DRAFT

2040 COMPREHENSIVE PLAN

1/1/2020 DRAFT

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INTRODUCTION

The City of Elko New Market is located in southeast Scott County, approximately 30 miles south of the Twin Cities metropolitan area. The City is also located on the southern boundary of the seven-county metropolitan area which is under the regional planning jurisdiction of the Metropolitan Council. The Metropolitan Council is the policy-making body, planning agency and provider of essential services for the Twin Cities metropolitan region.

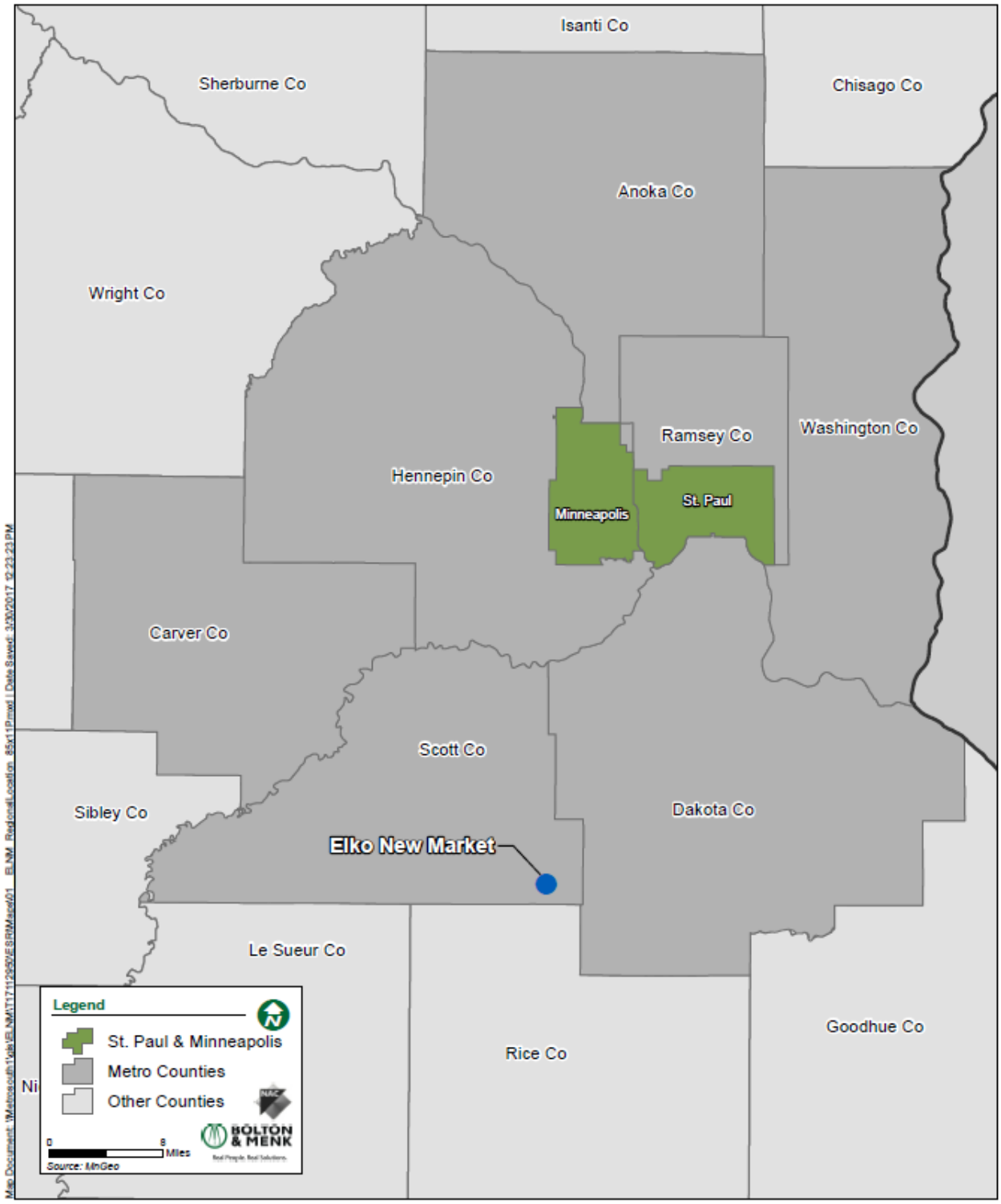
In response to State Statute requirements and to ensure a valid representation of its community vision, the City of Elko New Market has conducted a planning process to update its Comprehensive Plan through the year 2040. The Comprehensive Plan is intended to define the land use, transportation, natural environment and infrastructure goals of the City as a means of defining Elko New Market's future growth and long-term vision.

Beyond the desires and needs of the local community, the Metropolitan Council's *Thrive MSP 2040* regional development guide establishes a regional context within which the City of Elko New Market must define its role and direct its future. *Thrive MSP 2040* mandates specific regional criteria that must be addressed in the City's 2040 Comprehensive Plan Update.

The City's past planning efforts and the regional planning documents listed below provide the foundation for Elko New Market's 2040 Comprehensive Plan Update.

1996 Elko and New Market Joint Comprehensive Plan
2004 2030 Regional Development Framework - Metropolitan Council
2005 Southeast Scott County Comprehensive Plan
(for the Cities of Elko, New Market and New Market Township)
2005 Master Plan and Development Guidelines for Downtown New Market
2008 Elko New Market 2030 Comprehensive Plan (as amended)
2009 Elko New Market Park and Trail Plan
2011 Elko New Market Economic Development Strategy Plan (as amended)
2014 Elko Original Townsite "Vision"
2014 Thrive MSP 2040 Regional Development Guide - Metropolitan Council

This introductory section describes the purpose of the Comprehensive Plan, outlines Plan update process, provides a historical, local planning perspective, and finally describes the regional context that defines Elko New Market's future planning efforts.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Sherburne Co
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Anoka Co
Wright Co
Ramsey Co
Washington Co
Hennepin Co
Minneapolis
St. Paul
Carver Co
Scott Co
Sibley Co
Dakota Co
Elko New Market
Le Sueur Co
Rice Co
Goodhue Co
Legend
St. Paul & Minneapolis
Metro Counties
Other Counties
0
8
Miles
Source: MnGeo
BOLTON & MENK

COMPREHENSIVE PLAN PURPOSE

This Comprehensive Plan is part of an ongoing planning effort to guide growth and development within the City of Elko New Market and lands expected to be part of the City at some future point. It establishes concepts, principles, relationships, and patterns that will serve as a guide for decision making. These concepts allow the Plan to be interpreted more broadly than a zoning ordinance, for example, which is interpreted and enforced as regulations. To remain viable, the Plan must be flexible and dynamic, not static. It will need to respond to change, as well as guide it. It is recognized that the Plan may need to be amended periodically. Each amendment should however, be evaluated on its merits. This Plan serves several more specific purposes as explained below:

Goals

One of the primary purposes of any comprehensive plan is to document the goals and values for the community as established throughout a planning process. Such goals and values should have a direct relationship to the desired future vision of the community.

This Plan documents the goals and policies for the City of Elko New Market, considering the goals of the larger region, as well as the impact the goals and policies have on neighboring jurisdictions and related agencies (e.g. school districts). More specifically, the Plan identifies goals and policies for physical development in the areas of land use, housing, transportation, natural resources, parks and open space, surface and stormwater management, water supply, sanitary sewer, economic development, and intergovernmental cooperation. Considering that Elko New Market lies within the larger Twin Cities Metropolitan Area, this Plan must be consistent with the policy directions and strategies identified in the Metropolitan Council's *Thrive MSP 2040* regional development guide.

Management of Growth

Primary elements of this Plan focus on the need to manage growth and the desire to maintain a high quality of life in the community as growth continues.

The multi-jurisdictional nature of many of the issues associated with growth can be managed and shaped to everyone's benefit through cooperative working relationships among stakeholders and decision makers of the area and larger region. Historically, the City of Elko New Market has had positive working relationships with both Scott County and New Market Township. By continuing to work together, neighboring jurisdictions can best deal with the issues of growth such that goals and policies of one jurisdiction do not adversely affect an adjacent jurisdiction and the benefits of growth may be shared by all.

The City of Elko New Market is designated as a "Rural Center" planning area in the Metropolitan Council's *Thrive MSP 2040* regional development guide. The *Thrive MSP* development guide defines "Rural Centers" as local commercial, employment and residential activity centers which serve rural areas in the region. "Rural Center" communities are expected to plan for forecasted population and household growth at average densities of at least 3-5 units per acre for new development and redevelopment. In addition, "Rural Center" communities are directed to strive for high density commercial uses and compatible high density residential uses in the commercial core of the community to ensure efficient use of existing infrastructure improvements.

As a designated "Rural Center", the City of Elko New Market intends to accept a share of the region's projected growth. To be postured for continued growth, the City has or will update as necessary plans and ordinances to implement this Plan and accommodate growth in an orderly, fiscally responsive manner. The goals within this Plan are consistent with the Metropolitan Council's policy directions and strategies for "Rural Centers" related to growth and land use, transportation, housing, and natural resources. As provided for in the *Thrive 2040* development guide, Elko New Market is interested in working with the Metropolitan Council to utilize their regional investments as a means of assisting in the responsible management of regional growth.

Communication Tool

The Comprehensive Plan serves as a communication tool between decision-makers, units of government, agencies, and property owners. It helps to guide stakeholders in making land use decisions by providing information as established in the planning process. For this reason, the need to update this Plan on a regular basis is significant. Communication of up-to-date information is essential in order to utilize this Plan to guide future development.

Legal Basis for Ordinances

The Comprehensive Plan provides the legal basis for the establishment of ordinances used to implement this Plan. The City of Elko New Market is responsible for land use and planning within its corporate City limits while Scott County serves as the land use authority for the township areas of the County. Scott County and surrounding New Market Township are active participants in the public hearing process by providing feedback and recommendations to Elko New Market City Officials. Having land use authority over unincorporated areas of the Comprehensive Plan study area, Scott County will utilize the City's Comprehensive Plan to assist in the eventual implementation of the City's Plan. This will be achieved primarily by imposing development limitations upon existing undeveloped lands which are slated for future urban development.

COMPREHENSIVE PLANNING PROCESS

Comprehensive Planning is a broad, problem solving process. As such, the effort involves well defined steps which begin with the identification of issues and goals, and progresses to proposed solutions and actions. Each step in the process builds upon that step which precedes it. The following is a list of general stages which have been or will be undertaken in Elko New Market's comprehensive planning process:

1. Issue Identification
2. Inventory / Community Profile
3. Policy Plan
4. Development of Plans
5. Implementation

Issue Identification

The first phase of Elko New Market's 2040 Comprehensive Plan planning process is to identify issues important to the community and stakeholders. This involves the collection of community stakeholder perspectives related to community vision, development issues and future City priorities. Received input and perceptions will guide the comprehensive planning process. As part of the issue identification phase, interviews and/or surveys were conducted with the City Council, Planning Commission, Park Commission, Chamber of Commerce representatives, local business owners, area developers, and residents.

Inventory/Community Profile

The second phase of Elko New Market's 2040 Comprehensive Plan planning process is the assembly of an inventory of existing conditions. The inventory information identifies the current social, environmental, and physical facts and trends that define the community. The inventory provides empirical data from which to build recommendations and strategies for future land use, housing, utility, park, and transportation planning. The inventory information is contained within each chapter of the Plan (natural environment, housing, land use, etc.)

Policy Plan

The third phase of the process involves the formation of the Policy Plan. The City will define desired community planning goals that it wishes to accomplish through 2040. Policies will then be formulated to define actions for accomplishing these desired goals. Also included in the Policy Plan will be goals and policies provided in the *Thrive MSP 2040* regional development guide for "Rural Center" communities.

Development of Plans

Phase four of the Plan involves the formulation of specific plans chapters which provide specific recommendations for land use, housing, natural environment, infrastructure, transportation, and parks and trails as directed by the Metropolitan Council's regional development guide. These recommendations give attention to both regional (as appropriate) and City issues. The following plans, while part of the 2040 Comprehensive Plan update, are separate documents and are included in this Plan by reference:

- Water Supply Plan (Appendix A)
- Wastewater Collection System Plan (Appendix B)
- Stormwater Management Plan (Appendix C)

Implementation

The fifth and final phase of the Comprehensive Plan update process is the Implementation phase. The Land Planning Act requires each community's development plans and regulations to be consistent with the Comprehensive Plan. Thus, this phase involves an analysis of the City's implementation tools such as development regulations (zoning and subdivision ordinances), capital improvement plans, and housing programs to ensure that they will effectively serve to implement the Comprehensive Plan's goals.

Throughout the Comprehensive Planning process, each phase will be presented and reviewed by the Elko New Market Planning Commission and City Council which serve as the designated Comprehensive Plan Review Committee. The Planning Commission and City Council are charged with developing a draft Comprehensive Plan document that addresses community issues and lays the foundation for community planning and land use development through the year 2040. Following the initial input and discussion, the Plan will be revised and formally reviewed through a public hearing by the Planning Commission and preliminary approval by the City Council. The process will be concluded with referrals of the Comprehensive Plan update to the surrounding jurisdictions and affected units of government as well as the Metropolitan Council, and final adoption by the City Council.

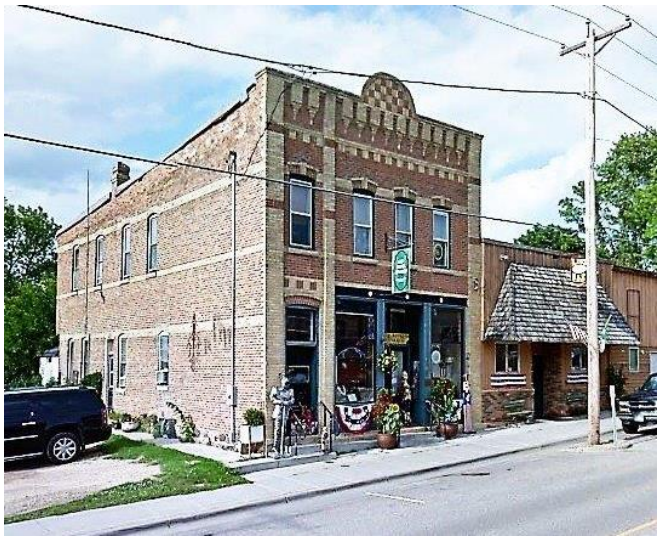
PLANNING HISTORY

The historic events surrounding the development of a community are an important part of providing baseline information in the planning process. To achieve a well-planned future, it is important to understand not only the current community, through demographic information or current land use, for example, but also its past. Understanding the history of the community can help to establish the nature of its character. This greater understanding can be utilized to create or maintain a sense of place which is unique to a community. It may also provide an indication of locations and or physical elements that should be taken into consideration as further

development occurs. These could be areas that have historic or cultural significance, which should be preserved, or sites that may present development constraints. An analysis of historic events may provide clues as to the reasons that particular types of land uses are present, or are missing from a community. Knowledge of historic patterns of development within the region may present an indication of the future within the smaller community. In addition, knowledge of historic events may provide an indication of what the community will accept in terms of new development concepts. [1]

Former City of New Market

It was during the early years of Scott County settlement that the former City of New Market began to develop into a community. German and Prussian emigrants first established the area known as Jackson (later the name would change to New Market), and by 1865, it was incorporated into a City whose social and civic activities were centered around the German Catholic Church. The incorporated area of the City initially included 320 acres, with only six blocks (approximately 17 acres) developed before 1898. By the late 1870s, the City included a post office, general stores, and several other businesses. A hotel was built in the 1890s. The City also had its own public school, which was closed in 1916, when the private parish school was opened. New Market was booming by the turn of the century, due in some part to the grain elevator and train station located in nearby Elko, which brought business activities into the area. By 1944, the City of New Market had grown to include approximately 50 acres of developed land; an area which included only 15% of the City's incorporated limits. Interstate 35 was constructed in the late 1960s which provided an entirely different mode of transportation into and out of the community. While a general store remained in operation until 1970, the advent of better transportation corresponded with the dwindling of business activity in New Market as larger shopping centers to the north developed. Even with the decline of businesses, construction of residential dwellings began to grow in the 1960s and 1970s. A moratorium on building due to lack of sewer capacity in the early 1980s halted virtually any new construction for a period of approximately five years. After cooperatively building a sewer system at the headwaters of the Vermillion River located in New Market Township with the neighboring City of Elko in 1987, construction of housing again began to rise by the end of the 1990s. Between



Original hotel constructed in the 1890's

[1] Historical Information Source: *Southeast Scott County Comprehensive Plan (2005)*

1997 and 2003, a period of only six years, the developed area of the City of New Market expanded from 320 acres of land (as initially incorporated) to approximately 790 acres.

Former City of Elko

Even with its proximity, development of the former City of Elko was quite dissimilar to that of New Market. In 1902, the Chicago-St. Paul Railroad platted the village which would later become the City of Elko. While the community grew around the railroad and other businesses in the village, it was not incorporated until 1949. While neighboring New Market was predominately a German Catholic community, the population of Elko included a large number of Scandinavian Lutherans. Elko had its own public school, perhaps due to the fact the New Market public school regularly included Catholic religious education in its coursework, and was primarily taught in German. The Elko public school merged with Lakeville in the 1950s, leaving the Elko/New Market community without a public school.

The Elko Speedway opened in 1964 and continues to attract people into the area. With the departure of the railroad from the City in 1977 and the construction of Interstate 35 in the 1960's, business activity slowly dwindled as it did in neighboring New Market. Elko also experienced a growth in housing construction between 1960 and 2000. Until the later part of the 1990's, housing construction in Elko surpassed that in New Market.

Elko Speedway, Circa 1975

City of Elko New Market

In October of 2005, City officials from Elko and New Market first met to discuss a possible merger. Recognizing potential financial benefits from such action, the City Councils of the two cities commissioned a study to examine potential impacts. Following a series of public meetings, a referendum was held in March of 2006 to consider the potential merger. The residents of the two cities voted overwhelmingly (84 percent) to approve the merger which formally became effective on January 1, 2007. As part of the 2008 Comprehensive Plan Update cycle, the New City of Elko New Market adopted its first Comprehensive Plan. Shortly thereafter, the first zoning and subdivision ordinance were adopted for the merged City.

REGIONAL PLANNING

As part of the mandated comprehensive planning process, the City of Elko New Market is required to coordinate its comprehensive plan in a manner consistent with the *Thrive MSP 2040* regional development guide as adopted by the Metropolitan Council.

To build the foundation for a prosperous, equitable, livable, and sustainable future, the *Thrive MSP* document identifies seven general policies to guide land use and regional development. These policies are as follows:

> Orderly and Efficient Land Use: Align land use, development patterns, and infrastructure to make the best use of public and private investment.
>
> Natural Resources Protection: Conserve, restore, and protect the region's natural resources to ensure availability, support public health, and maintain a high quality of life.
>
> Water Sustainability: Conserve, restore, and protect the quality and quantity of the region's water resources to ensure ongoing availability, support public health, and maintain a high quality of life.
>
> Housing Affordability and Choice: Promote housing options to give people in all life stages and of all economic means viable choices for safe, stable, and affordable homes.
>
> Access, Mobility and Transportation Choice: Sustain and improve a multimodal transportation system to support regional growth, maintain regional economic competitiveness, and provide choices and reliability for the system's users.
>
> Economic Competitiveness: Foster connected land use options to provide businesses and industries with access to materials, markets, and talent.
>
> Building in Resilience: Promote sensitive land use and development patterns to achieve Minnesota's adopted greenhouse gas emissions goals at the regional scale, and to develop local resiliency to the impacts of climate change.

The *Thrive MSP 2040* regional development guide also provides the following specific growth strategies for "Rural Center" communities to ensure orderly and efficient land use:

- Plan for forecasted population and household growth at overall average densities of at least 3-5 units per acre (for new development and redevelopment).
- Strive for higher-density commercial uses and compatible higher-density residential land uses in the commercial core of the community to ensure efficient uses of existing infrastructure investments.

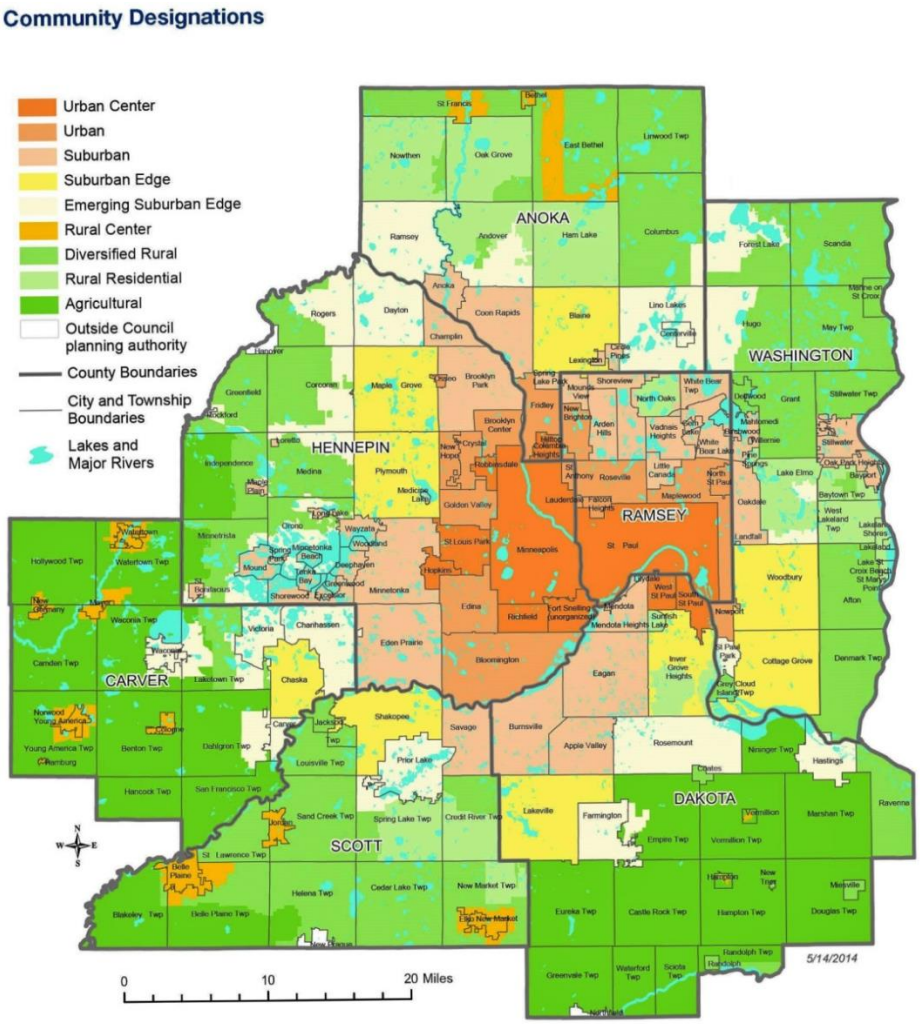
- Work with adjacent jurisdictions to execute orderly annexation agreements where forecasted growth exceeds land capacity within existing city boundaries.

- Work to focus forecasted growth in areas with existing infrastructure capacity to protect existing farm land and prime agricultural soils for the long term.

- Adopt ordinances that coordinate development with infrastructure availability.

- Identify areas that will accommodate post-2040 growth forecasts and implement strategies to preserve these areas for future growth. Plan for necessary infrastructure improvements.

As shown on the map below, the Metropolitan Council has classified the City of Elko New Market as a "Rural Center" community.



STUDY AREA

The study area for the 2040 Comprehensive Plan update extends well beyond the City's current municipal boundaries, but does not incorporate areas beyond the City's ultimate urban service area boundary (as established in the 2030 Plan).

The City's 2030 Comprehensive Plan is a reiteration of the Southeast Scott County Comprehensive Plan which was approved in 2005 for the Cities of Elko, New Market and New Market Township. The study area of the 2030 Plan incorporates portions of Scott, Dakota and Rice Counties. In Scott County, all of New Market Township and portions of Cedar Lake and Credit River Townships are included. In Dakota County, portions of Eureka and Greenville Townships are included as well as a portion of the City of Lakeville. In Rice County, portions of Webster and Wheatland Townships are included.

The study area for the 2040 Plan update will follow the City's ultimate urban service area boundary. Thus, only portions of Cedar Lake and New Market Townships in Scott County and Webster Township in Rice County lie within the study area of the 2040 Plan Update. Generally speaking, the City's ultimate urban service area is bordered on the north by 250th Street, on the south by 50th Street (in Rice County), on the east by Interstate 35 and on the west by Zachary Avenue.

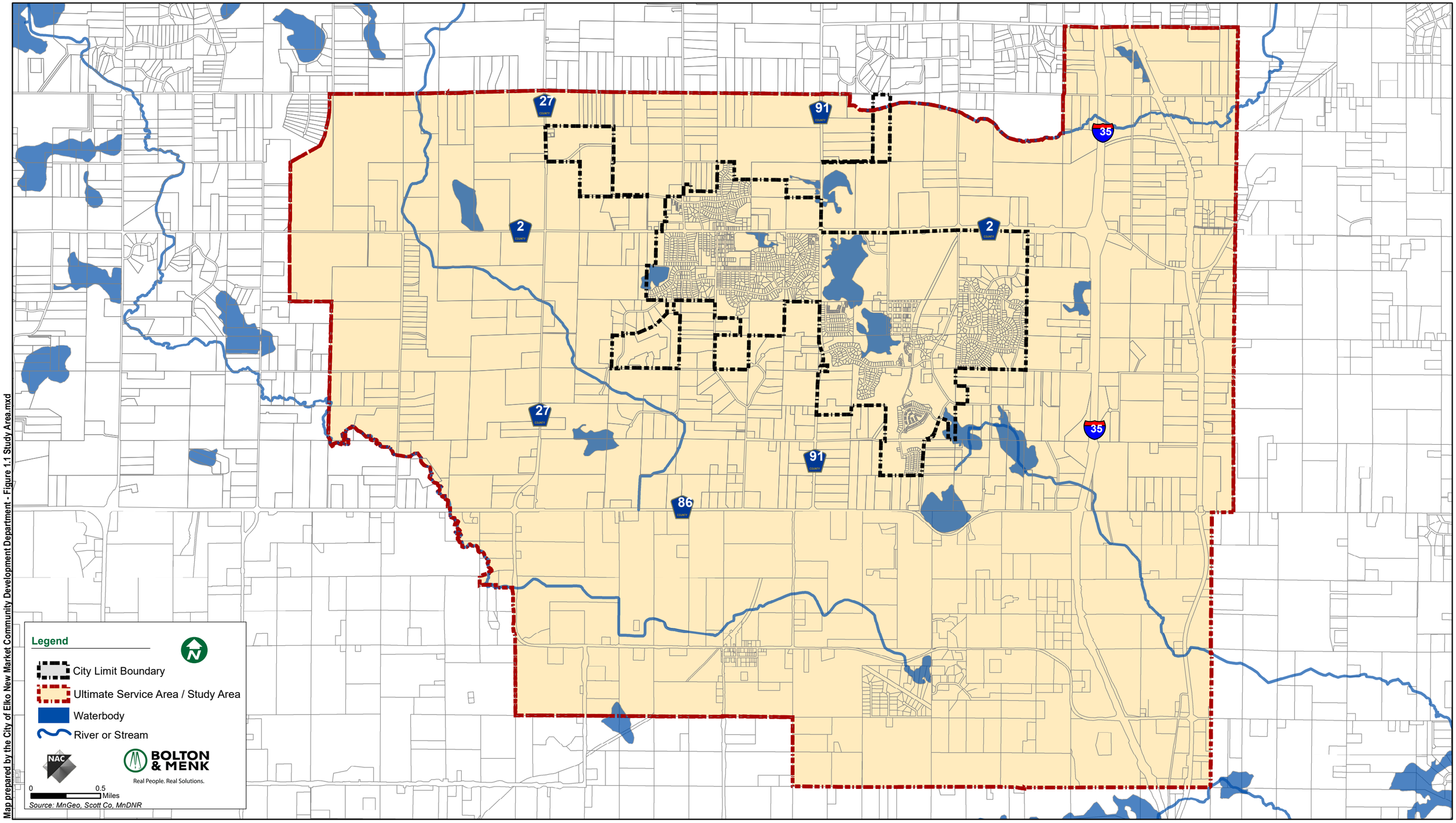
While certain land areas that were included in the 2030 study area being are excluded from the 2040 study area, it is important to note that the context of the study area and abutting physical features will be considered as part of the City's land use planning efforts (to provide an understanding of existing conditions and potential impacts). Also, to be noted is that opportunities for public feedback from surrounding jurisdictions will once again be provided as part of the 2040 Plan update.

The 2040 study area is depicted on Figure 1.1.

2040 Comprehensive Plan

Elko New Market, MN

Study Area
Figure 1.1



Map prepared by the City of Elko New Market Community Development Department - Figure 1.1 Study Area.mxd

INTRODUCTION

The Issue Identification chapter is a summary of comments and concerns raised during interviews and/or surveys with the Park Commission, Planning Commission and City Council members and other key stakeholders. Key stakeholders include local developers, business owners, and representatives of the Chamber of Commerce, school district, and residential neighborhoods. Feedback was also received from Elko New Market residents via an online survey.

Identification of each and every issue raised in the interview/survey process was not attempted. Rather, issues presented herein represent a broad categorization of topics raised. Generally, there was a strong consensus on many topics; however, where opinions differ, all sides of the issue are presented. The following perceptions and issues represent topics which require specific attention throughout the comprehensive planning process. The following survey/interview responses are numbered for ease of reference and are in no particular order of priority.

GENERAL CITY PERCEPTIONS

Opportunities and/or Strengths

Most of the interview/survey participants have a very positive image of the City of Elko New Market, describing it as a community that offers a "small town" environment with friendly neighborhoods. The following opportunities and/or strengths were identified as contributing to Elko New Market's quality of life and public image:

1. The most common interview/survey response related to Elko New Market's positive public image is the City's "small town" feel. In many cases, the City's "small town feel" was specifically identified as the primary reason for living in Elko New Market.

2. The City's proximity to Interstate 35 was identified as a positive community feature. Many respondents stated that Interstate 35 provides convenient access to the Twin Cities and other areas and is therefore considered a positive community asset. Others stated that the Interstate is expected to attract significant economic development to the City and surrounding areas which will positively contribute to the City's tax base.

3. Several respondents indicated that the City's partial location within the Lakeville School District (194) is a positive community asset. It was specifically noted from multiple developers that such feature contributes greatly to the appeal of the City.

4. Most respondents described the City as safe, quiet and walkable. It was also conveyed that the City is occupied by "nice" people and that neighborhoods feel "closely knit."

5. Several interview/survey respondents indicated that the availability of land to accommodate future growth and the opportunity for the City to guide and manage such growth in a positive manner is a positive feature that is not afforded many cities.

6. Interviewees and survey respondents were generally complimentary of City government operations and delivery of services. Most were particularly satisfied the accessibility of City Staff and City Officials.

7. A walkable downtown area was highlighted by interview and survey respondents as a positive community feature.

8. A few survey respondents expressed an opinion that the quality of the City's services (police, fire etc.) was considered a community strength.

9. Community event opportunities were highlighted as a community strength. In particular, the availability of various children's programs was noted.

10. The proximity of residential neighborhoods to the Eagle View Elementary School, St. Nicholas Church, and Boulder Pointe Golf Club was identified as a community strength.

11. One survey respondent indicated that the present size of the City is considered a community strength in that most negative aspects of larger suburbs do not presently exist in Elko New Market.

Issues and/or Concerns

While interview/survey respondents were complimentary to the City by characterizing it as a desirable place to live, respondents also identified some community weaknesses. The following were viewed as issues and/or concerns within the Elko New Market:

1. In terms of community weaknesses, most interview/survey respondents cited a lack of local commercial goods and services as a significant concern. The need for a grocery store and hardware store were mentioned on many occasions.

2. Related to the desire for goods and services is a concern over "excessive" taxes. It was suggested that future commercial and industrial uses would expand the City's tax base and potentially assist in the tax burden currently imposed upon residents.

3. Utility costs were cited as a community weakness. It was noted by several interview/survey respondents that the cost of such basic services (specifically the cost of water) exceeds that of other nearby cities.

4. A lack of jobs/employment opportunities in Elko New Market was frequently identified as a community concern.

5. Highlighted was a lack of resident amenities in the City. Interview/survey respondents specifically expressed a desire for more sidewalks/trails, a community garden, a municipal swimming pool/water park and a recycling/compost site.

6. Code enforcement was an expressed community concern. Specific concerns related to unkempt properties and specifically residential properties with excessive outside storage.

7. Some interview/survey respondents feel that City Staff is partly to blame for the lack of new development in the City. It was specifically suggested that City plans need to be prepared and implemented to attract new businesses.

8. Some interview/survey respondents expressed a concern over the City's development process and specifically the restrictions imposed upon the development community. Specific concern was expressed related to the time and expense involved. City development fees were also noted as a concern.

9. Several interview/survey respondents expressed concern over traffic volumes and speeds on County Road 2 and resulting impacts on vehicle and pedestrian safety.

10. While the partial inclusion of Elko New Market in the Lakeville School District was cited as a positive feature, the City's inclusion in two school districts was viewed by some interview/survey respondents as being divisive in that such condition discourages community unity.

11. A few interview/survey respondents feel that the City is presently lacking in character and is not particularly welcoming. It was suggested that a "Welcome to the City of Elko New Market" sign (or signs) would help in this regard. Somewhat related to this issue is an expressed opinion that the name of the City (Elko New Market) is confusing and unappealing.

12. A couple respondents cited noise resulting from Elko Speedway activities (races and concerts) and recreational motorcycle use (dirt bikes) in the City as a community concern.

13. One interview/survey respondent expressed an opinion that that there are not enough activity opportunities provided in the City for children.

14. Another interview/survey respondent raised the illegal dumping/disposal of yard waste in the City as a concern. In this regard, it was suggested that a City compost drop-off site could potentially resolve the issue.

CHALLENGES

Interview/survey respondents were asked to identify what they perceive to be the biggest challenges facing the City of Elko New Market in the next 20 years. In this regard, the following views were expressed in order of popularity (the most popular response being listed first):

1. Accommodate growth (urbanization) and provide City services in an organized and fiscally responsible manner.

2. Attract commercial development necessary to accommodate expectant population growth.

3. Accommodate future growth (and related service demands) in a well-planned manner while preserving the City's "small town" character.

4. Manage City taxes such that residents are not negatively impacted by greater service demands.

5. Provide a diverse housing mix which appeals to all age and income groups.

6. Provide suburban-type amenities associated with an increased City population.

7. Establish an appealing development character in the City.

8. Maintain a strong and healthy downtown area.

9. Accommodate increased traffic on County Road 2 in a safe and efficient manner.

10. Plan for and provide schools as necessary to meet the needs of the City's increasing population of school age children.

11. Provide public transit opportunities to Elko New Market citizens (specifically connections to south metro suburbs).

RESIDENTIAL LAND USES

Persons interviewed/surveyed were asked for their opinions related to existing and future residential uses in the City. In this regard, the following issues were identified:

1. Regarding the physical condition of the City's existing housing stock, most interview/survey respondents feel that such housing stock is either "good" or "very good."

2. Several interview/survey respondents expressed concern over the limited availability of single family residential lots in the City.

3. In regard to planning for future residential uses, most interview/survey respondents feel it is important to provide a variety of housing options which cater to different age and income groups.

4. Several interview/survey respondents cited the recent senior housing project (Market Village Apartments) as a benefit to the City as it provides an opportunity for long-time, aging residents to stay in the community. A belief was also conveyed that a market for additional senior housing presently exists in the City.

5. In regard to housing type, most interview/survey respondents feel that low density housing (single family homes – three to five units per acre) should be the City's top priority in the next 20 years. Several interview/survey respondents indicated that such high priority relates, in part, to the limited number of single family residential lots which are currently available in the City.

6. Medium density housing (five to ten units per acre) and high density housing (ten or more units per acre) are recognized as a community need and generally viewed as equally important in terms of priority.

7. A few interview/survey respondents expressed concern related to the upkeep of some single family residential properties in the City. Concerns related to both the condition/appearance of buildings and or yard areas. Excessive outdoor storage was cited as a specific concern. In this regard, it was suggested that the City should be more pro-active in the enforcement of its ordinances which relate to property maintenance.

COMMERCIAL LAND USES

Interview/survey respondents expressed several opinions regarding commercial (retail) land uses within the City. In this regard, the following comments were offered:

1. Nearly all interview/survey respondents feel that there is a lack of basic commercial services in the City. It was specifically noted that traveling to areas outside the City to obtain such services oftentimes presents an inconvenience. Services which were commonly mentioned by the respondents as an immediate need included the following:

    - Grocery
    - Hardware
    - Convenience gas

- Fast food
- Medical clinic
- Pharmacy
- Commercial daycare

2. In addition to responding to basic community needs, interview/survey respondents feel that basic commercial services will also contribute greatly to the City's tax base.

3. Most interview/survey respondents view Interstate 35 as a highly desirable community asset. It was specifically noted that the visibility and accessibility of the County Road 2/Interstate 35 interchange area is expected to attract commercial uses in the future. Anticipated commercial uses which were referenced included a grocery store, convenience gas and a home improvement center.

4. Interview/survey respondents indicated that a need is expected for commercial uses such as restaurants, liquor stores, personal services, medical/pharmacy, hotels, family entertainment centers and large (big box) chain stores by the year 2040

5. A few interview/survey respondents suggested that the City should take steps necessary to ensure high quality commercial buildings which exhibit a desirable architectural character.

6. A few interview/survey respondents expressed a desire to establish more locally-owned businesses in the City.

7. It was suggested that the City's downtown area (Downtown New Market) should not be neglected as a commercial center. Interview/survey respondents suggested that "fun" and "unique" uses which take advantage of the historical character of buildings should be encouraged. It was specifically indicated that small retail shops, restaurants, bars, coffee shops, offices and personal service uses should be promoted. It was also suggested that "mixed uses," meaning multi-story structures with ground floor commercial and upper floor office or residential uses should be considered in the area.

8. One survey respondent expressed concern about the appearance and upkeep of commercial properties in the Downtown area (Downtown New Market). It was specifically suggested that the City should provide financial incentives for small business owners in the City to improve the physical appearance of their buildings.

INDUSTRIAL USES

Interview/survey respondents provided several opinions related to existing and future industrial land uses in the City. In this regard, the following components were offered:

1. While generally not considered as high a priority (or need) as basic commercial services, interview/survey respondents feel the attraction of industrial uses in the future is important. Respondents view future industrial development as a means of improving the City's tax base.

2. Job creation associated with future industrial uses was also highlighted by interview/survey respondents as a positive aspect of industrial land uses.

3. Nearly all interview/survey respondents feel that future industrial uses should be located near the Interstate 35 to take advantage of its accessibility. It was specifically suggested by some respondents that such uses should be located on the east side of the Interstate 35 near County Road 2.

4. A few interview survey respondents indicated that long-term industrial uses should also be considered near the intersection of Interstate 35 and County Road 86.

5. Many interview/survey respondents envision uses such as warehouse/distribution centers, data centers and manufacturing facilities being located near Interstate 35, in the industrially guided areas of the City.

6. An opinion was expressed that the City should attempt to accommodate a variety of industrial use types as well as both small and large scale users.

7. Provided it can be done in a fiscally responsible manner, a few interview/survey respondents feel that improvements necessary to accommodate future industrial uses near the Interstate 35 corridor (i.e. utility extensions and transportation improvements) should be provided in the near term as an enticement for future development.

TRANSPORTATION

Interview/survey respondents offered several transportation-related comments. In this regard, the following comments and/or issues were received:

1. The clear majority of survey/interview respondents (approximately 75 percent) indicated that they are satisfied with both the physical condition of the City's existing streets and the street connections which are provided.

2. Improvement/expansion of the Interstate 35/County Road 2 interchange is viewed as the City's highest transportation-related priority going forward. It was specifically stated that improvements are necessary to address safety concerns associated with escalating traffic volumes and to accommodate future commercial and industrial development in the area.

3. Many interview/survey respondents raised concern over the segment of Xerxes Avenue located south of County Road 2. Specifically, concern was expressed that the roadway, in its current state, is "under built" and is not sufficient to accommodate both existing and future traffic volumes. Concern was also cited related to current pedestrian safety along the roadway.

4. Several interview/survey respondents indicated that it is important that the City secure right-of-way necessary to accommodate increased traffic volumes associated with future City population growth. Further, it was suggested that the City plan for and install appropriate traffic control devices as increased traffic volumes warrant.

5. A few respondents feel that the conversion of gravel-surfaced roads in the City to hard-surfaced (bituminous) roads should be a priority.

6. Some interview/survey respondents feel that transportation connections between the former Cities of Elko and New Market are lacking and are "over dependent" upon County Road 2.

7. Several specific comments/opinions were received related to County Road 2. These included the following:

    a. Improvements are needed at the County Road 2/ County Road 91 intersection. A few respondents suggested that the intersection should be signalized. One respondent indicated he is not in favor of the placement of a roundabout in such location.

    b. Within the downtown area, safety concerns were raised related to on-street parking and pedestrian movements.

    c. It was indicated that the City needs to address an ongoing pavement deterioration issue located directly south of City Hall.

    d. One respondent raised concern over a "blind spot" encountered by motorists wishing to access the County Road from Church Street.

    e. An opinion was expressed that improved lighting is needed within the corridor to improve safety.

8. Some respondents feel the City should make ongoing street maintenance a priority and that funds for such efforts should be allocated accordingly.

9. One survey respondent expressed a belief that long-term planning for County Roads 91 and 86 (including, but not limited to, right-of-way needs) should take place at this time.

10. A few interview/survey respondents feel that the improvement of Main Street in "Downtown Elko" should be made a priority and that on-street parking areas should be better defined.

11. One respondent suggested that lane markings on certain City streets could be improved. Lane markings along Aaron Drive were specifically cited.

12. Several comments were received related to sidewalks and trails which abut City streets. These comments are summarized below:

    a. Walking paths are needed alongside City streets.

    b. The width of shoulders which abut City streets should be increased.

    c. Additional attention needs to be given to pedestrian crossings to ensure safety.

PARKS AND TRAILS

As part of the interview/survey process, the following comments and/or opinions were received related to parks and trails/sidewalks:

1. Most persons interviewed/surveyed (60 percent) consider the City's existing park system to be "good" or "very good".

2. A majority of persons interviewed/surveyed (52 percent) feel that all areas of the City are adequately served by parks. In regard to areas thought to be inadequately served, the Boulder Point neighborhood was specifically identified as an area which lacks a nearby park for use by the subdivision's residents.

3. While generally satisfied with the condition of the City's sidewalks and trails, several respondents expressed concern over incomplete sidewalk and/or trail linkages in the City. Respondents indicated that such incomplete system raises safety concerns as pedestrians oftentimes must utilize streets as a travel route.

4. While many interview/survey respondents recognize that future sidewalk/trail construction in the City will accompany future development, many respondents feel that the City should take a more pro-active approach to sidewalk/trail development and promote sidewalk/trail construction in advance of development.

5. As part of future trail planning, some respondents expressed a desire to connect to regional destinations including, but not limited to, nearby cities.

6. Most persons interviewed/surveyed feel that new developments in the City should include sidewalks. Some respondents specifically noted that sidewalks on both sides of a street, rather than just one side (as currently required by the City Code), is preferable.

7. Many respondents feel there is a need for a trail along Xerxes Avenue, south of County Road 2. It was indicated that the roadway surface is oftentimes used by pedestrians which presents a safety concern.

8. One respondent suggested that the upkeep of sidewalks and trails in the City should be made a high priority and that funds should be allocated accordingly for ongoing maintenance.

9. An opinion was expressed that the trail connecting the Fish Rock Country Market and the Whispering Creek neighborhood to the north is in need of an upgrade.

10. It was also noted that, in the future, sidewalk connections to the Eagle View Elementary School will be needed to accommodate children who walk to and from school.

11. Several interview/survey respondents feel that the City is lacking in trails devoted to (or designed for) bicycle use.

12. It was further indicated by such respondents that the City is also lacking in “nature trails.”

13. One interview/survey respondent suggested that the City should be more pro-active in the removal of snow from the City’s trails in the winter months.

14. Another interview/survey respondent suggested the City should advertise trail locations in the City.

CONCLUSION

The preceding stakeholder comments are intended to help establish the basic direction of the 2040 Comprehensive Plan Update. Such comments identify a variety of community issues related to the following:

- General City Perceptions
- Challenges
- Residential Land Uses
- Commercial Land Uses
- Industrial Land Uses
- Transportation
- Parks and Trails

The extent and scope of received comments speaks to the desirable features of Elko New Market while recognizing that many concerns/issues exist which should be considered as the City continues to grow. In this regard, there is an evident appreciation of the various issues which confront the City. Simultaneously, there appears to be an equal commitment to resolving such issues and preparing for an improved future.

A common theme of the received comments is that community stakeholders are fond of Elko New Market's "small town" feel and believe that efforts should be made to retain such feature while accommodating future community growth.

To be stressed is that the stated stakeholder views and opinions have not been prioritized nor do they include any positions or responses by professional staff. At this stage in the Plan Update process, only the directions desired by community stakeholders are a matter of concern. As may be appropriate in future policy and plan discussions, professional staff recommendations and alternatives will be offered for consideration.

Ultimately, it will be the jurisdiction of City Officials to resolve the content and the direction of the Plan Update. In this regard, attempts will be made to build consensus on priority issues facing the City of Elko New Market (as identified in the interviews/surveys) and the general direction of the Plan.

INTRODUCTION

The intent of the Policy Plan is to outline community desires to be produced or accomplished relative to the physical environment. This chapter identifies general goals and supporting policies in which plans, programs and actions can be formulated and initiated. Goals and policies specific to transportation, parks and trails, water supply, wastewater and stormwater management will be provided in separate, stand-alone documents.

It is emphasized that these goals and policies are the basic and fundamental plan for the development of Elko New Market. Their purpose is to provide a decision-making framework to guide all public and private actions and the development of the City. In addition to the active function of guiding action, the goals and policies also serve the more passive function of establishing evaluation criteria for the development and change which subsequently occurs.

This Policy Plan is not an implementation program of actions as no time framework or priority of action is intended or stated. The Policy Plan is a guide which directs action of the part of the public and private sectors of the community when responding to needs, problems and opportunities.

It must be cautioned that the policies in this chapter are to be considered and utilized collectively. While in some instances a single policy may define and outline a course of action or decision, it is more common that several policies apply to a given situation. Reactions to individual policies should therefore be tempered pending consideration of all applicable statements.

Additional note should be made that policy plans are utilized as the basis of graphic plans and decision-making due to their flexibility and adaptability. Lacking a “hard line” delineation, policies can be applied and used for the basis of decision-making when unanticipated situations emerge. Such is not the case with a map plan in that it is static and fixed. Further, there may be instances when the policies contained in the Policy Plan do not reflect a change in policy direction or address an unanticipated issue. In such cases, the Plan should be amended to include policy statements which reflect the new direction or issue.

It should be noted that the use of the term “shall” within the framework of the Policy Plan is not to be considered an absolute regulation such as the case in the City’s Zoning and Subdivision Ordinances.

The Policy Plan portion of the Comprehensive Plan is based upon an analysis of the preceding Issue Identification Chapter. To ensure that the Policy Plan reflects the desires of the local community and that such desires are to be accomplished, the Plan has been subjected to detailed and thorough review by the Planning Commission, City Council and City Staff. To ensure a proper understanding and clarification, the terms utilized are defined as follows:

Goals: Desired end products.

Policies: Definite courses of action which lead toward goal achievement.

Many goal and policy statements are generalized in nature and are directed simply toward community health and welfare. Thus, many of the policies of the City's 2030 Comprehensive Plan (2008) remain valid and are reiterated. On the other hand, certain Comprehensive Plan policies are more specific in nature and reflect different courses of action than those contained in the 2030 Plan. Still other policies have been added simply because a particular issue was not relevant at the time of the 2030 Plan.

COMMUNITY PLANNING PRINCIPLES

The primary function of local municipal government is the provision of an orderly, safe, productive, and enhanced living and working environment. While this encompasses social, physical, and economic opportunities and issues, the City of Elko New Market primarily influences the quality of life for its residents through the physical environment. Within this context of the City's capabilities, the following are a list of fundamental principles that guide the planning process to develop the 2040 Comprehensive Plan:

- Facilitate a public process to obtain input from City stakeholders including but not limited to, community officials, local developers, business owners and residents to ensure that the 2040 Comprehensive Plan Update reflects the values and goals of the City of Elko New Market.

- Enhance Elko New Market's community character by ensuring that new development is respectful of the City's "small town" atmosphere while accommodating necessary urban growth.

- Promote development which is responsive to natural amenities and minimizes impacts upon environmental resources.

- Encourage growth in an orderly and fiscally responsible manner through careful management of the development process.

- Foster a strong sense of identity and quality of character for Elko New Market and its individual neighborhoods and business districts.

- Promote the economic vitality of Elko New Market businesses and industries to provide for needed services, employment opportunities, and a diversified tax base as a means of supporting future community growth.

- Expand the existing system of public parks, trails, and open space to provide equitable distribution of recreational opportunities in the City.

- Preserve and utilize Elko New Market's natural resources and scenic, and historical character to contribute to a high quality of life in the City.

- Coordinate with State and regional governments to develop an integrated transportation system for all modes of transportation (pedestrian, vehicle, and mass transit) to accommodate long range growth that is to occur.

- Provide for the health, safety, and welfare of the public by ensuring managed growth occurs within a framework of local infrastructure and services of sufficient capacity to meet community needs and expectations.

GROWTH MANAGEMENT

Goal #1: Promote growth strategies for orderly and efficient land use consistent with the *Thrive MSP 2040* regional development guide.

Policies:

1. Plan for forecasted population and household growth at overall average densities of at least 3-5 units per acre (for new development and redevelopment).

2. Strive for higher-density commercial uses and compatible higher-density residential land uses in the commercial core of the community to ensure efficient uses of existing infrastructure investments.

3. Work with adjacent jurisdictions to execute orderly annexation agreements where forecasted growth exceeds land capacity within existing City boundaries.

4. Work to focus forecasted growth in areas with existing infrastructure capacity to protect existing farm land and prime agricultural soils for the long term.

5. Adopt ordinances that coordinate development with infrastructure availability.

6. Collaborate with abutting counties and townships, as necessary, to ensure that near-term development outside of the City's 2040 MUSA boundary (but within the ultimate MUSA boundary) does not hinder long-term urbanization objectives for the area.

Goal #2: Ensure that proposed development does not overburden City resources.

Policies:

1. Maintain development projects within the limitations assigned to the City by regional agencies (i.e. the Minnesota Pollution Control Agency and/or the Metropolitan Council) in regard to public utility availability and potential sewer discharge.

2. Require developers or benefiting property owners to assume all or the significant majority of the improvement/service costs, and agree to pay assessments associated with extending service to their property.

3. Deny development or subdivision applications that qualify as premature based on non-conformity with this Comprehensive Plan or the City's Zoning and/or Subdivision Ordinances relative to:

    - Infill policies
    - Adequacy of roads or highways serving the subdivision or development
    - Adequacy of stormwater management or treatment facilities
    - Adequacy of safe water supply
    - Adequacy of safe sewage disposal system
    - Adequacy of support facilities (i.e. police, fire, schools, parks, etc.)
    - Consistency with environmental protection policies or regulations
    - Consistency with the City's five-year Capital Improvement Program

ECONOMIC DEVELOPMENT

Goal: In accordance with the City's Economic Development and Action Plan, attract, expand, and retain businesses and industries in Elko New Market as a means of adding value to and diversifying the City's tax base.

Policies:

1. Focus infrastructure planning on maximizing opportunities for job creation.

2. Expedite the planning and implementation of fiber optic availability for future economic development.

3. Solicit the support of the City's Chamber of Commerce for economic development initiatives.

4. Continue to build and promote a public sector culture of customer service, timeliness, accountability, and creative solutions.

5. Build "capacity" for economic development via City plans, policies and practices.

    a. Develop a land use plan which is conducive to the attraction of commercial and industrial land uses.

    b. Pursue infrastructure projects which will attract commercial and industrial development.

    c. Utilize available economic development tools (i.e. tax increment financing and other incentives), when appropriate, to attract commercial and industrial development.

    d. Explore opportunities to streamline the City's development review process without diminishing the public purpose of such processes.

    e. Build trust and confidence with the development community by exhibiting commitment, competence, and haste in the development review and approval process.

    f. Demonstrate that Elko New Market is a great place to do business by continuing to provide quality municipal services at reasonable property tax and utility rates.

6. Build "identity" for economic development via City plans, policies and practices.

    a. Recognize and promote the advantages of the City's proximity to Interstate 35 and southernmost location in the seven-county metropolitan area.

    b. Promote a positive City image which advertises resources which are important to business owners, employees, customers, and vendors including, but not limited to, reasonable proximity to urban amenities and property tax rates comparable to other area cities.

c. Explore ways in which the City can illustrate the cost-benefit and return on investment that Elko New Market will gain from future development.

7. Build "partnerships" for economic development via City plans, policies and practices.

   a. Nurture economic development alliances with bigger partners and leverage their initiatives in a manner which is beneficial to the City.

   b. Utilize available economic development tools in a creative manner as a means of maximizing limited development resources.

   c. Share economic development strategies for County Road 2 with Scott County and work in tandem in matters related to transportation and access, land use, and environmental issues along the corridor.

   d. Continue to work with and communicate development goals to the Elko New Market Chamber of Commerce.

   e. Meet with commercial brokers, developers, and/or other market participants for informal feedback on the City's economic development efforts.

8. Utilize the City's website to promote and enhance Elko New Market's development capacity, identity, and partnerships.

   a. Provide comprehensive information for businesses which may be considering a location in Elko New Market. Information may include, but not be limited to, zoning maps, tax and utility rates, development fees/procedures, and the City's business assistance policy.

   b. Expand the City's website to include links to real estate locator sites.

   c. Modify the City's website to provide greater emphasis on the desirable community features which may appeal to new businesses.

9. When available, consider the acquisition of properties in the downtown area (former Downtown New Market) as a means of advancing the goals of the City's Downtown Master Plan.

10. Promote Elko New Market's community identity through consistent brand messaging with all communications, signage at community gateways, and at City facilities.

NATURAL ENVIRONMENT

Goal #1: Design City regulations and performance standards to protect the natural environment, preserve natural resources, and protect natural features.

Policies:

1. Restrict and/or prohibit new development or the expansion of existing activities in environmentally sensitive areas (i.e. wetlands, floodplains, etc.) where environmental damage may result.

2. Utilize City regulations related to density, lot size, tree preservation, and wetland protection to protect natural features deemed important to the City.

3. Encourage subdivision design which preserves natural features in order to maintain a healthy environment, natural aesthetics, and economic benefits which such features provide to the area.

4. Guide development such that natural areas are not impacted or that impacts are minimized (e.g. re-configure lots and/or road alignments to less impactful locations).

Goal #2: Preserve/protect regionally significant, high value natural resources as identified in the Natural Environment Plan.

Policies:

1. Determine locations where existing natural resources can be enhanced and/or restored (e.g. types of vegetation to be planted, where stormwater ponds should be located).

2. Buffer high value natural resources from the impact of development.

3. Collaborate with Scott County, New Market Township, Three Rivers Park District, applicable Watershed Management Organizations and the Minnesota Department of Natural Resources to ensure proper management of the Vermillion River headwaters and the adjacent "priority natural area" which flanks the river.

4. Integrate natural resources with Elko New Market's park, trail, and open space systems.

5. As part of development review procedures, evaluate the following related to natural resource corridors:

   a. Determine if the property (or a portion of the property) proposed for development is within or adjacent to a natural resource corridor.

   b. Identify what types of resources are present within the corridor (e.g. wetland, woodland).

   c. Identify the purpose of the corridor (as outlined above).

   d. Determine whether preservation of the resource(s) within the corridor is appropriate.

   e. Based on purpose, determine the appropriate implementation method(s) or options.

6. Consider the following as potential methods of protecting high value natural resource corridors:

   a. Guide development (e.g. re-configure lots or road alignment or shift area of density to less significant area) such that there is no impact or impact is limited.

   b. Provide incentives such as:

      1) Allow higher density in an area for clustering development away from the resource.

      2) Allow the transfer of development rights – transferring (selling) density opportunities for development in areas where there is less of an impact on natural resources.

   c. Developer dedicated conservation easements.

   d. Acquisition of property by local government (e.g. park dedication vs. fee per lot, public easements).

   e. Acquisition of property by conservation organizations for recreational and/or preservation purposes (may be outright acquisition or easements).

   f. Do nothing – existing regulations adequately accomplish the corridor's intended purpose or no specific implementation is necessary.

7. Identify locations of significant deposits of non-metallic minerals (sand, gravel and aggregate) and where appropriate, consider preservation and protection for future access and use as a regional resource.

GENERAL LAND USE

Goal: **Develop a cohesive land use pattern that ensures compatibility and functional relationships among land use activities.**

Policies:

1. Encourage a balanced variety of development types to satisfy the needs, desires, and income levels of all people while preventing an oversupply of any one type of development.

2. Cluster complementary land uses and activities into functionally related sub-units of the community as determined by physical barriers (i.e. topography, drainageways, transportation routes, etc.), homogeneous land use characteristics, and service area boundaries.

3. Accomplish transitions between different land uses in an orderly manner so as not to create negative impacts on adjoining developments. Transitions of differing land uses shall occur either at mid-block points or along shared rear lot lines, so that similar uses front on the same street, or at borders of areas separated by physical barriers.

4. Regulate incompatible land uses such that conflicts are minimized through the use of physical barriers (i.e., topography, drainageways, transportation routes, etc.), separation, screening, or proper physical orientation of lots and buildings.

5. Amend geographic land use designations and related zoning classifications only when it can be demonstrated by those making the request that the modifications are in the best long-term interest of the City of Elko New Market and are consistent with the policies of the City's 2040 Comprehensive Plan.

6. Approve amendments to the Comprehensive Plan (or Zoning Ordinance) to allow uses or activities not guided or allowed only when such action is consistent with the City's long-term goals and not based solely on short-term market demand or potential.

7. Consider interim uses where differing land use designations are guided for long-term market needs. Such interim activities will only be considered when determined to be compatible with existing and proposed uses and will not serve as obstructions to long-term development objectives.

9. Analyze all development proposals on an individual basis from a physical, economic, and social standpoint within the context of the entire community to determine appropriate uses.

10. Deem premature any request for a rezoning of property to allow a more intensive land use than that which is guided by the City's Land Use Plan.

11. Relate the land uses guided by the Comprehensive Plan to community development priorities and transportation needs.

12. Consider the removal of land from property tax rolls only when it can be clearly demonstrated that such actions are in the public interest.

13. Establish standards for development quality which reflect the City's desired community character.

14. Coordinate Elko New Market's plans for future growth with abutting jurisdictions to encourage unified development patterns consistent with the Comprehensive Plan.

15. Plan land use development so as not to isolate or create land-locked parcels which lack adequate access to public streets.

16. Accomplish renewal, replacement, and redevelopment of substandard and grossly incompatible land uses through private means and, when appropriate, public action.

17. Encourage the conversion of nonconforming uses to uses which are consistent with those guided by the City's Land Use Plan.

18. Give due consideration to the integration of various modes of transportation and related facilities as part of land use planning activities.

19. Administer and enforce zoning, subdivision, building, and property maintenance requirements of the City Code as a means of maintaining high quality, attractive neighborhoods and business districts.

RESIDENTIAL LAND USES

Goal #1: **Recognize residential neighborhoods as the foundation of the City which are to be planned to provide safe, high quality, and high amenity living environments.**

Policies:

1. Limit new residential urban growth to areas within the 2040 Metropolitan Urban Service Area (MUSA) boundary.

2. Maintain and enhance the strong character of residential neighborhoods that are safe, healthy, and aesthetically pleasing through well-designed subdivisions for new housing.

3. Ensure that all new housing, including rental housing and housing for persons of low and moderate income, adheres to the highest possible standards of planning design and construction.

4. In the guidance of residential uses (on the City's Land Use Plan) utilize "net" site areas to make the type and density of residential uses more predictable. The net area shall be defined as being the gross area of a parcel excluding resources protected by ordinance (wetlands and steep slopes), County and State highway rights-of-way, and regional park land.

5. Provide a system of collector roadways to protect residential neighborhoods from an influx of through traffic on local streets.

6. Prohibit new development in areas where noise and/or pollution exceed accepted standards and the negative impacts are not correctable by construction, site planning or other techniques. Avoid exposure of residential development from adverse environmental impacts, including noise, air, and visual pollution.

7. Require low density residential neighborhoods to be protected from encroachment or intrusion of incompatible uses by adequate buffering and/or separation from other residential, as well as non-residential, land use categories.

8. Encourage innovation in subdivision design and housing.

9. Minimize outside storage in residential areas and in those instances when it is acceptable, require it be conducted in an orderly, confined, and limited manner.

10. Require accessory buildings located in residential neighborhoods to be of a compatible design and size to maintain a residential neighborhood character and limit the use of such buildings to be clearly incidental and secondary to the principal residential activity.

11. Allow for interim home occupations within residential neighborhoods only when they will not jeopardize the health, safety, and welfare of the surrounding neighborhood.

Goal #2: Provide housing opportunities for persons of all ages and income levels and choices that meet the changing life cycle needs of its residents.

Policies:

1. Allow for the development of a variety of quality housing styles, types and choices throughout the City based on type and density objectives established in this Plan.

2. Maintain a balance in the types and quantities of housing units available throughout the City, emphasizing single family, multiple family, housing for seniors and physically disabled with existing residential development.

3. Adhere to the highest community design, planning, and construction standards for all new residential development.

4. In recognition of the City's changing demographic profile, provide opportunities for senior living facilities.

5. Encourage housing styles and development techniques that conserve land and increase efficiency while achieving guided density objectives as established in this Plan.

6. Allow the mixing of various housing types or densities only when specifically planned and approved as part of the development approval process.

7. Establish single family dwellings as the primary type of housing maintained and developed within the community through a variety of single family lot sizes. Such varied lot sizes are intended to create potential for added diversity in the housing supply and create housing opportunities for all segments of the population.

8. Consider changes to the City's land regulations (zoning and subdivision ordinances) to better respond to current single family residential market trends.

9. Provide opportunities for housing for low and moderate income families and individuals that is not to be concentrated within a single project or area.

Goal #3: Provide for well-designed housing alternatives to single family dwellings which are compatible with the desired character of the community.

Policies:

1. Recognize the need to develop a variety of twinhome, townhome, and multiple family dwellings to supplement conventional single family homes giving due consideration to local market demands and desired community character.

2. Limit the development of two-family, townhome and multiple family dwellings to areas designated for medium and high density residential uses as designated on the City's Land Use Plan, except as may be integrated as part of a Planned Unit Development.

3. Guide areas for medium and high density residential land use so as not to be concentrated in any one area of the community or over such acreages at any one location as to create potential land use compatibility, transportation, utility, or service delivery issues.

4. Promote the development of two-family, townhome, and multiple family dwellings adjacent to areas targeted for commercial development to provide ancillary market support.

5. Establish and apply specific zoning and subdivision ordinance standards for development of two-family, townhome, and multiple family uses to ensure quality and innovation in construction and site design, as well as consistent application of development requirements.

6. Provide medium and high density residential housing development in areas which are provided reasonable access to major thoroughfares.

7. Locate residential care facilities in areas appropriately guided for residential land uses.

Goal #4: Maintain and/or upgrade the character of existing residential neighborhoods.

Policies:

1. Coordinate neighborhood preservation and rehabilitation efforts within individually defined neighborhoods.

2. Maintain a high quality residential environment through rehabilitation or where necessary, redevelopment of substandard dwelling units through private means and/or public action, when feasible.

3. Preserve and improve the existing housing stock through inspection and code enforcement efforts.

4. Consider the adoption of a housing maintenance code.

5. Abate property maintenance violations that infringe upon neighborhood quality or create public health safety and welfare concerns through code enforcement efforts.

6. Utilize public improvements as a means of civic beautification, strengthening neighborhood character, and stimulating investment in private property.

Goal #5: Build attractive residential neighborhoods which are integrated with the balance of land uses in the City.

Policies:

1. Require all new housing to comply with established zoning and building performance standards.

2. Update, as necessary, the City's development regulations to define the desired level of quality design expected for new residential subdivisions.

3. Require new subdivisions to be interconnected with existing neighborhoods (with local streets, trails, parks, etc.).

4. Require all new housing to adhere to standards related to design, planning, and construction.

5. Integrate natural features of property into subdivision design.

6. Transition differing land uses in an orderly fashion which does not create a negative impact on adjoining developments.

7. Promote housing construction which reflects modern and emerging construction techniques and styles.

8. Require financial securities to ensure performances on plats to provide an incentive for timely development.

Goal #6: Provide opportunities for affordable housing consistent with the Metropolitan Council's allocation of affordable housing need for 2021 through 2030 (326 units).

Policies:

1. Guide sufficient land at minimum residential densities of eight or more units per acre to support the City's allocation of affordable housing need for 2021-2030.

2. Continue efforts with the Scott County Community Development Agency (CDA) to provide housing for low and moderate income families, individuals, and senior citizens.

3. Encourage owner-occupied housing for low and moderate income households in a manner which does not concentrate such housing type in a single area of the City.

4. Encourage multiple family housing projects which include both subsidized and market rate housing units.

5. Establish administrative and policy mechanisms that will facilitate the development of low and moderate income housing and respond to housing deficiencies.

6. Ensure that housing assistance is available, be it State or Federal, and accessible to community residents.

COMMERCIAL LAND USES

Goal #1: Promote commercial development as a means of expanding the City's tax and employment base and providing goods and services to Elko New Market residents.

Policies:

1. Designate commercial land areas which are adequate to meet the long range commercial needs of the area.

2. In conjunction with transportation planning, locate commercial land uses in areas of high visibility and accessibility.

3. Screen and/or buffer commercial uses from adjacent residential development.

4. Promote unified commercial development patterns that serve the overall community and region, as well as smaller commercial nodes which may serve smaller portion of the community or neighborhoods.

5. Promote the Interstate 35 and designated segments of the County Road 2 corridor as areas of primary focus for commercial development.

6. Within the Interstate 35 and County Road 2 corridors, promote high quality commercial development which takes advantage of the visibility and/or access provided along such transportation routes.

7. To promote customer friendly environments, encourage commercial site designs which emphasize pedestrian accessibility, shared parking and green space.

8. Encourage multiple family residential uses as a transition between commercial uses and low density residential neighborhoods.

9. Require all new commercial development to comply with established zoning and building performance standards.

10. Update, as necessary, the City's development regulations to reflect and define the desired level of design quality for new commercial development.

11. Actively communicate with the Elko New Market Chamber of Commerce and local business owners to gain an understanding of the changing needs of the commercial market.

Goal #2: **Establish Downtown Elko New Market as a vibrant, historic area of the community which includes a broad range of mixed uses arranged in a development pattern which is characteristic of the area.**

Policies:

1. Consider the guidelines provided in the City's Downtown Master Plan as part of downtown area development and/or redevelopment proposals.

2. Review and update, as deemed necessary, the City's Downtown Master Plan to ensure that such plan is consistent with the City's current vision for the area.

3. Promote a broad range of commercial and civic uses within the Downtown including retail, service, office, entertainment, and civic uses.

4. Maintain a scale and form of development in the Downtown which emphasizes sensitivity to the pedestrian environment.

5. Minimize the impact of automobiles in the Downtown through strategies such as "shared parking", in which adjacent land uses having different peak-hour parking demands can share parking facilities.

6. Promote safe pedestrian circulation along and across County Road 2.

7. Provide easily accessible public parking areas and pedestrian connections to retail streets.

8. Achieve "traffic calming" benefits through an integrated street network which provides options for traffic flow, narrower street design, and the provision of on-street parking.

9. Provide for public open space that uses stormwater treatment ponds as a visual and recreational amenity to the project.

10. Promote buildings which are compatible with the character of existing historic buildings within their immediate context.

11. Encourage active ground floor uses, such as restaurants, shops, and services to animate retail streets.

INDUSTRIAL LAND USES

Goal: **Expand the City's tax and employment base through the promotion of industrial land uses.**

Policies:

1. Continue to implement Elko New Market's Economic Development Strategy and Action Plan.

2. Communicate with businesses and industries to stay abreast of their changing needs to facilitate industrial development.

3. Designate land areas which are considered adequate to meet long range industrial use demands of the area.

4. Locate industrial land uses near primary and easily accessible transportation routes.

5. Specifically locate industrial uses in the northeast and southeast quadrants of the Interstate 35/County Road 2 interchange area.

6. Define areas for varying types of industrial activities and provide for such varied use types within the Zoning Ordinance.

7. Encourage legal nonconforming industrial uses within residential areas of the City to relocate to areas guided for such activities.

8. Update, as necessary, the City's development regulations to reflect and define the desired level of design quality for new industrial development.

9. Investigate fiscal incentives to attract desired types of industries to the City.

10. Promote industrial developments which maximize the return on City investments in public facilities and services.

11. Consider all potential physical implications and service demands (i.e. traffic generation, sewer and water demands) of new industrial developments.

12. Encourage industrial site designs which integrate natural land features.

ADMINISTRATION

Goal #1: All development which occurs within in the City of Elko New Market is to be in accordance with the Comprehensive Plan.

Policies:

1. Apply development policies and regulations in a consistent and uniform manner.

2. Evaluate the Comprehensive Plan regularly and proceed with updates when such action is deemed appropriate by the City.

3. Periodically review and update zoning and subdivision regulations to ensure that they adequately reflect current City policies.

4. Consider the establishment of an exterior property maintenance code as a means of promoting the life, health, safety, aesthetic, economic and general welfare of Elko New Market citizens and to protect neighborhoods against nuisances, blight, and deterioration.

5. Monitor legislative changes and new requirements in community responsibilities, notably in the area of environmental protection, and update the City's development regulations as necessary.

6. Evaluate development proposals to determine all economic, physical, social, and service demand implications and provide sufficient time for thorough analysis and decision-making.

7. Document all analysis related to consideration of development proposals to substantiate the basis of the City's decisions.

8. When new or expected development necessitates, initiate impact studies and cost analysis for public service improvements (i.e. utility extensions or upgrades, fire and police protection, roadway network improvements and recreation system elements).

Goal #2: Maintain high standards for proactive involvement and communication with City residents and businesses on City issues and services.

Policies:

1. Provide opportunities for direct involvement and input of area residents, business persons, and property owners in the planning and implementation of any development-related activities in the City.

2. Utilize existing business and civic organizations as a means of communicating and informing land owners and tenants and the general citizenry of area projects, plans, and accomplishments.

3. Encourage developers to hold informal meetings with project area residents, business persons, and property owners on a neighborhood or sub-unit basis to inform them of area plans prior to proceeding with formal development applications.

4. Make use of available media such as area newspapers, social media and the City's website as a means of keeping citizens informed of development projects.

Goal #3: To the extent possible, allocate administrative and improvement costs to those generating the demand or utilizing the service.

Policies:

1. Monitor the City's administrative procedures and services, including the processing of development applications, to ensure that the financial costs associated with such services are paid by those making the request.

2. Require land dedication, easements and other such dedications at the time of subdivision and/or development to ensure the physical capability for necessary public/semi-public utilities and improvements.

3. Annually review the City's financial position to ensure proper fiscal programming and management.

4. Monitor Federal and State programs for the possibility of assisting the community with implementing the Comprehensive Plan and meeting the needs of its citizens.

5. Continue to implement a capital improvement program for the management, programming, and budgeting of capital needs.

INTRODUCTION

Protection of the City's environmentally sensitive areas and related "rural feel" is of prime importance to Elko New Market residents. Environmentally sensitive features help define the "rural character" of the community and have, to some degree, attracted residents to the City. In addition to their aesthetic value, the elements which comprise Elko New Market's natural environment serve important ecological functions and create boundaries that define the pattern of urban development.

Recognizing the value of its natural resources, the Plan is the assurance that continued expansion of urban development in Elko New Market will not result in natural resource degradation. It is therefore necessary, as part of this Comprehensive Plan Update, to give specific attention to the protection of these areas. The focus of environmental protection efforts within the City is trending towards the integration of natural environmental features within development projects.

LAKES AND RIVERS

Technically, there are no lakes within the City of Elko New Market. The largest Department of Natural Resources (DNR) protected water body in the City is located south of County Road 2 and east of County Road 91 (adjacent to the Elko Speedway). The water body, technically a DNR protected wetland, is routinely referred as "Lake Elko" by Elko New Market residents. Another large wetland complex exists, directly west of "Downtown Elko." Also to be noted is that no DNR protected lakes exist within the either the City's 2040 MUSA or ultimate urban service area boundaries.

Of primary importance in the consideration of the City's natural features is the headwaters of the Vermillion River which emerge in New Market Township, just north of the City's public works site. The City's 2040 MUSA boundary borders the south side of the river for a distance of just over one mile. Lands bordering the south side of the headwaters are largely undeveloped.

While the Vermillion River is a designated trout stream further downstream (east of the City of Elko New Market), its headwaters provide passive recreational opportunities for the City. The City's Park and Trail Plan directs the future establishment of a greenway/trail along the south side of the river. In addition to providing passive recreational opportunities, such greenway would also provide a natural buffer between urban development and the river to help protect its ecological function. Further, the greenway could provide an area for natural wildlife habitat and movement.

To manage development which occurs along the headwaters, consideration should be given to the adoption of Shoreland Overlay District regulations in advance of forthcoming urban development. Adoption of a Shoreland Overlay District is intended to maintain the natural character of the shoreline and protect the waterbody from overcrowding, pollution and flooding.

Such Overlay District regulations should be consistent with Minnesota Statutes and Department of Natural Resources (DNR) Rules. Figure 4.1 illustrates DNR Protected Waters and Wetlands.

WETLANDS

Wetlands serve important ecological functions in the City Elko New Market. These functions include the following:

- Provide critical wildlife habitat
- Allow for nutrient assimilation and ground water recharge
- Add aesthetic value

Wetlands are protected by the Wetland Conservation Act of 1991 (as amended) and the Clean Water Act, and implemented through the City's Zoning and Subdivision Ordinances. Elko New Market's efforts to protect, preserve and enhance wetlands within the community include requirements for establishment of buffers and increased building setbacks from wetlands and waterways (based upon wetland quality).

Figure 4.2 illustrates the possible location of wetlands protected under the Wetland Conservation Act and the Clean Water Act, lying within Elko New Market's existing City limits and 2040 MUSA boundary. The map depicts the 2013 National Wetland Inventory wetland boundaries which is widely used as a reference for possible location of wetlands that would be protected under the Wetland Conservation Act and Clean Water Act. It is noted that there may be additional wetlands that are protected under the Wetland Conservation Act and Clean Water Act that are not shown on this figure, and which would be identified at the time of development through a wetland delineation.

Recognizing the important function of wetlands, the City will continue to protect wetlands through the use of vegetative buffer requirements and requiring that wetlands be conveyed to the City during the development process.

FLOODPLAINS

Development in floodplain areas creates risks to public safety and expenses (resulting from property damage). To minimize these risks, the City of Elko New Market adopted regulations (as a Zoning Ordinance amendment) to direct allowed uses and establish development standards for such uses within floodplain areas. The City's Floodplain Overlay District regulations are consistent with the rules and regulations of the National Flood Insurance Program and are intended to regulate development in the flood hazard areas of the City as a means of minimizing the impact of flood events upon the City.

According to the official Flood Hazard Boundary map issued by the Federal Emergency Management Agency (FEMA), two areas of the City presently lie within the 100-year floodplain. These include a portion of Elko New Market's public works campus site which abuts the Vermillion River and a small area within the Whispering Creek North Addition located in the northwest corner of the City.

The City will continue to apply the regulations of the Floodplain Overlay District to manage the type of development allowed in floodplain areas. Figure 4.3 depicts the flood hazard boundaries identified by FEMA.

STORMWATER MANAGEMENT AND EROSION CONTROL

Issues related to stormwater management and erosion control in the City of Elko New Market are addressed within the City's 2040 Surface Water Management Plan which is attached to this document as Appendix C, and implemented through the City's Zoning and Subdivision Ordinances.

TOPOGRAPHY

Figure 4.4 illustrates the topography within and surrounding the City of Elko New Market and depicts areas of steep slopes. The Elko New Market area features fairly substantial changes in elevation from approximately 1014 to 1228 feet above sea level, which is the highest elevation in Scott County. There are areas of moderate and steep slopes scattered throughout the City and 2040 growth area. Slopes exceeding 18% may present development challenges and function best if allowed to exist in a natural state or exist with limitation on development.

SOILS

Figure 4.5 illustrates the basic condition of soils within the City of Elko New Market and 2040 growth area. While there are many ways to classify soils, one of the most critical for the purposes of land use planning is hydric versus non-hydric soils. According to the USDA's Natural Resources Conservation Service, hydric soil is "soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Hydric soils typically are not as well-suited for development as non-hydric soils. As the map shows, there is a significant amount of hydric soils in portions of Elko New Market, particularly in large wetland areas.

According to the Scott County Soil Survey, the most common soil associations in the area are the Lester and Webster soil types. In 2012, the Lester association was proclaimed to be the "Official Minnesota State Soil" by Minnesota Governor Mark Dayton. Webster soils are nearly level and

generally occupy upland flats. Like the Lester association, Webster soils are well-drained and suitable for urban development.

SIGNIFICANT NATURAL AREAS

A part of the *Thrive MSP 2040* development guide, the Metropolitan Council directs Twin Cities Metropolitan Area cities to preserve and protect regionally significant natural resource areas. The City has identified the areas listed below to be of importance and to be considered during the development process and when assessing the effects of development on the natural environment.

Natural Area Corridors. With strong public support for protecting the county's woodlands, wetlands, habitat areas, and ground water, Scott County began a process in late 2006 to undertake a natural resource inventory and to ultimately identify Natural Area Corridors. Figure 4.6, which was published by Scott County, depicts areas with known sensitive species or communities, unique natural communities, and high and medium quality natural communities. Natural Area Corridors have been identified in the City's 2040 growth area, particularly on the northern portion of the City surrounding the Vermillion River.

Regionally Significant Terrestrial and Wetland Ecological Areas. The DNR has prepared a map of Regionally Significant Terrestrial and Wetland Ecological Areas, Figure 4.7. The DNR suggests additional field work be done to determine the existence of significant features in these areas. Within the City's 2040 growth area and existing City limits, there are areas considered regionally significant.

Metro Wildlife Corridor Focus Areas. Figure 4.8 depicts the Metro Wildlife Corridor Focus Areas, also mapped by the DNR. The focus areas shown on the map identify regionally significant upland and/or wetland habitat area and wildlife corridors that the DNR, along with public and private partners, endeavor to preserve. Through the Wildlife Corridor Program partners purchase conservation easements which allow them to restore, enhance, or maintain significant habitat areas.

The areas identified in Figures 4.6, 4.7 and 4.8 are not intended to prohibit development. Rather, the intent is to guide development-related decisions. When a property within a mapped area is proposed for development, the City will evaluate the proposal alongside the following statements and make decisions accordingly:

- Determine if the property is within a mapped area;
- Identify what types of resources are present within the corridor;
- Identify the purpose of the corridor;
- Determine whether preservation of the resource(s) within the corridor is appropriate;
- Determine what levels of resource protection already exist for the area in question;
- Guide development such that the area is not impacted or impact is limited;

Examples of implementation tools, to help in the preservation of mapped corridors, may include:

- Provide higher densities in exchange for preservation areas, through the use of PUD zoning;
- Developer dedicated conservation easements;
- Acquisition by location government (e.g. park dedication)
- Acquisition by conservation organizations

AGGREGATE

Metropolitan Council's *Thrive MSP 2040* regional development guide includes a policy which directs the conservation, restoration and protection of the region's natural resources to ensure availability, support public health, and maintain a high quality of life. Specifically, the Metropolitan Council considers aggregate (sand gravel and crushed rock) an important resource as it relates to the construction of regional transportation systems. The City of Elko New Market likewise recognizes that aggregate resources are of regional significance, particularly as it relates to the construction of regional transportation systems.

No "regionally significant" aggregate deposits exist in the Elko New Market area. Some smaller deposits do however, exist in isolated areas. Figure 4.9 depicts areas of aggregate deposits.

Recognizing that both the Metropolitan Council and City of Elko New Market consider aggregate to be a valued regional resource, the following policy statement has been incorporated into the Policy Plan chapter of this Plan:

1. *The City of Elko New Market shall identify locations of significant deposits of non-metallic minerals (sand, gravel and aggregate) and where appropriate, consider preservation and protection for future access and use as a regional resource.*

WATERSHEDS

Elko New Market is located within three watershed districts. The Vermillion River Watershed District encompasses the largest amount of land area of the three, stretching approximately two miles south of the Vermillion River. The Vermillion River Watershed District is the largest watershed in the Minneapolis-St. Paul Metropolitan Area. The Sand Creek is the second largest watershed, overlaying land located in the extreme southwest corner of the City. The North Cannon Watershed overlays land generally located north of 270th Street and east of County Road 91 in the southeast area of the City. Watershed district boundaries are depicted on Figure 4.10. As developments are considered by the City, the City will continue to comply with individual watershed regulations.

DEVELOPMENT CONSTRAINTS

Several of the natural features identified in this chapter, including but not limited to wetlands, flood plain areas, hydric soils, areas of steep slopes, and regionally significant ecological areas, will present constraints to future development in the 2040 growth area. Figure 4.11 illustrates these potential constraints to development. The boundaries on the map are a compilation of floodplain areas, DNR Protected Waters & Wetlands, National Wetland Inventory data areas, areas of steep slopes, and areas of hydric soils. It is noted that further review of these areas is required prior to development. This map is intended to provide a general overview of potentially constrained development areas.

AGRICULTURAL PRESERVATION / GREEN ACRES

The Metropolitan Agricultural Preserve Program was established to preserve areas of prime farmland. While there are no agricultural preserves within the City of Elko New Market or the 2040 growth area, it is recognized that there are many active farming operations. Several properties surrounding the City limits are enrolled in the Green Acres Program, which provides property tax relief for the owners of productive agricultural property. The City of Elko New Market supports the preservation of prime farmland by:

- Pursuing a growth plan that emphasizes compact and contiguous growth patterns
- Encourages 1 unit per 40 acre densities in rural areas

GROUNDWATER

Elko New Market draws its groundwater from the Prairie Du Chien - Jordan aquifer. Groundwater quality is thought to be generally good; however the City does treat for iron, manganese, and radium. Groundwater in the area is considered to be free from contamination; however the Minnesota Pollution control Agency reports seven confirmed instances of leaking underground storage tanks within the City dating back to 1989. All files on the sites have been closed as of the drafting of this Plan. The sites are identified in the following table:

Table 4- 1

Minnesota Pollution Control Agency Tank Leak Sites		
ID	Site Name	Address
LS0001616	New Market Oil (bulk Plant)	341 Main St PO Box 38
LS0001796	Maynards Auto Service	10881 E 260th St
LS0004619	Home Oil Co	320 Main St
LS0004929	Mn Department Of Transportation	I35 N of Elko
LS0015935	G & T Trucking	11111 Deuce Rd Ste 5
LS0016832	G and T Trucking Co	11111 Deuce Rd Ste 5
LS0018629	Waconia Transport Co Tanker Spill	Main St & Balte Ave
Source: Minnesota Pollution Control Agency (2019)		

HISTORIC PRESERVATION

The City of Elko New Market has only one structure which is listed on the National Register of Historic Places, that being the New Market Hotel and Store located at 441 Main Street.

In addition, the St. Nicolas Cemetery located within the St. Nicolas Church campus site (south of County Road 2 and east of Church Street) is also considered historically significant.

The City of Elko New Market is committed to the preservation of its history. As opportunities arise and funding is available, the City will take appropriate steps to ensure preservation.

AIR AND NOISE POLLUTION

Primary sources of air pollution within the City of Elko New Market are projected to be the high-volume streets which intersect and/or border the City. Within the 2040 planning period, these are anticipated to be County Roads 2 and 91 and Interstate 35.

Recognizing that residential uses currently abut such transportation corridors and will continue to do so in the future, buffer strips, including landscaping, berming and/or fencing should be established wherever possible (to mitigate adverse impacts). In addition, vehicular circulation associated with commercial and industrial uses should be discouraged, and in some cases prohibited, from using local residential streets.

The City is presently lacking in any significant industrial use sites. Recognizing however, that areas of the City are guided for such uses, assurances should be put in place which ensure that

incompatible land use relationships will be minimized (via land use planning) and that thoughtful site designs are implemented (via site plan review efforts).

Further, new commercial and industrial developments (including expansions) should comply with existing State and Federal pollution emission standards. In this regard, environmental assessments should be conducted for new projects when required by State Rules.

While it is acknowledged that the Elko Speedway is a well-known source of noise within the community, parameters have been established to minimize adverse impacts. These include compliance with applicable Minnesota Pollution Control Agency standards and maximum dBA limits placed upon noise events (related to time of day) as measured from site property lines. Such standards have been imposed as conditions of past development approvals.

LIGHT POLLUTION

A common result of on-going urban development within cities are additional light sources which illuminate streets, intersections, yards, parks, parking lots, business signs, etc. The growing number of light sources within the cities results in increased levels of light being directed or reflected skyward that can obscure the dark rural skyline.

To minimize the effects of light pollution, the City should consider the adoption of comprehensive lighting standards to ensure appropriate levels of night time illumination (that are controlled in intensity and direction to preserve the dark sky). Such standards could be applied to both new developments and the redevelopment of existing uses within the City.

