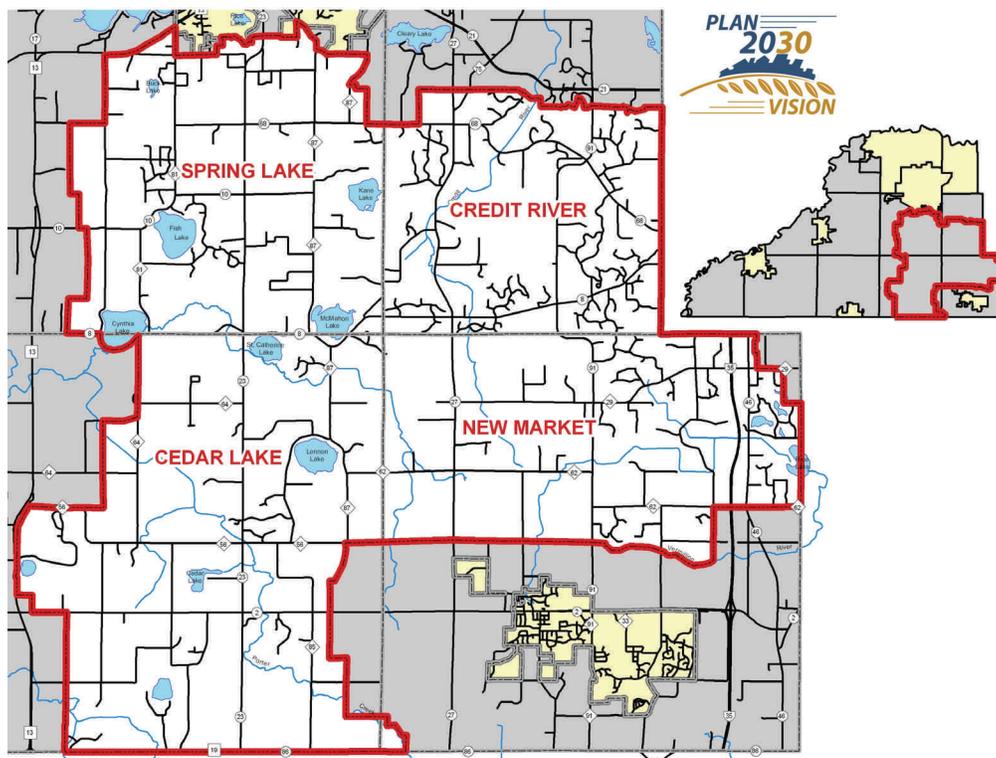


Scott County Rural Residential Service Area Detailed Area Plan



Assessing the Cumulative Impacts of a Long-term Rural Service Area

Study Partners:

CREDIT RIVER TOWNSHIP

New Market Township

THE MCKNIGHT FOUNDATION

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Scott County Rural Residential Service Area Detailed Area Plan

*Assessing the Cumulative Impacts of a
Rural Service Area Build-Out*

This document was produced by the Scott County Community Development Division in cooperation with the four Townships of Cedar Lake, Credit River, New Market, and Spring Lake and funding from the McKnight Foundation. For more information, please contact the Scott County Planning Department at (952) 496-8475 or visit www.co.scott.mn.us

**Scott County Community Development
December 22, 2009**

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This plan is dedicated to the memory of Eugene Berens, who passed away unexpectedly in 2009. Eugene was a long-time representative for Spring Lake Township and a well-respected member of the local community. He worked wholeheartedly to preserve the natural and cultural character of Spring Lake Township. Eugene's vision for Spring Lake Township was a key driving factor in the creation of this plan and is reflected throughout the study's recommendations.

Special Thanks to the McKnight Foundation for their Support

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I. Framework

A. Executive Summary

The *Scott County Rural Residential Service Area Detailed Area Plan (DAP)* was prepared by Scott County and its four eastern townships (Spring Lake, Credit River, Cedar Lake, and New Market) in 2009. The purpose of the DAP is to: a) identify potential impacts of rural residential development build-out on the service area related to natural resources, transportation, recreation, storm water management and public facilities; and b) recommend action steps necessary to mitigate these impacts.

The County determined that preparing a Detailed Area Plan, rather than an Alternative Urban Areawide Review (AUAR) in accordance with state rules, was the best method to integrate some environmental review while assessing a wider variety of potential impacts. The County adopted its *2030 Comprehensive Plan Update* on March 24, 2009, which identified the rural residential service area and required that this Detailed Area Plan be completed and approved before portions of the service area can rezone to higher rural residential densities.

This DAP document is organized into three sections. The first section (**Framework**) describes the reason for preparing this study in more detail by summarizing how the rural service area was determined in the *2030 Comprehensive Plan Update*, how planning for a rural service area is required under the Metropolitan Council's *2030 Regional Development Framework*, and how previous planning efforts that have occurred in and around the study area relate to this DAP. This first section also presents three possible build-out scenarios for the rural service area that were used in the analysis of the various impacts.

The second section (**Potential Impacts**) includes a range of issues - many that are included in an AUAR document – that could be impacted by rural residential build-out. These issues include land use, land development, and land cover; soils and geology; fish, wildlife, and ecologically sensitive resources; surface water and groundwater resources; sanitary sewer; traffic; housing; recreation; rural character; and fiscal impacts. For each issue, a brief summary or inventory as it relates to the study area is provided. For traffic, groundwater, storm water management, trails, and rural character issues, more detailed technical memos or reports that were conducted during the DAP planning process are provided as supporting appendix material.

The third section (**Mitigation Recommendations and Action Plan**) provides recommended mitigation strategies based on findings from the analysis documented in the Potential Impacts section. This third section also includes specific steps the County and Townships must take now and into the future to ensure that significant impacts are avoided or mitigated from the rural residential build-out of the service area.

Completion of this *Rural Residential Service Area Detailed Area Plan* fulfills a key implementation recommendation of the 2030 Plan, and provides the technical basis for requiring sustainable development practices during the remaining build-out of the study area.

Significant funding for this DAP planning process and final report was provided by the McKnight Foundation.

B. Reason for DAP Preparation

The Scott County *2030 Comprehensive Plan Update* (2030 Plan) guides roughly three-quarters of the county for ultimate urban development; with the remaining one-quarter (or 73 square miles) designated for rural development as the end land use. Determining the size and extent of this “rural residential service area” was based on six criteria developed under a joint study with the Metropolitan Council Environmental Services. The joint study identified existing wastewater treatment capacity in the county and an optimum location and urban service boundary for a new regional treatment plant to serve Scott County well into the 21st century. The six criteria used to identify the ultimate urban service area boundary were (see Attachment F for more information):

- existing lot patterns;
- wetlands, lakes and topography;
- natural resource and storm water management;
- transportation systems; and
- groundwater availability

Based on this mapped criteria and in conjunction with the City of Prior Lake/Spring Lake Township Orderly Annexation Agreement and long-range infrastructure plans from surrounding municipalities, it is unlikely that the County’s rural service area will ever be served by public sewer and water infrastructure and, therefore, will unlikely ever have the potential to develop at urban densities (three to four units per acre on average).

Under the 2030 Plan’s growth management goals and policies, the rural service area is guided primarily for residential development at densities supported by sustainable on-site wastewater management systems (one unit per 2.5 acres on average), but only after proper open space and natural resources have been identified and appropriate road connections, storm water planning and other issues have been addressed. In order to address all of these issues, the 2030 Plan recommended a detailed study (coined a Detailed Area Plan, or DAP) be completed with extensive input from citizens and landowners prior to rezoning portions of the service area to higher rural densities.

The 73-square mile area is the largest pocket in the seven-county Twin Cities region that the Metropolitan Council has formally recognized as an area that will unlikely ever be served by public sewer and water services. Completion of this Detailed Area Plan fulfills the County’s and participating Township’s “community role” in accommodating growth in Rural Residential Areas as identified in the Council’s *2030 Regional Development Framework*, which is spelled out as follows:

- Plan and develop interconnected local streets, adequate water supply, and properly managed individual sewage treatment systems to accommodate local growth forecasts;
- Plan land use patterns that will facilitate groundwater recharge to protect the region’s water supply;
- Protect the rural environment. Locally oversee the management and maintenance of alternative wastewater treatment systems such as community drainfields to avoid the environmental and economic costs from failed systems;
- Ensure financial and environmental accountability for installation, maintenance, remediation and management of any permitted private wastewater treatment systems;
- Plan for and construct local transportation infrastructure including trails sufficient to serve local needs;
- Construct an interconnected local public street system;
- Adopt improved design techniques for access management;

- Develop and implement comprehensive plans that provide land appropriate for a variety of affordable and lifecycle housing options;
- Adopt local housing goals and implementation plans;
- Use local official controls and resources to facilitate development of a range of housing densities, types, and costs;
- Approve and permit proposed housing developments in light of population forecasts, existing housing stock, and current and future community and regional needs, as appropriate; and
- Adopt conservation subdivision ordinances, cluster development ordinances, or environmental protection provisions in land use ordinances.

C. Study Area

The DAP study area is located in southeastern Scott County, comprising roughly 46,560 acres (or 73 square miles) in portions of Credit River, Spring Lake, Cedar Lake and New Market Townships (see Figure 1). Under the County’s *2030 Plan*, the DAP study area is guided for rural development at full build-out – with the remaining three-quarters of the county’s land base guided for future urban development at full build-out expected in the distant future.