SOLID WASTE

The City of Elko New Market's 2040 MUSA and ultimate urban service area boundaries encompass a large area of undeveloped land. In recognition of the City's proximity to the Twin Cities urban area, the possibility exists that lands slated for long-term urbanization could be viewed as an attractive location for a solid waste facility at some future point.

Presently, lands which lie outside of the City's municipal boundaries are subject to Scott County and/or Township zoning regulation. With this in mind and recognizing the regional significance of such a use, consideration of a solid waste facility proposal within the Elko New Market's ultimate urban service area boundary should be a collaborative review effort which minimally involves appropriate State agencies, Scott County, impacted Townships and the City.

While Elko New Market remains open to any potential development proposal, this type of land use has historically been discouraged due to inherent conflicts with the type and rate of anticipated City urbanization. In responding to a development request, waste disposal facilities

would not be allowed unless it is clearly demonstrated that such an activity can exist in harmony with both the natural environment as well as existing and anticipated urban land uses. In this regard, the following would be considered as part of a development request for such use:

- A comprehensive evaluation of potential environmental impacts.
- The proposed location, operation and long term use of the facility.
- The methods of collection, transportation, processing, and disposal.
- Potential for eventual reclamation and reuse of the site.

RESILIENCE

The Metropolitan Council's *Thrive MSP 2040* regional development guide encourages planning for climate change as part of the update of Twin Cities Metropolitan Area comprehensive plans. In this regard, cities must integrate strategies into their 2040 plans to be more resilient in the face of a changing climate.

Of specific concern is the impact which extreme weather events may have upon public facilities and the higher costs of providing services. Thus, there is growing need to not only plan for these events, but to also reduce the impacts through conscious climate adaptation and resilience planning.

With the preceding objectives in mind, the following efforts have been made by the City of Elko New Market:

Back-Up Power Systems. Within the City's sanitary sewer and water supply plans, efforts are being made toward addressing the impacts of severe weather. To minimize the risk of sewage backup in the event of electricity failure, such plans specify that new lift stations and wells should include standby power generators. Such a back-up system presently exists at the City's new water treatment plant which became operational in 2016, and the City is currently planning for stand-by generators at all City sanitary sewer lift stations.

Facility and Equipment Upgrades. In 2015, the Elko New Market Public Works Department moved into a new public works facility. Such facility (and additional floor area) enabled heavy equipment to be added to the City's fleet which is stored and maintained indoors. Such additional equipment enables a more expeditious response to damage resulting from extreme weather events. Specifically, streets (emergency travel routes) may be cleared of downed trees, debris and/or snow in a prompt manner.

Stormwater Storage. The City of Elko New Market recognizes that changing rainfall patterns may require additional storm water management capacity. Acknowledging such risks, the City has adopted stormwater rules that are implemented through the City's

Zoning and Subdivision Ordinances that promote retention of rainfall on-site in a manner which mimics pre-development conditions.

Further, City requirements for developers to construct rear-yard stormwater drainage facilities reduce the incentive for residents to make illegal sump pump connections to the sanitary sewer system. This requirement reduces inflow and infiltration into the sanitary sewer system, and in turn, reduces the financial costs associated with the transportation and treatment of water that is not technically "wastewater."

GreenStep Cities Program. In 2013, the City of Elko New Market joined the Minnesota GreenStep Cities program. The GreenStep Cities program is a voluntary challenge, assistance and recognition program which is intended to help cities achieve their sustainability and quality-of-life goals. This free, continuous improvement program, managed by a public-private partnership, is based upon several best practice categories (29 in total) as reiterated below:

Buildings and Lighting:

Efficient Existing Public Buildings: Benchmark energy usage, identify savings opportunities in consultation with state programs, utilities and others to implement cost-effective energy and sustainability improvements.

Efficient Existing Private Buildings: Provide incentives for energy, water and sustainability improvements in existing buildings/building sites.

New Green Buildings: Construct new buildings to meet or qualify under a green building framework.

Efficient Outdoor Lighting and Signals: Improve the efficiency and quality of street lighting, traffic signals and outdoor public lighting.

Building Redevelopment: Create economic and regulatory incentives for redeveloping and repurposing existing buildings before building new.

Land Use:

Comprehensive Plans: Build public support and legal validity to long-term infrastructural and regulatory strategy.

Efficient City Growth: Promote financial and environmental sustainability by enabling and encouraging walkable housing and commercial land use.

Mixed Uses: Develop efficient and healthy land patterns that generate community wealth.

Efficient Highway- and Auto-Oriented Development: *Adopt commercial development and design standards for auto-oriented development corridors and clusters.*

Design for Natural Resource Conservation: *Adopt development ordinances or processes that protect natural systems and valued community assets.*

Transportation:

Living Streets: *Create a network of green complete streets that improves city quality of life and adds value to surrounding properties.*

Mobility Options: *Promote active transportation and alternatives to single-occupancy car travel.*

Efficient City Fleets: *Implement a city fleet investment, operations and maintenance plan.*

Demand-Side Travel Planning: *Implement Travel Demand Management and Transit-Oriented Design in service of a more walkable city.*

Environmental Management:

Sustainable Purchasing: *Adopt environmentally preferable purchasing policies and practices.*

Urban Forests: *Add city tree and plant cover that increases community health, wealth and quality of life.*

Stormwater Management: *Minimize the volume of and pollutants in stormwater runoff.*

Parks and Trails: *Support active lifestyles and property values by enhancing the city's green infrastructure.*

Surface Water Quality: *Improve local water bodies.*

Efficient Water and Wastewater Systems: *Assess and improve city drinking water and wastewater systems and related facilities.*

Septic Systems: *Implement an effective management program for decentralized wastewater treatment systems.*

Solid Waste Reduction: *Increase waste reduction, reuse and recycling.*

Local Air Quality: *Prevent generation of local air contaminants.*

Economic and Community Development:

Benchmarks & Community Engagement: *Adopt outcome measures for GreenStep and other city sustainability efforts, and engage community members in ongoing education, dialogue, and campaigns.*

Green Business Development: *Support expansion of the city's green business sector.*

Renewable Energy: *Remove barriers to and encourage installation of renewable energy generation capacity.*

Local Food: *Strengthen local food and fiber production and access.*

Business Synergies: *Network/cluster businesses to achieve better energy, economic and environmental outcomes.*

Climate Adaptation and Community Resilience: *Plan and prepare for extreme weather, adapt to changing climatic conditions, and foster stronger community connectedness and social and economic vitality.*

As a current participant in the GreenStep Cities program, the City of Elko New Market will continue to work toward implementation of the preceding practices, as may be applicable.

Solar Access Protection. It is important to the City of Elko New Market that all properties have adequate access to sunlight. In this regard, solar access protection is considered a priority not only for solar energy systems but for the protection of property and aesthetic values as well.

Protection of solar access to properties will continue to be ensured by the City of Elko New Market via the uniform implementation of lot and building performance standards as established in the City's Zoning Ordinance. Requirements such as maximum building height and yard setback standards exist to create separation between structures and allow equal sunlight access such that a property is not in the shadow of an adjacent building.

Solar energy systems are a permitted accessory use in all zoning districts within the City. A specific set of performance standards applicable to solar systems is currently in place.

Wind Energy Protection. It is important to the City of Elko New Market that all properties have access to alternative energy systems. Wind energy systems are protected

through the City's ordinances in a manner that removes regulatory barriers and creates a clear path for wind energy, while still considering aesthetics and property values.

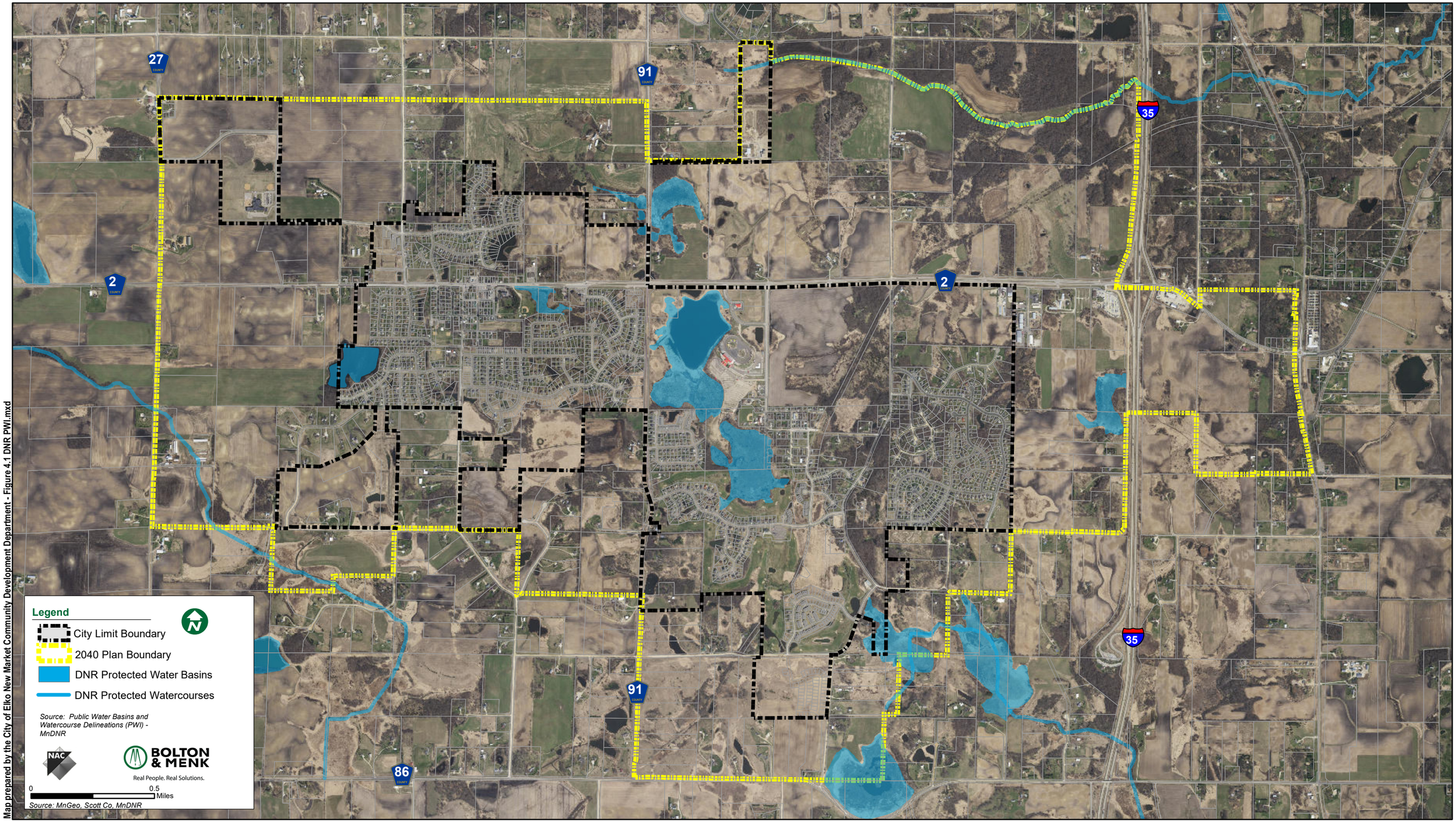
Protection of wind energy will continue to be ensured by the City of Elko New Market through uniform implementation of lot and performance standards as established in the City's Zoning Ordinance. Wind energy systems are permitted in all zoning districts within the City.

2040 Comprehensive Plan

Elko New Market, MN

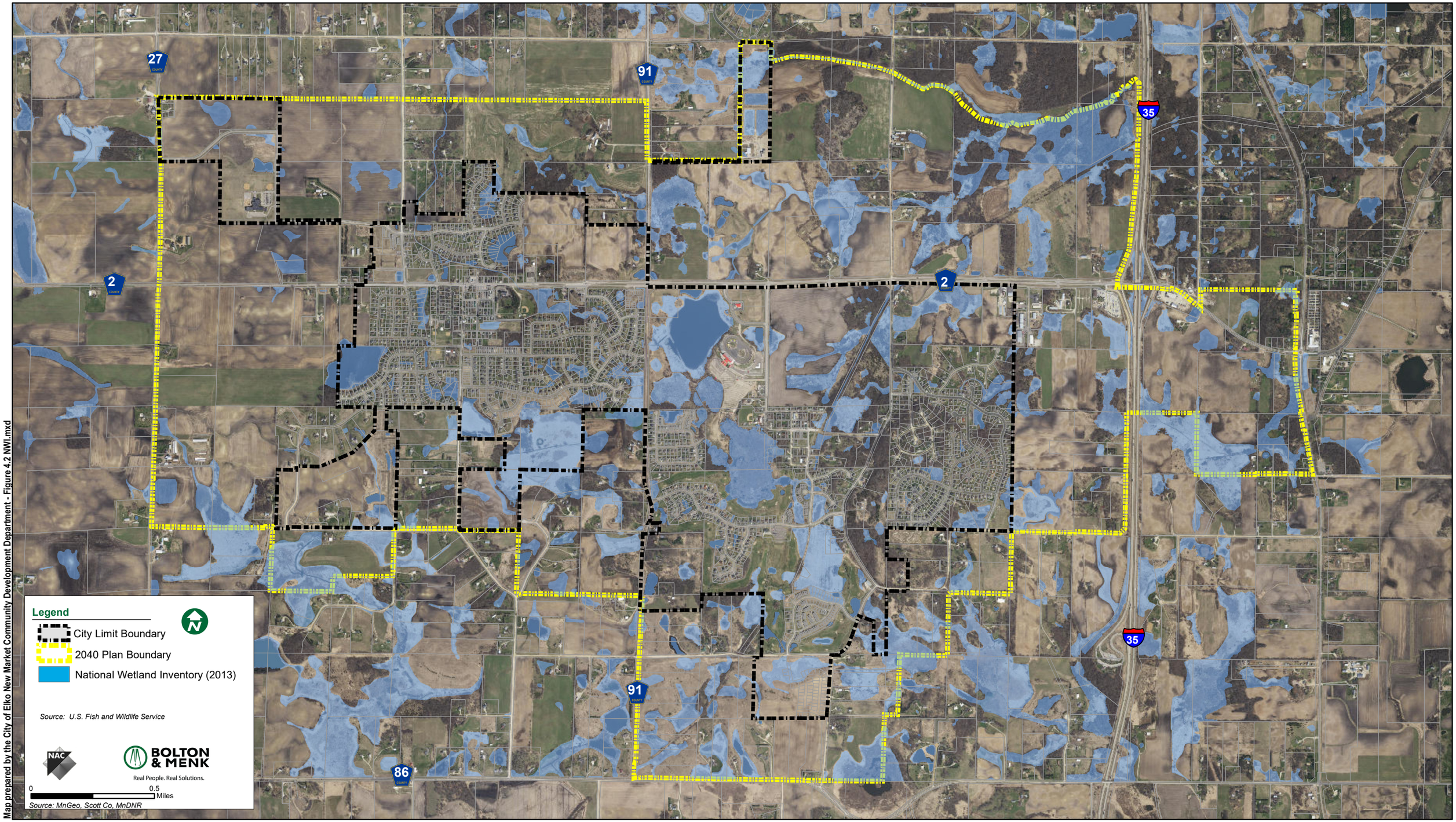
DNR Protected Waters & Wetlands

Figure 4.1



Map prepared by the City of Elko New Market Community Development Department - Figure 4.1 DNR PWI.mxd

National Wetland Inventory
Figure 4.2



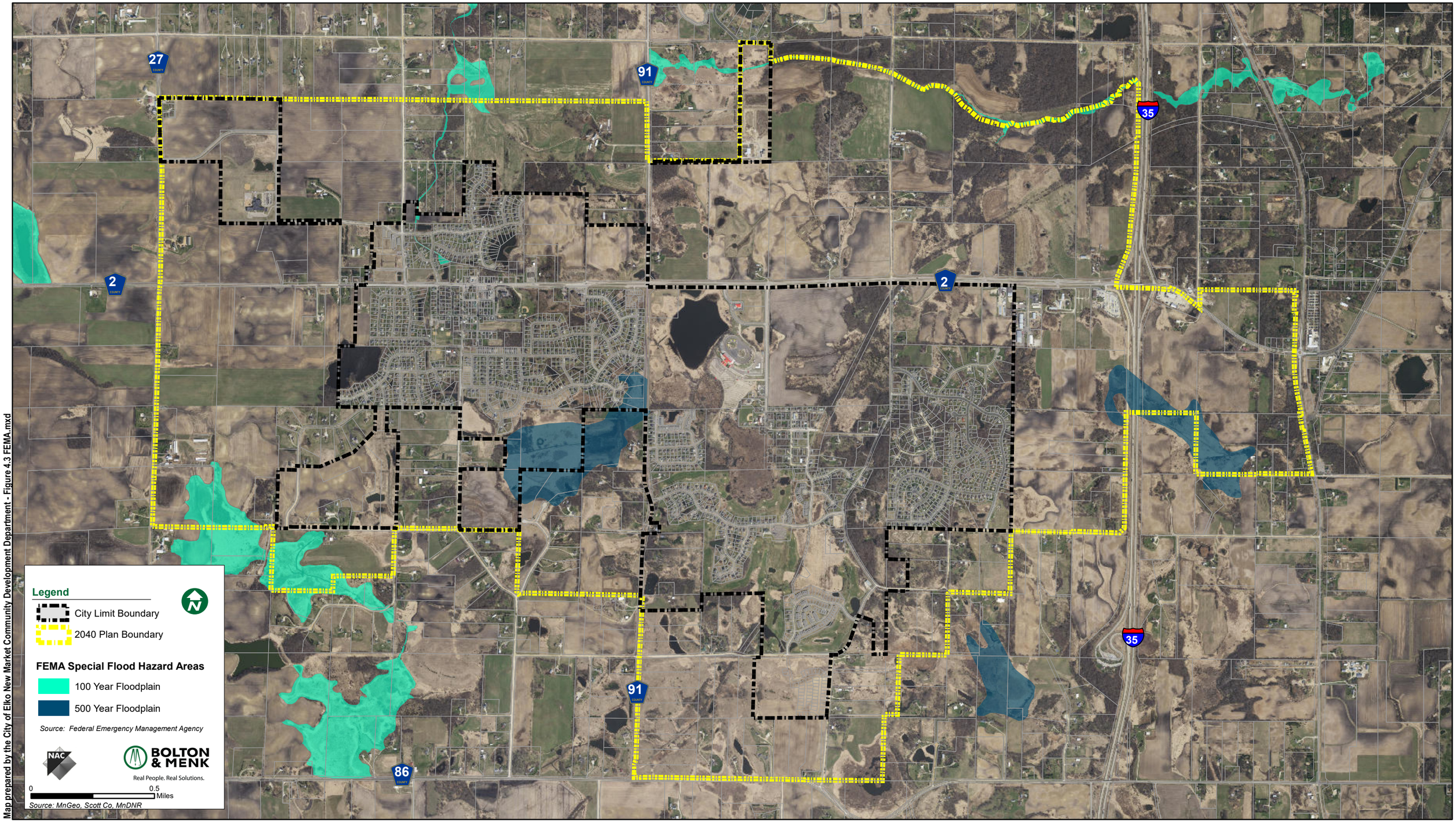
Map prepared by the City of Elko New Market Community Development Department - Figure 4.2 NWI.mxd

2040 Comprehensive Plan

Elko New Market, MN

(FEMA) Flood Hazard Boundaries

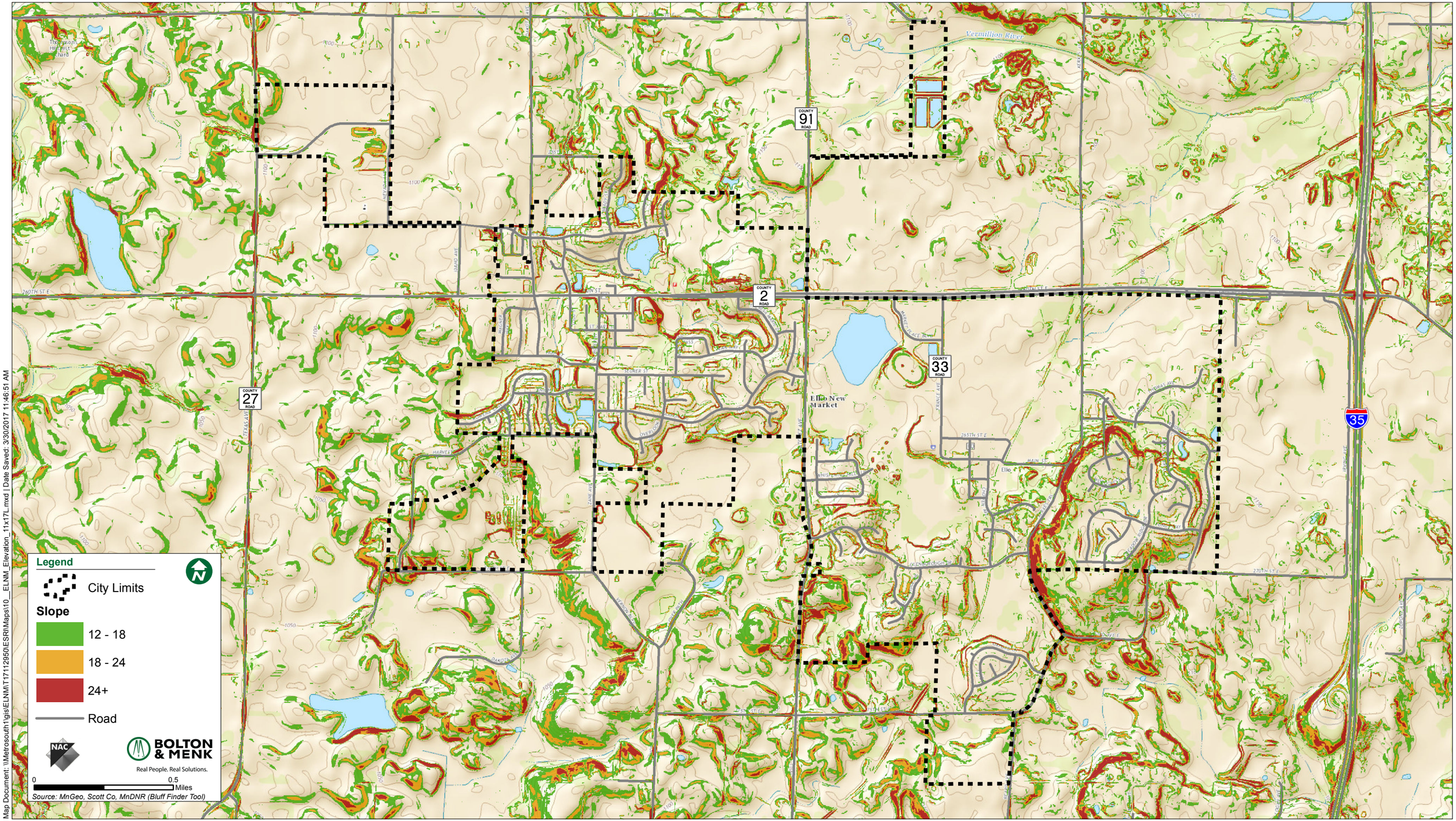
Figure 4.3



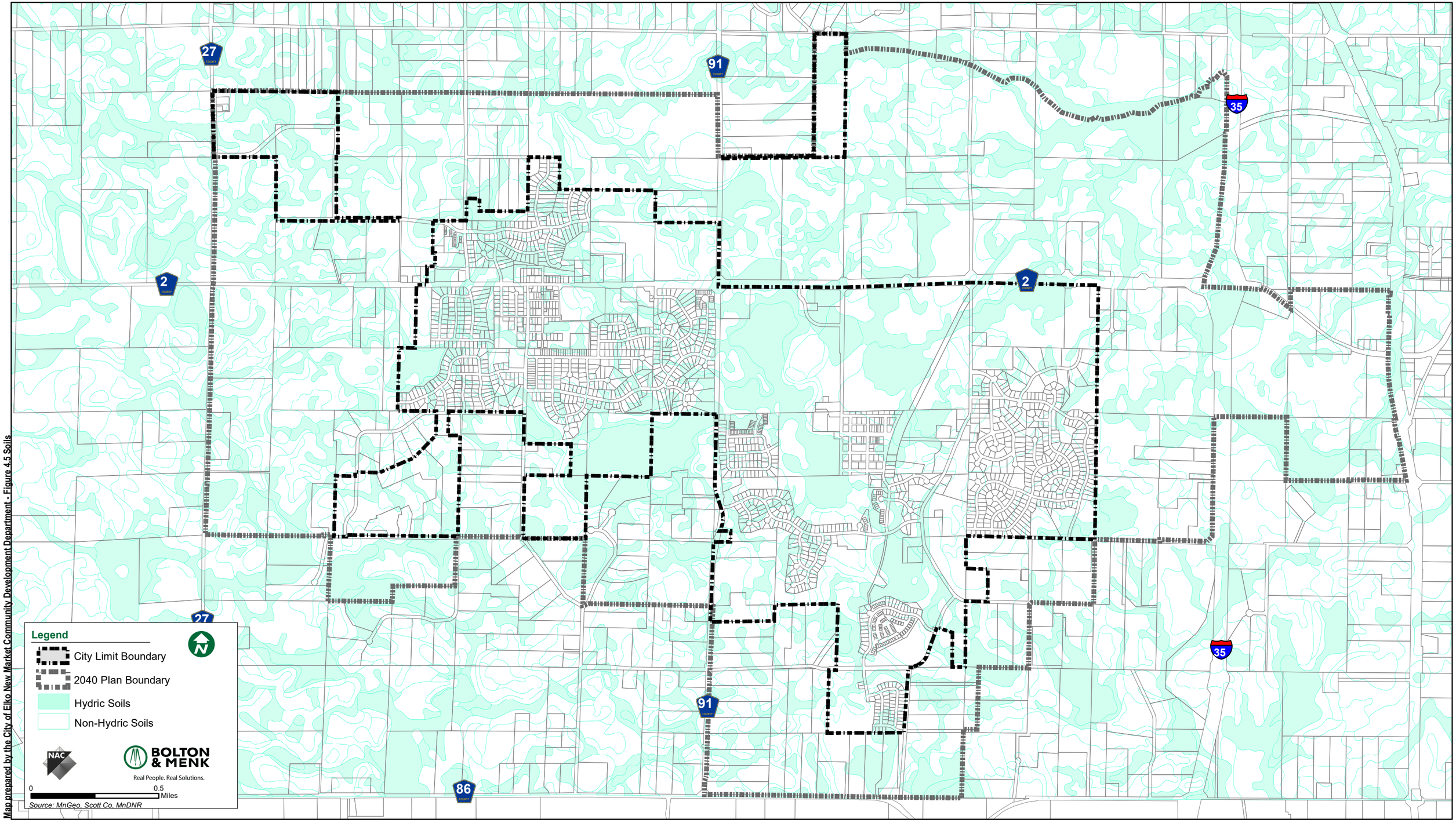
Map prepared by the City of Elko New Market Community Development Department - Figure 4.3 FEMA.mxd

Elevation & Slope

Figure 4.4



Soils
Figure 4.5



Map prepared by the City of Elko New Market Community Development Department - Figure 4.5 Soils

Scott County 2040 Comprehensive Plan Update

County Defined Natural Area Corridors

Legend

Natural Area Corridor

Municipalities

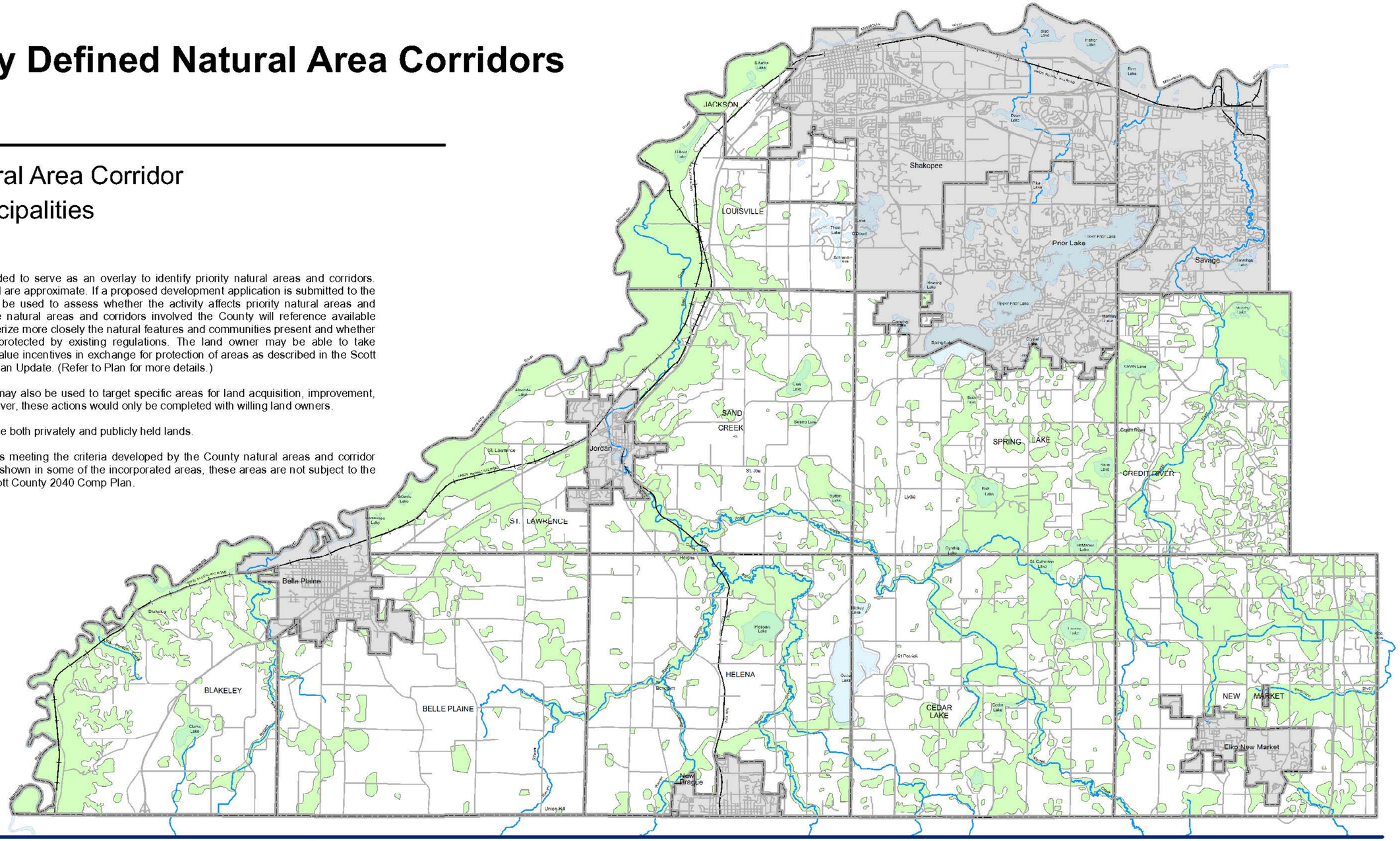
Note:

1) This map is intended to serve as an overlay to identify priority natural areas and corridors. Boundaries presented are approximate. If a proposed development application is submitted to the County this map will be used to assess whether the activity affects priority natural areas and corridors. If there are natural areas and corridors involved the County will reference available databases to characterize more closely the natural features and communities present and whether the land is already protected by existing regulations. The land owner may be able to take advantage of public value incentives in exchange for protection of areas as described in the Scott County 2040 Comp Plan Update. (Refer to Plan for more details.)

2) This overlay map may also be used to target specific areas for land acquisition, improvement, and restoration. However, these actions would only be completed with willing land owners.

3) Areas shown include both privately and publicly held lands.

4) While priority areas meeting the criteria developed by the County natural areas and corridor planning process are shown in some of the incorporated areas, these areas are not subject to the approaches in the Scott County 2040 Comp Plan.



SCOTT COUNTY COMMUNITY SERVICES DIVISION
Planning & Zoning Administration
200 Fourth Avenue West, Shakopee, Minnesota 55379-1220
(952) 496-8653 - Fax (952) 496-8496 - Web: scottcountymn.gov

0 0.5 1 2 3 4 5
Miles

This map is neither a legally recorded document nor a survey and is intended for planning purposes only. Delineations may not be exact.

Prepared by: Scott County Zoning Administration, December 1, 2017

Z:\2040 Comp Plan\NaturalAreaCorridors.mxd

Figure 4.7

Regionally Significant Terrestrial and Wetland Ecological Areas*

For more information, contact:

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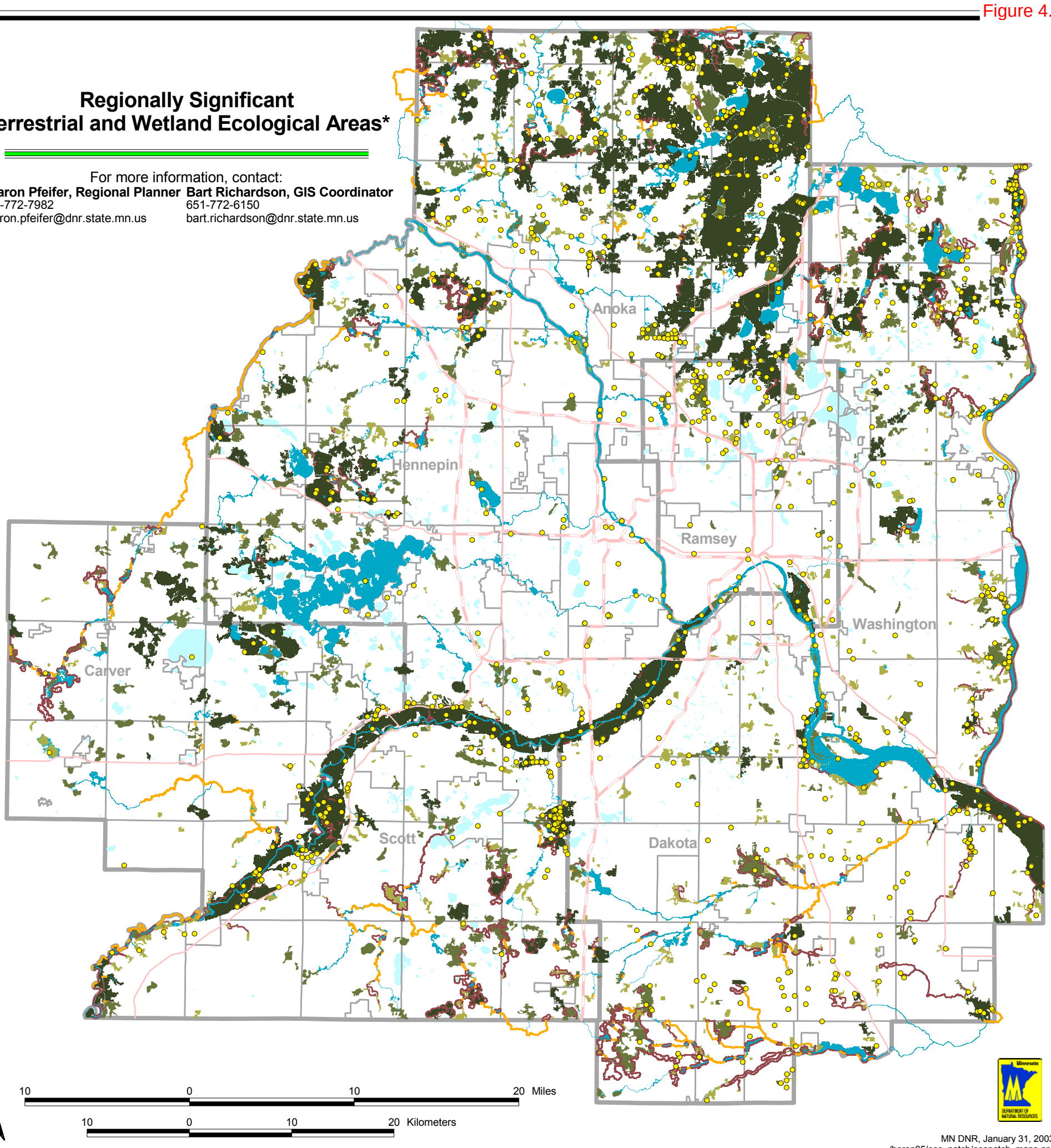


MN DNR, January 31, 2003
/heron05/eco_patch/ecopatch_maps.apr

Ecological Score*+

Regionally Significant Ecological Areas were given a score of 1, 2, or 3 (3 being the highest possible score) based on how well continuous natural areas met standards for size, shape, connectivity, adjacent land use, and species diversity.

3 - *These areas tend to be larger in size, and/or with few adjacent land cover types or land uses that could adversely affect the area; may have greater diversity of vegetation cover types; or it may be an isolated native plant community mapped and given a score of outstanding biodiversity significance by the Minnesota County Biological Survey.*

2 - *These areas tend to be moderate in size and/or with more adjacent land cover types or land uses that could adversely affect the area; may have less diversity of vegetation cover types; or it may be an isolated native plant community mapped and given a score of high biodiversity significance by the Minnesota County Biological Survey.*

1 - *These areas tend to be smaller in size while still meeting the minimum size requirements for regional significance (minimum size is variable based on cover type); may have less diversity of vegetation cover types; may have more adjacent cover types or land uses that could adversely affect the area; or it may be an isolated native plant community mapped and given a score of moderate biodiversity significance by the Minnesota County Biological Survey.*

River and Stream Corridors*+

Shortest-distance paths in and along rivers, streams, lakes, and wetlands that connect at least two RSEAs.

Terrestrial Species Routes
link upland derived RSEAs using natural/ semi-natural vegetation cover along the banks of open water.

Aquatic Species Routes
link wetland derived RSEAs using any open water (streams, rivers, or lakes).

Sections where Routes Coincide

Rare Species and Animal Aggregations**+

Mapped by the Minnesota County Biological Survey

Animals and plants, federally- or state-listed, found after 1970, excluding aquatic species.

Open Water

Interstate Highway

Federal Trunk Highway

Municipal Boundary

County Boundary

*Copyright 2003, Minnesota Department of Natural Resources.

The Regionally Significant Terrestrial and Wetland Ecological Areas (RSEA) are derived from a modeling process that predicts the likelihood that regionally significant natural resources exist in a contiguous area. These areas must meet specific criteria that were established to qualify an area as regionally significant (size, shape, connectivity, adjacent land use, and species diversity). The River and Stream Corridors show connections via rivers, streams, lakes, and wetlands for the RSEAs. The data for the modeling process was compiled from several different sources and its completeness or total accuracy cannot be guaranteed. The data and products have not been ground truthed. NOTE: The Terrestrial and Wetland Ecological Assessment does not model for aquatic species, although some aquatic features appear in the results. The Metropolitan Council, in association with DNR staff is undertaking a separate Aquatic Ecological Assessment.

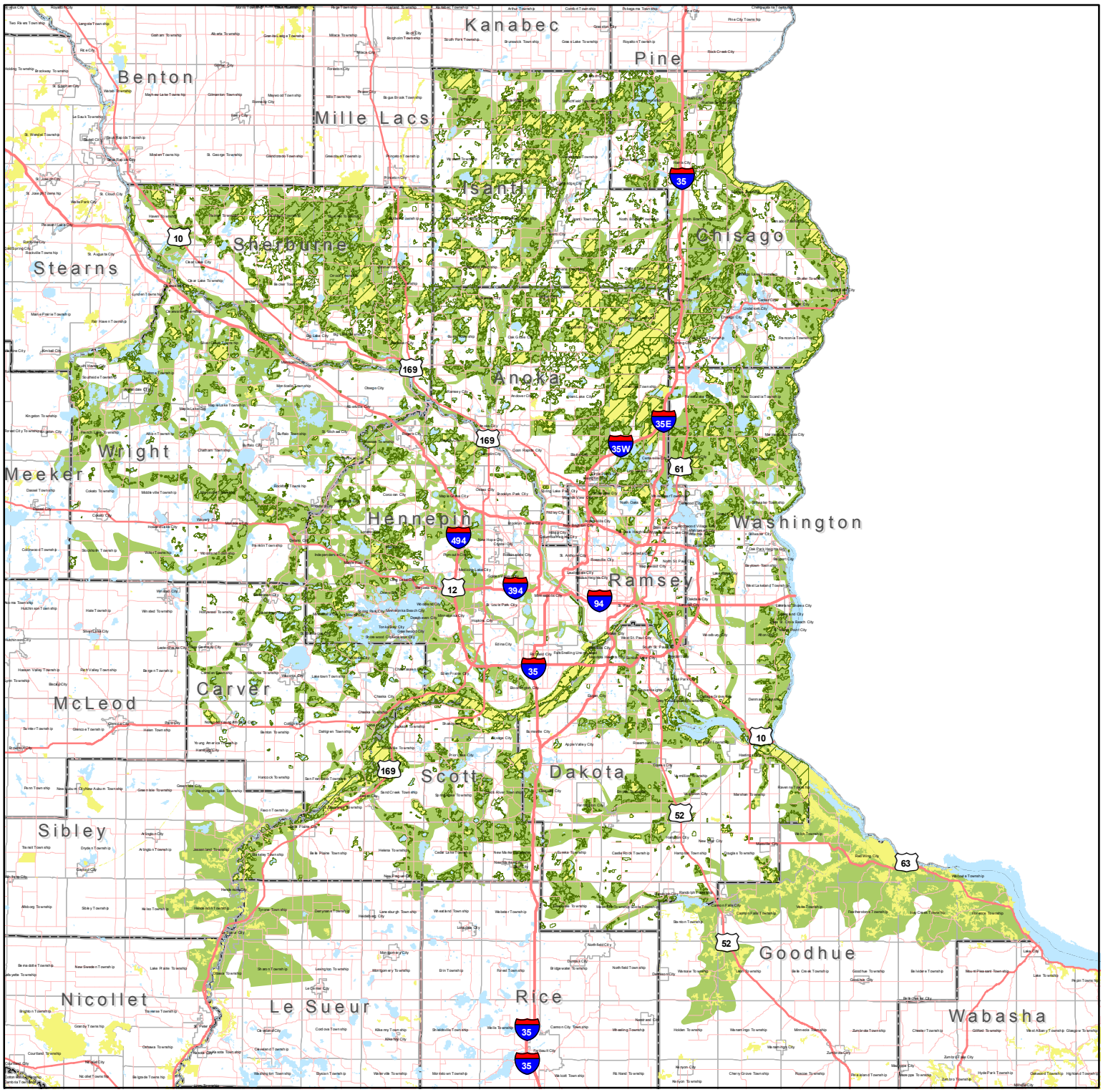
**Copyright 2003, Minnesota Department of Natural Resources.

Rare features data included here were provided by the Natural Heritage and Nongame Research Program of the Division of Ecological Services, Minnesota Department of Natural Resources (DNR), and were current as of January 31, 2003. These data are not based on an exhaustive inventory of the state. Permission to use these data does not imply endorsement or approval by the DNR of any interpretations or products derived from the data.

+There may be inaccuracies in the data or which the DNR is not aware and for which the DNR will not be held responsible.
The lack of data for any geographic area shall not be construed to mean that no significant features are present.

Metro Conservation Corridors - 2007

Figure 4.8



Metro Conservation Corridors

Regionally Significant Ecological Areas

MCBS Sites of Biodiversity Significance

Lake, Pond, Stream, River

Interstate Highways

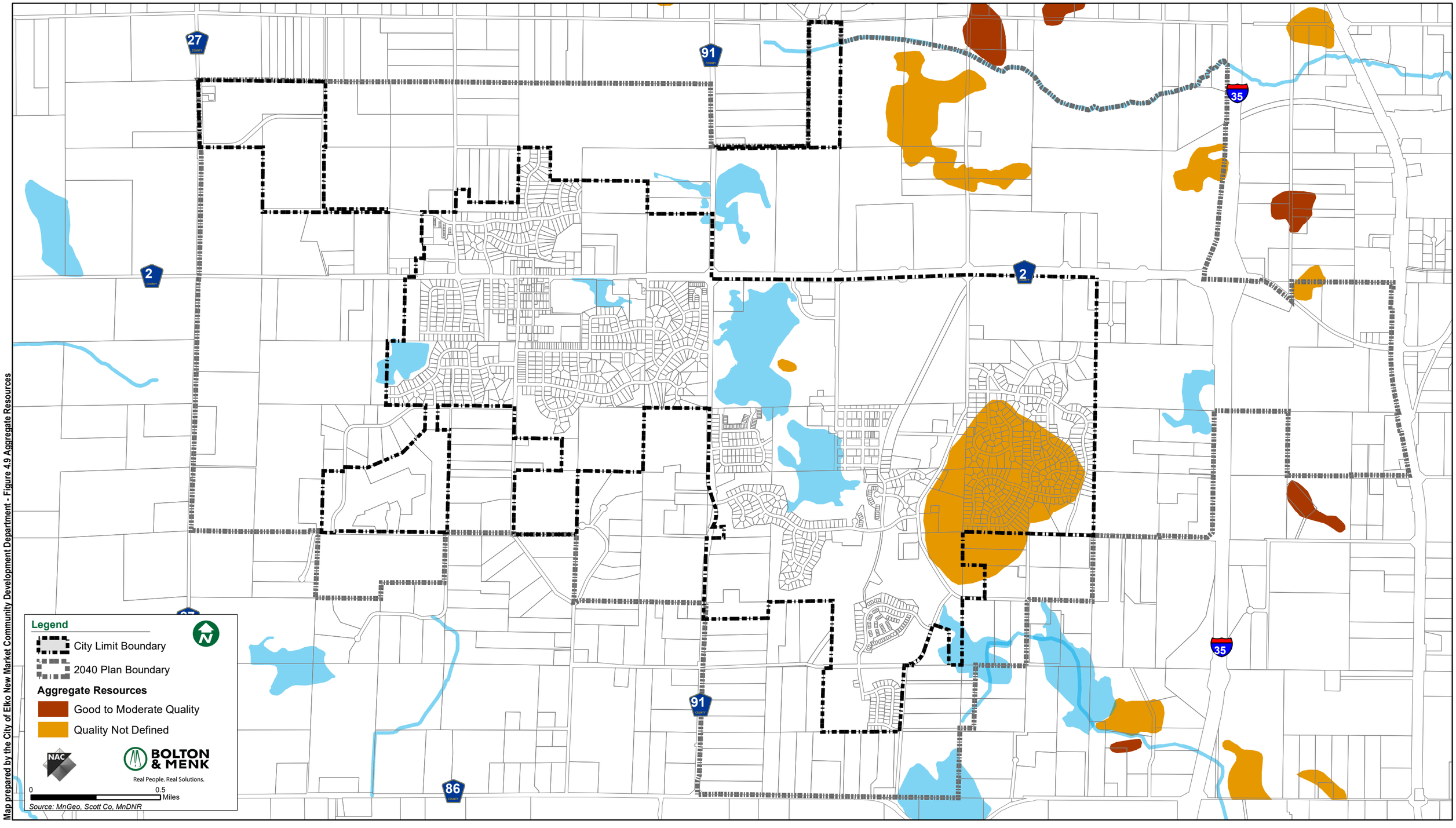
Secondary Highways

County Roads

County Boundaries

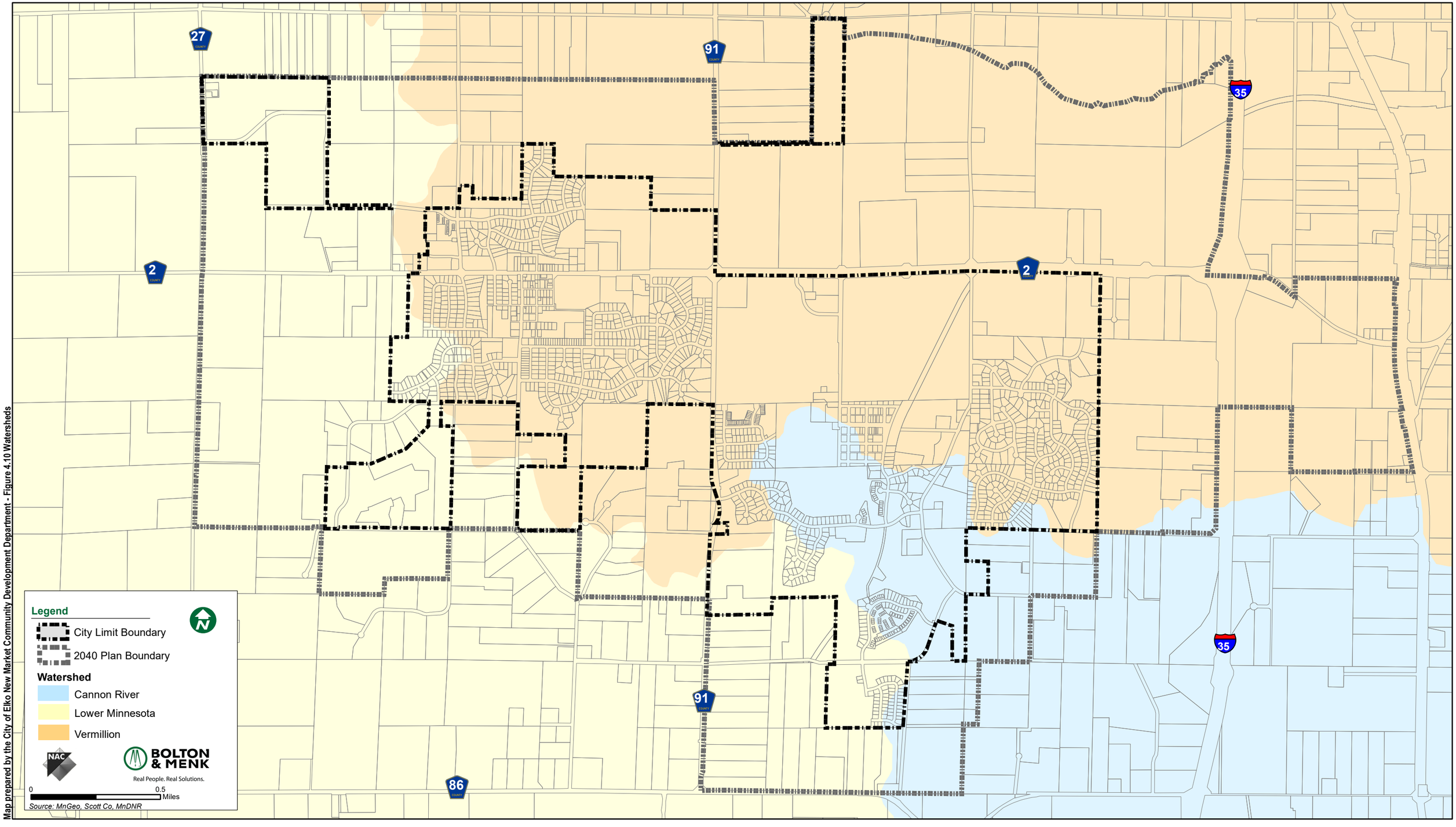
DNR Central Region
2008

Aggregate Resources
Figure 4.9



Map prepared by the City of Elko New Market Community Development Department - Figure 4.9 Aggregate Resources

Watersheds
Figure 4.10



Map prepared by the City of Elko New Market Community Development Department - Figure 4.10 Watersheds

INTRODUCTION

In order to analyze future housing, park and recreation, utility and transportation needs of the City of Elko New Market, it is important to review historic trends that have occurred and development assumptions for the future growth of the community. This Demographic Inventory documents the existing conditions and the type, amount and pattern of growth that has taken place within the City. It provides an informational base which will be used to identify issues and planning policies. With the help of a solid information base, decision-makers can evaluate and guide proposals in the short term (to benefit the residents of Elko New Market and the surrounding area), while fulfilling the City's long term goals and objectives.

The information contained in this chapter has been obtained through statistical data released by the United States Census Bureau, the Minnesota State Demographic Center, Scott County, the Metropolitan Council, and the City of Elko New Market.

Summary

- **Population**. The 2010 Census population for the City of Elko New Market was 4,110 persons, an increase of 411% over the 2000 Census population of 804.

- **Future Population**. The Comprehensive Plan update projects and plans for the future population of Elko New Market to be approximately 6,100 in 2020, 8,600 in 2030, and 11,900 in 2040.

- **Housing**. The number of housing units increased from 286 in 2000 to 1,259 in 2010, a 440% increase.

- **Household Size**. The average household size in 2010 was 3.26 person, which is forecasted to decrease to 2.7 persons by 2040.

- **Future Housing and Households**. This Comprehensive Plan projects that the City will have 3,030 housing units in 2030 and 4,400 housing units in 2040. Due to the aging demographics it is projected that the household size will decrease to 2.7 persons per household by 2040.

- **Age**. The City had a median age of 30.9 in 2000, compared to a median age of 30.4 in 2010. Elko New Market's median age in 2010 was nearly seven years younger than the median age in Minnesota (37.4) and the United States (37.2).

- **Median Household Income**. The 2010 Census median household income in Elko New Market was $90,071. Census estimates for median household income had grown to $105,042 by 2015.

- **Employment**. The 2010 Census estimated the local employment to be 317, which is forecasted to increase to 1,940 by 2040.

- **Travel Time to Work**. According to the 2010 Census, workers in Elko New Market traveled a mean travel time of 31.2 minutes to work. This travel time remained the same for 2015 Census Bureau estimates.

SOCIO-ECONOMIC PROFILE

Since the completion of the 2030 Comprehensive Plan in 2008, the City of Elko New Market has experienced modest population growth. While the timing and rate of future growth is uncertain, future population growth is expected to occur. With this in mind, the City's Comprehensive Plan remains an important tool in planning for and managing future growth.

Population and Household Growth

Population, Households and Household Size. Table 5-1 displays population and household growth trends for the City of Elko New Market from 2000 to 2010, along with estimates for 2015 provided by the State Demographer's office. Projections for 2020, 2030 and 2040 as provided by the Metropolitan Council.

The Census information reveals that Elko New Market added 3,306 people and 973 households between 2000 and 2010. For 2015, the State Demographer estimated a population of 4,555 persons with 1,399 households.

The Metropolitan Council, as part of the *Thrive MSP 2040* regional development guide, provides forecasts for population, households and employment for each community in the seven-county Metropolitan Area. The forecasts directed by the Metropolitan Council are intended to serve as a basis for future community planning. For the year 2040, the Metropolitan Council forecasts a population of 11,900 and a declining household size of 2.7 persons per household.

To be noted is that, in the City's 2030 Comprehensive Plan, the Metropolitan Council forecasted a 2030 population of 20,800 persons, which contrasts sharply to the new forecast of 8,600 persons for the year 2030. The dramatic reduction in population reflects the economic downturn which occurred in Elko New Market since the completion of the 2030 Plan. The City is however, expected to see continued growth based on the City's proximity to the metro area and available land supply, utility infrastructure and improved arterial roadways that provide convenient access for residents and businesses.

Also to be noted is that a significant decrease in household size is forecasted between 2010 and 2040 (from 3.26 persons to 2.7 persons per household). This household size reduction is likely

reflective of an aging demographic and an expected increase in retirement age households and the national trend of declining birth rates.

Table 5 - 1

Elko New Market Population and Households 2000 to 2040						
	U.S. Census		State Demographer Population Estimate	Metropolitan Council Forecasts		
	2000	2010	2015	2020	2030	2040
Population	804	4,110	4,555	6,100	8,600	11,900
Households	286	1,259	1,399	2,000	3,030	4,400
HH Size	2.81	3.26	3.26	3.05	2.84	2.70
Sources: U.S. Census Bureau, MN State Demographer and the Metropolitan Council						

Comparison to Scott County Cities. Table 5-2 provides a comparison between the populations of Scott County Cities and the City of Elko New Market. As shown, the City of Elko New Market experienced an overwhelming percentage of growth from 2000 to 2010, and has maintained a consistent percentage of Scott County's population between 2010 and 2015 at approximately three percent of the total County population.

Table 5 - 2

Elko New Market vs. Scott County Area Cities Population 2000 to 2015				
	U.S. Census		Percent Growth	State Demographer Estimate
	2000	2010	2000 to 2010	2015
Belle Plaine	3,789	6,661	75.8	6,742
Elko New Market	**804**	**4,110**	**411.2**	**4,555**
Jordan	3,833	5,470	42.7	6,150
New Prague	4,559	7,321	60.6	7,508
Prior Lake	15,917	22,796	43.2	25,049
Savage	21,115	26,911	27.4	30,024
Shakopee	20,568	37,076	80.3	40,254
Scott County Total (includes Townships)	89,498	129,928	45.2	140,898
Elko New Market Percent of County (%)	0.8	3.16		3.23
Sources: U.S. Census Bureau and Metropolitan Council				

Residential Building Permits. Table 5-3 illustrates annual building permits issued for new home construction from 2007 through 2016. During this period, Elko New Market added 268 new housing units. Building permit activity was inconsistent as years having significant building

permit activity (i.e. 2010 and 2013) were oftentimes followed by years of minimal residential development activity.

Table 5 - 3

Elko New Market Building Permits Issued for Residential Dwelling Units 2007 to 2016			
		Annual Increase	
Year	Number of Permits	Change In Number From Previous Year	Percent (%)
2007	51	-90	----
2008	15	-36	-71
2009	10	-5	-3
2010	68	58	580
2011	4	-64	-94
2012	27	23	575
2013	40	13	48
2014	18	-22	-55
2015	14	-4	-22
2016	21	7	50
Total	**268**	**----**	**----**
Sources: Metropolitan Council Residential Building Permit Survey and City of Elko New Market			

Expectant Growth Factors. The City of Elko New Market has and is projected to continue to grow at a moderate pace. Factors which contribute to Elko New Market's expectant growth include the following:

Proximity to Twin Cities Urban Core. The outer-ring suburbs of the Twin Cities Metropolitan Area and beyond experienced rapid growth during the 1990s as the Metropolitan Area continued to expand outward. While not to the same degree as growth during the 1990's, this outward growth trend is expected to continue.

Access to Regional Employment and Commuter Routes. Elko New Market's proximity to the Twin Cities Metropolitan Area provides residents with a multitude of employment opportunities within a reasonable commuting distance from their homes. Employment opportunities within the Metropolitan Area are easily accessible to residents due to the City's proximity to Interstate 35.

Vacant Land Supply. A healthy supply of vacant land is available for development in the Elko New Market area. The City's existing 2030 MUSA (between the current City limits and 2030 MUSA boundary) contains approximately 2,500 acres (upland) of vacant land which is guided for future urban development.

Small Town Character. Because Elko New Market is less populated and less developed, it offers residents the appeal of a small town but with the services and amenities of a large metropolitan area in relatively close proximity.

Age of Population

Table 5-4 summarizes the age of Elko New Market's population. The table indicates that the City has continued to have a relatively young population since 2000, with the median age ranging from 30.9 in 2000 to 31.8 in 2015. Having a high "under 40" population indicates the existence of many families in the community. This is supported by the fact that the greatest increases in population from 2000 to 2010 occurred among those under age 10. This younger age group places demands on the City for resources including schools, parks, and a variety of housing options.

Elko New Market also has a large, older work force population, those between the ages 30 to 64. It is believed that the lack of alternative housing options in the City (apartments, townhomes and low-income housing) has contributed to the limited number of young adults (age 20-29) who reside in the City.

While the 2010 Census data suggests that the City does not have a lot of older adults and seniors (those ages 65 and over), it is important to note that the senior population of the Market Village senior housing project (constructed in 2011), had not been considered in the U.S. Census Bureau information. It should be recognized that 49 senior living units have been added to the City's population since 2010.

Table 5 - 4

Elko New Market Population by Age 2000 to 2010						
	2000		2010		% Change 2000 - 2010	2015
	Population	Percentage	Population	Percentage		Population
School Age						
Under 5 years	39	4.9	511	12.4	1,210.3	490
5 to 9 years	73	9.1	511	12.4	600.0	524
10 to 14 years	61	7.6	365	8.9	498.4	428
15 to 19 years	36	4.5	226	5.5	527.8	197
Work Force						
20 to 24 years	41	5.1	140	3.4	241.5	227
25 to 29 years	80	10.0	268	6.5	235.0	699
30 to 34 years	102	12.7	511	12.4	401.0	
35 to 39 years	101	12.6	488	11.9	383.2	918
40 to 44 years	56	7.0	359	8.7	541.1	
45 to 49 years	40	5.0	284	6.9	610.0	617
50 to 54 years	42	5.2	151	3.7	259.5	
55 to 59 years	22	2.7	97	2.4	340.9	135
60 to 64 years	20	2.5	88	2.1	340.0	94
Retired						
65 to 69 years	12	1.5	50	1.2	316.7	164
70 to 74 years	9	1.1	30	0.7	233.3	
75 to 79 years	6	0.7	16	0.4	166.7	36
80 to 84 years	9	1.1	6	0.1	-33.3	
85 and over	8	1.0	9	0.2	12.5	0
Total	**804**		**4,110**			**4,529**
Median Age	**30.9**		**30.4**			**31.8**
Source: U.S. Census Bureau						

Household Income

Comparison to Scott County. Table 5-5 provides a summary of Elko New Market's 2010 household income as well as a comparison of household income to Scott County for the same year. Per the 2010 Census, the greatest percentage of households in Elko New Market (37.2 percent) had household incomes between $100,000 and $149,999. In comparing the City's household income levels to Scott County, the County had noticeably greater percentages of its households which had incomes less than $50,000. Also included in Table 5-5 is a 2015 household income estimate from the Census Bureau which shows growth in the percentages of households of incomes between $75,000 to $149,999.

Table 5 - 5

	Elko New Market vs. Scott County Household Income 2010				Elko New Market Household Income 2015 Estimate	
	Scott County		City of Elko New Market		City of Elko New Market	
	Households	Percent of Total (%)	Households	Percent of Total (%)	Households	Percent of Total (%)
Less than $10,000	1,094	2	15	1	16	1
$10,000 to $14,999	888	2	0	---	0	0
$15,000 to $24,999	2,570	6	68	5	67	5
$25,000 to $34,999	2,523	5	0	---	0	0
$35,000 to $49,999	3,953	9	103	7	65	4
$50,000 to $74,999	8,380	18	263	19	235	16
$75,000 to $99,999	7,510	16	287	20	321	22
$100,000 to $149,999	10,492	23	523	37	595	40
$150,000 to $199,999	4,931	11	105	8	86	6
$200,000 or more	3,873	8	41	3	90	6
Total	**46,214**	**100**	**1,405**	**100**	**1,475**	**100**
Source: U.S. Census Bureau						

Median Income. Table 5-6 displays the median household income for the City of Elko New Market for 2010, 2014 and 2015 as well as a comparison to Scott County. As shown, the median household income in the City in 2015 was $105,042. This income figure was notably higher than the median income for Scott County ($87,794) in the same year.

The higher median incomes in Elko New Market compared to Scott County can likely be attributed primarily to the age of the City's population. Most of Elko New Market's population consists of adults and older adults ages 35 to 50. Most adults reach their peak earning years between ages 45 to 54. This demonstrates that many residents in Elko New Market are in their peak earning years. The data also suggests that the City of Elko New Market has continued an influx of population from higher earning households (in comparison to Scott County).

Table 5 - 6

Elko New Market vs. Scott County Median Household Income 2010, 2014 and 2015			
	2010	2014	2015
City of Elko New Market	$90,071	$97,131	$105,042
Scott County	$82,190	$86,510	$87,794
Sources: U.S. Census Bureau and U.S Dept. of Labor – Bureau of Labor Statistics			

Education and Schools

Districts. Elko New Market is located within two school districts, Lakeville Public Schools ISD 194, and New Prague Public Schools ISD 721. Areas of the City generally east of County Road 91 lie within the Lakeville School District while areas west of County Road 91 lie within the New Prague School District.

All the Lakeville School District's buildings are located within the City of Lakeville (approximately 10 minutes from Elko New Market). Students who reside on the east side of the City attend John F. Kennedy Elementary School, McGuire Middle School, and Lakeville South High School.

The New Prague Public School District serves the Cities of New Prague, Lonsdale, Elko New Market and the unincorporated community of Veseli. The School District's high school and middle school are located in the City of New Prague (approximately 10 minutes from Elko New Market). Students who reside on the City's west side attend Eagle View Elementary School, New Prague Middle School and New Prague High School. To be noted is that the Eagle View Elementary School site has been designed to accommodate a middle school at some future point.

School district boundaries are depicted on Figure 5.1.

Educational Attainment. Table 5-7 displays education levels attained by Elko New Market residents age 25 and over. According to the 2015 Census Bureau estimates, 99.2 percent of Elko New Market's population over the age of 25 completed high school and 49.2 percent obtained a post-secondary degree. The Census Bureau data indicates that the number of Elko New Market residents that hold bachelor and graduate degrees increased 13.2 percent between 2010 and 2015.

Table 5 - 7

Elko New Market
Educational Attainment
Age 25 and Over

	2010		2015	
	Number of People	**% of Total**	**Number of People**	**% of Total**
Less than 9th grade	17	1	5	.2
9th to 12th grade, no diploma	47	2	16	.6
High school graduate (includes equivalency)	485	23	423	15.9
Some college, no degree	497	24	543	20.4
Associate's degree	302	14	367	13.8
Bachelor's degree	625	29	875	32.9
Graduate or professional degree	151	7	434	16.3
Total	**2,124**	**100**	**2,663**	**100.0**

* Includes equivalent (i.e., GED)

Source: U.S. Census Bureau

Employment

Growth. Table 5-8 displays forecasted employment growth for the City of Elko New Market and Scott County. As shown, the City of Elko New Market is anticipated to have 1,630 people employed in the City by 2020 and 1,940 employed by the year 2040. The forecasted increase in local employment between 2010 and 2020 (1,313) is considered significant. This is likely due to jobs which are expected to be created in association with Interstate 35 area development.

Table 5 - 8

Elko New Market vs. Scott County
Employment Growth
2000 to 2030

	2010	2020	2030	2040	Percent Change 2010 – 2040 (%)
Elko New Market	317	1,630	1,780	1,940	512
Scott County	41,545	54,900	61,990	68,440	65

Source: Metropolitan Council

Workforce Occupations. Table 5-9 displays occupations of the City's work force as provided by the U.S. Census. The table indicates that education, professional and retail jobs were the most predominant occupations for Elko New Market residents in 2010. The 2015 estimates indicate that education, manufacturing and retail jobs were most predominant occupations.

Table 5 - 9

Elko New Market
Employment by Industry
Workers Age 16 and Over

	2010		2015 Estimate	
Occupation	**No. of Persons**	**Percent of Total (%)**	**No. of Persons**	**Percent of Total (%)**
Agriculture, forestry, fishing and hunting, and mining	0	0	29	1.1
Construction	160	8	117	4.5
Manufacturing	214	11	330	12.8
Wholesale Trade	44	2	195	7.6
Retail Trade	247	12	305	11.8
Transportation and warehousing, and utilities	151	8	180	7
Information	22	1	47	1.8
Finance, insurance, real estate and rental and leasing	229	11	127	4.9
Professional, scientific, management, administrative	325	16	256	9.9
Educational, health and social services	378	19	569	22
Arts, entertainment, recreation, accommodation, food	171	8	212	8.2
Public administration	40	2	172	6.7
Other services	41	2	42	1.6
Total	**2,022**	**100**	**2581**	**100.0**

Source: U.S. Census Bureau

Commuter Times. Table 5-10 below displays travel time to work for Elko New Market residents for 2010 and 2015. In 2010 approximately 59 percent of Elko New Market's residents commuted 30 minutes or more to work, and in 2015 approximately 56 percent of Elko New Market residents commuted 30 minutes or more to work. Such travel times are understandable recognizing that Elko New Market is considered a "bedroom" community (to the Twin Cities Metropolitan Area) and that most residents who live in the City must drive a significant distance to their places of employment.

Table 5 - 10

Elko New Market
Travel Time to Work
Workers Age 16 and Over

	2010		2015	
Travel Time to Work	**Number of Persons**	**Percent of Total (%)**	**Number of Persons**	**Percent of Total (%)**
Less than 10 minutes	109	5.7	142	5.7
10 to 14 minutes	41	2.2	154	6.2
15 to 19 minutes	184	9.6	184	7.4
20 to 24 minutes	231	12.0	333	13.4
25 to 29 minutes	231	12.0	278	11.2
30 to 34 minutes	401	20.9	579	23.3
35 to 44 minutes	312	16.3	450	18.1
45 to 59 minutes	282	14.7	209	8.4
60 minutes or more	127	6.6	159	6.4
Total	**1,918**	**100.0**	**2,487**	**100.0**

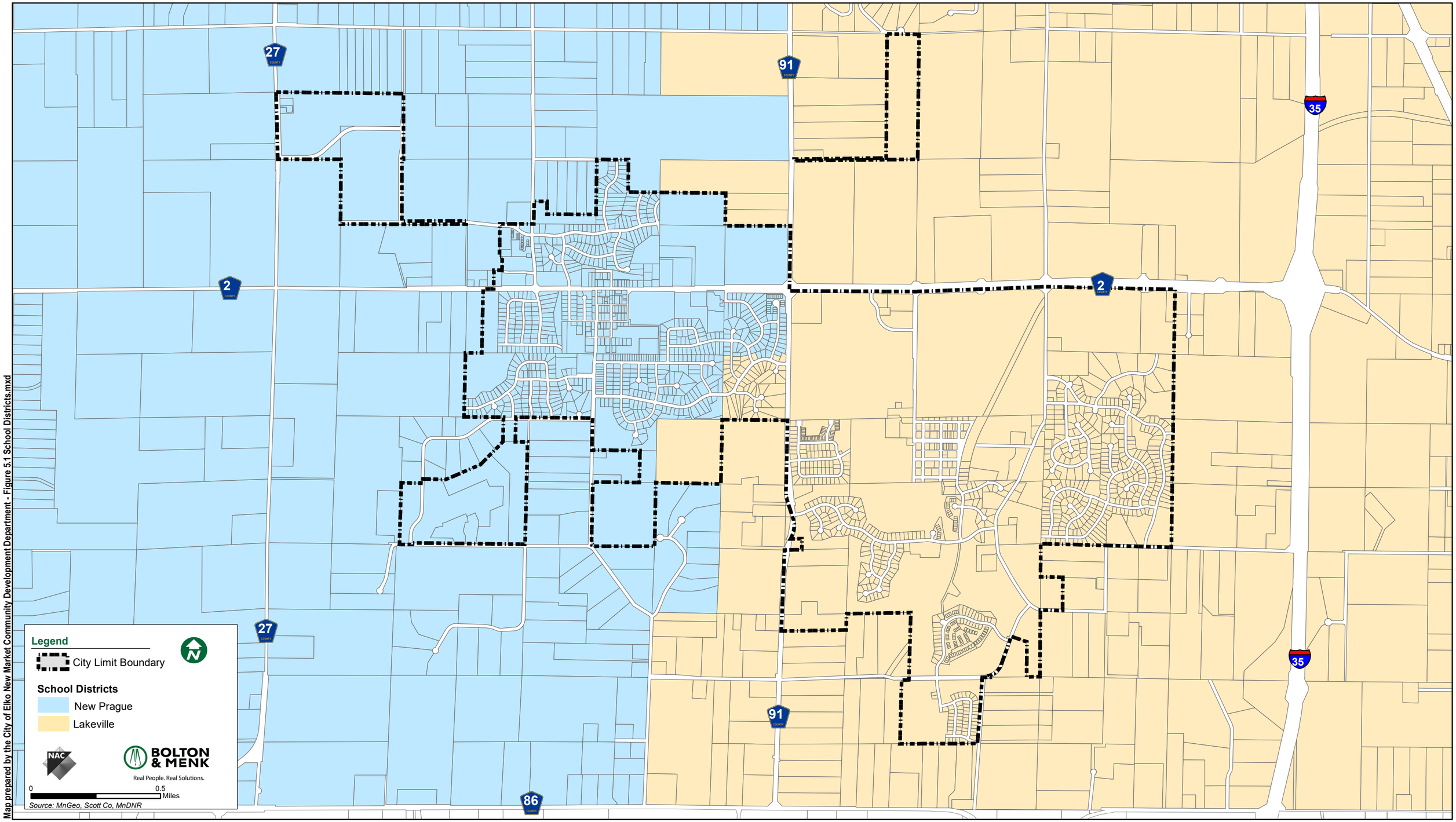
Source: U.S. Census Bureau

2040 Comprehensive Plan

Elko New Market, MN

School District Boundaries

Figure 5.1



Map prepared by the City of Elko New Market Community Development Department - Figure 5.1 School Districts.mxd

INTRODUCTION

The Land Use Plan guides and directs future land uses within the City of Elko New Market through the year 2040. The Land Use Plan is a narrative and graphic description that provides the background and rationale for land use designations as represented on the 2040 Land Use Plan Maps. The Land Use Plan also holds an educational and decision-making function by helping to improve the general understanding of how continued City growth is expected to occur.

GROWTH MANAGEMENT

Thrive MSP Regional Development Guide Directives

The Metropolitan Council's *Thrive MSP 2040* regional development guide designates the City of Elko New Market as a "Rural Center." Based on this designation, the Metropolitan Council has established certain land use-related expectations for the City as described in the Policy Plan chapter.

Goals and Policies

As indicated in the Metropolitan Council Policy Plan, an established goal of the City of Elko New Market is to promote growth strategies for orderly and efficient land use which are consistent with the *Thrive MSP 2040* regional development guide. With this in mind, growth expectations as described in the Policy Plan chapter have been integrated into the City's growth management policies as provided below:

1. Plan for forecasted population and household growth at overall average densities of at least 3-5 units per acre (for new development and redevelopment).

2. Strive for higher-density commercial uses and compatible higher-density residential land uses in the commercial core of the community to ensure efficient uses of existing infrastructure investments.

3. Work with adjacent jurisdictions to execute orderly annexation agreements where forecasted growth exceeds land capacity within existing City boundaries.

4. Work to focus forecasted growth in areas with existing infrastructure capacity to protect existing farm land and prime agricultural soils for the long term.

5. Adopt ordinances that coordinate development with infrastructure availability.

6. Identify areas that will accommodate post-2040 growth forecasts and implement strategies to preserve these areas for future growth and plan for necessary infrastructure improvements.

7. Collaborate with abutting counties and townships, as necessary, to ensure that near-term development outside of the City's 2040 MUSA boundary (but within the ultimate MUSA boundary) does not hinder long-term urbanization objectives for the area.

8. Maintain development projects within the limitations assigned to the City by regional agencies (i.e. the Minnesota Pollution Control Agency and/or the Metropolitan Council) regarding public utility availability and potential sewer discharge.

9. Require developers or benefiting property owners to assume all or the significant majority of the improvement/service costs, and agree to pay assessments associated with extending service to their property.

10. Deny development or subdivision applications that qualify as premature based on nonconformity with this Comprehensive Plan or the City's Zoning and/or Subdivision Ordinances relative to:

    - Infill policies
    - Adequacy of roads or highways serving the subdivision or development
    - Adequacy of stormwater management or treatment facilities
    - Adequacy of safe water supply
    - Adequacy of safe sewage disposal system
    - Adequacy of support facilities (i.e. police, fire, schools, parks, etc.)
    - Consistency with environmental protection policies or regulations
    - Consistency with the City's five-year Capital Improvement Program

Undesignated MUSA Reserve (2040 MUSA)

In 2005, the former Cities of Elko and New Market entered into an "undesignated Metropolitan Urban Service Area (MUSA) reserve" agreement with the Metropolitan Council. This agreement, which was subsequently applied to the merged City of Elko New Market, is intended to help manage existing and anticipated growth in the Elko New Market area. The agreement provides the City the opportunity to designate the acreage, types and density of land uses, and local/regional service levels for each five-year stage to the year 2040, with the exact location of each stage unspecified. As part of this staging option, an undesignated MUSA reserve boundary is mapped, but the timing of when and where a parcel is considered developable is driven by the ability to respond to market forces in a controlled manner not by a fixed staging area. By not designating the specific developable parcels by stage in advance, the community may reduce the problems associated with landowners withholding development on land designated for urban services, thereby driving up land prices. The undesignated MUSA reserve boundary (2040 MUSA) is illustrated on Figure 6.1.

The following growth management-related conditions, as identified in Elko New Market's 2030 Comprehensive Plan and part of the City's 2005 agreement with the Metropolitan Council, will continue to be identified as part of the 2040 Comprehensive Plan Update:

1. **The development at each stage will be built at or above the negotiated densities.**

   The Metropolitan Council has forecasted a total of 4,400 households and a population of 11,900 persons for the 2040 planning period. Considering that the City of Elko New Market has experienced extremely limited population growth since the adoption of the 2030 Plan in 2008, it is anticipated the existing acreage allocations within the existing undesignated MUSA reserve will accommodate residential land demands through the 2040 planning period. The City expects residential densities to be 3 or more units per acre.

2. **New development is contiguous to the current urban service area**

   According to the 2030 Regional Development Framework, "achieving a connected land use pattern that can be served efficiently and economically with urban services will be more important than adherence to regulatory requirements such as making new growth contiguous with existing development." This policy is considered relevant to the 2040 Comprehensive Plan Update, recognizing that extraordinary circumstances may exist that warrant development and corresponding infrastructure that may not necessarily be contiguous to the existing urban service area. Such circumstances may include the development of institutional uses that serve a public good such as schools and/or public health and safety facilities. Other such circumstances may include the development of highway dependent commercial uses along I-35 that positively influences the development of other uses within the community. This Plan supports this policy as a means of managing the pace of growth and the City's investment in public infrastructure.

3. **Development at each stage can be accommodated within the planned capacity of the regional sewer system.**

   The expansion of the Empire Waste Water Treatment Plant service area and the City's connection to the Metropolitan interceptor (2011) provided the City adequate capacity to accommodate the forecasted development within the 2040 undesignated MUSA reserve boundary.

4. **The local community adopts a premature subdivision ordinance.**

   The Elko New Market Subdivision Ordinance includes provisions related to premature development. Such provisions ensure that development proceeds in an orderly fashion by denying development or subdivision applications that qualify as premature based on non-conformity with this Comprehensive Plan or the City's Zoning and/or Subdivision Ordinances relative to:

   - *Infill policies*
   - *Adequacy of roads or highways serving the subdivision or development*
   - *Adequacy of stormwater management or treatment facilities*
   - *Adequacy of safe water supply*

- *Adequacy of safe sewage disposal system*
- *Adequacy of support facilities (i.e. police, fire, schools, parks, etc.)*
- *Consistency with environmental protection policies or regulations*
- *Consistency with the City's five-year Capital Improvement Program*

5. **Local infrastructure implications for all potentially designated areas have been determined and candidate sites that fall outside the capability of the local community to implement - via its Capital Improvement Plan (CIP) or other approved financing plan - have been eliminated from consideration for development.**

   The Elko New Market Facility Plans specifically address sanitary sewers, water supply, surface water management and transportation issues. These plans have analyzed future needs of the community and included specific recommendations for infrastructure improvements where necessary. The undesignated MUSA reserve boundary has been established based on these plans and the ability for the City to efficiently service the area.

6. **The local community development program (for example, financial commitments, five-year CIPs) provides the requisite local service and infrastructure needs of the proposed development for each stage, preserving the planned capacity and service level in the regional highway system.**

   The Elko New Market Facility Plans specifically address sanitary sewers, water supply, surface water management and transportation issues. These plans have analyzed future needs of the community and included specific recommendations for infrastructure improvements where necessary. The undesignated MUSA reserve boundary has been established based on these plans and the ability for the City to efficiently service the area.

   In addition, as part of the implementation phase, the City of Elko New Market will update its local Capital Improvement Program (CIP) to be consistent with the Comprehensive Plan.

7. **Annual reporting of local use of the MUSA reserve and corresponding local CIP adjustments are required as a condition of agreement.**

   The City of Elko New Market agrees to provide the Metropolitan Council with an annual accounting of development projects in the City including expansions, type of development, location, number of units, acreage, net density, and associated flows.

8. **Timely notification of annexation proposals.**

   The City of Elko New Market agrees to provide the Metropolitan Council with timely notification of annexation. This is important to ensure proper communication between the City and the Metropolitan Council as well as notification of when the Ultimate Land Use Plan goes into effect.

Much of the land area outside the City of Elko New Market boundaries, but within the undesignated MUSA reserve, is currently guided Urban Expansion Area by the Scott County Land Use Plan, which designates residential densities of 1 unit per 40 acres (with a clustering option). As part of this Comprehensive Plan update, this same area has been analyzed as to the most appropriate land uses should public utilities be made available or the land area annexed into City jurisdiction. These proposed land use designations are illustrated on the City's 2040 Ultimate Land Use Plan. It is the intention of this Comprehensive Plan to preserve the areas currently outside the City boundaries in accordance with Scott County's Land Use Plan until such time that public utilities are made available or the area is annexed into the City. At such time, the City's Ultimate Land Use Plan (as may be amended) shall take precedence over the Scott County Land Use Plan.

EXISTING LAND USE INVENTORY

City of Elko New Market (Existing Municipal Boundary)

In total, the City of Elko New Market measures approximately 3.5 square miles in size and overlays 2,226.75 acres of land. Figure 6.2 and Table 6-1 identify existing land uses within Elko New Market's current municipal boundaries, as reported by the Metropolitan Council. Existing land uses in the City are primarily reflective of historic development patterns which occurred in the former Cities of Elko and New Market. The land use categories referenced below are those utilized by the Metropolitan Council. Excepting agricultural/undeveloped lands, single family detached residential uses are the most predominant use within the City. Such uses overlay 617 acres of land and 28 percent of the City's total land area. Multiple family residential uses make up the balance of the housing stock, representing two percent of the total acreage devoted to housing.

Commercial uses comprise only two percent of the City's land area (55 acres) and only four acres of land in the City are presently devoted to industrial uses.

Table 6 - 1

Elko New Market Existing Land Use (Acreage)		
Land Use	**Acres**	**% of Total**
Agricultural and Undeveloped	1,155.75	52%
Agriculture - 424 acres (19%)		
Undeveloped Land – 731.75 acres (33%)		
Residential	652	30%
Single Family Detached - 617 acres (28%)		
Multi-family - 35 acres (2%)		
Commercial	55	2%
Industrial	4	---
Institutional	79	4%
Park and Recreational	219	10%
Park, Recreational or Preserve - 88 acres (4%)		
Golf Course - 131 acres (6%)		
Mixed Use	1	---
Open Water Total	61	3%
Total	**2,226.75**	**100%**
Source: Met Council and NAC		

2040 Metropolitan Urban Service Area

Figure 6.3 depicts existing land uses within the proposed 2040 Metropolitan Urban Service Area (MUSA) boundary. As depicted on the map, the vast majority of the land in the within the proposed 2040 MUSA boundary has a present land use of either agricultural or undeveloped. The City credits this to Scott County, who has largely zoned property located in the 2040 MUSA boundary as Urban Expansion Reserve, which limits development to a one home per forty acre density.

FUTURE LAND USE PLAN

2040 Land Use Plan

The 2040 Land Use Plan is depicted on Figure 6.4 and incorporates lands which presently lie within the existing City limits and those unincorporated bordering areas of New Market Township which lie within the City's proposed 2040 MUSA boundary. The MUSA boundary identifies a geographic area where growth is expected to occur (and utilities are planned to be provided) within the 2040 planning cycle.

The 2040 MUSA boundary mimics the existing 2030 MUSA boundary with one exception. East of the Interstate 35/County Road 2 interchange (north and south of County Road 2), a total of 140 acres is proposed to be added to the MUSA. In 2015, the City of Elko New Market and Metropolitan Council approved a Comprehensive Plan Amendment to expand the 2030 MUSA boundary to include approximately 125 acres of land located east of Interstate 35 and south of

County Road 2. Such MUSA boundary change was made in response to received development interest in the property from a large industrial user. In response to such development interest, the City prepared and approved an Alternative Urban Areawide Review (AUAR) which evaluated the environmental impacts which could result from such development. The AUAR study area included 265 acres of land, including the referenced 125-acre industrial development site. As part of the 2040 Comprehensive Plan Update, the City of Elko New Market wishes to include the balance of the AUAR study area (140 acres) in the 2040 MUSA.

The City of Elko New Market considers the MUSA boundary change described above to be consistent with the Metropolitan Council's "economic competitiveness" policy of promoting regional economic prosperity. The Interstate 35 corridor is considered a prime location for businesses to succeed and specifically those industries which export products or services beyond the Twin Cities Metropolitan Area and bring revenue and jobs to the region.

Lands located outside the City of Elko New Market's municipal boundaries, but within the 2040 MUSA, are presently reserved for urban development by the Scott County Land Use Plan and implemented through County Zoning and Subdivision Ordinance requirements. Specifically, such areas are guided "Urban Expansion Reserve", "Transition Area", or "Urban Business Reserve" which designates maximum residential densities of 1 unit per 40 acres.

Like the City's 2030 Plan, it is the intention of this 2040 Comprehensive Plan Update to preserve the areas currently outside the City boundaries in accordance with the Scott County Land Use Plan until such time that public utilities are made available and/or areas are annexed into the City. Upon annexation, the City's Land Use Plan and land use ordinances (zoning and subdivision) shall take precedence over the County Plan and ordinances.

Ultimate Land Use Plan (Post 2040)

The Metropolitan Council's *Thrive MSP 2040* development guide stipulates that "Rural Center" communities such as Elko New Market must identify areas that will accommodate post 2040 growth forecasts and implement strategies to preserve these areas for future growth. This directive mimics a similar policy provided in the Metropolitan Council's 2030 Regional Development Framework.