D. Planning Process

The DAP planning process included the formation of a Project Management Team consisting of County staff representing Planning, Natural Resources, Highway, Environmental Health, and Parks and Trails Departments along with one elected supervisor representing the four townships. Meeting on a regular basis throughout the process, the Project Management Team was responsible for confirming study goals and objectives, overseeing the public engagement process, and reviewing and providing comment on the technical reports and recommended mitigation strategies.

There were three major citizen engagement opportunities held during the 16-month DAP planning process. A rural design workshop was held in December 2008 to provide a forum for residents and landowners to consider the study area’s unique landscape features and help prioritize rural development design guidelines. Approximately 40 people attended this workshop. Another workshop focused on rural trail policies was held in December 2008 to gather input on desired trail uses, alignments, design and management. About 60 residents attended this event. Finally, an Open House showcasing the results of the DAP planning process was held in October 2009 to gather feedback and share information to residents and landowners. Approximately 140 people attended the Open House.

E. Previous Planning in Study Area

This Detailed Area Plan builds upon previous planning efforts that have occurred in the study area over the past decade. The following is a brief description of these past planning efforts as they relate to the preparation of this report:

- The **Scott County 2020 Comprehensive Plan Update**: This plan, adopted in 2001, designated the southern half of Credit River Township as a Rural Residential Growth Area (guided at an overall density of one home per 2.5 acres non-hydric) and identified two Staged Growth Areas “A” and “B” for future consideration. This plan also set a County planning policy of maintaining a ten-year supply of developable land in the mapped Rural Residential Growth Area. The reason for

this policy was to provide sufficient area for growth and allow adequate time for planning and budgeting for infrastructure to serve staged development. The 2020 Plan set the stage for looking at expanding the County's designated Rural Residential Growth Areas in future plan updates.

- The **City of Prior Lake Southwest Planning Area Sanitary Sewer Study**: This 2002 study established the ultimate southerly limits of the City's sewer system based on capacity limits to the collection and lift station systems. This southerly limit boundary established the urban expansion area between the City of Prior Lake and Spring Lake Township and was incorporated into these two jurisdiction's orderly annexation agreement adopted in 2003.
- The **Credit River Township Growth Area Alternative Urban Areawide Review (AUAR)**: This 2003 study provided a detailed assessment of the possible cumulative impacts resulting in the build-out of southern Credit River Township including a proposed 281-lot master planned development. The AUAR looked at a variety of possible impacts, including transportation, groundwater, surface water, natural resources, infrastructure and public services.
- The **Southeast Scott County Comprehensive Plan Update**: In 2005, Scott County, the Cities of New Market and Elko, and New Market Township, with assistance from the Metropolitan Council, completed a comprehensive planning analysis of Southeast Scott County to more fully understand the long term impacts and urban and rural growth demands on the area. The result of this process was the adoption of the long-range plan that identified the ultimate northerly and easterly public sewer service limits for a regional wastewater interceptor to accommodate future urban development in the Elko New Market area. Areas beyond this ultimate service boundary in New Market and Cedar Lake Townships were guided for rural residential growth.
- The **Spring Lake Township Land Use Study**: This 2006 study, commissioned by the township, advocated six principals for guiding development in the township: 1) As provided in the Orderly Annexation Agreement between the Township and City of Prior Lake, the area south of 180th Street should assume regional sewage treatment will not be made available; 2) Future development in the area south of 180th Street should be served by individual sewage systems or community sewage systems; 3) Overall densities in the township south of 180th Street should be guided for 2.5-acre homes sites as the end land use (not interim); 4) All hydric soils on a parcel should be permitted to contribute to meeting the density requirement; 5) Any future rezones to 2.5 acre density should occur on a parcel-by-parcel basis; and 6) Lydia should be recognized as a functioning hamlet in the County's long-range plans and the smaller residential lots and rural commercial uses should be treated as conforming uses in the County's zoning ordinance.
- The **Scott County State Aid Highway 17 and Minnesota Trunk Highway 13 Corridor Study**: This 2008 study considers the upgrade of CH 17 and TH 13 – running north-south along the western edge of the DAP study area – from a minor arterial into a continuous principal arterial roadway, either as an expressway or freeway. This planned upgrade has significant implications for local road planning, access management, and corridor land use decisions in Spring Lake and Cedar Lake Townships.
- The **Scott WMO Comprehensive Water Resource Management Plan 2009-2018**: This second generation plan is intended to protect, preserve and manage natural surface and groundwater systems in the face of rapid growth and agricultural activity. The Plan establishes a long-term vision for a collaborative approach to develop a green infrastructure system rather than relying on the more traditional, costly fixes. The Plan acknowledges that the development of a green infrastructure system requires public and private stewardship, focused cost share programs, and

innovative or emerging technologies for stormwater and water quality management. These themes were explored further during the development of this DAP document.

- The **Credit River Township Fiscal Impact Study**: This 2009 study analyzed the projected financial impacts of several future governing options for Credit River Township, including: incorporating as a city, maintaining status quo and allowing piecemeal annexation by neighboring cities, or detaching all of the township north of CSAH 21. The study looks at these three option's possible impact on future capital infrastructure and operating budget issues, such as providing municipal water and sanitary sewer service north of CSAH 21, street and road construction and maintenance, police and fire service, and public facilities.
- The **Scott County 2030 Comprehensive Plan Update**: This plan, adopted in 2009, officially designated the rural residential service area and required that this DAP study be completed. The following goal from the 2030 Plan provides the specific directive to complete this type of planning effort:

Goal #V-8 ***Support the staging of long-term, unsewered residential development through a phased basis, following a logical, planned sequence for road upgrades, storm water management, park, trails and open space planning, etc., to serve each staged area in a coherent, fiscally-responsible manner.***

- a. The Planning Commission will evaluate land supply every five years from the date of plan adoption to assess the overall staging of development in the planned rural areas, taking into consideration the following criteria:
 - infrastructure needed to support growth;
 - availability of land for development; and
 - local township road planning and storm water management system maintenance capabilities.
- b. Prior to rezoning parcels in a staged growth area, require a detailed planning process to address cumulative effects of proposed development on natural resources, transportation, and storm water management and identify effective mitigation strategies. This detailed planning process could take the form of an Alternative Urban Areawide Review (AUAR) process that follows all state requirements and procedures or the form of a Detailed Area Plan (DAP) that includes:
 - A build-out analysis of the study area given planned densities;
 - Locations for regional surface water ponds and drainage system;
 - Locations for township collector roads;
 - Township road access to County highways and interconnections;
 - Need and location of turn-lanes and by-pass lanes;
 - Condition of existing roads and bridges and identification of where improvements are needed;
 - Available water supply for drinking water and fire safety;
 - Well locations, water tower sites, and other water supply needs;
 - Locations for parks and trails;
 - Identification of areas where necessary public infrastructure such as storm water management plans and systems, roads, and utilities are in place;
 - Opportunities for connectivity of local roads and reduction of cul-de-sacs;

- Focusing traffic onto a completed local road system and allowing for safer traffic exchanges on County roads; and
 - Providing for sustainable and desirable long-term development to maintain and preserve the natural and cultural character of the staged growth area.
- c. Perform the “community role” in accommodating growth in Rural Residential Areas as identified in the Metropolitan Council’s 2030 Regional Development Framework.

Reason: Staging growth allows for immediate interconnection of roads rather than long term cul-de-sacs. Staging significantly reduces the conflicts of land uses that currently exist between residential and agricultural uses. Staging allows for upgrades of township roads by developers and reduces the cost burden on existing residents whom otherwise would not need the road improvements. Townships under State law are responsible for maintenance of storm water management systems in platted subdivisions and must maintain the storm water systems constructed by developers so that residents can be assured that storm water will continue to be managed as originally engineered.

F. Development Description/Scenarios

In order to assess potential impacts of increased development on natural resources, trails, roads, groundwater, and storm water management systems, Scott County Community Development staff developed the following three build-out scenarios for the DAP study area:

Scenario #1) Adopted 2030 Plan: Build-out scenario based on densities as designated in the *2030 Comprehensive Plan Update* – portions of Credit River, New Market and Spring Lake townships build-out at one dwelling unit per 2.5 acres under the Rural Residential Growth and Rural Residential Growth-Staged land use categories; and portions of Cedar Lake and New Market townships build-out at a density of one dwelling unit per 10 acres (non-wetland) under the Rural Residential Reserve land use category.

Scenario #2) Ultimate DAP Build-Out (at 2.5-Acres): Build-out scenario based on the premise the “permanent rural” DAP study area will be re-guided under a future comprehensive plan update to the Rural Residential Growth land use category, with the entire area developing at one dwelling unit per 2.5 acres.

Scenario #3) Ultimate DAP Build-Out (at 2.5-Acres Plus Bonus Density): Similar to Scenario #2, this build-out scenario is based on the premise that the “permanent rural” DAP study area will be re-guided to the Rural Residential Growth land use category at a density of one dwelling unit per 2.5 acres. In addition, Scenario #3 assumes certain parcels will receive density bonuses for participating in the Public Values Incentive Program. In particular, this scenario assumes that larger parcels (40-acres +) will receive a 100 percent density bonus under the Public Values Incentive Program for utilizing a publicly-managed community sewage treatment system (CSTS) or a publicly-managed individual sewage treatment system (ISTS). Implementation of Natural Area Corridors will also preserve a linear

network of protected open space and quality natural resources through Planned Unit Development (PUD) cluster subdivisions.