As part of the City of Elko New Market's 2030 Comprehensive Plan, an effort was made to implement this strategy by establishing a boundary line which delineates areas that would be ultimately served by public sanitary sewer and water services (public utilities). Many factors were considered in determining where physical constraints would make it difficult or cost prohibitive to extend public utilities. These factors included an analysis of the location and configuration of existing parcels, topography and natural geographic boundaries, natural resources, transportation corridors, and other general development constraints. Ultimately, a long-term public utility service area was determined which is considered the City's Ultimate Service Area Boundary.

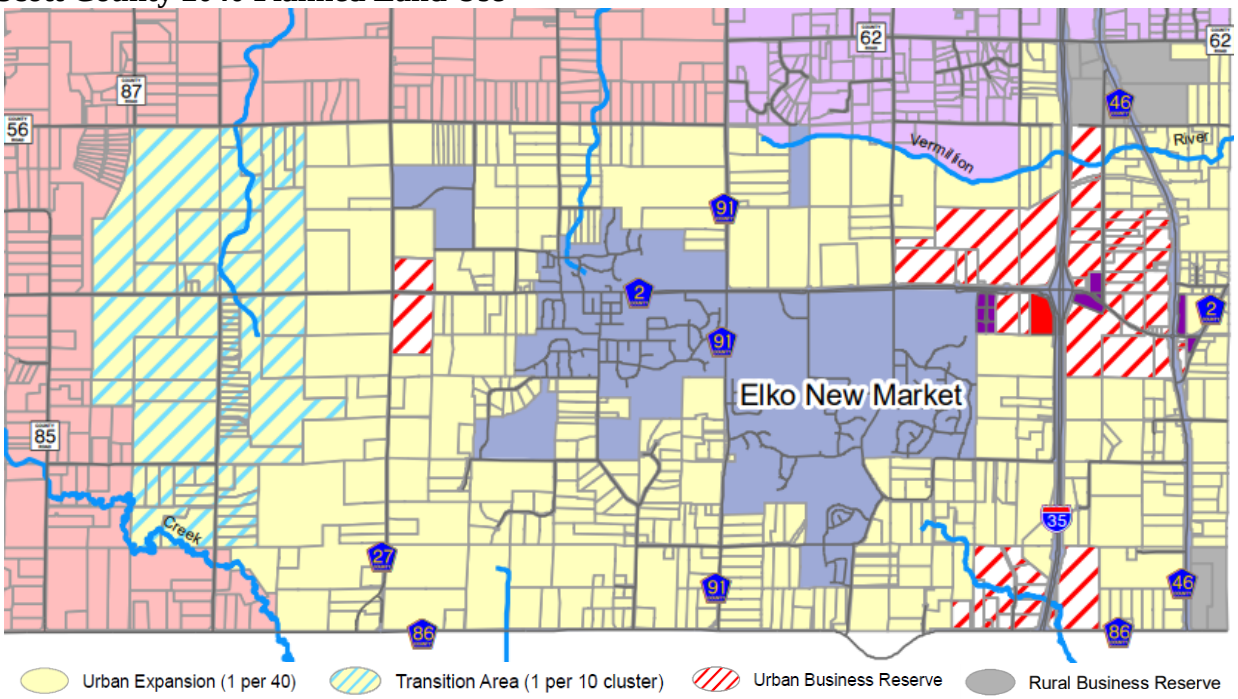
This 2040 Plan Update likewise identifies land areas which lie outside of the 2040 MUSA boundary but within the City's Ultimate Service Area Boundary (where urban services are ulti-

mately expected). The boundary or limits of the 2040 Ultimate Service Area, which are depicted on Figure 6.5, are the same as those applied to the City's 2030 Plan.

The Ultimate Land Use Plan is intended to provide a vision for land contained within the Ultimate Service Area Boundary which is anticipated to be the City of Elko New Market's municipal boundaries at full development. Recognizing that it will likely take more than 60 years to realize the ultimate build-out of the area, it is not the function of the Ultimate Land Use Plan to guide future uses on a parcel by parcel basis. Rather, the Plan is intended to simply assist the City in determining long term utility service needs and earmark general locations for future commercial and/or industrial uses. The Ultimate Land Use Plan is depicted on Figure 6.6.

It is the intention of this Comprehensive Plan to preserve areas currently outside the City municipal boundary until such time that public utilities are made available and the area is annexed into the City. Recognizing the City's Ultimate Urban Service Area, Scott County has guided these areas for preservation from development. There are three basic land use designations depicted within Scott County's 2040 Comprehensive Plan which take measures to preserve land for future urban development: Urban Expansion, Transition Area, and Urban Business Reserve. A new land use category has also been created within Scott County's 2040 Comprehensive Plan, Rural Business Reserve, which allows limited commercial and industrial uses in the far reaches of the City's Ultimate Urban Service Area. The City of Elko New Market will continue to collaborate with Scott and Rice Counties so that County Plans may take steps to preserve such lands for future urban development.

Scott County 2040 Planned Land Use



Source: Scott County Planning Department

LAND USE CATEGORY DESCRIPTIONS

Land use category descriptions, as referenced on the 2040 Land Use Plan and Ultimate Land Use Plans, define each land use category's objective, development location criteria, density, minimum requirements for development and typical uses.

In all cases, public utilities are required for development within any of the land use designations. Development proposals which are determined to be premature (based upon the "premature subdivision" criteria provided in the City's Subdivision Ordinance) shall not be approved.

Consistent with regional directives, future residential land uses within the City of Elko New Market will have a minimum mean net density of 3.0 dwelling units per acre through designation of Low, Medium and High Density Residential land use categories. The "Town Center" land use category also provides opportunities for residential development and contributes to such density determination.

As development occurs, net residential density shall be calculated as follows:

> Gross land area minus resources protected by ordinances (e.g. wetlands and steep slopes), County and State highway rights-of-way, and regional park land. Local streets, local parks, and stormwater holding ponds are not subtracted when calculating net density.

Low Density Residential

Objective:

This land use classification is characterized by low residential densities that provide opportunities for a variety of detached single family residential housing options. Traditional single family detached homes at the lowest of the urban densities are typical uses. Lower densities are often required to preserve and protect environmentally sensitive land. At the present time, this land use designation corresponds with the R1 and R2 zoning districts.

Development Location Criteria:

- The characteristics of a proposed development will be based upon consideration of several factors including, but not limited to, topography, geography, existing development and character of the surrounding area, transportation system access, and market conditions.

- Final density and development design will be a function of adopted zoning and subdivision standards and procedures.

Density:

- Residential densities with a range of 2.5 to 5 units per net acre.

Minimum Requirements for Development:

- Lot sizes typically are 8,400 – 12,000 square feet, but can be larger or smaller depending on the type of development and the specific property's characteristics.

- Planned unit development may be utilized to provide for a mixture of housing styles at higher densities provided the objectives of planned unit development, as provided in the City's Zoning Ordinance, are achieved.

Typical Uses:

- Single family detached dwellings; other dwelling designs by planned unit development; parks and playgrounds.

- Accessory uses that are compatible with low density residential neighborhoods.

Medium Density Residential

Objective:

This land use classification is characterized by medium residential densities that provide opportunities for a variety of detached and attached residential housing options. The land use designation is intended to provide alternative housing options which address the City's life cycle housing needs. Medium density residential developments are often established as transitional uses between low density residential uses and greater intensity uses such as high density residential and commercial. At the present time, this land use designation corresponds with the R3 zoning district.

Development Location Criteria:

- The location and characteristics of a proposed medium density residential development will be based upon consideration of several factors including, but not limited to, topography, geography, existing development (character of the surrounding area) and market conditions.

- Development of attached homes and multiple family dwellings is appropriate near major parks (open space), along collector roadways, near commercial centers and employment centers.

- The wide range of possible housing styles and design options make medium density residential housing a suitable transition between lower and higher intensity adjacent uses.

Density:

- Residential densities with a range between 5 and 10 units per net acre.

Minimum Requirements for Development:

- Lot sizes vary depending upon the number of units contained within the residential structures, as regulated in the City's Zoning Ordinance. Minimum lot areas per dwelling unit range from 3,500 to 7,200 square feet per unit.

- Specific design and construction standards are typically imposed upon medium density residential developments including standards related to exterior building finishes, garage construction and size, guest parking and open space requirements.

Typical Uses:

- Single-family detached dwellings, and two-family dwellings, and townhouses, condominiums and apartments which do not exceed eight units per building are considered permitted uses in this land use category. Manufactured home parks may also be allowed by conditional use permit.

High Density Residential

Objective:
This land use classification is characterized by high density residential developments which provide housing opportunities in multiple family structures (apartments, townhouses, and condominiums). High density residential developments are often established as transitional uses between lower density residential uses and higher intensity uses such as commercial, industrial and/or civic. High density residential developments are typically accessible to thoroughfares and activity centers such as community centers, libraries, shopping areas and employment centers. At the present time, this land use designation corresponds with the City's R4 zoning district. Additional opportunities for high density mixed use housing are available in the City's current R5 zoning district which is guided by the City's Downtown Master Plan.

Development Location Criteria:

- The location and characteristics of a proposed high density residential development will be based upon consideration of several factors including, but not limited to accessibility, topography, geography, existing development (character of the surrounding area), and market conditions.

- Development of high density, multiple family dwellings is appropriate along collector roadways and near major parks (open space), activity centers, and employment centers.

- High density residential housing is considered a suitable transition between lower and higher intensity adjacent uses.

Density:

- Residential densities with a range of 10 to 30 units per net acre.

Minimum Requirements for Development:

- While a minimum lot area of 15,000 square feet is required for high density residential uses, lot sizes typically relate to structure setback and green space requirements.

- Specific design and construction standards are typically imposed upon high density residential developments including standards related to exterior building finishes, garage construction and size, guest parking and open space requirements.

- Final density and development design will be a function of adopted zoning and subdivision standards and procedures.

Typical Uses:

- Multiple family dwelling structures which contain more than eight dwelling units. Manufactured home parks may also be allowed by conditional use permit.

- Mixed use projects which contain ground floor commercial uses and high density residential uses on upper floors may be accommodated by planned unit development in R5 zoning districts as guided by the City's Downtown Master Plan.

Town Center

Objective:

This land use classification is a special designation for traditional Town Centers which retain attributes of a recognized "downtown" and provide a sense of place based on historic nature and building character elements. Such elements include brick, awnings, street lighting, signage, etc.

The Town Center should be the recognized civic, commercial, and cultural gathering place for the community. Retail uses are expected to be relatively specialized and even unique and should easily mix with service uses and cultural places, rather than serve as the foundation of another shopping node. Pedestrian circulation within, as well as to the area is a distinguishing land use category feature.

New development in the Town Center area can provide for limited residential uses, excluding new single family detached dwellings, which can be integrated with the commercial and service environment, or multiple family dwellings which are consistent with the New Market Downtown Master Plan. Senior housing may be appropriate uses at selected locations. This land use designation corresponds with the B2, B3, and R5 zoning districts.

Development Location Criteria:

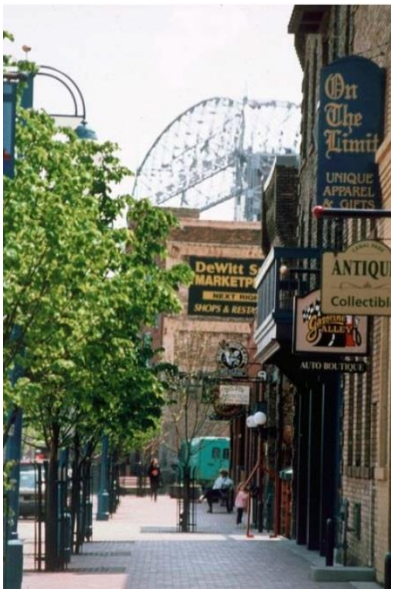
- The Town Center area is located along County Road 2 in the City's historic downtown New Market area, as identified in the City's Downtown Master Plan, and in the historic downtown Elko area of the City.

- The character of the Town Center should be defined by an approved master plan or planned unit development or through specialized Zoning Ordinance provisions.

Density:

- For projects which include residential land uses, a range between 10 to 30 units per net acre.

Minimum Requirements for Development:



- Uses and structural designs shall be found to preserve and enhance the "sense of community" broadly defined in the City's Downtown Master Plan. This does not require rigid use patterns, but does require a demonstration that the relatively unique character of the Town Center is evident. Great emphasis should be given to building features located at primary intersections or where streets intersect with central open space, as these locations will become future landmarks of the community.

- Traditional commercial development design, such as zero lot line development (buildings with little to no setback) will be encouraged to provide a continuation of the traditional atmosphere of the Town Center land use category.

- Approved planned unit development within this category may provide for off-site parking legally encumbered for a specific use, shared parking facilities, public on-street and off-street parking facilities, and public open space in lieu of private yards for certain uses.

- The Town Center area bisected by County Road 2 presents a dilemma for prospective development and redevelopment. Based on functional classification of County Road 2 and traffic volumes, private access to the County Road is highly restricted. Traffic calming and pedestrian access will be an important component of development designs.

- Buildings should be designed to create street-level interest and enhance the pedestrian experience.

- Surface parking lots should be located away from major streets, or behind or to the side of primary buildings.

Typical Uses:

- Town Center projects may include residential, commercial, and institutional developments, but by and large will consist of a mix of multi-family residential and commercial uses. The goal for the Town Center land use category is to maintain average land use distributions of 50 percent attached and multi-family homes, and 50 percent commercial uses.

- Mixed use buildings (with commercial uses on a lower level and residential uses above), restaurants (without drive-through facilities), professional offices, personal services, retail, craft, and specialty shops, clinics, banks, bakeries, and accessory and related uses that are clearly incidental to the primary use.

- Government and/or other public uses/community facilities such as offices, post offices, schools, parks, and libraries.

Commercial

Objective:

The commercial land use category is characterized by a wide range of commerce, recreation, and entertainment uses whose trade area is the community, and under certain conditions, the region (e.g. Elko Speedway). Arterial roadway-orientated uses and single stop or destination stores are also included. An important role of the commercial land use category is to provide a location for goods, services, and employment opportunities related to both the continued dependence upon the automobile for high mobility and in the case of the City's Downtown, a walkable commercial center.

The City of Elko New Market's proximity to Interstate 35, an existing interchange, and the existence of historic business districts within the community will require a variety of commercial zoning districts in order to define guided uses and standards within different geographic areas. Uses

and design that may be appropriate near the interchange may not be appropriate near the historic business district. At the present time, the City's Zoning Ordinance contains a number of commercial zoning district designations that may be appropriate based on various locations within the community (B1, B2, B3, B4, & B5).

Development Location Criteria:

- Generally speaking, commercial uses should not be located directly adjacent to low density detached single family residential uses. It is however, recognized that such land use relationships are common in the City's Downtown area. For new commercial development, a high level of transition to all proximate residential land and development is desirable. Commercial uses should be located near high volume roadways, with access limited to frontage roads or to internal common parking and driving areas.

- The wide variety of commercial uses allowed (as defined by assigned zoning districts) often produces undesirable effect on abutting and nearby uses. Extra care must be exercised in the evaluation of location criteria, transition design, and the effectiveness of buffering uses in this land use category.

- The currently established B1, B2, and B3 zoning districts were established to commercial guide uses within or close to the City's historic downtown areas, and therefore would not be appropriate zoning districts for commercial developments near the interchange area.

- The currently established B4 and B5 zoning districts were established to guide uses closer to Interstate 35 and existing interchange, and therefore would not be appropriate zoning districts for commercial development in the historic downtown areas of the community.

Minimum Requirements for Development:

- Specific design and construction standards are imposed upon commercial developments including standards related to building finish materials, off-street parking, and green space.

- Appropriate green space, yard (setbacks) and off-street parking must be satisfied and may vary based on specific commercial zoning district standards.

- Buildings in the City's historic downtown areas should be designed to create street level interest and enhance the pedestrian experience.

Typical Uses:

- Allowed uses in the City's various commercial land use categories can vary greatly and are specifically defined via the application of various commercial zoning districts.

- While the intensity of development, allowable uses, and performance standards vary from zoning district to zoning district, common commercial uses include: various retail, service, office, entertainment, restaurant, and motor fuel facilities and accessory uses that are clearly incidental to the primary use.

Business / Limited Industrial

Objective:

This land use category is intended to provide for the establishment of high quality business offices, wholesale showrooms, limited light industrial and light manufacturing, and related uses in an environment which provides a high level of amenities, including landscaping, preservation of natural features, architectural controls, pedestrian trails, and other features. Limited outdoor storage may be permitted in locations with appropriate buffers from adjacent residential and commercial uses and roadways.

Business / Limited Industrial, often formed as Planned Unit Developments (PUD), can serve small professional services in a group setting whereas such uses might otherwise be located in retail centers or in scattered free-standing buildings. Retail activities should only be allowed as an accessory use when it is clearly incidental to the primary use. High design standards should be imposed to ensure compatibility with nearby high density residential housing. Such uses should also provide open space, and opportunities for shared parking when possible. The corresponding zoning designations are presently B6, B7, and PUD.

Development Location Criteria:

- Locate near existing or planned multi-family residential, commercial, or industrial use areas

- Generally provide a buffer between lands guided Commercial and Medium Density Residential.

- Business / Limited Industrial uses should provide a high level of transition to nearby residential land uses.

- Access to major collector or local roadways should be provided.

Minimum Requirements for Development:

- High amenity features (site and/or building) which are conducive to "gateway" recognition are strongly encouraged. Areas visible from I-35 or County Road 2 shall have enhanced design features.

- Appropriate green space and buffers to adjacent land uses, as established by the Zoning Ordinance, should be provided.

- Overall size of buildings shall be limited as to not allow for overly large industrial uses.

Typical Uses:

- Primary uses are conference centers, professional and administrative offices, wholesale showrooms, automobile repair, open sales lots, indoor commercial recreation, limited light industrial and light manufacturing uses, small assembly and warehousing, limited research and development, and small contractor operations.

Industrial

Objective:

This land use classification is characterized by industrial uses of larger scale and intensity. Primary uses include business offices, manufacturing, assembly, warehousing, and outdoor sales.

Development in planned industrial centers in separate areas of the community allow for the distribution of peak period traffic, efficient access, effective distribution of public utilities, and sound use of land suited for industry.

Certain limited accessory and compatible commercial uses may be allowed depending upon zoning classification. It is not the purpose of this category however, to duplicate or conflict with the commercial land use category. At the present time, this land use designation corresponds with the I1, I2

and PUD zoning districts.

Development Location Criteria:

- Locate/congregate industrial uses in areas considered "suitable" for such activities.
- Locate industrial development near major transportation corridors. Provide access to arterial roadways via major collector roadways or local roads.
- Industrial parks should be planned upon lands which are considered appropriate and reasonably adaptable to site development without severe earthwork or the removal of significant tree stands.
- Locate near other intensive land uses (commercial centers that may provide goods and services for the volume of potential industrial employees, and high density multifamily residential developments that may provide housing opportunities for the volume of potential industrial employees).
- Locate near existing or planned mass transit routes.

Minimum Requirements for Development:

- Specific design and construction standards are imposed upon industrial developments including standards related to building finish materials, off-street parking and green space.
- Appropriate green space and buffers to adjacent land uses shall be provided as established by the Zoning Ordinance.

Typical Uses:

- Uses vary in scale and intensity by zoning district. Primary uses range from business offices, light industrial uses, heavy industrial uses (manufacturing facilities) all of which are subject to certain performance standards as outlined in the City's Zoning Ordinance.

Public and Semi-Public

Objective:

This land use classification is characterized by public and semi-public facilities and institutions which provide necessary services to the City and have their own unique set of land use characteristics. Such uses frequently operate on a nonprofit basis rather than the sale of goods and services.

Development Location Criteria:

- Public and semi-public uses are intended to be compatible with adjoining development and are typically located adjacent to collector or arterials streets.

Minimum Requirements for Development:

- To provide an example for the private sector, public and semi-public land uses are encouraged to integrate and/or reflect high levels of quality site and building design.

- Where feasible, incorporate sustainable, energy efficient building and low impact development techniques.

- Consistent architectural themes are encouraged as well as the use of consistent building materials or other design elements (to strengthen overall community identity).

- In locations where public and semi-public uses abut residential land uses, buffers and/or transitions shall be provided to mitigate potential compatibility issues. Such efforts may include site design, building orientation, access locations, setbacks, landscaping, and screening.

Typical Uses:

- Various facilities ancillary to an urban community including governmental facilities and offices, schools, churches, parks, and utility sites.

- While the need for public and semi-public uses is recognized, it is not practical at this time to identify future sites where such uses may be appropriate. Processing requirements and standards which apply to public and semi-public uses are subject to applicable Zoning Ordinance requirements.

GUIDED LAND USE CALCULATIONS

2040 Land Use Plan

Table 6-2 below identifies the total gross land area for each land use category depicted upon the 2040 Land Use Plan (Figure 6.4). This includes lands within the City's existing municipal boundaries and the surrounding unincorporated areas within the 2040 MUSA, including developed and undeveloped land.

Table 6 - 2

Elko New Market - 2040 MUSA Gross Land Area by Land Use Plan Category		
Land Use Category	**Gross Acres**	**Percentage**
Public and Semi Public	193.38	3.45
Low Density Residential	3,309.15	59.01
Medium Density Residential	572.82	10.21
High Density Residential	82.12	1.46
Town Center	51.59	.92
Commercial	524.3	9.35
Business / Limited Industrial Park	236.4	4.22
Industrial	250.98	4.48
Right of Way	386.94	6.90
Total Acres	**5,607.68**	**100**
Source: City of Elko New Market GIS		

Table 6-3 illustrates net acreages available for future residential development and the potential number of housing units within the 2040 MUSA. The results indicate that there is a potential to add a minimum of 3,860 housing units between 2021 and 2030, and 3,242 housing units between 2031 and 2040, for a total of 7,102 housing units. Based on 2040 Land Use Plan, the net residential density is 3.1 units per acre.

Table 6 - 3

Elko New Market
Net Acreages Future Residential Development & Potential Number Residential Housing Units Within 2040 MUSA

Res. Land Use Category	Net Acres	Density Range		Acres		Total Potential Units 2021-2030		Total Potential Units 2031-2040	
		Min	Max	2021-2030 (54.35%)	2031-2040 (45.65%)	Min	Max	Min	Max
Low Density	1,853.75	2.5	5	1,007.51	846.24	2,519	5,038	2116	4231
Medium Density	340.25	5	10	184.93	155.32	925	1,849	777	1553
High Density	62.36	10	30	33.89	28.47	339	1,017	285	854
Town Center	14.23	10	30	7.73	6.5	77	232	65	195
TOTAL	**2,270.59**			**1,234.07**	**1,036.52**	**3,860**	**8,136**	**3,242**	**6,833**

- Calculations are based on gross land area, minus National Wetland Inventory wetlands and 10% park dedication requirement to determine the net acreage available for residential development.
- Town Center (mixed use) area contains 28.47 acres; 50% permitted as high density residential
- Percentage of growth in each decade is based on Metropolitan Council growth projections

Source: City of Elko New Market GIS

Table 6-4 illustrates net acreages available for future commercial and industrial development and the potential number of jobs that may be added within the 2040 MUSA. The results indicate that there is a potential to add a 3,483 job within the 2040 MUSA.

Table 6 - 4

Elko New Market
Net Acreages Future Commercial / Industrial Development & Potential Number Jobs Within 2040 MUSA

Land Use Category	Net Acres	Number of Employees Per Acre	Number of Potential Jobs
Town Center	14.23	10	85
Commercial	315.02	6	1,890
Business / Limited Industrial	164.57	5	823
Industrial	171.20	4	685
TOTAL	**665.02**		**3,483**

- Calculations are based on gross land area, minus National Wetland Inventory wetlands and 10% park dedication requirement to determine the net acreage available for residential development.
- Town Center (mixed use) area contains 28.47 acres; 50% permitted as commercial uses
- Source: City of Elko New Market GIS

Growth Staging Plan

The Metropolitan Council has forecasted that the City will have a total of 3,030 households by 2030 and a total of 4,400 households by 2040. These forecasts indicate an increase of 1,631 households between the present time and 2030, and an increase of 1,370 households between 2031 and 2040. These forecasts indicate that 54.35% of the City's household growth will occur between the present time and 2030, and 45.65% of the City's growth will occur between 2031 and 2040. Table 6-5 illustrates the household projections forecasted by Metropolitan Council's Thrive MSP, by decade, as well as the net acreages needed to accommodate the Thrive MSP housing projections.

Table 6 - 5

Elko New Market
Acres Needed to Accommodate Thrive MSP Housing Forecasts

	Total through 2040	2021-2030	2031-2040
Households (Metropolitan Council Forecasts)	3,001	1,631 (54.35% of total)	1,370 (45.65% of total)
Acres Needed to Accommodate Thrive MSP Household Projections	1,000	543	457

- Assumes 3 units per acre.

Sources: Metropolitan Council

Table 6-6 below illustrates acreage allocation forecasts in 10-year increments to the year 2040. The results indicate that the 2040 MUSA boundary contains sufficient land to accommodate the housing unit and employment forecasted by Thrive MSP.

Table 6 - 6

Elko New Market
Acreage Available for Development Within 2040 MUSA

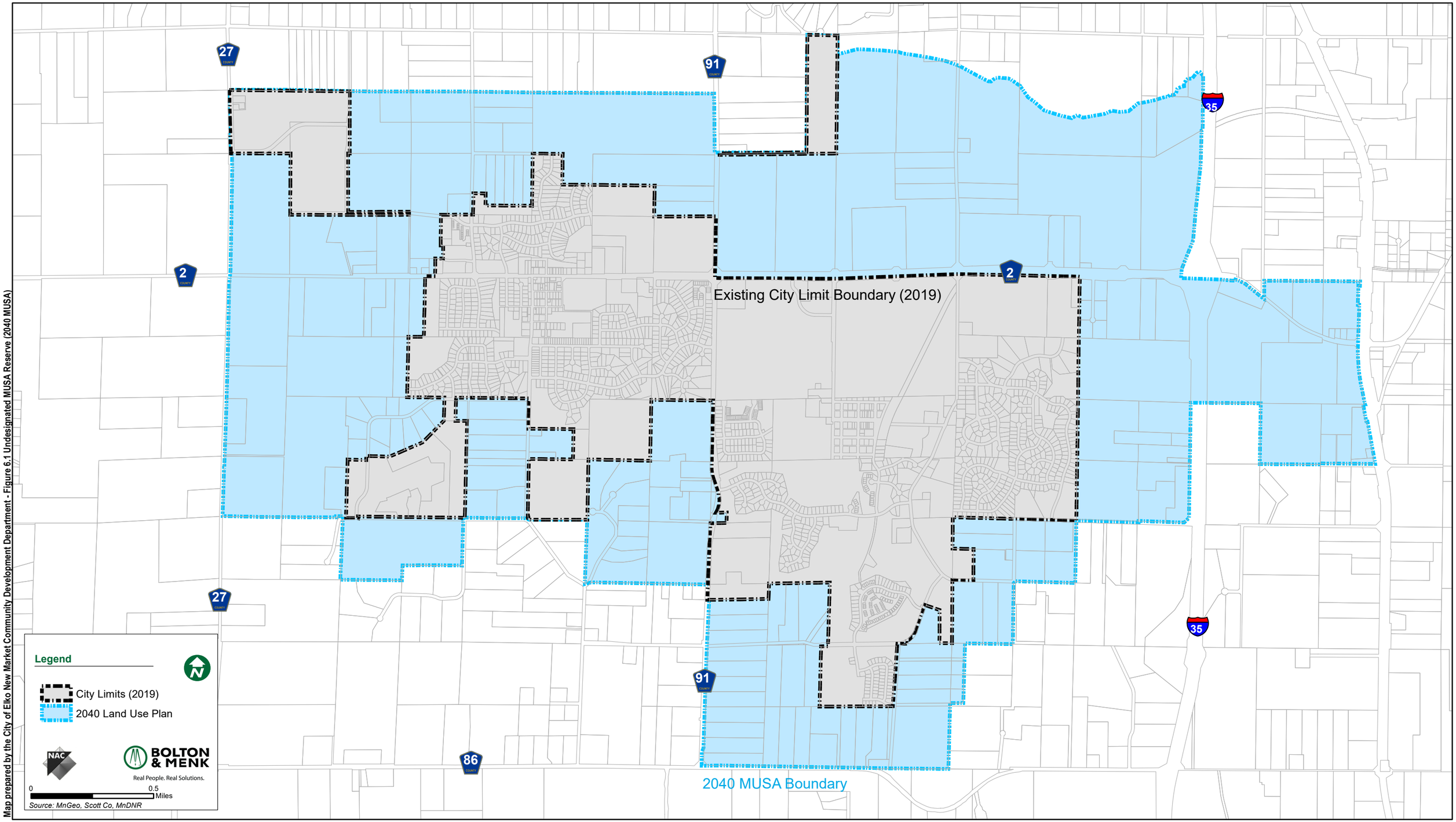
	Total Net Acres Available for Development through 2040	Acres Available for Development 2021-2030 (54.53% of Total)	Acres Available for Development 2031-2040 (34.65% of Total)
Low Density Residential Acres	1,853.75	1,007.51	846.24
Medium Density Residential Acres	340.25	184.93	155.32
High Density Residential Acres	62.36	33.89	28.47
Town Center Acres	28.47	15.47	13.00
Commercial Acres	315.02	171.21	143.81
Business / Limited Industrial Acres	164.57	89.44	75.13
Industrial Acres	171.20	93.05	78.15
Public / Semi-Public /Park Acres	326.18	177.28	148.90
TOTAL	**3,261.8**	**1,772.78**	**1,489.02**

- Net acreages calculated based on gross land area, minus National Wetlands Inventory wetlands and park dedication requirements to determine the net acreage available for development.
- Includes undeveloped land within existing city limit boundary and 2040 MUSA boundary.
- Town Center allows up to 50% residential development.

Sources: City of Elko New Market GIS

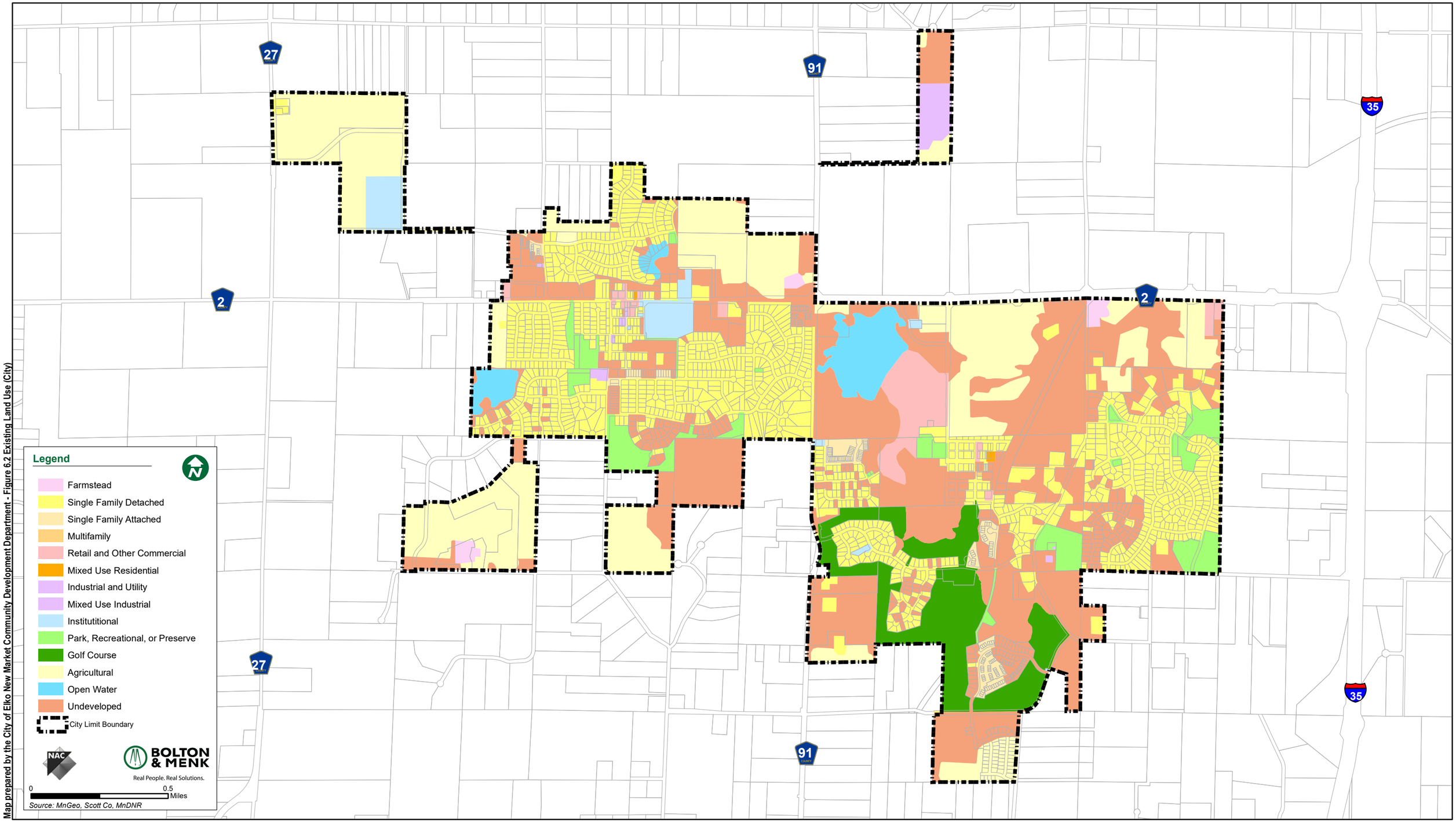
Undesignated MUSA Reserve Boundary (2040 MUSA)

Figure 6.1



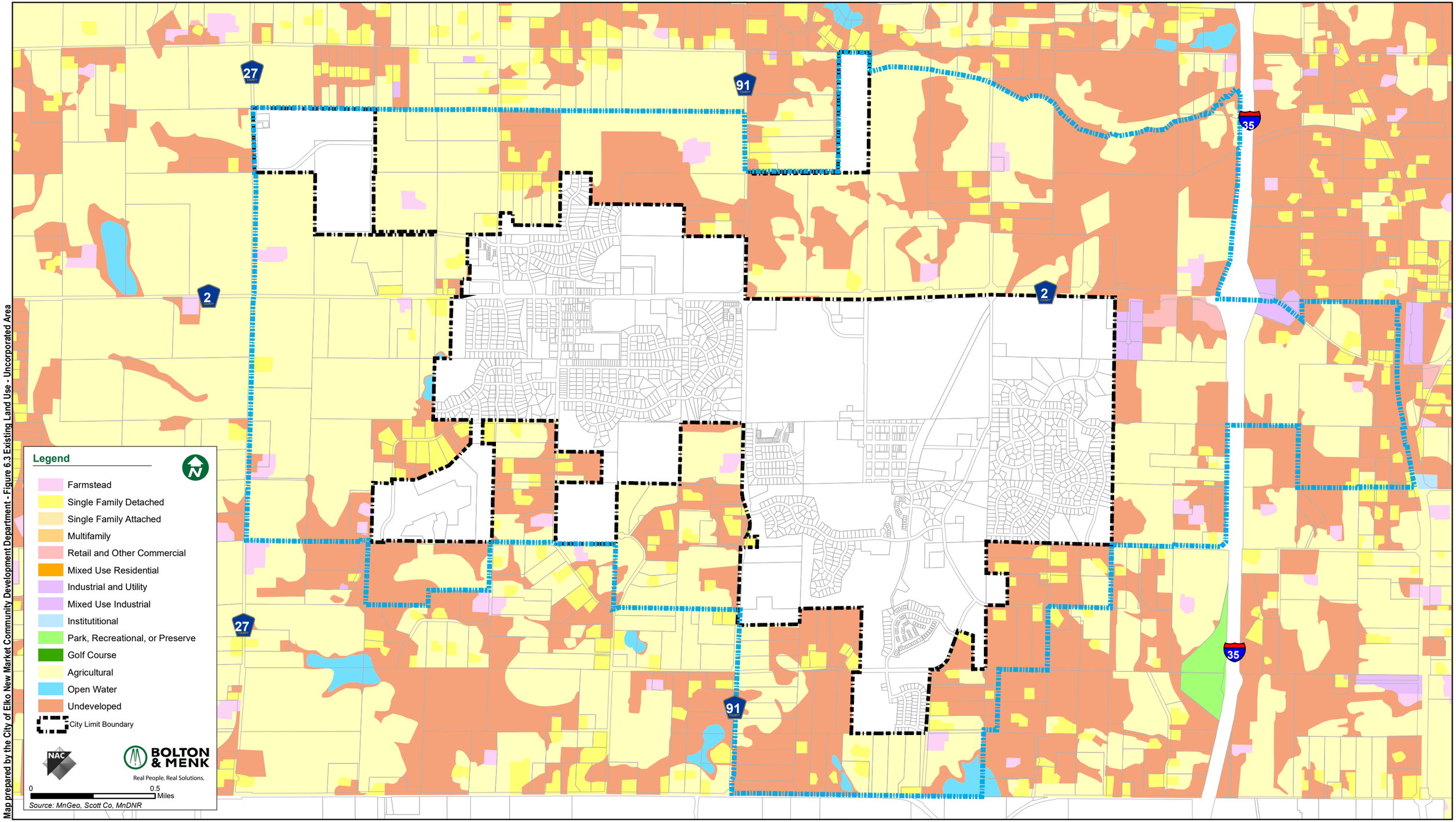
Map prepared by the City of Elko New Market Community Development Department - Figure 6.1 Undesignated MUSA Reserve (2040 MUSA)

Existing Land Use (City)
Figure 6.2



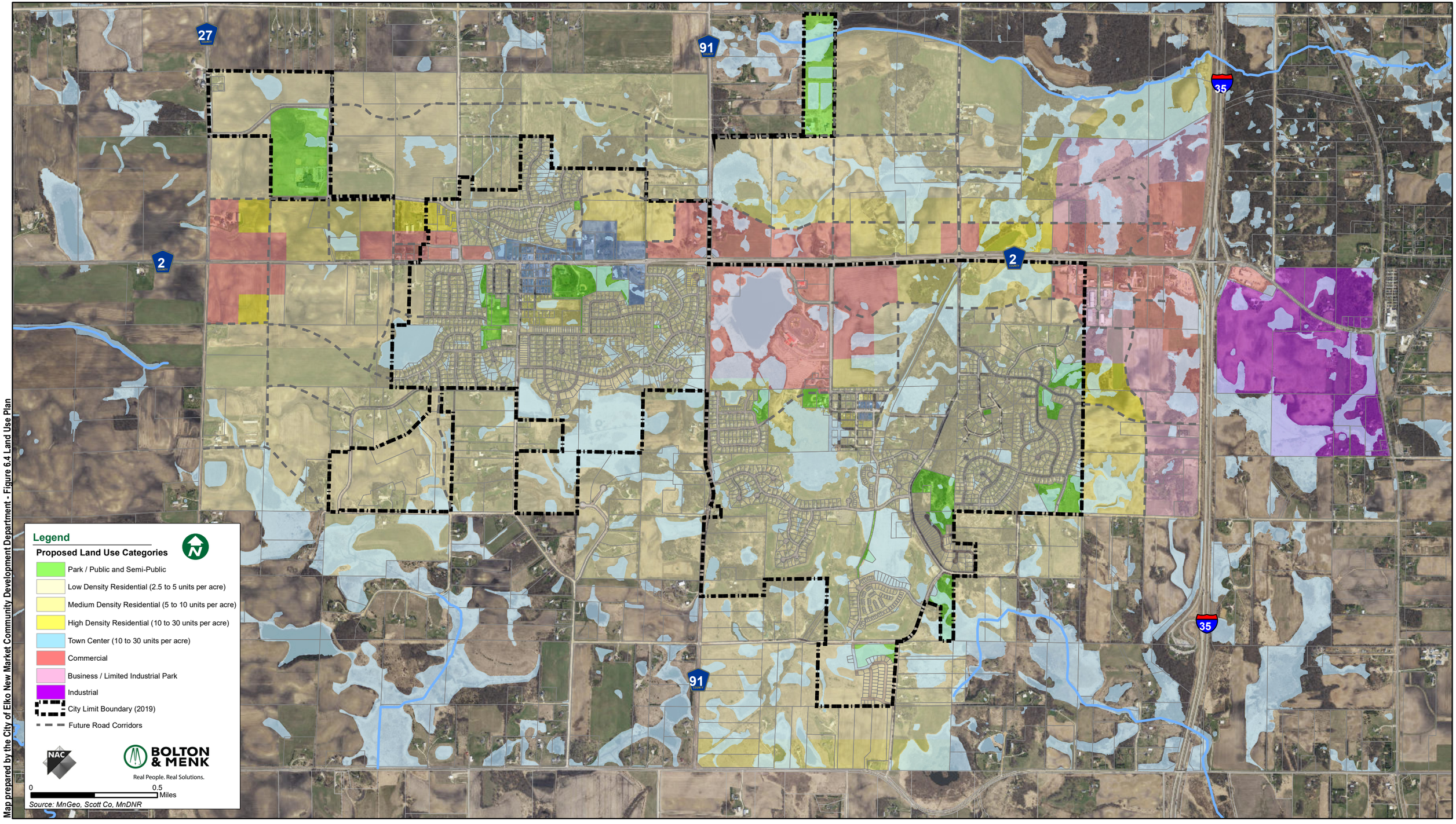
Map prepared by the City of Elko New Market Community Development Department - Figure 6.2 Existing Land Use (City)

Existing Land Use - Unincorporated Area
Figure 6.3



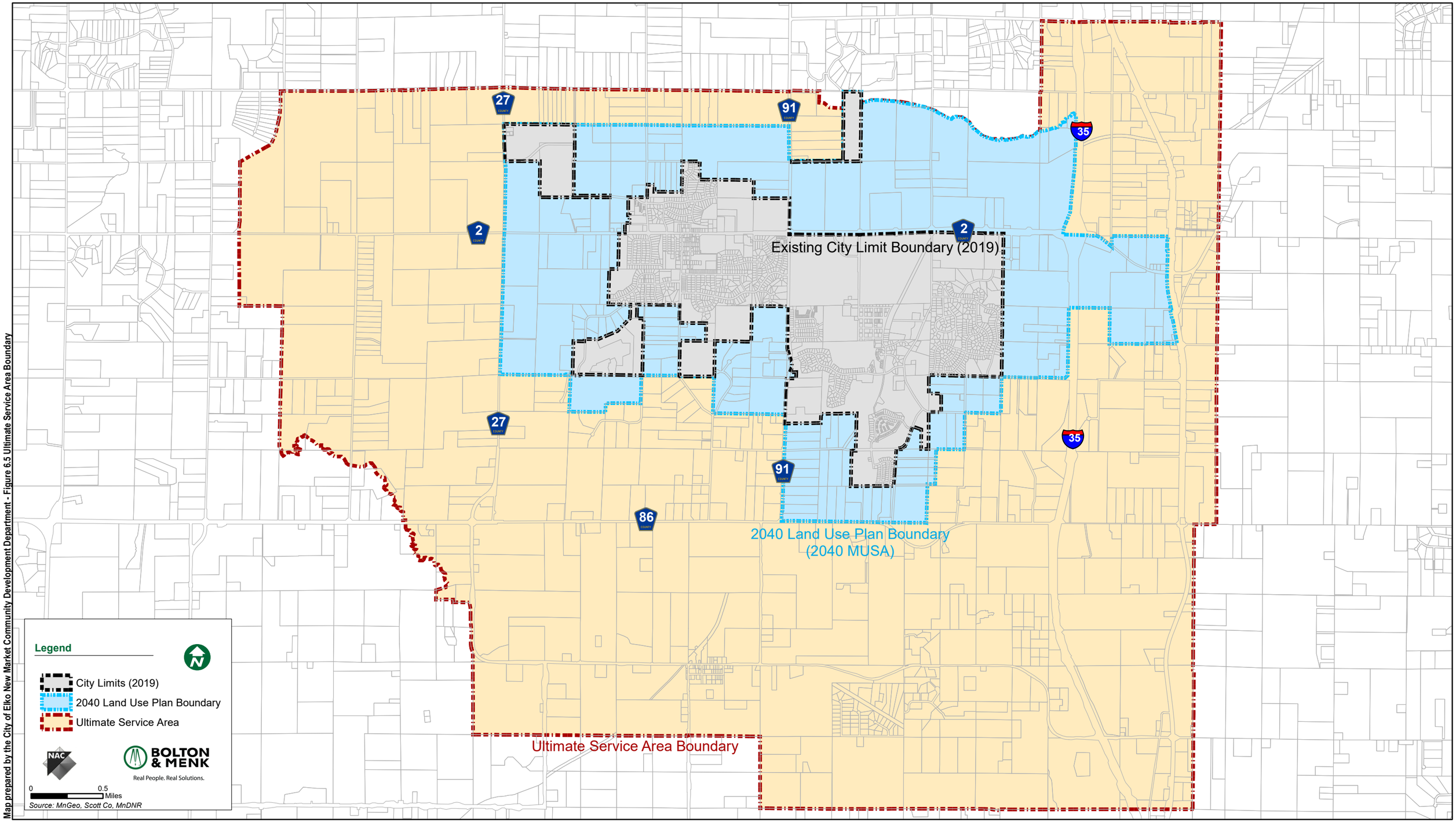
Map prepared by the City of Elko New Market Community Development Department - Figure 6.3 Existing Land Use - Uncorporated Area

2040 Land Use Plan
Figure 6.4



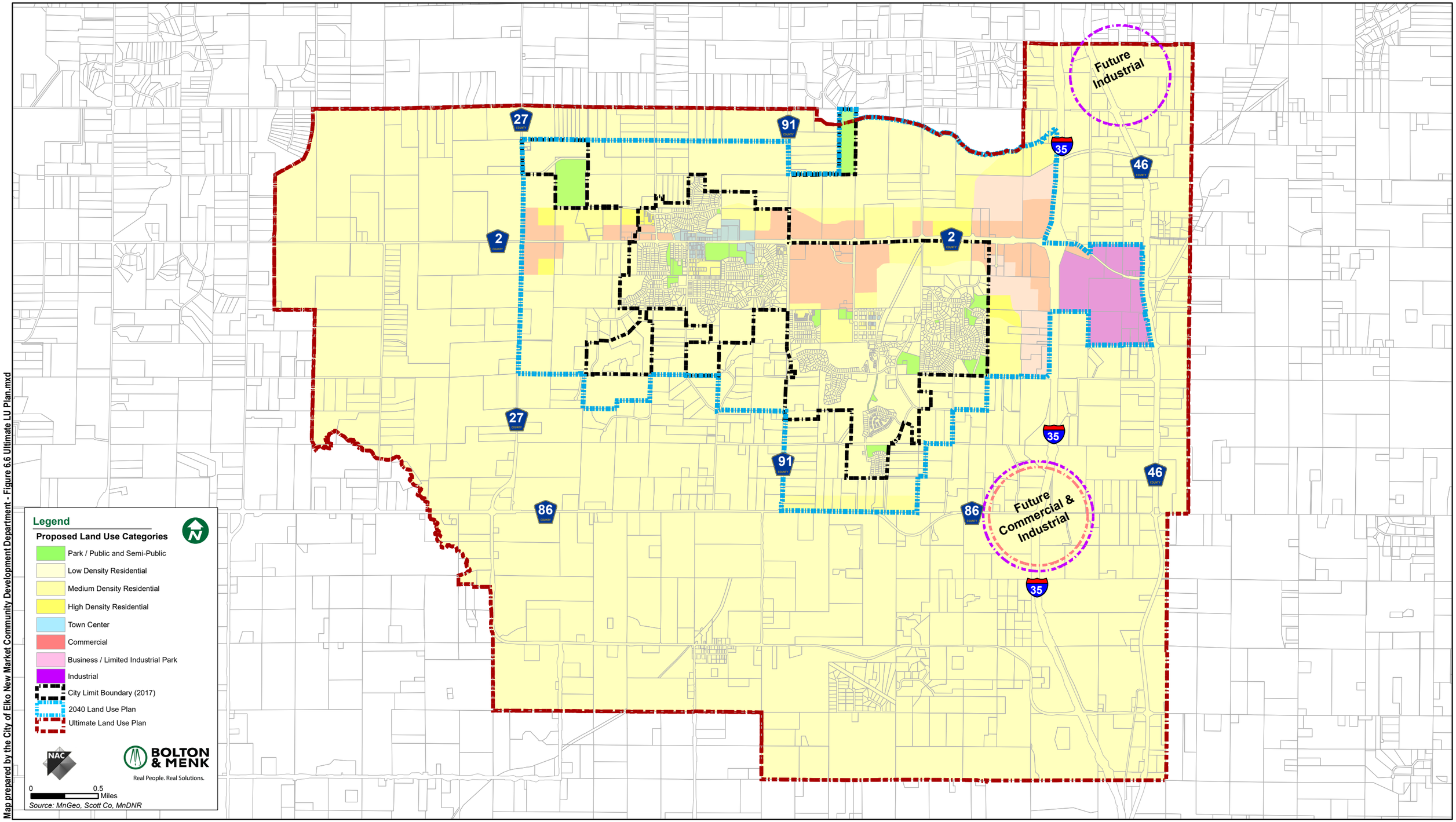
Map prepared by the City of Elko New Market Community Development Department - Figure 6.4 Land Use Plan

Ultimate Service Area Boundary
Figure 6.5



Map prepared by the City of Elko New Market Community Development Department - Figure 6.5 Ultimate Service Area Boundary

2040 Ultimate Land Use Plan
Figure 6.6



Map prepared by the City of Elko New Market Community Development Department - Figure 6.6 Ultimate LU Plan.mxd

INTRODUCTION

The purpose of this chapter is to summarize housing conditions within the City of Elko New Market and establish goals and work items promoting a healthy residential infrastructure and furthering a variety of life-cycle housing options. This chapter includes an analysis of existing housing conditions, housing policies, and implementation recommendations.

HOUSING PROFILE

Housing Types

Table 7-1 summarizes the City of Elko New Market's housing stock by type based upon quantity numbers provided by the U.S. Census and Metropolitan Council. As shown, the overwhelming majority of dwelling units in the City (83 percent) are single family detached homes. Townhomes comprise approximately 10 percent of the total and multi-family units (5 units or more per building) comprise 7 percent.

Table 7 - 1

Elko New Market
Number of Housing Units By Type

	2000 (Census)		2010 (Estimates)		2015 (Estimates)	
	Quantity	Percent (%)	Quantity	Percent	Quantity	Percent (%)
Single Family Detached	287	60.0	1,135	85.5	1,239	83.0
Duplex, Triplex, and Quadplex	6	1.0	6	0.5	6	0.5
Townhome (single family attached)	138	29.0	138	10.0	140	9.5
Multi-family (5 units or more)	49	10.0	49	4.0	98	7.0
Total	**474**	**100.0**	**1,328**	**100.0**	**1,483**	**100.0**

Source: US Census Bureau and Metropolitan Council

Age of Housing Stock

Table 7-2 summarizes the age of the City of Elko New Market's housing stock. Based on 2010 Census data and City building permit information through 2016, the City of Elko New Market has a total of approximately 1,547 housing units.

The clear majority (approximately 70 percent) of Elko New Market's housing stock was constructed during the 2000s. The City has issued building permits for a total of 156 housing units since 2010. The decrease in building permit issuance since 2016 likely relates to a combination of economic conditions and a limited availability of single family residential lots in the City.

Table 7 - 2

Elko New Market Age of Housing Stock		
Year Built	**No. of Units**	**Percent of Total (%)**
2010 to 2016	156	10
2000 to 2009	1,087	70
1990 to 1999	113	8
1980 to 1989	49	3
1970 to 1979	34	2
1960 to 1969	45	3
1950 to 1959	33	2
1940 to 1949	15	1
1939 or earlier	15	1
Total	**1,547**	**100**
Source: U.S. Census Bureau and City of Elko New Market		

The age of structures and their locations within Elko New Market are graphically illustrated on Figure 7.1. As can be expected, older homes in the City are clustered around the historic City of Elko and City of New Market downtown areas. Also of interest is that residential growth between 1990 and 2010 is evenly dispersed between the former Cities of Elko and New Market.

Owner-Occupied and Rental-Occupied

Table 7-3 displays the breakdown between owner-occupied and renter-occupied units within Elko New Market in 2010 and 2016. As indicated, the majority (98%) of the housing units within the City were owner-occupied units in 2010. Only two percent were rental. By 2016, the number of rental units had increased to 15% of the City's total housing units. To be noted is that 49 rental units included in the Market Village Apartments are not included in the 2010 Census data. Market Village was constructed by the Scott County Community Development Agency in 2011 and is designated for adults age 55 and over. The Market Village project was constructed using tax credits and is therefore considered a subsidized housing project. The data also indicates that an increasing number of single family homes are also being rented.

Table 7 - 3

Elko New Market Owner-Occupied and Rental Statistics				
	No. of Units (2010 Census)	**Percent of Total (%) 2010**	**No. of Units (2016 Metropolitan Council Estimate) 2010**	**Percent of Total (%) 2016**
Owner Units	1,145	98	1,276	85
Rental Units	27	2	221	15
Total	**1,172**	**100**	**1,497**	**100**
Source: U.S. Census Bureau & Metropolitan Council				

Housing Costs

Table 7-4 provides a comparison of housing costs between the City of Elko New Market and Scott County. As shown, the median sale price for a home in Elko New Market in 2015 was $264,250. This number was notably higher than the median sale price of $244,950 in all of Scott County during the same period.

There were 106 homes sold in the City of Elko New Market in 2015, which represented only about four percent of the total number of homes sold in Scott County in the same year. This percentage of home sales is consistent with Elko New Market's population in 2015 representing approximately 3.2 percent of Scott County's total population.

Table 7 - 4

Elko New Market vs. Scott County
Housing Costs
2015

	Number of Sales	Median Sale Price	Average Days on Market
Elko New Market	106	$264,250	76
Scott County	2,588	$244,950	80
Source: Regional Multiple Listing Service of Minnesota, Inc.			

Housing Values

Table 7-5 below provides a comparison of the median housing value in the City of Elko New Market and Scott County, based on Census Bureau data. The median housing value of a single-family home in the City of Elko New Market rose slightly between 2001 and 2010, from an average value of $276,258 to $287,100. The median home value in 2016 dropped to $268,200 according to the US Census Bureau.

Table 7 - 5

Elko New Market
Median Housing Value

Location	Median Value 2010	Median Value 2016
Elko New Market	$287,100	$268,200
Scott County	$274,300	$258,400
Source: US Census Bureau, ACS		

Gross Rent

Table 7-6 provides a summary of monthly rents paid by Elko New Market residents in 2010 and 2015. The number of rental units and the amount of rents paid increased significantly over the five year period. The Market Village Apartments are not included in the 2010 estimates and account for some of the increase in the number of units in 2015. It can also be concluded based

on the number of residents paying $1,500 or greater for rent that a larger number of single family homes were being rented in 2015.

Table 7 - 6

Elko New Market Gross Rent				
	2010		2015	
Gross Rent (per month)	**No. of Units**	**Percent of Total (%)**	**No. of Units**	**Percent of Total (%)**
$499 and under	0	---	0	---
$500 to $999	12	44	47	23
$1,000 to $1,499	7	26	67	33
$1,500 or More	8	30	88	44
Total	**27**	**100**	**202**	**100**
Median Rent	**$1,094**		**$1,201**	
Source: U.S. Census Bureau				

Cost Burden Households

Cost burden households are households whose housing costs are at least 30% of their income. In 2016 the Metropolitan Council estimated that 191 low-income households within the City were cost burned. Table 7-7 below depicts the Metropolitan Council estimates:

Table 7 - 7

Housing Cost-Burdened Households 2016		
Income at or below 30% of AMI	**Income 31% to 50% of AMI**	**Income 51% to 80% of AMI**
43	86	62
Source: Metropolitan Council AMI = Area Median Income Baseline AMI = $85,800 / year		

HOUSING PLAN

Future Housing Options

The City of Elko New Market recognizes the need to promote a greater variety of housing choices in the City to serve the life cycle needs of current and future residents. A primary goal of the 2040 Land Use Plan is to continue to maintain single family neighborhoods as the focus of the community while also providing sufficient opportunities for a variety of housing styles, sizes and values. Housing options, from efficiency apartments through executive homes which are suitable for all ages from young adult through end of life, are desired within the community. Affordable and workforce housing are important components of a complete housing system but

are not the only components. Affordable and workforce housing are of interest to the City in that the demand for such units is quickly increasing.

In an effort to provide housing options, the 2040 Land Use Plan provides opportunities for medium and high density residential uses as transitions between higher intensity commercial uses and lower intensity single family neighborhoods.

The City desires neighborhoods which provide a variety of housing choices, with convenient access to goods and services needed in daily life, along with the availability of public schools, recreational facilities, and open spaces.

Affordable Housing

Affordable housing is a concern to government leaders as people on low incomes are at high risk when there is a shortage of rental supply resulting in an increase in rental rates. Households struggling with housing costs are often faced with issues that further compromise their financial stability such as: traveling long distances to work or to access goods and services; having to live in overcrowded or substandard housing; going without food, heat, medication, or education; and working long hours or multiple jobs leading to decreased family time and chronic stress.

Investment in affordable housing can contribute to community health. Increasingly, occupations including teachers, police officers, public workers, health care workers, and skilled laborers can't afford housing near their workplaces so they travel longer distances to find affordable housing. Increased commutes negatively impact worker productivity and quality of life, and cause traffic congestion.

Nationwide and locally, housing developments containing affordable units are often opposed by neighbors, town residents, and public officials (e.g. not in my back yard). Opposition typically cites a series of negative outcomes such as concerns of increased traffic, added costs for schools, decreasing property values, increased demand on other municipal services such as police and fire, stresses on sewer and water systems, concerns about developer quality and/or experience, environmental degradation, and negative changes to town character.

When affordable housing is well designed, fits with the surrounding neighborhood, and is well managed, there appears to be only minimal impacts on property values and adjacent neighborhoods. Studies have shown population increases attributable to affordable housing (typically apartments) do not equate to higher municipal costs and are often less than those costs related to new single-family houses due to density of development.

Input from neighbors, town residents, and public officials can be constructive when it results in improvements in development design. Improvements in development design can result in higher levels of acceptance, and increased harmony between existing and proposed development.

Thrive MSP Affordable Housing Allocation

The City of Elko New Market recognizes its responsibility to provide opportunities for its share of the region's need for low and moderate-income housing. Affordable housing provides housing options for a diverse population and furthers one of the City's economic development goals by providing housing opportunities to support an employment base for future commercial and industrial development.

"Affordable Housing" is defined differently by various organizations. The Metropolitan Council defines the terms "affordable housing" and "low income" as follows:

> Affordable Housing. *Housing is "affordable" for low and moderate-income households when they pay no more than 30 percent of gross household income on housing.*
>
> Low Income. *A household is considered "low income" if it makes 80% or less of the median income of the seven-county region.*

For the purpose of this 2040 Comprehensive Plan, housing will be considered "affordable" if total housing and related costs are equal to or less than 30 percent of gross income.

The Metropolitan Council's Thrive MSP 2040 Plan assigns a low and moderate-income housing need for the City from 2021 through 2030. Specifically, a need for 326 new affordable units within such time period has been established. The allocation reflects the City's share of forecasted regional household growth that will need affordable housing. Of these new units, 195 need to be affordable to households earning at or below 30 percent of the area median income, 121 need to be affordable to households earning 31 to 50 percent of the area medium income and 10 need to be affordable to households earning 51 to 80 percent of the area median income. Income is based on percentage of area median income (AMI) with a baseline of $85,800 which is the AMI established by the Department of Housing and Urban Development (HUD) for a household of four in the Minneapolis-St. Paul metro area in 2016. The City's affordable housing "needs", as directed by the Metropolitan Council, are summarized in Table 7-8 below:

Table 7 - 8

Elko New Market Thrive MSP 2040 Affordable Housing Need Allocation 2021-2030	
Percent of Area Medium Income	**Housing Unit Need**
At or Below 30% AMI	195
31% to 50% AMI	121
51% to 80% AMI	10
Total Units Needed	**326**
AMI = Area Median Income Source: Metropolitan Council	

Elko New Market's land use plan addresses planned use types and densities sufficient to accommodate the Metropolitan Council's forecast allocations. Between 2021 and 2030 a total of 41.62 acres are planned for land uses that will accommodate 'high density residential' use with a minimum density of ten units per acre. Applying a minimum of 10 units per acre to the planned 41.62 acres indicates that the City can accommodate 416 affordable housing units, meeting the City's Thrive MSP 2040 affordable housing allocation. The City projects that affordable housing opportunities may be most likely to occur in 'high density residential districts' due to the increased allowable housing density within this land use designation.

Affordability Analysis

With the preceding Metropolitan Council directives to provide 326 affordable housing units in mind, it is worthwhile to understand the number of affordable housing units which presently exist in the City. For 2016, the Metropolitan Council has calculated that homes with a purchase price of $243,500 or less are considered "affordable" in the seven-county metropolitan area for a family of four earning 80% of the area median income. According to the Scott County Assessor's Office, 1,428 owner-occupied housing units existed in the City on January 1, 2017. Of these, 626 units had an assessed value of $243,500 or less. The results indicate 43.8 percent of the City's existing owner-occupied housing stock at that time was considered "affordable." The locations of housing units with an assessed value of $243,500 or less, which are considered "affordable" based on Metropolitan Council calculations, are depicted on Figure 7.2.

Households with different income levels have different thresholds of "affordable" as seen in Table 7-9. The income limits shown in Table 7-9 were established by HUD for fiscal year 2016. The Metropolitan Council has selected the four-person household thresholds as a general measurement for affordable housing needs at each income level.

Table 7 - 9

2016 Income Limit Summary
Minneapolis-St. Paul–Bloomington MSA

Household Size	30% AMI	50% AMI	80% AMI
One-person	$18,050	$30,050	$46,000
Two-person	$20,600	$34,350	$52,600
Three-person	$23,200	$38,650	$59,150
Four-person	***$25,750***	***$42,900***	***$65,700***
Five-person	$28,440	$46,350	$71,000
Six-person	$32,580	$49,800	$76,250
Seven-person	$36,730	$53,200	$81,500
Eight-person	$40,890	$56,650	$86,750

AMI = Area Median Income
Source: Department of Housing and Urban Development (HUD)
Based on 2016 AMI of $85,800

Table 7-10 illustrates potential need for affordable housing units and associated affordability thresholds in terms of rent rates and owner-occupied home values. The table utilizes HUD data

for the Twin Cities MSA to better define and understand affordability for Elko New Market. It is important to understand affordable monthly rental rates and home values associated with various income levels. Two approaches to affordability analysis are depicted; the first references affordability thresholds for a family of four, the second a single person.

Table 7 - 10

Housing Affordability Thresholds Minneapolis-St. Paul–Bloomington MSA		
Family of Four Household	**Affordable Rent Using 30% of Income For Housing Related Costs**	**Affordable Home Value Using 30% of Income For Housing Related Costs***
30% of AMI ($25,750/yr; $12.38/hour)	$644	$83,189
60% of AMI ($51,480/yr; $24.75/hr)	$1,287	$166,314
80% of AMI ($65,700/yr; $31.58/hr)	$1,643	$212,254
120% of AMI ($102,950/yr; $49.50/hr)	$2,574	$332,595
Single Person Household	**Affordable Rent Using 30% of Income For Housing Related Costs**	**Affordable Home Value Using 30% of Income For Housing Related Costs***
30% of AMI ($18,050/yr; $8.68/hour)	$451	$65,000
60% of AMI ($36,060/yr; $17.34/hr)	$902	$150,000
80% of AMI ($46,000/yr; $22.12/hr)	$1,150	$175,000
120% of AMI ($72,050/yr; $34.64/hr)	$1,801	$290,000
*5% down, 30 year fixed AMI = Area Median Income, based on 2016 AMI of $85,800 Source: Metropolitan Council		

Projected Housing Needs

As noted earlier, the City of Elko New Market recognizes the need to promote a variety of housing choices to serve the life cycle needs of current and future residents. This includes a wide variety of housing styles, sizes, and values, and options ranging from rental apartments through executive homes.

In 2016 the Metropolitan Council estimated that there were 1,497 total housing units within the City. Projected housing needs for Elko New Market are based on Elko New Market's affordable housing allocation and the household projections as provided by the Metropolitan Council's Thrive MSP document. The Metropolitan Council requires that the City embrace the need for 326 affordable housing units by 2030, and total of 4,400 housing units in the City by 2040, which is an additional 2,903 housing units. The Metropolitan Council 2020 / 2030 / 2040 household projections are shown in Table 7-11.

Table 7 - 11

Elko New Market Thrive MSP Housing Projection (Total)			
Location	**2020**	**2030**	**2040**
Elko New Market	2,000	3,030	4,400
Source: Metropolitan Council			

It is also worth noting that in 2016, Maxfield Research completed a study entitled "Comprehensive Housing Needs Update: Scott County, Minnesota". The Study forecasts a need for 2,548 additional general occupancy units, and 220 senior housing units, for a total of 2,768 additional housing units. The Maxfield Research Study forecasts for general and senior occupancy, for sale and rental dwellings, are depicted in Table 7-12.

Table 7 - 12

Housing Needs Forecasts for Elko New Market						
General Occupancy Demand – 2,548 Total Units						
For Sale Demand – 2,235 units		**Rental Demand – 313 units**				
1,802 Single-Family	433 Multifamily	141 Market Rate	125 Shallow Subsidy	47 Deep Subsidy		
Senior Housing Demand – 220 Total Units						
Senior Ownership – 41 units	**Senior Rental – 179 units**					
	50 Market Rate	1 Shallow Subsidy	35 Deep Subsidy	41 Congregate Care	24 Assisted Living	28 Memory Care
Source: 2016 Comprehensive Housing Needs Update for Scott County, Maxfield Research						

Shallow subsidy housing is defined as income-restricted to households earning at or below 80 percent of AMI, although individual properties can have income-restrictions set at 40 to 80 percent AMI. Deep subsidy housing is income-restricted to households with earnings at or below 30 percent of AMI.

The 2040 housing projections provided by the Metropolitan Council, and the 2040 housing needs projected by the Maxfield Research Study are very similar, 2,903 versus 2,768. The Maxfield Research Study reaffirms the need to provide a variety of housing options within the community.

Livable Communities Program

The 1995 Livable Communities Act (LCA) was enacted to provide incentives for addressing various issues facing the seven-county Metropolitan Area and is administered by the Metropolitan Council. Metropolitan Area municipalities which elect to participate in the Livable Communities Program are eligible to compete for funding for community development activities. The former Cities of Elko and New Market began participation in the Livable Communities Act in 2002 and has continued to participate (as the City of Elko New Market) since the merger of the two cities in 2007.

Through the Livable Communities Program, the Metropolitan Council has the ability to make grant and loan awards to communities from the following accounts:

- Livable Communities Demonstration Account (LCDA)
- Local Housing Incentives Account (LHIA)
- Tax Base Revitalization Account (TBRA)

- Transit Oriented Development (TOD)

Of the four accounts, two provide funding for affordable housing goals of cities. The Local Housing Incentives Account (LHIA) provides funding to produce and preserve affordable housing choices while the Tax Base Revitalization Account (TBRA) provides funding for clean ups of brownfield sites for redevelopment, including affordable housing projects.

To compete for Livable Communities grants, communities must participate in the Local Housing Incentives program established by the Metropolitan Livable Communities Act (LCA) as well as negotiate with the Metropolitan Council to establish a set of goals for affordable and lifecycle housing. As development occurs, the City will continue to work toward the achievement of the affordable and lifestyle housing goals of the Livable Communities Act.

In regard to the achievement of affordable housing goals, it is important to recognize that there is an ample supply of developable land available within with City 2040 MUSA which is guided high density residential use (minimum of 10 units per acre). Thus, affordable housing goals are considered attainable in the long-term.

Housing Goals / Policies

The following housing goals / policies have been developed to meet the needs of the growing population through the year 2040. Table 7-13 is a summary of tools that may be used to address those needs.

Housing Goal #1: Support preservation of existing housing stock.
Policies:

- Encourage upkeep and proper maintenance of residential properties in the City.
- Evaluate City zoning codes to ensure that reasonable maintenance of residential properties is required.
- Consider future efforts to survey housing conditions in various neighborhoods to evaluate if deterioration exists and additional action is required.
- Consider implementing a Rental Housing Registration Program to monitor the condition of the City's rental housing stock.
- Consider housing programs such as the Small Cities Development Grant to assist with residential rehabilitation in targeted areas of the community where housing stock is older and in need of rehabilitation.
- Be aware of and promote programs offered through the Scott County CDA and Minnesota Housing Finance Agency, and other agencies that may provide assistance for residential rehabilitation.

Housing Goal #2: Provide housing options for people in all life stages and of all economic means.

Policies:

- Provide opportunities for the potential development of a variety of dwelling unit types through sufficient amounts of appropriately zoned land.
- Maintain zoning and subdivision regulations that allow for the construction of a variety of housing types and price ranges.
- Utilize Planned Unit Development zoning to provide for a mixture of housing types.
- Promote the development of multifamily housing in areas that are well suited to serve high densities.
- Guide and zone land suitable for additional senior housing, in close proximity to goods and services.
- Market and encourage development on existing vacant lots.

Housing Goal #3: Remove barriers to providing a variety of housing options.

Policies:

- Evaluate current City ordinances which may provide barriers to providing housing options and make changes where necessary.

Housing Goal #4: Provide opportunities for the City's share of affordable dwelling units.

Policies:

- Provide sufficient land within the City to accommodate the City's allocation of affordable housing units.
- Provide programs and incentives to encourage the development of affordable dwelling units.
- Maintain strong partnerships with the Scott county Community Development Agency, Metropolitan Council and other agencies / programs such as Habitat for Humanity.
- Encourage the incorporation of affordable housing units as part of mixed-use projects or as components of new multifamily projects.
- Participate in the Livable Communities Act Local Housing Incentive Program to meet benchmarks.

Table 7 - 13

Housing Plan Implementation Tools		
Housing Goal	**Available Tool**	**Opportunity for Use**
Support preservation of existing housing stock.	City Zoning Codes	The City will evaluate City zoning codes to ensure that reasonable maintenance of residential properties is required.
	Rental Housing Registration Program	The City may consider implementing a rental housing registration program to monitor the condition of the City's rental housing stock.

	Housing Survey	The City will consider completion of a housing survey to document housing conditions in various neighborhoods to evaluate if deterioration exists and additional action is required.
	Small Cities Development Grant	The City may consider applying for a Small Cities Development Grant to assist with residential rehabilitation in targeted areas of the community where housing stock is older and in need of rehabilitation.
	Scott County Community Development Agency (CDA)	The City will coordinate with the CDA to be aware of and promote programs that may provide assistance for residential rehabilitation.
	Minnesota Housing Finance Agency (MHFA)	The City will be aware of and promote programs offered through MHFA that may provide assistance for residential rehabilitation.
	Naturally Occurring Affordable Housing (NOAH)	The City will support the continuation of naturally occurring affordable housing within the City. The City may explore opportunities with the Minnesota Housing Fund on the use of NOAH Impact Funds to finance the acquisition and preservation of naturally occurring affordable housing.
Provide housing options for people in all life stages and of all economic means.	Guide land at densities supporting affordable housing	See Future Land Use Map depicting sufficient land to meet the City's affordable housing allocation.
	City Zoning Codes	The City will review zoning and subdivision codes to ensure regulations allow the construction of a variety of housing types and price ranges.
	Home Buyer Counseling / Education	The Scott County Community Development Agency offers first-time homebuyer workshops and counseling services. The City will coordinate with the Scott County Community Development Agency to promote their services in Elko New Market.
	Homeowner Counseling / Education	The Scott County Community Development Agency provides counseling to homeowners struggling with their mortgage payments. The City will coordinate with the Scott County Community Development Agency to promote their services in Elko New Market.
	TIF	The City will consider TIF for development proposals creating multi-family housing options that are not currently available within the community and meet TIF requirements under state statute.

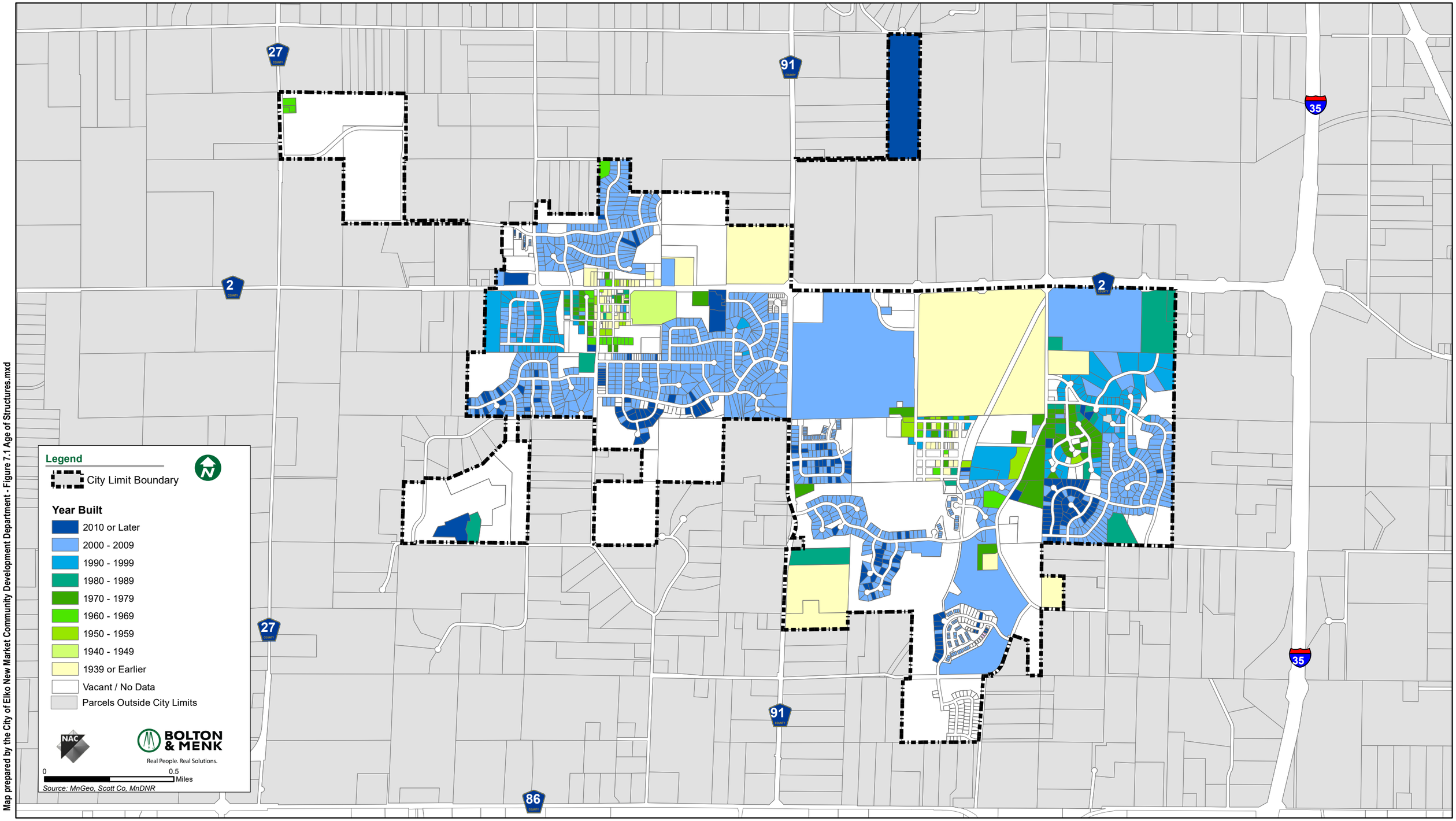
	TAX Abatement	The City will consider the use of tax abatement for multi-family development proposals that create housing options that are not currently available within the community.
	Accessory Dwelling Unit (ADU)	The City will research information regarding ADU's and will educate the City's Planning Commission and City Council regarding ADU's. If supported, a regulatory framework to allow ADU's will be prepared for consideration.
	Housing Bonds	The City will consider the use of housing bonds to facilitate housing projects creating dwellings affordable to persons at or below 80% AMI.
	Scott County CDA	The City will coordinate with the CDA to best align their resources with this stated goal. Examples may be CDA support of 55+, Workforce, or Deep Subsidy Housing.
	Naturally Occurring Affordable Housing (NOAH)	The City will support the continuation of naturally occurring affordable housing units within the City. The City may explore opportunities with the Minnesota Housing Fund on the use of NOAH Impact Funds to finance the acquisition and preservation of naturally occurring affordable housing.
	Fair Housing Policy	The City will consider adoption of a Fair Housing Policy.
Remove barriers to providing a variety of housing options.	City Ordinances	Evaluate current City ordinances which may provide barriers to providing housing options and make changes where necessary.
	Naturally Occurring Affordable Housing (NOAH)	The City will support the continuation of naturally occurring affordable housing units within the City. The City may explore opportunities with the Minnesota Housing Fund on the use of NOAH Impact Funds to finance the acquisition and preservation of naturally occurring affordable housing.
	Fair Housing Policy	The City will consider adoption of a Fair Housing Policy.
Provide for the City's Share of Affordable Dwelling Units	TIF	The City will consider TIF for multi-family development proposals creating dwelling units affordable to persons at or below 80% AMI and meet TIF requirements under state statute.
	Tax Abatement	The City will consider using tax abatement for multi-family development projects

		creating dwellings affordable to persons at or below 80% AMI
	Livable Communities Act	The City will consider supporting and sponsoring an application to Livable Communities Account program for multi-family rental proposals with units suitable for large families, and in areas guided for high density residential.
	Scott County CDA	The City will coordinate with the Scott County Community Development Agency to best align their resources with projects meeting this stated need.
	Guide Appropriate Land Uses and Densities	The City will guide sufficient land to a high-density residential land use designation, which provide the opportunity to construct at least 326 housing units between 2021 and 2030, see planned land use map (Map 6-5).
	Housing Bonds	The City will consider the use of housing bonds to facilitate housing projects creating dwellings affordable to persons at or below 80% AMI
	Monitor Progress	The City will monitor progress toward meeting the affordable housing goals required by the Thrive MSP 2040 plan.

2040 Comprehensive Plan

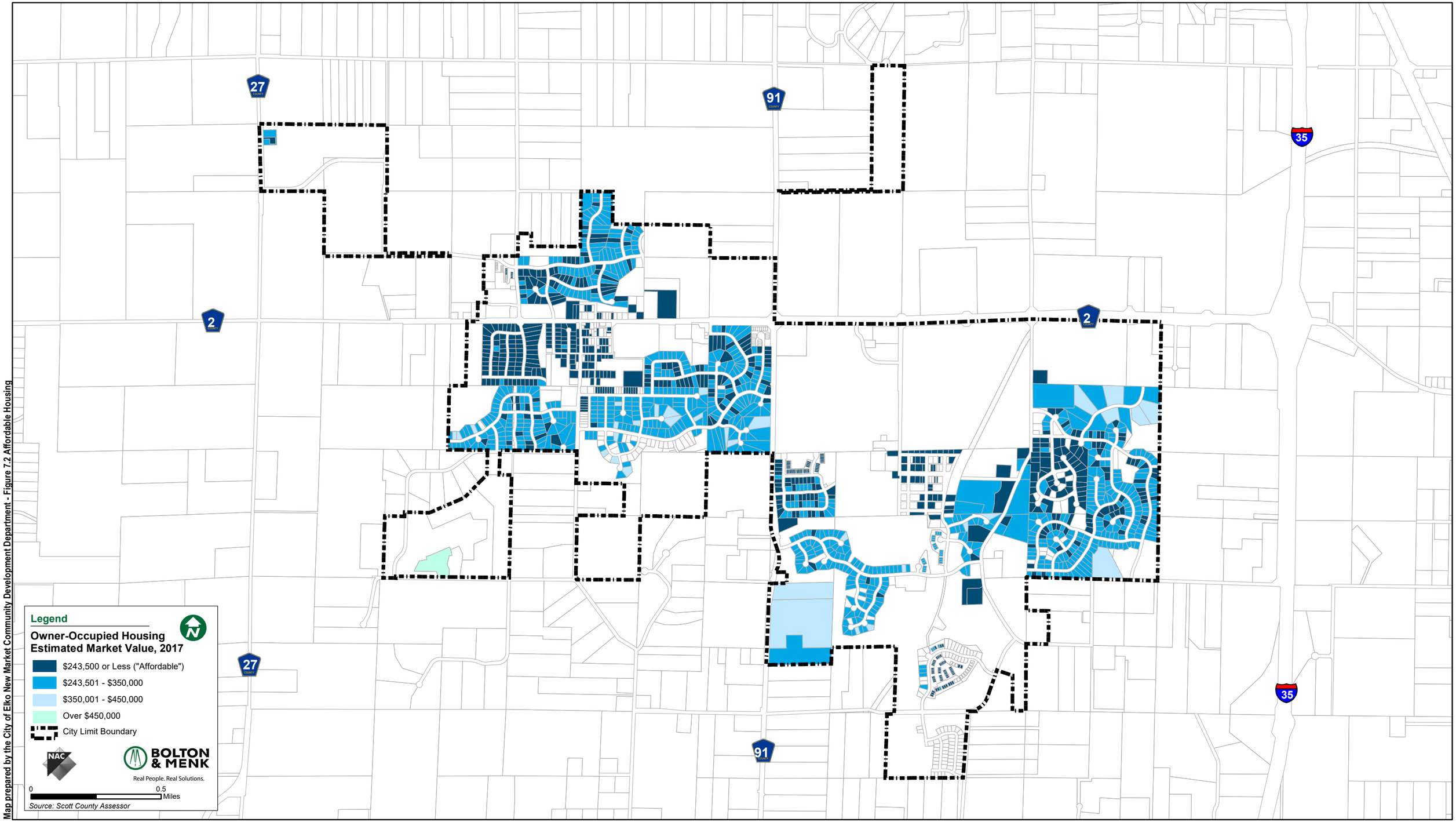
Elko New Market, MN

Age of Structures
Figure 7.1



Map prepared by the City of Elko New Market Community Development Department - Figure 7.1 Age of Structures.mxd

Figure 7.2
Affordable Housing Units



Map prepared by the City of Elko New Market Community Development Department - Figure 7.2 Affordable Housing

INTRODUCTION

The Metropolitan Land Planning Act requires that comprehensive plans for Metropolitan Area communities to contain an element related to the protection and development of access to direct sunlight for solar energy systems. As a result, the following solar resource-related information must be included in the Elko New Market's 2040 Comprehensive Plan update:

1. A map which illustrates the City's gross solar potential.

2. A calculation of the City's solar resources.

3. A policy (or policies) which relate to the development of access to direct sunlight for solar energy systems.

4. Strategies to be applied to implement established solar resource policies.

SOLAR PLAN

Solar Potential

Attached as Figure 8.1 is a graphic depiction (map) of Elko New Market's gross solar potential. The map was developed by the University of Minnesota and is being utilized by the Metropolitan Council. The map illustrates annual sun energy dispersed throughout the City with "high end" potential areas shown in yellow and areas having "low end" energy potential illustrated in black. Such information can be used to predict the productivity of solar installations. According to the Metropolitan Council, the primary issue in the consideration of solar energy installations is intermittent shading due to nearby structures and trees. In this regard, areas which are shown to have "high end" potential in the City are those areas with very little tree cover.

Solar Resource Calculations

Table 8-1 below provides an approximation of Elko New Market's solar potential. The gross solar potential and gross solar rooftop potential, as provided by the Metropolitan Council, are expressed in megawatt hours per year (Mwh/yr). To be noted is that the calculations estimate the current potential resource of the City (prior to the removal of areas considered unsuitable for solar development or factors related to solar efficiency).

Table 8 - 1

Elko New Market - Gross Solar Potential (Megawatt Hours per Year)			
Gross Potential (Mwh/yr)	**Rooftop Potential (Mwh/yr)**	**Gross Generation Potential (Mwh/yr)**	**Rooftop Generation Potential (Mwh/yr)**
6,880,061	193,918	688,006	19,391
Source: Metropolitan Council			

Metropolitan Council Notes:

- In general, a conservative assumption for panel generation is to use 10 % efficiency for conversion of total insolation into electric generation.
- The rooftop generation potential does not consider ownership, financial barriers or building-specific structural limitations.

The estimated gross solar generation potential and gross solar rooftop potential are intended to convey how much electricity could be generated in the City of Elko New Market using existing technology and assumptions on the efficiency of conversion. According to the Metropolitan Council, for most cities, the rooftop generation potential is equivalent to between 30 and 60 percent of a community's total electric energy consumption. To be noted is that there is no minimum amount of solar resource development required for cities in the Metropolitan Area.

Solar Policies

The City of Elko New Market has established the following policies which relate to solar resources:

1. Promote reasonable access to solar energy by controlling artificial blockage of solar radiation through land management tools, such as zoning and building codes, for optimum long-term economic and environmental benefits.

2. Encourage residential solar development which maintains community and neighborhood character.

3. Increase energy resilience of critical facilities such as police, fire and emergency and hazard response centers.

4. Fairly balance the development rights of land owners with solar resources with the community character rights of adjacent landowners.

5. Encourage the development of community solar gardens on lands outside of the City's 2040 MUSA boundary which retain the community character and provide co-benefits such as the creation of pollinator habitat.