For all three scenarios, non-residential parcels (e.g. regional parks, commercial sites, etc.) were not considered to have residential development potential. Also, it was assumed that residential parcels less than five acres in size could not subdivide any further. Data from the 2003 Credit River Township Growth Area AUAR was used in each scenario for the Credit River portions of the study area. Staff verified development eligibility for each parcel in the DAP study area (excluding Credit River Township) using 2007 air photographs and wetland and hydric soil coverage. For Scenario #3, the 100 percent density bonus was applied to 179 parcels, all 40 acres or greater in size.

Build-Out Scenarios: Total Number of Lots	Existing Lots* 2008	Scenario #1 Adopted 2030 Plan	Scenario #2 Build-Out @ 2.5 Acres	Scenario #3 Build-Out @ 2.5 Acres + Bonus
Cedar Lake Twp (pt)	666 lots	989 new lots	3,427 new lots	5,027 new lots
New Market Twp (pt)	802 lots	1,568 new lots	2,513 new lots	3,652 new lots
Spring Lake Twp (pt)	800 lots	2,694 new lots	2,694 new lots	3,846 new lots
Credit River Twp (pt)	897 lots	800 new lots**	800 new lots**	1,592 new lots
<i>Sub-total</i>	<i>3,165 lots</i>	<i>6,051 new lots</i>	<i>9,434 new lots</i>	<i>14,117 new lots</i>
Existing lots*	3,165 lots	3,165 lots	3,165 lots	3,165 lots
Total Lots at Build-Out	n/a	9,216 total lots	12,599 total lots	17,282 total lots

* Existing number of residential lots based on 2008 Scott County septic records

** Source: 2003 AUAR for Credit River Township Growth Area

Population (assumes 2.5 pop/hh)	2008 Population (estimated)	Scenario #1 Adopted 2030 Plan	Scenario #2 Build-Out @ 2.5 Acres	Scenario #3 Build-Out @ 2.5 Acres + Bonus
Cedar Lake Twp (pt)	1,665	4,138	10,233	14,233
New Market Twp (pt)	2,005	5,925	8,288	11,135
Spring Lake Twp (pt)	2,000	8,735	8,735	11,615
Credit River Twp (pt)	2,243	4,243	4,243	6,223
Total Population at Build-Out	n/a	23,040	31,498	43,205

According to this build-out scenario analysis and looking at past growth trends in the DAP study area, it appears that the estimated population forecast for the DAP study area in 2030 is 20,000 residents, and the approximate time period when the study area reaches full build-out (with 31,500 residents) would occur in the 2060s. These estimates assume that the average annual new housing growth that occurred in the study area from 1990 to 2006 will be the same incremental growth in the future. However, given the more recent downturn in rural platting and home site development and projected slow recovery to the recession of the late 2000s, the housing demands in the DAP study area may never return to these sustained growth rates, which would push the full build-out period to much later in the century.

II. Potential Impacts

A. Land Use, Land Development & Land Cover

The predominant existing land uses in the DAP study area are agricultural and single-family rural residential uses. There are a few scattered rural business and institutional uses located at major crossroads. From 2000 to 2009, the four eastern townships in the DAP study area experienced the bulk of the county's rural residential growth. This concentration of housing growth can be attributed to the DAP study area's desirable rolling topography, scattered woodlands, pocket lakes and wetlands, proximity to regional parkland and open space, location within desired south metro school districts, and adjacency to Interstate 35. The southern portions of the DAP study area still retain large agricultural parcels and farming remains an important land use activity.

Most of the larger, undeveloped parcels in the study area guided for the first stage of rural residential growth (at a density of 1 home per 2.5 acres) under the *2030 Comprehensive Plan Update* are currently zoned RR-1, Rural Residential Reserve – which only allows a density of 1 home per 10 acres (non-wetland). There are two options to upzone properties in this staged growth area to allow this additional density: on a parcel-by-parcel basis in response to landowner initiation of a rezoning request; or on an areawide basis where all eligible parcels are rezoned at once. In consultation with the Townships, staff assessed these two options and determined that the parcel-by-parcel basis, at the time a landowner initiates a development proposal, would ensure that compliance with the mitigation strategies recommended in this study could be reviewed and applied in relation to each site's unique characteristics.

The *2030 Comprehensive Plan Update* calls for a more innovative option to private development by providing incentives to developers in exchange for public values. These public values include publicly managed utilities, roadways, parkland and trailways, regional stormwater facilities, natural resource conservation, wetland restoration, and sustainable development practices. By providing all or some of these public values, developers are eligible for additional density or more design flexibility under a negotiated planned unit development (PUD) process. Because the DAP study area is targeted for most of the county's future rural growth and contains many of these pre-identified public values, it is likely that the PUD option will be applied regularly during the build-out of the area.

The University of Minnesota Center for Rural Design prepared three maps that highlight the key land use and land cover characteristics of the DAP study area. Figure 2 shows the study area's land cover based on the Minnesota Land Cover Classification System (MLCCS). Figure 3 shows the area's topographic features using 20-foot contour lines over three-dimensional hill-shade. Figure 4 illustrates past platting activity that has occurred in the study area by showing parcel sizes and densities.

B. Soils & Geology

The study area consists of a variety of soil types. Hayden is the most prevalent and wide-spread soil type found within the study area, with Lester, Webster, and Houghton also very common. There are soil types that meet the criteria of hydric soil, or soil types that were developed under wet conditions or are periodically wet. The location and extent of hydric soils in the study area is shown in Figure 5. Hydric

soils are a determining factor in rural development densities due to their inability to properly infiltrate water from septic drainfields.

Beneath the surficial material is a series of layered bedrock formations. The uppermost bedrock formations are primarily sedimentary rock. Underlying the sedimentary rock formation is the Keweenawan Subgroup, which is related to the Midcontinent rift. Figure 6 shows locations of bedrock formation in the study area, with the Prairie Du Chien being the uppermost bedrock in the study area.

C. Fish, Wildlife & Ecologically Sensitive Resources

There are significant high-quality natural resources and critical habitat areas in the DAP study area. Continued residential growth could impact these important resources. Figure 7 shows a compiled inventory of known sensitive species of communities, unique natural communities, and medium- and high-quality natural communities in County-defined Natural Area Corridors within the study area. These linear corridors – based on MLCCS data along with information on critical ecological areas identified by Minnesota Department of Natural Resources – were adopted in the 2030 Plan and were used extensively in the DAP planning process.

The DAP study area contains wildlife, wildlife corridors, and natural communities that may be disturbed with future development. The wooded area, grassland, and cropland are habitat primarily used by wildlife such as deer, coyote, raccoon, fox, ground squirrels, pheasant, quail, hawks, turkey, a variety of songbirds, and many other small mammals. The Credit River, Vermillion River and wetland complexes are habitat for fish, amphibians, reptiles, and wildlife, such as herons, frogs, waterfowl, and songbirds. One known threatened species, the Blanding’s Turtle, is found in sections 17 and 21 of Credit River Township.

Residential development will unavoidably eliminate a certain amount of habitat for wildlife. Scott County will encourage future developers to preserve the wildlife habitat as an amenity through the Natural Area Corridors and Public Values Incentive Programs. Future developments may utilize the wildlife habitat areas as trails and open spaces to retain the rural character of the development.

As required in the Scott County Zoning Ordinance, a Resource Management Plan (RMP) will be prepared for all developments greater than five lots. While the RMP does not specifically address wildlife and fish resources, it does provide the County an opportunity to quantify the natural resources within a project area and ensure that developments are designed to minimize impacts. Future development will be designed or encouraged to preserve woods, wildlife corridors, wetlands, and natural areas to minimize displacement consistent with regulations in place at time of development.

Scott County currently requires that a tree preservation plan be submitted for review on all residential subdivisions of five or more lots of five acres or less.

Major Unique Resource/Critical Habitat and Scenic Area

One major unique natural resource area, Doyle-Kennefick Regional Park, has been identified within the DAP study area. Doyle-Kennefick Regional Park currently consists of 490 acres located in Section 11 of Cedar Lake Township. In the future the park is planned to be 914 acres which will include boundaries running from St. Catherine’s Lake on the north, to Lennon Lake at the south end of the park. Doyle-Kennefick has a high degree of biological diversity including rolling oak woodlands, degraded oak

savanna, a very large and diverse wetland and open water system, cropland, pasture land, farmstead, and second growth deciduous forest. Based on the MLCCS inventory, generalized land cover within Doyle-Kennefick Regional Park consists of cultivated areas (251 acres or 27 percent), forested areas (168 acres or 18 percent), herbaceous (upland and lowland grasslands) areas (311 acres or 33 percent), woodlands (20 acres or 2 percent), and open water (149 acres or 16 percent). Less than 2.5 percent of the land cover is comprised of artificial surfaces and associated areas.

Doyle-Kennefick has significant wildlife habitat value with 650 acres of natural lands, 300 of which are native plant communities. The wildlife habitat hub is adjacent to or buffers three Regionally Significant Ecological Areas (RSEAs) and is near five additional RSEAs and a Wildlife Management Area. A Regionally Significant Terrestrial Species route traverses the park area, connecting two of the RSEAs. Several significant features are documented by the Minnesota Department of Natural Resources as occurring within or near the park, including Minnesota County Biological Survey sites (mesic oak forest), Blanding's Turtles, Sand Hill Cranes, and Bald Eagles. Preliminary breeding and migratory bird surveys, waterfowl surveys and casual observations conducted by the County indicate a minimum of 104 bird species using the park, with highlights including Cerulean Warblers, Sand Hill Cranes and Bald Eagles.

The Minnesota Department of Natural Resources also manages the following wildlife and fishery properties within the DAP study area:

- Bradshaw Lake WMA – sections 5, 8, 9, 10, 15, and 16, Cedar Lake Township;
- Spartina WMA – section 11, New Market Township;
- St. Patrick WMA – sections 17, 18, Cedar Lake Township; and
- DNR Fisheries Land – section 36, Spring Lake Township near McMahan Lake & section 1, 2 Cedar Lake Township near St. Catherine's Lake.

D. Surface Water & Groundwater Resources

There are numerous lakes and water basins within the study area that could be impacted due to continued residential growth. As shown on Figure 8, some of the larger named lakes and streams include: Fish Lake, Cynthia Lake, McMahan Lake, St. Catherine Lake, Lennon Lake, Cleary Lake, Rice Lake, Little Cedar Lake, Credit River, Porter Creek, and Vermillion River. The MnDNR, the Minnesota Pollution Control Agency (MPCA), and the Metropolitan Council monitor these water bodies for fisheries success and water quality. The study area also contains numerous wetlands and areas of drained wetlands (see Figure 8).

The Prairie du Chien bedrock formation underlies most of the DAP study area. The Prairie du Chien-Jordan aquifer is the main supply of groundwater for agricultural and domestic uses in the study area.

E. Watershed Management & Shoreland/Floodplain

Within the DAP study area, surface water management is provided by three watershed jurisdictions: Scott Watershed Management Organization (WMO), Prior Lake-Spring Lake Watershed District, and the Vermillion River Joint Powers Organization (see Figure 9 for watershed jurisdiction boundaries). Scott County regulations are required to be consistent with the adopted plans for each corresponding water management jurisdiction.

Numerous parcels within the study area are within the Shoreland Overlay zoning district and delineated 100-year floodplain areas for various water features. The Shoreland Overlay zoning district applies to all land within 1,000 feet of a DNR protected wetland or lake and within 300 feet of a river, stream or tributary. All parcels within the Shoreland Overlay district must follow the standards and meet the required setbacks from DNR protected water bodies set in Chapter 70 of the Scott County Zoning Ordinance. Land within a 100-year floodplain overlay district must follow the standards set in Chapter 71 of the Zoning Ordinance.

As per Chapter 6 requirements in the Zoning Ordinance, the Resource Management Plan (RMP) for each project within the DAP study area shall identify the Normal Water Level and 100-year flood elevation for WCA wetlands and water bodies. The Ordinary High Water Level (OHWL) and 100-year flood elevation must be identified for all DNR protected wetlands, watercourses, and water bodies. The boundaries of all wetlands and floodplains must be identified.

F. Erosion & Sedimentation

Development in the DAP area will result in grading for houses, driveways, roadway systems, and stormwater ponds. Scott County regulations prevent future development and landowners from conducting land disturbing activities that cause erosion or sedimentation that might result in damage to water or soil resources or off-site impacts. As a part of the County Grading Permit, all development will follow the conditions set in Zoning Ordinance, Chapter 6C - Erosion and Sediment Control Standards, and will implement all construction methods and soil conservation practices for erosion and sediment control as per the MPCA BMP Manual – Protecting Water Quality in Urban Areas and the BSWR Minnesota Construction Site Erosion and Sediment Control Handbook Standards. Developers must complete an Erosion and Sediment Control Plan subject to review and approval by Scott County. The Erosion and Sediment Control Plan will require an explanation of slopes, soil classification and location, critical erosion or sedimentation areas, and proposed areas of disturbance. An explanation of type, location, quantity, and maintenance plan of Best Management Practices that will be put in place to avoid erosion, including explanation of how grading on erodible soils will be avoided. The Erosion and Sediment Control Plan requires an effective plan for during and after construction erosion mitigation measures.

G. Water Quality

Two sub-studies have been completed to assess the impact of additional development in the DAP study area on water quality and provide recommendations for mitigation strategies. The Stormwater and Groundwater studies can be found in Attachments A and B, respectively. The following provides a summary of each study.

Stormwater Study

To assess the potential impacts to critical resources from additional storm water runoff from the residential density options in the study area, staff from the County's Natural Resources Department worked with Barr Engineering to undertake two studies, one at the micro level and the other at the macro level.

The macro level study focused on the rural trunk storm water system in the DAP area. Currently, there are four county ditches in the study area – Ditch 4 through portions of Credit River Township; Ditch 12

through portions of the Vermillion River in New Market Township; Ditch 6 in the northwest corner of New Market Township; and Ditch 5 covering portions of Porter Creek in Cedar Lake Township. There are also a number of DNR public waters and private drainage systems (ditches and tile lines) in the DAP study area. The Barr study addressed the following components:

- Define the trunk system – e.g., what parts of the system need to be under public purview, considering that some parts are already “public” (DNR public waters, county ditches);
- Describe the management needs for the trunk system (e.g., operation, maintenance); and
- Discuss how the management efforts could be funded.

The micro level study focused on “on-the-ground” best practices for storm water management. The case study compares two approaches to managing on-site run-off for a hypothetical subdivision on the same piece of property: conventional practices for 2.5 acres lots vs. Low Impact Development (LID) practices for clustered development.

The results from both of these studies can be reviewed in Attachment A-1 and A-2.

Groundwater Study

Scott County and the participating townships are committed to working with adjacent communities in the study area to address the need for a sufficient supply of water while protecting natural resources in the area. This commitment was formalized in a 2003 Memorandum of Agreement among MnDNR, Metropolitan Council, Dakota County, Scott County, Credit River Township, and neighboring cities and Sioux Community (see appendix H).

Impacts to Groundwater Supply from Development of the Detailed Area Plan Study Area (Attachment B), was completed to assess the impacts that different development densities will have on groundwater in the DAP area and surrounding communities. The groundwater model predicted the impacts to groundwater and surface water (Savage Fen, Vermillion River, and Credit River). The model includes impacts to the surficial aquifer, the Prairie Du Chien aquifer and the Jordan aquifer. In addition, the model included drawdown under average pumping, peak pumping, and peak pumping with conservation.

The study concluded that complete build-out of the DAP study area at 2.5-acre densities has little effect on groundwater supply. On average, the model predicts that under this scenario, groundwater recharge will increase by 1.6 inches in the DAP area. This increase in recharge is primarily a function of reduced runoff from agricultural land and a greater potential for water to infiltrate beyond the root zone of agricultural crops. Recharge also increases as a result of more septic systems. The potential increase in recharge as a result of 2.5 acre density development may actually help reduce drawdowns caused by increased municipal pumping.

The study also found that most of the predicted drawdown in the DAP area is a result of increased pumping by the municipalities. The cone of depressions from municipal pumping extends great distances into the DAP area. For this study, a well spacing of ½ mile was assumed for new municipal wells. A greater well spacing may help to alleviate the drawdown by reducing well interference.

The drawdown created by increased pumping in the municipalities may interfere with existing shallow wells and possibly new wells drilled in the Prairie Du Chein. This concern was discussed in the Credit River AUAR. The Credit River AUAR recommended as a mitigation measure that Scott County require larger developments with a community sewage treatment system should also be required to construct a

community water supply system with oversight by the Department of Natural Resources (DNR) and the Minnesota Department of Health (MDH). Community water supply systems may provide more protection for the aquifer in terms of reducing the potential for contamination and provide Homeowner's associations a mechanism for conservation.

A reduction in stream baseflow, or streamflow recharge from groundwater, to the Credit and Vermillion rivers was observed for all model simulations. The groundwater model shows a strong connection between the bedrock aquifer and the surficial aquifers. Because of this connection significant drawdowns are observed in the surficial aquifer resulting in reduced baseflow. Further evaluation of the connection between the bedrock and surficial aquifers may be necessary to fully understand the potential reduction in baseflow as a result of increased pumping.

One big issue raised by staff from municipalities that surround the DAP study area was the potential impact the proliferation of shallow wells will have on municipal well interference, and anticipated well interference claims. These municipalities recommended that larger developments be served by community wells under an appropriation permit from the Minnesota Department of Natural Resources and such wells and pumps be set at levels to deter municipal well interference. It was further recommended that smaller developments not served by a community well should still be required to have individual wells and pumps set at levels to deter interference.

To help residents, developers, builders and well drillers learn more about the identified impacts to the aquifers, an on-line interactive mapping application was created. Titled the *Scott County Geologic Atlas/Groundwater Impact to DAP Study*, the interactive map is available on the Scott County website (www.co.scott.mn.us).