Solar Goal Implementation

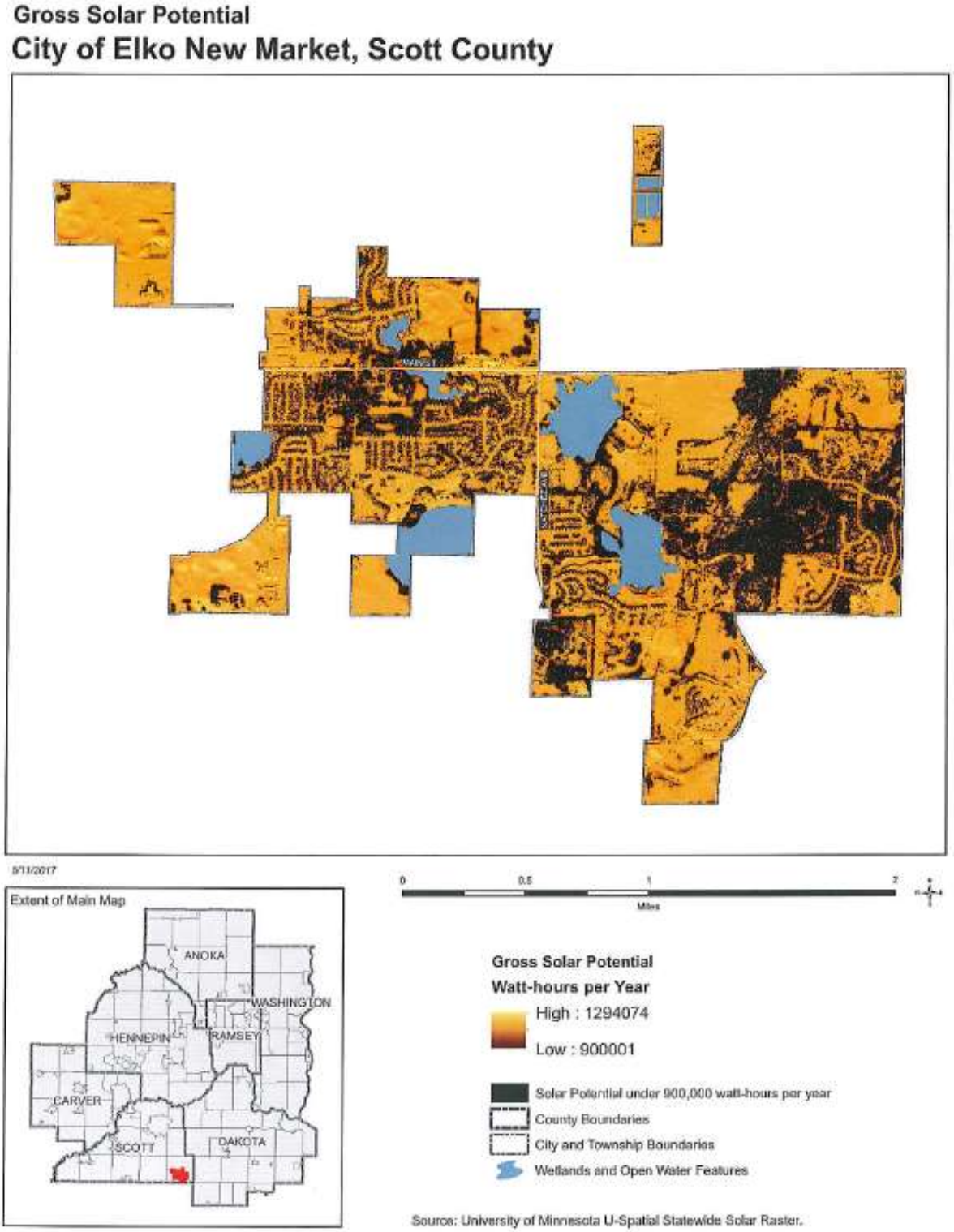
City actions will include the following:

- Consider changes needed to local ordinances which will make solar energy more feasible. This may include evaluating regulations to allow additional solar opportunities in the City's Institutional zoning districts (schools, churches, public facilities).

- Continue to accommodate alternative energy systems (wind, solar and geothermal) in accordance with applicable Ordinance requirements.

- Continue to monitor technological changes which relate to alternative energy systems, including solar, to ensure that the City's Ordinance provisions respond to such changes in a responsible manner.

Figure 8.1


Gross Solar Potential
City of Elko New Market, Scott County
5/11/2017
Extent of Main Map
ANOKA
WASHINGTON
HENNEPIN
RAMSEY
CARVER
SCOTT
DAKOTA
0
0.5
1
2
Miles
Gross Solar Potential
Watt-hours per Year
High : 1294074
Low : 900001
Solar Potential under 900,000 watt-hours per year
County Boundaries
City and Township Boundaries
Wetlands and Open Water Features
Source: University of Minnesota U-Spatial Statewide Solar Raster.

INTRODUCTION

Overview & Purpose

The City of Elko New Market is a free-standing community in a rural setting with growing suburban-style development. Its location within the regional transportation network is depicted on **Figure 9.1**. With its close access to I-35, Elko New Market has strong potential for future growth. Scott County arterial roadways provide the backbone of Elko New Market's roadway system, and the City is developing a growing system of collector roadways to support development and complement County roads.

The primary purpose of this Transportation chapter is to provide guidance to City staff and elected officials regarding the implementation of effective, integrated transportation facilities and programs through the 2040 planning timeframe. This chapter is consistent with regional requirements for transportation as captured in the Metropolitan Council's 2040 *Local Planning Handbook*.

This chapter is organized into the following sections:

- Existing Roadway Conditions
- Transportation Questions from Residents
- Summary of Existing Transportation Studies
- Roadway System Plan
- Transit
- Biking and Walking
- Aviation
- Freight
- Transportation Funding Sources

Transportation Goals

The City of Elko New Market adopts the following goals to guide the continued development of a transportation system that best serves its residents and businesses:

- <u>Overall transportation system attributes</u> – Plan/provide a system that is:
    - Safe
    - Economically feasible
    - Functional
    - Convenient
    - Multi-modal (vehicles [cars and trucks], bicyclists and pedestrians accommodated)
    - Designed appropriate to context
    - Aesthetically pleasing

- Safe pedestrian crossings – Scott County arterial roadways are the primary roadways within the community; therefore, coordinate with Scott County to provide safe crossings of these and other higher volume roadways which are safe and comfortable for pedestrians.

- Comprehensive trail network – Trails represent a quality-of-life type of amenity which is important to many current and future residents; therefore, provide off-street trails in a comprehensive and coordinated manner.

- Importance of CSAH 2 and I-35 Travel – Many Elko New Market residents work in the Twin Cities metro area and use CSAH 2 to access I-35 for their work commutes; therefore, plan for and support a CSAH 2 and the I-35/CSAH 2 interchange operate safely and with minimal delay.

- Regional coordination – County roadways are key arterials within and surrounding the City's roadway network, and I-35 is critical for access to the metro area for jobs and other purposes; therefore, coordinate effectively with Scott County, Dakota County, and MnDOT regarding regional improvements beneficial to City and regional users. This includes promoting a new I-35 interchange at CSAH 86.

- Collector/local street system – There is substantial potential for future development within the current City limits and planned 2040 growth area; therefore, develop a collector and local street network which is convenient for residents and limits the need to use existing arterials for local travel. This network should be well planned, accommodating anticipated growth patterns as well as terrain and environmental factors, and should be financed in an equitable manner with appropriate funding levels provided by development.

More focused strategies to meet these goals are presented throughout the remainder of this chapter.

EXISTING ROADWAY CONDITIONS

Existing Traffic Volumes and Crash Data

The most basic characteristic of a given roadway is the volume of traffic that it carries. Existing traffic volumes on roadways in the Elko New Market area are presented on **Figure 9.2** which represents MnDOT traffic data. The most recent crash data focusing on intersections is also summarized on **Figure 9.2**. It can be seen that the largest number of crashes was at the CSAH 2/CSAH 91 intersection. This is not surprising, since this is the highest volume intersection in the City. A roundabout is in the City's Capital Improvement Program for this location in 2020, which will improve safety conditions.

Jurisdictional Classification

Roadways are classified on the basis of which level of government owns and has jurisdiction over them. For the Elko New Market area, roadways are under the jurisdiction of MnDOT (Interstate 35), Scott County, New Market Township, or the City itself. **Figure 9.3** depicts the existing roadway jurisdictional classification system in the Elko New Market area.

Functional Classification

The functional classification system is a roadway network that distributes traffic from neighborhood streets to collector roadways, then to minor arterials, and ultimately the Metropolitan Highway System. Roads are placed into categories based their function: the degree to which they provide **access** to adjacent land uses and lower level roadways versus providing higher-speed **mobility** for "through" traffic. Functional classification is a cornerstone of transportation planning. Within this approach, roads are located and designed to perform their designated function.

The current roadway map for Elko New Market reflecting functional classifications consistent with Metropolitan Council definitions is presented on **Figure 9.4.** The roadway system presently consists of six functional roadway classifications:

- Principal arterial
- "A" minor arterial, including the sub-categories: reliever, expander, connector, and augmenter
- Other arterials / B minor arterials
- Major collector
- Minor collector
- Local street

The Metropolitan Council has defined four sub-categories of "A" minor arterials: reliever, expander, connector, and augmenter. These sub-categories have to do primarily with Metropolitan Council's allocation of federal funding roadway improvements, but do not translate into specific design characteristics or requirements. While "A" minor arterials are eligible for federal funding, "other arterials" are not.

For arterial roadways, the Metropolitan Council has designation authority. Local agencies may request that their roadways become arterials (or are downgraded from arterial to collector), but such designations or re-designations must be approved by the Metropolitan Council. The agency which has jurisdiction over a given roadway (e.g. Scott County or the City of Elko New Market) has the authority to designate collector status.

Principal Arterials

Principal arterials are the highest roadway classification and make up the Metropolitan Highway System. The primary function of these roadways is to provide **mobility** for regional trips, and they do not provide a land access function. They are intended to interconnect regional business concentrations in the metropolitan area, including the central business districts of Minneapolis and St. Paul. These roads also connect the Twin Cities with important locations outside the metropolitan area. Principal arterials are generally constructed as limited access freeways, but may also be multiple-lane divided highways.

There are no principal arterials within the current Elko New Market city limits. The closest principal arterial, and one which is critical to Elko New Market residents regarding travel to the Twin Cities metro area and other regional destinations is Interstate 35 (I-35). This freeway is approximately one-half mile east of the easterly city limit and is within the City's planned 2040 growth area.

"A" Minor Arterials

"A" Minor Arterials connect important locations within the City of Elko New Market to access points of the metropolitan highway system and to important locations outside the City. These arterials are also intended to carry short to medium trips that would otherwise use principal arterials. While "A" minor arterial roadways provide more access than principal arterials, their primary function is still to provide **mobility** rather than access.

Within the existing City limits and planned 2040 growth area there are four "A" minor arterials:

County State Aid Highway (CSAH) 2 (Main Street/260th Street) – CSAH 2 is an east-west route providing connectivity across southern Scott County between Scott County CSAH 11 on the west and Dakota County CSAH 9 at the Dakota County border on the east. CSAH 2 provides the only interchange access to I-35 in Scott County and is heavily traveled in the a.m. and p.m. peak hours. It is Main Street through the downtown portion of Elko New Market (former New Market).

CSAH 86 (280th Street West) – CSAH 86 is an east-west route just south of the Elko New Market city limits along the Scott County and Rice County borders. It provides connectivity between the interregional corridors of Trunk Highway (TH) 169 west of the City of New Prague and TH 52 in Dakota County.

CSAH 27 (Texas Avenue) – CSAH 27 is a north-south corridor beginning at CSAH 86 and terminating at CSAH 16 in Savage. Since the 2030 Transportation Plan, CSAH 27 has been realigned to link with Rice County CSAH 3 at CSAH 86.

CSAH 46 (Pillsbury Avenue, north of CSAH 2) – CSAH 46 is a north-south corridor generally paralleling I-35 to the east. The route of old Hwy 65 which I-35 replaced in the 1960s. South of CSAH 2, CSAH 46 is classified by the Metropolitan Council as "other arterial" (see below).

Other / B Minor Arterials

Like "A" minor arterials, other arterials also serve more of a mobility function than an access function. However, they may not have as much regional importance as "A" minor arterials and are not eligible for federal roadway improvement funding. This classification used to be termed "B" minor arterials. The Metropolitan Council now refers to them as "other arterials."

There are two "other arterial" roadways in the Elko New Market area:

CSAH 91 (Nachez Avenue) – CSAH 91 is a north-south corridor that begins at CSAH 86 (280th Street) south of the Elko New Market area, and continues north to CSAH 21 (Eagle Creek Avenue/185th Street), in Credit River Township. CSAH 91 runs through the City limits of Elko New Market. Traffic volumes are significantly heavier on this roadway south of CSAH 2 than north of CSAH 2, partly due to residential development in Elko New Market over the last 10-20 years. The roadway also carries a significant amount of traffic from southerly part of Scott and northerly parts of Rice and Le Sueur counties to and from Interstate 35.

CSAH 46 (Pillsbury Avenue, south of CSAH 2) – CSAH 46 is a north-south corridor generally paralleling I-35 to the east. The route of old Hwy 65 which I-35 replaced in the 1960s. North of CSAH 2, CSAH 46 is classified by the Metropolitan Council as an "A" minor arterial.

Major and Minor Collectors

Collector roadways provide a **balance** of the **mobility** and land-use **access** functions. They generally serve trips that are entirely within the City and connect neighborhoods and smaller commercial areas to the arterial network. Minor collectors generally are shorter in length, with lower volumes and lower speeds than major collectors.

Existing major collector streets are as follows:

Xerxes Avenue – The existing "major collector" portion of Xerxes Trail runs from Glenborough Drive on the south, to CSAH 2 on the north. This street collects traffic from adjacent residential neighborhoods and conveys it to CSAH 2 on the north. 2014 traffic volumes are approximately 2,600 AADT, with counts tapering off further to the south.

Existing minor collector streets are as follows:

France Avenue – The "minor collector" portion of France Avenue runs from CSAH 2 to the main Elko Speedway access approximately 2,000 feet to the south. Elko Speedway is a major traffic generator within the City.

Glenborough Drive – Glenborough Drive, from CSAH 91 on the west to Xerxes Trail on the east, functions as a minor collector street. This primarily residential street was constructed during the 2000's and does include residential driveway access, but based on the "through" design of the street, it functions as a minor collector street. Glenborough Drive collects

traffic from residential neighborhoods and conveys it to higher level roadways. It also serves as access to a local golf course.

Aaron Drive – Aaron Drive, from Webster Street on the west to CSAH 91 on the east, functions as a minor collector street. This primarily residential street was constructed during the 2000's and does include residential driveway access, but based on the "through" design of the street, it functions as a minor collector street. Aaron Drive collects traffic from adjacent residential neighborhoods and conveys it to higher level roadways.

James Parkway – James Parkway, lying west of Dakota Avenue, functions as a minor collector street. This segment of James Parkway was constructed in the mid-2000's. The adjacent properties are primarily undeveloped; however, James Parkway serves as the primary access to Eagleview Elementary School. Current traffic volumes are approximately 1,000 AADT.

Local Streets

Local streets are primarily for **access** to adjacent land uses. Mobility is significantly hampered by traffic entering and leaving driveways, parked cars, and pedestrians and bicyclists. They connect land uses to the collector and arterial street system. They're often designed to discourage through traffic by short blocks, offsets in alignment, or looped layouts to promote the quality of life desired by residents. However, connections to adjacent neighborhoods must also be considered to avoid creating undue inconvenience to residents and unnecessary local traffic on mobility-oriented roads.

The recommended **future** functional classification network is discussed under the Future Roadways and Functional Classification heading of the Roadway System Plan section (see also **Figure 9.5**). There are various existing roadways (e.g. 255th Street East) which are too short currently to be collector roadways, but as these roadways are extended to meet development needs, the City intends to classify them as collectors. When coordinating with developers on roadway design standards, access standards, and similar design parameters, it is the future functional classification of the given roadway as identified on **Figure 9.5** that will apply.

Number of Travel Lanes

All roadways in Elko New Market are two-lane except for the following:

- CSAH 2 (A minor arterial) – four-lane divided from CSAH 91 to west of I-35
- France Avenue (minor collector) – four-lane undivided between CSAH 2 and the main access to Elko Speedway approximately 2,000 feet to the south

TRANSPORTATION QUESTIONS FROM RESIDENTS

The most frequently-asked transportation-related questions or requests from local stakeholders involve the speed of traffic through town, as well as roadway signage and pavement markings. Information is provided under the following headings to address these factors.

Speed Limits

Residents sometimes ask for speed limits to be reduced to slow down traffic. Minn. Statute 169.14 establishes statutory speed limits on most roadways, regardless of what agency has jurisdiction over the roadway (i.e. city, county, state). Speed limits are set by the City at the time a street is opened. The most common speed limits are:

- 10 mph in alleys
- 30 mph on streets in urban districts
- 55 mph on other roads
- 65 mph on expressways
- 65 mph on urban interstate highways
- 70 mph on rural interstate highways

A jurisdiction may reduce the speed limit on residential roadways to 25 mph, or increase speed limits to 35 mph in a rural residential district. All other speed limits are set by the Department of Transportation Commissioner based upon an engineering and traffic investigations.

Studies have shown that lowering a speed limit does not actually reduce speeds or driver behavior. A driver is much more influenced by the roadway design and conditions than the posted speed limit. Likewise, lowering a speed limit is not proven to reduce crashes. Crashes are most often the result of driver inattention and driver error.

More information can be found by visiting the Minnesota Department of Transportation's speed limits page, http://www.dot.state.mn.us/speed/.

Stop Signs

Stop signs are sometimes requested in response to a specific incident or condition involving vehicles and/or pedestrians. Or, in some instances, they are requested as part of a broader desire to reduce travel speeds through town.

The use of stop signs is guided by MnDOT's *Manual of Uniform Traffic Control Devises* (MUTCD). The MUTCD defines a list of conditions under which the installation of stop signs should be considered pending traffic engineering analysis which supports such an action. In the absence of these conditions, stop signs are not recommended. The MUTCD identifies that research suggests that at most low traffic volume locations, increasing the level of intersection control (e.g. through stop signs) will not improve safety (Section 2B.6). It also specifically recommends that stop signs should not be used for speed control.

A general "rule-of-thumb" of traffic engineering is that if control measures such as stop signs are overused, they tend to be disregarded by motorists, and safety or other potential problem conditions can be made worse. The installation of any stop signs on CSAH 2, CSAH 91, or CSAH 27 would be under the authority of Scott County. On City roadways, the City Engineering

department needs to consider any request for stop signs within the context of MUTCD guidance as well as traffic engineering analysis which meets industry standards. This analysis would consider factors such as traffic/pedestrian volumes, crash history, vehicle turning movements, adjacent land uses, and intersection geometry and sight distances.

It is recognized by the City that there are stops signs that exist within the community which likely do not meet the guidance contained in the MUTCD for placement of such signs. Such signs were likely placed many years ago, at a time when the City did not heavily rely on engineering based guidance documents such as the MUTCD. As opportunities arise, the City supports removal of stop signs at locations that do not meet MUTCD guidance.

Pedestrian Crosswalks

Pavement markings such as crosswalks are also often requested by residents with the intention of making it safer to cross a street in a specific location. The nationwide incidence rate of crashes involving pedestrians is extremely low; however, the fears, often expressed by parents, are genuine. The City should respond to these requests with the intention of improving safety rather than assuaging fears. This can be challenging in the face of emotional pleas to take action; however making unwarranted improvements may actually decrease safety – ***no sign or pavement marking, no matter how noticeable, can actually make a motorist stop.*** Measures that reduce pedestrian vigilance can therefore be detrimental to the intended purpose.

Crosswalks are covered in the MUTCD referenced above. However, its guidance for crosswalks is relatively generalized and leaves significant discretion to traffic engineering analysis and judgement. There has been extensive research into the question of whether crosswalks improve pedestrian safety conditions. The results for unsignalized intersections indicate that crosswalks on higher speed arterial roadways actually increase the frequency of pedestrian crashes. Even for lower speed and volume roadways, the research results are inconclusive as to whether crosswalks enhance pedestrian safety conditions.[1]

One strategy that can be effective in improving pedestrian safety and feelings of security is to pay attention to how development may influence the need or desire for pedestrians to cross in a particular location. The location of sidewalks, streets and intersections relative to neighborhoods and park, institutional, or retail uses can often be managed to promote crossings of streets away from busy, higher speed zones, or areas with less sight distance between cars and pedestrians. Mid-block crossings should be avoided, and promoting crossing of the less-busy legs of intersections (providing pedestrian guidance is the actual purpose of crosswalk markings) should be favored if a street crossing is necessary.

The implementation of any new crosswalks on CSAH 2, CSAH 91, or CSAH 27 would be under the authority of Scott County. Regarding requests for new crosswalks on City streets, they should

[1] *Traffic Safety Fundamentals Handbook* (Section C-39), MnDOT, 2015.

be referred to the City Engineering Department for review using MUTCD guidance and analysis by a licensed traffic engineer.

Traffic Operation Change Requests

Recognizing that public input regarding the City's overall transportation system is important, the City of Elko New Market has adopted a formal policy regarding requests related to changes in traffic operations, such as a request for stop sign installation or change in speed limit. The policy documents that any changes in traffic operations shall conform to the Minnesota Manual of Uniform Traffic Control Devices, Minnesota Statute, or engineering based studies.

SUMMARY OF EXISTING TRANSPORTATION STUDIES

A summary of transportation studies most relevant to roadways in the Elko New Market area is provided below.

Highway 2 and 91 Gateway and Access Study/Grant Award

The City of Elko New Market commissioned a study focusing on the CSAH 2/CSAH 91 intersection. The study, completed by Bolton & Menk in May of 2013, evaluated benefits and costs associated with constructing a roundabout at this location. The key findings of the study were as follows:

- A roundabout would have gateway and place-making benefits at this location for those traveling westbound into the downtown (old New Market) area on CSAH 2.
- A roundabout would have operational and safety benefits based on intersection functional area analysis and other well-documented roundabout safety factors.
- A roundabout would be preferable to a conventional signal-controlled intersection in terms of providing access to adjacent land uses and allowing those areas to develop to their highest and best potential.

Following the results of the study, the City, with the assistance and support of Scott County, applied for funding under MnDOT's Highway Safety Improvement Program (2016 solicitation) to construct a roundabout at the CSAH 2/CSAH 91 intersection. This funding was awarded, and the City plans to construct the project in 2020.

Elko New Market Alternative Urban Areawide Review (AUAR)

Ryan Companies initiated discussions with the City of Elko New Market regarding a development project called Park I-35. Park I-35 includes a 125 acre parcel of land envisioned for industrial park/distribution center development in the southeast quadrant of the I-35/CSAH 2 interchange. To clear the area for development in terms of environmental review, the City

conducted an Alternative Urban Areawide Review (AUAR) consistent with Minnesota Environmental Policy Act requirements. The AUAR process was initiated in 2014 and concluded in 2015. It covered not only the 125 acre Ryan parcel, but an additional 140 acres of adjacent land with potential for similar development.

One of the key issues addressed in the AUAR was traffic, and the proposed development's anticipated impacts on surrounding roadways. The traffic analysis included extensive coordination with Scott County and MnDOT. It concluded that interim-level improvements generally including traffic signals and turn lanes at I-35 ramp intersections with CSAH 2 would adequately accommodate traffic growth associated with associated with development at the AUAR site up to 1.5 million square feet of light industrial development. The AUAR analysis identified the ultimate need for replacement of the CSAH 2 bridge over I-35 with a wider bridge section to accommodate additional development beyond 1.5 million square feet.

I-35/CSAH 2 Interchange Environmental Assessment Worksheet (EAW)

Following completion of the Elko New Market AUAR which identified the long-term need for replacement of the CSAH 2 bridge over I-35, government agencies convened an effort to identify the preferred long-term solution to the bridge replacement. A comprehensive review of the interchange was completed, including preparation of an EAW.

The purpose of the interchange review was to:

- Identify the appropriate interchange design
- Provide information to guide local land use planning and preserve the necessary right-of-way for the interchange footprint

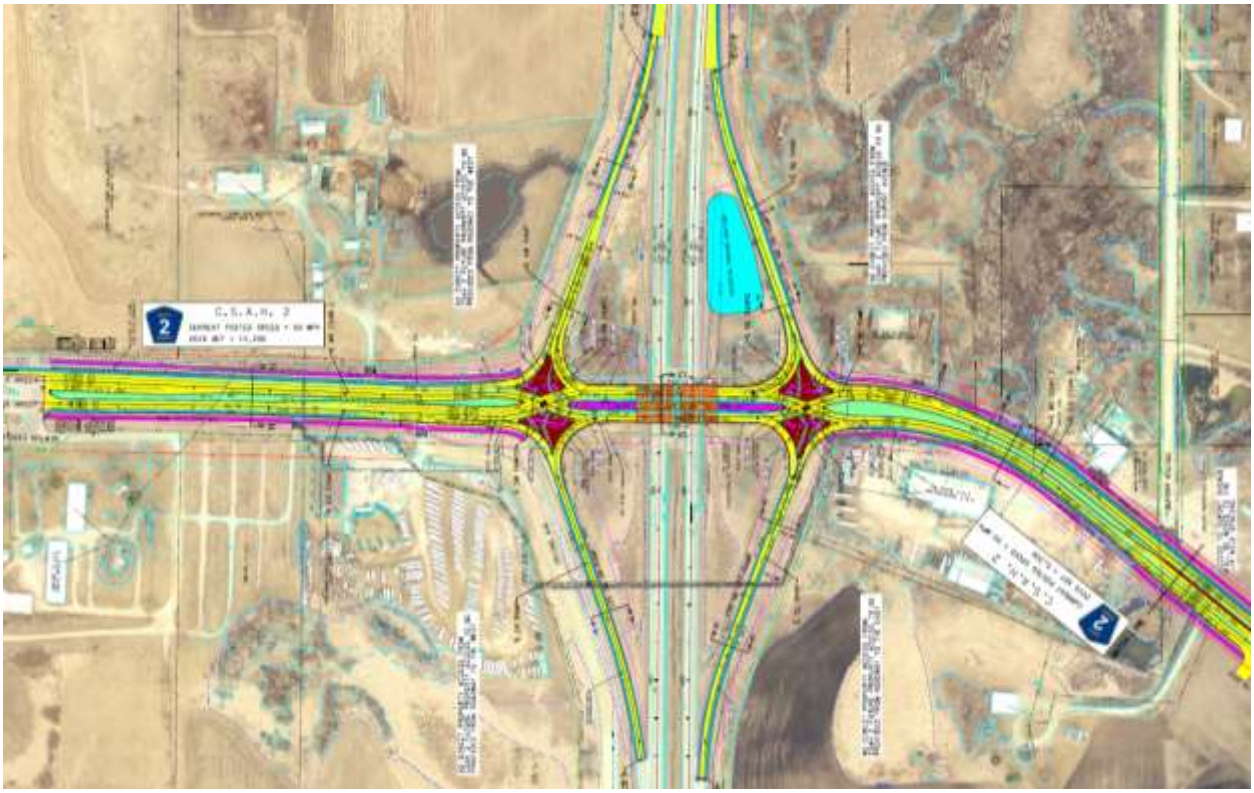
The study process supporting the EAW analyzed the following interchange designs:

- Traditional diamond interchange
- Diverging diamond interchange
- Partial cloverleaf interchange
- Single point urban interchange

A diverging diamond interchange was selected to be evaluated in the EAW. This selection was based on evaluation of the following primary factors:

- Operational/safety benefits
- Cost
- Right-of-way and environmental impacts

Preferred Diverging Diamond Layout



MnDOT, Scott County, the City of Elko New Market, and New Market Township ultimately entered into a Memorandum of Understanding regarding the diverging diamond interchange design whereby all agencies agreed to guide to development in such a manner that would preserve the ability to construct the diverging diamond at some point in the future. Ultimate reconstruction of the interchange will require improvements to CSAH 2 to include widening and channelization.

The interchange project is currently not programmed or funded in any government capital improvement plan.

CSAH 2 Development Infrastructure Needs Study

The City of Elko New Market commissioned this study to review roadway and other infrastructure needs to support future development on either side of CSAH 2 between CSAH 91 and I-35, a distance of approximately two miles. The purpose of the study was to perform technical analyses and solicit stakeholder input to help define the City's future infrastructure plans along this stretch of CSAH 2. This will inform the City's funding plans and facilitate discussions with developers. The focus of the summary below is on the roadway elements of the study; however, the study also covered utility elements.

To comply with Scott County access management guidelines, development along CSAH 2 in the study area will rely on a new collector roadway system parallel to CSAH 2 which will provide frontage/backage access to properties. The study addressed two challenges:

- Under current City access management guidelines, private access is not allowed on major collector streets, and access on minor collectors must have a minimum 1/8 mile (660 feet) setback from the intersection of a collector or higher level roadway.
- The current design guidelines for collector roadways as defined in the 2030 Elko New Market Transportation Plan call for relatively high-cost roadways relative to initial demand when development commences.

To address these factors, the study created a new collector classification, "commercial collector." These roadways would be designed to provide more of a mobility/connectivity function than local streets, but would allow flexibility regarding access and design characteristics. The study identified that design standards will be established for commercial collectors which include:

- Narrower widths (relative to current City collector standards) achieved by restricting parking
- Commercial access allowed as guided; access sharing promoted
- Use of turn lanes as volumes dictate, meaning associated rights-of-way must be preserved
- Heavier-duty pavement sections to facilitate truck traffic to support commercial deliveries and services
- Use of a continuous two-way center left turn lane in some cases where projected volumes dictate or the opposite half of the roadway from planned development isn't ready to make improvements. The section would provide an interim, fire-code compliant roadway design.

The location and access provisions of the envisioned commercial collectors considered as part of this study are identified on **Figure 9.6**.

Adelmann Family Property Alternative Urban Areawide Review (AUAR)

The Adelmann family initiated discussions with the City of Elko New Market regarding development of approximately 250 acres on the west side of the I-35/CSAH 2 interchange. The property is envisioned to contain a mixture of commercial, business park, and medium density residential uses. To clear the way for development in terms of environmental review, an Alternative Urban Areawide Review (AUAR) has been drafted but not yet adopted. The draft document includes a detailed Traffic Impact Study.

Some of the key items addressed in the Traffic Impact Study were the proposed development's anticipated impacts to CSAH 2 and the need for improvements at key CSAH 2 intersections. The traffic study also concluded that there are failing level of service issues at the interchange ramps which will continue to worsen, regardless of development. The AUAR analysis identified the ultimate need for replacement of the CSAH 2 bridge over I-35 with a wider bridge section to accommodate additional development.

ROADWAY SYSTEM PLAN

Future Roadways and Functional Classification

With anticipated development in the City's 2040 growth area, the roadway network will need to be expanded accordingly. The City has identified a future network of collector roadways to support future development and limit the volume of local trips on arterials (most notably CSAH 2). The City's future roadway network is depicted on **Figure 9.5**. This map also depicts the Metropolitan Council functional classification. It is noted that not all of the future roadways identified will be constructed by 2040; the collector system should be constructed as actual development occurs. However it is necessary to have a long-term vision in place as the system is built incrementally.

Figure 9.6 depicts Elko New Market commercial collectors. This designation is not part of the Metropolitan Council classification system, and therefore is not depicted on **Figure 9.5**. However, the City has jurisdiction over its roadways regarding design and access standards. The concept of commercial collectors was a result of the CSAH 2 Infrastructure Development Needs Study summarized earlier in this Transportation Chapter.

Traffic Forecasts for 2040 Roadway Network

The roadway network assumed for the 2040 traffic forecast analysis includes the existing network, plus anticipated funding-constrained improvement projects. Neither the City of Elko New Market nor Scott County have any programmed new roadway or capacity expansion improvement projects within the current city limits or 2040 growth boundary.

Scott County entered into an agreement with its cities and townships, including Elko New Market, to perform traffic forecasting using the Metropolitan Council regional forecast model in their 2040 transportation plans. Following Metropolitan Council guidelines, Scott County assumed one funding-constrained improvement within the City by 2040 – construction of a minor collector CSAH 2 service road on the south side of the highway between France Avenue and approximately Newton Circle. While this improvement is not programmed, the City considers it likely by 2040 and it met County requirements for being included in the 2040 model. In the City's functional classification system, this is a commercial collector roadway.

It may be noted that other improvement projects have been studied and/or discussed and may be constructed prior to 2040. This includes:

- I-35/CSAH 2 interchange reconstruction project discussed previously in this report. It is anticipated that this project will add one travel lane in each direction on CSAH 2 between approximately Newton Circle and the interchange on the west side. East of the interchange, the County is planning for a three-lane roadway from the interchange to approximately a quarter mile east of Dupont Avenue.

- Continued buildout of the commercial collector network identified on **Figure 9.6**

- Construction of other future City collector roadways depicted on **Figure 9.5**.

Construction of these and other potential projects would be dictated by development demand and/or funding availability. Construction of these projects would not be anticipated to affect the 2040 volumes on the regional minor arterial network. Using applicable design standards per information elsewhere in this Transportation Plan, the roadways would be able to handle the projected 2040 volumes.

Transportation Analysis Zone Information and 2040 Forecast Results

Traffic forecasts are based on the use of Transportation Analysis Zones (TAZs). Each TAZ has demographic and employment information that translates to vehicular trip origins and destinations. Computer models assign the resulting trips to specific routes (roadways). The baseline TAZs for metro communities to be used in the 2040 comprehensive planning process were defined by the Metropolitan Council.

A map of Elko New Market TAZs is provided on **Figure 9.7**. The anticipated future land use patterns discussed in the Land Use chapter of this Comprehensive Plan were assumed for the 2040 TAZ allocations identified in **Table 9-**1. Projections are also provided for 2020 and 2030 consistent with Metropolitan Council requirements for the transportation elements of 2040 Comprehensive Plans.

Table 9-1

Elko New Market TAZ Projections									
TAZ	**2020**			**2030**			**2040**		
	HH	**Pop**	**Jobs**	**HH**	**Pop**	**Jobs**	**HH**	**Pop**	**Jobs**
2259	600	1,424	200	707	2,006	210	1,026	2,620	219
2260	575	1,220	260	606	1,720	270	880	2,422	280
2261	412	2,019	325	1,003	2,847	375	1,457	4,034	415
2262	413	1,437	845	714	2,027	925	1,037	2,824	1,026
TOTAL	**2,000**	**6,100**	**1,630**	**3,030**	**8,600**	**1,780**	**4,400**	**11,900**	**1,940**

It should be noted that Metropolitan Council requirements dictate that all future growth be assigned within existing City limits for these estimates. Given this restriction, an attempt was made to reflect some anticipated growth that will more likely take place outside of existing City limits. This affects projections for 2040, and back to 2020, in the table.

Future Roadway Capacity Evaluation for 2040 Traffic Forecasts

Traffic modeling was completed by Scott County, as referenced previously, and generated 2040 traffic projections for primary roadways. These results are presented as average daily traffic (ADT) on **Figure 9.8**. Adjustments relative to the County forecasts were made at certain locations, following professional traffic engineering practices and judgement, to account for local conditions.

Table 9-2 provides a method to evaluate roadway capacity for mid to long-range planning purposes. Typical roadway capacities are presented for different roadway types. These capacities are presented in terms of vehicles per day, and may be compared against the projected 2040 volumes summarized on **Figure 9.8**. These estimates were based on methods and guidance from Transportation Research Board's *Highway Capacity Manual*.

Table 9-2

Typical Traffic Capacity by Roadway Type/Configuration For Roadways in Elko New Market	
Roadway Design	**Planning Level Capacity (vehicles per day)**
Gravel road	500
2-lane local/residential road	1,000
Urban 2-lane minor collector	1,700
Urban 2-lane undivided (major collector/minor arterial)	11,000
Rural 4-lane divided (minor arterial)	37,000
Source: Bolton & Menk, Inc., using methods from Highway Capacity Manual, Sixth Edition	

Based on the projected 2040 traffic volumes on primary roadways relative to the identified capacity estimates, it is not anticipated that significant roadway expansions will be required by 2040. While forecasts are not included for all future collector roadways, these roads will be able to handle future traffic volumes as long as they are built according to City standards as summarized in this Transportation Plan.

Please note that this capacity review is for overall roadway segments and does not cover any detailed intersection analyses which may be required over the planning horizon.

Design Speed

The design speed of a roadway is directly related to the roadway's function in the roadway system. The focus of minor arterial roadways is mobility; therefore these roadways should be designed to accommodate higher travel speeds. Likewise, minor collector roadways are more focused on land use access and should be designed to accommodate lower travel speeds. The function of major collectors is balanced between mobility and accessibility; therefore, these roadways should be designed accordingly. **Table 9-2(a)** presents the recommended design speeds for the Elko New Market roadway network.

Table 9-2(a)

Roadway Design Speed Guidelines	
Functional Classification	**Design Speed[(1)]**
Minor collector street	30 mph
Major collector roadway	30 – 40 mph
Minor arterial roadway	45 – 55 mph
[(1)]At the discretion of the City Engineer for City roadways, with approval by the City Council.	

Recommended Roadway System Improvements and Studies

No major studies concerning local roadways are identified at this point. Smaller scale studies may be required as individual properties develop to determine the development's impact on the surrounding road network.

The improvements to the CSAH 2 / I-35 interchange as described previously (interim improvements and full interchange replacement) are a high priority for the City. The City will continue to actively promote efforts to advance these improvements. The City will also support future efforts to study an I-35 interchange at CSAH 86.

"Mini Roundabouts" are roundabouts having much smaller inscribed diameters than conventional roundabouts, which generally allows them to fit within a standard intersection layout. The idea behind this type of installation is that they are relatively inexpensive and provide the safety benefits of typical roundabouts (on lower volume roadways), yet also provide more operational capacity than a four-way stop sign intersection. They can have significant pedestrian safety benefits by reducing travel speeds through the intersection and by providing a pedestrian refuge on splitter islands if they are designed in this manner. The City will evaluate mini roundabouts where appropriate as retrofits of existing intersections and/or as the future collector network is built out.

Future Jurisdictional Classification

The City does not anticipate that there will be any jurisdictional transfer of roadways in the 2040 planning period, other than transfers from township to city in conjunction with potential annexations.

Access Management

The purpose of access management is to provide adequate access to adjacent land development while also maintaining traffic flow on higher level roadways. Management consists of carefully controlling the spacing and design of public street intersections, as well as the location of private access points (driveways) on the public roadway system based on the roadway functional classification system discussed previously. Arterials, being designed for higher speed, longer-distance trips, generally have restricted access. Conversely, local streets serve low speed, short distance trips and therefore can accommodate much greater access than arterials. Collector roadways fall in between arterials and local streets regarding the amount of access that is permitted.

The government agency that has jurisdiction over a given roadway defines the applicable access management guidelines for that roadway. Since there are no trunk highways in the Elko New Market area, MnDOT access management guidelines to not directly apply. However, Scott County guidelines apply for County roads in the Elko New Market area. Most notably, this

includes CSAH 2 and CSAH 91, but also includes CSAH 27 and CSAH 86. Scott County access management guidelines are presented in **Appendix T-1**.

The City of Elko New Market determines guidelines for appropriate access spacing and design for City streets. These guidelines are presented on **Table 9-3** and **9-4. Table 9-3** provides guidelines for private access points (driveways), and **Table 9-4** provides information on City spacing/access guidelines for roadways.

Table 9-3

City Driveway Dimension and Access Guidelines [1]		
Driveway Dimensions/Access Permitted	**Driveway Type**	
	Residential[2]	**Commercial or Industrial**[2]
Driveway Width	11' – 27' (16' Desired)	16' – 32' (32' desired)
Minimum Distance between Driveways	20'	20'
Minimum Corner Clearance from an intersecting Collector Roadway	60'	80'[3]
Direct Access to a Major Collector	Not Permitted[4]	Not Permitted[4]
Direct Access to a Minor Collector	Discouraged[5]	Discouraged[5]
Direct Access to a Commercial Collector	Permitted with Review[6]	Permitted with Review[6]

[1]Spacing distances measured from curb to curb.
[2]Unless shared/common driveway.
[3]At the discretion of the City Engineer, 80' minimum.
[4]Access to major collectors is limited to public streets only. Steps must be taken to redirect private access to other local streets. New private access to major collectors is not permitted unless deemed necessary by the Elko New Market City Council.
[5]Whenever possible, residential access must be directed to local streets rather than minor collector roadways.
[6]An important function of commercial collectors is to provide controlled access for commercial land uses. Commercial driveways connecting to these roadways must be set back 660' feet from intersecting roadways to allow for turn lanes, vehicle queues, and driver decision-reaction requirements. Commercial properties are encouraged to use common accesses with adjacent properties. Cross traffic between adjacent compatible properties must be accommodated when feasible.

Table 9-4

City Roadway Spacing Guidelines [1]		
Type of Collector Roadway being Accessed	**Minimum Spacing from an adjacent Collector/Arterial Roadway**	
	Residential[2]	**Commercial or Industrial**[2]
Major Collector	660'	660'
Minor Collector	300'	660'
Commercial Collector	N/A	660'

[1]Spacing distances measured from centerline to centerline. These guidelines apply to City streets only. Scott County and MnDOT have access authority for roadways under their jurisdiction. Please refer to Scott County's minimum access spacing guidelines in the Transportation element of their current Comprehensive Plan.
[2] Based on predominant adjacent land use.

As identified previously, it is the future functional classification map (**Figure 9.5**) that applies when coordinating with developers and others regarding access spacing and setbacks. City commercial collectors are identified on **Figure 9.6**.

Geometric Design Standards and Right-of-Way Preservation

A system of design guidelines is an effective tool to help provide safe, efficient, and consistent roadway networks within communities. Some situations may require additional analysis due to unusual or unforeseen conditions, but established baseline standards will minimize design uncertainty in many circumstances. These guidelines also help define right-of-way (ROW) needs for different categories of roadways.

As depicted on **Figure 9.9** (sheets 1 and 2), typical sections have been defined for the following categories of City streets:

- Local residential
- Minor collector
- Commercial collector
- Major collector

Figure 9.9 shows recommended roadway dimensions, adjacent non-motorized facilities, and overall ROW needs. It may be noted that the collector level roadways have Baseline Design information, as well as Extended/Future Design information. This is based on the fact that new collector level roadways are often initially constructed when the adjacent development is limited and corresponding traffic needs are not extensive. However, as adjacent development advances and increased traffic needs are realized, then the demand on collector roadways increases. Often it does not make sense from an economic and assessment perspective to construct the full design for a collector roadway when the full traffic demand on it will not be realized 10 or 15 years or more into the future. However, it is very important that the ROW is preserved for the ultimate design so future costly and socially disruptive property acquisitions do not need to take place. In addition, the initial design should be consistent with the intended ultimate design in terms of alignment, intersection spacing, and other factors.

Traffic Impact Studies

Traffic Impact Studies are utilized to evaluate the interaction between existing transportation infrastructure and proposed land use development projects. The basic premise is that land development generates new traffic that will travel on the adjacent roadway system, and that the amount of traffic and the relative impact to the transportation system is predictable. Traffic Impact Studies:

- Identify potential adverse impacts to the existing transportation system and to the proposed development such as:
    - On-site congestion and/or congestion on adjacent roadways

  - Inadequate access capacity
  - Crash experience / crash expectancy
- Assist public and private sector entities in identifying and resolving issues related to the location of driveways, public streets, traffic controls (i.e. signals, signs, striping) and other transportation facilities that are requested.
- Assist in long term planning such that the extension and growth of the transportation system may occur in a manner than is comprehensive in nature and supportive of public good.

To assist in identifying impacts to the transportation system, the City of Elko New Market supports the requirement for a Traffic Impact Study if any of the following conditions are expected:

- A development will generate 100 or more new a.m. or p.m. peak hour vehicle trips.
- A development will generate 750 or more new daily vehicle trips.
- New development traffic will substantially affect an intersection or roadway segment already identified as operating at an unacceptable level of service.
- The development would likely create a hazard to public safety.
- The location of the development is in an environmentally or otherwise sensitive area, or in an area which is likely to generate public controversy.
- The development will substantially change the off-site transportation system or connections to it.

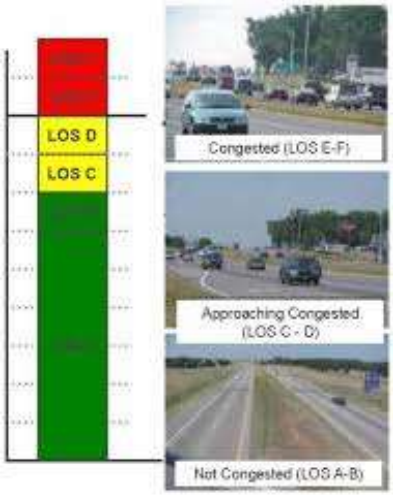


FIGURE 1
Level of Service Thresholds of Congestion

Trip generation should be estimated using the ITE Trip Generation Handbook (10th Edition or most current publication). The City will utilize the quality of traffic operations as the key performance measure for the roadway system within the City. The Highway Capacity Manual estimates the quality of traffic flow in letter grades (A – F). The City establishes, as a citywide target, a Level of Service (LOS) "C" on all roads and intersections within the City. When the LOS without development is LOS A, B or C, the minimum acceptable projected LOS shall be LOC C. When the LOS without development is LOS D, E or F, the minimum acceptable LOS shall be equal to the LOS without development. See table 9-5.

Table 9-5

Acceptable Levels of Service with New Development Development							
	Level of Service without Development						
Projected Level of Service (with Proposed Development		A	B	C	D	E	F
	A	N.A.					
	B	B	N.A.				
	C	C	C	N.A.			
	D	C	C	C	N.A.		
	E	C	C	C	D	N.A.	
	F	C	C	C	D	E	N.A.

TRANSIT

The Metropolitan Council has established a series of Transit Market Areas throughout the metropolitan area as a guide for the provision of appropriate transit service. Transit Market Areas are defined by the demographic and urban design factors that are associated with successful transit service. There are five Transit Market Areas with Transit Area I having the most potential for successful transit (high population density, high job density, dense network of local routes, high percentage of transit-dependent residents, and other factors), and Transit Area V having the least potential for successful transit service.

The Metropolitan Council has categorized Elko New Market as being Transit Market Area V. The Metropolitan Councils System Statement for Elko New Market describes Market Area V as follows:

> *Transit Market Area V has very low population and employment densities and tends to be primarily Rural communities and Agricultural uses. General public dial-a-ride service may be appropriate here, but due to the very low-intensity of land uses, these areas are not well-suited for fixed-route transit service.*

There currently is no scheduled transit service in Elko New Market. The closest scheduled service is commuter service provided by Metro Transit to downtown Minneapolis via the Lakeville Kenrick Avenue Park & Ride facility. This facility is approximately nine miles north of the I-35/CSAH 2 interchange. There is no transitway as defined in the Metropolitan Council's 2040 Transportation Policy Plan in or near Elko New Market. The closest identified transitway is the proposed Metro Orange Line (I-35W Bus Rapid Transit). The southernmost Orange Line station is identified in Burnsville, approximately 14 miles north of the I-35/CSAH 2 interchange.

Elko New Market is not in the metro area transit taxing district. It is not anticipated that there will be sufficient demand for commuter transit in Elko New Market to justify extending scheduled transit service along I-35 to Elko New Market through the 2040 planning horizon. However, it is recommended that the City consider a park-and-ride location close to the I-35/CSAH 2 interchange to help foster new van/car pools. This could provide the basis for a transit facility providing commuter service to the core metro area pending future development and associated transit demand within the City.

Dial-a-ride service in Elko New Market is provided by SmartLink, which is under contract with Scott and Carver Counties. Buses operate Monday through Friday from 6 a.m. through 7 p.m. Rides can be provided to/from any location in the seven county Metro area; in some cases a transfer to another transportation provider may be required. Rides are booked in advance through SmartLink customer service agents.

BIKING AND WALKING

Existing and Planned Facilities

Existing and planned sidewalk and trail facilities are discussed and mapped in the Parks and Recreation Chapter of this Comprehensive Plan. Please refer to Figure 10.4 in that Chapter. The facilities discussed therein are primarily those not tied to a roadway corridor. The City's Subdivision Ordinance requires construction of pedestrian and biking facilities along roadway corridors with new developments. In general, shared use paths are required when development occurs next to a collector or arterial roadway. Sidewalks are required at a minimum on one side of local and minor collector streets.

Regional Bicycle Transportation Network (RBTN)

There are no RBTN alignments or corridors as designated by the Metropolitan Council in or near the City of Elko New Market. The closest RBTN location is a Tier II alignment approximately five miles to the northeast, on the other side of I-35.

Removal of Non-Motorized Barriers

The largest barriers to non-motorized movements in Elko New Market are CSAH 2 and CSAH 91 (in particular south of CSAH 2). CSAH 2 is an important east-west regional highway with a connection to I-35 which is located approximately two miles east of its intersection with CSAH 91. CSAH 2 currently has an average daily traffic (ADT) count of 6,400 through the old downtown New Market area, and 9,200 east of CSAH 91. East of CSAH 91, it is a four-lane divided facility. CSAH 91 is a north-south arterial roadway with a current ADT of 1,050 north of CSAH 2 and 4,050 south of CSAH 2. CSAH 2 at CSAH 91 is the most prominent intersection within the City. These volumes are expected to increase during the 2040 planning cycle, increasing the impact on non-motorized movements.

While higher vehicular volumes can mean fewer gaps available for pedestrian crossings and therefore longer wait times, the real peril of these roadways to pedestrians and bicyclists is speed. Higher speed roadways tend to be wider and are more difficult to judge available crossing time. Motorists on these roadways are less inclined to stop for pedestrians, perhaps because speed on the road is otherwise unfettered and/or pedestrian crossings are rare. It takes longer for an emergency stop on these roads if a pedestrian makes an unexpected entry to the roadway. Perils are even greater where the roadway has four lanes – one approaching car may stop, encouraging a pedestrian to proceed, while the car following in the adjacent lane may not stop for the pedestrian.

One project that should help reduce the non-motorized barrier aspect for both the highways identified above is a roundabout that is planned for construction in 2020. Relative to the current thru-stop traffic control conditions (stop signs on the CSAH 91 legs only), the roundabout will improve pedestrian safety conditions by substantially slowing vehicular speeds on CSAH 2 through the intersection. Also, pedestrians wishing to cross from the one side of CSAH 2 to the other at this location must currently cross six lanes (two turn lanes and four thru lanes) with no pedestrian safety features. The proposed roundabout includes a CSAH 2 pedestrian crossing on the west side of the roundabout which will include pavement markings and a refuse area within

the splitter island. Pedestrians will have fewer lanes to cross than under current conditions. Also included are CSAH 91 pedestrian crossings on both the north and south sides of the proposed roundabout.

As the City develops its collector roadway network in the years to come, it plans to evaluate mini-roundabouts at all potentially viable locations. This type of design has vehicular safety benefits and, relative to uncontrolled or thru-stop control only conditions, pedestrian safety benefits as well. Benefits are primarily because of reduced travel speeds through the intersection as well as breaking each pedestrian crossing into two separate crossing with the splitter island as a refuge.

The City will continue to work with Scott County to evaluate pedestrian safety features along the county road system. This will be particularly important as development advances and pedestrian barrier and safety considerations become more pronounced.

AVIATION

The closest metro airport to Elko New Market is the Lakeville Airlake Airport, located approximately five miles to the northeast. The City is not impacted by an airport. There are no radio beacons or other air navigation aids sited in off-airport locations in or near Elko New Market.

There are no structures within Elko New Market that exceed 500 feet in height. Any applicant who proposes to construct a structure 200 feet above the ground that could affect navigable airspace level must get appropriate approvals. The Federal Aviation Administration and the Minnesota Department of Transportation must be notified at least 30 days in advance in advance of construction, as required by law per MCAR 8800.1200, Subpart 3 and FAA Form 7460-8. It is unlikely such a structure would be proposed in Elko New Market.

FREIGHT

There are no railways, barge facilities or freight terminals within or near Elko New Market. There are no industrial parks or large commercial centers at this time that would generate significant freight movement. As discussed previously, the City of Elko New Market conducted an Alternative Urban Areawide Review (AUAR) covering a 265 acre area of proposed industrial park/distribution center land use in the southeast quadrant of the I-35/CSAH 2 interchange. One of the primary issues covered was transportation. This development could significantly increase freight movement on City, County, and State roadways. The AUAR process included extensive coordination between the City, Township, Scott County, and MnDOT. The agencies have a good understanding of how traffic and freight movement generated from future industrial development may affect the surrounding transportation system.

TRANSPORTATION FUNDING SOURCES

There are a number of funding mechanisms currently available or available in the future to support Elko New Market transportation projects, including those addressed under the following headings.

Minnesota State Aid Street (MSAS) System

To support the state's system of streets, roads and bridges, MnDOT distributes funds for roadway maintenance and construction to counties, cities and townships based on a formula determined by the Legislature. Local agencies must have a minimum population of 5,000 to receive State Aid funding. Within each eligible city, up to 20 percent of the local streets and county roads may be designated as MSAS. A street may be selected as MSAS if:

- It is projected to carry a relatively heavy traffic volume and/or is functionally classified as collector or arterial as identified on the city's functional classification plan.
- Connects points of major traffic interest, parks, parkways, or recreational areas.
- Provides an integrated and coordinated highway and street system affording, within practical limits, an overall state-aid network consistent with projected traffic demands.

The City of Elko New Market is close to the 5,000 population threshold, and will be able to use this funding source once the threshold is reached. It should be noted that for the competitive grant programs addressed in the following headings, Elko New Market generally would need to work with Scott County as the application sponsor until the City becomes a State Aid city (5,000 residents).

Regional Solicitation Federal Funding

The Regional Solicitation is a funding resource for local projects with federal transportation funds. The solicitation is traditionally run on a biennial basis and administered by the Metropolitan Council within the seven-county metropolitan area. This is a competitive solicitation process for agencies including Elko New Market, with the application process and evaluation criteria periodically updated by the Transportation Advisory Board (TAB) of the Metropolitan Council to accommodate regional needs. The application categories are:

<u>Roadway</u>

- Roadway expansion
- Roadway reconstruction/modernization
- Roadway system management
- Bridge rehabilitation/replacement

<u>Bicycle and Pedestrian Facilities</u>

- Multi-use trails and bicycle facilities
- Pedestrian facilities

- Safe Routes to School

Transit

- Transit expansion
- Travel demand management
- Transit system modernization

Local agencies must provide a minimum 20 percent match for awarded projects.

MnDOT Local Road Improvement Program (LRIP)

This program provides funding on a competitive basis to local agencies constructing or reconstructing roadways. Criteria for this program include:

- The regional significance of the route
- Effectiveness of the proposed project in eliminating a transportation system deficiency
- Number of persons positively impacted by the project
- The project's contribution to other local, regional, or state economic development or redevelopment efforts

MnDOT Cooperative Agreement Funds

MnDOT's Cooperative Agreements section provides MnDOT trunk highway construction funding through a competitive selection process to local agencies for roadway improvement projects. The program selects projects that are initiated and administered by a local agency, involving a trunk highway such as I-35, where MnDOT funds are utilized for part of the project to the mutual benefit of all partners. The program relies on the initiative of the local agencies and their commitment to making roadway improvements.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including locally-owned roads. The HSIP requires a data-driven, strategic approach to improving highway safety with a focus on performance. In Minnesota, this program is administered by MnDOT, which on a periodic basis awards HSIP grants on a competitive application process. The future roundabout at CSAH 2 and CSAH 91 received funding through this program.

Transportation Economic Development Infrastructure (TEDI)

Minnesota cities, counties and other government entities can apply for matching funds for transportation infrastructure projects that support economic development through MnDOT and the Minnesota Department of Employment and Economic Development (DEED). The TEDI program, jointly administered by MnDOT and DEED, awards funds on a competitive basis to

projects on local roadways and non-roadway transportation projects. It is administered on a parallel basis with the Transportation Economic Development (TED) program, which focuses more on the trunk highway network. The TED/TEDI grant programs are designed to help meet the state's transportation and economic development needs by creating and preserving well-paying jobs and leveraging private and local investment in transportation infrastructure.

Minnesota Department of Natural Resources Grants

Various federal and state grants as administered by the Minnesota Department of Natural Resources (MnDNR) are available for the development or reconstruction of recreational trails. These programs include the Federal Recreational Trail Grant Program, the Regional Trail Grant Program, the Outdoor Recreation Grant Program, and the Local Trail Connections Program. Typically these grants require a 25 percent local match (50 percent match in the case of the Outdoor Recreation Grant Program), and demonstration that the trail is not only of local but regional significance. Grants are awarded on a competitive application process.

Private Developer Contributions

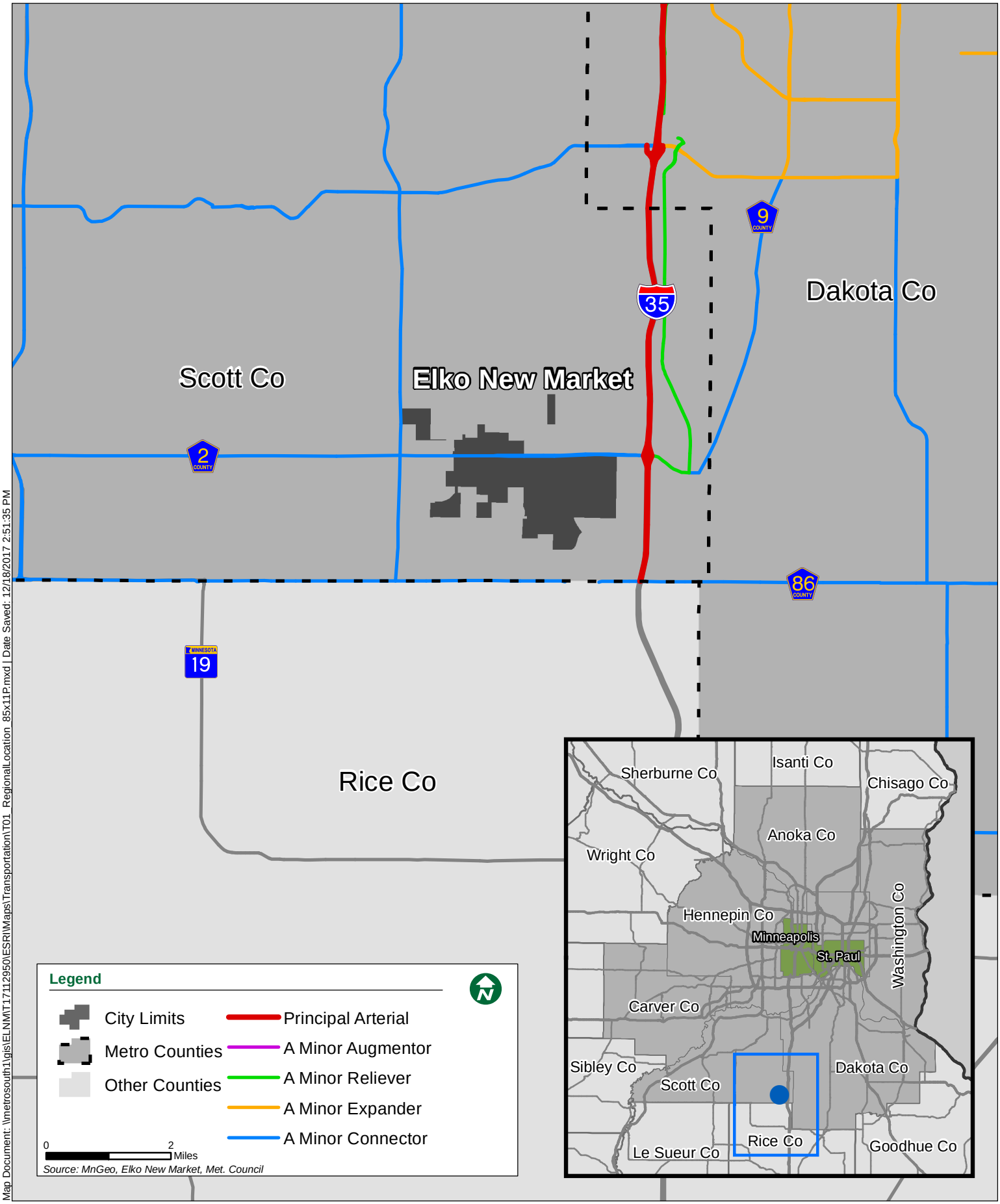
Developers may be required to fund the entire cost of collector roadways, as well as local streets, as a part of their development fees.

2040 Comprehensive Plan

City of Elko New Market, Minnesota

Regional Location Map

Figure 9.1



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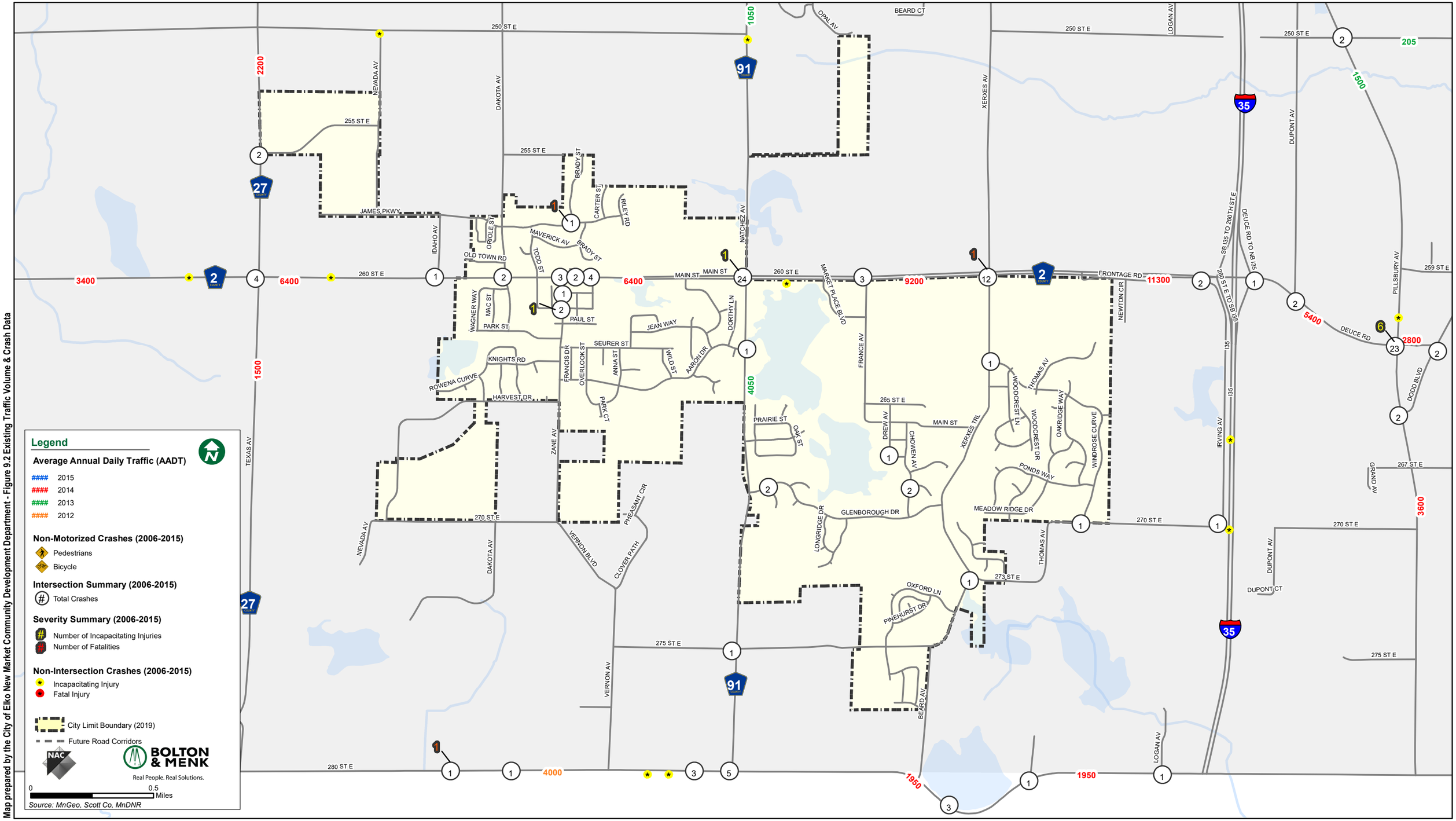
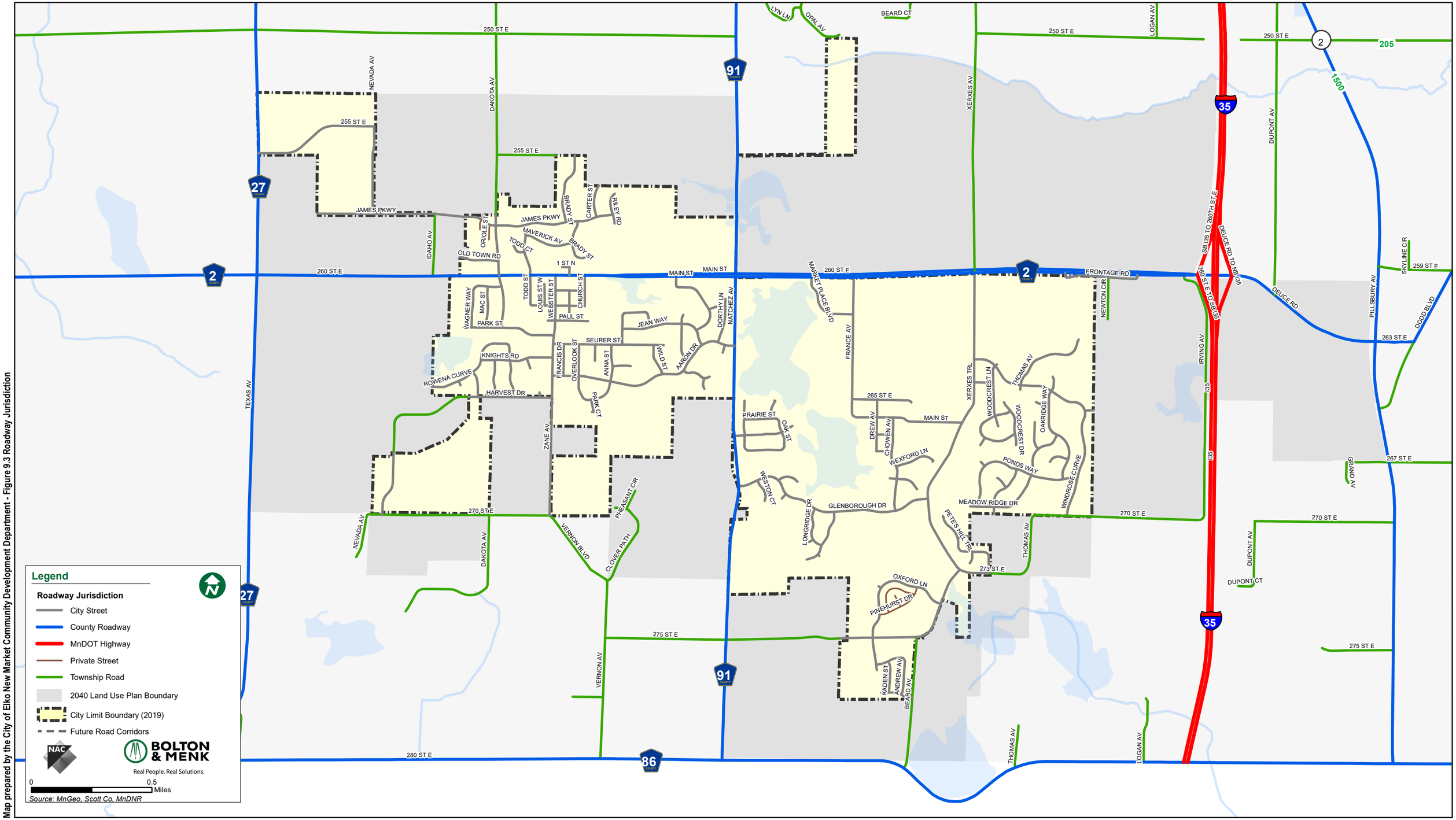
Existing Traffic Volume & Crash Data
Figure 9.2



Map prepared by the City of Elko New Market Community Development Department - Figure 9.2 Existing Traffic Volume & Crash Data

Roadway Jurisdiction
Figure 9.3



Legend

Roadway Jurisdiction

- City Street
- County Roadway
- MnDOT Highway
- Private Street
- Township Road
- 2040 Land Use Plan Boundary
- City Limit Boundary (2019)
- Future Road Corridors

NAC

BOLTON & MENK
Real People. Real Solutions.

0 0.5 Miles

Source: MnGeo, Scott Co, MnDNR

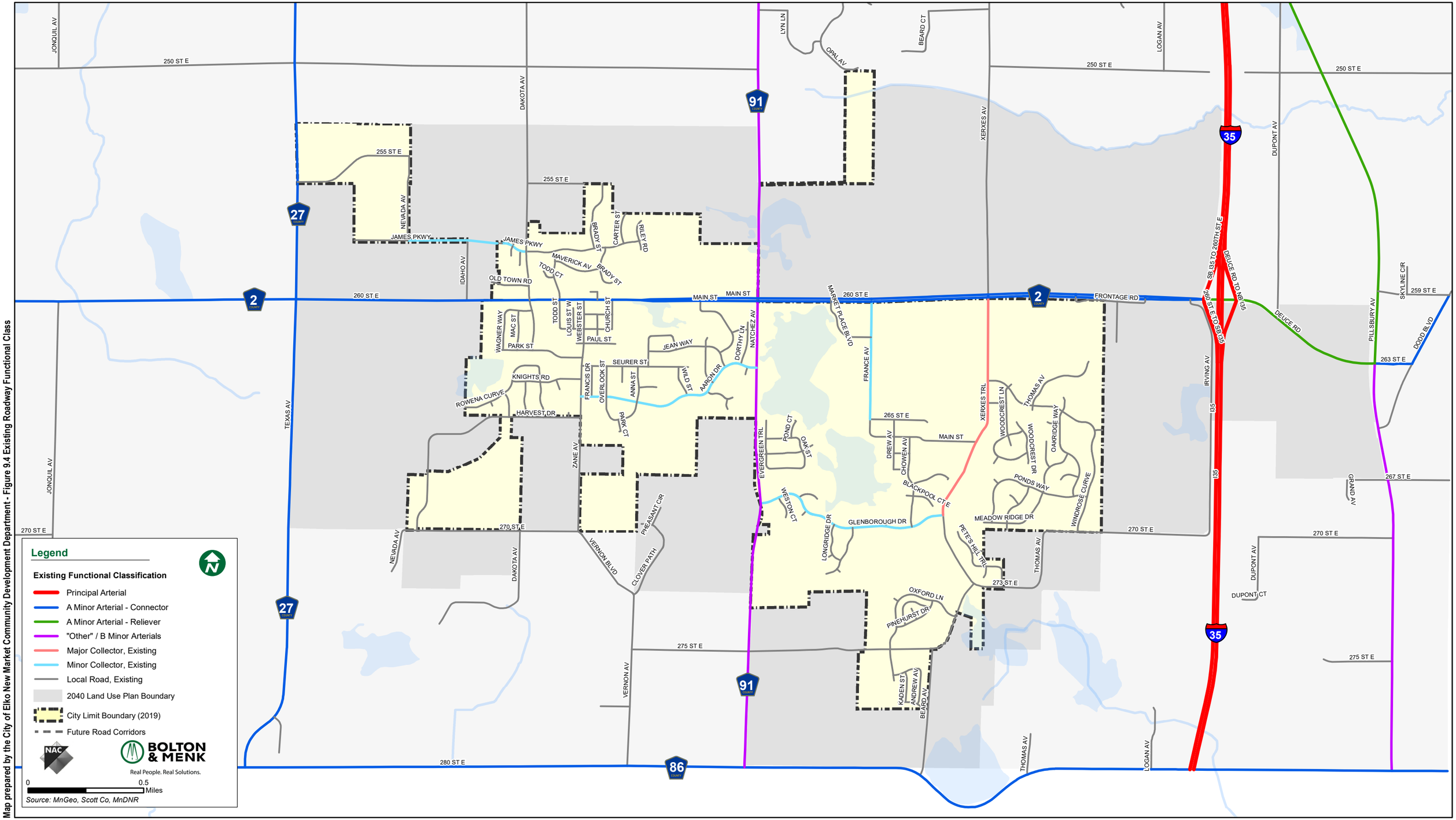
Map prepared by the City of Elko New Market Community Development Department - Figure 9.3 Roadway Jurisdiction

2040 Comprehensive Plan

Elko New Market, MN

Existing Roadway Functional Class

Figure 9.4



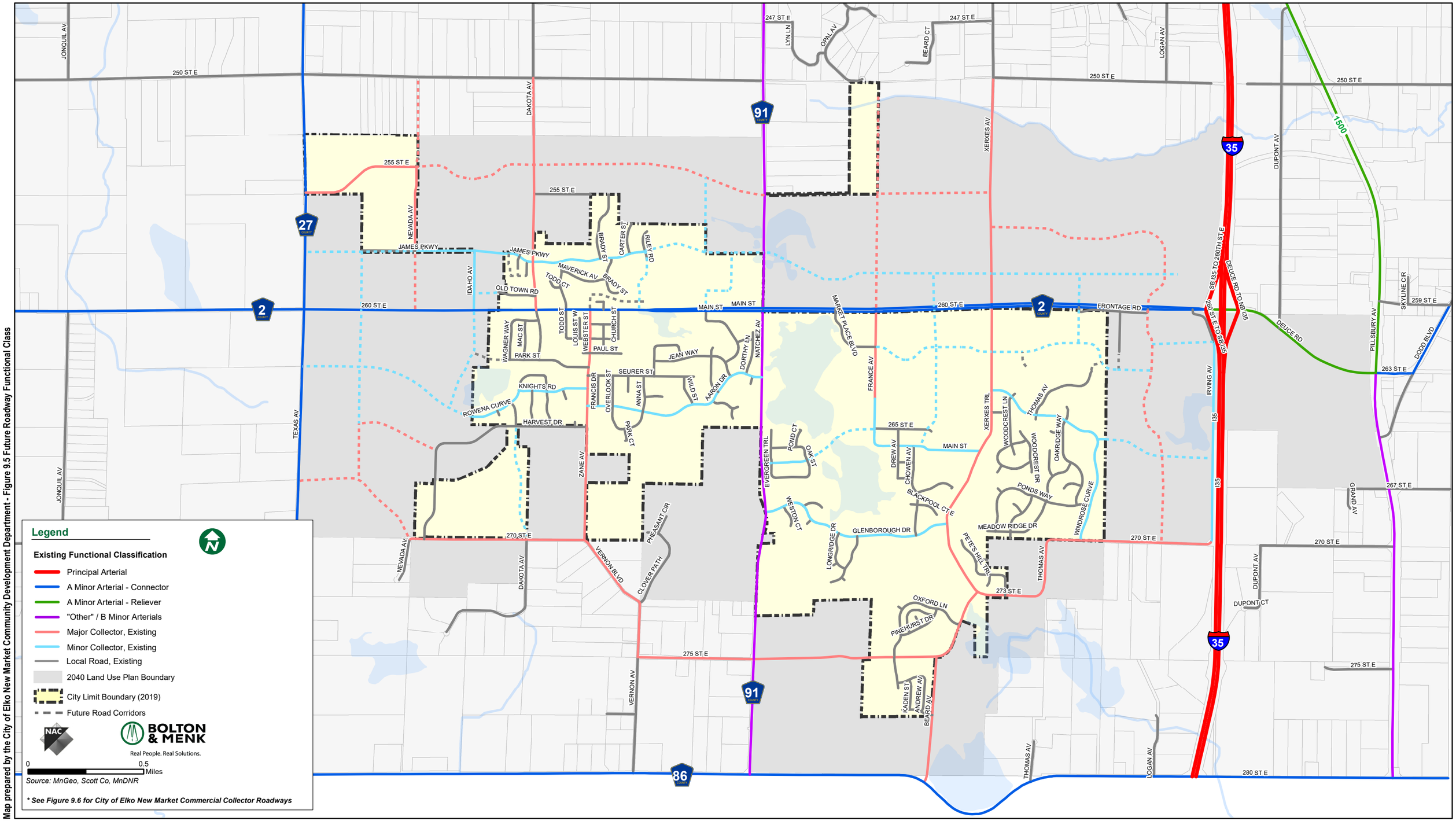
Map prepared by the City of Elko New Market Community Development Department - Figure 9.4 Existing Roadway Functional Class

2040 Comprehensive Plan

Elko New Market, MN

Future Roadway Functional Class

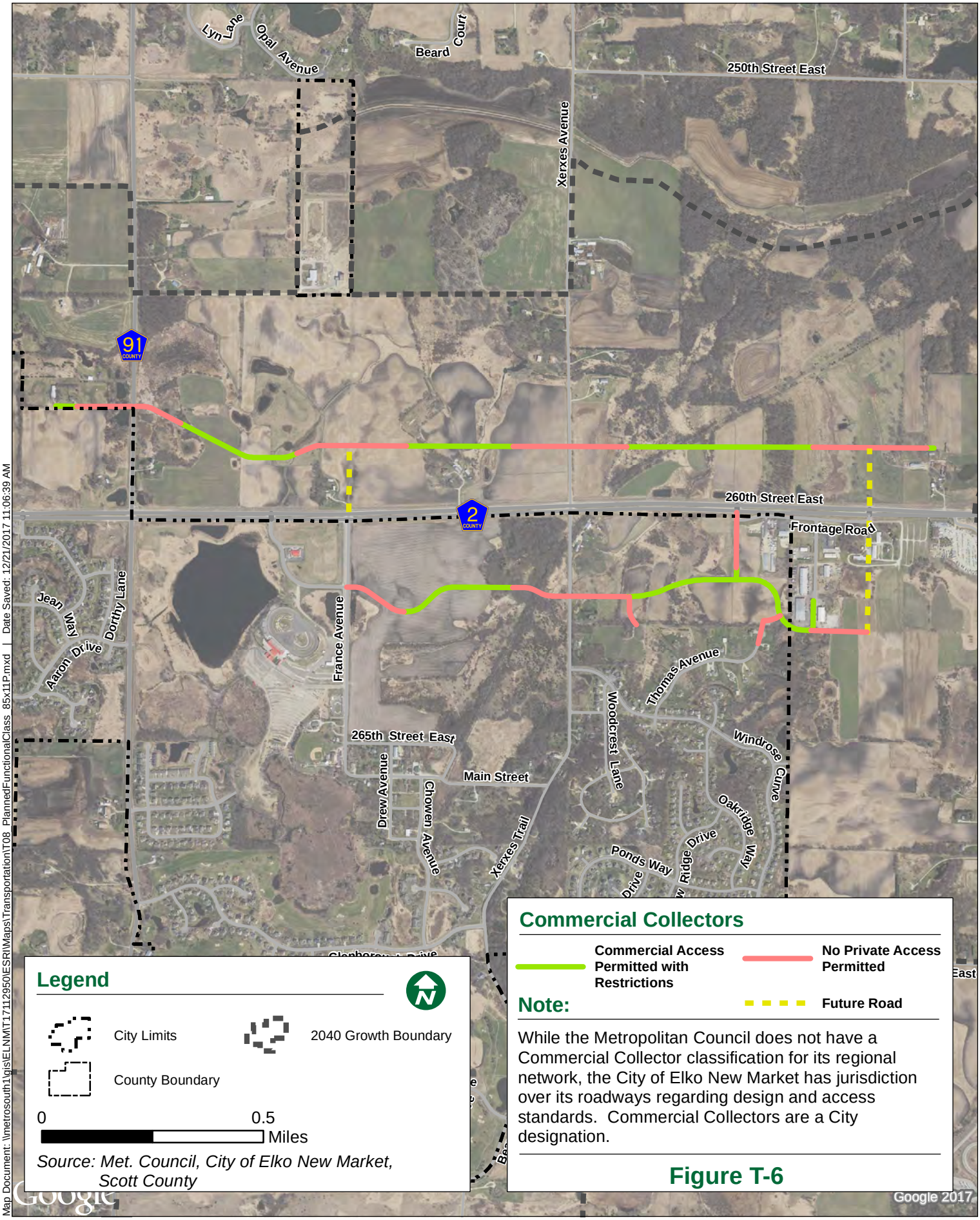
Figure 9.5



Map prepared by the City of Elko New Market Community Development Department - Figure 9.5 Future Roadway Functional Class

City Commercial Collectors

Figure 9.6



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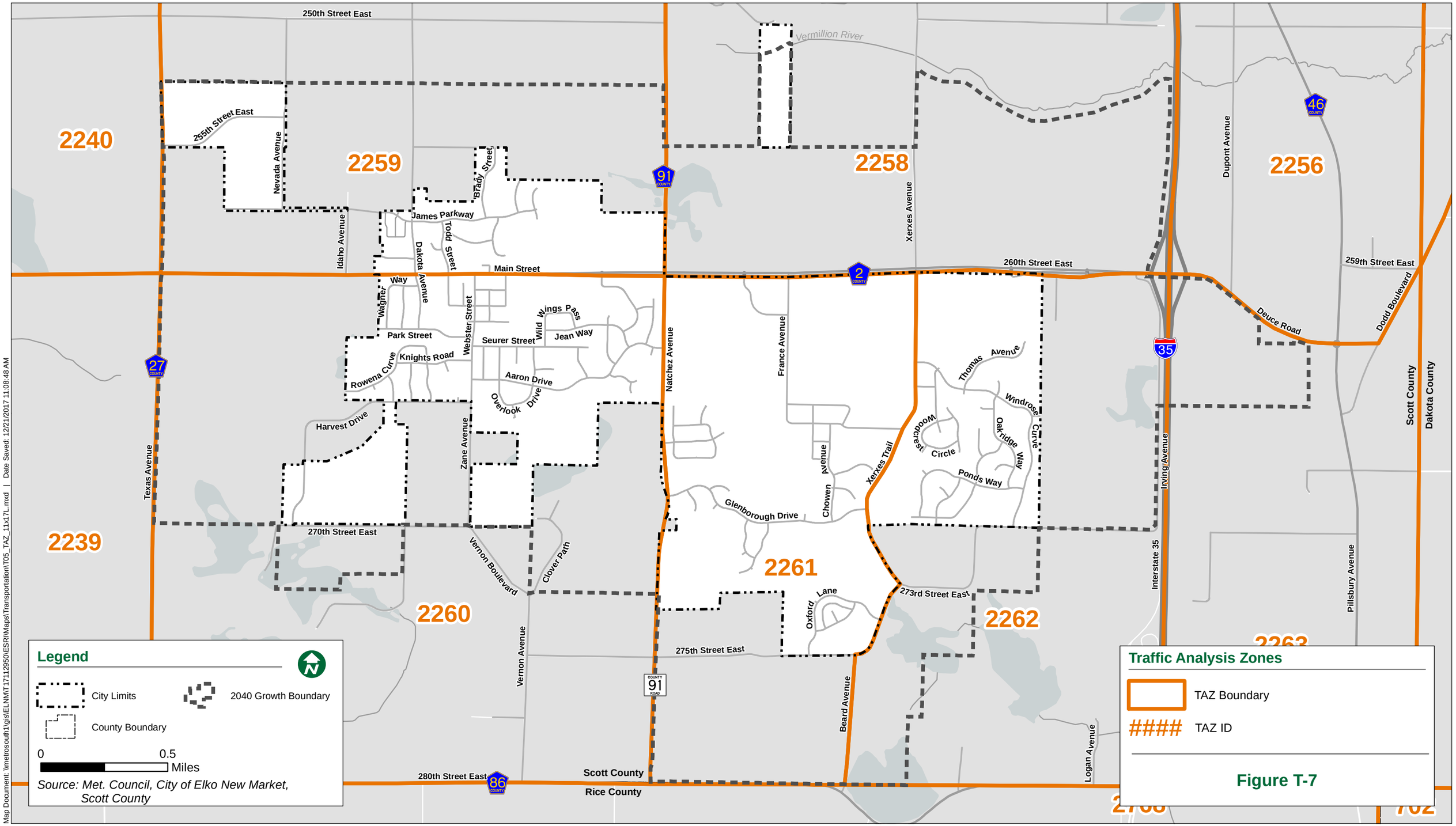
Transportation Analysis Zones

Figure 9.7



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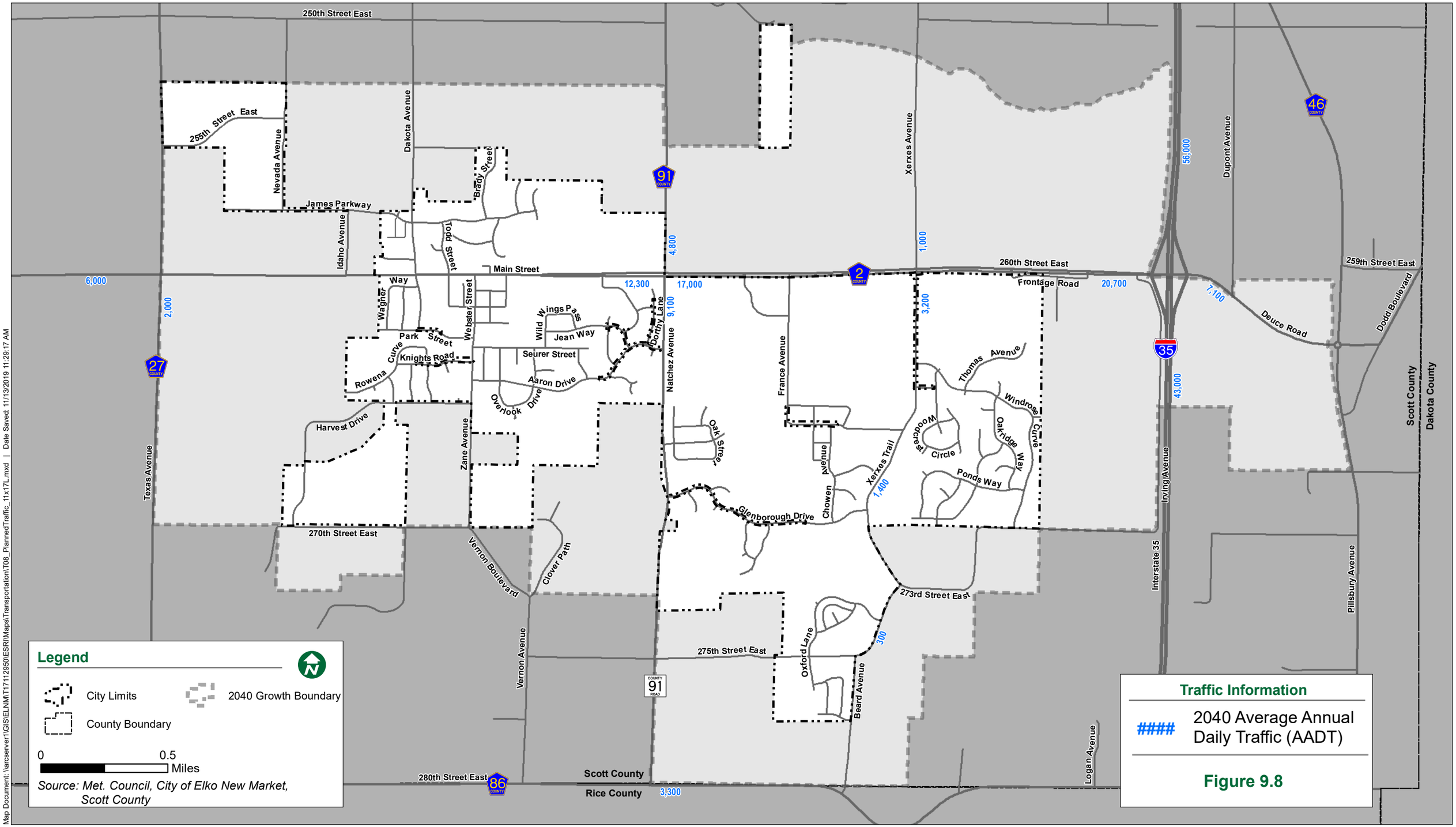
Projected 2040 Traffic Volumes

Figure 9.8



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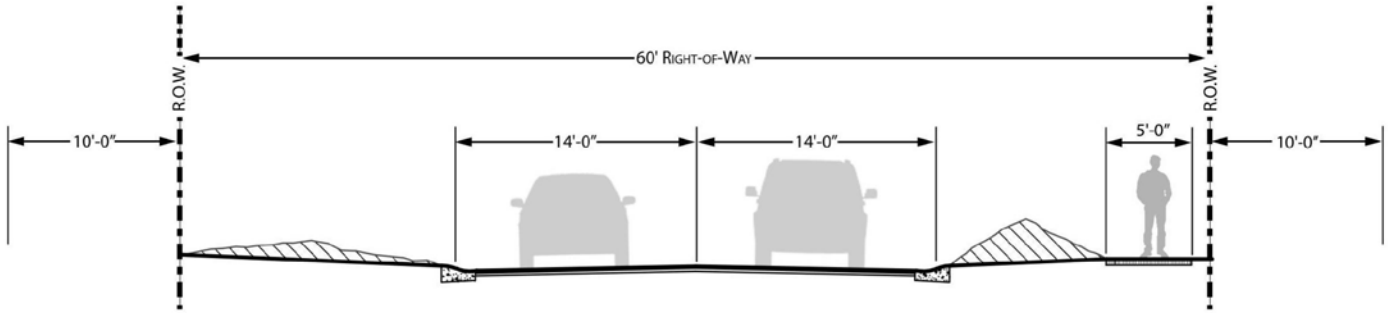
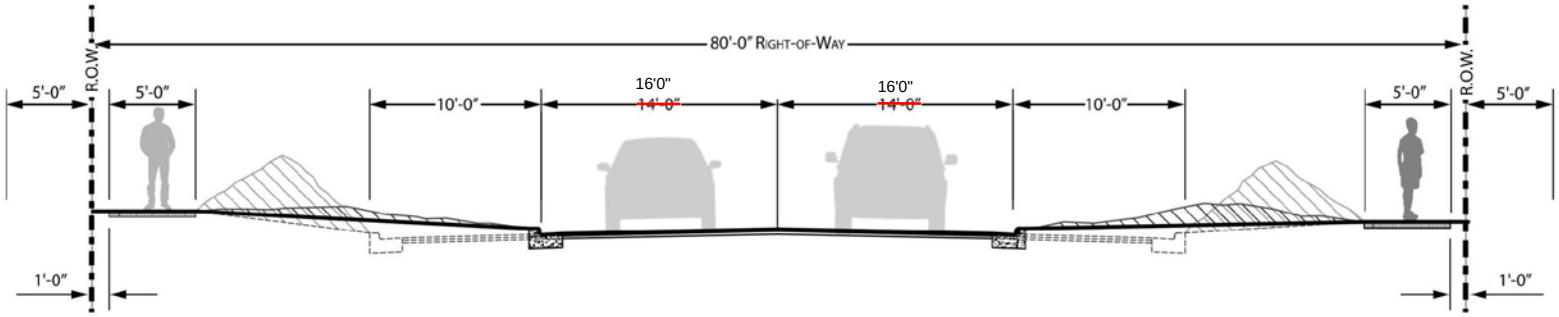
Local Residential Street
Typical Section



Local Streets
28' in residentially zoned areas
32' in commercial/industrially zoned areas

Minor Collector Street
Typical Section



Legend

- Baseline Design
- Extended/Future Design
- Snow Storage (8" Snowfall) in width*

Note: Pedestrian-only sidewalks would be 5'-8' in width. Multi-use trail would be 10'.