H. Sanitary Sewer

The DAP study area is currently not (nor planned to be) serviced by municipal sanitary sewer. Therefore, development within this area will be serviced by private or community sewage treatment systems. All individual sewage treatment systems (ISTS) are required to meet the standards set forth in Scott County's Individual/Community Sewage Treatment System Ordinance No. 4. The standards require acceptable treatment systems and a primary and alternate drainfield site for each lot, as well as size requirements and setback requirements from adjacent lots, wells, and water bodies. Scott County has developed an ISTS maintenance program to ensure existing systems are properly maintained in accordance with Metropolitan Council requirements and Minnesota Pollution Control Agency (MPCA) Rule 7080. The County's Environmental Health Department notifies homeowners every three years unless verification is received that their septic tank has been recently inspected/pumped. If septic systems are found to require repair or replacement, a reasonable timeline for conformance is established based on the potential impact to public health or safety and state laws.

Community Sewage Treatment Systems (CSTSs) must also conform to the Scott County Individual/Community Sewage Treatment System Ordinance No. 4. Scott County considers CSTS systems as a public value and, as such, it offers developers the ability to get more residential density if a publicly managed CSTS is used to serve the development. The County provides this incentive because of the advantages of a properly managed sewage treatment system over the uncertainty of maintenance of private individual systems. These advantages include better use of limited land when home lots are

clustered, economies-of-scale to cover costs for roads and other infrastructure, and professional maintenance.

In Scott County, CSTSs are managed by the Township through establishment under State law of a Subordinate Service District. Homeowners hooked up to a CSTS pay a monthly service fee that covers usage fees and also helps finance future replacement of the system. Subordinate Service Districts grant the townships authority to assess properties within the district if a property owner fails to pay these monthly service fees. Currently, there are five developments served by an operational CSTS in the study area: South Passage, Monterey Heights, Stonebridge, Territory (all in Credit River Township), and Ben's Bay (Spring Lake Township). Two developments have received preliminary plat approval with a planned CSTS: Hillcrest and St. Catherine's on the Lake (both in Cedar Lake Township).

Scott County currently requires a permit for all CSTSs (regardless of size) and prohibited performance based systems. In 2008, the MPCA made rule changes where they would review and permit all Type I, II, and III (performance based) systems designed to manage flows above 10,000 gallons per day. In light of these changes, draft amendments to the Scott County Individual/Community Sewage Treatment System Ordinance No. 4 would allow - and defer to the MPCA for permitting - both standard and performance-based CSTS systems larger than 10,000 gallons as long as they utilized standard drainfield sites. For CSTS systems smaller than 10,000 gallons, Scott County will start allowing performance-based systems that include a standard drainfield site. These amendments are anticipated to be incorporated in early 2010.

The *2030 Comprehensive Plan Update* promotes another emerging approach to managing sewage from homes in rural developments. This approach promotes developments with a collection of on-site ISTS that are monitored, pumped and maintained by a subordinate service district, rather than a private individual. This type of publicly-managed ISTS development is seen as a public value as it ensures on-going maintenance of private systems.

I. Traffic

The DAP study area consists of a system of local roads (under township planning, construction and maintenance jurisdiction), collector and minor arterial roads (under county jurisdiction), and principal arterial roads (under state jurisdiction). Anticipated growth in the study area will have impacts on all three levels of roadway jurisdiction and functional classification.

With the major growth anticipated county-wide, the Transportation chapter of the *2030 Comprehensive Plan Update* emphasizes the need to preserve transportation corridors to accommodate future travel demands. Proper preservation requires an understanding of the long-term function of the corridor to correctly make current decisions related to access and intersection spacing, supportive road networks, and appropriate land uses. In recognition of this need, Scott County became the first county in the Twin Cities metro area to forecast traffic estimates beyond 2030 – to a model forecast for 2050 (see Attachment G for supporting modeling data).

The 2030 forecast scenario was similar to Build-out Scenario #1 and based on densities as designated in the Metropolitan Council Regional Development Framework - where portions of the study area build-out at a density of one dwelling unit per 2.5 acres; and others at a density of one dwelling unit per 10 acres. The model also assumed certain regional roadway assumptions consistent with the Council's Transportation Policy Plan and selected county road improvements either programmed or identified

under the current plan. The 2050 forecast scenario was similar to Build-out Scenario #2 and based on the premise the DAP study area will be fully developed at a density of one dwelling unit per 2.5 acres.

Based on these countywide forecasts, a Future Functional Classification Map was developed for the system. Figure 10 shows the County's Future Functional Classification System for the DAP study area, along with estimated vehicle daily traffic forecasts in the years 2030 and 2050. The Future Functional Classification Map shows both TH 13/CSAH 17 and CSAH 8 in the study area need to be upgraded and preserved as future principal arterials. Segments of both of these corridors show signs of congestion based on 2050 daily traffic forecasts. This determination has significant implications for future access and land use decisions along these two important road corridors and was considered during the layout and intersection of each township's planned local road map.

CSAH 91 and County Road 81 are identified as future minor arterials moving traffic north-south and east-west through the study area. Both CSAH 23 and 27 take on more importance as arterial roadways that will connect Savage and Prior Lake to Elko New Market and points south. CSAH 27 shows significant traffic volume increases by 2050. Again, the importance these road corridors will have on the countywide system in the future was considered during the layout and intersection of each township's planned local road map.

Within this regional and county context, this DAP planning process was focused on more detailed road planning at the local level. The Townships of Cedar Lake, New Market, and Spring Lake undertook a traffic study based on the planned change in residential density to address safety and capacity. The study included identifying locations for future township collector roads, criteria for access spacing and lane configuration for local roads, criteria for intersection location and design at arterial roads, and funding mechanisms for intersection improvements. The goal was to establish a local *street* network that provides access to individual lots and subdivisions, and a local *collector* network that connects neighborhoods to the wider county and regional system.

The findings of this study (see Attachment C for the complete report) consist of:

1. A map of the future Township Collector and Connector Roads (Attachment C, Figure 2).
2. A map of future intersection improvements (Attachment C, Figure 2).
3. Suggested policies for the design and implementation of Collector Roads, Connector Roads, intersection improvements and other elements of the Transportation Detailed Area Plan.
4. Cost estimates for future intersection improvements (2009 dollars).

J. Housing

Homes in the DAP study area are almost exclusively single-family detached on lots 2.5 acres or greater. This housing profile is a result of past real estate market trends and adopted County zoning and septic regulations that allowed higher rural densities. The DAP study area has become a desirable pocket of the Twin Cities metropolitan region for executive home development due to its natural setting and topography, close proximity to Interstate 35, quality school districts, and short commute time to the job centers in the south metro area.

According to the 2006 *Comprehensive Housing Needs Assessment for Scott County, Minnesota* prepared by Maxfield Research, Inc., the four townships in which this DAP study area is located had a median household income of \$91,700 in 2005. This is compared to a median household income of \$75,600 for

Scott County and \$62,500 for the entire metropolitan area. The median resale price of existing single-family homes in 2005 was \$482,500. The 2006 report states that the study area will continue to attract executive home development in the future marketed to higher-income households.

The DAP study area has a relatively new housing stock. In 2000, 75 percent of the single-family homes in the four townships of Cedar Lake, Credit River, New Market, and Spring Lake were less than 30 years old. Since 2000, over 900 additional homes have been constructed within the four townships. This has resulted in a stable and attractive housing stock for residents and homebuyers that require few major renovations or maintenance projects.

Due to the abundance of relatively new, higher-end housing and high land values within the study area - coupled with a general County policy of encouraging affordable and lifecycle housing to locate in the cities where there is existing infrastructure, transportation options, jobs and resources - there is little affordable or lifecycle housing in the DAP study area. This is an issue that surfaced during the County's 2030 planning process and resulted in renewed interest by the County and townships to explore options to expand housing choices in the unincorporated area.

Another housing issue that surfaced during the 2030 planning process was the growing trend of incorporated energy efficient and "green" design practices into new home construction. Spurred by the recent increases in energy prices, a growing number of consumers are turning to building technologies that save energy while also cutting down on environmental pollutants. Green houses include building practices that make minimal disturbances to the land they are built on; make efficient use of materials, water, and energy; and promote healthy indoor air quality. According to the National Association of Home Builders, the green segment of the construction industry is expected to climb from 2 percent of all housing starts in 2005 to between 5 and 10 percent in 2010.

This DAP study recommends two low-impact options for Scott County and the townships to expand its range of housing choices and promote "green" housing development in the study area: 1) promote lifecycle and energy efficient/green building through the Public Values Incentive Program; and 2) adopt an Accessory Dwelling Unit ordinance. These recommendations are described below in more detail:

- 1) **Public Values Incentive Program:** As recommended in the Scott County *2030 Comprehensive Plan Update*, the County should take a more active role in promoting lifecycle housing in the rural areas by implementing the Public Value Incentive Program in return for additional housing types and more environmentally friendly development in new subdivisions. The Public Values Incentive Program could allow a developer to produce a percentage of attached or detached townhome units or homes constructed to meet LEED or Minnesota Green Star building certification standards in return for additional density or more flexibility in zoning regulations such as lot sizes, setbacks, etc.

The *2030 Comprehensive Plan Update* defines Livable and Sustainable Neighborhoods worthy of a density bonus as "Providing a variety of housing types such as lifecycle and senior housing, utilizing environmentally friendly building designs, utilizing on-site alternative energy sources and water and energy conservation practices, and/or implementing other sustainable development and active living design practices as defined in the Scott County Zoning Ordinance." As part of the Planned Unit Development (PUD) and Public Values Incentive Program, the Zoning Ordinance will need to be updated to clarify these options and implement a more negotiable, collaborative development track.

- 2) **Accessory Dwelling Units:** An Accessory Dwelling Unit (ADU) is commonly defined as a small, self-contained residential unit that provides complete independent living facilities for one or more persons separate from a primary dwelling unit on the same parcel. ADUs are more commonly found in the east and west coasts, but are also allowed in many communities within the Twin Cities metropolitan area. As a response to encouraging other housing options in the rural area, Scott County has prepared an update to the County Zoning Ordinance that will allow the creation of Accessory Dwelling Units. The intent of the Ordinance is to provide additional housing opportunities for large or extended families, family members infirmed or with disabilities, and/or elderly family members with a need for semi- independent living situations. ADUs have been found to be a compatible secondary or subordinate use to single-family dwellings that under certain performance standards will not negatively alter the character of the surrounding neighborhood.

K. Recreation

At the local level, Spring Lake Township is the only one of the townships in the study area with an adopted Parks and Trails Plan. Adopted in 2006, the Township's parks and trails plan describes the system to be developed in the community over the next 20 years. The plan includes a needs analysis based on expected population growth and typical park and trail needs, identification of future locations for active community parks, nature parks and trails, estimated costs of the proposed system, and park dedication fees and ordinance.

At the regional level, the Scott County *2030 Comprehensive Plan Update* identifies a search corridor for a regional trail through the DAP study area. The general intent of the regional trail is to connect Murphy-Hanrehan Regional Park Reserve, Cleary Lake Regional Park, Doyle-Kennefick Regional Park, and Cedar Lake Farm Regional Park, although no exact alignment was proposed. The entire trail will likely be developed in segments and may take many years to complete. Due to the lack of existing corridors to locate such a trail, the desire to provide a connection to natural features and keep the trail off-road as much as possible, and the anticipated development in the study area, Scott County performed a sub-study as part of the Rural Residential DAP to identify two potential trail alignments.

Rural Trail Policy Discussion/Public Involvement

As part of the sub-study, Scott County Community Development hosted a rural trail policy focus group in December 2008 to gather public input from residents of the DAP study area on what type of policy considerations should be made in determining desired trail alignments. Approximately sixty residents attended the focus group. Policy topics considered included: reasons/basis for trails, trail alignments and potential impacts to adjacent land uses, acquisition strategies, trail design and construction, and trail operations and management.

As part of a group exercise during the focus group, participants were asked to draw two trail alignments through a segment of the study area connecting Cleary Lake and Doyle-Kennefick Regional Parks. They were also asked to think about important policy considerations based on their trail alignments and desired uses. This exercise generated a lot of discussion and forced participants to think about the difficulties with locating a trail through both developed (existing rural neighborhoods with 2.5-acre lots) and undeveloped areas. It also allowed opponents and proponents of trails to debate the need/value of trails in a rural setting.

In groups of ten, participants prepared ten potential trail alignments for policy considerations with which many similarities existed. The two most common alignments were: 1) an overland trail in a natural setting that connected lakes and wetlands through undeveloped parcels avoiding (as much as possible) existing homeowner properties; and 2) a road-based trail that parallels County Roads 68 and 87. Other observations from the meeting include:

- People were mixed in support for trails in rural Scott County.
- Residents in Grey Fox Estates generally supported a trail connection to Cleary Lake Regional Park and envisioned this trail segment developed before the rest of the trail.
- Overland trails were preferred; however phased trail or on-road temporary trails could work.
- It is generally acceptable to plan for an overland trail as long as landowner timeframes are considered.
- Traditional trail uses (walking, biking, etc) were supported. Other uses (cross country skiing, equestrian) and parallel trail sections could be provided, however they do not have to be provided for the entire length of the trail.
- People were attracted to trails along natural features such as water and forested areas.

The information and feedback gathered from the rural trail policy focus group were used to generate a policy document, titled *Scott County Rural Regional Trail Development & Design Guidelines*. These guidelines will be effective in all future regional trail planning efforts by applying consistent, but flexible, measures to each potential trail corridor. The guidelines will also benefit residents, landowners, and developers by providing a framework for what a proposed trail corridor will look like, how it will function, and how it will interact with adjacent land uses.

Trail Alignments

The guidelines were also applied to the subject regional trail segment in the DAP study area. Preferred and alternative trail alignments are shown for the proposed regional trail in Attachment D, along with a list of affected parcels. A preferred alignment is shown as a primarily off-road trail connecting to lakes, wetlands, Natural Area Corridors, and other quality natural resource features. An alternative alignment generally follows roadways and could be utilized for temporary trail sections between uncompleted segments of the preferred alignment.

A majority of the preferred alignment currently crosses through undeveloped private parcels. As part of the development process, the trail corridor will be preserved through land dedication to Scott County. Along with the Natural Area Corridors and Public Values Incentive Programs, density bonuses may be provided in exchange to help protect the trail corridor, and potentially construct portions of the trail for integration into neighborhoods.

L. Rural Character

A major increase in development (as projected in the DAP study area) can lead to a change in the landscape by filling in previous open space or less dense areas with more roads, homes, pole sheds, and residential activities. The change in landscape can also lead to a change in the character of the area, altering the way people perceive the area looks, feels and functions. These visual and social changes can be mitigated through implementation of simple design practices within the subdivision and home building processes.

One of the qualities of the study area that makes it unique today is its rural character within a metropolitan area. In order to discuss ways to help retain this rural character, Scott County Community Development staff, with assistance from the University of Minnesota's Center for Rural Design, hosted a rural design workshop. Focusing on the DAP study area, the purpose of the workshop was to provide an opportunity for residents to consider the study area's unique landscape features and help prioritize rural development design guidelines related to future development.

The public workshop took place at Spring Lake Townhall in Spring Lake Township on December 4, 2008. The workshop drew approximately 40 people interested in the rural character of the DAP. The workshop combined an introductory image preference survey, Rural Character Units GIS mapping review and questionnaire, a presentation on rural design elements and two questionnaires: one seeking input on rural character in the DAP and the second seeking input on the overall perception of the public workshop itself.

The results and a more detailed summary of the Rural Design process can be found in Attachment E, *Scott County: Defining the Rural Character for the Detailed Planning Area*.

M. Public Services & Facilities

As documented in this report, the three alternative development scenarios show today's population of 8,000 residents growing to 20,000 to 40,000 residents living in the DAP study area at full build-out. This future population will have considerable impact on the delivery of public services and facilities in the study area.

Currently, the four participating townships provide the following services and facilities to study area residents: local road planning, design, driveway access, construction and maintenance; storm water pond and infrastructure management and maintenance; election and polling services, serve as RGU for Wetland Conservation Act rules. Three of the townships own and operate town parks; one maintains active athletic fields for area sports association use. Three own and operate town hall buildings. Three of the townships operate community sewer treatment systems for larger residential developments under a Subordinate Service District (SSD).

Scott County and its regional partners currently provide the following services and facilities: county road planning, design, driveway access, construction and maintenance; law enforcement and 911 services; regional park and trail operations; planning, zoning, septic and building permit services; health and human services, and library operations, materials, and services.

Three school districts serve the study area's school-age population (see Figure 11). The school districts likely to experience the most noticeable impact due to a change of density in the Rural Residential Growth Staged area are Lakeville and Prior Lake – Savage. At full build-out, the number of new lots (which is roughly equivalent to new households given that the zoning only allows single family detached units) added to the district from development in portions of Credit River and New Market Townships ranges from 2,260 to 2,980. The number of new households in Spring Lake Township served by the Prior Lake – Savage School District at full build-out range from 1,690 to 2,620. With an average of 0.7 school-age children per household, this equates to approximately 1,580 to 2,080 new students in the Lakeville School District; and 1,180 to 1,830 new students in the Prior Lake –Savage School District at full build-out (over the next 40 to 50 years). Scott County is actively communicating with these two districts to

provide up-to-date building and proposed project information in a timely manner which will allow them to plan accordingly for the projected increase in students in both the short- and long-term.

Build-Out Scenarios: Total Number of Lots (By School District)	Existing Lots 2008	Scenario #1 Adopted 2030 Plan	Scenario #2 Build-Out @ 2.5 Acres	Scenario #3 Build-Out@ 2.5 Acres + Bonus
Jordan	272 lots	303 new lots	1,226 new lots	2,323 new lots
Lakeville	1,445 lots	2,264 new lots	2,516 new lots	2,978 new lots
New Prague	723 lots	968 new lots	4,151 new lots	6,200 new lots
Prior Lake - Savage	724 lots	1,694 new lots	1,793 new lots	2,616 new lots
<i>Sub-total</i>	3,165 lots	6,051 new lots	9,434 new lots	14,117 new lots
Existing lots	3,165 lots	3,165 lots	3,165 lots	3,165 lots
Total Lots at Build-Out	n/a	9,216 total lots	12,599 total lots	17,282 total lots

The five surrounding municipalities (Prior Lake, New Prague, Savage, Elko New Market, and Lakeville) currently provide the following services and facilities to DAP area residents: contracted fire services, athletic fields; recreational programming (many in partnership with school districts and community education programs), library buildings, and recycling drop-off facilities. These municipalities have different relationships or arrangements with the townships, ranging from fire service contracts to orderly annexation agreements to joint wellhead protection planning.