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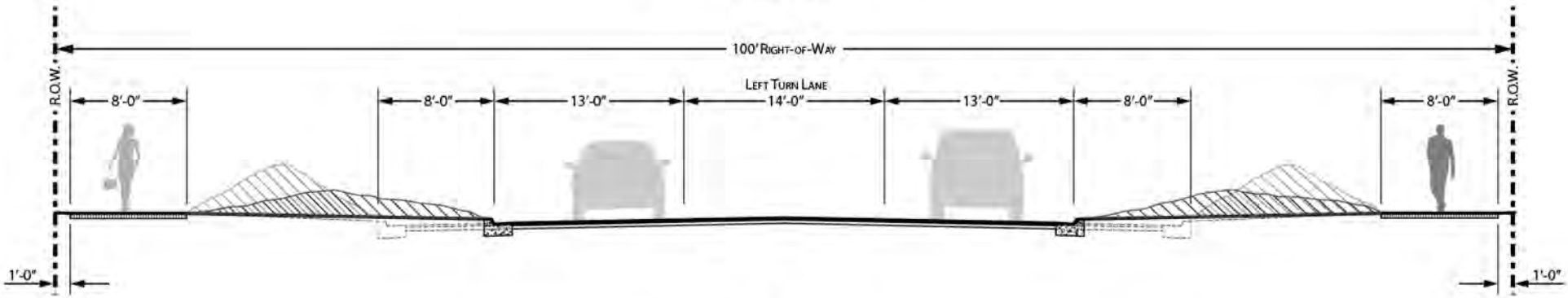
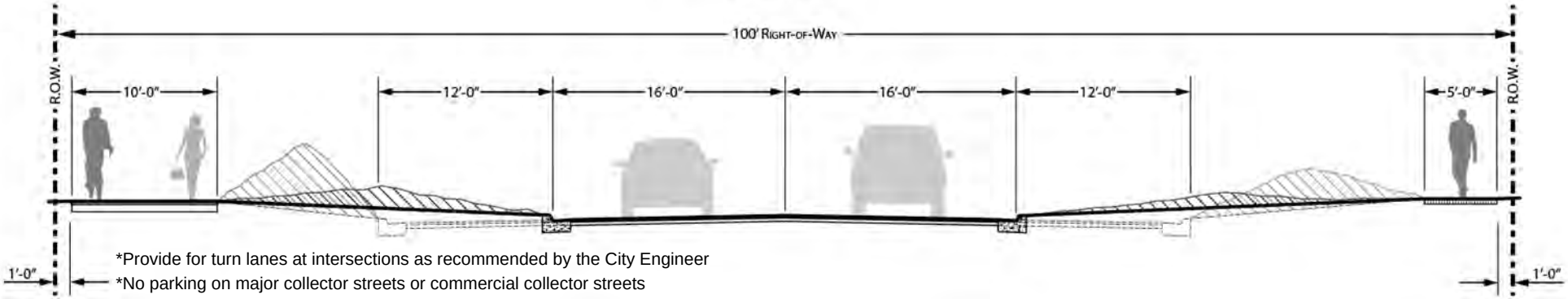
Commercial Collector
Typical Section



Major Collector
Typical Section



*Provide for turn lanes at intersections as recommended by the City Engineer
*No parking on major collector streets or commercial collector streets

Legend

Baseline Design

Extended/Future Design

Snow Storage (8" Snowfall) in width*

Note: Pedestrian-only sidewalks would be 5'-8' in width. Multi-use trail would be 10'.

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APPENDIX T-1

Scott County Access Management Standards

Figure 1

MINIMUM ACCESS SPACING GUIDELINES 2008

TYPE OF ACCESS BEING REQUESTED	TYPE OF COUNTY HIGHWAY FUNCTION AFFECTED BY ACCESS			
	PRINCIPAL ARTERIAL	Minor Arterial A and B Minor	Collector	Local
A. **Private Residential** (3 or less shared driveways)	Not Permitted	*Not Permitted in 2030 Urban Services Area & Urban reserve *1/4 mile in rural	1/8 Mile	Determination based on other criteria
B. **Commercial Driveways, Or Private Streets**	Not Permitted	Not Permitted	*Right In/Right out at 1/8 Mile *Full access at 1/4 Mile	Determination based on other criteria
C. **Local Streets**	Not Permitted	*Full access at 1/4 Mile *Right in/Right out at 1/8 Mile	1/8 Mile	1/8 Mile
D. **Collector Streets**	*1 Mile Full Access (rural) *3/4 or Right In/Right out at 1/2 Mile (urban)	*Full access at 1/4 Mile *Right in/Right out at 1/8 Mile	1/4 Mile	1/4 Mile
E. **Minor Arterial**	*1 Mile Full (rural) *1 Mile full Access (urban)	*1/2 to 1 Mile (urban) *1/2 Mile to 1 Mile (rural)	*1/4 to 1 Mile (urban) *1/2 to 1 Mile (rural)	*1/4 to 1 Mile (urban) *1/2 to 1 Mile (rural)

Notes:

1. The Functional Classification is based on the Future Functional Classification Map (Figure VI-17).
2. Fully developed urban area will require individual evaluation on a case by case basis.
3. When there is opportunity for private or public access on more than one public roadway, access shall be taken on lower functional roadway.
4. Turn lanes shall be required at all access locations except for private residential direct access in the rural area.
5. Intersection Control/Signals shall be installed only where warranted and justified, consistent with the MMUTCD. 1 mile signal spacing on Principals and 1/2 mile signal spacing will be preserved on other roadways.
6. Access spacing may be modified to be more or less restrictive per adopted County corridor study.
7. Private residential access in the rural area shall be located where there is the optimum distance or future shared access
8. Environmental constraints may be considered when determining access spacing locations.
9. Access spacing within Interchange influence areas shall meet all stopping and intersection site distance requirements on Principal Arterials.
10. Existing access on Principal Arterials outside the 2030 service area may be relocated provided sight distance is improved and opportunities for access consolidation do not exist. Future removal of the access must be planned for.

INTRODUCTION

The 2040 Park and Trail Plan is intended to support and supplement the City's Comprehensive Plan as it relates to planning and providing active and passive recreational opportunities for residents. Specifically, the Plan provides an analysis and a subsequent decision-making framework to guide City officials in providing recreational opportunities and to address private development proposals. The Plan will be used to earmark future park and trail areas in advance of development. The Plan also provides implementation strategies and includes an analysis of the park dedication and funding needed to implement.

PARK CLASSIFICATIONS

Based upon an analysis of community conditions and needs, there are six general classifications of parks existing or proposed within Elko New Market. These classifications include: mini park (MP), neighborhood park (NP), community park (CP), community playfield / athletic complex (CPA), conservation area / greenway (CA), and special use park (SUP). These classifications are nationally recognized park types with modifications made for local Elko New Market conditions and needs. Table 10-1 provides a description, service area radius, and size criteria for each of the park classifications.

Table 10 - 1

Park Classifications			
Classification	**General Description**	**Service Area Radius**	**Size Criteria**
Mini Park	Provides limited recreational opportunities due to their small size. Usually include play equipment, multiuse hard-courts, and a limited number of playfields.	¼ mile	1-5 acres
Neighborhood Park	Provides neighborhood open space with provisions for active and passive recreation use which responds to residential neighborhood needs. Recreational uses could include play equipment, trails, multiuse hard-courts, open playfields, ball fields, picnic areas and ice skating rinks. Primary users will be children and families rather than organized athletic functions.	½ mile	6-20 acres
Community Park	Includes both parks and playfields that provide facilities for more intensive recreation activities, such as ball fields, tennis courts, ice skating rinks and picnicking.	1 mile	Varies. Generally more spacious than neighborhood parks.
Community Playfield /	Targeted towards organized adult and youth play and require baseball / softball fields,	Community Wide	20-60 acres

Athletic Complex	soccer / football fields, tennis courts, etc.		
Conservation Area / Greenway	Natural areas where preservation of the environment is the primary emphasis. Primary uses typically include hiking trails, wildlife habitat and picnic facilities.	Community Wide	Varies. At least 100 feet in width.
Special Use Park	Provides special activities, unique built environments, historical sites or single purposes. Respond to distinct markets, demands or opportunities within the community.	Community Wide	Varies. Historical features should be a minimum of ½ acre.
Source: National Recreation and Parks Association			

The park classification system standards should be utilized to guide Elko New Market decision makers in determining future park location, size and amenities as dictated by local circumstances. The City of Elko New Market recognizes the importance of using park and recreation standards to:

1. Define minimum acceptable facilities for residents of the community.

2. Establish guidelines to determine land requirements for various kinds of park and recreation facilities.

3. Establish a basis for relating recreational needs to spatial analysis within a comprehensive recreation system.

4. Utilize the Park and Trail Plan as a means to justify the need for parks and open space within the overall land use pattern of the City.

EXISTING RESOURCES

The Elko New Market park system is comprised of approximately 59 acres of parkland including 11 existing parks and three platted parks to be developed in the future. The approximate park acreage pertains to the core park systems, exclusive of trail corridors and wetlands. In addition, Elko New Market has approximately 77,300 lineal feet or 14.7 miles of public trails and sidewalks throughout the community. Figure 10.1 depicts the existing parks, trails, and sidewalks within the community.

Existing City Parks

Of the 11 existing parks in Elko New Market, seven are mini parks, two are community parks, one is a conservation area / greenway, and one is a special use park. The three platted parks to be developed in the future have not yet been given a park classification. The City does not currently

have any existing neighborhood parks or community playfields / athletic complexes. The existing park inventory is summarized in Table 10-2.

Table 10 - 2

Existing City Park Inventory		
Park Name	**Classification**	**Total Acres**
Historic Elko Park	MP	0.94
Kelly Glen Park	MP	0.21
Little Windrose	MP	2.80
Rowena Ponds Park	MP	3.35
Whispering Creek Park	MP	0.62
Whispering Hills Park	MP	2.63
Woodcrest Park	MP	0.44
Mini Park Acreage Subtotal		**11.0**
Wagner Park	CP	7.10
Windrose Park	CP	7.61
Community Park Acreage Subtotal		**14.7**
Elko North Park	CA	3.43
Conservation Area / Greenway Acreage Subtotal		**3.43**
Pete's Hill Park	SUP	11.8
Special Use Park Acreage Subtotal		**11.8**
Boulder Heights Platted Park	--	1.49
Farm 3rd Addn Platted Park	--	8.80
Pete's Hill Platted Park	--	7.71
Platted (Undeveloped) Park Acreage Subtotal		**18.0**
TOTAL PARK ACREAGE		**58.9**
Source: City of Elko New Market GIS		

Fifteen different park amenities can be found throughout the City. These amenities include: baseball / softball fields, basketball courts, conservation areas, disc golf, ice rinks, off-street parking, open playfields, park buildings, picnic facilities, picnic shelters, playground equipment, restrooms, skate parks, and trails. Amenities located within each of the developed City parks are identified in Table 10-3.

Table 10 – 3

Existing City Park Amenities															
Park Name	**Baseball Field**	**Basketball Court**	**Conservation Area**	**Disc Golf**	**Ice Skating**	**Off Street Parking**	**Open Playfield**	**Park Building**	**Picnic Facilities**	**Picnic Shelter**	**Playground Equipment**	**Restroom**	**Skate Park**	**Softball Field**	**Trails**
Elko North Park			•												
Historic Elko Park						•					•	•			
Kelly Glen Park									•		•				
Little Windrose		•	•		•				•		•	•			
Pete's Hill Park			•						•						•
Rowena Ponds Park	•		•						•		•	•		•	•
Wagner Park	•	•	•		•	•		•	•	•	•	•	•	•	•
Whispering Creek Park									•		•				
Whispering Hills Park			•						•		•				
Windrose Park			•	•			•		•	•	•	•			•
Woodcrest Park		•							•		•				
Source: City of Elko New Market GIS															

Figure 10.2 depicts the location of existing parks within the City and their service areas based on park classification. This map is a useful tool to indicate certain areas within the 2040 City boundary that are not serviced by a mini, neighborhood or community park. A buffer is given for parks which can be related to a park service area specifically defined as: ¼ mile for mini parks, ½ mile for neighborhood parks and 1 mile for community parks. Community playfield / athletic complexes, conservation areas / greenways and special use parks do not have a defined service area as they are utilized at a community wide level.

It should be noted that 260th Street East (CSAH 2) and Natchez Avenue (CSAH 91) create barriers that limit the accessibility of parks within the community. The service areas for parks which are affected by these roadways have been abbreviated and condensed.

Existing City Trails

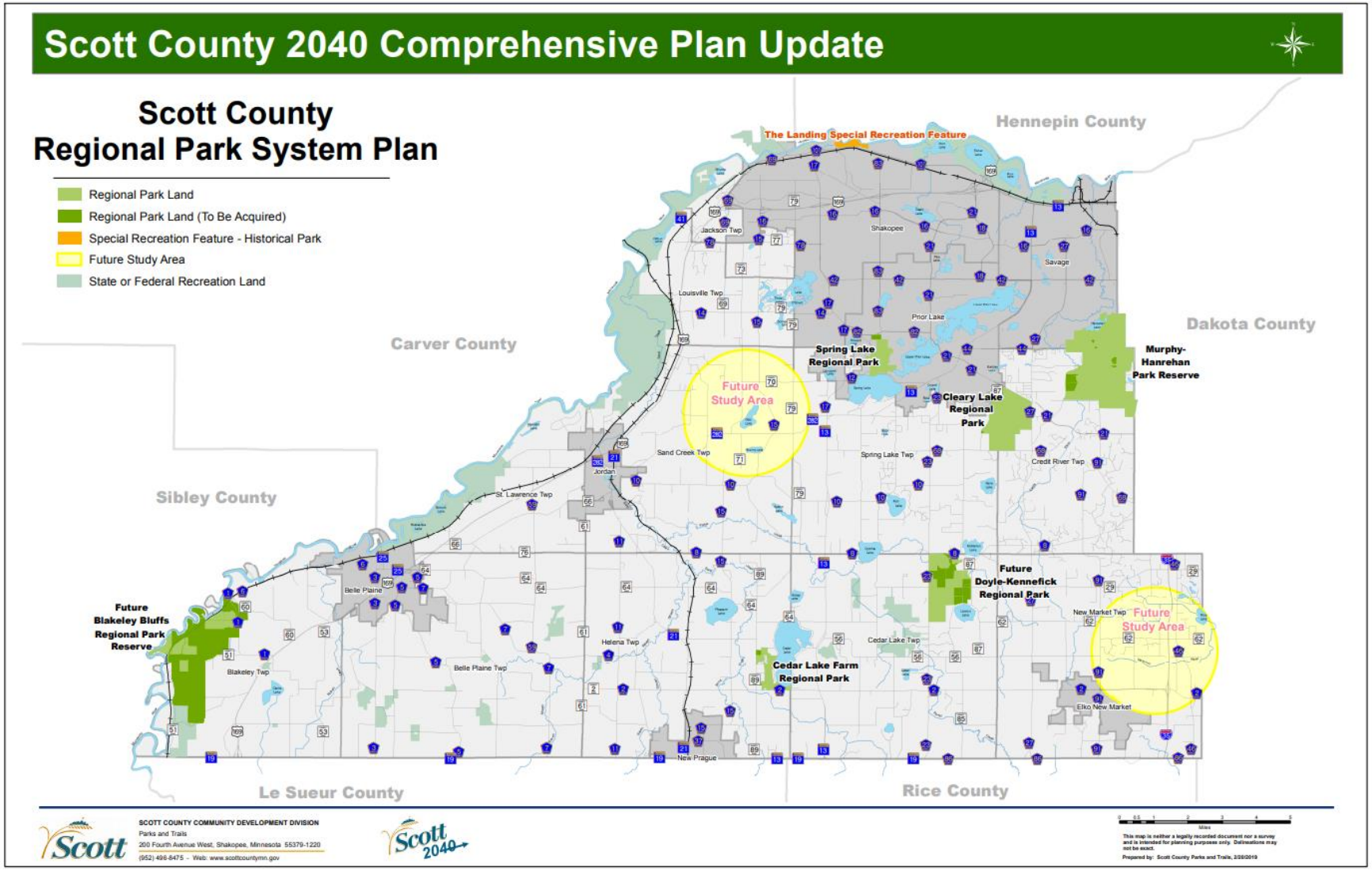
As of 2019, Elko New Market contained approximately 77,300 feet or 14.7 miles of trails and sidewalks maintained by the City. Of the approximately 14.7 miles, approximately 8.3 miles are trails and approximately 6.4 miles are sidewalks. Figure 10.3 depicts the existing trails and sidewalks within the community.

Existing School Facilities

The City of Elko New Market is served by two school districts: Lakeville Independent School District 194 and New Prague Independent School District 721. Eagle View Elementary, which is part of the New Prague district, is the only school located in Elko New Market. Eagle View Elementary supports the park system by providing baseball / softball fields, multiuse hard courts (including court games and basketball hoops), open playfields, and play equipment. Facilities at Eagle View Elementary function primarily as a neighborhood park and are available for use by the Elko New Market community through a joint powers agreement. The location of Eagle View Elementary is depicted on Figure 10.1.

REGIONAL RECREATIONAL FACILITIES

No Regional Parks System facilities exist in Elko New Market. However, Scott County, in partnership with the Three Rivers Park District, provides parks, trails and recreational facilities that serve Elko New Market residents. The Scott County Parks Program is focused on creating, operating and maintaining a system of parks, trails and open space to meet the needs of 11 townships and seven cities that make up Scott County, while continuing to support the existing facilities of the Three Rivers Park District. The Scott County Parks Program is focused on land acquisition and planning for the development and operation of regional and county parks and trails. The map included on the following page depicts the existing and planned Regional Parks within Scott County while Table 10-4 summarizes the amenities located at each.



Source: Scott County

Table 10-4:

Regional Recreational Facilities

Recreational Facilities	Total Acres	Miles of Trails	Archery	Bike/Boat Rental	Boat Launch	Biking/Walking Trails	Camping	Conservation Area	Cross Country Skiing	Dog Off-Leash Area	Equestrian Trail	Fishing	Golf	Interpretive Programming	Mountain Bike Trails	Park Building	Picnic Facilities	Picnic Shelter	Playground Equipment	Restroom	Snowmobile Trails	Swimming
Blakely Bluffs Park Reserve (Planned)	2,440					•		•														
Cedar Lake Farm Regional Park	172	1.3			•	•	•				•	•		•		•						
Cleary Lake Regional Park	1,045	8.5		•	•	•	•		•	•		•	•			•	•		•			•
Doyle-Kennefick Regional Park (Planned)	882	13				•		•									•	•				
Murphy Hanrehan Park Reserve	2,400	40			•	•	•		•		•				•							
Spring Lake Regional Park	373	3.5	•			•	•	•		•		•		•		•	•	•		•	•	

Source: Scott County and Three Rivers Park District

PARK AND TRAIL GOALS / POLICIES

Continued expansion of the City park and trail system is an important amenity that the City desires to provide for its residents and market to visitors. Elko New Market can plan and provide for parks and trails in advance of the actual need should funding be available. The City's Park and Trail Plan is an essential tool to ensure that adequate open space and recreational needs of the community are provided for both now and in the future. The following goals and policies are intended to serve as a guide for future system acquisition and development.

Park and Trail Goal #1: Protect, preserve and improve environmentally sensitive areas and natural/cultural resources.

Policies:

- Establish the following as protection and preservation priorities:
    - Vermillion River corridor.
    - Shoreland areas, wetland complexes, water ways, water bodies and ponds.
    - Ground water resources.
    - Significant forested vegetation, prairies, and savannas.
- Promote innovative development concepts that seek to protect, preserve and improve environmentally sensitive areas and natural/cultural resources, as well as take advantage of any unique features for enjoyment by residents.
- Implement innovative stormwater management techniques and best management practices in existing and future park and trail projects.
- Promote and engage the community in environmental preservation projects, such as cleanups, education, pollinator habitats, and native grass, wildflower and tree plantings.

Park and Trail Goal #2: Acquire land for development of a park and trail system to fulfill the long-term needs of community residents.

Policies:

- Acquire park and trail land through land dedication, purchase, or donation.
- Acquire parcels that will provide for both active recreation needs and that contain natural amenities and unique landscape areas such as the Vermillion River corridor, shoreland areas, wetland complexes, water ways, water bodies, ponds, significant forested vegetation, prairies, and savannas.
- Accept land dedication for park, trail and open space facilities in satisfaction of subdivision requirements only when the parcel satisfies the needs of the community and is compatible with surrounding parcels, as determined by the City.
- Accept lands that serve no previously defined system purpose as a donation, but do not accept the lands as part of required development contributions. Unsolicited donations will only be accepted if they are free of obligations or impacts that may limit their use.

- Dedicate proper right-of-way for sidewalks and trails during the subdivision process or acquired as part of improvement projects.
- Promote acquisition of land which provides public view, access and exposure to improve safety and to maximize public use for the facility.
- Require that costs of acquisition and development of park and trail facilities be borne by those that benefit from the improvements.

Park and Trail Goal #3: Establish a comprehensive park and trail system for all residents of Elko New Market.

Policies:

- Preserve inherent natural amenities or cultural resources when planning the development of specific park and trail sites.
- Establish parks and trails to segregate urban land use patterns, provide public access, allow wildlife movement, and preserve open space while allowing the community to enjoy the natural amenities within the City. These natural amenities may include both buildable land and environmentally sensitive areas with a linear park design to conserve and enhance areas such as significant vegetation, water bodies, waterways, wetlands, ponds, prairies, savannas other natural resources within the community.
- Emphasize Elko New Market as a trailway hub:
    - Work with the state of Minnesota to interconnect City greenway corridors and trailways to larger state-wide trails.
    - Interconnect Elko New Market and adjacent county's greenway corridors and trailways, specifically the Vermillion River corridor with Dakota County.
    - Work with Scott County to interconnect City trails with County parks and trails.
- Maintain a balance between active and passive recreational areas and activities tailored to the needs of the entire community.
- Integrate park and trail facilities that can be utilized during all seasons.
- Utilize consistent design elements for park and trail facilities (buildings, play equipment, landscape plantings, signage, fixtures, etc.) that promote community identity, recognition of public facilities and safety.
- Consider long-term costs for maintenance and operation in a facility's design and construction as part of the planning process.
- Minimize impacts upon adjacent land uses through provision for, but not limited to the following:
    - Appropriate location and orientation of activity areas and buildings.
    - Screening and landscaping site design elements.
    - Structure designs with appropriate scale, color and materials.
    - Adequate off-street parking.
- Develop a trail system which is both functional for transportation and recreation with priority given to the following areas:

  - Trail connections with existing and proposed parks and trails, activity centers, school sites, natural resource areas and natural habitat / greenway corridors such as the Vermillion River.
  - Trails along major streets that have the most direct access to destinations.
  - Trails that are routed to minimize stop signs, cross traffic and mixing with other modes of transportation, but are not limited to trail crossings at controlled intersections.
- Coordinate the construction of trails in conjunction with State, County or City street improvement projects to minimize costs.
- Require park and trail projects to be in accordance with City design standards, American's with Disabilities Act (ADA) requirements and National Recreation and Park Association and playground standards.

Park and Trail Goal #4: Ensure that the City park and trail system is related to the needs of community residents and that the dedication requirements are roughly proportionate to the impacts generated by development.

Policies:
- Evaluate capital improvements made to individual park facilities on the basis of relative need for developed park facilities.
- Program recreational open space improvements in accordance with a Capital Improvement Program and update on an annual basis.
- Monitor park dedication fee structure to ensure that implementation of the comprehensive park and trail system will be accomplished in a manner that is consistent with the law.
- Require park improvements associated with development proposals be installed at the time of development to ensure that park facilities are available to neighborhood residents.

Park and Trail Goal #5: Develop a partnership between the City of Elko New Market, Lakeville ISD 194, New Prague ISD 721, Scott County, Elko New Market Township, churches and civic organizations to provide recreation facilities and programs.

Policies:
- Pursue grants, joint powers agreements and other alternative funding sources for the acquisition and development of park, trail and open space facilities.
- Coordinate local facility development with the needs and facilities of surrounding communities, school districts, athletic associations, civic groups, etc.
- Coordinate recreational programming with the needs of surrounding communities, school districts, athletic associations, civic groups, etc.

PARK AND TRAIL PLAN

The Elko New Market 2040 Park and Trail Plan is intended to provide guidance to City Officials, developers and residents for continued development of the City's park and trail system. The Plan projects park and trail development needs through the year 2040 and identifies search areas for future park needs. It must be emphasized that the future park search areas identified herein do not target specific properties. Instead, the search areas identify general areas of acquisition toward the goal of providing the City with the ability to reserve land from development as it becomes available.

Trail development is addressed somewhat differently, in that major future trail corridors have been identified by the Scott County Comprehensive Plan. The proposed park and trail system (Figure 10.4) identifies these important corridors and trail segments that the City believes should be constructed in order to link community facilities to regional facilities and open space systems that exist or are being planned in adjacent communities and townships. The basic concept of the 2040 Park and Trail Plan is to provide for a pedestrian and bicycle transportation network that connects to important recreational and social centers in the community. The comprehensive trail system should not only ensure public access to community amenities but should also provide recreation opportunities for all age groups and safer access to facilities than are currently available within the community.

Park Needs

The population of the City of Elko New Market is projected to grow to 11,900 by the year 2040. For park planning purposes, communities range in the amount of parkland that is desired per capita. Generally, the amount of park acreage per capita ranges from 10 to 20 acres per 1,000 residents. Utilizing the population forecast from the Metropolitan Council for Elko New Market, Table 10-5 summarizes the number of acres of park that will be needed to accommodate future populations through the year 2040.

Table 10-5

Park Acreage Needs through 2040				
Year	**Elko New Market Population Forecasts**	**Required Park Acreage**		
		Low (10 acres per 1,000 residents)	**Mid (15 acres per 1,000 residents)**	**High (20 acres per 1,000 residents)**
2018	4,769	48	72	95
2020	6,100	61	92	122
2030	8,600	86	129	172
2040	11,900	119	179	238
Source: Metropolitan Council				

Based on the 10 to 20 acres per 1,000 residents standard, the Elko New Market park system should currently include approximately 48 to 95 acres of parkland to serve the existing (2018)

population. The City currently has approximately 41 acres of public park area with an additional 18 acres of platted parks that are to be developed in the future. This gives Elko New Market a current total of approximately 59 acres of public park areas, which is within the recommended parameters. A minimum of 119 acres of park / recreation area will be needed to accommodate the anticipated 2040 population of 11,900. To meet the 119 acre total, 60 additional acres of land will need to be added to the current park system between now and 2040.

It should be noted that the acres per 1,000 residents standard typically pertain to the core park systems, exclusive of trail corridors and special use facilities like golf courses, regional parks and wetland open space areas. The acres per 1,000 residents standard provides one method to evaluate park systems. The City should utilize the standard as a way to evaluate whether the overall park system acreage is generally acceptable.

In addition to the acres per 1,000 residents standard, the City should utilize the per capita standards for each park classification to ensure sufficient acreage of each park type is provided in the community. Table 10-6 summarizes the park classifications per capita standards and acreage needs through 2040.

Table 10-6

Park Acreage Need through 2040 By Park Classification

Classification	Per Capita Standard (acres per 1,000 residents)	Existing Acreage	2018 Required Acreage[1]	2040 Required Acreage[2]	Additional Acreage Needed by 2040 to Meet Requirements[3]
Mini Park	0.25 to 0.5	11.0	1.2 to 2.4	3.0 to 6.0	**0.00**
Neighborhood Park	2.5 to 3.5	0	11.9 to 16.7	29.8 to 41.7	**29.8 to 41.7**
Community Park	5.0 to 8.0	14.7	23.8 to 38.2	59.5 to 95.2	**44.8 to 80.5**
Community Playfield / Athletic Complex	2.0 to 2.5	0	9.5 to 11.9	23.8 to 29.8	**23.8 to 29.8**
Conservation Area / Greenway	N/A	3.43	--	--	--
Special Use Park	N/A	11.8	--	--	--

[1] Based on 2018 Estimated Population: 4,769
[2] Based on 2040 Projected Population: 11,900
[3] Difference between existing acreage and the 2040 required acreage.
Source: National Recreation and Park Association, Metropolitan Council

Based on the per capita standards for each park classification, Elko New Market needs a minimum of 30 acres of Neighborhood Park, 45 additional acres of Community Park, and 24 acres of Community Playfield / Athletic Complex. No additional Mini Park acreage is needed for the projected 2040 population.

As a part of the park planning effort, Park Commission members inquired about the type of facilities that should be offered within the park system for residents. The type, number and quality of park equipment, courts and fields are subject to individual goals and objectives of each

community and the amount of land available. As there are a number of parks that will be outfitted within the future, it may be an opportune time for the City to survey residents to determine what type of amenities they would like to have in future parks.

Proposed Park Recommendations

To provide the park acreage needs for the projected 2040 population and address service area gaps, the Parks Commission recommends that the City consider adding a minimum of 30 acres of neighborhood parks, 45 acres of community parks, and 24 acres of community playfield / athletic complex over the next 20 years. Meeting these minimum recommendations would result in 99 additional acres of parkland bringing the total projected park acreage to 158. The projected total of 158 parkland acres by 2040 results in just over 13 acres per 1,000 residents, which exceeds the minimum required acreage to serve the projected 2040 population.

The City should also consider the development of conservation areas / greenways and special use parks as the need or opportunity arises. Figure 10.4 depicts the proposed 2040 park plan. Proposed park search areas are based on future residential land uses, land topography, park service area deficits and proximity to existing and proposed community facilities.

When planning for future parks, Elko New Market decision makers should utilize the park classification standards to determine the exact park location, size and amenities provided. The standards are to be coupled with conventional wisdom and judgment relating to the particular situation to which they are applied and specific local needs. Occasionally, more than one component may occur within the same site, particularly with regard to a specialized use or conservation areas within a larger park. The following descriptions supplement the standards summarized in Table 10-1 by providing additional guidelines for each of the park classifications and noting proposed search areas, if applicable.

Mini Park. Mini parks are intended to service special neighborhoods due to geographic limitations. They have insufficient size to fulfill the needs of a complete neighborhood park. The sites usually have less than five acres of usable land and therefore only allow for play equipment, multiuse hard-courts and possibly substandard ball fields (suitable for informal recreation). These areas are highly individualized based upon the nature of the site and the needs of the immediate adjacent population.

Desirable Park Size: 1 to 5 acres.

Service Area: Less than ¼ mile radius preferred. ½ mile radius in select circumstances.

Per Capita Standard: 0.25 to 0.5 acres per 1,000 residents.

Typical Facilities:
Active

- Play equipment

- Multiuse hard-courts (basketball, court games)
- Ball fields

Passive
- Park benches / seating areas
- Picnic facilities

Search Areas: No search areas have been identified as the City has sufficient mini park acreage to accommodate the projected 2040 population.

Neighborhood Park. Neighborhood parks should provide neighborhood open space with provisions for active recreation use which responds to residential neighborhood needs. These recreational uses could include play equipment, open playfields, ball fields, multiuse hard-courts, multiuse trails, picnic areas and ice skating. Primary users will be children and families rather than organized athletic functions.

Convenient pedestrian and bicycle linkages from the neighborhood into the parks should occur along with community trail connections. Adjacent land use should be residential (limited to two edges), school grounds, collector roadway or community open space. In some cases, joint use of elementary or middle school sites should be considered to minimize duplication of active recreation facilities.

Desirable Park Size: 6 to 20 acres.

Service Area: ½ mile radius with secondary service to residences within ¾ mile radius.

Per Capita Standard: 2.5 to 3.5 developed acres per 1,000 residents.

Typical Facilities:
Active
- Play equipment
- Open playfields
- Ball fields
- Multiuse hard-courts (basketball, court games)
- Tennis courts (optional, can vary by location and neighborhood desires)
- Trails – both internal loops and access to community system
- Sledding
- Ice rinks

Passive
- Park benches / seating areas
- Picnic facilities

Support Elements:
- Trash containers
- Landscaping with native plant materials
- Identification sign/regulatory signs
- Off-street parking, disability accessible (20 car standard)
- Park shelter for principal neighborhood parks (15 acres and larger that are geographically distributed throughout the City)

Search Areas:
- North of 260th Street, South of 250th Street East, East of Dakota Avenue, and West of Natchez Avenue.
- North of James Parkway, South of 250th Street East, East of Nevada Avenue, and West of Dakota Avenue.
- North of 270th Street East, South of 260th Street East, East of Texas Avenue, and West of Zane Avenue.
- North of 275th Street East, South of Glenborough Drive, along Natchez Avenue.

Community Park. Community parks should be differentiated from neighborhood parks by two factors: size and function. The Community Park designation includes both parks and playfields that provide facilities for recreational activities such as walking, picnicking, viewing, water sports, ice skating, passive sports and organized community events. These parks serve larger sections of the City and are typically more spacious than neighborhood parks.

Desirable Park Size: Varies.

Service Area: 1 mile.

Per Capita Standard: 5 to 8 acres per 1,000 residents.

Typical Facilities:
Active
- Active facilities compatible with large groups such as volleyball, horseshoes, baseball / softball, soccer, football, court games, etc.
- Play equipment
- Multiuse trails
- Beach front
- Boat access

Passive
- Picnic facilities
- Seating areas with attractive views
- Fishing
- Conservation areas

Support Elements:
- Trash containers
- Comfort facilities with restrooms which may integrate an information center, picnic facility, storage or other building elements
- Off-street parking for large groups and community events
- Identification sign / regulatory signs

Search Areas:
- North of 260th Street East, south of 250th Street, along Xerxes Avenue. This location serves to preserve the existing wetland, remnant forest patch and give connection to the Vermillion River. It may also provide an opportunity to work with Scott County, the State DNR and conservation organizations to finance the environmental protection of the area.
- City extension of land South, East, and West of Windrose Park.

Community Playfield / Athletic Complex. Community playfields / athletic complexes are targeted towards organized adult and youth play on a citywide basis. The majority of the users for these facilities will come from beyond a walking range and as a result will require adequate parking and available restrooms. Community playfields / athletic complexes should respond to the following types of athletic facility needs: baseball / softball fields, soccer / football fields, multiple tennis courts, swimming pools, etc. Facility use and team competition play may require site lighting and irrigation to extend their useable hours. Community playfields / athletic complexes should be maintained with more intensity than other parks due to the amount of use and level of play.

Community playfields / athletic complexes generally service populations up to 25,000 however, their service base relates primarily to individual facility needs and the demands placed on them by user groups. Minimum size should not be less than 20 acres with optimum size being 30 acres or larger. Locations near thoroughfares to accommodate vehicle access and movement are preferred. Joint use of facilities with elementary, middle or senior high schools can be considered where schedules and maintenance requirements agree.

Desirable Park Size: 20 to 60 acres.

Service Area: Community wide.

Per Capita Standard: 2.0 to 2.5 acres per 1,000 residents.

Typical Facilities:
Active
- Ball fields
- Ice rinks
- Basketball

- Tennis (multiple courts)
- Swimming pools
- Disk golf
- Play equipment

Passive
- Spectator seating and bleacher areas
- Picnic facilities for group events and tournaments
- Trails connecting facilities and linking to the community trail system

Support Elements:
- Trash containers
- Off-street parking for players and spectators, including buses
- Comfort facilities including restrooms and concessions
- Storage facilities

Search Areas:
- North of 260th Street East, South of 250th Street East, East of Natchez Avenue, and West of Xerxes Avenue.
- City extension of land South of Eagle View Elementary and North of 260th Street East.

Conservation Area / Greenway. Conservation areas / greenways are set in natural areas of the community where preservation of the natural environment is the primary emphasis as opposed to active recreation and play. Hiking trails, wildlife habitat and picnic facilities are among the primary uses of the park facility. This type of facility is typically developed for one or more varying modes of recreational travel such as hiking, biking, skiing, roller blading, skating, canoeing, etc. Developed facilities should be limited to elements compatible with resource preservation or management.

Desirable Park Size: Varies by use and function, but corridors are to be a minimum of 100 feet in width.

Service Area: Community wide.

Per Capita Standard: N/A

Typical Facilities:
Active
- Small play area

Passive
- Park benches / seating areas
- Picnic facilities

- Passive trails
- Scenic overlook

Support Elements:
- Comfort facilities
- Interpretive / informational signage
- Lighting
- On / off-street parking

Search Areas:
- North of 260th Street East, South of 250th Street East, East of Xerxes Avenue, West of I-35, along the Vermillion River.
- City extension of land South, East, and West of Pete's Hill Platted Park. This location serves to preserve the existing Natural Area Corridor and DNR protected water basins.

Special Use Park. Special use parks are facilities which provide special activities, unique built environments, historical sites or single purposes. Their need should respond to distinct markets, demands or opportunities within the community. Characteristics vary widely in response to the facility and the demand responded to. Included in this classification are formal designations of a site with historical character or cultural significance. Uses typical of this special designation include dog parks, golf courses, nature centers, conservatories, arboretums, gardens, fishing piers, amphitheaters or downhill ski areas.

The Parks Commission will work collectively with the Scott County Historical Society and other local historical commissions to facilitate identification and designation of potentially significant historical sites within the Elko New Market.

Desired Park Size: Varies by function and facility type. Historical features should be a minimum of one half acre to encourage use and provide support facilities.

Service Area: Community wide.

Per Capita Standard: N/A

Typical Facilities:
- Facilities vary according to function and facility type

Support Elements:
- Parking
- Comfort facilities
- Multiuse trails
- Identification / informational signage

Search Areas: Future special use parks are dependent on market demand and the availability of sites with historical character or cultural significance.

Proposed Trail Recommendations

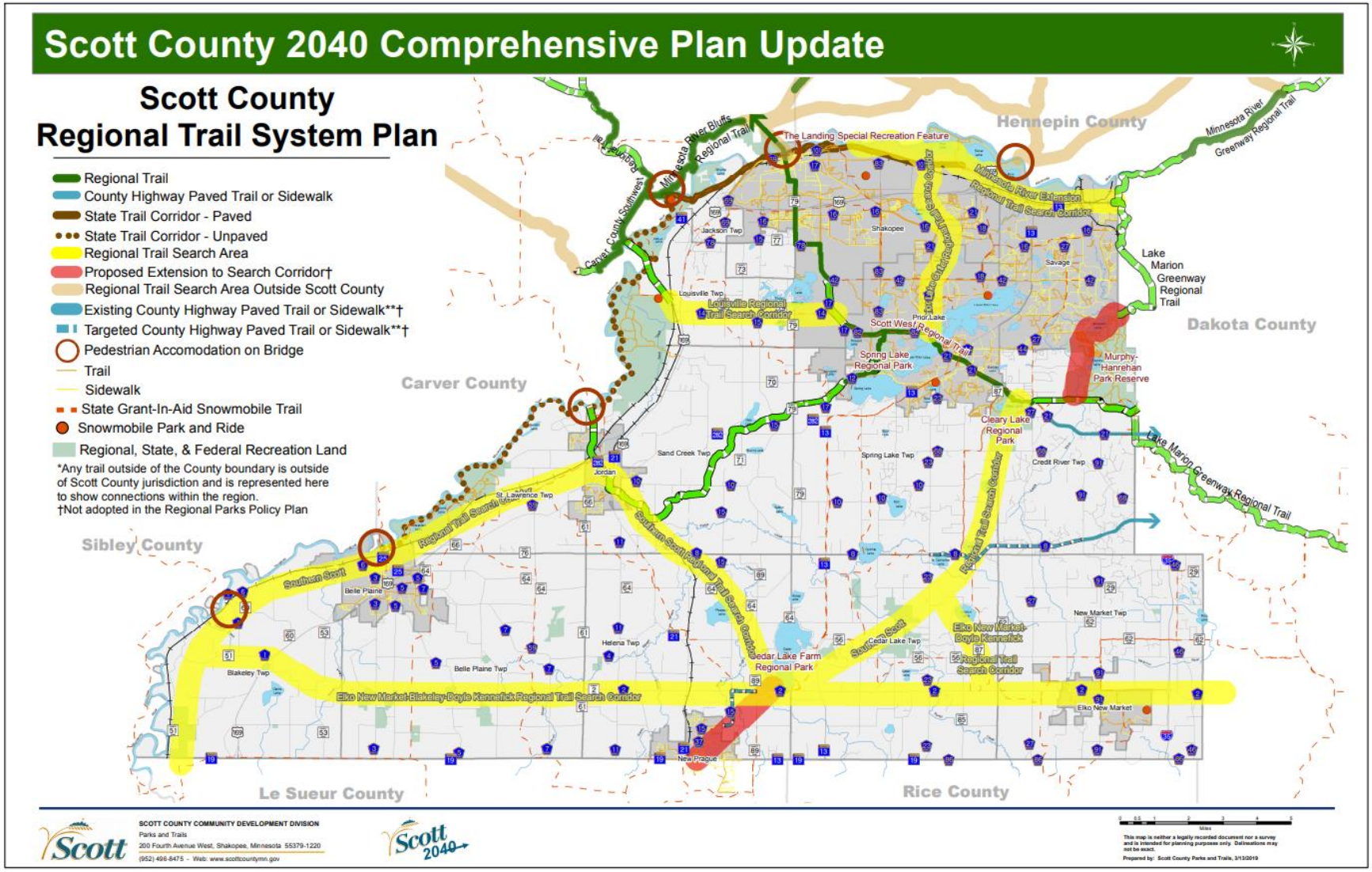
Figure 10.4 identifies a number of trail segments that are proposed to connect various recreation areas, commercial nodes, schools and neighborhoods throughout the community within the 2040 planning area. The total proposed distance of future trails that are needed to provide connections to existing and proposed park and recreation areas is approximately 175,000 linear feet or 33 miles.

In order to provide the regional, county and city trailway corridor links, it will be important for all of the communities, including Scott County and adjacent counties, Elko New Market and New Market Township, to work together to develop an overall plan, method to acquire lands, and funding mechanism to install the trails. It will be imperative to begin working on a joint plan in order to acquire or preserve the lands adjacent to these features prior to development. The 2040 Park and Trail Plan suggests that the City of Elko New Market Parks Commission act as the steering committee to make contact with adjacent jurisdictions and agencies that could help provide direction to implement a joint trailway system. The following summary outlines the proposed plans for the 2040 trail system:

Regional and County Trailway Corridors. The City of Elko New Market will continue to work with Metropolitan Council, Scott County, Dakota County, New Market Township and associated stakeholders to implement regional and county trailway corridors when applicable. Scott County has identified CSAH 2 through Elko New Market as part of the Elko New Market-Blakely-Doyle Kennefick Regional Trail Search Corridor. This corridor is proposed to connect Elko New Market to Cedar Lake Farm Regional Park and the Minnesota River.

In addition to the above mentioned regional and county trailway corridors, the Minnesota Pipe Line Company has indicated that a passive recreational corridor could extend through Elko New Market over the MinnCan natural gas pipeline. The MinnCan natural gas pipeline was constructed from Clearwater County in northern Minnesota, south to the Twin Cities metropolitan area. The pipeline alignment runs west / east through the southern border of Scott County, along Elko New Market's current boundary and through the City's 2040 boundary.

According to Minnesota Pipe Line Company, which is responsible for the construction of the pipeline, the route requires a 50 to 100 foot buffer. This buffer must be kept clear of vegetation to service the pipeline if necessary. Although not yet identified by other Minnesota communities which are affected by the pipeline location, it has been indicated by the City of Elko New Market that this pipeline corridor offers opportunity to be included in the proposed trail system network as a passive recreational corridor. It has been indicated that separate trail easements will be required from each property owner. With the implementation of this Plan, the City will continue to pursue this 3.24 mile trailway corridor potential.



Source: Scott County

City Trailway Corridors. The proposed Park and Trail Plan depicts four city trailway corridor segments. The first is a Vermillion River city trailway corridor which extends east / west along the Vermillion River. A proposed city trailway corridor south from this corridor links the Vermillion River to CSAH 2 along Xerxes Avenue. Another city trailway corridor is proposed southwest through the City of Elko New Market, at times following an existing railroad bed. Lastly, a city trailway corridor is proposed southeast from Pete's Hill Park to I-35 and beyond into Dakota County. The City will continue to pursue construction of these trail alignments as opportunity arises, along with other links, such as along Xerxes Avenue.

City Trails / Sidewalks. City trails and sidewalks supplement the aforementioned county and city trailway corridors, connecting these larger trail networks to local neighborhoods, commercial nodes, school facilities and other parks within the network. Future arterial roads which include Natchez Avenue, 260th Street East and 280th Street East are guided to receive trails on both sides of the roadway. In addition, a diverse network of residential trails and sidewalks are proposed to interconnect neighborhoods, parks and city facilities.

These proposed city trails and sidewalks guided for construction are dependent on future residential plats and reconstruction of county roads. The City's Subdivision Ordinance requires construction of sidewalks and / or trails along roadway corridors with new developments. In general, trails are required when development occurs next to a collector or arterial roadway and sidewalks are required, at a minimum, on one side of local and minor collector streets.

Implementation

This section of the Park and Trail Plan identifies the tools and processes to implement the Plan. The following implementation strategies may be used:

1. The Park Commission will review and update neighborhood park needs and service areas as development occurs so that new barriers and changing recreational needs are acknowledged and accommodated.

2. The Park Commission will review and evaluate each development project to ensure it provides appropriate park land dedication, open space preservation and trail connections parks, trails, greenways, schools, and commercial/industrial developments.

3. The Park Commission will review and prioritize trail needs and recommend a schedule and funding framework to the City Council.

4. The Park Commission will investigate the use of grants, donations, partnerships, and opportunities for additional joint powers agreements for the development of park, trail and recreation facilities.

5. The Park Commission recommends that the City Council amend its City Code to incorporate current state statue language associated with park dedication. This language states that the

City may require that a reasonable portion of the buildable land, as defined by the City's ordinance, of any proposed subdivision be dedicated to the public or preserved for public use as parks, recreational facilities and open space. The City may also accept a cash fee, based on fair market value, in lieu of land dedication. The land dedication or cash fee must bear a rough proportionality to the need created by the proposed subdivision or development.

Cash payments received must be placed by the municipality in a special fund to be used only for the purposes for which the money was obtained. Cash payments received must be used only for the acquisition and development or improvement of parks, recreational facilities, playgrounds, trails, wetlands, or open space based on the approved park systems plan. Cash payments must not be used for ongoing operation, maintenance, or redevelopment of parks, recreational facilities, playgrounds, trails, wetlands, or open space.

6. The City will develop comprehensive maintenance and management plans for its Park and Trail System. Minnesota Statutes specify that park dedication fees may not be used for operation or maintenance purposes and therefore it is important for the City to continue to provide a separate budget fund for maintenance and management.

7. The Park Commission recommends that the City Council consider incorporating park redevelopment infrastructure planning as part of the 5-year Capital Improvement Plan. It is anticipated that significant funding over many years will be needed to enhance or redevelop aging parks and provide facility improvements.

8. The Park Commission recommendations for future land dedication will be based on the park land need defined by the Elko New Market Park and Trail Plan. Active park areas shall be exclusive of wetlands, slopes exceeding 12 percent, ponding areas, or other features unsuitable for active park development. The City may accept natural open space as part of the parkland dedication. Selection of parkland for dedication shall be at the discretion of the City Council, based upon the policies and recommendations of the Park Commission and Elko New Market Park and Trail Plan.

9. The Park Commission will act to further investigate options and agency participation for development of the greenway / natural habitat corridor and trail system outside of the 2040 planning area.

Funding Mechanisms

Financing the park and trail improvements will be a challenge for the City. The acquisition and development of the park and trail system will not occur without adequate funding and taking advantage of opportunities as they present themselves. A brief description of potential funding sources is provided as follows:

Park Dedication. Pursuant to Minnesota State Statutes, the City requires the dedication of either land or cash, or combination thereof at the time that property is subdivided. Dollars collected

from park dedication fees represent the primary source of park and trail revenue and should be used for parkland acquisition or park / trail development.

Property Taxes. The City has the ability to raise property taxes to help to pay for the park and trail system. In the event that future changes to the Park and Trail Plan, growth projections, land areas subject to the dedication analysis or other changes occur, the park dedication will need to be reviewed and adjusted accordingly. Property taxes are a means to raise revenue for the part of the Park and Trail system that should be borne by existing residents. The use of property tax may be limited by overall financial management of the City or by State imposed levy limitations.

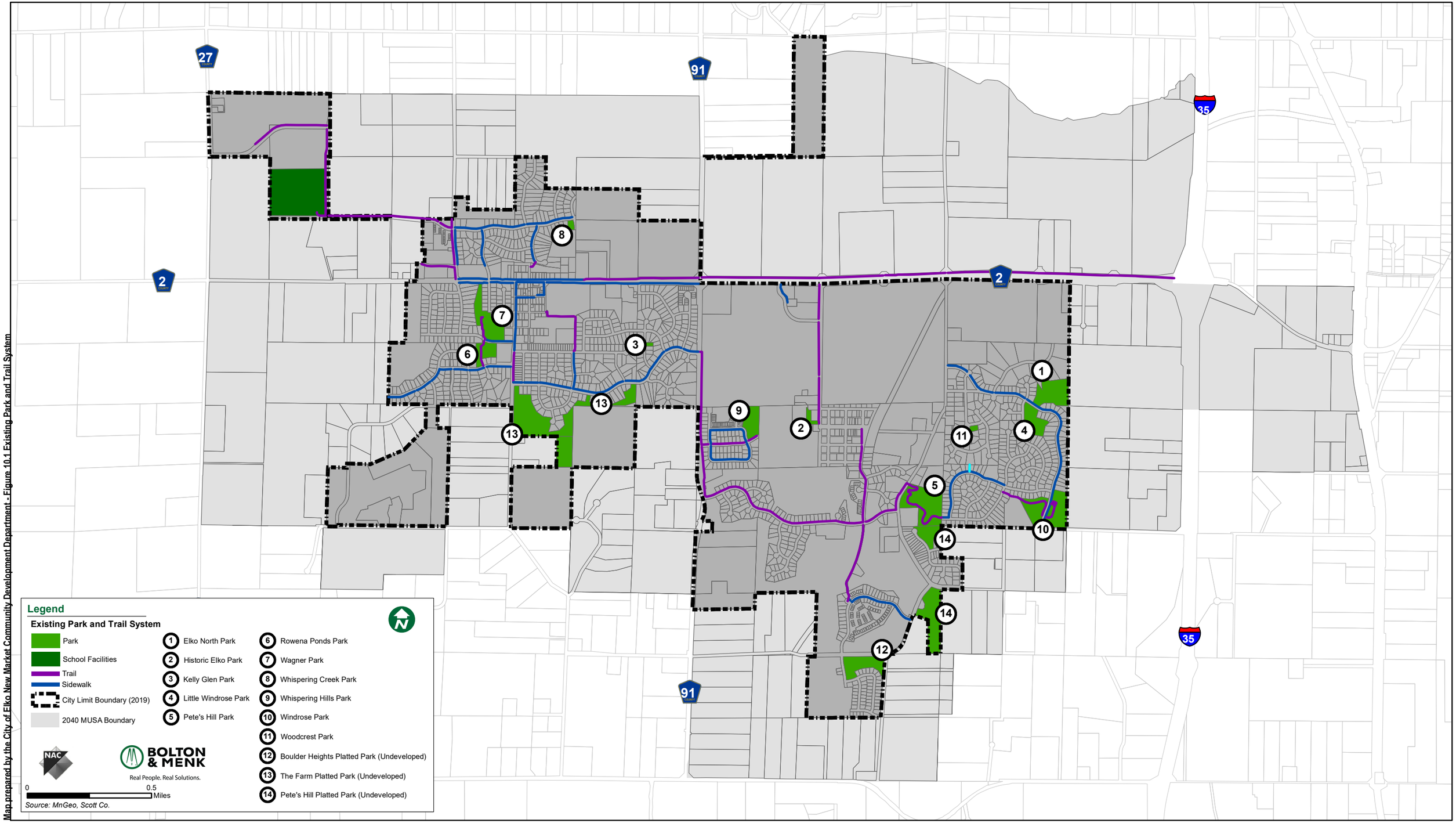
Special Assessments. The ability of a city to levy assessments for park improvements is governed by Minnesota Statutes, Chapter 429. This statute defines eligible park improvements as "acquire, improve and equip parks, open space areas, playgrounds, and recreational facilities within or without the corporate limits." This definition would cover the vast majority of projects anticipated by this Plan. A special assessment represents the portion of a park improvement costs levied against benefiting properties. The special assessment tool must be reviewed carefully to identify whether historic park dedication fees have been collected and applied to the benefiting properties to ensure that owners are not charged twice for park and trail improvements. Also, an analysis would need to be done to identify which properties receive benefit from the park and trail improvement as there must be a rational nexus between the charge and benefit received. The typical method would be to levy an equal assessment on each benefiting parcel. The assessment could be for all or any portion of the improvements. At least 20% of the costs of the improvement must be assessed to gain the authority to issue bonds. If less than 100% of the costs are assessed, then park dedication fees, property taxes, or other available revenues would be needed to pay back the debt.

Referendum – Voter Approved Bonds. The City may place a referendum on voter ballets for consideration by the public to support park and trail improvements. Voter approved debt service levies are spread on the market value of property. This funding mechanism is typically utilized for major improvements such as a community center, athletic complex or to acquire high amenity park and recreation areas.

Grants. The City should continue to apply for available grants for development of its Park and Trail Plan through agencies such as the Minnesota Department of Natural Resources, Minnesota Department of Transportation, Scott County, and any other agencies.

Private Donations. The City should establish a policy identifying park and trail needs and a process the public can use to donate revenue or equipment to meet those needs. The City should also consider establishing a Community Foundation for use for park projects and equipment. Additionally, the Park Commission should proactively contact private foundations such as The Trust for Public Land, 1,000 Friends of Minnesota, McKnight Foundation, Metro Greenways and others to identify potential funding sources for the community park and trail system.

Existing Park and Trail System
Figure 10.1

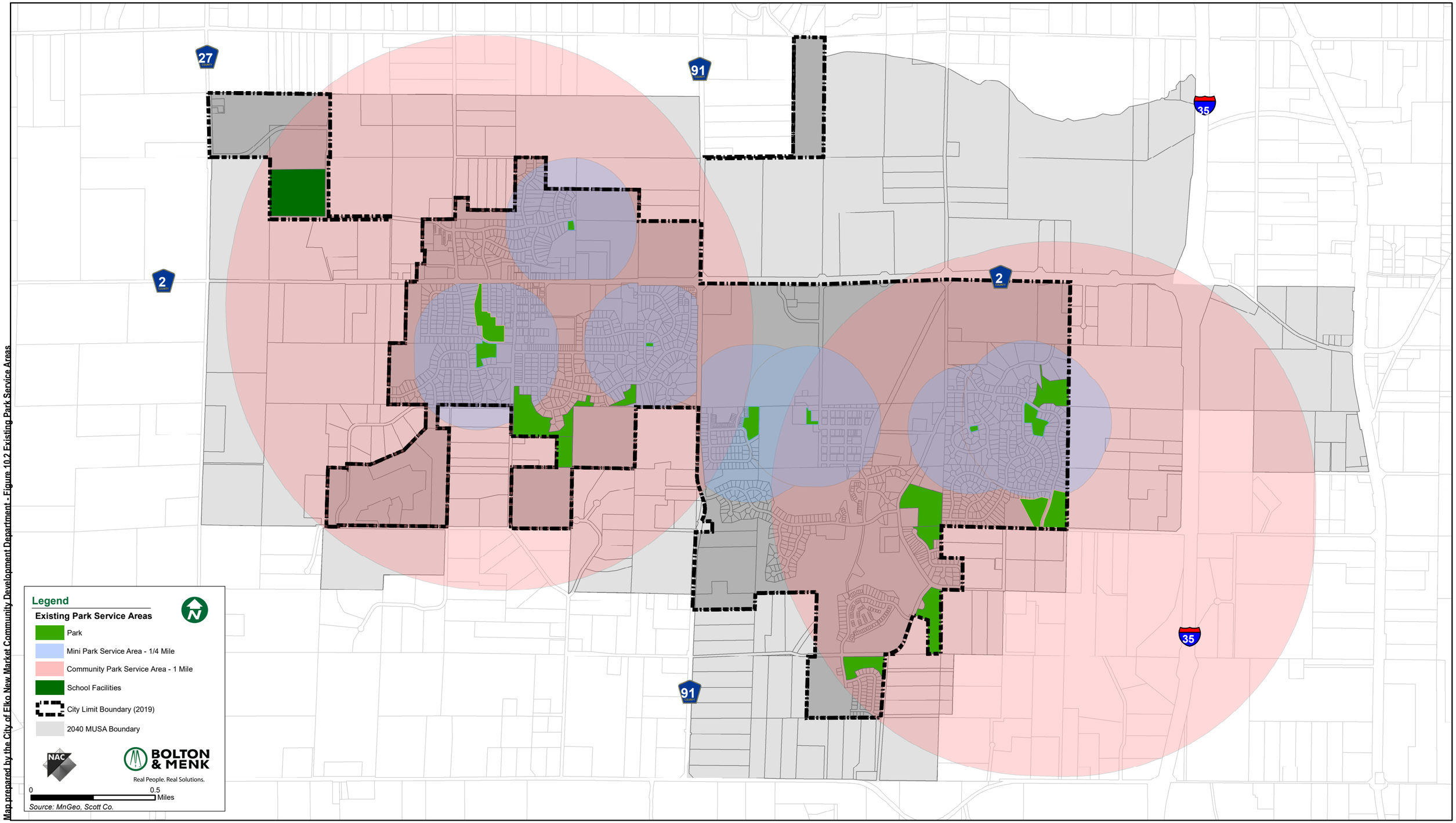


Map prepared by the City of Elko New Market Community Development Department - Figure 10.1 Existing Park and Trail System

2040 Comprehensive Plan

Elko New Market, MN

Existing Park Service Areas
Figure 10.2

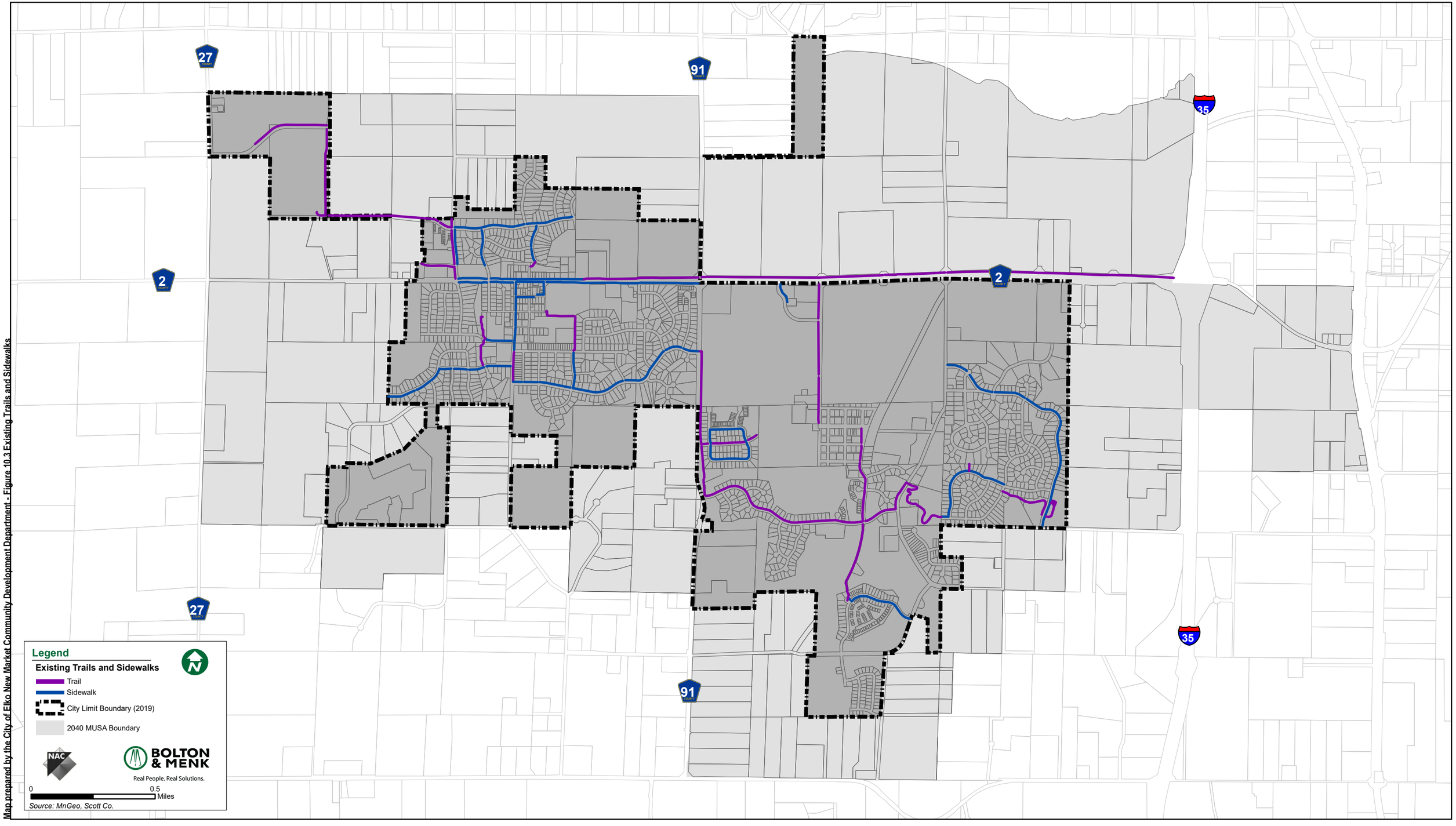


Map prepared by the City of Elko New Market Community Development Department - Figure 10.2 Existing Park Service Areas

2040 Comprehensive Plan

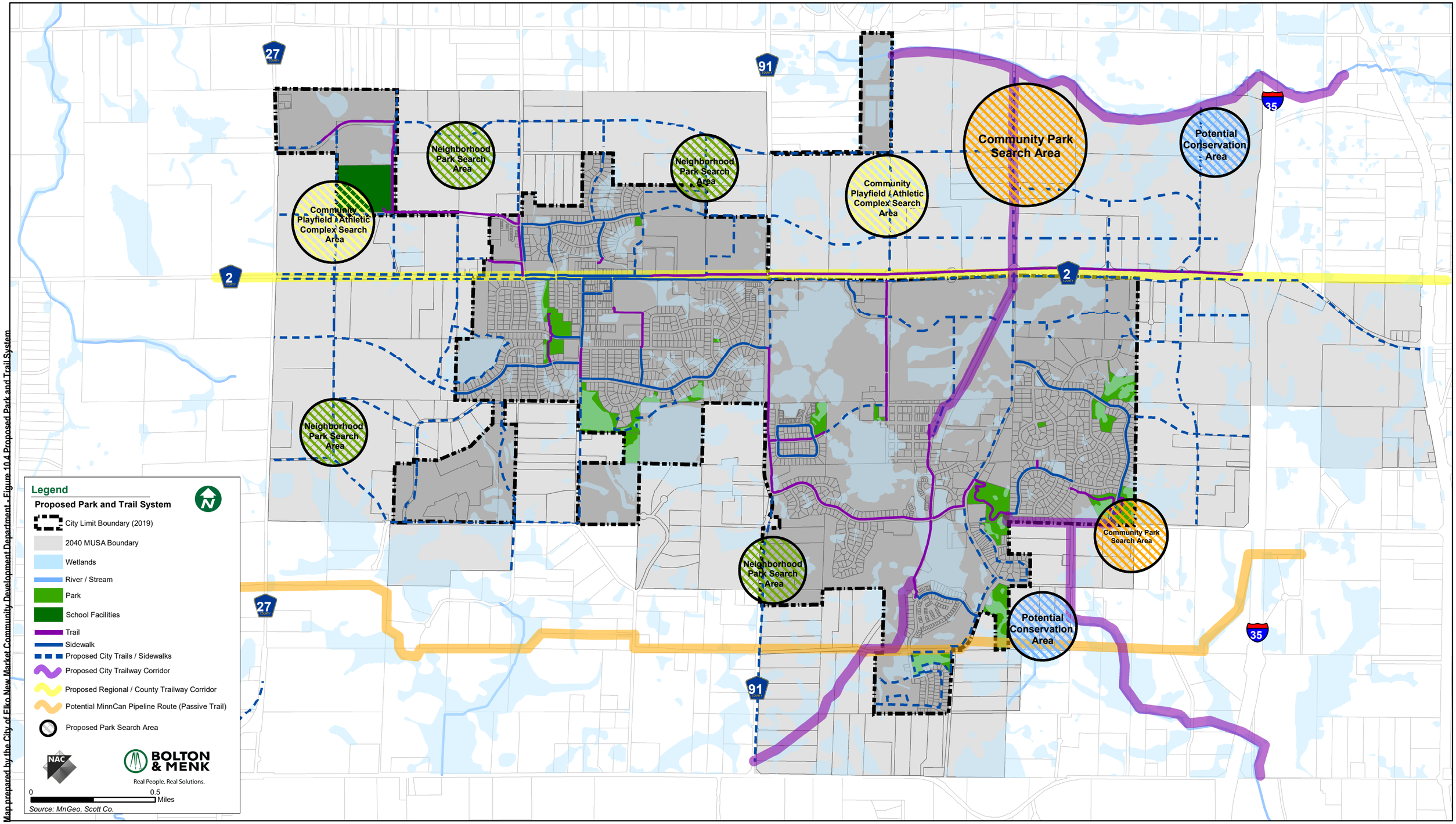
Elko New Market, MN

Existing Trails and Sidewalks
Figure 10.3



Map prepared by the City of Elko New Market Community Development Department - Figure 10.3 Existing Trails and Sidewalks

Proposed Park and Trail System
Figure 10.4



Map prepared by the City of Elko New Market Community Development Department - Figure 10.4 Proposed Park and Trail System

INTRODUCTION

Administration and implementation of the Comprehensive Plan and related supportive ordinances are equally important as the development of the Plan itself. Only through proper coordination of the Comprehensive Plan with the City's official controls can the desired community vision and goals be fulfilled. Official controls are adopted ordinances, policies, design guidelines, fiscal tools and other local regulations that direct, guide, and assist in development decisions. This chapter will describe official controls and other implementation strategies that should be enacted to support implementation of the 2040 Comprehensive Plan.

ZONING ORDINANCE AND SUBDIVISION ORDINANCE

In Elko New Market, the Zoning Ordinance and Subdivision Ordinance are the primary controls which govern land use and development in the City. The City adopted a new Zoning Ordinance (in 2006) and Subdivision Ordinance (in 2007) in response to the merger of the former Cities of Elko and New Market in 2007. Numerous amendments to each have occurred since that time. Notable amendments included the following:

- Environmental protection regulations in 2008 (Chapter 11 of the Zoning Ordinance). Such regulations address stormwater management, erosion control, wetlands, bridge and culvert crossings, drainage alterations, groundwater, grading operations and tree preservation and flood regulations.

- Alternative energy regulations in 2011 (Chapter 14 of the Zoning Ordinance). Such regulations address and regulate geothermal, wind and solar energy systems.

- A floodplain overlay zoning district in 2014 (Section 11-28D of the Zoning Ordinance). Such district provisions regulate development in the flood hazard areas of the City.

- Residential lot size regulations in 2018 (Chapter 25 of the Zoning Ordinance). Such regulations reduced lot sizes in the R-2 Urban (Small Lot) Single-Family Residential District and the R-3 Medium Density Residential District.

Elko New Market's Zoning Ordinance and Subdivision Ordinance both stipulate that land uses and subdivisions must be consistent with the Comprehensive Plan and its related policies (Sections 11-3-2, 11-3-7 and 11-3-8 of the Zoning Ordinance and Section 12-9-1 of the Subdivision Ordinance). If, upon annexation, a proposed land use differs from that illustrated on the 2040 Land Use Plan, an amendment to the Plan (in accordance with Metropolitan Council requirements) is required.

A description of the zoning districts established in the Elko New Market Zoning Ordinance and the respective land use designation they apply to is included on the following pages. The Zoning Ordinance incorporates an official zoning map which defines the location and boundaries of the various districts established therein. The City's current Zoning Map is illustrated in Figure 11.1.

R-1 Suburban Single Family Residential District. The purpose of the R-1 Suburban Single-Family Residential District is to provide for low density detached single-family uses in developed and developing areas of the community that are predominantly residential in character.

Designation of the R-1 District corresponds to areas guided for Low Density Residential use on the 2040 Land Use Plan with development densities between 2.5 and 5 dwelling units per net acre.

Within the R-1 District, the minimum lot area is 12,000 square feet for interior lots and 12,500 square feet for corner lots. The minimum lot width is 85 feet for interior lots and 100 feet for corner lots.

R-2 Urban (Small Lot) Single Family Residential District. The purpose of the R-2 Urban (Small Lot) Single-Family Residential District is to provide for single-family dwelling units at a relatively dense urban scale.

Designation of the R-2 District corresponds to areas guided for Low Density Residential land use on the 2040 Land Use Plan with development densities between 2.5 and 5 dwelling units per net acre.

Within the R-2 District, the minimum lot area is 8,400 square feet and the minimum lot width is 70 feet.

R-3 Medium Density Residential District. The purpose of the R-3 Medium Density Residential District is to establish low to moderate density residential housing in multiple-family structures which satisfy the following planning objectives:

1. Create a cohesive medium density neighborhood that provides attractive living environments and contributes to the City's identity.

2. Provide attractive and durable medium density housing options as a means of addressing the City's life cycle housing needs.

3. Preserve natural land forms, open spaces, greenways for scenic enjoyment and recreational use through the regulation of medium density residential land use.

4. Allow for the subdivision of twinhome, quadraminium and townhome base lots to permit individual private ownership of a single dwelling within such a structure.

5. Comply with the provisions of this chapter, other applicable provisions of this title, and the City Subdivision Ordinance.

Designation of the R-3 District corresponds to areas guided for Medium Density Residential land use on the 2040 Land Use Plan, with development densities ranging from 5 to 10 dwelling units per net acre.

Allowed R-3 District uses are subject to comprehensive performance standards addressing site design, building construction, landscaping and maintenance of common open spaces. Minimum lot area requirements in the district vary depending upon the number of units:

- Single family dwelling units must provide a minimum lot area of 7,200 square feet and a minimum lot width of 60 feet.
- Two-unit dwellings must provide a minimum lot area of 6,000 square feet per unit and a minimum lot width of 100 feet.
- Structures having more than two dwelling units must provide a minimum lot area of 3,500 square feet per unit and a minimum lot width of 100 feet.

R-4 High Density Residential District. The purpose of the R-4 High Density Residential District is to create, preserve and enhance areas for multi-family use at higher densities for both permanent and transient families. The district is intended to be applied in areas served by public utilities, with good accessibility to thoroughfares, public community centers, libraries, shopping, and where such development is consistent with the Comprehensive Plan and its included planning policies.

Designation of the R-4 District corresponds to areas guided for High Density Residential use on the 2040 Land Use Plan with development densities ranging from 10 to 30 dwelling units per net acre.

Allowed R-4 District uses are subject to comprehensive performance standards addressing site design, building construction, landscaping and maintenance of common open spaces. The R-4 District makes an allowance for multiple family dwellings containing eight or more dwelling units as a permitted use. The minimum lot area is 15,000 square feet and the minimum lot width is 100 feet.

R-5 Downtown Residential District. The purpose of the R-5 Downtown Residential District is to provide medium density residential housing and integrated service retail space in the downtown area of the City, as directed by the City's Downtown Master Plan. A compatible

mix of land uses is intended to be achieved through the mitigation of land use conflicts between differing uses.

Designation of the R-5 District corresponds to areas guided for Town Center use on the 2040 Land Use Plan, with development densities ranging from 10 to 30 dwelling units per net acre.

Allowed R-5 District uses are subject to comprehensive performance standards addressing site design, building construction, landscaping and maintenance of common open spaces. The R-5 District makes an allowance for multiple family dwellings containing six or more dwelling units as a permitted use. There is no minimum lot area or lot width in this district.

B-1 Neighborhood Business District. The purpose of the B-1 Neighborhood Business District is to provide for the establishment of local centers for convenient, limited office, retail or service outlets which deal directly with the customer for whom the goods or services are furnished.

Allowed B-1 District uses include limited retail, service and office uses. The market for these businesses is intended to be neighborhood-oriented and located at the edge of residential neighborhoods accessed by major collector or arterial streets.

B-2 Downtown Business District. The purpose of the B-2 Downtown Business District is to provide for a mix of business and multi-family housing in the downtown area of the City as directed by the City's Downtown Master Plan. The B-2 District provides the broadest variety, highest density and greatest intensity of development within the City.

The B-2 District makes an allowance for a variety of ground floor retail and service uses as well as above ground floor multiple family developments containing eight or more units per acre. Allowed B-2 District uses are subject to comprehensive performance standards addressing site design, building construction, landscaping and maintenance of common open spaces.

B-3 Original Townsite District. The purpose of the B-3 Original Townsite District is to:

A. Establish a district applicable to the original Elko Townsite that is compatible with existing uses;

B. Encourage a compatible mix of land uses through the mitigation of land use conflicts between differing uses;

C. Adhere to the goals and objectives of the Comprehensive Plan;

D. Provide opportunities for neighborhood businesses to concentrate for the convenience of the public and in mutually beneficial relationships to each other;

E. Permit the development of neighborhood businesses in those areas for the uses identified in the comprehensive plan, according to standards that minimize adverse impacts on adjacent uses;

F. Provide adequate space to meet the needs of modern development, including off street parking areas, loading areas and landscaping; and

G. Protect neighbors from noise, odor, dust, dirt, smoke, vibration, heat, traffic, noxious fumes and other objectionable or hazardous influences.

The B-3 District provides for a variety of ground floor retail and service uses as well as above ground floor residential dwellings as permitted uses. Ground floor dwellings are allowed as a conditional use in the District. Dwelling units above the ground floor are allowed at a density of one dwelling unit per 3,000 square feet of lot area while ground floor dwellings are allowed at a density of one unit per 10,000 square feet of lot area.

B-4 Highway Business District. The purpose of the B-4 Highway Dusiness District is to provide for and limit motor vehicle dependent commercial and service activities, while creating an attractive "gateway" to the City which fosters high quality development of businesses, with careful attention to the appearance of the site and buildings.

Uses allowed in the B-4 District include a range of retail, service and office uses in addition to specific provisions applying to motor fuel and auto service centers (as conditional uses). Consistent with the purpose of the district, specific site and building requirements are imposed to ensure high quality development products.

B-5 General Business District. The purpose of the B-5 General Business District is to provide for the establishment of commercial and service activities which draw from and serve customers from the entire community or region. A full range of retail, service and office activities are allowed in the B-5 District.

B-6 Business Warehousing District. The purpose of the B-6 Business Warehousing District is to provide for the establishment of wholesale and retail trade of large volume or bulk commercial items, storage and warehousing. The overall character of the B-6 District is intended to be transitional in nature. Thus, industrial uses allowed within the district are limited to those which can compatibly exist adjacent to commercial and lower intensity activities.

B-7 Business Campus District. The purpose of the B-7 Business Campus District is to provide for the establishment of business offices, wholesale showrooms, and related uses in

an environment which provides a high level of amenities, including landscaping, preservation of natural features, architectural controls, pedestrian trails, and other features.

I-1 Limited Industrial District. The purpose of the I-1 Limited Industrial District is to provide for the establishment of warehousing and light industrial development. Industrial uses allowed in this district are limited to those which can compatibly exist adjacent to both lower intensity business uses and high intensity manufacturing uses and which have limited amounts of truck traffic in comparison to higher intensity industrial districts. It is further the intent of the District to direct industrial development such that it occurs in an orderly, well planned manner at locations identified in the comprehensive plan where urban services are provided.

I-2 General Industrial District. The purpose of the I-2 General Industrial District is to provide areas suitable for the location of general industrial activities which have adequate and convenient access to major streets and provide effective controls for "nuisance" and pollution characteristics. The district is also intended to encourage industrial development in a compact and orderly manner consistent with the general locations shown in the Comprehensive Plan providing a compatible relationship with other land uses where a full complement of urban services are provided.

UR Urban Reserve District. The purpose of the UR Urban Reserve District is to preserve areas where urban public utilities are not presently available. These lands are to be retained in a natural state or in agricultural use pending the proper timing for the economical provision of sewer and water, streets, parks, storm drainage and other public utilities and services so that orderly development can occur. Upon annexation, all newly incorporated lands assume a UR Urban Reserve zoning designation and are subject to rezoning to accommodate urban development.

INS Institutional District. The purpose of the INS Institutional District is to provide a specific zoning district for facilities devoted to serving the public. The district is unique in that the primary objective of allowed uses is the provision of services, frequently on a nonprofit basis, rather than the sale of goods or services. It is intended that uses within this district will be compatible with adjoining development and typically located on an arterial street or thoroughfare.

PUD Planned Unit Development District. The PUD Planned Unit Development District provides opportunities for flexibility in the application of established performance standards for the development of residential land uses, non-residential land uses or mixed-use projects that would not otherwise be possible under conventional zoning. The intent of the PUD District is to:

A. Provide for the establishment of PUD (planned unit development) zoning districts in appropriate settings and situations to create or maintain a development pattern that complies with the city comprehensive plan.

B. Allow for the mixing of land uses within a development when such mixing of land uses could not otherwise be accomplished under this title.

C. Provide for variations to the strict application of the land use regulations in this title in order to improve site design and operation, while at the same time incorporating design elements (e.g., construction materials, landscaping, lighting, etc.) that exceed the city's standards to offset the effect of any variations.

D. Promote a more creative and efficient approach to land use within the city, while at the same time protecting and promoting the health, safety, comfort, aesthetics, economic viability, and general welfare of the city.

E. Preserve and enhance natural features and open spaces.

F. Maintain or improve the efficiency of public streets and utilities.

G. Ensure the establishment of appropriate transitions between differing land uses.

Establishment of a PUD District is considered a legislative act (public policy decision) of the City Council based on the policies of the Comprehensive Plan.

FP Floodplain Overlay District. The purpose of the FP Floodplain Overlay District is to:

A. Regulate development in the flood hazard areas of the City. These flood hazard areas are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base. It is the purpose of the article to promote the public health, safety, and general welfare by minimizing these losses and disruptions.

B. Comply with the rules and regulations of the National Flood Insurance Program, as amended, to maintain the City's eligibility in the program.

C. Preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and storm water impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

IMPLEMENTATION STRATEGIES

In addition to the Zoning Ordinance and Subdivision Ordinance, the City has identified a number of other controls that assist in implementation of the Comprehensive Plan. These controls are grouped by topic area and summarize implementation strategies from each element of the Plan. The City will implement these strategies to achieve the vision and goals previously outlined within the Plan.

Housing & Economic Development

- The City will work with adjacent jurisdictions to execute orderly annexation agreements where forecasted growth exceeds land capacity within existing City boundaries.
- The City will make any necessary changes to the zoning map to ensure consistency with the land use map contained in this Plan.
- The City will adopt ordinances that coordinate development with infrastructure availability.
- The City will evaluate zoning codes and make changes as necessary to reduce barriers to providing a variety of housing types and price ranges.
- The City will consider implementing a rental housing registration program to monitor the condition of the City's rental housing stock.
- The City will consider the adoption of a housing maintenance code.
- The City will consider completion of a housing survey to document housing conditions in various neighborhoods to evaluate if deterioration exists and additional action is required.
- The City will work with other organizations such as the Scott County Community Development Agency, Metropolitan Council and Minnesota Housing Finance Agency to identify and promote relevant housing programs to Elko New Market residents.
- The City will identify naturally occurring affordable housing within the City and explore opportunities with the Minnesota Housing Fund to finance the acquisition and preservation of naturally occurring affordable housing.
- The City will educate the City's Planning Commission and City Council regarding accessory dwelling units, inclusionary zoning, and fair housing policies. If supported, prepare a regulatory framework for adoption.
- The City will monitor progress toward meeting the affordable housing goals required by the Thrive MSP 2040 Plan.
- The City will continue to consider TIF, tax abatement, and conduit bonding (when authorized) to encourage growth and development projects.
- The City will pursue infrastructure projects which will attract commercial and industrial development.
- The City will explore opportunities to streamline the City's development review process without diminishing the public purpose of such processes.