In the summer of 2009, county staff conducted interviews with municipal and school district staff to assess what future arrangements or relationships would be beneficial to address the potential impacts of continued rural residential growth in the study area. Below are key findings from these interviews:

- **Communications:** There is a recognized need for more regular, formal communication between the cities and townships in the DAP study area to discuss various topics that will arise in the future. It was suggested that County staff take a lead role in organizing and facilitating these discussions.
- **Parks and Recreation:** One of the biggest and most commonly identified impacts by municipalities was on city park facilities and recreation programming. In one case, nearly 20 percent of the participants in joint city-school district operated recreation programming were township residents and, while these township residents cover some of the cost through school tax levies, there remains a cost burden inequity between city and township residents in the on-going cost for park facility maintenance and program administration. Some possible solutions to this impact ranged from the township or County providing and maintaining active park facilities within the study area, to establishing a sliding registration fee for city and township residents participating in municipal programs.
- **Municipal Well Interference:** Another common impact identified by municipal staff was that continued rural residential housing on private wells in the study area could create more well interference claims against the cities.
- **Transportation:** Municipal staff emphasized the need for continued coordination on long-term transportation issues between the cities, County and townships because some routes in the study area serve as critical links between municipalities.

- **Annexation:** Some municipalities expressed interest in continued discussions on orderly annexation issues with the neighboring townships as a means to plan for orderly growth and provide more predictability for township landowners.
- **Schools.** The build-out analysis done for the study area – examining potential densities parcel-by-parcel – should be shared with each school district serving the study area, as they look at future enrollment projections and attendance boundary studies.

N. Fiscal Impact of Rural Development Pattern

Guiding the DAP study area for an ultimate build-out of rural residential development has a significant impact on public finances, public investments, and property tax rates. Over the past decade, there have been three relevant studies on the fiscal impacts of growth and land development patterns - one that included Scott County as a case study. Below is a summary of key findings from these three studies.

In September 1999, the Minnesota Department of Agriculture published a report titled *Cost of Public Service Study*. The study examined the fiscal impact of new residential development on a selected group of rural Minnesota counties—including Scott County. The key finding from this report found that new residential development tends to be more fiscally advantageous to local governments when it occurs within or adjacent to established urbanized areas than when it occurs in outlying undeveloped rural areas. Here is a list of other key findings:

- Agriculture is an important factor in the fiscal health of most rural counties, townships and school districts, because it contributes more in taxes than it requires in services.
- New residential development can have a negative fiscal impact on townships that lose a major part of their agricultural tax base and must also provide higher levels of service.
- Due to the structure of Minnesota's local governments, the fiscal impact of new residential development on counties is usually enhanced when it occurs within cities. This is because cities are generally able to provide the level of urban services typically demanded by new residents. However, there are some townships, primarily in the metropolitan area, that also offer urban-level services, and some cities in Greater Minnesota that lack urban-level services.
- County per capita road maintenance costs tend to decline as density, residential market value and percent of city residents increase.
- When townships reach a certain population level, their per capita road costs increase.
- New development within cities or adjacent areas often favorably affects the cost of water and wastewater services.
- Student transportation costs decline as residential densities increase and as land use patterns allow more children to walk to school.

In October 2001, the Metropolitan Council published a study titled *The Fiscal Impacts of Growth on Cities*. The study examined the costs of serving new development or redevelopment and the revenues they generate to calculate a net fiscal benefit. These net fiscal benefits were compared under two scenarios. One assumed growth would occur in a spread-out pattern (reflecting current trends). The other projected a more compact pattern that reflected a higher density, more intensive development pattern. The study took a case-study approach, looking at eight communities around the Twin Cities metropolitan area at different stages of development. This study found that compact housing development produces more net revenue per acre than spread-out housing development. Compact development is less costly to provide with municipal infrastructure such as streets, sewer and water

lines. Infrastructure costs ranged from \$10,000 to \$12,000 per unit for residential development with 2.5 acre lots (i.e., estate lots) to \$4,000 to \$5,000 for residential development with eight to nine units per acre (i.e., townhome lots).

In 2009, Embrace Open Space commissioned an economic study of home values in Hennepin County to quantify the financial impact of proximity to open spaces on the value of nearby single-family homes. This study found that an open space premium does exist when homes are located within 200 feet of neighborhood open space or within ½ mile of community or regional open space. However, this premium is not present for homes on large lots (1 acre or greater) or for homes in high-income neighborhoods. The study suggests important implications for long-term planning for future growth areas, such as the following:

- A commitment to preserve, acquire and maintain open space (both public and private) as part of future land use planning and zoning should be viewed as an opportunity to maintain property values and not entirely as a loss in tax base.
- Preserved open spaces can result in a more visually pleasing and inviting community atmosphere, which may translate into potential new residents recognizing a higher premium on the value of any property in the area.
- Homes on clustered residential lots backed up to open space have a higher open space premium than homes on larger lots with their own private open space

Results from these studies offer several important considerations for the future build-out of the DAP study area.

First, each of the municipalities around the DAP study area have rightfully recognized the high public costs and investments to extend municipal sewer and water infrastructure into the study area and, therefore, have established de facto “urban growth boundaries” for their cities through various long-term sewer and water infrastructure studies. The cities surrounding the DAP study area should continue to promote compact development within these boundaries as the most cost-effective, fiscally advantageous approach to urban growth.

Second, the four townships within the DAP study area should recognize that with increased rural density comes increased responsibility to provide a higher level of services and facilities either on their own or through partnerships and agreements with other service providers. Townships will need to take on more responsibility for planning, constructing, and maintaining local streets and collector roads, park facilities, community well and sewer services, and storm water management facilities.

Third, one of the most effective ways to manage the cumulative impacts increased housing has on the cost of services is to stage the development over space and time. Roughly one-half of the DAP study area is slated to open up for 1 home per 2.5-acre density under the County’s adopted *2030 Comprehensive Plan Update*; with the remaining half staying at a guided overall density of 1 home per 10 acres non-wetland. While this allows the County and townships to stage the overall build-out of the study area over space, it also allows those townships remaining at 10-acre densities (Cedar Lake, parts of New Market) *time* to further plan for this ultimate pattern.

Fourth, there will be enhanced value to both the County and townships if the future build-out pattern of housing in the DAP study area is primarily clustered and designed in a way that permanently preserves the defined Natural Area Corridors and unique environmental features in the study area.

III. Mitigation Recommendations & Action Plan

A. Mitigation Plan

The table that follows summarizes the potentially significant impacts as documented in this DAP and/or technical report attachments and proposed strategies the County and Townships shall undertake to mitigate these impacts.

Table A: Summary of Potentially Significant Impacts & Proposed Mitigation Strategies