- The City will meet with commercial brokers, developers, and/or other market participants for informal feedback on the City's economic development efforts.
- The City will actively communicate with the Elko New Market Chamber of Commerce and local business owners to gain an understanding of the changing needs of the commercial market.
- The City will update the City's website to provide greater emphasis on the desirable community features which may appeal to new businesses and include links to real estate locator sites.
- The City will consider the possible elimination or consolidation of a number of the City's commercial zoning districts.
- The City will promote the maintenance, modernization and expansion of local commercial and industrial land uses to preserve and expand the City's tax base and revenues.
- The City will pursue available County, State and Federal grants and aids, as appropriate, to facilitate community improvements and programs.

Natural Environment & Recreation.

- The City will encourage landowners to retain areas of native vegetation, and to plant species native to the area, to protect and improve wildlife habitat and maintain the historic ecological role.
- The City will guide development such that natural areas are not impacted or that impacts are minimized (e.g. re-configure lots and/or road alignments to less impactful locations).
- The City will collaborate with Scott County, New Market Township, Three Rivers Park District, applicable Watershed Management Organizations and the Minnesota Department of Natural Resources to ensure proper management of the Vermillion River headwaters and the adjacent "priority natural area" which flanks the river.
- The City will consider incentives such as density bonuses or the transfer of development rights to protect high value natural resource corridors.
- The City will adopt shoreland regulations, which will apply to lands within 1,000 feet of the ordinary high-water level of lakes and 300 feet from the ordinary high-water level of rivers and designated river tributaries, when necessary.
- The City will review and update neighborhood park needs and service areas as development occurs so that new barriers and changing recreational needs are acknowledged and accommodated.
- The City will review and evaluate each development project to ensure it provides appropriate park land dedication, open space preservation and trail connections parks, trails, greenways, schools, and commercial/industrial developments.
- The City will review and prioritize trail needs and recommend a schedule and funding framework to the City Council.

- The City will investigate the use of grants, donations, partnerships, and opportunities for additional joint powers agreements for the development of park, trail and recreation facilities.
- The City will amend its City Code to incorporate current state statue language associated with park dedication.
- The City will develop comprehensive maintenance and management plans for its Park and Trail System.
- The City will consider incorporating park redevelopment infrastructure planning as part of the 5-year Capital Improvement Plan.
- The City will act to further investigate options and agency participation for development of the greenway / natural habitat corridor and trail system outside of the 2040 planning area.

Solar

- The City will consider changes needed to local ordinances which will make solar energy more feasible. This may include evaluating regulations to allow additional solar opportunities in the City's Institutional zoning districts (schools, churches, public facilities).
- The City will continue to accommodate alternative energy systems (wind, solar and geothermal) in accordance with applicable Ordinance requirements.
- The City will continue to monitor technological changes which relate to alternative energy systems, including solar, to ensure that the City's Ordinance provisions respond to such changes in a responsible manner.

Utilities (Sanitary Sewer, Stormwater, and Water)

- The City should compare existing well pump and waste water discharge records to see if there is a clear correlation between the two. If a spike in the waste water flow shows up during fall and spring wet periods, then a sump pump inspection program should be considered.
- The City will continue to enforce the policy requiring rear-yard drainage systems to prevent the development of chronically wet turf grass areas.
- The City will develop a stormwater maintenance program to ensure the successful operation of the drainage system.
- The City will develop and implement corrective actions for stormwater problems.
- The City will encourage low-impact development and better site design components for new development projects.
- The City will establish emergency overflow routes to be established and maintained to provide stabilized relief during extreme storm conditions, which exceed design conditions.

- The City will review street sweeping frequency.
- The City will update and enforce the City's critical water deficiency ordinance to restrict or prohibit lawn water, vehicle washing, golf course and park irrigation and other nonessential uses.
- The City will meet with large water users to discuss user's contingency plan.
- The City will maintain, replace, and repair water system infrastructure as necessary.
- The City will continue to require utility infrastructure costs to be borne by the development which creates the demand for such utilities.

Administration

- The City will will continue to hold Public hearings required for proposed development applications in accordance with the procedures established by the Zoning Ordinance and / or Subdivision Ordinance and as required by Minnesota Statute.
- The City shall, as appropriate, encourage developers to host neighborhood meetings with residents, businesses and property owners in the area to provide information regarding a proposed project.
- The City will continue to include news releases in the City newsletter and / or official newspaper related to on-going planning related activities and development proposals.
- The City will make available on its website information regarding on-going planning related activities, development proposals and Planning Commission and City Council meetings.
- The City will continue to work with established business and civic organizations as a means of communicating information regarding the Comprehensive Plan and implementation strategies.
- The City will conduct periodic community surveys to solicit input from residents, businesses and property owners regarding the character of the community, potential issues to address and satisfaction with the City's administration, services and facilities.
- The City will be proactive in the pursuit and utilization of new technologies that may contribute to more effective communications with residents, businesses and property owners.
- The City will maintain open lines of communication between the City Council and advisory committees.
- The City will attempt to "learn from others" by consulting with other communities to leverage experiences and expertise, when appropriate.
- The City will remain proactive in the pursuit and utilization of new technologies which may contribute to more effective operation and delivery of community services.
- The City will operate in a fiscally sound manner and provide cost-conscious solutions for the provision of public services.
- The City will allocate administrative and improvement costs to those generating the demand or utilizing the public services.

- The City will encourage ongoing staff training and education as a means of maintaining the delivery of high quality services to residents.
- The City will continue proactive maintenance of public facilities to avoid significant disrepair and/or breakdowns.
- The City will pursue intergovernmental cooperation for the sharing of public services and facilities as a means of avoiding duplication and economizing City investments.
- The City will maintain a 5-year Capital Improvement Plan which identifies needed public capital improvements and assigns costs and schedules based on project priority and funding availability. Table 11-1 outlines the City's Capital Improvement Program for 2019 to 2023.

Table 11-1

Capital Improvement Plan
2019 – 2023

Project	Year	Estimated Cost	Description
2019 Pavement Rehab	2019	$610,000	Includes a mill and overlay of several City streets. The project was needed to extend the life of the existing streets.
Police Station Remodel	2020	$2,055,000	Includes a new addition to the current City Hall while making health and safety improvements to the existing Police Department building, so that it could be used for community purposes.
Sewer Onsite Generation	2020	$250,000	On-site generation provides increased reliability for lift station operation in the event of power outages to reduce the potential of sewer backups. In addition, it increases worker safety – power outages typically occur during severe weather events. It also reduces the need for Staff to manually visit the sites in the event of a power failure.
Fire Department Rescue Truck	2020	$300,000	The current heavy rescue is over 18 years old and at the end of its usable life as a reliable response vehicle. The new rescue truck is smaller, more maneuverable, has four-wheel drive, and reflects the Department's operational needs based on experience.
Roundabout	2020	$1,235,000	Located at CSAH 2 & CSAH 91, the purpose of this project responds to

			existing and forecast traffic volumes and movements, conducting traffic through the intersection as safely and conveniently as possible.
Plow Trucks	2021	$540,000	Includes the acquisition of two new snow plows.
Source: City of Elko New Market			

IMPLEMENTATION SCHEDULE

State Statute requires that Metropolitan Area communities update their official controls within nine months of the adoption of their Comprehensive Plan. The requirement is intended to ensure that such controls are not in conflict with the Plan and promote its vision and goals. The City of Elko New Market intends to meet this requirement within the referenced nine month time period. Table 11-2 summarizes the implementation strategies and identifies a responsible party and time period for when each strategy is to be completed. The time periods are categorized as follows:

- Immediate (0 – 9 months)
- Short Term (9 months – 5 years)
- Long Term (5+ years)
- Ongoing

Table 11-2

Implementation Schedule		
Strategy	**Responsible Party**	**Timing**
Housing & Economic Development		
Work with adjacent jurisdictions to execute orderly annexation agreements where forecasted growth exceeds land capacity within existing City boundaries.	City Administrator Community Development Staff	Short Term
Make any necessary changes to the zoning map to ensure consistency with the planned land use map contained in this Plan.	Community Development Staff	Immediate
Adopt ordinances that coordinate development with infrastructure availability.	Community Development Staff	Immediate
Evaluate zoning codes and make changes as necessary to reduce barriers to providing a variety of housing types and price ranges.	Community Development Staff	Immediate
Consider implementing a rental housing registration program to monitor the condition of the City's rental housing stock.	Community Development Staff	Short Term
Consider the adoption of a housing maintenance code.	Community Development Staff	Short Term
Consider completion of a housing survey to document housing conditions in various neighborhoods to evaluate if deterioration exists and additional action is required.	Community Development Staff	Short Term
Work with other organizations such as the Scott County Community Development Agency, Metropolitan Council and Minnesota Housing Finance Agency to identify and promote relevant housing programs to Elko New Market residents.	Community Development Staff	Ongoing
Identify naturally occurring affordable housing within the City and explore opportunities with the Minnesota Housing Fund to finance the acquisition and preservation of naturally occurring affordable housing.	Community Development Staff	Short Term
Educate the City's Planning Commission and City Council regarding accessory dwelling units, inclusionary zoning, and fair housing policies. If supported, prepare a regulatory framework for adoption.	Community Development Staff	Immediate

Monitor progress toward meeting the affordable housing goals required by the Thrive MSP 2040 Plan.	Community Development Staff	Ongoing
Continue to consider TIF, tax abatement, and conduit bonding (when authorized) to encourage growth and development projects.	Community Development Staff	Ongoing
Pursue infrastructure projects which will attract commercial and industrial development.	Community Development Staff	Ongoing
Explore opportunities to streamline the City's development review process without diminishing the public purpose of such processes.	City Administrator Community Development Staff	Short Term
Meet with commercial brokers, developers, and/or other market participants for informal feedback on the City's economic development efforts.	Community Development Staff	Ongoing
Communicate with the Elko New Market Chamber of Commerce and local business owners to gain an understanding of the changing needs of the commercial market.	Community Development Staff	Ongoing
Update the City's website to provide greater emphasis on the desirable community features which may appeal to new businesses and include links to real estate locator sites.	Community Development Staff	Immediate
Consider the possible elimination or consolidation of a number of the City's commercial zoning districts.	Community Development Staff	Immediate
Promote the maintenance, modernization and expansion of local commercial and industrial land uses to preserve and expand the City's tax base and revenues.	Community Development Staff	Ongoing
Pursue available County, State and Federal grants and aids, as appropriate, to facilitate community improvements and programs.	Community Development Staff	Ongoing
Natural Environment & Recreation		
Encourage landowners to retain areas of native vegetation, and to plant species native to the area, to protect and improve wildlife habitat and maintain the historic ecological role.	Community Development Staff	Ongoing

Guide development such that natural areas are not impacted or that impacts are minimized (e.g. re-configure lots and/or road alignments to less impactful locations).	Community Development Staff	Ongoing
Collaborate with Scott County, New Market Township, Three Rivers Park District, applicable Watershed Management Organizations and the Minnesota Department of Natural Resources to ensure proper management of the Vermillion River headwaters and the adjacent "priority natural area" which flanks the river.	Community Development Staff City Engineer	Long Term
Consider incentives such as density bonuses or the transfer of development rights to protect high value natural resource corridors.	Community Development Staff	Immediate
Adopt shoreland regulations, which will apply to lands within 1,000 feet of the ordinary high-water level of lakes and 300 feet from the ordinary high-water level of rivers and designated river tributaries, when necessary.	Community Development Staff	Long Term
Review and update neighborhood park needs and service areas as development occurs so that new barriers and changing recreational needs are acknowledged and accommodated.	Parks Staff	Ongoing
Review and evaluate each development project to ensure it provides appropriate park land dedication, open space preservation and trail connections parks, trails, greenways, schools, and commercial/industrial developments.	Community Development Staff	Ongoing
Review and prioritize trail needs and recommend a schedule and funding framework to the City Council.	Parks Staff	Ongoing
Investigate the use of grants, donations, partnerships, and opportunities for additional joint powers agreements for the development of park, trail and recreation facilities.	Parks Staff	Ongoing
Amend its City Code to incorporate current state statue language associated with park dedication.	Community Development Staff	Immediate
Develop comprehensive maintenance and management plans for its Park and Trail System.	Parks Staff	Short Term

Consider incorporating park redevelopment infrastructure planning as part of the 5-year Capital Improvement Plan.	City Administrator Parks Staff	Short Term
Act to further investigate options and agency participation for development of the greenway / natural habitat corridor and trail system outside of the 2040 planning area.	Parks Staff	Ongoing
Solar		
Consider changes needed to local ordinances which will make solar energy more feasible.	Assistant City Administrator Community Development Staff	Immediate
Continue to accommodate alternative energy systems (wind, solar and geothermal) in accordance with applicable Ordinance requirements.	Assistant City Administrator Community Development Staff	Ongoing
Continue to monitor technological changes which relate to alternative energy systems, including solar, to ensure that the City's Ordinance provisions respond to such changes in a responsible manner.	Assistant City Administrator Community Development Staff	Ongoing
Utilities (Sanitary Sewer, Stormwater, and Water)		
Compare existing well pump and waste water discharge records to see if there is a clear correlation between the two. If a spike in the waste water flow shows up during fall and spring wet periods, then a sump pump inspection program should be considered.	Public Works	Short Term
Continue to enforce the policy requiring rear-yard drainage systems to prevent the development of chronically wet turf grass areas.	Public Works Community Development Staff	Ongoing
Develop a stormwater maintenance program to ensure the successful operation of the drainage system.	Public Works	Short Term
Develop and implement corrective actions for stormwater problems.	Public Works City Engineer	Short Term
Encourage low-impact development and better site design components for new development projects.	Community Development Staff City Engineer	Ongoing

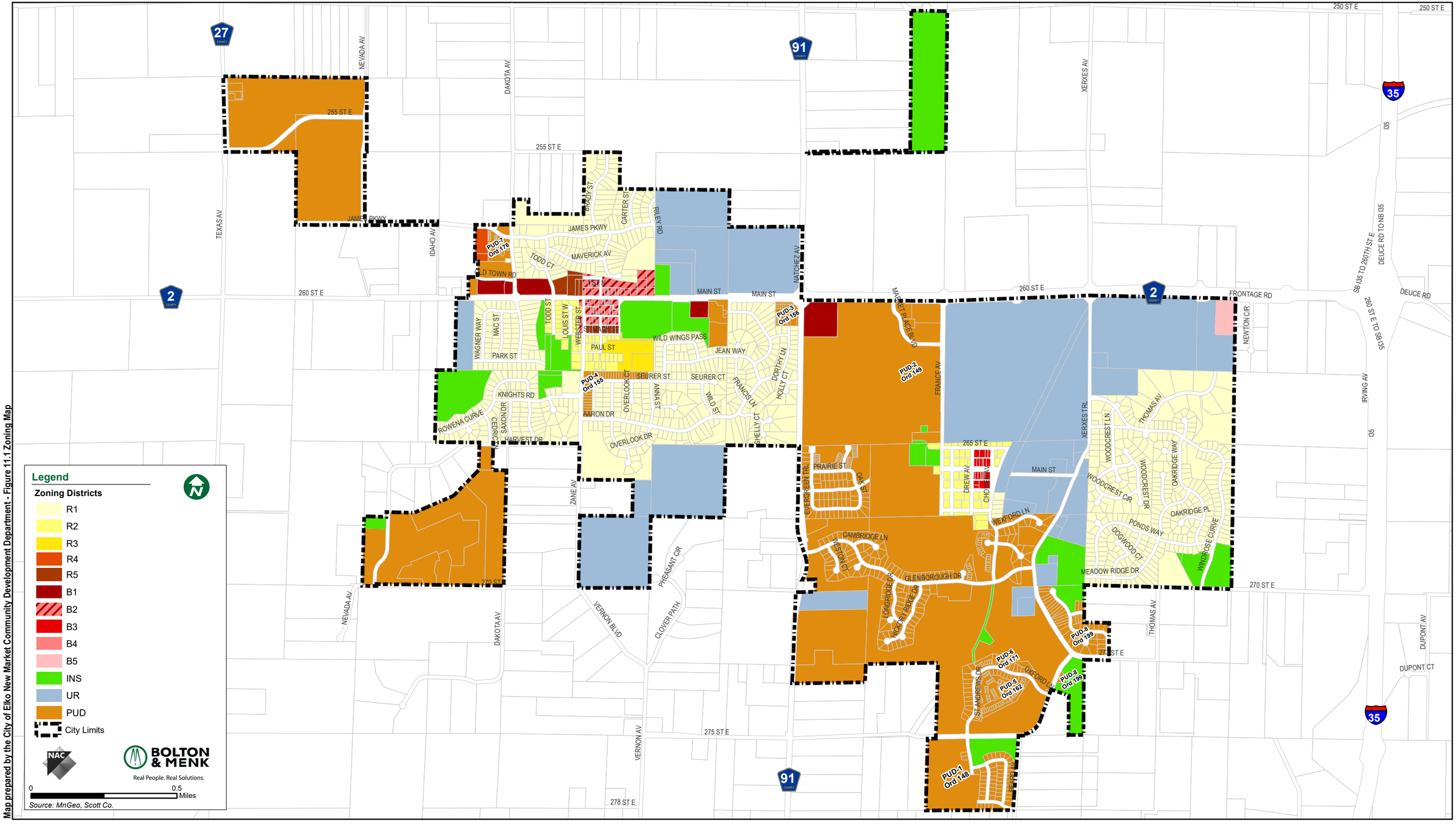
Establish emergency overflow routes to be established and maintained to provide stabilized relief during extreme storm conditions, which exceed design conditions.	City Engineer	Ongoing
Review street sweeping frequency.	Public Works	Short Term
Update and enforce the City's critical water deficiency ordinance to restrict or prohibit lawn water, vehicle washing, golf course and park irrigation and other nonessential uses.	Community Development Staff	Immediate
Meet with large water users to discuss user's contingency plan.	City Administrator City Engineer	Short Term
Maintain, replace, and repair water system infrastructure as necessary.	Public Works	Ongoing
Continue to require utility infrastructure costs to be borne by the development which creates the demand for such utilities.	Community Development Staff City Attorney	Ongoing
Administration		
Continue to hold public hearings required for proposed development applications in accordance with the procedures established by the Zoning Ordinance and / or Subdivision Ordinance and as required by Minnesota Statute.	Community Development Staff	Ongoing
Encourage developers to host neighborhood meetings with residents, businesses and property owners in the area to provide information regarding a proposed project.	Community Development Staff	Ongoing
Continue to include news releases in the City newsletter and / or official newspaper related to on-going planning related activities and development proposals.	Community Development Staff	Ongoing
Make available on its website information regarding on-going planning related activities, development proposals and Planning Commission and City Council meetings.	Community Development Staff	Ongoing
Continue to work with established business and civic organizations as a means of communicating information regarding the Comprehensive Plan and implementation strategies.	City Administrator Community Development Staff	Ongoing

Conduct periodic community surveys to solicit input from residents, businesses and property owners regarding the character of the community, potential issues to address and satisfaction with the City's administration, services and facilities.	City Administrator Assistant City Administrator	Ongoing
Be proactive in the pursuit and utilization of new technologies that may contribute to more effective communications with residents, businesses and property owners.	Administrative Staff	Ongoing
Maintain open lines of communication between the City Council and advisory committees.	Administrative Staff	Ongoing
Attempt to "learn from others" by consulting with other communities to leverage experiences and expertise, when appropriate.	Administrative Staff	Ongoing
Remain proactive in the pursuit and utilization of new technologies which may contribute to more effective operation and delivery of community services.	Administrative Staff	Ongoing
Operate in a fiscally sound manner and provide cost-conscious solutions for the provision of public services.	City Administrator	Ongoing
Allocate administrative and improvement costs to those generating the demand or utilizing the public services.	Administrative Staff	Ongoing
Encourage ongoing staff training and education as a means of maintaining the delivery of high quality services to residents.	Administrative Staff	Ongoing
The City will continue proactive maintenance of public facilities to avoid significant disrepair and/or breakdowns.	Public Works City Administrator	Ongoing
Pursue intergovernmental cooperation for the sharing of public services and facilities as a means of avoiding duplication and economizing City investments.	City Administrator	Ongoing
Maintain a 5-year Capital Improvement Plan which identifies needed public capital improvements and assigns costs and schedules based on project priority and funding availability. Table 14-1 outlines the City's Capital Improvement Program for 2019 to 2023.	City Administrator	Ongoing

2040 Comprehensive Plan

Elko New Market, MN

Zoning Map
Figure 11.1



Map prepared by the City of Elko New Market Community Development Department - Figure 11.1 Zoning Map

Local Water Supply Plan Elko New Market, MN

Third Generation for 2016-2018

Revised April 10, 2017

Formerly called Water Emergency & Water Conservation Plan

DEPARTMENT OF NATURAL RESOURCES

Cover photo by Molly Shodeen

For more information on this Water Supply Plan Template, please contact the DNR Division of Ecological and Water Resources at (651) 259-5034 or (651) 259-5100.

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This information is available in an alternative format upon request.

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DEPARTMENT OF NATURAL RESOURCES – DIVISION OF ECOLOGICAL AND WATER RESOURCES AND METROPOLITAN COUNCIL

INTRODUCTION TO WATER SUPPLY PLANS (WSP)

Who needs to complete a Water Supply Plan

Public water suppliers serving more than 1,000 people, large private water suppliers in designated Groundwater Management Areas, and all water suppliers in the Twin Cities metropolitan area are required to prepare and submit a water supply plan.

The goal of the WSP is to help water suppliers: 1) implement long term water sustainability and conservation measures; and 2) develop critical emergency preparedness measures. Your community needs to know what measures will be implemented in case of a water crisis. A lot of emergencies can be avoided or mitigated if long term sustainability measures are implemented.

Groundwater Management Areas (GWMA)

The DNR has designated three areas of the state as Groundwater Management Areas (GWMAs) to focus groundwater management efforts in specific geographies where there is an added risk of overuse or water quality degradation. A plan directing the DNRs actions within each GWMA has been prepared. Although there are no specific additional requirements with respect to the water supply planning for communities within designated GWMAs, communities should be aware of the issues and actions planned if they are within the boundary of one of the GWMAs. The three GWMAs are the North and East Metro GWMA (Twin Cities Metro), the Bonanza Valley GWMA and the Straight River GWMA (near Park Rapids). Additional information and maps are included in the DNR Groundwater Management Areas webpage.

Benefits of completing a WSP

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. M.S.103G.291 to complete a water supply plan. For water suppliers in the metropolitan area, the WSP will help local governmental units to fulfill their requirements under M.S. 473.859 to complete a local comprehensive plan. Additional benefits of completing WSP template:

- The standardized format allows for quicker and easier review and approval
- Help water suppliers prepare for droughts and water emergencies.
- Create eligibility for funding requests to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund.
- Allow water suppliers to submit requests for new wells or expanded capacity of existing wells.
- Simplify the development of county comprehensive water plans and watershed plans.
- Fulfill the contingency plan provisions required in the MDH wellhead protection and surface water protection plans.
- Fulfill the demand reduction requirements of Minnesota Statutes, section 103G.291 subd 3 and 4.

- Upon implementation, contribute to maintaining aquifer levels, reducing potential well interference and water use conflicts, and reducing the need to drill new wells or expand system capacity.
- Enable DNR to compile and analyze water use and conservation data to help guide decisions.
- Conserve Minnesota's water resources

If your community needs assistance completing the Water Supply Plan, assistance is available from your area hydrologist or groundwater specialist, the MN Rural Waters Association circuit rider program, or in the metropolitan area from Metropolitan Council staff. Many private consultants are also available.

WSP Approval Process

10 Basic Steps for completing a 10-Year Water Supply Plan

1. Download the DNR/Metropolitan Council Water Supply Plan Template from the DNR Water Supply Plan webpage.
2. Save the document with a file name with this naming convention: WSP_cityname_permitnumber_date.doc.
3. The template is a form that should be completed electronically.
4. Compile the required water use data (Part 1) and emergency procedures information (Part 2)
5. The Water Conservation section (Part 3) may need discussion with the water department, council, or planning commission, if your community does not already have an active water conservation program.
6. Communities in the seven-county Twin Cities metropolitan area should complete all the information discussed in Part 4. The Metropolitan Council has additional guidance information on their Water Supply webpage. All out-state water suppliers ***do not*** need to complete the content addressed in Part 4.
7. Use the Plan instructions and Checklist document from the DNR Water Supply Plan webpage to insure all data is complete and attachments are included. This will allow for a quicker approval process.
8. Plans should be submitted electronically using the MPARS website – no paper documents are required.
9. DNR hydrologist will review plans (in cooperation with Metropolitan Council in Metro area) and approve the plan or make recommendations.
10. Once approved, communities should complete a Certification of Adoption form, and send a copy to the DNR.

Complete Table 1 with information about the public water supply system covered by this WSP.

Table 1. General information regarding this WSP

Requested Information	Description
DNR Water Appropriation Permit Number(s)	**1984-6141**
Ownership	☒ Public or ☐ Private
Metropolitan Council Area	☒ Yes or ☐ No (Scott)
Street Address	**601 Main Street**
City, State, Zip	**The City of Elko New Market, MN 55054**
Contact Person Name	Thomas Terry
Title	City Administrator
Phone Number	(952) 461-2777
MDH Supplier Classification	Municipal

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and availability. Information summarized in Part 1 can be used to develop Emergency Preparedness Procedures (Part 2) and the Water Conservation Plan (Part 3). This data is also needed to track progress for water efficiency measures.

A. Analysis of Water Demand

Complete Table 2 showing the past 10 years of water demand data.

- Some of this information may be in your Wellhead Protection Plan.
- If you do not have this information, do your best, call your engineer for assistance or if necessary leave blank.

If your customer categories are different than the ones listed in Table 2, please describe the differences below:

The cities of Elko and New Market were combined in 2007. Therefore, the data for 2007 and 2008 is complete data for the combined city. Data prior to 2007 was the combination of the data from the two cities. Some of the required data was not available from both cities prior to 2005. Some data from 2010 – 2014 was missing.

Table 2. Historic water demand (see definitions in the glossary after Part 4 of this template)

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supplier Services	Percent Unmetered/ Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)
2005	2,525	870	83.6	8.0	0	0	92	96	0	4.8%	0.25	0.93	N/A	90.7	104.4
2006	3,167	1,085	114.7	4.4	0	0	119	114	0	-4.5%	0.33	1.19	N/A	99.2	98.6
2007	3,788	1,130	117.7	14.1	0	0	132	135	0	2.4%	0.36	0.75	N/A	85.1	97.6
2008	3,788	1,613	106.2	3.9	0	0	110	124	0	11.0%	0.30	0.60	N/A	76.8	89.5
2009	3,800	1,644	112.5	3.8	0	0	116	123	0	5.1%	0.32	--	N/A	81.1	88.4
2010	3,943	1,324	102.2	2.8	0	0	105	103	0	-2.1%	0.29	--	N/A	71.0	71.4
2011	4,110	1,303	101.2	3.2	0	0	104	114	0	8.3%	0.29	0.98	N/A	67.5	75.9
2012	4,200	1,300	115.7	5.1	0	0	121	122	0	0.7%	0.33	1.30	N/A	75.5	79.4
2013	4,300	1,381	--	--	0	0	115	115	0	--	0.31	--	N/A	0.0	73.2
2014	4,390	1,383	99.0	5.5	0	0	104	116	0	9.9%	0.29	--	N/A	61.8	72.3
2015	4,472	1,380	88.8	3.7	0	0	93	96	0	3.7%	0.25	0.90	N/A	54.4	58.9
2016	4,483	1,473	84.8	7.2	0	0	92	99	0	7.1%	0.25	0.71	N/A	51.8	60.5
Avg. 2010-2016	4,271	1,363	99	5	0	0	105	109	0	3.9%	0.29	0.97	N/A	54.6	70.0

MG – Million Gallons **MGD –** Million Gallons per Day **GPCD** – Gallons per Capita per Day

See Glossary for definitions. A list of Acronyms and Initialisms can be found after the Glossary.

Complete Table 3 by listing the top 10 water users by volume, from largest to smallest. For each user, include information about the category of use (residential, commercial, industrial, institutional, or wholesale), the amount of water used in gallons per year, the percent of total water delivered, and the status of water conservation measures.

Table 3. Large volume users

Customer	Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)	Amount Used (Gallons per Year)	Percent of Total Annual Water Delivered	Implementing Water Conservation Measures? (Yes/No/Unknown)
Market Village Apartments	Residential	111,250	0.1%	Unknown
Villas of Boulder Pointe Assn.	Residential	73,817	0.1%	Unknown
NP Area Schools (No. 3)	Institutional	57,167	0.1%	Unknown
Townhomes of the Farm	Residential	51,167	0.1%	Unknown
Townhomes Whispering Hills	Residential	41,512	0.0%	Unknown
Firehouse Grill LLC.	Commercial	36,250	0.0%	Unknown
Villas of Boulder Pointe Assn.	Residential	29,667	0.0%	Unknown
Townhomes Whispering Hills	Residential	21,662	0.0%	Unknown
Townhomes Whispering Hills	Residential	19,340	0.0%	Unknown
Arif Seepersaud	Residential	18,757	0.0%	Unknown

B. Treatment and Storage Capacity

Complete Table 4 with a description of where water is treated, the year treatment facilities were constructed, water treatment capacity, the treatment methods (i.e. chemical addition, reverse osmosis, coagulation, sedimentation, etc.) and treatment types used (i.e. fluoridation, softening, chlorination, Fe/MN removal, coagulation, etc.). Also describe the annual amount and method of disposal of treatment residuals. Add rows to the table as needed.

Table 4. Water treatment capacity and treatment processes

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (GPD)*	Treatment Method	Treatment Type	Annual Volume of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
WTF 1	2016	1,920,000 (1,600 gpm)	Gravity filtration	Fe/Mn and radium removal, chlorination, fluoridation	unknown	sanitary sewer	yes
Total	NA	1,920,000	NA	NA	N/A	NA	N/A
*Capacity is based on operation of 20 hours per day							

Complete Table 5 with information about storage structures. Describe the type (i.e. elevated, ground, etc.), the storage capacity of each type of structure, the year each structure was constructed, and the primary material for each structure. Add rows to the table as needed.

Table 5. Storage capacity, as of the end of the last calendar year

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
Elko Tower 1	Elevated	1997	Steel	150,000
New Market Tower 1	Elevated	2000	Steel	250,000
WTF Clearwell	Ground	2016	Concrete	490,000
Total	NA	NA	NA	890,000

Treatment and storage capacity versus demand

It is recommended that total storage equal or exceed the average daily demand.

Discuss the difference between current storage and treatment capacity versus the water supplier's projected average water demand over the next 10 years (see Table 7 for projected water demand):

Currently, the City of Elko New Market has three (3) storage facilities totaling 0.890 million gallons of storage capacity. There are two elevated storage facilities and one-ground storage facilities (WTF clearwell). The two elevated storage facilities have a combined total capacity of 0.40 million gallons while the single clearwell/reservoir at the WTF has a capacity of 0.490 million gallons. Since there are pumps and a generator that can pump the water in the event of a power failure, the 0.415 million gallons in the clearwell/reservoirs at the WTF is included in the total storage capacity. AWWA recommends that the storage capacity should equal or exceed the average day demand. Based on the data provided in Table 2, the current storage capacity is adequate for current average day demands. Using table 7 and the future average day projections, by 2025, there is an estimated average day demand of 0.55 MGD, leaving a surplus storage capacity of 337,000 gallons. Looking at 2030, the projected average day demand is 0.65, yielding a surplus in storage of 243,000 gallons. There is adequate storage capacity for the City of Elko New Market for the next 10 to 15 years and beyond. It is not until 2040 that a deficit in storage capacity of 5,000 gallons is projected. It is best to start planning and strategizing additional storage by 2040 to avoid having a deficit in storage capacity.

The City of Elko New Market has one water treatment facility (see Table 4). WTP No. 1 was construction and went online in 2016. The new plant has a capacity of 1,600 gpm (1.92 MGD) based on 20 hours of operation per day. This WTF is served by wells E2 – E4. Based on the data provided in Table 2, the average maximum day demand is approximately 0.66 MGD, yielding a surplus in treatment capacity of 1.26 MGD, which is sufficient for current demands. Table 7 indicates that the projected peak day demand will continue to increase as the population increases. By 2025, the projected peak day demand is 1.71 MGD, which is still less than the plant capacity. By 2030, the peak demand is projected to be 2.00 MGD, yielding a deficit in capacity of 0.08 MGD. Taking into account operation for 24 hours per day, the plant has a total capacity of 2.30 MGD, yielding adequate capacity. However, it running the plant for 24 hours per day does not allow for maintenance or backwashing. There is adequate treatment capacity for the next 10 years.

C. Water Sources

Complete Table 6 by listing all types of water sources that supply water to the system, including groundwater, surface water, interconnections with other water suppliers, or others. Provide the name of each source (aquifer name, river or lake name, name of interconnecting water supplier) and the Minnesota unique well number or intake ID, as appropriate. Report the year the source was installed or established and the current capacity. Provide information about the depth of all wells. Describe the status of the source (active, inactive, emergency only, retail/wholesale interconnection) and if the source facilities have a dedicated emergency power source. Add rows to the table as needed for each installation.

Include copies of well records and maintenance summary for each well that has occurred since your last approved plan in **Appendix 1.**

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Elko 2	594234	1997 (redone in 2016)	850	521	Active	Yes
Groundwater	Elko 3	680569	2002 (redone in 2016)	850	525	Active	Yes
Groundwater	New Market 1	211953	1930	80	410	Sealed and abandoned	Unknown
Groundwater	New Market 2	451825	1988	250	435	Monitoring Well	No
Groundwater	New Market 3	686687	2003	945	439	Emergency Only	Unknown
Groundwater	Elko 4	805363	2016	1000	500	Active	Yes

Limits on Emergency Interconnections

Discuss any limitations on the use of the water sources (e.g. not to be operated simultaneously, limitations due to blending, aquifer recovery issues etc.) and the use of interconnections, including capacity limits or timing constraints (i.e. only 200 gallons per minute are available from the City of Prior Lake, and it is estimated to take 6 hours to establish the emergency connection). If there are no limitations, list none.

New Market Well 3 is not treated and may take some effort to get it running in an emergency situation.

D. Future Demand Projections – *Key Metropolitan Council Benchmark*

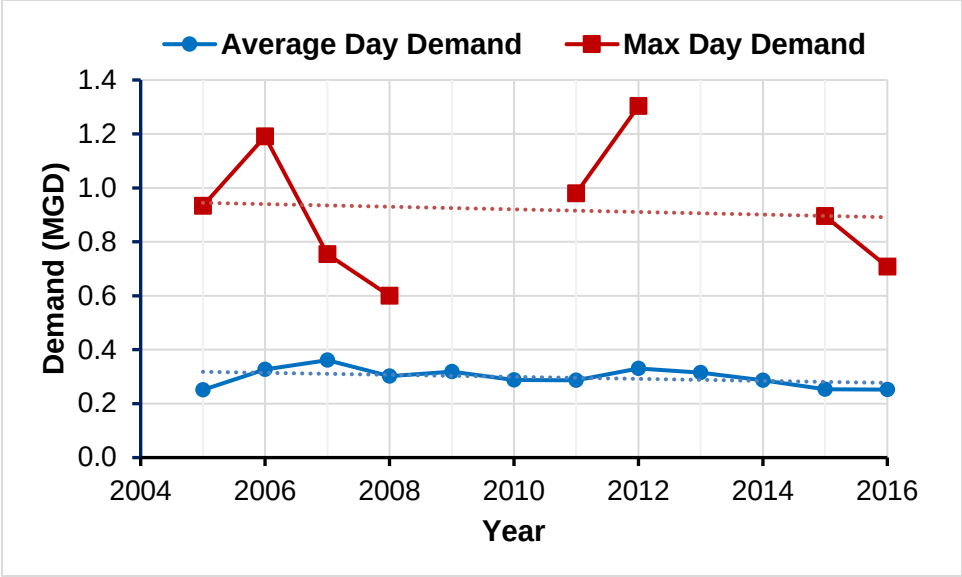
Water Use Trends

Use the data in Table 2 to describe trends in 1) population served; 2) total per capita water demand; 3) average daily demand; 4) maximum daily demand. Then explain the causes for upward or downward trends. For example, over the ten years has the average daily demand trended up or down? Why is this occurring?

From 2005 to 2016, the City of Elko New Market saw an increase in population served of 77.5%, from 2,525 in 2005 to 4,483 in 2016. The total population trend has slightly increased over the last 10 years at about the same rate as the population served. There are slightly more people that the population served by the distribution system. Based on the historical population, it is anticipated that the projected population will follow similar growth trends.

The total per capita demand has average 80.8 gallons per capita per day (gpcd) from 2005 through 2016. When looking at data from 2011 through 2016, the average day demand is 70 gpcd. This decrease in average per capita demand reflects water conservation measures the City has been implementing for the last several years. The per capita demand had a peak in 2005 at 104.4 gpcd. Since then, the per capita demand has been decreasing as water conservation measures have been implemented and education about water conservation becomes easier to find. The demands in 2015 and 2016 have significantly declined (43% less than the average of the previous 10 years). Increased precipitation along with increased water conservation has led to the lower water demands.

Average day demand has been consistent over the 10-year historical period. The historical average of the average day demand is 0.30 MGD. Overall, there have not been any major fluctuations in average day demand. The steady demand could be attributed to the size of Elko New Market and efforts by the City to implement water conservation techniques and programs. The figure below represents the historical average and max day demand trends for Elko New Market.



Maximum day demand has a slight decreasing trend over the historical period. Not all data was available for the analysis. Major peaks occurred in 2006 and 2012 (during drought years). Peaking factors have been relatively similar over the historical period. The peaking factor averages 3.09, which is typical for a town the size of Elko New Market. Maximum day demands are most likely slightly decreasing due to the implementation of water conservation measures and education about conserving water being more easily accessible to customers. As more water conservation measures get implemented,

Use the water use trend information discussed above to complete Table 7 with projected annual demand for the next ten years. Communities in the seven-county Twin Cities metropolitan area must also include projections for 2030 and 2040 as part of their local comprehensive planning.

Projected demand should be consistent with trends evident in the historical data in Table 2, as discussed above. Projected demand should also reflect state demographer population projections and/or other planning projections.

Table 7. Projected annual water demand

Year	Projected Total Population [1]	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD) [2]
2016	4,716	4,716	75	0.35	1.10
2017	5,062	5,062	75	0.38	1.18
2018	5,408	5,408	75	0.41	1.26
2019	5,754	5,754	75	0.43	1.34
2020	6,100	6,100	75	0.46	1.42
2021	6,350	6,350	75	0.48	1.48
2022	6,600	6,600	75	0.50	1.54
2023	6,850	6,850	75	0.52	1.59
2024	7,100	7,100	75	0.53	1.65
2025	7,350	7,350	75	0.55	1.71
2030	8,600	8,600	75	0.65	2.00
2040	11,900	11,900	75	0.89	2.77

[1] Total Population Projections based on Metropolitan Council (2016 population estimate is from MN State Demographer)
[2] Peaking Factor based on historical data

GPCD – Gallons per Capita per Day **MGD** – Million Gallons per Day

Projection Method

Describe the method used to project water demand, including assumptions for population and business growth and how water conservation and efficiency programs affect projected water demand:

Water demand projections were based on historical trends and the increase in population. The Metropolitan Council population projections were used to for population projections through 2040. It is assumed that the projected service population will equal the projected total population.

The historical total per capita demand from 2011 through 2014 of 75 gallons per capita per day (gpcd) was used to make water demand projections through 2040. This also matches the Met Council Master WSP projections. Based on historical trends in per capita demand and future population projections, it is acceptable to use 75 gpcd through 2040. The reason 2015 and 2016 were omitted was that the demands were significantly lower than previous years demands and when the averages were compared to Met Council projections, it was decided that 75 gpcd water usage is more practical. The reason 2011 through 2014 data was used is that the City has implemented water conservation measures over the last several years and the per capita demand reflects those efforts. It is important to consider these water conservation measures when making projections as they can help make accurate projections with regards to the City's plan of conserving water and reducing per capita demands. Commercial and industrial development was accounted for by using the historical demands to make projections. It is assumed that the rate at which commercial and industrial water usage increases will remain the same as the historical demands. The C/I/I water usage for Elko New Market is primarily residential. Therefore, the C/I/I water usage is insignificant when it comes to making water use projections.

The projected average day demand was calculated by multiplying the projected total per capita demand of 75 gpcd by the projected service area population. It is assumed that in the future, the service area population will equal the total population of the City. The projected average day demand shows a increasing demand through 2040 because the population is increasing at a similar rate on a yearly basis. As the population increases and the per capita demand

remains constant, the average day demand will slightly increase. By 2040, a projected average day demand of 0.89 MGD is expected.

The projected maximum day demand was calculated by multiplying the average day demand by a peaking factor. The peaking factor used to calculate the projected maximum day demand is the average historical peaking factor from 2005 through 2016 of 3.09. This peaking factor was used to project maximum day demands up to 2040. By 2040, a maximum day demand of 2.77 MGD is projected.

E. Resource Sustainability

Monitoring – *Key DNR Benchmark*

Complete Table 8 by inserting information about source water quality and quantity monitoring efforts. The list should include all production wells, observation wells, and source water intakes or reservoirs. Groundwater level data for DNR's statewide network of observation wells are available online through the DNR's Cooperative Groundwater Monitoring (CGM) webpage.

Table 8. Information about source water quality and quantity monitoring

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
Elko 2 594234	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir ☐ Emergency Only	☒ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
Elko 3 680569	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir ☐ Emergency Only	☒ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
New Market 1 211953 SEALED	☐ production well ☐ observation well ☐ source water intake ☐ source water reservoir ☐ Emergency Only	☐ routine MDH sampling ☐ routine water utility sampling ☐ other	☐ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☐ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
New Market 2 451825	☐ production well ☒ observation well ☐ source water intake ☐ source water reservoir ☐ Emergency Only	☐ routine MDH sampling ☐ routine water utility sampling ☒ other	☐ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☐ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
New Market 3 686687	☐ production well ☐ observation well ☐ source water intake ☐ source water reservoir ☒ Emergency Only	☐ routine MDH sampling ☐ routine water utility sampling ☒ other	☐ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☐ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
Elko 4 805363	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir ☐ Emergency Only	☒ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge

Water Level Data

A water level monitoring plan that includes monitoring locations and a schedule for water level readings must be submitted as **Appendix 2**. If one does not already exist, it needs to be prepared and submitted with the WSP. Ideally, all production and observation wells are monitored at least monthly.

Complete Table 9 to summarize water level data for each well being monitored. Provide the name of the aquifer and a brief description of how much water levels vary over the season (the difference between the highest and lowest water levels measured during the year) and the long-term trends for each well. If water levels are not measured and recorded on a routine basis, then provide the static water level when each well was constructed and the most recent water level measured during the same season the well was constructed. Also include all water level data taken during any well and pump maintenance. Add rows to the table as needed.

Groundwater hydrographs illustrate the historical record of aquifer water levels measured within a well and can indicate water level trends over time. For each well in your system, provide a hydrograph for the life of the well, or for as many years as water levels have been measured. Include the hydrographs in **Appendix 3**. An example of a hydrograph can be found on the DNR's Groundwater Hydrograph webpage. Hydrographs for DNR Observation wells can be found in the CGM discussed above.

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
Elko 2 594234	Prairie du-Chein Jordan	The City has insufficient data to accurately record well readings. The SCADA system is not recording the well data correctly and therefore is not collecting accurate data. The City is working to resolve this issue to collect well level data.	☐ Falling ☐ Stable ☐ Rising	New wells are measured by SCADA continuously. The City is currently working to resolve the issue with data recording. Once the issue is resolved, the City will record and follow trends in well water levels. No well data is available at this time.
Elko 3 680569	Prairie du-Chein Jordan		☐ Falling ☐ Stable ☐ Rising	
Elko 4 805363	Prairie du-Chein Jordan		☐ Falling ☐ Stable ☐ Rising	

Potential Water Supply Issues & Natural Resource Impacts – *Key DNR & Metropolitan Council Benchmark*

Complete Table 10 by listing the types of natural resources that are or could potentially be impacted by permitted water withdrawals in the future. You do not need to identify every single water resource in your entire community. The goal is to help you triage the most important water resources and/or the water resources that may be impacted by your water supply system – perhaps during a drought or when the population has grown significantly in ten years. This is emerging science, so do the best you can with available data. For identified resources, provide the name of specific resources that may be impacted. Identify what the greatest risks to the resource are and how the risks are being assessed. Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts. Provide information about the potential mitigation actions that may be taken, if a resource protection threshold is crossed. Add additional rows to the table as needed. See the glossary at the end of the template for definitions.

Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

Your DNR area hydrologist is available to assist with this table.

For communities in the seven-county Twin Cities metropolitan area, the Master Water Supply Plan *Appendix 1 (Water Supply Profiles)*, provides information about potential water supply issues and natural resource impacts for your community.

Steps for completing Table 10

1. ***Identify the potential for natural resource impacts/issues within the community***
   First, review available information to identify resources that may be impacted by the operation of your water supply system (such as pumping).
   Potential Sources of Information:
   - County Geologic Atlas
   - Local studies
   - Metropolitan Council System Statement (for metro communities)
   - Metropolitan Council Master Water Supply Plan (for metro communities)

   ACTION: Check the resource type(s) that may be impacted in the column "Resource Type"

2. ***Identify where your water supply system is most likely to impact those resources (and vice versa).***
   Potential Sources of Information:
   - Drinking Water Supply Management Areas
   - Geologic Atlas - Sensitivity
   - If no WHPA or other information exists, consider rivers, lakes, wetlands and significant within 1.5 miles of wells; and calcareous fens and trout streams within 5 miles of wells

   ACTION: Focus the rest of your work in these areas.

3. ***Within focus areas, identify specific features of value to the community***
   You know your community best. What resources are important to pay attention to? It may be useful to check in with your community's planning and zoning staff and others.

   Potential Sources of Information:
   - Park plans
   - Local studies
   - Natural resource inventories
   - Tourist attractions/recreational areas/valued community resource

   ACTION: Identify specific features that the community prioritizes in the "Resource Name" column (for example: North Lake, Long River, Brook Trout Stream, or Green Fen). If, based on a review of available information, no features are likely to be at risk, note "None".

4. ***Identify what impact(s) the resource is at risk for***
   Potential Sources of Information:
   - Wellhead Protection Plan
   - Water Appropriation Permit
   - County Geologic Atlas
   - MDH or PCA reports of the area
   - Metropolitan Council System Statement (for metro communities)
   - Metropolitan Council Master Water Supply Plan (for metro communities)

   ACTION: Check the risk type in the column "Risk". If, based on a review of available information, no risk is identified, note "None anticipated".

5. ***Describe how the risk was assessed***

   Potential Sources of Information:

   - Local studies
   - Monitoring data (community, WMO, DNR, etc.)
   - Aquifer testing
   - County Geologic Atlas or other hydrogeologic studies
   - Regional or state studies, such as DNR's report 'Definitions and Thresholds for Negative Impacts to Surface Waters'
   - Well boring logs

   ACTION: Identify the method(s) used to identify the risk to the resource in the "Risk Assessed Through" column

6. ***Describe protection threshold/goals***

   What is the goal, if any, for protecting these resources? For example, is there a lower limit on acceptable flow in a river or stream? Water quality outside of an accepted range? A lower limit on acceptable aquifer level decline at one or more monitoring wells? Withdrawals that exceed some percent of the total amount available from a source? Or a lower limit on acceptable changes to a protected habitat?

   Potential Sources of Information:

   - County Comprehensive Water Plans
   - Watershed Plans or One Watershed/One Plan
   - Groundwater or Aquifer Plans
   - Metropolitan Master Plans
   - DNR Thresholds study
   - Community parks, open space, and natural resource plans

   ACTION: Describe resource protection goals in the "Describe Resource Protection Threshold" column or reference an existing plan/document/webpage

7. ***If a goal/threshold should trigger action, describe the plan that will be implemented.***

   Identify specific action, mitigation measures or management plan that the water supplier will implement, or refer to a partner's plan that includes actions to be taken.

   Potential Sources of Information:

   - County Comprehensive Water Plans
   - Watershed Plans or One Watershed/One Plan
   - Groundwater or Aquifer Plans
   - Metropolitan Master Plans
   - Studies such as DNR Thresholds study

   ACTION: Describe the mitigation measure or management plan in the "Mitigation Measure or Management Plan" column.

8. ***Describe work to evaluate these risks going forward.***

   For example, what is the plan to regularly check in to stay current on plans or new data?

Identify specific action that the water supplier will take to identify the creation of or change to goals/thresholds, or refer to a partner's plan that includes actions to be taken.

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- Studies such as DNR Thresholds study

ACTION: Describe what will be done to evaluate risks going forward, including any changes to goals or protection thresholds in the "Describe how Changes to Goals are monitored" column.

Table 10. Natural resource impacts (*List specific resources in Appendix 12)

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
☐ River or stream	none	☒ None anticipated ☐ Flow/water level decline ☐ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☐ Modeling ☐ Monitoring ☐ Aquifer testing ☐WRAPS or other watershed report ☐Proximity (<1.5 miles) ☐ Other:	☒ Not applicable ☐ Additional data is needed to establish ☐ See report: _____ ☐ No data available ☐ Other: _____	☒Not applicable ☐ Change groundwater pumping ☐ Increase conservation ☐ Other:	☒Not applicable ☐ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☐ Other:
☐ Calcareous fen	None	☒ None anticipated ☐ Flow/water level decline ☐ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☐ Modeling ☐ Monitoring ☐ Aquifer testing ☐WRAPS or other watershed Report ☐Proximity (<5 miles) ☐ Other: _____ ☐ Other: ___	☒ Not applicable ☐ Additional data is needed to establish ☐ See report: _____ ☐ Other: _____	☒Not applicable ☐ Change groundwater pumping ☐ Increase conservation ☐ Other: _____	☒Not applicable ☐ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☐ Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
☐ Lake	None	☒ None anticipated ☐ Flow/water level decline ☐ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☐ Modeling ☐ Monitoring ☐ Aquifer testing ☐WRAPS or other watershed report ☐Proximity (<1.5 miles) ☐ Other: _____ ☐ Other: ___	☒ Not applicable ☐ Additional data is needed to establish ☐ See report: _____ ☐ Other: _____	☒Not applicable ☐ Change groundwater pumping ☐ Increase conservation ☐ Other: _____	☒Not applicable ☐ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☐ Other: _____
☐ Wetland	None	☒ None anticipated ☐ Flow/water level decline ☐ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☐ Modeling ☐ Monitoring ☐ Aquifer testing ☐WRAPS or other watershed report ☐Proximity (<1.5 miles) ☐ Other: _____	☒ Not applicable ☐ Additional data is needed to establish ☐ See report: _____ ☐ Other: _____	☒Not applicable ☐ Change groundwater pumping ☐ Increase conservation ☐ Other: _____	☒Not applicable ☐ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☐ Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
☒ Trout stream	Vermillion River	☐ None anticipated ☒ Flow/water level decline ☒ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☐ Monitoring ☐ Aquifer testing ☐WRAPS or other watershed report ☐Proximity (< 5 miles) ☒ Other: Evaluation of water quality and stream flow data	☐ Not applicable ☒ Additional data is needed to establish ☐ See report: _____ ☐ Other: _____	☐Not applicable ☐ Change groundwater pumping ☒ Increase conservation ☒ Other: Consult with MN DNR_____	☐Not applicable ☒ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☒ Other: Consult with MN DNR_____
☒ Aquifer	Praire du-Chien Jordan	☐ None anticipated ☒ Flow/water level decline ☒ Degrading water quality trends ☐ Impacts on endangered, threatened, or special concern species habitat ☐ Other: _____	☐ Geologic atlas or other mapping ☐ Modeling ☒ Monitoring ☐ Aquifer testing ☐Proximity (obwell < 5 miles) ☒ Other: Evaluation of well water level data	☐ Not applicable ☒ Additional data is needed to establish ☐ See report: _____ ☐ Other: _____	☐Not applicable ☐ Change groundwater pumping ☒ Increase conservation ☐ Other: _____	☐Not applicable ☒ Newly collected data will be analyzed ☐ Regular check-in with these partners: _____ ☒ Other: Consult with MN DNR area hydrologist

Wellhead Protection (WHP) and Source Water Protection (SWP) Plans

Complete Table 11 to provide status information about WHP and SWP plans.

The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.

Table 11. Status of Wellhead Protection and Source Water Protection Plans

Plan Type	Status	Date Adopted	Date for Update
WHP	☐ In Process ☒ Completed ☐ Not Applicable	August 2008	2018
SWP	☐ In Process ☐ Completed ☒ Not Applicable		

WHP – Wellhead Protection Plan **SWP** – Source Water Protection Plan

F. Capital Improvement Plan (CIP)

Please note that any wells that received approval under a ten-year permit, but that were not built, are now expired and must submit a water appropriations permit.

Adequacy of Water Supply System

Complete Table 12 with information about the adequacy of wells and/or intakes, storage facilities, treatment facilities, and distribution systems to sustain current and projected demands. List planned capital improvements for any system components, in chronological order. Communities in the seven-county Twin Cities metropolitan area should also include information about plans through 2040.

The assessment can be the general status by category; it is not necessary to identify every single well, storage facility, treatment facility, lift station, and mile of pipe.

Please attach your latest Capital Improvement Plan as **Appendix 4**.

Table 12. Adequacy of Water Supply System

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	N/A	N/A
Water Storage Facilities	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	N/A	N/A
Water Treatment Facilities	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	N/A	N/A
Distribution Systems (Pipes, valves, etc.)	☐ No action planned - adequate ☒ Repair/replacement ☐ Expansion/addition	As needed	Repair and replace watermains throughout the City.

System Component	Planned action	Anticipated Construction Year	Notes
Pressure Zones	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	N/A	N/A
Other:	☐ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition	N/A	N/A

Proposed Future Water Sources

Complete Table 13 to identify new water source installation planned over the next ten years. Add rows to the table as needed.

Table 13. Proposed future installations/sources

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	none	none	none	none	none
Surface Water	none	none	none	none	none
Interconnection to another supplier	none	none	none	none	none

Water Source Alternatives - *Key Metropolitan Council Benchmark*

Do you anticipate the need for alternative water sources in the next 10 years? Yes ☐ No ☒

For metro communities, will you need alternative water sources by the year 2040? Yes ☐ No ☒

If you answered yes for either question, then complete table 14. If no, insert NA.

Complete Table 14 by checking the box next to alternative approaches that your community is considering, including approximate locations (if known), the estimated amount of future demand that could be met through the approach, the estimated timeframe to implement the approach, potential partnerships, and the major benefits and challenges of the approach. Add rows to the table as needed.

For communities in the seven-county Twin Cities metropolitan area, these alternatives should include approaches the community is considering to meet projected 2040 water demand.

Table 14. Alternative water sources

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
☐ Groundwater	N/A	N/A	N/A	N/A	N/A	N/A
☐ Surface Water	N/A	N/A	N/A	N/A	N/A	N/A

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
☐ Reclaimed stormwater	N/A	N/A	N/A	N/A	N/A	N/A
☐ Reclaimed wastewater	N/A	N/A	N/A	N/A	N/A	N/A
☐ Interconnection to another supplier	N/A	N/A	N/A	N/A	N/A	N/A

PART 2. EMERGENCY PREPAREDNESS PROCEDURES

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

A. Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (Public Law 107-188, Title IV- Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan. MDH recommends that Emergency Response Plans are updated annually.

Do you have an Emergency Response Plan? Yes ☒ No ☐

Have you updated the Emergency Response Plan in the last year? Yes ☐ No ☒

When did you last update your Emergency Response Plan? 2009_____

Complete Table 15 by inserting the noted information regarding your completed Emergency Response Plan.

Table 15. Emergency Response Plan contact information

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	COREY SCHWEICH	(952) 224-6781	CSCHWEICH@CI.ENM.MN.US
Alternate Emergency Response Lead	THOMAS TERRY	(952) 461-2777	TTERRY@CI.ENM.MN.US

B. Operational Contingency Plan

All utilities should have a written operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance.

Do you have a written operational contingency plan? Yes ☒ No ☐

At a minimum, a water supplier should prepare and maintain an emergency contact list of contractors and suppliers.

C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280. Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been

approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

Emergency Telephone List

Prepare and attach a list of emergency contacts, including the MN Duty Officer (1-800-422-0798), as **Appendix 5**. An Emergency Contact List template is available at the MnDNR Water Supply Plans webpage.

The list should include key utility and community personnel, contacts in adjacent water suppliers, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list and date it. Thereafter, update on a regular basis (once a year is recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the Emergency Manager for that community. Responsibilities and services for each contact should be defined.

Current Water Sources and Service Area

Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

Do records and maps exist? Yes ☒ No ☐

Can staff access records and maps from a central secured location in the event of an emergency?

Yes ☒ No ☐

Does the appropriate staff know where the materials are located?

Yes ☒ No ☐

Procedure for Augmenting Water Supplies

Complete Tables 16 – 17 by listing all available sources of water that can be used to augment or replace existing sources in an emergency. Add rows to the tables as needed.

In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Municipalities are encouraged to execute cooperative agreements for potential emergency water services and copies should be included in **Appendix 6**. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

WSP should include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MDH are required for interconnections or the reuse of water.

Table 16. Interconnections with other water supply systems to supply water in an emergency

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
NONE	N/A	N/A	N/A

GPM – Gallons per minute MGD – million gallons per day

Table 17. Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
NONE	NONE	NONE	NONE	NONE

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

Obtain bottled water

Allocation and Demand Reduction Procedures

Complete Table 18 by adding information about how decisions will be made to allocate water and reduce demand during an emergency. Provide information for each customer category, including its priority ranking, average day demand, and demand reduction potential for each customer category. Modify the customer categories as needed, and add additional lines if necessary.

Water use categories should be prioritized in a way that is consistent with Minnesota Statutes 103G.261 (#1 is highest priority) as follows:

1. Water use for human needs such as cooking, cleaning, drinking, washing and waste disposal; use for on-farm livestock watering; and use for power production that meets contingency requirements.
2. Water use involving consumption of less than 10,000 gallons per day (usually from private wells or surface water intakes)
3. Water use for agricultural irrigation and processing of agricultural products involving consumption of more than 10,000 gallons per day (usually from private high-capacity wells or surface water intakes)
4. Water use for power production above the use provided for in the contingency plan.
5. All other water use involving consumption of more than 10,000 gallons per day.
6. Nonessential uses – car washes, golf courses, etc.

Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Lower priority uses will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

Table 18. Water use priorities

Customer Category	Allocation Priority	Average Daily Demand (GDP)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	280,000	112,000
Commercial/Institutional/Industrial	2	20,000	8,000
Non-Essential	3	0	0
TOTAL	NA	300,000	120,000

GPD – Gallons per Day

Tip: Calculating Emergency Demand Reduction Potential

The emergency demand reduction potential for all uses will typically equal the difference between maximum use (summer demand) and base use (winter demand). In extreme emergency situations, lower priority water uses must be restricted or eliminated to protect priority domestic water requirements. Emergency demand reduction potential should be based on average day demands for customer categories within each priority class. Use the tables in Part 3 on water conservation to help you determine strategies.

Complete Table 19 by selecting the triggers and actions during water supply disruption conditions.

Table 19. Emergency demand reduction conditions, triggers and actions (Select all that may apply and describe)

Emergency Triggers	Short-term Actions	Long-term Actions
☒ Contamination ☒ Loss of production ☒ Infrastructure failure ☒ Executive order by Governor ☐ Other: _____	☐ Supply augmentation through ____ ☒ Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through____ ☐ Meet with large water users to discuss their contingency plan.	☐ Supply augmentation through ____ ☒ Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through____ ☒ Meet with large water users to discuss their contingency plan.

Notification Procedures

Complete Table 20 by selecting trigger for informing customers regarding conservation requests, water use restrictions, and suspensions; notification frequencies; and partners that may assist in the notification process. Add rows to the table as needed.

Table 20. Plan to inform customers regarding conservation requests, water use restrictions, and suspensions

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
☒ Short-term demand reduction declared (< 1 year)	☒ Website ☐ Email list serve ☒ Social media (e.g. Twitter, Facebook) ☐ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____	☐ Daily ☐ Weekly ☐ Monthly ☐ Annually ☒ As needed	none
☒ Long-term Ongoing demand reduction declared	☒ Website ☐ Email list serve ☒ Social media (e.g. Twitter, Facebook) ☐ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____	☐ Daily ☐ Weekly ☐ Monthly ☐ Annually ☒ As needed	none
☒ Governor's critical water deficiency declared	☒ Website ☐ Email list serve ☒ Social media (e.g. Twitter, Facebook)	☐ Daily ☐ Weekly ☐ Monthly ☐ Annually	none

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
	☐ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____	☒ As needed	

Enforcement

Prior to a water emergency, municipal water suppliers must adopt regulations that restrict water use and outline the enforcement response plan. The enforcement response plan must outline how conditions will be monitored to know when enforcement actions are triggered, what enforcement tools will be used, who will be responsible for enforcement, and what timelines for corrective actions will be expected.

Affected operations, communications, and enforcement staff must then be trained to rapidly implement those provisions during emergency conditions.

Important Note:

Disregard of critical water deficiency orders, even though total appropriation remains less than permitted, is adequate grounds for immediate modification of a public water supply authority's water use permit (2013 MN Statutes 103G.291)

Does the city have a critical water deficiency restriction/official control in place that includes provisions to restrict water use and enforce the restrictions? (This restriction may be an ordinance, rule, regulation, policy under a council directive, or other official control) Yes ☒ No ☐

If yes, attach the official control document to this WSP as **Appendix 7**.

If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.

Irrespective of whether a critical water deficiency control is in place, does the public water supply utility, city manager, mayor, or emergency manager have standing authority to implement water restrictions? Yes ☒ No ☐

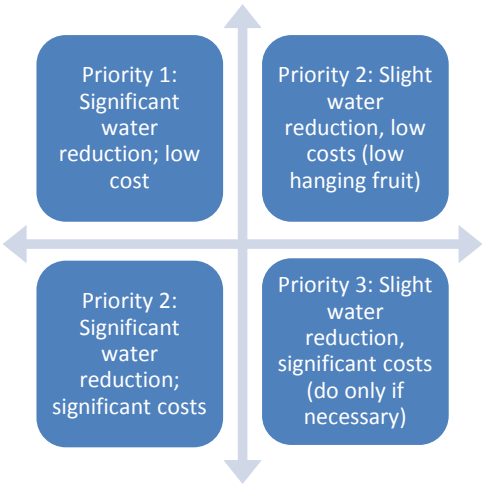
If yes, cite the regulatory authority reference: City Council.

If no, who has authority to implement water use restrictions in an emergency?

n/a

PART 3. WATER CONSERVATION PLAN

Minnesotans have historically benefited from the state's abundant water supplies, reducing the need for conservation. There are however, limits to the available supplies of water and increasing threats to the quality of our drinking water. Causes of water supply limitation may include: population increases, economic trends, uneven statewide availability of groundwater, climatic changes, and degraded water quality. Examples of threats to drinking water quality include: the presence of contaminant plumes from past land use activities, exceedances of water quality standards from natural and human sources, contaminants of emerging concern, and increasing pollutant trends from nonpoint sources.



There are many incentives for conserving water; conservation:

- reduces the potential for pumping-induced transfer of contaminants into the deeper aquifers, which can add treatment costs
- reduces the need for capital projects to expand system capacity
- reduces the likelihood of water use conflicts, like well interference, aquatic habitat loss, and declining lake levels
- conserves energy, because less energy is needed to extract, treat and distribute water (and less energy production also conserves water since water is used to produce energy)
- maintains water supplies that can then be available during times of drought

It is therefore imperative that water suppliers implement water conservation plans. The first step in water conservation is identifying opportunities for behavioral or engineering changes that could be made to reduce water use by conducting a thorough analysis of:

- Water use by customer
- Extraction, treatment, distribution and irrigation system efficiencies
- Industrial processing system efficiencies
- Regulatory and barriers to conservation
- Cultural barriers to conservation
- Water reuse opportunities

Once accurate data is compiled, water suppliers can set achievable goals for reducing water use. A successful water conservation plan follows a logical sequence of events. The plan should address both conservation on the supply side (leak detection and repairs, metering), as well as on the demand side (reductions in usage). Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. In some cases, one of the early steps will be reviewing regulatory constraints to water conservation, such as lawn irrigation requirements. Outside funding and grants may be available for implementation of projects. Engage water system operators and maintenance staff and customers in brainstorming opportunities to reduce water use. Ask the question: "How can I help save water?"

Progress since 2006

Is this your community's first Water Supply Plan? Yes ☐ No ☒

If yes, describe conservation practices that you are already implementing, such as: pricing, system improvements, education, regulation, appliance retrofitting, enforcement, etc.

n/a

If no, complete Table 21 to summarize conservation actions taken since the adoption of the 2006 water supply plan.

Table 21. Implementation of previous ten-year Conservation Plan

2006 Plan Commitments	Action Taken?
Change water rates structure to provide conservation pricing	☒ Yes ☐ No
Water supply system improvements (e.g. leak repairs, valve replacements, etc.)	☒ Yes ☐ No
Educational efforts	☒ Yes ☐ No
New water conservation ordinances	☒ Yes ☐ No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.	☐ Yes ☒ No
Enforcement	☒ Yes ☐ No
Describe other	☐ Yes ☐ No

What are the results you have seen from the actions in Table 21 and how were results measured?

Reduction in average day demand and maximum day demand, which results in lower per capita demands and less stress on the distribution system.

A. Triggers for Allocation and Demand Reduction Actions

Complete table 22 by checking each trigger below, as appropriate, and the actions to be taken at various levels or stages of severity. Add in additional rows to the table as needed.

Table 22. Short and long-term demand reduction conditions, triggers and actions

Objective	Triggers	Actions
Protect surface water flows	☐ Low stream flow conditions ☒ Reports of declining wetland and lake levels ☐ Other: _____	☒ Increase promotion of conservation measures ☐ Other: _____
Short-term demand reduction (less than 1 year	☒ Extremely high seasonal water demand (more than double winter demand) ☒ Loss of treatment capacity ☒ Lack of water in storage ☒ State drought plan ☒ Well interference ☐ Other: _____	☒ Adopt (if not already) and enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Supply augmentation through ____ ☐ Water allocation through____ ☒ Meet with large water users to discuss user's contingency plan.
Long-term demand reduction (>1 year)	☒ Per capita demand increasing ☒ Total demand increase (higher population or more industry). Water level in well(s) below elevation of half of available static head. Unable to maintain at least 15 ft. in water tower. ☐ Other: _____	☒ Develop a critical water deficiency ordinance that is or can be quickly adopted to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Enact a water waste ordinance that targets overwatering (causing water to flow off the landscape into streets, parking lots, or similar), watering impervious surfaces (streets, driveways or other hardscape areas), and negligence of known leaks, breaks, or malfunctions. ☒ Meet with large water users to discuss user's contingency plan. ☐ Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor's "Critical Water Deficiency Order" declared	☒ Per capita demand is increasing and there is limited water supply. Water supply wells cannot meet peak day demands.	☒ Enforce water restriction ordinances and restrict non-essential water usage if possible.

B. Conservation Objectives and Strategies – *Key benchmark for DNR*

This section establishes water conservation objectives and strategies for eight major areas of water use.

Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%

The Minnesota Rural Water Association, the Metropolitan Council and the Department of Natural Resources recommend that all water uses be metered. Metering can help identify high use locations and times, along with leaks within buildings that have multiple meters.

It is difficult to quantify specific unmetered water use such as that associated with firefighting and system flushing or system leaks. Typically, water suppliers subtract metered water use from total water pumped to calculate unaccounted or non-revenue water loss.

Is your five-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%?

Yes ☐ No ☒

What is your leak detection monitoring schedule? (e.g. Monitor 1/3rd of the city lines per year)

Leak detection is done on an as needed basis. The distribution system has been well maintained and is predominantly less than 20 years old. Therefore, leak detections are done as needed throughout the year.

Water Audits - are designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. The American Water Works Association (AWWA) has a recommended water audit methodology which is presented in AWWA's M36 Manual of Water Supply Practices: Water Audits and Loss Control Programs. AWWA also provides a free spreadsheet-based water audit tool that water suppliers can use to conduct their own water audits. This free water audit tool can be found on AWWA's Water Loss Control webpage. Another resource for water audit and water loss control information is Minnesota Rural Water Association.

What is the date of your most recent water audit? unknown

Frequency of water audits: ☐ **yearly** ☒ **other (specify frequency) As needed**
Leak detection and survey: ☐ **every year** ☐ **every other year** ☒ **periodic as needed**
Year last leak detection survey completed: unknown

If Table 2 shows annual water losses over 10% or an increasing trend over time, describe what actions will be taken to reach the <10% loss objective and within what timeframe

N/A. Water losses are less than 10%.

Metering -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer's point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or replacement of all meters. Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built. AWWA also recommends that water suppliers conduct regular water audits to account for unmetered unbilled consumption, metered unbilled consumption and source water and customer metering inaccuracies. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

Complete Table 23 by adding the requested information regarding the number, types, testing and maintenance of customer meters.

Table 23. Information about customer meters

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years
Residential	1,403	1,403	1,403	As needed	Variable / As needed
Commercial	61	61	61	As needed	Variable / As needed
Agricultural	9	9	9	As needed	Variable / As needed
TOTALS	1,473	1,473	1,473	NA	NA

For unmetered systems, describe any plans to install meters or replace current meters with advanced technology meters. Provide an estimate of the cost to implement the plan and the projected water savings from implementing the plan.

n/a

Table 24. Water source meters

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years
Water source (wells/intakes)	3	As needed	3	< 10 years/every 10 – 20 years
Treatment plant	2	As needed	2	< 10 years/every 10 – 20 years

Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)

The 2002 average residential per capita demand in the Twin Cities Metropolitan area was 75 gallons per capita per day.

Is your average 2010-2015 residential per capita water demand in Table 2 more than 75? Yes ☐ No ☒

What was your 2010 – 2015 five-year average residential per capita water demand? 55 g/person/day

Describe the water use trend over that timeframe:

Residential water demand decreased from 99 gpcd in 2006 to 52 gpcd in 2016. This decrease in demand is most likely attributed to increased water conservation and improved water metering and accounting for lost water and repairing leaks in the system. The total per capita demand follows a similar trend, decreasing from 104 gpcd in 2006 to 61 gpcd in 2016. Overall, residential per capita demand has significantly decreased and has remained below 75 gpcd since 2010 with the exception of 2012 where the demand was slightly over 75 gpcd at 75.5 gpcd. This could be attributed to drought, which increased water usage in the residential sector. This is common for a City such as Elko New Market where the primary water users are residential and there is very little commercial or

industrial water usage. Water usage for residential customers is projected to remain less than 75 gpcd for future demands.

Complete Table 25 by checking which strategies you will use to continue reducing residential per capita demand and project a likely timeframe for completing each checked strategy (Select all that apply and add rows for additional strategies):

Table 25. Strategies and timeframe to reduce residential per capita demand

Strategy to reduce residential per capita demand	Timeframe for completing work
☐ Revise city ordinances/codes to encourage or require water efficient landscaping.	
☒ Revise city ordinance/codes to permit water reuse options, especially for non-potable purposes like irrigation, groundwater recharge, and industrial use. Check with plumbing authority to see if internal buildings reuse is permitted	Currently in effect per City Code.
☒ Revise ordinances to limit irrigation. Describe the restricted irrigation plan: Odd-even watering	Ongoing
☐ Revise outdoor irrigation installations codes to require high efficiency systems (e.g. those with soil moisture sensors or programmable watering areas) in new installations or system replacements.	
☒ Make water system infrastructure improvements	As needed to improve efficiency of distribution system and repair leaks.
☐ Offer free or reduced cost water use audits) for residential customers.	
☐ Implement a notification system to inform customers when water availability conditions change.	
☐ Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	
☐ Provide rebates or incentives to reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
☐ Identify supplemental Water Resources	
☐ Conduct audience-appropriate water conservation education and outreach.	
☒ Describe other plans	Rate tiers with aggressive upper tier pricing

Objective 3: Achieve at least 1.5% annual reduction in non-residential per capita water use (For each of the next ten years, or a 15% total reduction over ten years.) This includes commercial, institutional, industrial and agricultural water users.

Complete Table 26 by checking which strategies you will used to continue reducing non-residential customer use demand and project a likely timeframe for completing each checked strategy (add rows for additional strategies).

Where possible, substitute recycled water used in one process for reuse in another. (For example, spent rinse water can often be reused in a cooling tower.) Keep in mind the true cost of water is the amount on the water bill PLUS the expenses to heat, cool, treat, pump, and dispose of/discharge the water. Don't just calculate the initial investment. Many conservation retrofits that appear to be prohibitively expensive are actually very cost-effective when amortized over the life of the equipment. Often reducing water use also saves electrical and other utility costs. Note: as of 2015, water reuse, and is not allowed by the state plumbing code, M.R. 4715 (a variance is needed). However, several state agencies are addressing this issue.

Table 26. Strategies and timeframe to reduce institutional, commercial industrial, and agricultural and non-revenue use demand

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
☐ Conduct a facility water use audit for both indoor and outdoor use, including system components	
☐ Install enhanced meters capable of automated readings to detect spikes in consumption	
☐ Compare facility water use to related industry benchmarks, if available (e.g., meat processing, dairy, fruit and vegetable, beverage, textiles, paper/pulp, metals, technology, petroleum refining etc.)	
☐ Install water conservation fixtures and appliances or change processes to conserve water	
☒ Repair leaking system components (e.g., pipes, valves)	Ongoing
☐ Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	
☐ Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
☐ Train employees how to conserve water	
☐ Implement a notification system to inform non-residential customers when water availability conditions change.	
☐ Nonpotable rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner. Plumbing code 4714.1702, Published October 31, 2016	
☒ Describe other plans:	Rate tiers with aggressive upper tier pricing

Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand

Include as **Appendix 8** one graph showing total per capita water demand for each customer category (i.e., residential, institutional, commercial, industrial) from 2005-2014 and add the calculated/estimated linear trend for the next 10 years.

Describe the trend for each customer category; explain the reason(s) for the trends, and where trends are increasing.

Total water demands show a decreasing trend. The total demand decreased from 104 gpcd in 2006, to 61 gpcd in 2016, a decrease of 41%. The decrease in demand reflects water conservation efforts that the City has implemented to reduce water demands. Future demands will most likely be linked to residential demand trends. If the residential demand trends continue to decrease, the total demand will most likely decrease. This occurs because the residential demand makes up a majority of the water usage for Elko New Market.

Residential water demand follows a similar trend to the total water demand. Because Elko New Market's water demand is mostly residential usage, this category drives the water demand trends. The residential water usage is a decreasing trend. The residential water usage peaked in 2006 at 99 gpcd and reached a new low in 2016 at 51.8 gpcd, a decrease of 48%. Even during drought years (2007), the water demands decreased for this category. This is not typical as during drought conditions, residents tend to water lawns more frequently, which drives up the water usage. The decrease in residential demand over the last 5 years, stems from an increase in water conservation education and changing the utility billing to a tiered system that charges more for high water usage. The decreasing trends are predicted slow down and plateau, but are expected to continue the slight decrease over the next 10 years.

Commercial/Institutional/Industrial water demand has remained stable over the last 10 years. There are small peaks and valleys in the graph shown in appendix 8, which is typical as businesses, and commercial industries move into or out of the City. This trend is predicted to continue over the next 10 years. Overall, the C/I/I water usage category is small for Elko New Market.

Objective 5: Reduce Ratio of Maximum day (peak day) to the Average Day Demand to Less Than 2.6

Is the ratio of average 2005-2014 maximum day demand to average 2005-2014 average day demand reported in Table 2 more than 2.6? Yes ☒ No ☐

Calculate a ten-year average (2005 – 2014) of the ratio of maximum day demand to average day demand: <u>3.09</u>

The position of the DNR has been that a peak day/average day ratio that is above 2.6 for in summer indicates that the water being used for irrigation by the residents in a community is too large and that efforts should be made to reduce the peak day use by the community.

It should be noted that by reducing the peak day use, communities can also reduce the amount of infrastructure that is required to meet the peak day use. This infrastructure includes new wells, new water towers which can be costly items.

Objective 6: Implement Demand Reduction Measures

Water Conservation Program

Municipal water suppliers serving over 1,000 people are required to adopt demand reduction measures that include a conservation rate structure, or a uniform rate structure with a conservation program that

achieves demand reduction. These measures must achieve demand reduction in ways that reduce water demand, water losses, peak water demands, and nonessential water uses. These measures must be approved before a community may request well construction approval from the Department of Health or before requesting an increase in water appropriations permit volume (Minnesota Statutes, section 103G.291, subd. 3 and 4). Rates should be adjusted on a regular basis to ensure that revenue of the system is adequate under reduced demand scenarios. If a municipal water supplier intends to use a Uniform Rate Structure, a community-wide Water Conservation Program that will achieve demand reduction must be provided.

Current Water Rates

Include a copy of the actual rate structure in **Appendix 9** or list current water rates including base/service fees and volume charges below.

Volume included in base rate or service charge: 1,000 gallons or ____ cubic feet ___ other

Frequency of billing: ☒ Monthly ☐ Bimonthly ☐ Quarterly ☐ Other: _____

Water Rate Evaluation Frequency: ☒ every year ☐ every ___ years ☐ no schedule

Date of last rate change: January 2017_

Table 27. Rate structures for each customer category (Select all that apply and add additional rows as needed)

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
Residential	☒ Monthly billing ☒ Increasing block rates (volume tiered rates) ☐ Seasonal rates ☐ Time of use rates ☒ Water bills reported in gallons ☐ Individualized goal rates ☐ Excess use rates ☐ Drought surcharge ☐ Use water bill to provide comparisons ☒ Service charge not based on water volume ☐ Other (describe)	☐ Uniform ☒ Odd/even day watering	☐ Service charge based on water volume ☐ Declining block ☐ Flat ☐ Other (describe)
Commercial/ Industrial/ Institutional	☒ Monthly billing ☒ Increasing block rates (volume tiered rates) ☐ Seasonal rates ☐ Time of use rates ☒ Water bills reported in gallons ☐ Individualized goal rates ☐ Excess use rates	☐ Uniform	☐ Service charge based on water volume ☐ Declining block ☐ Flat ☐ Other (describe)

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
	☐ Drought surcharge ☐ Use water bill to provide comparisons ☐ Service charge not based on water volume ☐ Other (describe)		
☐ Other			

*** Rate Structures components that may promote water conservation:**

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
    - The first tier is for the winter average water use.
    - The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
    - The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.
- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals. **Excess Use rates**: if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons**: simple graphics comparing individual use over time or compare individual use to others.
- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

****Conservation Neutral****

- **Uniform rate**: rate per unit used is the same regardless of the volume used
- **Odd/even day watering** –This approach reduces peak demand on a daily basis for system operation, but it does not reduce overall water use.

***** Non-Conserving *****

- **Service charge or base fee with water volume:** an amount of water larger than the average residential per capita demand for the water supplier for the last 5 years
- **Declining block rate:** the rate per unit used decreases as water use increases.
- **Flat rate:** one fee regardless of how much water is used (usually unmetered).

Provide justification for any conservation neutral or non-conserving rate structures. If intending to adopt a conservation rate structure, include the timeframe to do so:

n/a

Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning

Development and redevelopment projects can provide additional water conservation opportunities, such as the actions listed below. If a Uniform Rate Structure is in place, the water supplier must provide a Water Conservation Program that includes at least two of the actions listed below. Check those actions that you intent to implement within the next 10 years.

Table 28. Additional strategies to Reduce Water Use & Support Wellhead Protection

☐	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 "Best Practices" for water
☐	Prepare a master plan for smart growth (compact urban growth that avoids sprawl)
☐	Prepare a comprehensive open space plan (areas for parks, green spaces, natural areas)
☒	Adopt a water use restriction ordinance (lawn irrigation, car washing, pools, etc.)
☒	Adopt an outdoor lawn irrigation ordinance
☐	Adopt a private well ordinance (private wells in a city must comply with water restrictions)
☒	Implement a stormwater management program
☐	Adopt non-zoning wetlands ordinance (can further protect wetlands beyond state/federal laws- for vernal pools, buffer areas, restrictions on filling or alterations)
☐	Adopt a water offset program (primarily for new development or expansion)
☐	Implement a water conservation outreach program
☐	Hire a water conservation coordinator (part-time)
☐	Implement a rebate program for water efficient appliances, fixtures, or outdoor water management
☐	Other

Objective 8: Tracking Success: How will you track or measure success through the next ten years?

Monitor per capita demand as well as peak day demand to determine trends.

Tip: The process to monitor demand reduction and/or a rate structure includes:

a) The DNR Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
b) They will discuss what activities the community is doing to conserve water and if they feel their actions are successful. The Water Supply Plan, Part 3 tables and responses will guide the discussion. For example, they will discuss efforts to reduce unaccounted for water loss if that is a problem, or go through Tables 33, 34 and 35 to discuss new initiatives.
c) The city representative and the hydrologist will discuss total per capita water use, residential per capita water use, and business/industry use. They will note trends.
d) They will also discuss options for improvement and/or collect case studies of success stories to share with other communities. One option may be to change the rate structure, but there are many other paths to successful water conservation.

e) If appropriate, they will cooperatively develop a simple work plan for the next few years, targeting a couple areas where the city might focus efforts.

C. Regulation

Complete Table 29 by selecting which regulations are used to reduce demand and improve water efficiencies. Add additional rows as needed.

Copies of adopted regulations or proposed restrictions or should be included in **Appendix 10** (a list with hyperlinks is acceptable).

Table 29. Regulations for short-term reductions in demand and long-term improvements in water efficiencies

Regulations Utilized	When is it applied (in effect)?
☐ Rainfall sensors required on landscape irrigation systems	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Water efficient plumbing fixtures required	☐ New development ☐ Replacement ☐ Rebate Programs
☒ Critical/Emergency Water Deficiency ordinance	☒ Only during declared Emergencies
☒ Watering restriction requirements (time of day, allowable days, etc.)	☒ Odd/even ☐ 2 days/week ☐ Only during declared Emergencies
☐ Water waste prohibited (for example, having a fine for irrigators spraying on the street)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	☐ New development ☐ Shoreland/zoning ☐ Other
☒ Soil preparation requirement s (after construction, requiring topsoil to be applied to promote good root growth)	☒ New Development ☒ Construction Projects ☐ Other
☒ Tree ratios (requiring a certain number of trees per square foot of lawn, tree planting requirements)	☒ New development ☐ Shoreland/zoning ☐ Other
☐ Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	☐ Describe

D. Retrofitting Programs

Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use, as well as energy costs. It is recommended that municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar

conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.

Retrofitting Programs

Complete Table 30 by checking which water uses are targeted, the outreach methods used, the measures used to identify success, and any participating partners.

Table 30. Retrofitting programs (Select all that apply)

Water Use Targets	Outreach Methods	Partners
☐ Low flush toilets, ☐ Toilet leak tablets, ☐ Low flow showerheads, ☐ Faucet aerators;	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization
☐ Water conserving washing machines, ☐ Dish washers, ☐ Water softeners;	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization
☒ Rain gardens, ☐ Rain barrels, ☐ Native/drought tolerant landscaping, etc.	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization

Briefly discuss measures of success from the above table (e.g. number of items distributed, dollar value of rebates, gallons of water conserved, etc.):

Stormwater management ordinance requires volume control to promote infiltration and/or stormwater reuse.

E. Education and Information Programs

Customer education should take place in three different circumstances. First, customers should be provided information on how to conserve water and improve water use efficiencies. Second, information should be provided at appropriate times to address peak demands. Third, emergency notices and educational materials about how to reduce water use should be available for quick distribution during an emergency.

Proposed Education Programs

Complete Table 31 by selecting which methods are used to provide water conservation and information, including the frequency of program components. Select all that apply and add additional lines as needed.

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Consumer Confidence Reports	Water quality	1	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Social media distribution (e.g., emails, Facebook, Twitter)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Presentations to community groups			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Staff training			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Facility tours			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Displays and exhibits			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Community news letters	Water quality and water conservation tips. General information	4	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Information kiosk at utility and public buildings			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Public service announcements			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Cable TV Programs			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Demonstration projects (landscaping or plumbing)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
K-12 education programs (Project Wet, Drinking Water Institute, presentations)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Community events (children's water festivals, environmental fairs)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Community education classes			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Water week promotions			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Website (include address: www.ci.enm.mn.us)	General information about water quality, water resources, water conservation, and water system components. Also includes information on possible restrictions etc.	Continuous	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Targeted efforts (large volume users, users with large increases)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Notices of ordinances			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Emergency conservation notices			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Other:			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies

Briefly discuss what future education and information activities your community is considering in the future:

Held a water expo to explain new water treatment facility and upcoming rate changes and tiers. Could do that again if an issue of such importance arises that justifies the time and cost of hosting such an event.

PART 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process.

Much of the information in Parts 1-3 addresses water demand for the next 10 years. However, additional information is needed to address water demand through 2040, which will make the WSP consistent with the Metropolitan Land Use Planning Act, upon which the local comprehensive plans are based.