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Land Use & Land Development</p> <p><i>New ways to review and guide private development will be needed to achieve the vision of the 2030 Plan within the DAP study area and ensure mitigation of potential impacts are met during the review process</i></p>	<p>The County will:</p> <ol style="list-style-type: none"> 1. Within the Rural Residential Growth Staged Area, respond to landowner-initiated requests to rezone to RR-2, Rural Residential Single Family District on a parcel-by-parcel basis as part of a development proposal as a way to ensure mitigation strategies are met. 2. Adopt a Planned Unit Development (PUD) ordinance to administer the public value incentive program and support integrated subdivision design in the study area. 3. Promote PUD and public value program through website, brochures and initial landowner discussions. <p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Consider converting the DAP study into a formal Alternative Urban Areawide Review (AUAR) for submittal to and review by state agencies to streamline environmental reviews for larger projects.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Fish, Wildlife, Sensitive Resources</p> <p><i>Wildlife habitat and high-quality natural resource areas could be impacted by unplanned rural residential development in the study area</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Actively promote clustering home sites away from mapped Natural Area Corridors and preserve these corridors through the public value incentive program and Planned Unit Development (PUD) process. 2. Continue to support policies in the comprehensive watershed management plans of the Scott WMO, Vermillion River JPO, and Prior Lake - Spring Lake Watersheds that promote wildlife habitat restoration and resource protection. <p>The County will:</p> <ol style="list-style-type: none"> 1. Adopt policies establishing criteria for holding and maintaining permanent conservation easements to protect Natural Areas. 2. Continue requiring Resource Management Plans for all subdivisions with five lots or more.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Surface Water Resources: Wetlands</p> <p><i>Wetlands could be impacted by unplanned rural residential development, including alignments of several infrastructure projects (roads, utility lines), slated for the study area</i></p>	<p>The County will:</p> <ol style="list-style-type: none"> 1. Enforce the development regulations pertaining to wetlands in Chapter 6 of the County Zoning Ordinance. 2. Promote wetland restoration through the public value incentive program. 3. Require wetland buffers and conservation easements around wetlands as land is developed. <p>The Townships will:</p> <ol style="list-style-type: none"> 1. Enforce the Wetland Conservation Act as the LGU of WCA, including reviews of determinations, delineations, exemptions, and no loss certificates. 2. Follow the sequencing standards of the Wetland Conservation Act Wetlands when development activities may impact a wetland. 3. Require a Wetlands Replacement Plan be prepared and properly administered for wetland areas that are determined to need replacement, and have the plan submitted to the LGU/ Scott Soil and Water Conservation District for review and approval.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Rural Trunk Drainage System</p> <p><i>Drainage systems in the DAP study area primarily consist of natural and artificial drainageways either designed and constructed for agriculture, or not designed at all. Currently, responsibilities for this drainage system are not well defined, except for road culverts, bridges and crossings; and County ditches. These systems have only a limited amount of capacity and occasionally need maintenance. Property damage or road problems could occur if capacity is exceeded or the system is not maintained.</i></p>	<p>The County will:</p> <ol style="list-style-type: none"> 1. Compile a map of the trunk stormwater system as defined in the Barr report (i.e., public ditches, drainageways, and land-locked basin that have watersheds of 320 acres or more). 2. Retain rights and responsibilities over the County Ditches in the DAP area. 3. Revise Chapter 6 of the County Zoning Ordinance to expand controls over culvert replacements to apply countywide instead of only in the Scott WMO and Prior Lake Spring Lake Watershed jurisdictions. 4. Improve consultation and permit acquisition for bridge and culvert replacements in accordance with existing Standards. <p>The Township will:</p> <ol style="list-style-type: none"> 1. Maintain a dedicated fund (minimum \$5,000 to \$10,000) for emergency management of the trunk systems in their areas, except for the County Ditches which will remain a County responsibility.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Stormwater Management</p> <p><i>Unplanned rural residential development could impact the management of storm water quantity and quality</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Promote Low Impact Development (LID) practices for all new proposed residential subdivisions by requiring a LID checklist as part of any Resource Management Plan and by considering LID practices as a public value incentive through the PUD process. 2. Preserve potential regional stormwater basins as a public value incentive through the PUD process. 3. Insure that maintenance requirements and responsibilities for stormwater facilities constructed with development (i.e., ponds, infiltration systems, and collection systems, etc) are detailed in developer’s agreements, including the need for periodic inspections and provisions for townships to assess. <p>The County will:</p> <ol style="list-style-type: none"> 1. Revise Chapter 6 of the County Zoning Ordinance to include similar requirements for downstream assessments for the Vermillion River Watershed portion of the DAP area as is currently required in the Scott WMO areas.
<p>Groundwater</p> <p><i>Unplanned rural residential development served by individual wells for water supply could impact nearby municipal well fields if improperly managed and maintained</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Provide the results of the groundwater report to all developers and well-drillers within the study area for use in determining community or private well construction needs. 2. Require community wells under an appropriation permit from MnDNR for all proposed cluster residential subdivisions with 15 home lots or more to ensure proper depth is set to deter municipal well interference. 3. Continue to work with surrounding cities and the Metropolitan Council to discuss groundwater issues, such as reduce stream baseflow from increased pumping.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Sanitary Sewer Service</p> <p><i>Unplanned rural residential development served by individual or community sewage treatment systems could impact the rural environment if improperly managed and maintained</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. For larger developments with lots served by individual sewage treatment systems (ISTS), promote the concept of a publicly-managed ISTS system as a public value and require Subordinate Service District to a.) maintain the septic system by arranging to have it pumped/inspected every three years, and b.) ensure that the alternate sites are protected. <p>The County will:</p> <ol style="list-style-type: none"> 1. Enforce the septic regulations in the County's sewer code, including prohibiting septic drainfields on hydric soils.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Traffic</p> <p><i>The increased amount of traffic due to continued rural residential development is expected to impact road and traffic infrastructure in the study area</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Ensure that all future land developments are consistent with the recommended alignments, design and implementation policies for township collector and connector roads and intersection improvements as set forth in the Bonestroo transportation DAP study and maps, as amended. 2. Consider any land development or subdivision premature if: <ol style="list-style-type: none"> a) The proposed development’s local road access location onto an existing or future County arterial roadway is inconsistent with the future access intersection locations identified in the Bonestroo transportation DAP study and maps, as amended; or b) The proposed development – if serving four or more total home sites - does not provide (on-site) turn-lanes and/or bypass lanes at the existing or future County arterial or collector roadway. 3. Per the County’s adopted minimum access spacing guidelines, do not allow any further direct driveway access onto existing or future County principal arterial roadways as part of a land subdivision process or conditional/interim use permit approval (existing lots of record may retain direct driveway access for single family use only); limit further direct driveway access onto existing or future County minor arterials to ¼ mile spacing; and limit further direct driveway access onto existing or future County and Township collectors to 1/8 mile spacing. 4. Consider changes to the DAP transportation maps as the need for revisions arise and, if needed, amend the maps simultaneously with any plat and rezone request; and conduct a comprehensive review of the Bonestroo transportation DAP study findings every 5 years. 5. Support the recommended access locations along adopted corridor studies (e.g., CH17/TH 13, County Road 8, etc.) within the study area.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Traffic (continued)</p> <p><i>The increased amount of traffic due to continued rural residential development is expected to impact road and traffic infrastructure in the study area</i></p>	<p>The Townships will:</p> <ol style="list-style-type: none"> 1. Plan for and maintain collector roads - in some cases, these may be county roads that will transfer back to township jurisdiction in the future - to serve the traffic needs generated from the build-out of the township. 2. Establish a funding mechanism to cover the costs of all intersection improvements identified in the Bonestroo transportation DAP study, which could include: <ol style="list-style-type: none"> a) Establish a Transportation Funding Plan or expand the Capital Improvement Program to fund (through general levy) the construction of the intersection and turn-lane improvements as set forth in the Bonestroo transportation DAP study; or b) Adopt a Transportation Area Fee Ordinance and collect the fee charged to all developments in their portion of the DAP study area on a per acre or per lot basis to cover the intersection and improvement costs; or c) Adopt a Transportation Area Fee Ordinance and contract with the County to collect the fee to cover the intersection and improvement costs.
<p>Housing</p> <p><i>Unplanned rural residential development could impact the study area's existing housing stock and hinder opportunities for affordable or lifecycle housing choices</i></p>	<p>The County will:</p> <ol style="list-style-type: none"> 1. Adopt an Accessory Dwelling Unit (ADU) ordinance to allow secondary living areas for family members. 2. Continue to enforce state building codes for new residential construction or home rehabilitation/remodeling projects. 3. Promote energy efficient homes and lifecycle housing as public values in the PUD process.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Recreation</p> <p><i>Unplanned rural residential development could impact opportunities for planned regional trails</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Preserve the identified regional trail corridor through the development process. 2. Promote corridors for regional trails and Natural Area Corridors and planned township parks and trails as public values as part of the PUD process. 3. Promote future neighborhoods to include local connections to regional trails.
<p>Rural Character</p> <p><i>Unplanned rural residential development could impact the visual characteristics of the study area</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Prepare a rural development handbook based on the input and technical assistance received during the DAP planning process that provides direction on different design elements aimed at preserving rural character. 2. Continue to discuss zoning tools aimed at mitigating development issues in the study area's hamlets and rural non-conforming business uses.

Potentially Significant Impacts	Proposed Mitigation Strategies
<p>Public Services and Facilities</p> <p><i>The projected population for the DAP study area will have a considerable impact on the delivery of public services and facilities in the study area</i></p>	<p>The County and Townships will:</p> <ol style="list-style-type: none"> 1. Organize an annual meeting of the participating township and surrounding municipal staff to discuss ongoing issues related to rural residential growth. 2. Continue working with cities and townships to update existing or establish new Orderly Annexation Agreements. 3. Convene meetings between township, city, and local sports organizations to discuss specific issues, operation costs, user fees, facilities, and strategies to address any inequities in the provision of recreational programming. 4. Provide school-district level build-out data to school district officials and participate in their enrollment studies; and continue to provide notice of pending plats and developments during the review process. 5. Encourage study of governance options to most effectively and efficiently provide public services and facilities in the study area.

B. Action Steps

This final section of the report provides the County, Townships, and prospective developers with an understanding of the actions necessary to limit impacts from the build-out of the rural residential service area.

All of the following action steps need to be completed prior to the County accepting or supporting any rezone applications (to RR-2, Rural Residential Single Family District) from landowners in portions of Spring Lake Township and the northeast corner of New Market Township guided for Rural Residential Growth Staged in the adopted 2030 Comprehensive Plan Update:

1. **Spring Lake, New Market and Cedar Lake Township** shall adopt a resolution approving the 2009 Bonestroo Transportation DAP Report and Maps, and commit to a funding mechanism to cover the costs for intersection improvements as identified in the 2009 Report.
2. **Spring Lake, New Market and Cedar Lake Township** shall establish a trunk stormwater system fund in their annual budget with sufficient funds to cover periodic or emergency maintenance to storm water management facilities.
3. **Spring Lake and New Market Township** shall set and convene a meeting by April 1, 2010 with adjacent city and local sports organizations to discuss specific issues, operation costs, user fees, facilities, and strategies to address any inequities in the provision of recreational programming.
4. **Scott County** shall adopt a Planned Unit Development (PUD) ordinance to administer the public value incentive program and support integrated subdivision design.
5. **Scott County** shall adopt policies establishing criteria for holding and maintaining permanent conservation easements to protect Natural Area Corridors.