This Part 4 provides guidance to complete the WSP in a way that addresses plans for water supply through 2040.

A. Water Demand Projections through 2040

Complete Table 7 in Part 1D by filling in information about long-term water demand projections through 2040. Total Community Population projections should be consistent with the community's system statement, which can be found on the Metropolitan Council's website and which was sent to the community in September 2015.

Projected Average Day, Maximum Day, and Annual Water Demands may either be calculated using the method outlined in *Appendix 2* of the *2015 Master Water Supply Plan* or by a method developed by the individual water supplier.

B. Potential Water Supply Issues

Complete Table 10 in Part 1E by providing information about the potential water supply issues in your community, including those that might occur due to 2040 projected water use.

The Master Water Supply Plan provides information about potential issues for your community in *Appendix 1 (Water Supply Profiles).* This resource may be useful in completing Table 10.

You may document results of local work done to evaluate impact of planned uses by attaching a feasibility assessment or providing a citation and link to where the plan is available electronically.

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

Complete Table 12 in Part 1F with information about potential water supply infrastructure impacts (such as replacements, expansions or additions to wells/intakes, water storage and treatment capacity, distribution systems, and emergency interconnections) of extended plans for development and redevelopment, in 10-year increments through 2040. It may be useful to refer to information in the community's local Land Use Plan, if available.

Complete Table 14 in Part 1F by checking each approach your community is considering to meet future demand. For each approach your community is considering, provide information about the amount of

future water demand to be met using that approach, the timeframe to implement the approach, potential partners, and current understanding of the key benefits and challenges of the approach.

As challenges are being discussed, consider the need for: evaluation of geologic conditions (mapping, aquifer tests, modeling), identification of areas where domestic wells could be impacted, measurement and analysis of water levels & pumping rates, triggers & associated actions to protect water levels, etc.

D. Value-Added Water Supply Planning Efforts (Optional)

The following information is not required to be completed as part of the local water supply plan, but completing this can help strengthen source water protection throughout the region and help Metropolitan Council and partners in the region to better support local efforts.

Source Water Protection Strategies

Does a Drinking Water Supply Management Area for a neighboring public water supplier overlap your community? Yes ☐ No ☒

If you answered no, skip this section. If you answered yes, please complete Table 32 with information about new water demand or land use planning-related local controls that are being considered to provide additional protection in this area.

Table 32. Local controls and schedule to protect Drinking Water Supply Management Areas

Local Control	Schedule to Implement	Potential Partners
☒ None at this time	Unknown at this time	None at this time
☐ Comprehensive planning that guides development in vulnerable drinking water supply management areas		
☐ Zoning overlay		
☐ Other:		

Technical assistance

From your community's perspective, what are the most important topics for the Metropolitan Council to address, guided by the region's Metropolitan Area Water Supply Advisory Committee and Technical Advisory Committee, as part of its ongoing water supply planning role?

☒ Coordination of state, regional, and local water supply planning roles
☒ Regional water use goals
☒ Water use reporting standards
☐ Regional and sub-regional partnership opportunities
☐ Identifying and prioritizing data gaps and input for regional and sub-regional analyses
☐ Others: _____

GLOSSARY

Agricultural/Irrigation Water Use - Water used for crop and non-crop irrigation, livestock watering, chemigation, golf course irrigation, landscape and athletic field irrigation.

Average Daily Demand - The total water pumped during the year divided by 365 days.

Calcareous Fen - Calcareous fens are rare and distinctive wetlands dependent on a constant supply of cold groundwater. Because they are dependent on groundwater and are one of the rarest natural communities in the United States, they are a protected resource in MN. Approximately 200 have been located in Minnesota. They may not be filled, drained or otherwise degraded.

Commercial/Institutional Water Use - Water used by motels, hotels, restaurants, office buildings, commercial facilities and institutions (both civilian and military). Consider maintaining separate institutional water use records for emergency planning and allocation purposes. Water used by multi-family dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use.

Commercial/Institutional/Industrial (C/I/I) Water Sold - The sum of water delivered for commercial/institutional or industrial purposes.

Conservation Rate Structure - A rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user. A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

Date of Maximum Daily Demand - The date of the maximum (highest) water demand. Typically this is a day in July or August.

Declining Rate Structure - Under a declining block rate structure, a consumer pays less per additional unit of water as usage increases. This rate structure does not promote water conservation.

Distribution System - Water distribution systems consist of an interconnected series of pipes, valves, storage facilities (water tanks, water towers, reservoirs), water purification facilities, pumping stations, flushing hydrants, and components that convey drinking water and meeting fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities.

Flat Rate Structure - Flat fee rates do not vary by customer characteristics or water usage. This rate structure does not promote water conservation.

Industrial Water Use - Water used for thermonuclear power (electric utility generation) and other industrial use such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining.

Low Flow Fixtures/Appliances - Plumbing fixtures and appliances that significantly reduce the amount of water released per use are labeled “low flow”. These fixtures and appliances use just enough water to be effective, saving excess, clean drinking water that usually goes down the drain.

Maximum Daily Demand - The maximum (highest) amount of water used in one day.

Metered Residential Connections - The number of residential connections to the water system that have meters. For multifamily dwellings, report each residential unit as an individual user.

Percent Unmetered/Unaccounted For - Unaccounted for water use is the volume of water withdrawn from all sources minus the volume of water delivered. This value represents water “lost” by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category “Water Supplier Services”.

Population Served - The number of people who are served by the community's public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community's public water supply system. It should not include residents in the community who have private wells or get their water from neighboring water supply.

Residential Connections - The total number of residential connections to the water system. For multifamily dwellings, report each residential unit as an individual user.

Residential Per Capita Demand - The total residential water delivered during the year divided by the population served divided by 365 days.

Residential Water Use - Water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

Smart Meter - Smart meters can be used by municipalities or by individual homeowners. Smart metering generally indicates the presence of one or more of the following:

- Smart irrigation water meters are controllers that look at factors such as weather, soil, slope, etc. and adjust watering time up or down based on data. Smart controllers in a typical summer will reduce water use by 30%-50%. Just changing the spray nozzle to new efficient models can reduce water use by 40%.
- Smart Meters on customer premises that measure consumption during specific time periods and communicate it to the utility, often on a daily basis.
- A communication channel that permits the utility, at a minimum, to obtain meter reads on demand, to ascertain whether water has recently been flowing through the meter and onto the premises, and to issue commands to the meter to perform specific tasks such as disconnecting or restricting water flow.

Total Connections - The number of connections to the public water supply system.

Total Per Capita Demand - The total amount of water withdrawn from all water supply sources during the year divided by the population served divided by 365 days.

Total Water Pumped - The cumulative amount of water withdrawn from all water supply sources during the year.

Total Water Delivered - The sum of residential, commercial, industrial, institutional, water supplier services, wholesale and other water delivered.

Ultimate (Full Build-Out) - Time period representing the community's estimated total amount and location of potential development, or when the community is fully built out at the final planned density.

Unaccounted (Non-revenue) Loss - See definitions for "percent unmetered/unaccounted for loss".

Uniform Rate Structure - A uniform rate structure charges the same price-per-unit for water usage beyond the fixed customer charge, which covers some fixed costs. The rate sends a price signal to the customer because the water bill will vary by usage. Uniform rates by class charge the same price-per-unit for all customers within a customer class (e.g. residential or non-residential). This price structure is generally considered less effective in encouraging water conservation.

Water Supplier Services - Water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and/or other uses.

Water Used for Nonessential Purposes - Water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

Wholesale Deliveries - The amount of water delivered in bulk to other public water suppliers.

Acronyms and Initialisms

AWWA – American Water Works Association
C/I/I – Commercial/Institutional/Industrial
CIP – Capital Improvement Plan
GIS – Geographic Information System
GPCD – Gallons per capita per day
GWMA – Groundwater Management Area – North and East Metro, Straight River, Bonanza,
MDH – Minnesota Department of Health
MGD – Million gallons per day
MG – Million gallons
MGL – Maximum Contaminant Level
MnTAP – Minnesota Technical Assistance Program (University of Minnesota)
MPARS – MN/DNR Permitting and Reporting System (new electronic permitting system)
MRWA – Minnesota Rural Waters Association
SWP – Source Water Protection
WHP – Wellhead Protection

APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER

Appendix 1: Well records and maintenance summaries

Go to Part 1C for information on what to include in appendix

Appendix 2: Water level monitoring plan

Go to Part 1E for information on what to include in appendix

Appendix 3: Water level graphs for each water supply well

Go to Part 1E for information on what to include in appendix

Appendix 4: Capital Improvement Plan

Go to Part 1E for information on what to include in appendix

Appendix 5: Emergency Telephone List

Go to Part 2C for information on what to include in appendix

Appendix 6: Cooperative Agreements for Emergency Services

Go to Part 2C for information on what to include in appendix

Appendix 7: Municipal Critical Water Deficiency Ordinance

Go to Part 2C for information on what to include in appendix

Appendix 8: Graph of Ten Years of Annual Per Capita Water Demand for Each Customer Category

Go to Objective 4 in Part 3B for information on what to include in appendix

Appendix 9: Water Rate Structure

Go to Objective 6 in Part 3B for information on what to include in appendix

Appendix 10: Ordinances or Regulations Related to Water Use

Go to Objective 7 in Part 3B for information on what to include in appendix

Appendix 11: Implementation Checklist

Provide a table that summarizes all the actions that the public water supplier is doing, or proposes to do, with estimated implementation dates.

Appendix 12: Sources of Information for Table 10

Provide links or references to the information used to complete Table 10. If the file size is reasonable, provide source information as attachments to the plan.

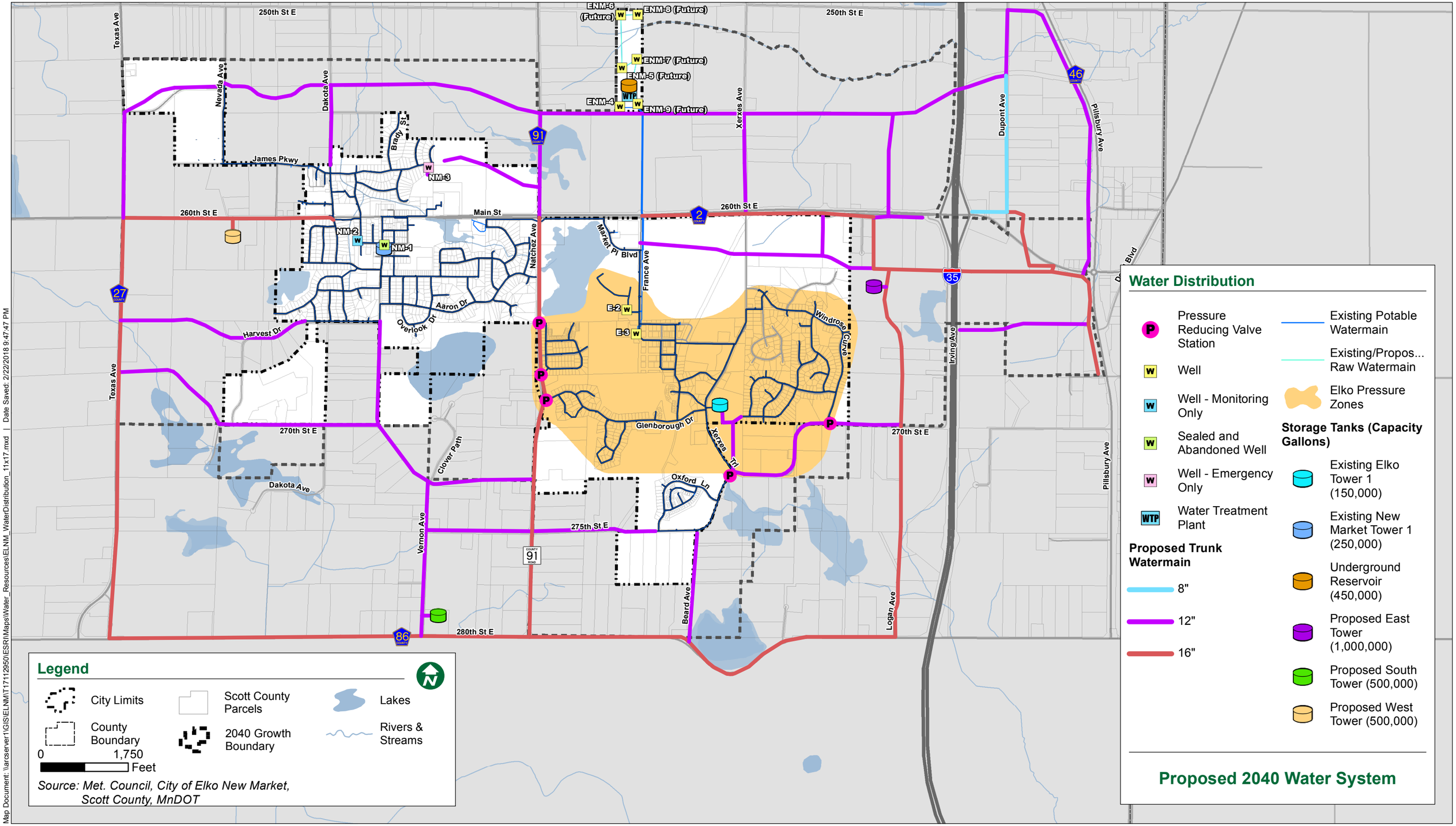
2040 Comprehensive Plan

Elko New Market, MN

Proposed 2040 Water System

February 2018

BOLTON & MENK
Real People. Real Solutions.



Map Document: \\arcserver1\GIS\ELNM\T17112950\ESRI\Maps\Water_Resources\ELNM_WaterDistribution_11x17.mxd | Date Saved: 2/22/2018 9:47:47 PM

Real People. Real Solutions.

City of Elko New Market
2040 Sanitary Sewer Plan

February 2018

Submitted by:
Bolton & Menk, Inc.
12224 Nicollet Avenue
Burnsville, MN 55337
P: 952-890-0509
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2040 Sanitary Sewer Plan

For the City of

Elko New Market, Minnesota

BMI Project No. T17.112950

February 10, 2018

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By: _____
Richard J. Revering, P.E.
License No. 20711

Date: 02/23/18

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Appendix

Appendix A: Figure 1 – Existing Sanitary Sewer Map
Appendix B: Figure 2 – Future Sanitary Sewer Map
Appendix C: Design Flow Tabulation
Appendix D: 2040 Trunk Sewer Design and Capacity Tabulation

I. EXECUTIVE SUMMARY

In the past, the City of Elko New Market had been a remote, rather isolated rural community to the Twin City Metropolitan Area. Today, it has changed to that of a "bedroom community" and in the near future it will reach that of a full "suburb" to the Twin City Metropolitan Area. The City has significant commercial and industrial growth potential. These changes will place new demands on the infrastructure and public services. For the purpose of this Sanitary Sewer System Study, the following two study areas were chosen: 1) The ultimate boundary of the City, and 2) The 2040 boundary of the City.

The topography, wetland presence, interstate, and location of the Metropolitan Council's interceptor sewer all dramatically influence the ultimate configuration and sequence of construction of the wastewater collection system. The system will rely on 17 local and regional lift stations within the 2040 growth boundary, with forcemains to transport the wastewater to the MCES Interceptor or a gravity branch sewer. During the growth process, some lift stations will be interim to serve areas where gravity sewer may not yet be available. The areas served by this type of station will be served by future development of the gravity system, so interim designs should facilitate decommissioning of the interim lift station.

Eventually, when the entire system is developed the following will be a result:

1. Approximately 30 permanent lift stations and forcemains will remain in use (eight of which are already in service).
2. Seven locations where connections to the MCES interceptor have been provided as it was constructed as described below. Three were installed along with the County Road 2 reconstruction project in 2006. MCES prefers connection at these locations; however, exceptions have historically been granted under certain circumstances in other communities. MCES approval would be required for any variance to the following points:
    a) #1: East side of CR 91, south of CR 2.
    b) #2: West side of Xerxes Avenue, south of CR 2.
    c) #3: East side of Newton Circle, north of CR 2.
    d) #4: West side of I-35, south of the Vermillion River.
    e) #5: West side of I-35, north of the Vermillion River.
    f) #6: East side of I-35, intersection of 250th St. & Dupont Avenue.
    g) #7: East side of I-35, on CR 62 east of Pillsbury Avenue.

A. RECOMMENDATIONS

1. It is suggested that the City of Elko New Market periodically revisit this study to update the underlying assumptions, and make such adjustments as are appropriate.

2. The characteristics of actual development, i.e. density of residential, wet industry, percentage of higher density residential, will change the sizing of the proposed lift stations.

3. The City should compare existing well pump and waste water discharge records to see if there is a clear correlation between the two. If a spike in the waste water flow shows up during fall and spring wet periods, then a sump pump inspection program should be considered.

4. The City has a policy of requiring rear-yard drainage systems to prevent the development of chronically wet turf grass areas due to tight soils, dense lawns, irrigation, and builder/homeowner alterations that can affect drainage ways over time. The policy requires the provision of connections for sump pump systems to the drainage system. It is recommended this policy be retained and enforced. While intended primarily to benefit drainage, the sump connections offer the additional benefit of dis-incenting illicit connections of sump pumps to the sanitary system by homeowners fed up with wet yards. The inflow from illicit connections means clear water must be unnecessarily treated, raising costs and taking up capacity needed for wastewater. The inflow also is not metered at the house by the City, which would increase sewer bills and generate revenue to cover the costs incurred by the City for it. The clear water does show up at the MCES meter for the City's wastewater flow and affects City charges.

B. ESTIMATED COSTS

1. The costs incurred to achieve these improvements should be borne by new development by application of the City's Sewer Trunk Fee. The fee should be updated and published annually in the City's Fee Schedule.

2. The trunk fee collected from new development on an area or unit basis as adopted by the Council is intended to offset sewer system investments made by the City to prepare for and/or accommodate new development. Trunk fees cover those costs that will be incurred by the development whether the lots or parcels develop. These are the "make-ready" costs.

The minimum fee recommended would recover oversizing of systems illustrated at a conceptual level in this report. At any time during implementation of this system there may be other factors affecting the trunk fee the City would charge in order to maintain a minimum projected fund balance and protect existing rate payers. These factors may include the development climate, debt service for past sewer investments, existing fund balances, or other factors. A "floor-level" trunk fee based on an estimate of the costs for the 2040 system in this report follows:

ESTIMATED COSTS	
ITEM	**COST**
Lift Stations	$1,760,000
Forcemain	$831,550
Power Generation	$400,000
Gravity Sewer Over-sizing	$2,126,644
Subtotal	$5,118,194
Price Contingency, Engineering & Administration	$1,791,368
Total	$6,909,562
Net Acreage Served	3,570
Approximate Cost Per Acre	**$1,935**

II. INTRODUCTION

A. Purpose of Study

The purpose of this study is to examine the wastewater collection system for the city. The study provides a layout of a future system required to serve the City as it grows. This layout is based on topography, constraints such as wetlands and highways, and planned land uses. The layout includes gravity pipes and lift stations with forcemains. The layout will be referenced to influence investment decisions as development occurs. The intention is to avoid under-building initial sewer facilities so they can be expanded in an efficient manner, avoiding the need to re-build them, as the City grows. The layout offers a base of estimating the minimum cost the City will need to recover from development as it occurs.

The study also seeks to identify challenges the City may face related to wastewater collection and provide recommendations to meet these challenges.

The age and condition of individual elements in the collection system were not a part of this study. Conclusions and recommended priorities may have to be adjusted in the future, if failures in the existing system occur or as development conditions or technology changes. Comprehensive televising, rating and consistently performing preventative maintenance of the sewers in the existing system could lessen the impact of these unexpected events.

III. BACKGROUND

A. Location

The City of Elko New Market is located approximately 30 miles south of Minneapolis and is bisected by CR 91/Natchez Avenue. Its northern boundary on the east side of CR 91 is approximately the Vermillion River headwaters (see Figure 1).

B. Flow Characteristics

A conceptual understanding of the flow characteristics of sanitary sewers is helpful to appropriately interpret the information in this report.

1. The vast majority of the time, sanitary sewers appear virtually unused and the sewer is barely flowing.
2. However, given the normal patterns of human habitation, there is a consistency in the total volume of water used per person that is focused during a limited number of hours in the day.

3. In order not to cause backups into peoples' homes, sanitary sewers must be designed to accommodate this maximum peak rate of flow that occurs during that focused period each day.

4. The City first started installing a wastewater system in the 1980s, but the majority of the existing system has been constructed since 1990. Therefore, the materials used have modern joints that are capable of resisting inflow & infiltration (I & I). For that reason, no analysis of I & I or allowance for additional flow has been included in past studies by the City.

C. Topography of the Area

1. The unusual land forms that dominate the City of Elko New Market can be described as:

   a) "Dead ice moraine" - It is a rugged landscape that formed as the last glaciers were melting at the end of the Ice Age, between about 12,000 and 9,000 years ago…..They are rough, boulder-strewn, and undrained. They do, however, include a lot of excellent rangeland and thousands of undrained depressions - lakes, ponds, and sloughs known collectively as prairie potholes - that serve as important nesting and feeding areas for waterfowl. [1]

2. This landform presents unique challenges to the efficient and orderly collection of wastewater in that there are very few natural tributary flow patterns that could be described as the branches of a tree. Rather, the underlying dead ice moraine left numerous individual low pockets with intermediate high points that are fifty to seventy feet higher. This topography is a significant obstacle to the efficient use of gravity sewers to collect wastewater for treatment. The protocol to overcome these obstacles is:

   a) Analyze the natural tributary patterns that do exist in an effort to maximize the use of gravity sewers.

   b) This analysis will result in identifying the locations of the "pockets" which can only be drained by either:

      (1) Extending deeper interceptor sewers through the intermediate high areas.

      (2) Constructing gravity sewers to deliver wastewater to lift stations that pump it through forcemains to the treatment plant or other drainage districts closer to the treatment plant.

      (3) Constructing pressure sewer systems where every few houses have a lift station which pumps into a pressurized sewer system that eventually reaches the treatment plant. At this time, the use of

[1] Bluemle, John P.; North Dakota Geological Survey as described in *NORTH DAKOTA NOTES NO. 14* published on May 19, 2004 at http://www.state.nd.us/ndgs/ndnotes/ndn14_h.htm.

pressurized sewer systems is limited for financial and maintenance reasons to special circumstances like around lakes or through historic districts. Therefore, little consideration was given to this option.

3. Superimposed on the drainage patterns are the potential developable and non-developable areas. Non-developable properties include:

   a) Protected waters of the state.

   b) Wetland areas that would require mitigation. Given that the first rule of mitigation is "avoidance", which is in conformity with the stormwater management plan, it is anticipated that little or no development will occur in these areas.

D. Sewer Routing

1. Five system constraints have a major influence on the ultimate sewer pattern to serve the City of Elko New Market. They are:

   a) Vermillion River Corridor - Shared Goal #1 in the Southeast Comprehensive Plan Update is to: Protect and preserve the Vermillion River, and "exceptional" and "high quality" sites identified in the Natural Resource Inventory as unique and valuable state and regional resources. Therefore, it is recommended that a protective 100 to 200-foot natural buffer be maintained from the Vermillion River through the City.

   b) Metropolitan Council Environmental Services (MCES) Interceptor Sewer – A Metropolitan Council interceptor sewer provides wastewater collection service to the Elko New Market area. The wastewater from Elko New Market is carried by this interceptor pipe to the MCES Empire WWTF for treatment. Flow from Elko New Market is metered for billing purposes downstream of the City's future service boundary. The interceptor will have service connections for the City of Elko New Market at seven (7) locations, as previously discussed.

   c) Interstate 35 – The I-35 freeway runs north/south on the east side of the city. This influences the wastewater system in two ways:

      (1) Development patterns are expected to focus commercial, industrial and high residential land uses on either side of the highway.

      (2) The highway presents a physical barrier against the efficient routing of sanitary sewers and forcemains. The future system will largely rely upon the interceptor sewer that already provides a crossing of this freeway. This means; however, that what would appear on the map to be the "closest" available sewer may not offer the most effective route because of the high cost associated with boring or drilling under the freeway.

d) Development Pressure – The Twin City Metropolitan Area is gradually enveloping the City of Elko New Market. As such, developers will investigate sites, purchase property, establish development plans and approach the City for the extension of municipal services. These requests will come at times that are opportune to the developers. It may be difficult or impossible for the City to meet these requests in the developers' timeframes. It is also not possible to reliably predict when development requests will occur, or where.

E. Existing Facilities

1. Collection System - The existing wastewater collection system in the City of Elko New Market consists of sewers ranging in size from 8-inches to 18-inches and eight lift stations. The sewer locations, manhole and pipe sizes are shown on Figure 1.

EXISTING PUMP STATIONS				
Service Area	**Commonly Used Name**	**Location**	**Discharges to:**	**Capacity**
LS #1	City Hall Lift Station	City Hall	MH approx. 600 LF west of CR 91 and CR 2; MH is behind curb	350
LS #1A	Dakota Lift Station	CR 2 @ Dakota Ave	MH approx. 600 LF west of CR 91 and CR 2; MH is behind curb	210
LS #1B	Carter Lift Station	Carter Street @ James Pkwy	MH approx. 250 ft west of Carter/James intersection on James Pkwy; in the future will discharge to MH in James Pkwy @ at Riley/James intersection	200
LS #2	Elko Downtown Lift Station	Main St. @ Chowen Ave	MH 3001 in CR 2 @ France Ave.	200
LS #2A	Ptarmigan Lift Station	Ptarmigan Drive @ Woodcrest	MH 2001 in Xerxes Avenue, 210 LF northeast of Xerxes/Main intersection.	250
LS #4	Glenborough Lift Station	Glenborough @ Chowen	MH 3064 in Glenborough, 200 LF southeast	200

EXISTING PUMP STATIONS				
			of Stirling Court	
name	Public Works Lift Station	Public Works Campus	MCES Interceptor at CRs 91 and 2 intersection	find
LS #6	Oxford Lift Station	Beard Ave @ Oxford Ln	MH 4043 in Xerxes @ Beard Ave	110

a) Given the relative young age of most of the collection system, no investigation or assessment of the materials or condition of these sewer lines was included in this study.

2. Subsurface Sewage Treatment Systems (SSTS) – Currently the City has approximately ninety SSTSs within the city limits, see Figure 1. Scott County is the regulative authority for administering ordinances related to SSTS permitting and inspections. There are no community systems within the City. Scott County has no point of sale compliance inspection requirement; however, inspections are triggered by certain building permits. Scott County officials estimate a third or more of systems in the City would not pass a compliance inspection.

3. Existing SSTSs will be generally be connected to the municipal sanitary sewer system when these services become available or are made so by the City to address compliance issues or demand from the neighborhood. The City has established a policy for providing City sewer in the Woodcrest neighborhood, for example, where lots relatively undersized for SSTS, tight soils, and extensive tree cover are expected to make it infeasible for many parcels to replace SSTS systems as they age. Three of the 40-odd homes in the neighborhood have already hooked up and sewer in place for several more to gain sewer availability by adding individual packaged pump stations at their properties.

F. Inflow and Infiltration (I &I)

Due to the size of the City and the relatively modern piping system infiltration has not been a major issue in the past. Flow records to indicate a correlation between rainfall and flow. It is believed this is largely due to inflow from illicit sump pump connections and possibly at some manholes subject to sheet flow or low-point flooding.

The Metropolitan Council established a regional waste water surcharge program that took effect in January, 2007. This program was for metropolitan communities that discharge into MCES

treatment plants. With the addition of clean rainwater the capacity of the MCES treatment plants is greatly reduced, which may result in sewage backups into basements and/or sewage overflows that could cause environmental damage. The surcharge program establishes goals for communities with time periods set for eliminating excessive I & I.

The City should continue to compare existing well pump and waste water discharge records to see if there is a clear correlation between the two. If there is a surcharge of waste water flows in the fall or spring months during a precipitation event, this may suggest that there are sump pump connections to the sanitary sewer, or that there are leaks in the system. Given the relatively young age of the sanitary piping system, the connection of sump pump discharge lines would likely be a major cause for flow spikes. If a correlation is found a sump pump inspection program should be considered that would disconnect sump pump discharge lines from the sanitary sewer system.

The City has an ordinance that prohibits the connection of roof downspouts, foundation drains, areaway drains, surface runoff and groundwater to a building sewer or indirectly to the sanitary sewer system.

IV. CONDUCT OF THIS STUDY

A. Standards

1. The Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers have developed a standard for wastewater facilities that is commonly referred to as Ten States Standards. The development of this study followed these standards.

B. Methods Employed

1. Two features determine the potential extension of an existing sewer.

    a) The Elevation of the Existing Sewer Versus the Topography - Given the required slope for the sewer, there is established a gravity service area boundary. Properties beyond this boundary cannot be directly served with gravity sewers.

    b) The Size and Grade of the Existing Sewers - These determine a maximum flow capacity that the existing system can carry.

2. Sanitary sewer service to areas beyond this gravity service boundary, can only be serviced by either:

    a) Constructing a new interceptor sewer, or

    b) Constructing lift stations and forcemains to pump the sewage, or

c) Constructing pressure sewer systems to transport the wastewater.

3. Existing Capacities

a) The driving energy of flow in a sanitary sewer is gravity. Therefore, the pipes must be laid on a grade (or slope) to force the flow. Slopes are expressed in percentage (%) and represent the number of feet of fall in 100 feet of length. i.e., a grade of 1.00% is one foot of fall in 100 horizontal feet.

b) The slope, together with the diameter and material type, are used to calculate the actual volume of flow that a full pipe can carry. Typically, this volume is expressed in cubic feet per second (cfs) or gallons per minute (gpm). This rate of flow is the actual capacity of the sewer line.

4. Required Capacities

a) The 2030 sewer plan relied on land use data from the Southeast Comprehensive Plan Update - Land Use Plan prepared by the City and Scott County. All areas were identified with an anticipated land use and density to model wastewater generation rates as follows:

(1) For areas that are already developed, actual lot counts were used. For undeveloped low-density residential areas, a 2.7 units per acre lot count was predicted.

(2) For areas designated as “mixed use” the distribution of land use is:

(a) Seventy percent - low density residential (2.7 units per acre).

(b) Twenty percent – high density residential (8 units per acre).

(c) Ten percent commercial / industrial.

(3) Commercial and industrially zoned areas - 1,000 gallons per acre per day. This is much more difficult to predict, since the character and size of specific occupants is unknown at this time. Further, the water use patterns of commercial and industrial property can easily change. For example, a warehouse could be replaced by a much larger user, resulting in a significantly higher flow. Therefore, any temptation to lessen the design standards could prove to be ill advised.

(4) Institutional use was predicted at the same rate as commercial.

(5) Recreational areas, cemeteries, ravines, escarpments, flood plain, and wetlands were not considered to contribute wastewater flow.

b) For the 2040 plan we reviewed effects of the land use plan proposed by the City for the 2040 Comprehensive Plan update. Our finding is that wastewater generation either stayed the same or was reduced. Where commercial or industrial uses replaced single family, the higher generation rate was offset by a reduced peaking factor. No changes in pipe sizes due to land use changes were made. Our opinion is that the 2030 plan provided conservative pipe sizes that allow for increased density or other flexibility in development without unduly affecting minimum required trunk fees. The

alignment, size, material, and depth of any future facility will need to consider this layout, but also the developments preceding and proposed at the time and other conditions present.

V. LAND USE / DESIGN FLOW

A. General

1. The rolling nature of the topography requires that the sanitary sewer system collection system make extensive use of lift stations and forcemains to service the area.

2. The land use of each sub-district for 2030 flow modeling is summarized in the Appendix. The 2030 plan's design flows* remain the basis for determining the necessary pipe sizing and lift station capacities for future improvements.

   * The flow rate numbers have been designed for purposes of sizing the City's sanitary sewer piping network for future development and may not represent the flows to be expected by the MCES.

3. For planning purposes, the city has been divided into nine service districts and those districts have been further divided into forty sub-districts, see Figure 2. Each sub-district is served by a lift station that pumps wastewater to a gravity sewer line. The lift stations are summarized in the following table:

LIFT STATION SUMMARY					
	Lift Station Number	**Lift Station Capacity (GPM)**	**Located in District:**	**Location**	**Discharges to:**
District	LS 1S-2	292	1S-2	Glenborough Dr./Chowen Ave.	Gravity sewer at Glenborough Dr./Stirling Ct.
	LS 1S-3	97	1S-3	Beard Ave./Oxford Ln.	Gravity sewer at Xerxes Ave./Beard Ave.
	LS 1S-4	174	1S-4	990' west of CR 91/Glenborough Dr.	Gravity sewer at CR 91/ Glenborough Dr.
	LS 1S-5	632	1S-5	1500' north of 275th St./CR 91 on CR 91	Gravity sewer at CR 91/ Glenborough Dr.
	LS 1S-6	201	1S-6	275th St./Oxford Ln.	Gravity sewer 525' west of 275th St./Oxford Ln. on 275th St.
	LS 1S-7	361	1S-7	1040' north of 280th St. on CR 91	Trunk gravity line 450' west of 275th/CR 91
East	LS 5A-3	424	5A-3	460' west of Pillsbury Ave./270th St. on 270th St.	Gravity sewer line at Pillsbury Ave./270th St.
Elko	LS 2S-2	514	2S-2	Chowen Ave./Main St.	Trunk gravity line at 265th/Beard
	LS 2S-3	264	2S-3	Xerxes Ave./Ptarmigan Ave.	Trunk gravity line at Xerxes Ave./Ptarmigan Ave
New Market	LS NM-2	7048	NM-2	City Hall	Trunk gravity line 600' west of CR 91/CR 2; MH is behind curb
	LS NM-3	153	NM-3	320' north of Carter Ave./James Pkwy on Carter Ave.	Gravity sewer. 250' west of Carter/James intersection on James Pkwy
Southeast	LS 3S-2	4985	3S-2	1290' north of Logan Rd./280th St. on Logan Rd.	Trunk gravity line 2348' east of Thomas Ave./270th St. on 270th St.
	LS 3S-2A	Not Available	3S-2	1700' west of Pillsbury Ave./280th and 1855' south of 280th St.	1700' west of Pillsbury Ave./280th St. on 280th St.
	LS 3S-3	1576	3S-3	6250' south of Beard Ave./280th St.	Trunk gravity line 2630' south of Beard Ave./280th St.
	LS 3S-4	868	3S-4	2740' south of CR 91/280th St.	Trunk gravity line 4000' south of CR 91/280th St.
	LS 3S-5	229	3S-5	Thomas Ave./273rd St.	Trunk gravity line at Thomas Ave./270th St.
	LS 3S-6	1097	3S-6	9130' south of I35/280th St.	Trunk gravity line 7515' south of I35/280th St.
	LS 3S-7	465	3S-7	5700' south of 280th St. (CR 86)/CR 46 on CR 46	Trunk gravity line 4150' south of 280th St. (CR 86)/CR 46 on CR 46
	LS W-1	7000	W-1	CR2/Dakota Ave.	Trunk gravity line 600' west of CR 91 and CR 2; MH is behind curb
	LS W-2	694	W-2	2620' south of CR 2/Texas Ave. on Texas Ave.	Trunk gravity line 1480' east of CR 2/Texas Ave. on CR 2

LIFT STATION SUMMARY					
West	LS W-3	236	W-3	880' north of CR 2/Texas Ave. on Texas Ave.	Trunk gravity line 1480' east of CR 2/Texas Ave. on CR 2
	LS W-5	368	W-5	Nevada Ave./255th St.	Gravity sewer at James Pkwy./Nevada Ave.
	LS W-6	5555	W-6	2200' west of CR 2/Texas Ave. on CR 2	Trunk gravity line 1480' east of CR 2/Texas Ave. on CR 2
	LS W-7	548	W-7	1870' south of Harvest Dr./Saxon Dr.	Gravity sewer at Harvest Dr./Cedric Lane
	LS W-8	1111	W-8	1830' north of CR 2/ Jonquil Ave.	Trunk gravity line at CR 2/Jonquil Ave.
	LS W-9	3534	W-9	4130' north of 280th St./Texas Ave. on Texas Ave.	Trunk gravity line at 5510' north of 280th St./Texas Ave. on Texas Ave.
	LS W-10	1215	W-10	2050' west of 280th St./ Vernon Ave and 1450' south of 280th St.	Trunk gravity line 2050' west of 280th St./ Vernon Ave. on 280th St.
	LS W-11	854	W-11	730' west of 280th St./Vernon Ave. and 2650' south of 280th St.	Trunk gravity line 730' west of 280th St./Vernon Ave. and 1040' south of 280th St.
North	LS 4A-3	417	4A-3	950' east of 250th St/Dakota and 200' south of 250th St.	2600' east of 250th St/Dakota Ave. on 250th St.

The table below shows the population, household, employment and estimated wastewater flows projected by the Metropolitan Council through the year 2040.

Forecast of population, households, employment and wastewater flow:

FORECAST 2010 THROUGH 2040				
	2010	**2020**	**2030**	**2040**
Population	4,110	6,100	8,600	11,900
Households	1,259	2,000	3,030	4,400
Employment	317	1,630	1,780	1,940
Estimated Average Flow (MGD)	0.23	0.35	0.49	0.69

VI. SUMMARY

The topography, wetland presence, interstate, and location of the Metropolitan Council's interceptor sewer all dramatically influence the ultimate configuration and sequence of construction of the wastewater collection system. The system will rely on 17 local and regional lift stations within the 2040 growth boundary, with forcemains to transport the wastewater to the MCES Interceptor or a gravity branch sewer. During the growth process, some lift stations will be interim to serve areas where gravity sewer may not yet be available. The areas served by this type of station will be served by future development of the gravity system, so interim designs should facilitate decommissioning of the interim lift station.

Eventually, when the entire system is developed the following will be a result:

1. Approximately 30 permanent lift stations and forcemains will remain in use (eight of which are already in service).

2. Seven locations where connections to the MCES interceptor have been provided as it was constructed as described below. MCES prefers connection at these locations; however, exceptions have historically been granted under certain circumstances in other communities. MCES approval would be required for any variance to the following points:

    a) #1: East side of CR 91, south of CR 2.
    b) #2: West side of Xerxes Avenue, south of CR 2.
    c) #3: East side of Newton Circle, north of CR 2.
    d) #4: West side of I-35, south of the Vermillion River.
    e) #5: West side of I-35, north of the Vermillion River.
    f) #6: East side of I-35, intersection of 250th St. & Dupont Avenue.
    g) #7: East side of I-35, on CR 62 east of Pillsbury Avenue.

3. For areas designated as "mixed use" the distribution of land use is:

    a) Seventy percent - low density residential (2.7 units per acre).
    b) Twenty percent – high density residential (8 units per acre).
    c) Ten percent commercial / industrial.

VII. RECOMMENDATIONS

1. It is suggested that the City of Elko New Market periodically revisit this study to update the underlying assumptions, and make such adjustments as are appropriate.

2. The characteristics of actual development, i.e. density of residential, wet industry, percentage of higher density residential, will change the sizing of the proposed lift stations.

3. The City should compare existing well pump and waste water discharge records to see if there is a clear correlation between the two. If a spike in the waste water flow shows up during fall and spring wet periods, then a sump pump inspection program should be considered.

4. The City has a policy of requiring rear-yard drainage systems to prevent the development of chronically wet turf grass areas due to tight soils, dense lawns, irrigation, and builder/homeowner alterations that can affect drainage ways over

time. The policy requires the provision of connections for sump pump systems to the drainage system. It is recommended this policy be retained and enforced. While intended primarily to benefit drainage, the sump connections offer the additional benefit of dis-incenting illicit connections of sump pumps to the sanitary system by homeowners fed up with wet yards. The inflow from illicit connections means clear water must be unnecessarily treated, raising costs and taking up capacity needed for wastewater. The inflow also is not metered at the house by the City, which would increase sewer bills and generate revenue to cover the costs incurred by the City for it. The clear water does show up at the MCES meter for the City's wastewater flow and affects City charges.

VIII. ESTIMATED COSTS

A summary of costs and computation of minimum recommended trunk fee in 2018 dollars is provided in the Executive Summary at the beginning of this document.

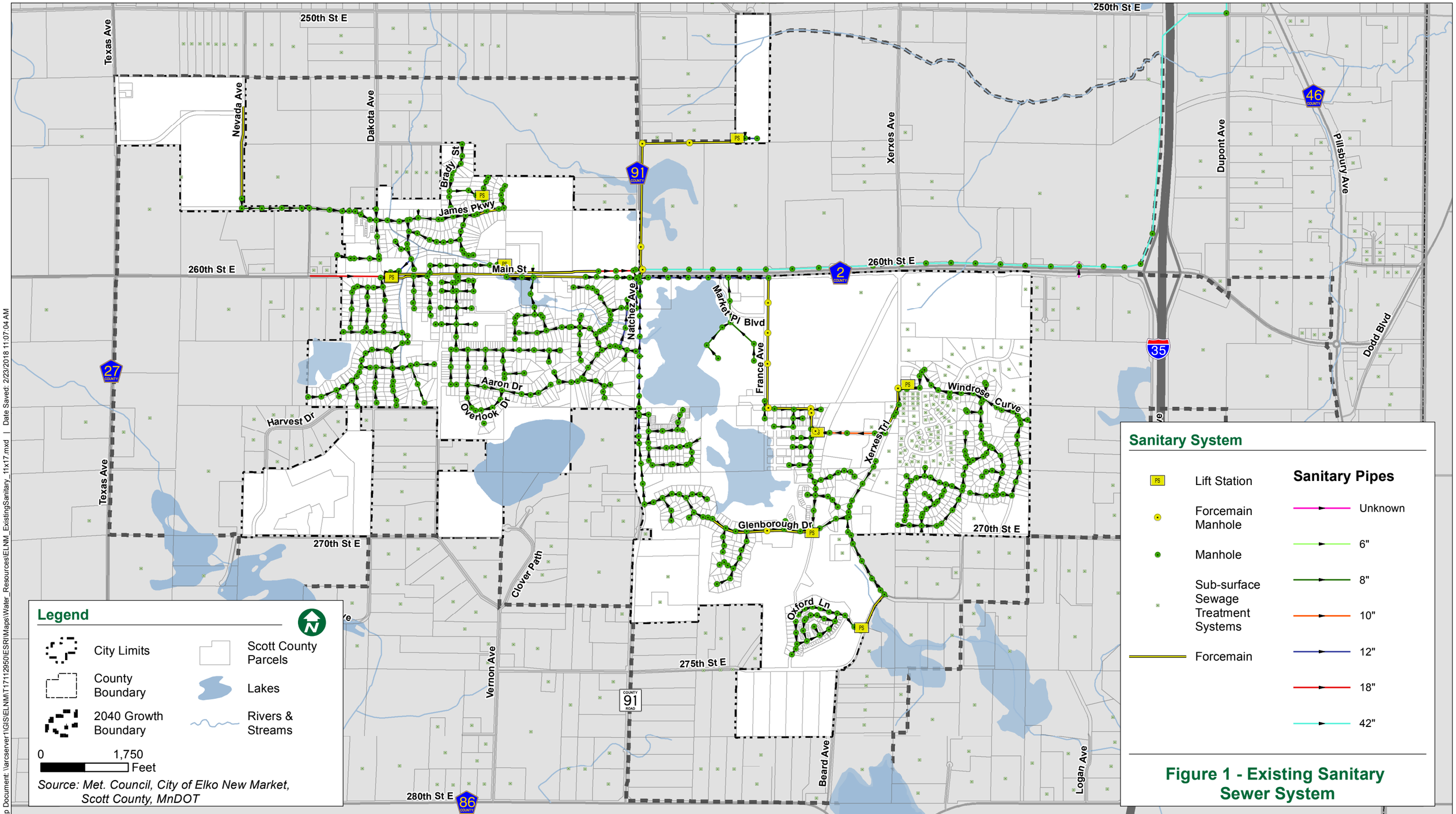
Appendix A: Figure 1 – Existing Sanitary Sewer Map

2040 Comprehensive Plan

Elko New Market, MN

Figure 1 - Existing Sanitary Sewer System

February 2018



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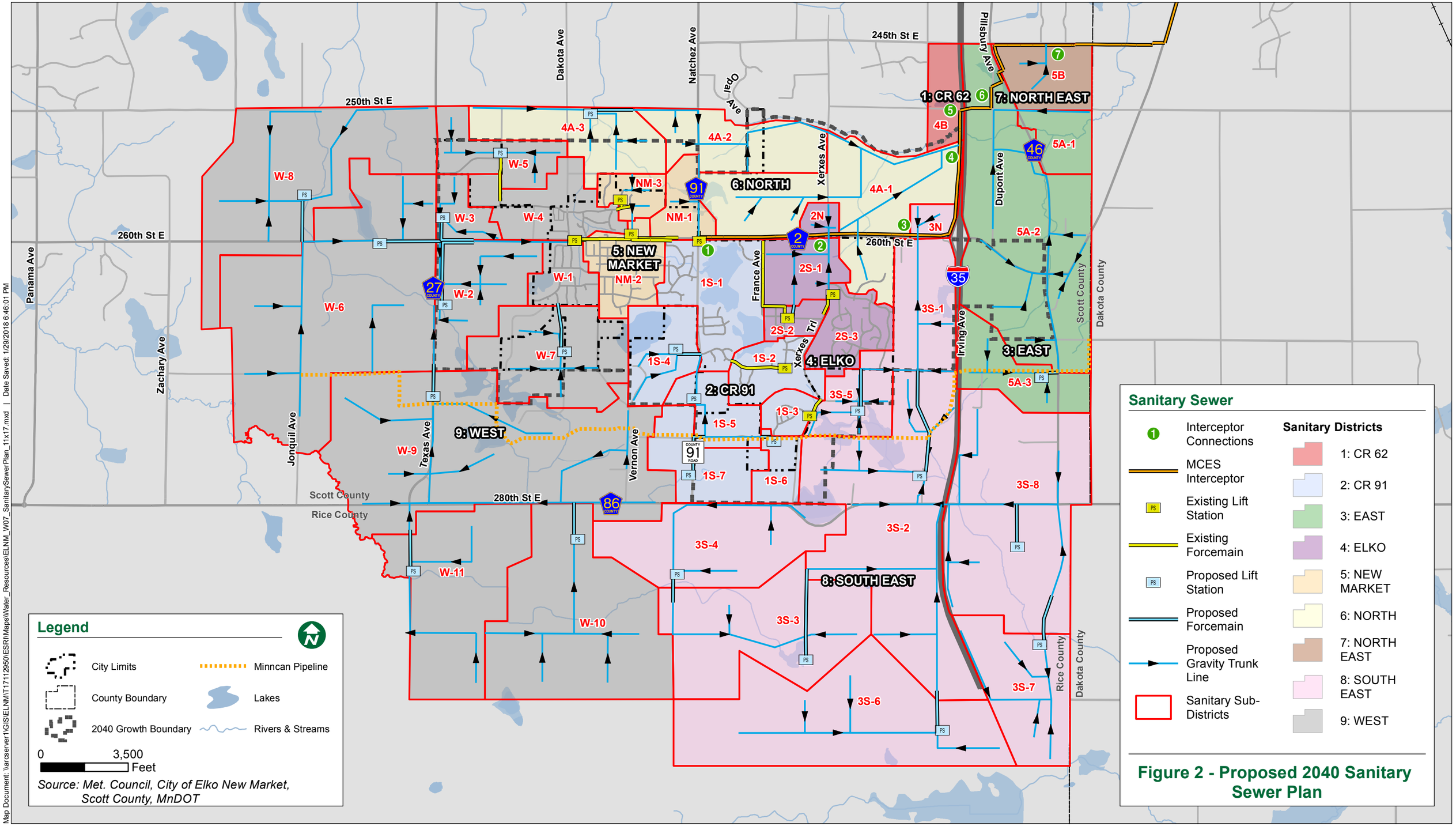
Appendix B: Figure 2 – Future Sanitary Sewer Map

Figure 2 - Proposed 2040 Sanitary Sewer Plan

February 2018



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Appendix C: Design Flow Tabulation

LAND USE / DESIGN FLOW (ULTIMATE POTENTIAL) FROM 2030 PLAN										
District	Area	Total Area (Acres)	Wetland Area (Acres)	Residential – Low Density (Acres)	Mixed Use (Acres)	Comm/ Industrial (Acres)	Town Center (Acres)	Average flow (MGD)	Design Flow (MGD)	MCES Connection Point
West	W-3	95	4	0	55	0	0	0.085	0.31	1
	W-5	221	18	112	91	0	0	0.137	0.47	1
	W-7	490	74	416	0	0	0	0.208	0.69	1
	W-2	357	33	0	0	0	0	0.269	0.83	1
	W-4	305	38	68	68	0	9	0.196	0.59	1
	W-11	712	104	510	98	0	0	0.342	1.03	1
	W-8	934	111	706	116	0	64	0.456	1.32	1
	W-10	983	124	728	64	0	68	0.514	1.49	1
	W-9	1542	241	651	650	0	0	0.901	2.16	1
	W-6	1493	128	896	469	0	0	0.863	1.81	1
	W-1	137	23	8	1	0	0	0.060	0.13	1
CR-91	1S-3	77	9	0	0	0	0	0.034	0.13	1
	1S-4	226	100	126	0	0	0	0.063	0.23	1
	1S-6	105	3	46	57	0	0	0.073	0.27	1
	1S-2	180	38	212	0	0	0	0.071	0.25	1
	1S-7	253	33	162	58	0	0	0.133	0.45	1
	1S-5	175	17	157	0	0	0	0.079	0.24	1
	1S-1	377	133	39	0	28	8	0.191	0.55	1
New Market	NM-3	100	9	52	0	0	6	0.054	0.21	1
	NM-2	212	26	0	0	0	0	0.145	0.30	1
	NM-1	132	15	0	52	0	66	0.136	0.27	1
***Total to MCES connection point 1 =**									**12.02**	

LAND USE / DESIGN FLOW (ULTIMATE POTENTIAL) FROM 2030 PLAN										
District	Area	Total Area (Acres)	Wetland Area (Acres)	Residential – Low Density (Acres)	Mixed Use (Acres)	Comm/ Industrial (Acres)	Town Center (Acres)	Average flow (MGD)	Design Flow (MGD)	MCES Connection Point
Elko	2N	49	3	0	33	13	0	0.042	0.16	2
	2S-3	196	8	28	0	0	0	0.094	0.34	2
	2S-2	75	13	14	0	0	13	0.057	0.19	2
	2S-1	179	18	38	98	9	17	0.139	0.40	2
***Total to MCES connection point 2 =**									**12.29**	
Southeast	3N	57	1	0	0	0	0	0.056	021	3
	3S-5	181	30	135	16	0	0	0.082	0.30	3
	3S-7	433	90	343	0	0	0	0.172	0.57	3
	3S-4	597	71	305	221	0	0	0.348	1.04	3
	3S-6	1041	140	901	0	0	0	0.451	1.31	3
	36-3	733	51	682	0	0	0	0.341	0.95	3
	3S-2	2264	375	956	467	221	0	1.347	2.96	3
	3S-1	324	48	106	87	18	0	0.208	.46	3
***Total to MCES connection point 3 =**									**17.53**	

LAND USE / DESIGN FLOW (ULTIMATE POTENTIAL) FROM 2030 PLAN										
District	Area	Total Area (Acres)	Wetland Area (Acres)	Residential – Low Density (Acres)	Mixed Use (Acres)	Comm/ Industrial (Acres)	Town Center (Acres)	Average flow (MGD)	Design Flow (MGD)	MCES Connection Point
North	4A-3	341	36	305	0	0	0	0.153	0.52	4
	4A-2	328	27	18	283	0	0	0.260	0.78	4
	4A-1	741	129	0	400	0	18	0.562	1.46	4
***Total to MCES connection point 4 =**									**19.58**	
CR 62	4B	133	15	0	109	3	0	0.104	0.36	5
East	5A-1	141	33	0	108	0	0	0.095	0.34	6
	5A-3	261	24	141	97	0	0	0.157	0.53	6
	5A-2	1102	106	40	470	465	0	0.923	2.86	6
***Total to MCES connection point 6 =**									**21.20**	
Northeast	5B	216	47	0	87	83	0	0.159	0.54	7
***Total to MCES connection point 7 =**									**21.52**	

Appendix D: 2040 Trunk Sewer Design and Capacity Tabulation

TRUNK SEWER DESIGN AND CAPACITY INFORMATION						
From Point	**To Point**	**Design Flow (MGD)**	**Pipe-Existing/Proposed**	**FM Size (in.)**	**FM Length (ft.)**	**Length to be Oversized (ft.)**
CR 62						
4B	**Interceptor**	0.42	PROPOSED	--	--	0
CR 91						
1S-1	**Interceptor**	1.58	EXISTING	Ex 8	--	0
1S-2	**1S-1**	0.42	EX. FM	Ex 6	--	0
1S-3	**1S-2**	0.14	EX. FM	Ex 4	--	0
1S-4	**1S-1**	0.25	PROP. FM	8	1000	4750'(10")
1S-5	**1S-1**	1.05	PROPOSED	8	1820	1650'(10")
1S-6	**1S-5**	0.29	PROPOSED	4	550	0
1S-7	**1S-5**	0.52	PROPOSED	6	2070	0
EAST						
5A-1	**Interceptor**	0.38	PROPOSED	--	--	0
5A-2	**Interceptor**	1.13	PROPOSED	--	--	10700'(24")
5A-3	**5A-2**	0.61	PROPOSED	6	500	2160' (12")
ELKO						
2N	**Interceptor**	0.17	PROPOSED	--	--	0
2S-1	**Interceptor**	1.50	PROPOSED	--	--	5950'(15")
2S-2	**2S-1**	0.74	PROPOSED	Ex 6	--	0
2S-3	**2S-1**	0.38	EXISTING	Ex 6	--	0
NORTHEAST						
5B	**Interceptor**	0.62	PROPOSED	--	--	2050'(10")

TRUNK SEWER DESIGN AND CAPACITY INFORMATION - CONTINUED						
NORTH						
4A-1	**Interceptor**	3.12	PROPOSED	--	--	5700'(21"), 12469'(10")
4A-2	**4A-1**	1.44	PROPOSED	--	--	3955'(12"), 5724(18")
4A-3	**4A-2**	0.60	PROPOSED	8	1700	0
NEW MARKET						
NM-1	**Interceptor**	10.48	EXISTING	Ex 12, Ex 6	--	0
NM-2	**NM-1**	10.15	EXISTING	Ex 12, Ex 6	--	0
NM-3	**NM-2**	0.22	PROPOSED	--	--	0
Incoming Flow	**NM-2**	10.08	--	--	--	--
SOUTHEAST						
3N	**Interceptor**	0.22	PROPOSED	--	--	0
3S-1	**Interceptor**	7.66	PROPOSED	--	--	5430'(36")
3S-2	**3S-1**	7.18	PROPOSED	6 & 20	1615'(6"), 4190'(20")	3066'(36"), 5202'(21"), 7493'(18")
3S-3	**3S-2**	2.27	PROPOSED	12	3530	7530'(21")
3S-6	**3S-2**	1.58	PROPOSED	10	1680	7980'(18")
3S-7	**3S-2**	0.67	PROPOSED	6	2130	4550'(12")
3S-5	**3S-1**	0.33	PROPOSED	--	1750	0
3S-4	**3S-3**	1.25	PROPOSED	8	1280	6310'(15")

TRUNK SEWER DESIGN AND CAPACITY INFORMATION - CONTINUED						
WEST						
W-1	**Outgoing Flow**	10.08	PROPOSED	--	--	1400'(21")
W-2	**W-1**	1.00	PROPOSED	8	3770	0
W-3	**W-2**	0.34	PROPOSED	6	2020	2742'(24")
W-4	**W-1**	1.20	EX. FM	Ex 12	465	0
W-5	**W-1**	0.53	EXISTING	Ex 6	--	0
W-6	**W-1**	8.00	PROPOSED	18	3700	3167'(33"), 7398'(24")
W-7	**W-1**	0.79	PROPOSED	8	2000	4160' (12")
W-8	**W-6**	1.60	PROPOSED	10	1640	9830'(12")
W-9	**W-6**	5.09	PROPOSED	16	1470	4120'(27"), 7660'(24"), 4090'(15")
W-10	**W-9**	1.75	PROPOSED	10	1490	6400'(18")
W-11	**W-9**	1.23	PROPOSED	8	1600	11400'(15")

Real People. Real Solutions.

2040 Comprehensive Surface Water Management Plan

Elko New Market, MN

Submitted by:
Bolton & Menk, Inc.
1960 Premier Drive
Mankato, MN 56001
P: 507-625-4171
F: 507-625-4177

Certification

2040 Comprehensive Surface Water Management Plan

for

The City of Elko New Market

T17.112950

December 2019

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By: _____

Richard J. Revering, P.E.
License No. 20711

Date: 12/17/19

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I. EXECUTIVE SUMMARY

The City of Elko New Market's Comprehensive Surface Water Management Plan (Plan) was modeled after Minnesota Rules Chapter 8410 (Metropolitan Area Local Water Management), Minnesota Statutes Section 103B.235, the Scott Watershed Management Organization (WMO) Comprehensive Water Resource Management Plan (CWRMP) and the Vermillion River Watershed Management Plan (VRWMP). The City of Elko New Market (City) will utilize this Plan, the accompanying Rules, and the existing and new Ordinances as the basis for managing wetlands, surface, storm, flood, and groundwater within the municipal boundary.

This Plan, accompanying Rules, and Ordinances, when adopted in conjunction with the Scott CWRMP and the VRWMP, will provide the management goals, policies, and objectives the City will implement to protect, improve, and preserve wetlands, surface, storm, flood, and groundwater resources within the City. It will also address the topics required to meet the Scott WMO CWRMP and the VRWMP criteria for a Local Water Plan for submittal, acceptance, and approval under Minnesota Statutes 103B and Minnesota Rule 8410.

The Plan has been prepared with cooperation of Scott and Dakota County staff, the City of Elko New Market Staff, and the Elko New Market City Council to address the concern for the City's wetlands, surface, storm, flood, and groundwater impacts resulting from continued development and growth both in and adjacent to the City of Elko New Market.

Elko New Market is situated in a unique area geographically in that the study area sits at the headwaters of three watersheds: 1) Vermillion River, 2) Sand Creek (via Porter Creek and Duck Creek), and 3) the Cannon River. There are four Department of Natural Resources protected wetlands within the City limits and numerous smaller wetlands. There are no major water bodies or rivers in the City. Given this, the City's protection of land and resources during the planning and design of development will affect downstream resources. To protect natural communities the natural resources and environmental conservation goals of the current Southeast Scott County Comprehensive Plan will be included in the City's 2040 update and ordinances adopted that will implement the standards of the Scott WMO and VRWMP.

This Plan addresses various methods of ensuring that continued growth and development does not adversely affect the City's natural resources as well as the existing storm sewer, open channel, and regional pond networks. Acceptance of this Plan by the Scott WMO and the VRWJPO identifies the City of Elko New Market as the Local Government Unit (LGU) for matters related to protection, preservation, use, and regulation of surface and groundwater resources. In addition, this Plan includes a review of the surface water related costs associated with continued development in the City. It identifies a basis and a methodology for storm sewer infrastructure related charges associated with the corresponding development and provides a framework for managing the City's natural resources in relation to continued development and urban growth. The costs and regulatory efforts are proportional to the burdens that urban developments place on existing and future public infrastructure as well as the City's natural resources. Given this information, the findings and goals of this Plan are summarized as follows:

- The majority of the existing storm sewer and regional detention basin networks serving the developed portion of the City are adequately sized to accommodate the design storm runoff from the existing service area given current land use data. Further information on the hydrologic model is available upon request by the City Engineer.
- The existing storm sewer conveyance and regional detention systems do not have capacity to accommodate future development within the City's ultimate growth boundary.
- The existing natural resources within the City must be preserved while accommodating the

projected growth and development. The City's goal for wetland management is for no net loss of wetland area. The City looks forward to working with Scott WMO and the Minnesota Pollution Control Agency (MPCA) in developing the Total Maximum Daily Load (TMDL) concentrations for Porter Creek. The groundwater resources in the City will be managed in conjunction with Minnesota Department of Health (MDH) through the Wellhead Protection Plan (WHPP).

- Although there are numerous alternative methods of accommodating future development and growth, the City is advocating the continued design and construction of localized detention basins as the preferred BMPs for water quality and rate control associated with future development in the City's outlying growth areas.
- Localized detention basins are advocated because of a number of benefits. They are the most easily adapted to unforeseen changes in development design and layout. They can accommodate changes in the rate and location of development. They require no investment in land rights, pipes sized for un-attenuated peak runoff from development, or pond construction in advance of development and the associated fee revenue that would be required to create the facilities. They facilitate development stormwater design that more closely mimics existing hydrologic and hydraulic conditions. They do reduce developable acreage within developments, but the local approach also means stormwater area charges to developers can be much lower.
- Due to the amount of data contained in the Hydrologic modeling files (HydroCAD), detailed information including surface areas, storage volumes, flow rates for the existing conditions, etc. will be available upon request and modified as required to account for future development and provide the required level of service.
- An estimate of the costs associated with the facilities to be funded with storm water area charges has been included in this Plan. The SWAC is a per-acre fee that is collected from developers based on projected costs. The SWAC should be reviewed and adjusted on an annual basis for inflation or other factors.
- This Plan is a document-in-progress and will be amended as required. Annually as development occurs the hydrologic model will be reviewed and modified to account for the differences between the actual and modeled hydrologic conditions. It is anticipated that, as development layouts are submitted for review, the proposed storm sewer and detention pond improvements can be temporarily entered into the hydrologic model and analyzed for possible adverse effects on the area hydrology. If accepted and constructed, these improvements will then be permanently entered into the comprehensive hydraulic and hydrologic model as an existing condition.

II. PURPOSE

This Plan, in conjunction with the Scott WMO CWRMP and the VRWMP, satisfies the requirements of MN Statute 103B.205 to 103B.255 – Local Water Management Plans and MN Rule-8410 – Local Water Management.

The overall purpose of this plan is to protect, preserve, and manage surface and groundwater systems within the City while accommodating rapid municipal, residential, commercial development, and agricultural activity. This Plan outlines sustainable and equitable means to effectively reach this goal. This Plan provides goals, policies, guidance, and specific standards for decision-makers, residents, landowners, and City personnel.

This submittal is a culmination of many months of research, mapping, land use analysis, planning, and hydrologic and hydraulic design. The end product is a comprehensive design tool that may be

used by the City for managing growth and planning for future public infrastructure construction. Approximately 180 City watersheds were identified and modeled as part of this Plan and are available to City staff for reference during future development plan reviews. This Plan is not a "stand-alone" document and should only be utilized in conjunction with the Scott WMO CWRMP and the VRWMP.

This Plan represents a technical report and includes a large amount of detailed design data. The accompanying overall Watershed Drainage District map (Figure No. 1) identifies major watershed boundaries and major water bodies along with identify minor subwatersheds, contours, proposed storm sewer improvements, and regional development detention basin locations. This map serves as an overview of the entire system and proposed stormwater improvements.

The maps identify the present land use conditions and the proposed drainage conditions required to accommodate anticipated development within the City defined growth boundary. A summary of the hydrologic modeling data for the 2-, 10- and 100-year, 24-hour storm events is available from the City Engineer.

A. Hydrologic Methodology

The hydrologic analysis utilized in this Plan has been performed using the HydroCAD Modeling Software as developed by HydroCAD software solutions, LLC. The model is based on SCS TR-20. The SCS TR-20 methodology is widely accepted among water resource engineers across the United States. The SCS procedure is based on a standard rainfall hydrograph, which is modified by site-specific parameters (i.e., rainfall amount, soil type, ground cover, time of concentration, time to peak flow, etc.).

Information such as pond storage volumes, runoff slopes, drainage areas and ditch locations were compiled directly from the topographic maps. Topographic slope information was used to calculate the time of concentration for each sub-watershed, a critical parameter in the hydrological analysis. Soil cover was compiled from review of orthographic photos obtained from Scott County.

The SCS defines the time of concentration as the total travel time of a particle of water from the hydraulically most distant point in the watershed to the outlet itself. The time of concentration was tabulated for each sub-basin by breaking the sub-basin flow length into regions of sheet flow, shallow concentrated flow, and channel flow, if applicable. A separate time of concentration was computed for each length, with the summation resulting in the total time of concentration for each sub-basin.

The effects of a 2-year (2.8-inch), 10-year (4.2-inch), and 100-year (6.0-inch), 24-hour storm events for the Scott WMO portion of the watershed, and the 1-year (2.4-inch), 10-year (4.2-inch) and 100-year (6.0-inch), 24-hour storm events were analyzed for the VRWJPO portion of the watershed in the 2008 comprehensive plan. Conceptually, the 1-year storm event has a 100 percent chance of occurring in any given year, the 2-year storm event has a 50 percent chance, the 10-year storm event has a 10 percent chance and the 100-year storm event has a 1 percent chance of occurring in any given year.

For future development purposes the Atlas 14 distribution MSE 3 rainfall depths will be used for quantifying stormwater runoff.

Project specific detention basin design procedure requires ponds to be sized to ensure there is no net increase in off-site flow rates for specific storm events. This procedure will minimize adverse effects to downstream properties. Unfortunately, when this procedure is applied to individual development sites without comprehensive review of regional drainage patterns the cumulative effect may be to inadvertently increase downstream flow conditions and possibly cause flooding at some locations. The use of the City-wide hydrology and hydraulic model is suggested as a way to review cumulative impacts of development.

Based on our analysis, the existing pond and culvert system will function properly for storm events less than or equal to the 100-year, 24-hour storm. However, for future detention and water quality ponds the 100-year storm events will need to be managed to prevent damage to the downstream properties. This may be accomplished by volume controls, proper siting of improvements, consideration and protection of natural resources, constructing emergency spillways, increased pond storage volume, and/or adoption of low-impact site design practices. All of these options can be implemented while protecting the natural features of the City.

B. Water Resource Management Responsibilities and Related Regulatory Responsibilities

The City of Elko New Market (City) will be assuming regulatory authority for development while recognizing the role of other local, state, and federal entities. Several entities will have administrative responsibilities within the planning area. For a local water management effort to be successful, each entity's commitment and role must be clearly understood. The agencies currently having some level of administration responsibility include the City, Scott WMO, VRWJPO, Scott County, Minnesota Department of Natural Resources (Mn/DNR), Minnesota Pollution Control Agency (MPCA), the U.S. Army Corps of Engineers (USACE), and the Board of Water and Soil Resources (BWSR). It has been recognized that regulatory agencies can achieve common goals by joining together to combine already scarce financial and regulatory resources.

Intergovernmental cooperation is an excellent tool to address natural resource protection. This is due to the fact that natural resources do not recognize political boundaries and are often located across local, state, and federal regulatory boundaries. The City is ultimately responsible for planning, permitting, construction, maintenance, and other projects related to the City's surface water and ground water infrastructure and will work in conjunction with other local, state and federal agencies to achieve its goal of sound resource management. The City looks forward to cooperating with intergovernmental agencies in the future if the need should arise.

Items specifically identified in the Scott WMO plan that require City cooperation include:

- Providing Scott WMO assistance with wetland banking opportunities - The City will seek to promote the use of wetland banking for projects within the City over the creation of wetland for mitigation where the size, surroundings, and location of the created wetland provide limited opportunities for success. The City will also seek to promote the creation of wetland banks within the City where the prospects for creating a viable and beneficial wetland are evident.
- Coordination and meeting attendance - The City will send representatives to participate in meetings held by the WMO for the purpose of discussing watershed-wide management issues when specifically invited by the WMO.
- Support Wellhead Protection – The City has an approved wellhead protection plan and is actively implementing provisions in the plan.
- MS4 Maintenance Requirements – The City is implementing BMPs and maintenance requirements in accordance with its SWPPP and permit.
- Technical Advisory Committee – The City participates in this committee. See bullet no. 2 above.
- Share Data and Information – The City will cooperate with Scott WMO and other agencies in sharing information.

The major task of administering this plan will be in the permitting process. It is the intent

of the City to assume the role of permitting for all land alteration, thereby enforcing the policies and standards of this Plan. The City's existing permit procedures include surface water management elements outlined in this Plan and the current Environmental Protection Ordinance. Surface water management elements will be reviewed at the same time all other permits are reviewed.

To ensure conformance to this Plan and the associated Rules, the City's preliminary and final platting process and site plan approval process will require more detailed information. Erosion control, water quality, and other pertinent information such as stormwater rate and volume control, regarding local plan standards are among the elements that will be addressed on preliminary and final plans and/or preliminary plats. Conditional approvals by the Planning Commission and/or City Council must require the incorporation of conditional elements into the final plan to ensure compliance.

The revised plan will then be re-distributed to City staff to confirm the inclusion of the provisions under which the plans were approved. The Building Permit issuance process can be the check-point for staff to review final plans for compliance with this Plan and associated Rules while holding the condition of building permit issuance as the incentive. Engineering staff will have a sign-off procedure prior to permit issuance.

The City's administrative responsibilities include, but are not limited to the following:

- Comprehensive Plan update(s);
- Land use regulation;
- Ordinance review and amendment;
- Local plat review and amendments;
- Permits;
- Wetland management as the LGU;
- Sediment and erosion control (Ordinance);
- Groundwater – City wells;
- Participation and cooperation with the programs of the Scott WMO, VRWJPO, Minnesota DNR, and Scott County;
- Hydrologic model update with condition changes;
- Financing Alternatives;
- Capital improvements; and
- Conveyance system and detention pond maintenance;
- Continued Administration of its Stormwater Pollution Prevention Program in accordance with MPCA requirements based on the City's status as a Municipal Separate Storm Sewer Systems (MS4) community.
- Amending its Zoning Ordinance as necessary to establish rules for the implementation of this plan within 120 days following any plan amendments.

Scott WMO and VRWJPO responsibilities and authorities may include but are not limited to the following:

- Monitoring;
- Establishing land use or ordinance requirements;

- Local plan review and approval;
- Review and comment on projects 40 acres and greater in size (VRWJPO);
- Projects of regional significance; and
- Verification of plan implementation.
- Approval of variances.

Metropolitan Council: Comprehensive Plan Amendment

Metropolitan Council has a regional review authority regarding surface water management including:

- Local Plan review; and
- Regional controls related to nonpoint source pollution.

This Plan and all subsequent amendments will become part of the City's Comprehensive Plan (adopted by reference), in accordance with Minnesota Rule 8410, Minnesota Statutes 103B.235, Subd. 3A and 473.859, Subd. 2 (Chapter 176, Laws of Minnesota 1995), as part of the adoption process for this Plan.

This Plan does not have to be re-submitted as a formal comprehensive plan amendment, subject to additional review, at a later date. The adopted City Plan and associated Rules will satisfy Metropolitan Council's requirements and will be thereby recognized as an amendment to the City's Comprehensive Plan.

C. Neighboring Jurisdictions and Water Resource Related Agreement

The City's location at the top of the watershed means that all of its runoff in the watershed drains to other jurisdictions within the watershed. The City's Zoning Ordinance contains provisions for the evaluation of downstream impacts from development to prevent downstream damage. These provisions apply to all developments whether they drain to Scott WMO, VRWJPO, or other watersheds unless superseded by separate, more stringent agreements.

One agreement is in place with New Market Township at this time. As part of the 2005 School Core Street and Utility Improvements an agreement between the City of New Market and New Market Township was reached to limit surface water discharge from the associated drainage area in Section 20 to limited pre-settlement rates. Future development in this subwatershed will limit discharge on a per acre basis. Developers will be encouraged to use low impact development, infiltration practices and Best Management Practices to meet the requirements. A copy of the agreement letter is located in Appendix B.

III. LAND AND WATER RESOURCE INVENTORY

The City of Elko New Market is located in the southeast corner of Scott County and is surrounded by New Market Township. The total hydrologic study area includes over 5,220 acres of watershed and is shown in Figure No. 1. As can be seen from the figure, the study area lies both within and outside of the current City limits. It has been assumed that growth around Elko New Market will continue to expand in all directions outward of the current City limits.

Elko New Market is situated at the divide of four major watershed divides. To the northeast is the Vermillion River, to the northwest is Credit River, to the southwest is Sand Creek and to the southeast is the North Cannon watershed. The stormwater runoff begins in each of these upper-most basins as sheet and shallow concentrated flow. This flow follows existing contours and

ravines and develops into intermittent surface flows and creeks directed downstream where they eventually enter into the Minnesota and Mississippi Rivers. The Vermillion River watershed areas within the City are the headwaters for a branch of the Vermillion River that is a designated trout stream located downstream in Eureka Township, which is in Dakota County.

Land use with the study area, outside of the urban areas, consists chiefly of gently rolling agricultural crop land with interspersed wetlands.

A. Soils and Geology

For the most part, the majority of soils in the Elko New Market study area consist of loam and silty clay loam. Although there are random areas that have high sand content with high infiltration rates, a large percentage of the soils found are classified as SCS, type B and/or type D, which are known to have moderate to low infiltration capabilities.

The typical B type soil consists of Hayden loam, which occupy approximately one-third of the upland soils in Scott County. Hayden soils are light-colored and are well-drained. These soils have a moderate rate of infiltration in the range of 0.15-0.30 inches/hour. Type D soils have a high runoff potential due to very slow infiltration rates. These soils consist primarily of soils with high ground water tables, soils with a claypan or a clay layer at or near the surface, and shallow soils over nearly impervious parent material. These soils have a very low rate of infiltration in range of 0-0.05 inches/hour. The watershed soil classifications are shown in Figure No. 3.

The dominant land form in Elko New Market is “dead ice moraine”, which refers to the remnants of the last of the glacier as it retreated. As the last ice melted it released huge piles of accumulated debris in a random pattern. The net result was the creation of a vast number of both connected and isolated wetlands with few organized stream patterns, except for the Vermillion River and Credit River corridors. The preservation and any potential enhancement of the Vermillion River and the enhancement of Credit River are key components of the City’s Storm Water Pollution Prevention Plan.

B. Temperature, Precipitation and Evaporation Summary

The typical Atlas 14 24-hour storm events to be used for future modeling in the Elko New Market area are shown in the table below:

Temperature, Precipitation and Evaporation Summary				
	1 Year	**2 Year**	**10 Year**	**100 Year**
Rainfall	2.47	2.8	4.2	7.29

The total average annual precipitation in this area is approximately 31 inches. The average annual snowfall is about 22 inches, which is roughly equivalent to 2.2 inches of water. It is interesting to note that the average annual pan evaporation amount is almost 37 inches for the months from April to October, which does not include evaporation that may occur during the winter months.

Average Monthly Temperature, Precipitation and Snowfall			
Station: Jordan 1 S, MN4176 (For the months from 1981 – 2010)			
Month	**Avg. Temperature (°F)**	**Avg. Precipitation (inch)**	**Avg. Snowfall (inch)**
January	13.0	0.73	6.6
February	18.4	0.62	3.3
March	30.6	1.73	2.4
April	45.5	2.53	1.4
May	57.3	3.69	0.0
June	66.7	4.64	0.0
July	70.7	3.49	0.0
August	68.0	5.05	0.0
September	59.6	3.41	0.0
October	47.1	2.47	0.1
November	31.9	1.64	2.0
December	17.2	0.95	6.3
Average =	43.8	2.58	
Total =		30.95	22.0

Pan evaporation is used to estimate the evaporation from lakes. An evaporation pan is used to hold water during observations for the determination of the quantity of evaporation at a given location. The table below shows the average pan evaporation at the University of Minnesota St. Paul campus.

Monthly PAN Evaporation (inches)								
1972 – 2014 PAN EVAPORATION DATA: St. Paul Climatological Observatory 21-8450-6								
	April	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Total**
Avg.	1.85	6.72	7.50	8.06	6.67	4.75	1.26	36.83

The Scott WMO CWRMP – Section 1: Land and Water Resource Inventory contains the most current and comprehensive resource inventory for the Scott WMO portion of the watershed. Please reference Section 1, page 5, of the Scott WMO CWRMP for further information: (http://www.scottcountymn.gov/DocumentCenter/Home/View/4801)

The VRWMP – Section1: Existing and Future Physical Environment, and Section 2: Existing and Future Biological Environment, provide existing and historical information regarding land and water resource information for the Vermillion River portion of the watershed. Please reference Sections 1 and 2 of the VRWMP for further information:

(http://www.vermillionriverwatershed.org/plans-reports/watershed-management-plan/)

IV. ESTABLISHEMENT OF GOALS AND POLICIES

The primary goal of the City's Plan and associated Rules is to provide the framework for the

management of all forms of surface water as development occurs both within and adjacent to the City in the area defined as the City's ultimate growth boundary. This Plan provides clear guidance on how the City will manage surface water both in terms of quantity and quality. The goals and policies stated in this Plan are complimentary to the goals and policies stated in the Scott WMO CWRMP and VRWMP.

An interceptor sewer line was constructed in 2005 along CSAH 2 to the City's eastern boundary. In 2011 this was connected to the Empire Waste Water Treatment Plant, which replaced the City's old waste water treatment plant. It is anticipated that growth in the Elko New Market community will begin to occur at a more rapid pace. Population growth, resource education, and increasing regulation of surface water at the State, County, and Federal levels necessitate that the City's surface water management goals evolve over time with increased awareness.

The goals and policies detailed in this Plan focus on future development as much as the existing infrastructure. The City only conducts plan reviews "as development occurs" as part of the preliminary plat submittal and approval process. This emphasis on future requirements ensures that future development augments the City's amenities rather than diminishes the complex environments that the City is located within.

A. Goal 1: Water Quantity

(See City ordinances for implementation of these polices)

The purpose of this goal is to control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of surface water runoff, in accordance with the Scott WMO CWRMP and the VRWMP. Traditional surface water management deals with just one component of the hydrologic cycle; surface runoff. Large amounts of energy are directed towards alleviating significant negative impacts of surface runoff and flooding for the cultural, water, and natural resources.

The primary management strategy is shifting from detention in both existing natural and constructed basins, to Low Impact Development (LID) techniques and Integrated Management Practices (IMPs) that emphasize reduction of runoff volume and on-site runoff control via infiltration or small volume storage to mimic predevelopment hydrology for more frequent rainfall events. This trend will help remedy the negative impact of stormwater runoff on water quality and downstream flooding. With increased value placed on natural wetlands, the number and extent to which wetlands can be used for detention is already in decline. The approach to sound water quantity management relates directly to water quality, wetland management, erosion control, and land development strategies. By comprehensively managing the quantity and quality of surface water runoff, the other goals of this Plan are more efficiently achieved.

Subject: Surface Water Runoff (Rate and Volume) Management.

Purpose: Control post-development stormwater runoff.

Goal: Control flooding, protect human life, protect public and private property, mimic existing runoff conditions, minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of surface water runoff from entering rivers, streams and wetlands in the watershed, and maintain or improve the downstream conveyance system.

Surface Water Quantity Policies

***Policy 1.1*:** Utilize LID site design and alternative landscape techniques where applicable, along with conventional constructed on-site detention ponds for large, infrequent rainfall events. Pre-developed peak flow rates for the 1-yr, 2-yr, 10-yr, and 100-yr, 24-hour, storm

events cannot be exceeded by new development. These design techniques will be relied upon to help mimic pre-development hydrology and to control downstream flooding.

Unincorporated areas/development that are annexed into the City within the Scott WMO that have storm water facilities designed to the unincorporated standard of pre-settlement rates must retain that design rate.

The NOAA Atlas 14 rainfall depths using a NRCS MSE 3 or nested distribution shall used for calculating peak flow rates. The main reasons behind this are that the City is located at the top of several watersheds, this type of distribution is familiar to design engineers in Minnesota, and the most conservative peak runoff rates typically result with the use of this distribution in the Elko New Market watershed environment.

Policy 1.2: The City encourages the use of regional detention ponds rather than localized on-site ponding when it works effectively into the planning and design of proposed improvements. The City recognizes that regional ponding works best when incorporated into active developments and will not in general initiate the construction of regional ponds independently.

Policy 1.3: Development that creates more than one acre of new impervious surface must incorporate volume control practices into the design sufficient to control the most restrictive of either the runoff volume from the 2-year 24-hour rainfall event to pre-development conditions, or one inch (1") of runoff from new impervious surfaces. This requirement may be met on a regional or site by site basis.

Policy 1.4: Credits for various site design techniques will be allowed to help meet the volume control requirements and are the preferred approach for meeting volume controls.

Policy 1.5: Where LID techniques and localized ponding are not feasible, the City may consider cash in lieu of on-site ponding if downstream regional ponding facilities are feasible.

Policy 1.6: Emergency overflows or outlets for drainage systems are required and shall be provided to prevent flood damages and overtopping of constructed basins. These shall not be placed below the seasonally high water table unless it can be demonstrated that there is a reasonable need for such an outlet to control seepage damage to existing structures.

Policy 1.7: The minimum building elevation shall be set/designed to prevent flood damage from the established 100-year, 24-hour, storm event in accordance with established City Ordinances and the standards of this Plan, and associated Rules.

Policy 1.8: The City rewards the use of alternative landscape techniques and materials to reduce rates and volumes of stormwater runoff.

Policy 1.9: The City shall require stormwater ponds, wetlands, flood plains, and ditches to be located in outlots as part of the land development approval process.

Policy 1.10: Outlets from landlocked basins will be allowed, provided such outlets are consistent with State and federal regulations, and the downstream impacts, riparian impacts, and habitat impacts of such outlets have been analyzed and no detrimental impacts result.

Policy 1.11: The City shall maintain and periodically inspect stormwater management facilities and structures to assure they function as originally designed according to the Storm Water Pollution Prevention Plan requirements.

Policy 1.12: For development that occurs near the outer limits of the City's 2040 growth boundary, adjacent to the townships, the City will work closely with the County and the

townships to ensure that downstream conveyance systems are not impacted by upstream development.

The City of Elko New Market Environmental Protection Ordinance addresses the current water quantity requirements. When this Plan is adopted the Ordinance will be revised to incorporate by reference this Plan that reflects the new goals, policies and forthcoming Rules.

B. Goal 2: Water Quality

The purpose of this goal is to achieve water quality standards in lakes, creeks, and wetlands consistent with the intended use and classification, in accordance with the Scott WMO CWRMP and the VRWMP. Water quality is often directly related to the level of nutrients in the water body. While nutrients comprise only one category of substances that can affect water quality, nutrients, principally phosphorous, must be controlled to achieve the water quality goals of this Plan. Phosphorous is generally the limiting factor to plant growth. An increase in phosphorous will cause the plant species dominating the lakeshore, open water, or marsh to shift in favor those plants that can best take advantage of the increased supply of the nutrient.

Controlling nutrients through housekeeping practices are a way for City residents to make a difference. According to the Minneapolis Chain of Lakes Clean Water Partnership, many people do not realize that organic materials like leaves, grass clippings, fertilizers, pesticides, and pet waste can disrupt the fragile ecosystem of a lake or creek.

Leaves and grass clippings that make their way into lakes and creeks are doing more damage than fertilizers, pesticides, or motor oils, according to the Minneapolis Chain of Lakes Clean Water Partnership. Once in the lakes and creeks, these organic materials decay, and subsequently release nutrients. The excess nutrients increase algae growth, which inhibits the growth of other aquatic plants and animals. When algae die and decay, they exert a biological oxygen demand on the lake, depleting available oxygen for fish. Algae growth due to nutrient loading can damage or even kill a lake's ecosystem.

Fertilizer application may be necessary for a healthy lawn, but the nutrients in fertilizer can be harmful to lakes, creeks, and wetlands. Nutrients from fertilizers run off lawns and ultimately discharge to area lakes, creeks, and wetlands. Effective January 1, 2005, in Minnesota, fertilizers containing phosphorous cannot be used on lawns. Refer to the Minnesota Department of Agriculture (www.mda.state.mn.us/appd/ace/phoslaw.htm) website for additional information. Applying the proper fertilizer, in the right amount, ensures a healthier lawn and healthier lakes, creeks, and wetlands.

Total Maximum Daily Load (TMDL) represents the maximum amount of a pollutant that a water body can receive and still meet federal and state water quality standards. TMDL also refers to the process of allocating pollutant loadings among point and non-point sources.

That portion of the Vermillion River within the 2040 growth boundary, from the headwaters to the east, was added to the 2012 draft list of impaired waters. It was listed for impairment due to fecal coliform. The TMDL study was completed in 2015. The fecal coliform is considered a non-construction related impairment and does not require best management practices for compliance with the construction permit.

Porter Creek has been listed as a state impaired stream for turbidity from Fairbanks Avenue to 250th Street East. It was added to the impaired list in 2010. On the draft 2020 Impaired Waters List the target date for completion of the TMDL is 2028. The City looks forward to working with the MPCA and Scott County in the study planning process.

The VRWJPO Standards have criteria for temperature control of discharge from areas that

do not first drain to a waterbody of 10 or more acres of open water. The western one-third of the Vermillion River Watershed in the City drains through Rice Lake, a lake approximately 40 acres in size, prior to flowing into a reach of the Upper Vermillion River. The easterly two-thirds portion of the Vermillion River Watershed in the City's growth area drains to the east, on the south side of Rice Lake, where it then joins together with the outlet channel from Rice Lake. The distance from the easterly portion of the Vermillion River Watershed to the designated trout stream portion of the river is approximately 16,500-ft (~3 miles). In a report prepared by Emmons & Olivier Resources, titled "Vermillion River Headwaters Groundwater Area Inventory and Protection Plan", this 3mile stretch of river was classified as a losing reach. This means that the river was losing water to the adjacent soils and groundwater.

With the westerly portion of the City's Vermillion River Watershed draining through Rice Lake and the interaction of runoff from the easterly portion through a "losing reach", temperature control of runoff from the Vermillion River Watershed in the City would have little, if any, effect on the downstream temperature of the trout stream. Given this, the City will establish policies that promote cooling of runoff, but does not intend to establish limits or required BMP's.

Subject: Water quality in lakes, rivers, creeks, and wetlands.

Purpose: To protect and enhance water quality.

Goal: Achieve water quality standards in lakes, rivers, creeks, and wetlands consistent with their intended use and established classification.

Water Quality Policies (see City ordinances for implementation of these policies)

Policy 2.1: Development that disturbs more than one acre, or creates more than one acre of impervious surface, shall demonstrate that phosphorus and Total Suspended Solids (TSS) reduction in discharge runoff meets NURP levels described in this Plan and accompanying Rules.

Policy 2.2: Public road and utility projects that disturb greater than one acre must include temporary BMPs to control water quality; if more than one acre of additional impervious surface is created, the project shall include permanent water quality BMPs to meet the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit, this Plan, and accompanying Rules.

Policy 2.3: The rebuilding, repair, or alteration of a structure, land surface, road or street, or facility that creates less than 1 acre of new impervious surface, and disturbs, replaces, or alters more than 1 acre of existing impervious surface shall incorporate water quality BMPs to the extent practical.

Policy 2.4: Proposed developments must identify all reasonable steps taken to avoid water quality impacts. They must also mitigate unavoidable impacts with appropriate BMPs to prevent water quality in receiving waters from falling below established standards including TMDLs, and to meet City erosion control Ordinance standards.

Policy 2.5: The City shall supplement its regulatory approach with an education-based approach to achieve appropriate yard care measures. This will reduce nutrient loading to City lakes, creeks, and wetlands, and will reduce the impacts of domestic animal waste.

Policy 2.6: The City shall promote the reduction or minimization of hard surfaced areas, where applicable.

***Policy 2.7*:** The City will balance protection of natural wetlands and utilization of

constructed wetlands to protect the water quality of other water resources (i.e., wetlands, lakes, creeks) based on Mn/RAM 3.4 wetland classification.

Policy 2.8: The City encourages and rewards the use of alternative landscape techniques and materials and LID IMPs to reduce and mitigate water quality impacts.

Policy 2.9: The City will manage public properties in accordance with the appropriate BMPs.

Policy 2.10: It essential that the condition of water bodies in the Watershed included on the MPCA impaired waters [303(d)] list be improved so that these waterbodies can be removed from the 303d list.

Policy 2.11: Use of existing natural retention and detention areas for stormwater management to maintain or improve existing water quality will be achieved to the extent possible.

Policy 2.12: The City supports land use planning, policies and controls that maintain sustainable, high-quality surface water resources and ensure that development causes no adverse or cumulative impacts.

Policy 2.13: Require buffers adjacent to major waterways tributary to the Vermillion River. See Figure No. 8 for the waterway corridors to be protected and the required buffer widths. The buffers shall be protected as outlots or with conservation easements.

The City of Elko New Market Environmental Protection Ordinance addresses the current water quality requirements. When this Plan is adopted the Ordinance will be revised to incorporate by reference this Plan that reflects the new goals, policies and accompanying Rules.

C. Goal 3: Erosion Control

The purpose of this goal is to minimize soil erosion through increased education and enforcement, in accordance with the Scott WMO CWRMP and VRWMP. Water quality problems are frequently linked to high phosphorus concentrations. Phosphorus is often transported to surface water through soil erosion but can also be transported to waters in a variety of other mechanisms. Nevertheless, erosion control is an important factor in the effort to improve surface water quality. Soil erosion and sediment deposition can also impact pond and drainage-way performance and create maintenance issues.

Ponds and drainage facilities may be impacted by erosion and sedimentation from a variety of sources including construction sites and winter street sanding. The coarse sediment accumulates in ditches and ponds where runoff velocities are low. When a sand delta appears at a storm sewer outfall that is a visible indication of the effectiveness of erosion and sediment control measures and road maintenance activities of the past winter. As the sediment builds up over time, it reduces the capacity of the drainage system and the pollutant removal capabilities of ponds by reducing storage volume below the outlet. This also reduces the infiltration rates for stormwater facilities. Extending the life of facilities involves source control and elimination of the material that causes the problem. Regulatory actions will control a major portion of the sediment. Street maintenance and an effective sweeping program will also have a positive impact.

Subject: Erosion control.

Purpose: To control erosion and sedimentation.

Goal: Minimize soil erosion through increased education, enforcement and management of stormwater.

Erosion Control Policies

Policy 3.1: Erosion and Sedimentation Control Plans shall be reviewed and enforced by the City for all grading activities. These plans shall conform to the general criteria set forth by the City's Environmental Protection Ordinance and applicable NPDES /SDS Permit (MPCA Permit MN R100001) requirements.

Policy 3.2: The City will implement an erosion control Ordinance to control erosion and sediment to extend the effective life of water resource facilities and reduce pollutant loading to streams, lakes, and wetlands.

Policy 3.3: The City will develop proactive measures such as education, incentives, and recognition of erosion control efforts to prevent soil erosion and encourage responsible site development.

Policy 3.4: Construction site inspection by the City must be completed prior to commencing earthwork activities to ensure the proper BMPs are in place and operational.

Policy 3.5: Horizontal, vegetative buffer zones between twenty -five and fifty feet are required around existing wetlands based on the MnRAM rating, the VRWJPO buffer requirements, and the NPDES/SDS Permit. Stormwater ponds shall have a minimum 25-foot building setback from buffers. New development or redevelopment projects must provide the appropriate buffer zone around new and existing wetlands and are required to provide 25-foot buffers around existing and new stormwater ponds. Buffers shall be maintained in native vegetation to provide habitat for wildlife. These buffer widths will be required by ordinance and protected by outlots or conservation easements.

Policy 3.6: The City will maximize the use of bioengineering approaches whenever possible for all slope stabilization and permanent erosion control projects.

Policy 3.7: If a construction activity creates more than 1 acre of disturbed area and the activity takes place where the soils are currently disturbed, areas that will not be graded as part of the development and areas that will not be stabilized according to the NPDES/SDS Permit, shall be seeded with a temporary or permanent cover before commencing the proposed land disturbing activity.

The City of Elko New Market Environmental Protection Ordinance addresses the current erosion control requirements. When this Plan is adopted the Ordinance will be revised to incorporate by reference this Plan that reflects the new goals, policies and accompanying Rules.

D. Goal 4: Wetlands

The purpose of this goal is to maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City, in accordance with the Scott WMO CWRMP and the VRWMP. The City is the LGU for the Wetland Conservation Act (WCA). The City has not completed a Comprehensive Wetland Management Plan. The wetland inventory is based on the wetlands in the National Wetland Inventory (NWI) and Scott County's records, which may not include all of the wetlands and aquatic resources in the City. The City does not have the resources to survey all of the wetlands at this time. Field delineation, assessment of hydrology, identification of plant species, characterizations of soils, MnRAM assessment and restoration are generally completed and reviewed on an "as development occurs" basis. This approach places the financial burden for identification, delineation, and possible restoration on the land developer.

The policies below will be used to achieve the City's wetland goals. The strategies will apply to new development and redevelopment projects submitted to the City for review and

approval. Any wetland habitat on property to be developed will be subject to the following management strategies, as well as the rules and requirements of the WCA and other City, State, and Federal regulations.

Proper implementation of stream, bluff, and wetland buffers in new developments is paramount. Without proper implementation of buffers; stream and wetland water temperatures increase, sediment deposition increases, stream and bluff bank erosion and collapse are more severe, and riparian habitats are destroyed.

Subject: Wetland Management

Purpose: To utilize, protect, preserve, and enhance existing natural wetlands.

Goal: Maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City.

Wetland Policies

Policy 4.1: The City shall administer wetland protection and mitigation as the LGU for the WCA in accordance with the Minnesota WCA, Scott WMO CWRMP and the VRWMP.

Policy 4.2: A vegetative function and value assessment using the most current version of MnRAM shall be completed for each wetland delineated.

Policy 4.3: The City will require the establishment of vegetative buffers around wetlands in accordance with its MnRAM ranking and regulatory requirements. Development or redevelopment of an area adjacent to a wetland will require the establishment of the appropriate buffer. The buffer areas will be protected by outlots or conservation easements.

Policy 4.4: The artificial water level fluctuation (bounce) in wetlands resulting from stormwater runoff will be managed in accordance with the WCA, Scott WMO CRWMP and the VRWMP. Outflow rates and elevations must be controlled to avoid water elevations that may permanently affect the character of the resource per "Recommended hydroperiod standards for wetlands" table in the State of Minnesota Stormwater Manual (see Appendix C).

Policy 4.5: The City may utilize the available technical resources of outside agencies, such as the Minnesota DNR, USACE, Scott SWCD, the Board of Water and Soil Resources and/or the Scott WMO and VRWJPO, for review of private developments and City-proposed projects that may affect wetland resources.

Policy 4.6: Developers must provide a field delineation in accordance with applicable rules and regulations to determine the jurisdictional boundaries of wetlands, including a report of the results of the field delineation, detailing the methodology and findings of the delineation. A printed and electronic copy (.dwg) of the approved delineation boundary will be required to be submitted to the City.

Policy 4.7: Prior to any site development activities, the City will verify through a wetland boundary delineation review, the location and extent of all wetlands present. The results of the wetland boundary delineation will be compared to the field delineation data provided by the developer.

Policy 4.8: Any review of a proposed wetland encroachment must first address the issue of avoidance and project alternatives. Prior to allowing any wetland encroachment, all reasonable attempts to avoid such alteration must be demonstrated. This avoidance must also consider the reasonableness of the no-build alternative.

Policy 4.9: Replacement for unavoidable wetland impacts will be provided (if possible, within the same subwatershed), in accordance with the requirements of the Scott WMO CWRMP, the VRWMP and the WCA.

Policy 4.10: The City will not allow excavation, or other non-filling related alterations to an existing wetland without the expressed written approval of the City Administrator or designee.

Policy 4.11: The City shall require pretreatment of stormwater runoff discharged directly into wetlands, except possibly for wetlands with a low quality MnRam rating. Treatment will be required to meet or exceed N.U.R.P. efficiencies for removal of TSS and total phosphorous prior to discharge.

Policy 4.12: The City will encourage wetland restoration as well as wetland protection strategies in proposed development and redevelopment projects. Public Value Credits (PVCs) may be provided for improvement of existing wetland habitat associated with development and/or wetland replacement projects, in accordance with established WCA rules.

Policy 4.13: Fragmentation and impacts to natural areas and corridors will be avoided when feasible or mitigated when unavoidable at equal value. High priority natural areas identified through the land cover mapping done for the Scott Biological Survey and other inventories will be the tools used to evaluate development proposals and set preservation goals to protect high-quality habitat for plants and animals.

The City of Elko New Market Environmental Protection Ordinance addresses the current wetland requirements. When this Plan is adopted the Ordinance will be revised to incorporate by reference this Plan that reflects the new goals, policies and accompanying Rules.

E. Goal 5: Public Participation, Information & Education

The purpose of this goal is to increase public participation and knowledge in management of the City's water resources, in accordance with the Scott WMO CWRMP and the VRWMP. Public involvement is a strategy that recognizes people want to be involved in decisions that affect any facet of their life. It provides opportunities for the public to participate in the processes that lead to decision-making.

As part of the NPDES/SDS Phase II requirements the City was required to prepare a Surface Water Pollution Prevention Plan (SWPPP). There are two minimum control measures in the SWPPP that deal with public education and participation. Measure number one is: Public Education and Outreach on Storm Water Impacts. Measure number two is: Public Participation and Involvement. To meet the permit requirements the City must educate its citizens on six minimum control measures in the SWPPP. The City must also hold at least one public meeting per year to address an annual report regarding the SWPPP to receive public input. The activities described in the SWPPP will be the guiding document that will be followed to increase public awareness of the storm water related issues.

Website Availability - http://www.ci.enm.mn.us/. The website is an alternative medium to provide municipal information to both City residents and those people who live outside Elko New Market. An electronic version of this Plan will ultimately be accessible on the website. Because the Plan has such a wide audience from engineers, planners, developers, citizens, scientists, and educators electronic access to the text and mapping creates a better understanding of the goals, policies, and activities of this Plan.

The City will continue to distribute information on pertinent water and wetland

management issues via the City of Elko New Market Monthly Newsletter. The newsletter will promote opportunities for residents to participate in water resources management activities. The City will make an ongoing effort on both a City-wide and watershed level toward educating the public by distributing information to its residents on responsible practices they should employ to protect water resources within the community. The program will also educate residents on the benefits of using phosphorus-free fertilizer.

Subject: Enhancement of Public Participation, Information and Education

Purpose: Encourage active community involvement in water resources management.

Goal: Increase public participation and knowledge in management of the water resources of the community.

Public Involvement Policies

Policy 5.1: The City will use a public involvement process in resource management decision-making (i.e., the Parks Commission, and the Planning Commission).

Policy 5.2: The City will use a variety of media, including newsletters, and the City's Website, to inform the community about water resource issue programs including alternative landscapes, phosphorus free fertilizer, aquatic plant management, etc. The City will make an ongoing effort on both a local and municipal level to distribute information to residents on responsible practices to protect water resources in the City. Educational information will also be provided regarding the proper use of a wide range of lawn chemicals and proper disposal of hazardous household materials.

Policy 5.3: The City will work with all available resources to increase public participation in water resources management.

Policy 5.4: The City will follow the best management practices outlined in the City's Storm Water Pollution Prevention Plan (SWPPP) that address public education and outreach and public participation/involvement. Educational goals and activities have been identified in the SWPPP to make the public more informed of the impact storm water discharges and pollutants have on receiving waters.

F. Goal 6: Groundwater Management

The City's groundwater resources are identified in the city of Elko New Market Wellhead Protection Plan. The City's aquifers have been assigned a "Not Vulnerable" rating. This rating indicates "there is not a hydraulic connection between surface waters and the aquifer serving the water supply system for the City".

The City of Elko New Market Wellhead Protection Plan currently outlines requirements for continued groundwater protection and well management. The report is obtainable directly from the City's Website.

Subject: Groundwater Management

Purpose: To protect groundwater quality and improve groundwater supplies through effective management.

Goal: Provide clean and safe drinking water for the City while managing increased development and population.

Groundwater Management Policies

Policy 6.1: Promote ongoing evaluation of land use impacts on groundwater quality and quantity.

Policy 6.2: Provide information to the public by revising and updating the City Wellhead Protection Plan as required by the Minnesota Department of Health.

Policy 6.3: Support identification and reduction of groundwater contamination from both point and non-point sources.

Policy 6.4: Promote water conservation efforts to reduce water use and conserve the City's groundwater resources.

Policy 6.5: Groundwater quality should not be sacrificed to manage surface water. Holding ponds, animal watering ponds, wetlands and other water storage areas must be designed to protect groundwater.

Policy 6.6: Infiltration of stormwater and resulting groundwater recharge will be promoted where it is feasible and does not pose a threat to groundwater quality.

G. Goal 7: Floodplain Management

There are multiple areas shown on the Flood Insurance Rate Map (FIRM) for the City of Elko New Market and the growth area that are identified as Zone A floodplains in the 2040 study area (see Figure No. 6). No base flood elevations have been determined for these floodplains. The City's ordinance will regulate development adjacent to the floodplain districts.

Moderate flood hazard areas, labeled Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood (100-year) and the 0.2-percent-annual-chance (or 500-year) flood. Unshaded Zone X areas are those areas determined to be outside the 100-year and 500-year floodplains.

These areas have been identified on the FIRM as areas of moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems.

FEMA and Scott County are currently updating the FIRM's for the Vermillion River with new panels expected to be published in the near future.

Subject: Floodplain Management

Purpose: To provide flood protection for people and property.

Goal: Manage and protect the floodplains from encroachment.

Floodplain Management Policies

Policy 7.1: Protect the natural function of a floodwater storage area in a floodplain from encroachment.

Policy 7.2: Work to maintain no net loss of floodplain storage.

Policy 7.3: Manage floodplains to maintain critical 100-year flood storage volumes.

Policy 7.4: Restrict construction of new structures to sites above flood prone areas.

Policy 7.5: Maximize upstream floodwater storage areas and require mitigation for any fill within a floodplain.

POND DESIGN AND CRITERIA

When possible, regional detention/water quality ponds will meet NURP or NPDES/SDS standards and City requirements. Wet settling basins are an accepted and proven BMP technique widely accepted for stormwater quality treatment prior to discharge. All regional

and localized detention/water quality pond design parameters will need to be carefully considered to ensure that there is no impact to existing downstream properties. It is imperative not to increase the groundwater gradient and the potential for basement seepage associated with regional or localized detention/water quality ponds.

Every attempt has been made to strategically locate regional and localized detention/water quality ponds in existing closed depressions within a given watershed or subwatershed. Steps have been taken to avoid wetlands and DNR waters. The intent is to minimize the excavation required and to optimize the volume and size of storm sewer conveyance piping associated with pond construction.

The proposed conveyance network utilizes the natural drainage routes wherever feasible. Open space adjacent to ponds and drainage routes may be used beneficially for vegetative buffer, trails, parks, conservation areas, and wildlife habitat.

The proposed detention/water quality ponds may be designed as non-uniform meandering waterways, creating a more natural appearance while maintaining the design intent and providing cost savings by reducing the length of large diameter pipe.

The VRWJPO set flow limits, via numeric standards, at two northern City limit locations that must not be exceeded. The first location is approximately 250 feet east of Dakota Avenue with a flow limit of 232 cfs. The second location is approximately 1,300 feet east of Xerxes Avenue with a flow limit of 26 cfs. The hydrologic model will need to be analyzed and ran to determine how these set flowrates will be affected as future development occurs in the catchments upstream of these outflow locations.

The City has an agreement with New Market Township regarding the flow rates from Section 20 that discharges through a culvert under 250th Street, approximately 2,750 feet east of Texas Avenue. Details of the agreement are in a memo, located in Appendix B.

When reviewing development plans the SCS runoff curve number (CN) for the existing agricultural areas and the minimum CN's for developed conditions should be limited to the values in the following table:

Land Use Curve Number	
Maximum existing (excludes wetlands)	70
Minimum residential development	72
Minimum commercial development	90
Minimum industrial development	90

These values are general in nature and typically apply to the urban development of existing farmland. We anticipate instances in which the existing land use is either pasture, wetland, or ungrazed meadows, etc., which will require appropriate curve number adjustment in accordance with standard SCS TR-20 and TR-55 methodology. The City Engineer may allow exceptions to the table above based on land cover and soil types when adequate data is provided for review.

V. ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

There are no lakes, as defined by the DNR, or navigable waters within the City's growth boundary. There are several ditches that are the headwaters of creeks and rivers, which are part of three different watersheds. Given the lack of aquatic resources most of the water resource related issues the City faces will deal with development and the problems associated with it. Given this, the City will concentrate on effective implementation of their Storm Water Pollution Prevention Plan (SWPPP), which addresses all aspects in the protection of water resources.

The assessment of problems in the Plan includes reviewing possible adverse effects of surface water that have been identified by local, state and federal agencies, in research, literature, and other stormwater management materials. The assessments were divided into three potential sources of problems (Source Areas).

A. Public Lands Managed by Public Agencies

The first potential Source Area addresses public lands or areas that are managed by public agencies (i.e., public streets, parking lots, sewer lines, parks, public facilities, etc.). The identified potential problems in this source area include but are not limited to:

1. The need to maintain high quality recreational use of the City's water resources, whether it is for fishing, waterfowl habitat, etc. The MPCA first listed the Vermillion River as state impaired water in the 2008 TMDL List of Impaired Waters and the TMDL for E. coli was completed in 2015. Porter Creek was first listed by the MCA as impaired for turbidity in 2010. In the draft 2020 Impaired Waters List the Porter Creek TMDL is scheduled to be completed in 2028.
2. The need for community education programs regarding sustainable water resource management.
3. The need for an adequate road salt management program.
4. The importance of maintaining the City's surface water management system and overall goals while encouraging private development.
5. The need for and frequency of sweeping of public and private streets and parking lots. The City currently sweeps all City streets and parking lots in the spring and fall.
6. The need to establish local spill containment plans. A portion of the downtown drains by storm sewer directly to Whispering Creek. This area is exposed to filling station tank refueling activity.
7. The need for other management programs as considered necessary. The City is beginning to receive inquiries from residents regarding "beautification" projects for stormwater ponds. Establishment of policies limiting modifications to those that do not impact their function may be beneficial in promoting water quality.

B. Privately Owned Lands

The second potential Source Area addresses existing development on privately owned lands (i.e., private homes, small businesses, large commercial areas, industrial areas, private parking lots, and private streets, etc.). The identified potential problems in this source area include but are not limited to:

1. Soil erosion from site disturbances (construction) on private lands.
2. Private lawn and garden maintenance (phosphorous and nitrogen loading).
3. Landscaping of stream banks on private land.
4. Litter accumulation on private lands.
5. Wetland buffer degradation on private lands.

6. Stream bank erosion and collapse on private lands.
7. Private vehicle and equipment storage sites.
8. Snow and ice removal methods from private parking lots and streets.
9. Impervious surface management (private streets and parking lots).
10. Illicit discharge to storm sewers.

C. New Residential, Commercial, and Industrial Development

The third potential source area focuses on new residential, commercial, and industrial development. Possible surface water problems in this section are directly associated with the construction process and how new developments may impact local natural resources and public infrastructure both during construction and after they are completed.

A major source of concern for the City is the projected development rate and associated stormwater volume and rate increases. In addition, problems caused by development in environmentally sensitive areas are also a concern (i.e., buffers, streams and wetlands). The identified potential problems in this Source Area include but are not limited to:

1. Concern about contamination of Credit River, Vermillion River and public conveyance networks with sediment from construction sites and improper use of BMPs in new developments (e.g., detention basins, grass swales, etc.).
2. Proper implementation of creek, bluff, and wetland buffers in new developments. Without proper implementation of buffers, sediment deposition increases, creek bank erosion and collapse are more severe, and riparian habitats are destroyed. See Appendix A, for the applicable area maps. As part of the development permitting process the City will determine, based on accurate topographical maps, whether development will be permitted in any particular bluff, creek, or wetland area.

The Environmental Protection Agency developed a program called the General Permit To Discharge Stormwater Associated With Small Municipal Separate Storm Sewer Systems (MS4) Under The National Pollution Discharge Elimination System (NPDES/SDS). The City is a mandatory MS4 community. Under Phase II of this program, small MS4s were required to get a permit for their storm water management system. As a condition of the permit the City was required to prepare a SWPPP. The SWPPP identifies structural and non-structural controls that will be put into place to minimize negative impacts caused by storm water discharges to the environment. Best management practices (BMPs) have been identified and are used to meet the six minimum control measures requirements of the NPDES/SDS Phase II Permit.

Programmatic improvements and implementations will be required to manage the water resources within the City more effectively. For the area within the City's defined growth boundary area where there is a planned increase in development and stormwater runoff systems are planned, corrective actions may include but are not be limited to:

1. Implement City programs to target developer and resident education efforts. The programs will outline what residents and developments can do to improve the efficiency of nitrogen and phosphorus reduction from existing and proposed surface water runoff.
2. Review of proposed development submittals to verify the requirements stated in the City Comprehensive Surface Water Management Plan Rules and existing City Ordinances have been met prior to approval. This will ensure that the approved BMPs have been selected and the City is engaged in a pattern of sustainable growth.

Many of the following issues and corrective actions have been identified in the City's

SWPPP and associated BMP summary sheets.

D. Issues and Corrective Actions

Issue	Corrective Action
Illicit discharge detection and elimination	An illicit discharge ordinance prohibiting non-storm water discharges, including illegal dumping into the storm sewer system was adopted by the City
Public education regarding storm water related issues	An education program that involves distributing storm water related educational materials to the community was implemented by the City as part of its MS4 permit
Illicit discharge detection and elimination plan	An illicit discharge inspection and assessment program was adopted as part of the City's MS4 permit. Administrative procedures for notifying and enforcing non-compliance was included as part of the program
Construction site storm water runoff control	A construction site storm water runoff control ordinance to reduce pollutants in storm water runoff from construction activities was adopted by the City
Location of farm field drain tiles	The location of existing drain tiles will be required by developers when proposed development occurs. Drain tiles will need to be rerouted as necessary to maintain existing flows
Floodplain management ordinance	An ordinance to effectively address floodplain management was adopted by the City in 2014
Site inspection and enforcement procedures	Procedures, including an inspection checklist and time frames for conducting site inspections, were established as part of the City's MS4 permit
Financing of storm water projects, which include storm water facilities, water quality improvements and community education	Review storm water area charge and utility fee to insure that sufficient funds are being collected by the City
Pollution prevention and good housekeeping practices	Annual inspection of all structural pollution control devices within the City. Use of the following BMPs related to salt and sanding for snow and ice control: Use of additives such as “Clear Lane” to allow less salt and sand to be applied Use of remote distribution rate controls on each truck to facilitate instantaneous modification of application rates to match conditions Sweep entire City as early as possible each Spring Annual maintenance and calibration of distribution equipment Limit snow removal and associated ice control to snowfall events greater than two inches or locations where there is a present ice hazard for lesser events only
Ground water protection	A well head protection plan was prepared per the Minnesota Department of Health requirements
Increased runoff volumes due to new development	Promote a decrease in runoff volume through infiltration and other volume reduction best management practices through administrative policies and decisions
Compliance with future TMDL standards	Participate in the development of TMDL studies for water bodies affected by the City's watersheds as applicable

VI. IMPLEMENTATION PRIORITIES

The criteria, considerations, and constraints used to prioritize City surface water improvements and activities reflect the City's values, goals, and policies. Changes in any one of these factors can result in a change in project priority. The City's stormwater management program has evolved over time, and in view of recent challenges, the future will bring even more significant change. The breadth and extent of these changes, at present, are largely unknown.

The City's SWPPP identifies an implementation schedule for each of the six minimum control measures identified. The implementation priorities will closely follow those specified in the SWPPP. For management components that are not identified in the SWPPP they will be addressed largely through the rules that will enforce this plan.

Some factors that influence the City's stormwater management program do not lend themselves to a quantitative system of prioritization. For example, deciding the exact projects to include in each year's City improvement plan requires a high level of professional judgment based upon the best available knowledge and awareness of the local political climate toward cost-effective improvements. Many projects that are included in an annual improvement package most likely will have surface water components although the project focus is not surface water. Though difficult to quantify, these components and influences play an important part in deciding the inclusion of selected projects into the following improvement program.

The City of Elko New Market will continue to conduct private development project reviews on a "project-by-project" basis. Based on when specific property owners choose to develop the City will take that opportunity to implement the following priorities. The City will also implement the following components of possible CIP projects;

A. Surface Water Quantity Management

Prioritize City projects that provide storm water runoff quantity management. The purpose is to control post-development surface water runoff. The goal is to promote projects that control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of runoff.

B. Surface Water Quality Management

Prioritize projects that provide water quality improvements in lakes, creeks, and wetlands within the City. The purpose is to protect and improve water quality in the City's lakes, creeks and wetlands. The goal is to achieve water quality standards in lakes, creeks, and wetlands consistent with their intended use and established classification.

B. 1. Chloride Management

Estimates indicate that 80 percent of the environmental damage caused from de-icing chemicals is a result of inadequate storage of the material (MPCA 1989). Therefore, proper storage of salt is critical in reducing the amount of chloride that is transported to the environment. The following procedures can be used as a guideline for de-icing storage practices.

- Store de-icing material in waterproof sheds. If this is not possible, stockpiles shall be covered with polyethylene.
- Divert off-site runoff away from storage locations. Berms and shallow drainage swales may need to be constructed.
- Place stockpiles on impervious surfaces. Infiltration of runoff high in chloride content can pollute the ground water. Impervious surfaces also provide easier year-end cleanup of loading areas and will not become muddy during the spring.

- Contain runoff from stockpile locations. Runoff from stockpiles shall not be allowed to flow directly into streams or wetlands where environmental damage can occur.
- Road de-icing stockpiles shall not be located near municipal well areas or in other sensitive ground water areas.

Practices shall also be followed to reduce the amount of salt that is applied to roads. One method is to limit the amount of salt applied to low traffic areas and straight level areas. Streets shall be inspected for the need for de-icing prior to application. Equipment shall be maintained in good working order to evenly distribute salt on roadways and shall be properly calibrated to prevent excessive application. The City currently follows these practices.

C. Erosion Control Management

Prioritize projects that minimize the mobilization of sediment and enhance site erosion control requirements. The purpose is to control erosion and sedimentation on private developments and in public drainage systems. The goal is to minimize soil erosion through increased education and enforcement of existing BMP Ordinance.

D. Wetland Management

Prioritize projects that enhance the City's wetland management. The purpose is to utilize, protect, preserve, and enhance existing natural wetlands. The goal is to maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City, in accordance with the Scott WMO CWRMP and VRWMP.

E. Public Participation and Education

Prioritize projects that enhance the current level of public participation, information, and education on City projects. The purpose is to encourage active community involvement in all aspects of surface water resources management. The goal is to increase public assistance, participation, and knowledge in management of the water resources of the community.

F. Groundwater Management

Prioritize projects that provide sound, long-term groundwater and aquifer management. The purpose is to protect groundwater quality and improve groundwater supplies through effective management. The goal is to provide clean and safe drinking water for the City while managing increased development and population.

VII. IMPLEMENTATION PROGRAM

The primary means the City will use to implement the standards of this Plan, the Scott WMO CWRMP and the VRWMP is through the adoption and implementation of the City of Elko New Market Plan, associated Rules, and Ordinances. Private development projects within the City are reviewed on a "project-by-project" basis and it is during this review the City has the opportunity to implement the goals, policies, and priorities developed in the Plan.

City improvement projects provide another opportunity for the City to implement the goals, policies, and priorities developed in this Plan. Most CIP projects generally have a surface water component. Development of a CIP will serve as a useful planning tool for City sponsored surface water projects.

There are also specific development-independent implementation goals that the City will continue to develop on a parallel administrative track to the general goals listed above. The City will finance these goals either directly or by specific development related review and construction

inspection budgets.

The following is an implementation process list of the recommended actions, timing, responsible party, and the cost or funding sources which are presented for the City Council's consideration based upon the data compiled in this report. Actions are listed in order of priority, from highest to lowest.

Action	Timing	Responsible Party	Funding Source
Maintain and implement Capital Improvement Program	On-going, updated on a 5 year period	City of Elko New Market	Storm water area charge, utility fee and project specific engineering budgets
Storm water maintenance program to ensure the successful operation of the drainage system.	On-going	City of Elko New Market	Storm water area charge, utility fee and annual engineering and maintenance budgets
Corrective actions for storm water problems be developed and implemented.	On-going, as problems are brought to the attention of Staff	City of Elko New Market	Storm water area charge, assessments and project specific engineering budgets
Enforcement of the erosion and sedimentation control ordinance for new developments.	On-going, as development projects are submitted to the City for approval	City of Elko New Market	Funding by developer's fees, building permits and fines collected for non-compliance
Encourage low impact development and better site design components for new development projects.	On-going, as development projects are submitted to the City for approval	City of Elko New Market	Funding by developer's fees and project specific engineering budgets
Established modeled ponding areas and maximum flow rates and volumes as referenced during initial phases of development projects.	On-going, as developments are submitted to the City for approval	City of Elko New Market	Funding by developer's fees and annual engineering budget
Review procedures to be established to ensure all construction projects within the City are in compliance with erosion control ordinance.	On-going	City of Elko New Market	Funding by developer's fees and annual engineering budget
Update the City detailed hydrologic analysis during final design of all ponding areas.	Currently in place. Update as necessary.	City of Elko New Market	Funding by developer's fees and project specific engineering budgets
High water elevations governing building finish floor elevations adjacent to ponding areas and floodplains to be established per this Plan, Rules, and Ordinance.	On-going, as development projects are submitted to the City for approval	City of Elko New Market	Funding by developer's fees and building permits.

Action	Timing	Responsible Party	Funding Source
Emergency overflow routes to be established and maintained to provide stabilized relief during extreme storm conditions, which exceed design conditions.	On-going, as development projects are submitted to the City for approval	City of Elko New Market	Funding by developer's fees and project specific engineering budgets
An education program for City residents, staff, and development community to be developed and implemented.	On-going	City of Elko New Market	City of Elko New Market with assistance from Scott WMO, DNR, U of M Extension Service, SWCD & VRWJPO
Amendments to the SWMP be adopted and implemented and the SWMP be updated.	As warranted by future standards or regulations	City of Elko New Market	Storm water area charge and annual engineering budget
Encourage landowners to retain areas of native vegetation, and to plant species native to the area, to protect and improve wildlife habitat and maintain the historic ecological role.	On-going, as developments are submitted to the City for approval	City of Elko New Market	Funding by developer's fees, storm water utility and project specific engineering budgets
Review City-wide street sweeping frequency	On-going	City of Elko New Market	Storm Water Utility

IX. FINANCIAL CONSIDERATIONS

The cost of implementing the Surface Water Management Plan will be supported by several revenue sources. Following are several of the sources that will be used to implement the plan. As new development occurs within the City the amount of impervious cover typically increases. This places additional burden on the existing storm sewer infrastructure by increasing the volume of storm water runoff, which also increases the amount of pollutants transferred downstream to the receiving waters. To minimize these impacts, new development and redevelopment shall implement these standards and associated rules. The City has 180 days upon approval of this plan to update City ordinances that will enforce it.

Potential Funding Source	Revenue Produced
City's Storm Water Utility Fee The City has implemented a storm water utility fee that charges property owners on a monthly basis. The funds generated from this fee are used to finance the storm water management program.	Approximately $198,000/year
Special Assessments The idea behind this assessment method is that generally the benefited properties pay in relation to the benefits received. The benefit would be realized by an increase in market value of the property that resulted from the improvement.	Variable depending on the projects undertaken.
Grants State and Federal grants are available for surface water management and non-point source pollution. Grants can be a good way to help fund special projects that meet grant eligibility criteria, but are not a good finance source to depend upon for an annual income source.	Variable depending on the projects undertaken.
Wetland Permit Review Fees Local government units, per M.S. 103G.2242 Sub. 5, can charge processing fees to cover the costs of implementing the rules and administrative review time. Costs could also include site evaluation and inspection of the project site.	Variable depending upon the number of permits reviewed.
Land Development Fees As new development occurs within the City, the developer pays a storm sewer trunk fee based upon the net acreage of the property, exclusive of road right-of-way and public ponding areas. If the development includes oversizing of trunk facilities, a credit for oversizing will be given to the developer. If the City determines that a development is premature, the developer will pay for oversizing.	Variable depending upon the amount of development that occurs on an annual basis.

STORMWATER IMPROVEMENTS AND BMP PROGRAM							
PROJECT DESCRIPTION	ESTIMATED$ COST	FUNDING SOURCE	ESTIMATED EXPENSE				
			2020	2021	2022	2023	2024
BACKYARD DRAINAGE IMPROVEMENTS (CITY SHARE)	$75,000	STF	$15,000	$15,000	$15,000	$15,000	$15,000
INSPECT STORMWATER PONDS (20% PER YEAR)	$10,000	GF & SUF	$2,000	$2,000	$2,000	$2,000	$2,000
STORM SEWER POND MAINTENANCE & CLEAN OUT	$100,000	GF & SUF	$20,000	$20,000	$20,000	$20,000	$20,000
INSPECT 20% OF ALL OUTFALLS 24" AND LARGER	$10,000	GF & SUF	$2,000	$2,000	$2,000	$2,000	$2,000
INSPECT EROSION CONTROL BMP'S ON ALL CONSTRUCTION SITES	$25,000	DA, GF & SUF	$5,000	$5,000	$5,000	$5,000	$5,000
STREET SWEEPING @2 TIMES PER YEAR	$33,000	GF	$6,600	$6,600	$6,600	$6,600	$6,600
PERFORM WETLAND CONSERVATION ACT LGU RESPONSIBILITIES	$25,000	DA & GF	$5,000	$5,000	$5,000	$5,000	$5,000
DEVELOP & DISTRIBUTE INFORMATION FLIERS ON PRE/POST CONSTRUCTION BMP'S	$15,000	GF & SUF	$3,000	$3,000	$3,000	$3,000	$3,000
MAINTAIN CITY WEBSITE WITH STORMWATER MANAGEMENT ISSUES	$7,500	GF	$1,500	$1,500	$1,500	$1,500	$1,500
UPDATE STORM SEWER SYSTEM MAP	$12,500	GF	$2,500	$2,500	$2,500	$2,500	$2,500
REVIEW STORMWATER UTILITY FEE FOR SUFFICIENT OPERATING FUNDS	$6,000	GF	$2,000		$2,000		$2,000
TOTALS	**$319,000**		**$64,600**	**$62,600**	**$64,600**	**$62,600**	**$64,600**

DA = DEVELOPER'S AGREEMENT, GF = GENERAL FUND, STF = STORMWATER TRUNK FEE, SUF = STORMWATER UTILITY FEE

It is the current policy of the City to charge new land development a Stormwater Area Charge (SAC) to finance storm drainage improvements on a per-acre basis.

As with all improvements, there is a cost associated with prudent stormwater management. The costs incurred to achieve these improvements should be supported by new developments coming into the city through the Storm Water Area Charge. The following is an estimate of future improvement costs:

Estimated 2040 Costs	
Item	**Cost**
Culverts for Existing Streams and Creeks (increment over 24 inches)	$400,000
County Road Drainage Facilities	$2,600,000
Total Cost	$3,000,000

As with all estimates of this nature, they are based on current construction costs and should be adjusted annually to account for inflation, bonding costs, legal costs, interest costs, etc.

Stormwater Area Charge (SAC) Cost Summary

The net developable land area in the 2040 is estimated at 3,570 acres. This results in a minimum-recommended SAC of $840 per acre. Projected costs are only one factor, however. Existing debt service for past development-promoting investments, fund balances, development phasing and timing would be other factors the City considers in setting annual area charges. The stormwater area charge will be published annually in the City's fee schedule.

The SAC enables the construction of, and provides for, the effective management and financing of the recommended storm water management system within the projected City growth boundary area. Existing areas of development, large wetland areas, trunk highway rights-of-way and the areas shown on the watershed drainage district map that require further analysis have been excluded from the calculation for developable acres. It is recommended that these areas be excluded in the future when computing the SAC for new development.

A. Stormwater Area Charge (SAC) Annual Inflation

The SAC should be adjusted annually for inflation or changes in conditions. As with all estimates of this nature, they are based on current construction costs and should be adjusted annually to account for inflation, bonding costs, legal costs, interest costs, etc.

B. Stormwater Area Charge (SAC) Cost Summary

The net developable land area in the 2040 is estimated at 3,570 acres. This results in a minimum-recommended SAC of $840 per acre. Projected costs are only one factor, however. Existing debt service for past development-promoting investments, fund balances, development phasing and timing would be other factors the City considers in setting annual area charges. The stormwater area charge will be published annually in the City's fee schedule.

The SAC enables the construction of, and provides for, the effective management and financing of the recommended storm water management system within the projected City growth boundary area. Existing areas of development, large wetland areas, trunk highway rights-of-way and the areas shown on the watershed drainage district map that require further analysis have been excluded from the calculation for developable acres. It is recommended that these areas be excluded in the future when computing the SAC for new development.

X. AMENDMENTS TO THE PLAN

A. Amendment Procedures

For the Plan to remain a dynamic, effective document, a system must be identified and available to update information and implement new ideas, methods, standards, management practices, and any other changes, which may affect the intent and/or results of the Plan. This Plan shall remain in effect for five years from its adoption date by the Council or until an amended Plan is adopted, not to exceed 10 years from the date of initial adoption. Any person or persons either residing or having business within the City may request amendment at any time. The City itself may amend this Plan at any time if changes are required or if issues or opportunities arise that are not currently addressed. All amendments shall be in accordance with Minnesota Rules 8410.0160 Subp. 4 and Minnesota Statutes 103b.235 Subd. 5.

B. Request for Amendment

The amendment process begins when a written request for a plan amendment is submitted to the City administrator. The request must outline the need for the specified amendment as well as additional materials that the City will need to consider before making its decision.

C. City Staff Review

A decision is made as to the validity of the request. Two options exist;

1. Accept the amendment as a minor issue, with minor issues collectively added to the Plan during the annual review process; and
2. Accept the amendment as a major issue, and refer the matter to the City Council for consideration. In acting on an amendment request, staff shall recommend to the City Council whether or not a public hearing is warranted.

D. Council Consideration

The amendment and the need for a public hearing shall be considered at a regular or special City Council meeting. Staff recommendations should also be considered before decisions on appropriate action(s) are made.

E. Public Hearing and Council Approval

This step allows for public input based on public interest. The City Council shall determine when the public hearing should occur in the process. Based on the Public hearing, the City Council will approve or reject the amendment.

F. Watershed Organizational Approval

Proposed amendments must be reviewed and approved by the watershed organizations according to their amendment procedures, including Metropolitan Council, prior to final adoption of the amendments by City Council.

XI. FUTURE CONSIDERATIONS

Numerous factors were considered in developing the proposed future storm sewer plan for the City. Because of the intricacies of the planned improvements, this summary report will the not discuss every detail. The enclosed HydroCAD data sheets of the existing conditions can be compared with existing storm sewer data as necessary to address specific issues. However, we wish to highlight several key design features and recommendations.

A. Acquiring Space for Localized Detention

In the older more densely developed areas of the community, such as the originally platted areas and the historic downtown business and residential district areas, the possibility of acquiring space for localized detention basin construction is reduced. Throughout most of this area, new detention basin construction would require site clearing and re-platting of developed properties. Consequently, in these developed areas, water quality and detention requirements will be complicated and may require construction of regional facilities with collection piping to serve the existing/new uses. The hydrologic analyses of these areas will be reviewed on a case-by-case basis as required. Downtown Elko New Market is served by such a pond, with the intent that as redevelopment that would normally trigger stormwater management occurs, the parcel pays a cash-in-lieu of stormwater facilities fee and runoff from the site is routed to the City pond when feasible.

To meet the future Scott County, Vermillion River Watershed or possible NPDES/SDS Phase III requirements, it may be necessary to construct and/or install some form of in-line treatment that does not require a large amount of open space. Stormwater Management, Inc., Bay Saver and Stormceptor are a few of a many of in-line treatment systems being presently being incorporated into existing developed areas.

B. Flood Plains Adjacent to Corridor along the Vermillion River

The flood plain areas adjacent to the corridor along the Vermillion River and the unnamed stream along the east side of Dakota Avenue will need a hydraulic analysis as these areas develop in the future. These regions are typically protected from future development by floodplain Ordinances.

A majority of Section 20, located in the northwest corner of the study boundary area, will be limited to discharge limits that were agreed upon between the City, New Market Township and Scott County. When development occurs in this area, see Figure No. 1, runoff will be limited on a per acre basis to the amounts agreed upon in the memo, located in Appendix B.

XII. CONCLUSIONS

The City's existing storm sewer treatment and conveyance system cannot accommodate continued development in the growth boundary area. New development will need to include BMPs to manage runoff rate, volume, and quality and preserve existing drainage patterns.

The localized stormwater detention/water quality pond model presented in this Plan is one approach to accommodate the predicted urban development in the regional growth boundary area of the City. Further enhancement of this model must include updates on a project by project basis particularly in the event a private development will be constructing a regional pond as a condition of their permit. These updates will ensure that adjustments, due to new construction and urban development, can be coordinated with the model and regional flow rates and volumes can continually be reviewed, verified, and updated to ensure they do not exceed the numerical standards to be set by the VRWJPO. The components of the proposed SAC should also be reviewed and updated annually. These reviews will ensure that developers are paying their fair share for the improvements.

As stated earlier, this model is predominantly based on information obtained from available Scott County GIS mapping data, the City aerial and contour maps, field verification of accurate watershed boundaries, and discussions with City staff relative to the historical flooding areas. Based on all available information the modeled system closely matches qualitative descriptions given by individual observation. We believe this Comprehensive Surface Water Management Plan has significant benefit as a planning, engineering, and design tool. However, this Plan and the regional and localized stormwater and water quality pond network model is not necessarily the only method of accomplishing the goal of comprehensive surface water management. The quality and accuracy of this model may be further validated with more detailed survey data at the time of proposed development in the regional growth area of the City.

Appendix A: Maps

Watershed Drainage District Map	Figure No. 1
Digital Aerial Photographic Map	Figure No. 2
Scott County Soils Map	Figure No. 3
Scott County Wetlands and Bluff Areas Map	Figure No. 4
DNR Protected Waters Map	Figure No. 5
Floodplain Map	Figure No. 6
Future Land Use Map	Figure No. 7
Waterway Corridor Classification Map	Figure No. 8

2040 Comprehensive Plan

Elko New Market, MN

Figure 1 - Watershed Drainage District Map

February 2018

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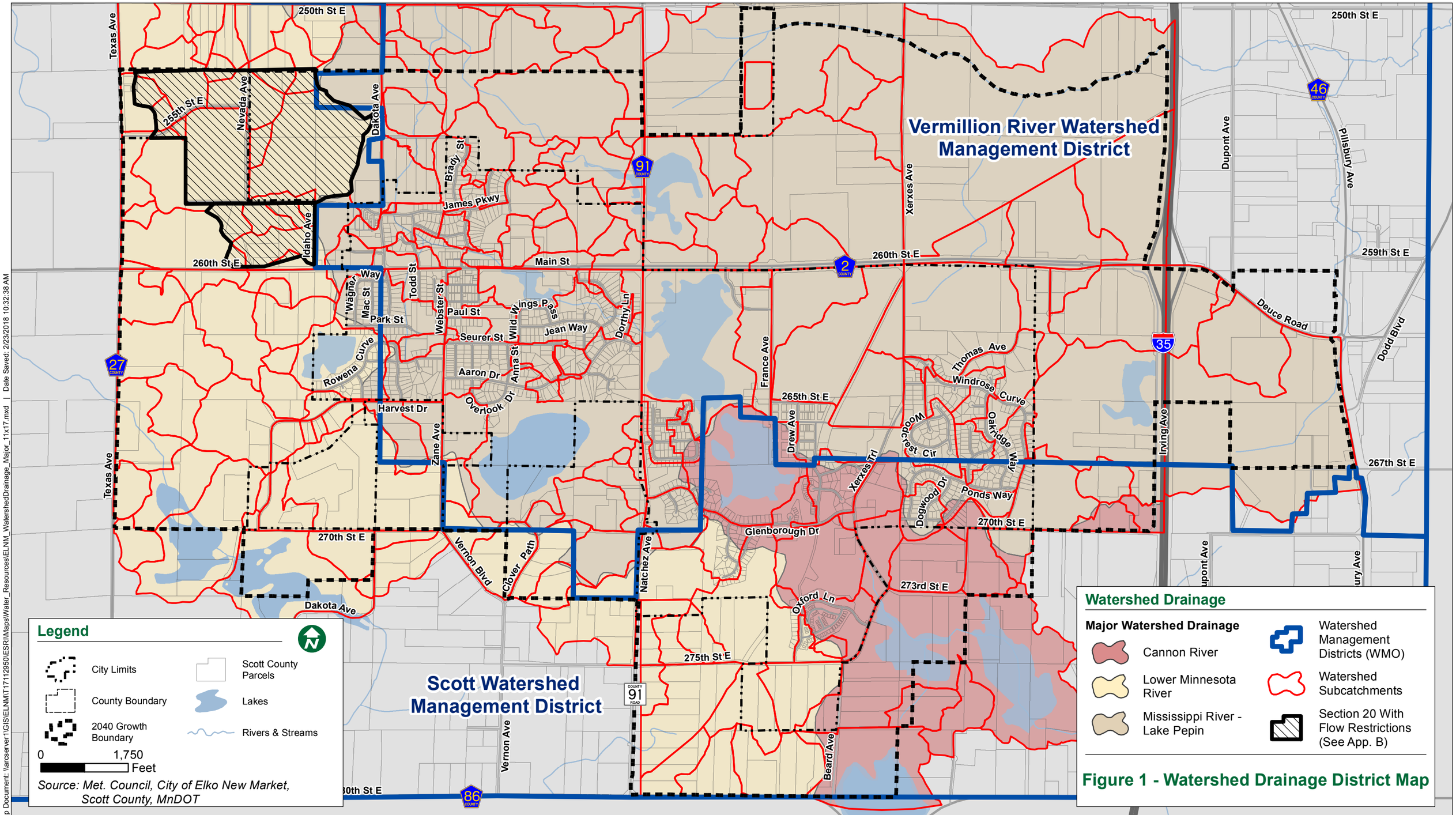

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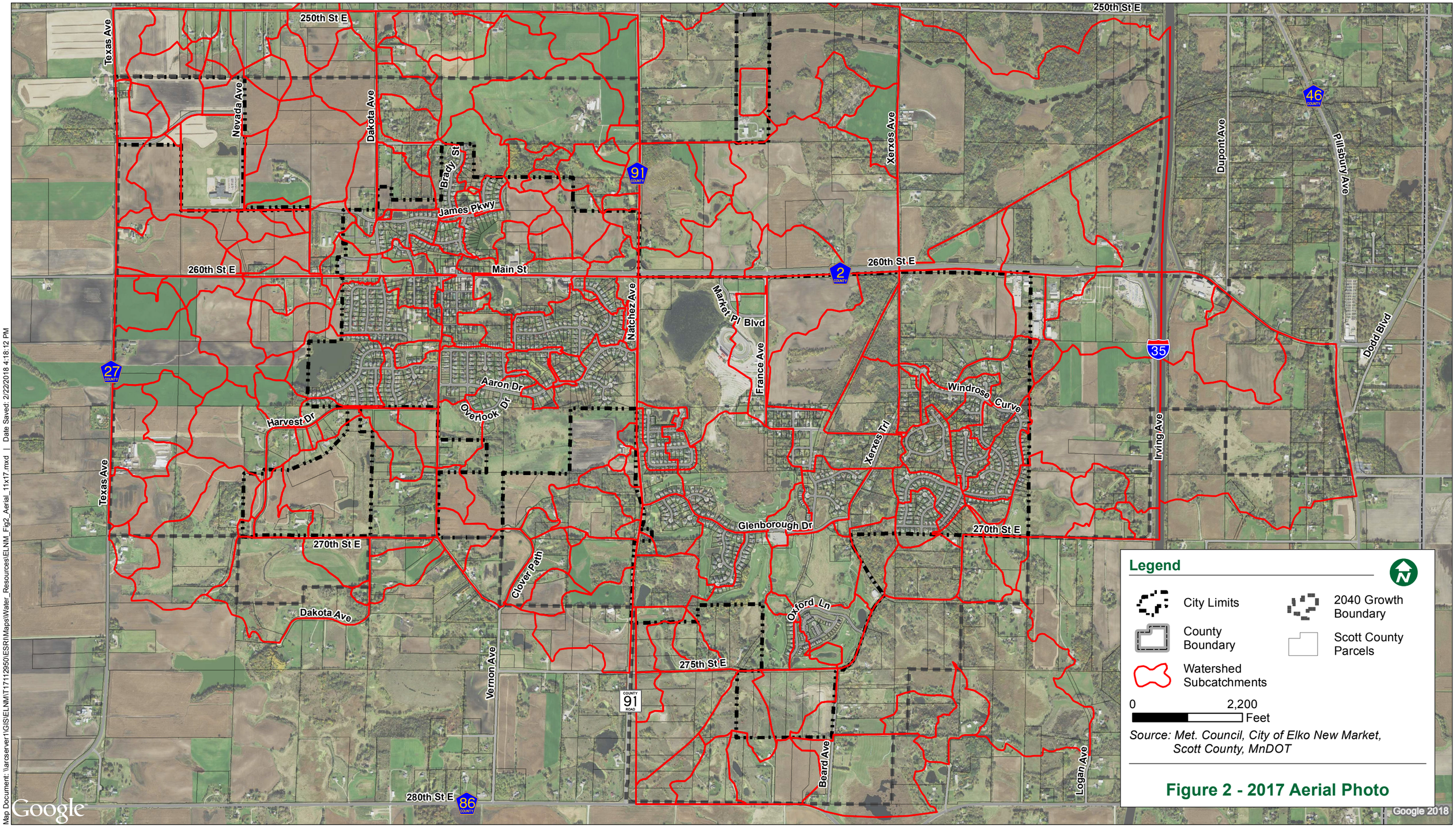
Figure 2 - 2017 Aerial Photo

February 2018



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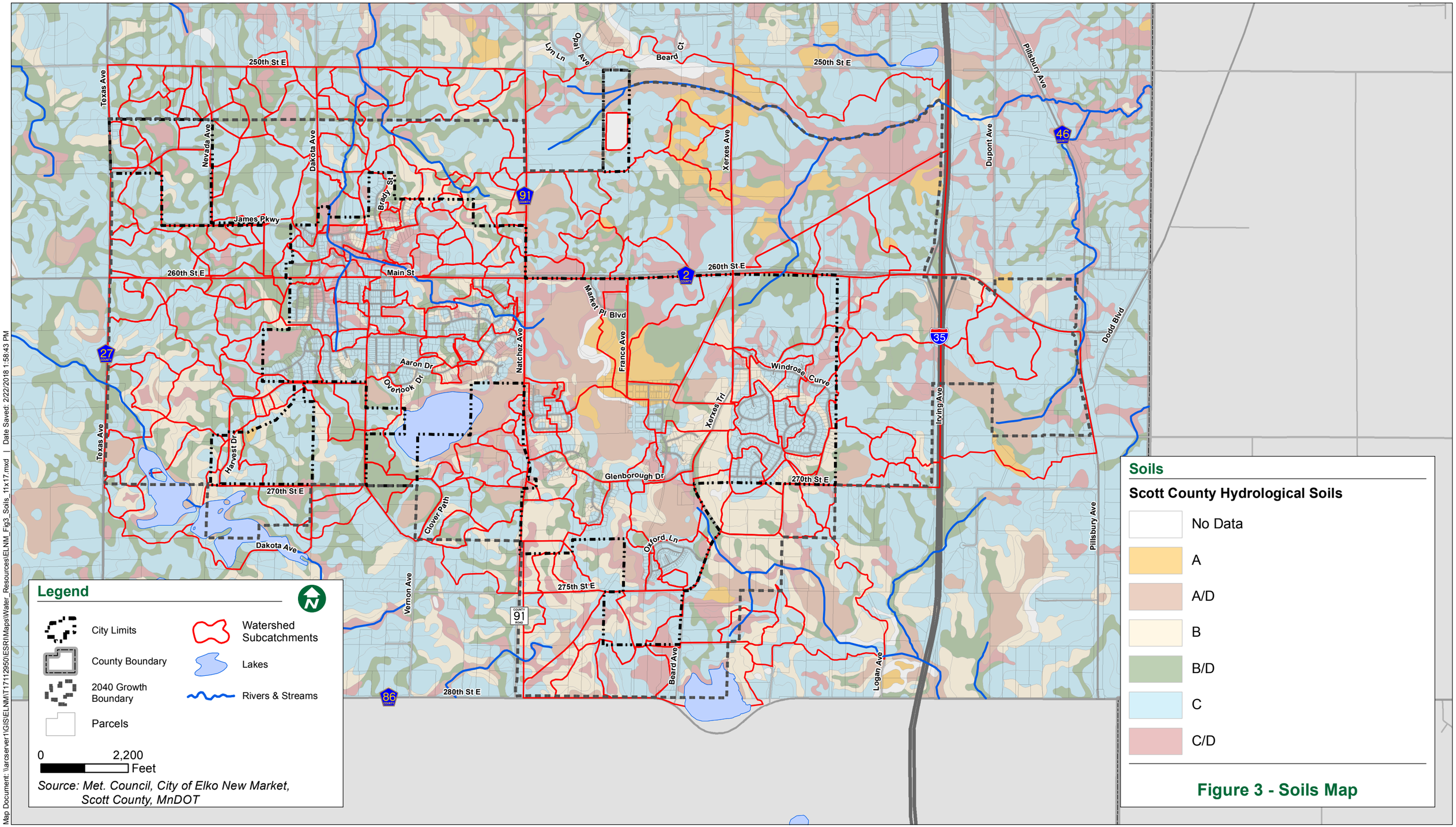

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2040 Comprehensive Plan

Elko New Market, MN

Figure 4 - Wetlands and Bluffs

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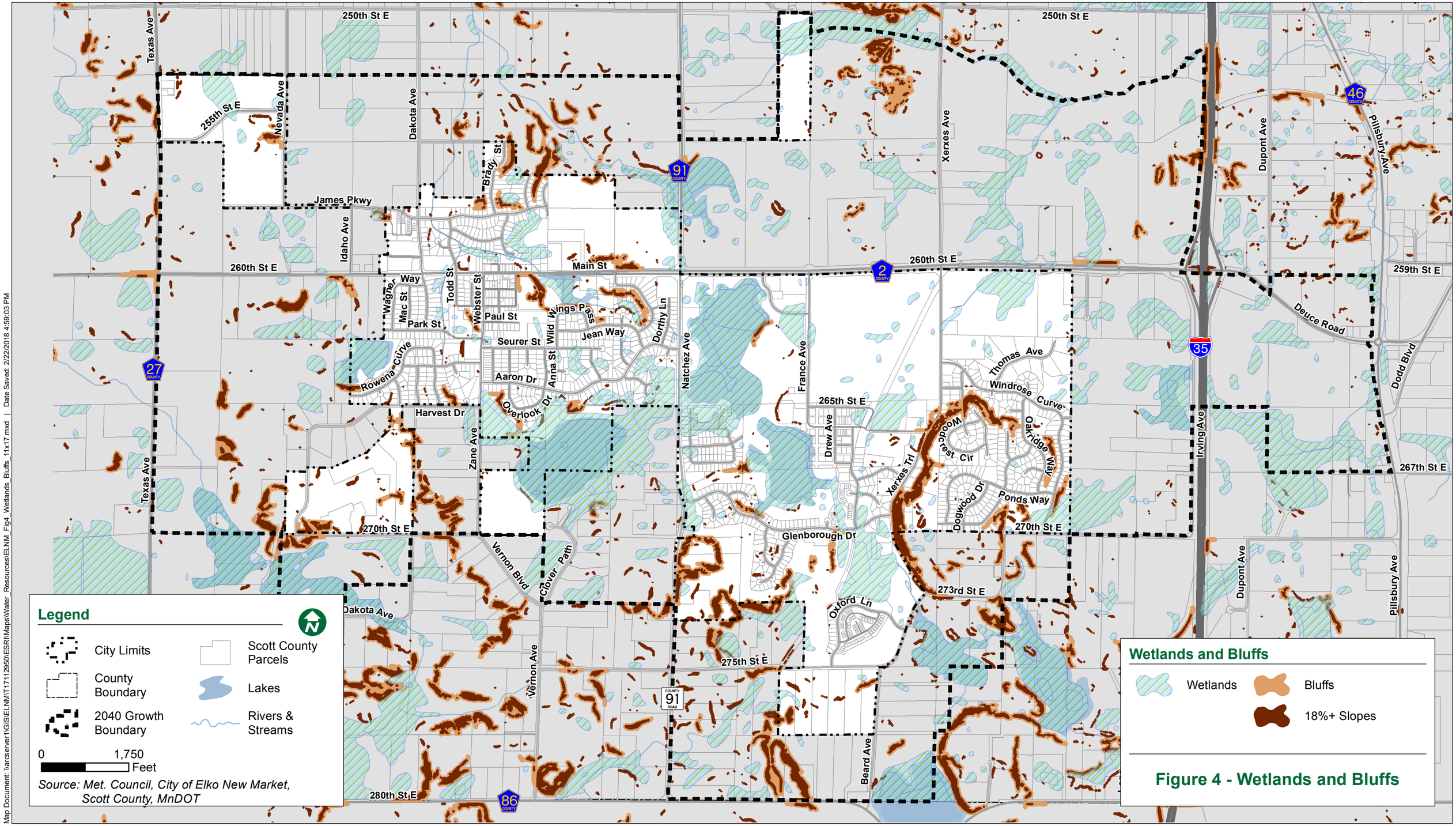

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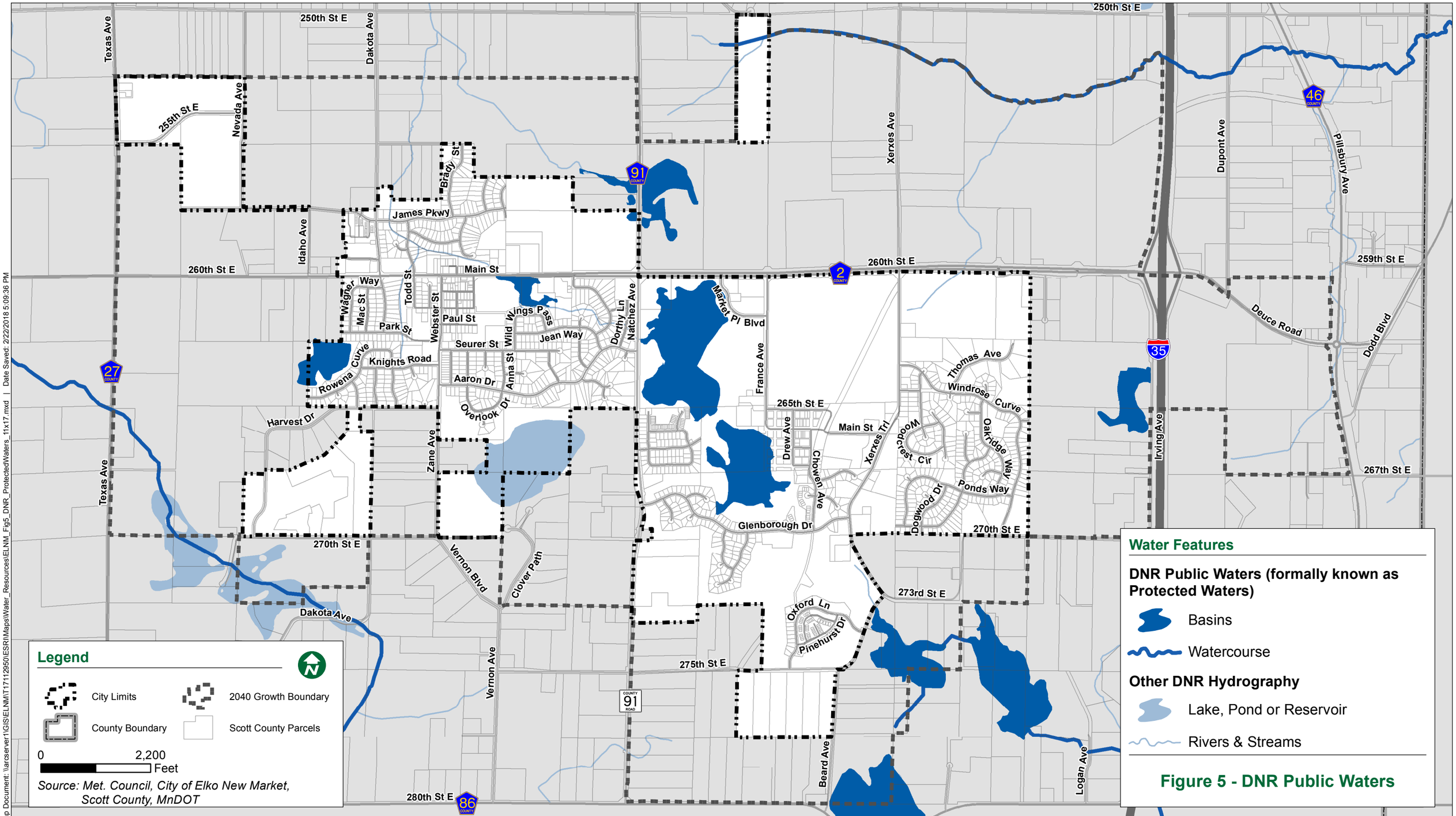
Figure 5 - DNR Public Waters

February 2018



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2040 Comprehensive Plan

Elko New Market, MN

Figure 6 - FEMA Floodplain Map

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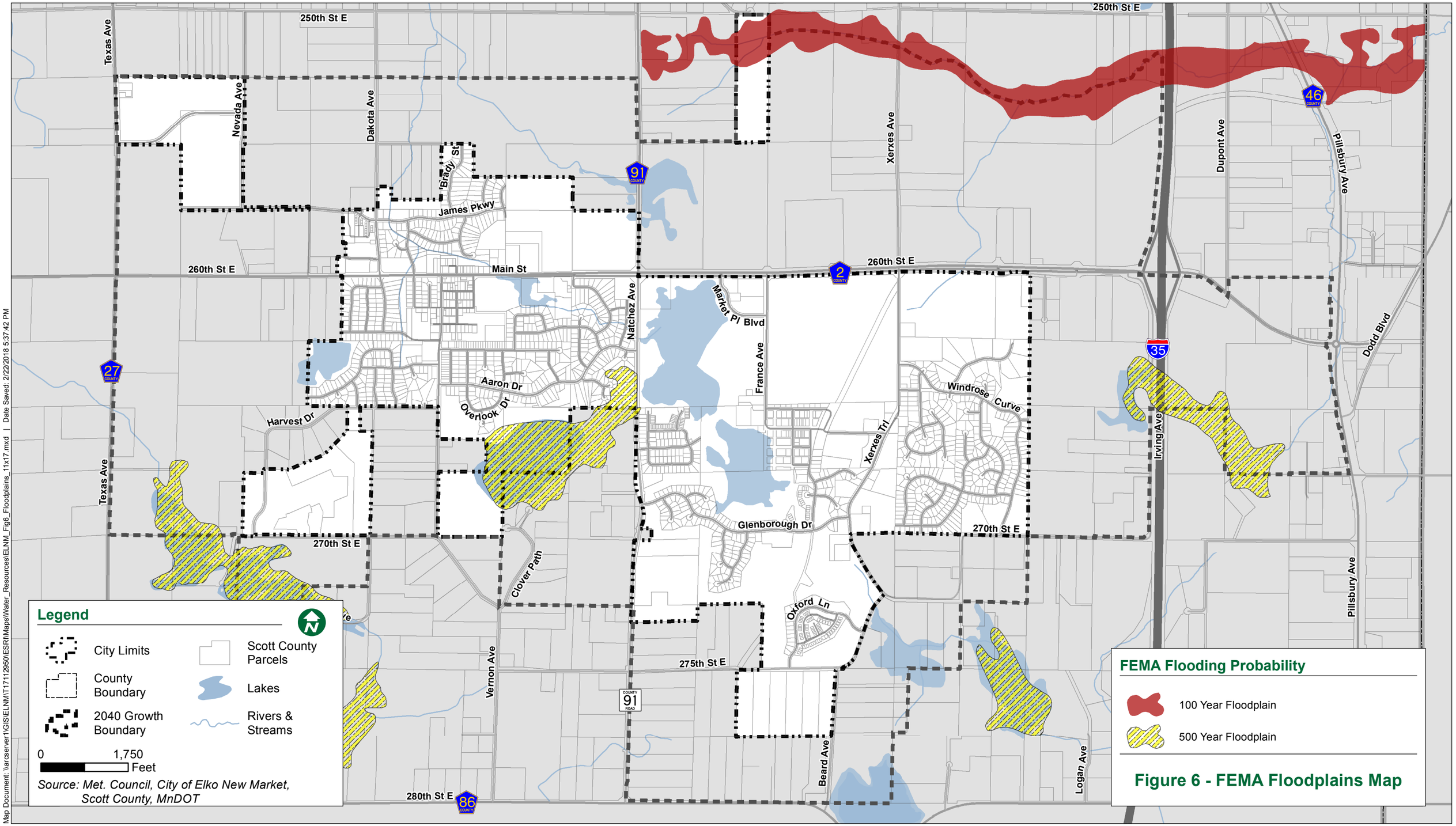

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2040 Comprehensive Plan

Elko New Market, MN

Figure 7 - Future Land Use Map

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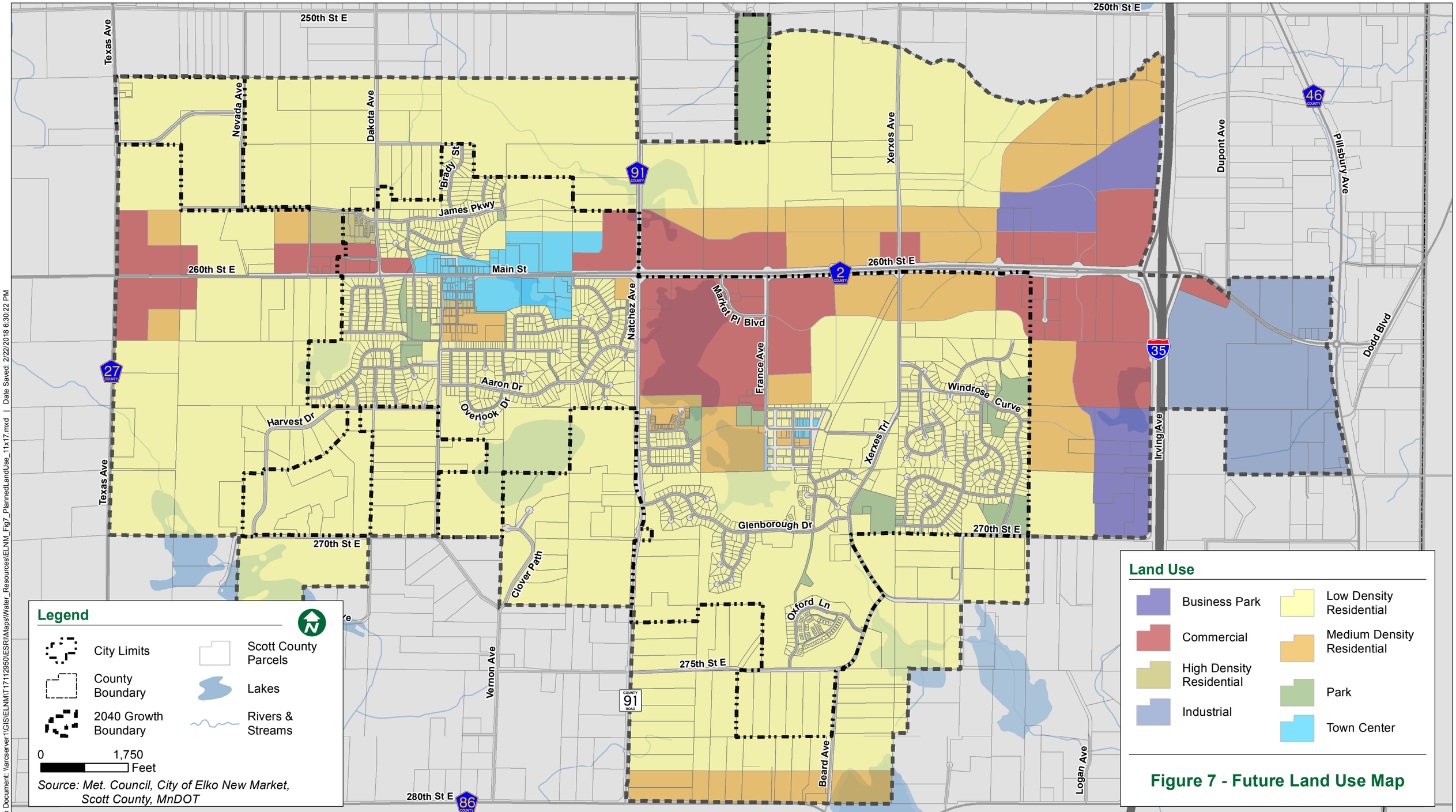

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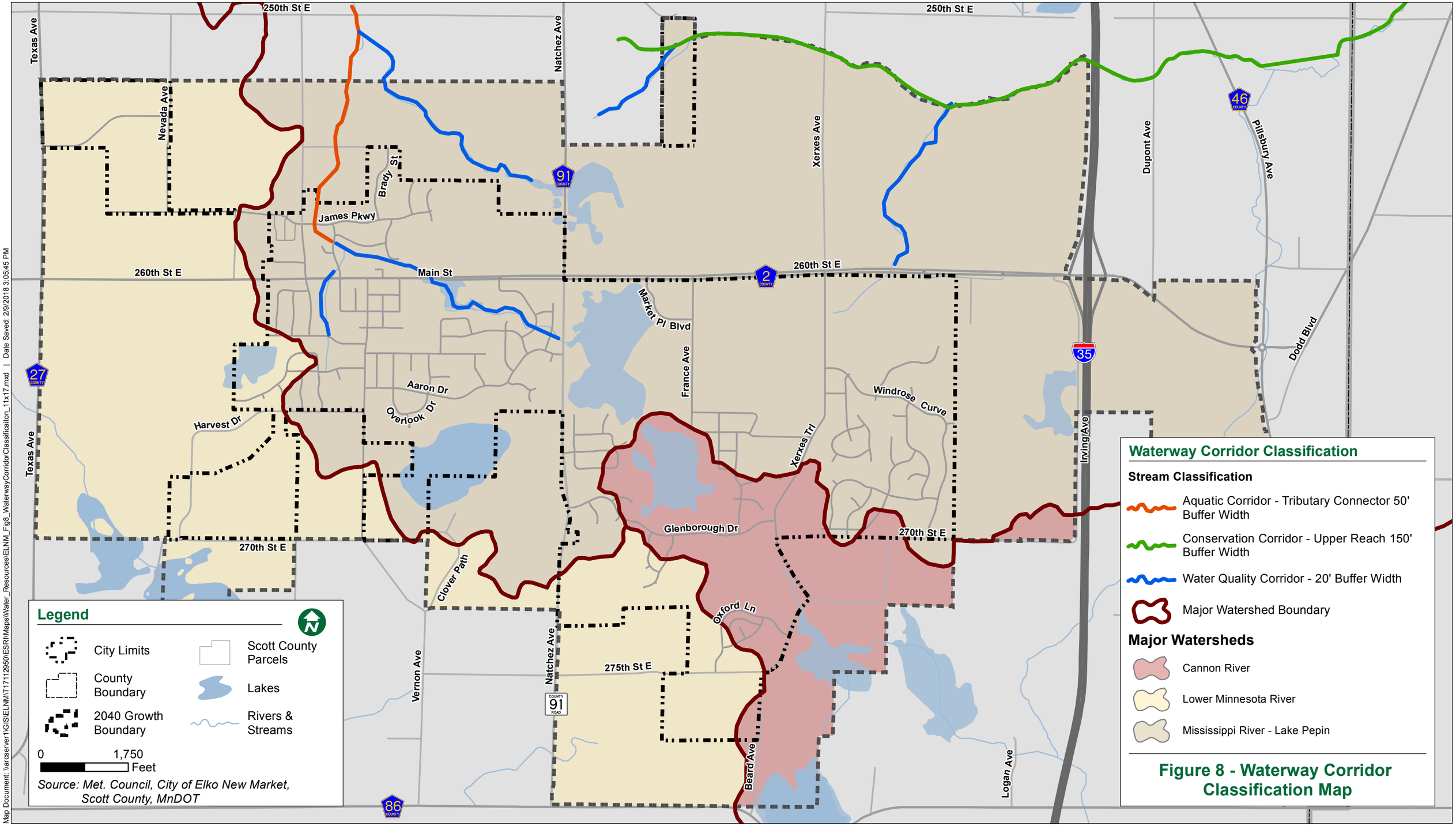
Figure 8 - Waterway Corridor Classification Map

February 2018



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Appendix B: Section 20 Discharge Agreement

EarthTech
A Tyco International Ltd. Company

MEMO

May 1, 2006

To: New Market Town Board

Copy: Albert Zweber, Township Clerk
Eric Braaten, Township Attorney

From: Scott Young

Subject **Drainage and Utilities Easement**
City of New Market Trunk Storm Sewer
Earth Tech Project No. 90566.01

On April 29th we received updated information from Thatcher Engineering, the City of New Market's engineer, regarding issues discussed at the March 30th meeting. These materials include a memo from Thatcher Engineering, dated April 27, 2006, and a memo from Wenck Associates, Inc., dated April 24, 2006, both of which are attached.

As summarized in the Thatcher memo of April 27th, the City's proposal meets the significant concerns raised during our review of the proposed project. In short, the proposal:

- is based on pre-settlement conditions,
- limits discharges for design storm events on a per acre basis,
- emphasizes the use of BMP's, infiltration and Low Impact Development methods,
- maintains existing draintile for school road, and
- minimizes the potential for run-on from undeveloped properties to adjacent roads.

Given the revisions to the plan incorporated in this latest material, we believe the New Market Town Board may allow the use of its drainage and utilities easement for the City of New Market's trunk storm sewer.

We are available on Tuesday evening if you have questions regarding this matter.

L:\work\newmark\90566\corres\City of New Market Drainage Permit 20060501.doc

Thatcher Engineering, Inc.
3055 Old Highway 8, Suite 103
Minneapolis, MN 55418-2500
Phone: (612) 781-2188
Fax: (612) 781-2241

MEMORANDUM

To: Thomas Borchert, Earth Tech
Thomas Meyer, Scott County

From: Rich Revering, City Engineer

CC: Thomas Terry, City Administrator
Andrea McDowell Poehler, City Attorney

Date: April 27, 2006

Re: New Market Township Right of Way Permit and Scott County Grading Permit
Trunk Storm Sewer Installation – School Core Street and Utility Project

---

Our office has completed a follow-up of the issues discussed during our March 30th meeting. The results are presented below in italics following a brief description of each issue:

1. Provide the geotechnical report for the school road project to each party.

   Done.

2. Review watershed modeling

   Wenck Associates represents several watersheds in the metro area and has watershed experience in Scott County. We asked them to review the Hydrocad models prepared by our office. A memorandum summarizing their tasks and findings is enclosed.

   We concur with their findings and have also attached the revised HydroCAD model for presettlement conditions.

3. Apportion peak flows from smaller storms for setting future development discharge limits. Combined pond discharges must not exceed presettlement conditions.

   The City will limit release rates from developments in the watershed to the following presettlement rates:

1-year	*No peak discharge*
2-year	*.008 cfs/acre*
10-year	*.044 cfs/acre*
100-year	*.150 cfs/acre*

   We will require developers provide a draintile/filtration system in future ponds that will prevent any release through the control structures for 1-year storms or smaller. Release for these small events will only occur via filtration in the ponds. This requirement will have water quality and temperature

benefits for the stream, and outflows from ponds will contribute to stream base flow rather than peak discharges.

4. Subwatershed plan

   The City will present a subwatershed plan focusing on the following issues in addition to the modeling already completed and the requirements listed above. The plan will be completed by July 30th, 2006 and will guide any future developments in this subwatershed until such time as a comprehensive local water plan is completed for the City as required by State Statute.

   a. *Identify and preserve any infiltration opportunities in the watershed.*

   b. *Define and require the use of Low Impact Development techniques where feasible.*

   c. *Set forth a draintile policy that benefits receiving waters.*

5. Modify school road plans to prevent any run-on from undeveloped property to roads or account for run-on in ponding to be built as part of the school or On-Site/Wagner project.

   The Contractor for the school road project has been notified of this requirement and we are currently preparing this plan revision. Low berms will be place in boulevards where run-on could occur and existing tile systems will be preserved or modified as necessary to drain the resulting low points with no connection to the trunk sewer.

6. Modify school road plans to require existing tile be reconnected only – not intercepted by the City storm sewer.

   The Contractor for the school road project has been notified of this requirement and we are currently preparing this plan revision. Non-perforated tile will be placed across the City's rights of way to carry flow from existing tile systems across the roadway. We are using non-perforated tile to minimize backflow into imported granular subgrades.

This project will enable the City to control stormwater runoff from future developments in a manner that will eventually reduce overland flows and flooding in the lower end of the subwatershed while meeting the common goal of preserving existing drainage patterns and minimizing downstream impacts. On behalf of the City, we request your recommendation to approve the respective permits based on the commitments stated above.

End of Memo

Memorandum

1800 Pioneer Creek Center, Maple Plain, MN 55359
Phone: 763-479-4200 Fax: 763-479-4242

Wenck

To: Rich Revering, P.E., Thatcher Engineering Inc.

From: Chris Meehan, P.E, Wenck Associates, Inc.

Date: April 24, 2006

Subject: New Market Township Right of Way Permit and Scott County Grading Permit Trunk Storm Sewer Installation – School Core Street and Utility Project.

INTRODUCTION

After our meeting last week, Wenck Associates, Inc. was requested to review and provide a summary of the hydrology associated with the 2005 School Core Street and Utility Improvements. Thatcher Engineering Inc. supplied for review a HydroCAD model and drainage map for pre-settlement, existing and future conditions.

The following concerns of New Market Township and Scott County were also to be included in the review:

- Accuracy of hydrologic model calculated flows and volumes, and verification of the validity of Curve Numbers used in the model.

- How peak flow rates would be apportioned for the 1, 2, 10, and 100-year storms in the watershed, thus allowing the establishment of discharge limits for future developments.

The remainder of this memo will summarize the model review and address agency concerns.

APPROACH

Upon receiving the HydroCAD model and drainage map for the site, several review actions were taken to validate the hydrologic and hydraulic characteristics of the watershed. These actions included:

- Verify accuracy of drainage boundaries with 2-foot contour map.
- Review soils for proper Hydrologic Soil Group classification.
- Confirm SCS Curve Number used in model.
- Evaluate Time of Concentration (Tc).
- Confirm overland and channel flow patterns.

Initial review of the model demonstrated that it was reasonably representing the watershed; however, a few changes to the HydroCAD model were required. These changes included:

- Additional field reconnaissance revealed an additional 7-acres drains south into the study area through an 18" CMP across 250th Street into subwatershed 8SB.

- Overland flow routes were identified which show Pond 16P flows into pond 13P vs. pond 24P. Therefore, the storage for ponds 13P, 15P, and 16P was combined since pond 13P outlet elevation would control the bounce in these ponds.

- Subwatersheds 8SC and 9SB were redelineated to better reflect surface drainage patterns. Subwatershed 8SC drains directly to pond 24P, where previously it drained to pond 14P then 24P. The redelineation also resulted in a new watershed (8SD), which drains directly to pond 14P.

- A new pond, 25P, was added to reflect a lowland area in subwatershed 9SB. Pond 25P discharges east into pond 14P.

RESULTS

After incorporation of these revisions, the model results were reviewed to determine 100-year flow rates for existing and presettlement conditions. A ratio of peak flow rate to drainage area is provided as a method to apportion flows in the watershed. Table 1 provides the results of the HydroCAD model.

Table 1. HydroCAD results for 100-year event (6.0")

Drainage Condition	Peak Flow at Outlet (cfs)	Ratio of Peak Flow to Drainage Area (cfs/ac)*
Existing	60.4 cfs	0.17 cfs/ac
Presettlement	52.5 cfs	0.15 cfs/ac

*Contributing Drainage Area = 350 acres

The ratio of peak flow to drainage area is similar to previous work completed by Wenck which found a ratio of 0.15 cfs/acre.

A 48" RCP trunk storm sewer is proposed to serve this drainage area, and based on full flow conditions the pipe will have a capacity of 60 cfs demonstrating it will have adequate capacity to convey peak flows from the site.

Agencies also requested the evaluation of existing conditions for the 1,2, and 10-year events. Table 2 provides a summary of the additional modeling.

Table 2. HydroCAD results for 1, 2, 10-year event (2.4", 2.8", and 4.25")

Drainage Condition	Peak Flow at Outlet (cfs)	Ratio of Peak Flow to Drainage Area (cfs/ac)*
1-year	5.8 cfs	0.02 cfs/ac
2-year	8.9 cfs	0.03 cfs/ac
10-year	19.5 cfs	0.06 cfs/ac

*Contributing Drainage Area = 350 acres

SUMMARY

Review of the modeling resulted in a 25% reduction in existing peak flow rates due to additional field reconnaissance and storage correction. The revised modeling provides reasonable representation of existing conditions and provides a defendable peak flow rate on which to base rate control requirements for the watershed.

Modeling results also indicate that the proposed 48" RCP will have adequate capacity to convey the 100-year event, limiting the chance for any overland flooding on the site.

To achieve existing rates to the trunk storm sewer future development should be limited to a rate of 0.17 cfs/acre for the 100-year event. Subsequent lesser year events (1, 2, and 10-year) should also meet their apportioned rate (0.02, 0.03, 0.06 cfs/ac). Rate control values provided do not incorporate the benefits of infiltration, draintile, or Low Impact Development techniques, which should be used to meet the established criteria.

Appendix C: Hydroperiod Guidelines for Wetlands

HYDROPERIOD GUIDELINES FOR WETLANDS

Recommended Hydroperiod Standards for Wetlands (Source: State of Minnesota Storm-Water Advisory Group, 1997)				
	Susceptible		**Non-Susceptible**	
Hydroperiod Standard	Highly Susceptible Wetlands	Moderately Susceptible Wetlands	Slightly Susceptible Wetlands	Least Susceptible Wetlands
Storm Bounce	Existing	Existing plus 0.5 ft	Existing plus 1.0 ft	No limit
Discharge Rate from Wetland	Existing	Existing	Existing or less	Existing or less
Inundation Period* for 1 & 2 –Year Precipitation Event	Existing	Existing plus 1 day	Existing plus 2 days	Existing plus 7 days
Inundation Period for 10 –Year Precipitation Event & Greater	Existing	Existing plus 7 days	Existing plus 14 days	Existing plus 21 days
Run-Out Control Elevation (Free Flowing)	No change	No change	0 to 1.0 feet above existing run out	0 to 4.0 feet above existing run out
Run-Out Control Elevation (Landlocked)	Above delineated wetland	Above delineated wetland	Above delineated wetland	Above delineated wetland
*Inundation period is the time above the normal water level (NWL)				

Source: State of Minnesota Stormwater Manual, November 2005, Chapter 10, Volume 2, Page 35.