SRF No. 0086626

MEMORANDUM

TO: CSAH 34 TAC Members

FROM: Kelcie Young
Environmental Planner

DATE: May 8, 2009

SUBJECT: CSAH 34 CORRIDOR STUDY
SOCIAL, ENVIRONMENTAL AND ECONOMIC SCREENING TECHNICAL MEMORANDUM

A social, environmental and economic (SEE) scan was conducted to identify existing resources along County State Aid Highway (CSAH) 34 (Birch Street) in Lino Lakes, Minnesota. This memo is part of a corridor study that will analyze and recommend future improvements to CSAH 34. The goals of the study are to improve mobility and safety and coordinate land use plans with transportation needs. Future improvements may include widening or slightly realigning the roadway. Therefore, the study area for the SEE scan included CSAH 34 between CSAH 49 and CSAH 54 and areas within approximately 1,000 feet of the existing roadway.

The National Environmental Policy Act (NEPA) and Minnesota Environmental Policy Act (MEPA) require governmental agencies to examine environmental impacts of their proposed actions. The SEE scan is meant to highlight issues that need further investigation as part of a future formal environmental documentation process. Because the SEE information was gathered at a screening level, it does not represent the full extent of data or analysis needed for completion of an environmental document. If an environmental regulatory document is needed in the future, the issues identified in this effort will need to be analyzed in greater detail.

The format of this SEE scan examines 17 key elements, indicates potential impacts, and suggests the appropriate level of analysis that should be done for any future environmental document. Additional information will be needed as more is learned and various project elements are refined.

Agency Coordination

In November and December 2008, the Technical Advisory Committee (TAC) requested early input from the following environmental agencies to help identify resources that the corridor study should avoid or accommodate in the planning process:

- State Historic Preservation Office (SHPO)
- Rice Creek Watershed District (RCWD)
- USDA Natural Resource Conservation Service (NRCS)
- Minnesota Pollution Control Agency (MPCA)
- Minnesota Department of Natural Resources (MnDNR) – Environmental Review Program, Division of Waters, Division of Trails and Waterways, Natural Heritage Inventory System
- Anoka Soil and Water Conservation District (ACD)
- City of Lino Lakes Parks Department
- Army Corps of Engineers (ACE)
- Board of Water and Soil Resources (BWSR)
- Anoka County Office of Environmental Services
- Mn/DOT Office of Environmental Services (Mn/DOT OES)

In April 2009, staff from the above agencies were invited to participate in a project scanning meeting. Members of the TAC met with representatives of Anoka County Parks, RCWD, and ACD to discuss general study objectives and potential methods to avoid or minimize potential impacts to environmental resources. The input gathered at this meeting and through the earlier coordination effort is incorporated into this technical memorandum.

SOCIAL AND ECONOMIC RESOURCES

Community Facilities

Community facilities support community cohesion and may provide social and recreational opportunities. NEPA and MEPA require consideration of social and economic impacts of proposed projects on these resources. A search was conducted to determine the locations of schools, worship facilities, cemeteries, parks and community centers within approximately 1,000 feet of CSAH 34. Table 1 identifies community facilities adjacent to the corridor. Since the project is anticipated to occur primarily within existing right of way, no direct impact to these facilities is anticipated.

Table 1: Community Facilities

Name	Address	Type
Rice Lake Methodist Cemetery	Birch Street, 1/2 mile east of CSAH 49	Cemetery
North Springs Church	1388 Pheasant Hills Drive	Worship Facility
Living Waters Lutheran Church	865 Birch Street	Worship Facility
Quail Ridge Park	1101 Birch Street	Park
Rice Lake Elementary School	575 Birch Street	School/Child Care

Potential Impacts

- No direct impact to any of these community facilities is anticipated.
- Indirect impacts that may occur depending on the design of the preferred alignment include changes in traffic patterns and access.

Future Environmental Process

- After a preferred alternative is identified and during the official environmental documentation process, review the alignment to confirm that no additional community facilities have been constructed adjacent to the corridor, and that none of these facilities will be impacted.

Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," dated February 1, 1994, requires that environmental justice be addressed (to the greatest extent practicable and permitted by law) in all federal planning and programming activities. The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects of programs, policies and activities on minority populations and low-income populations.

Year 2000 census data for race and income is presented in Tables 2 and 3. Most block groups near or along CSAH 34 have lower poverty rates than the Anoka County poverty rate which is 4.2 percent; the exception is tract 502.30, block group 1, with a poverty rate of 5.0 percent. This block group is located at the eastern end of CSAH 34. Since it is anticipated the project will primarily use existing right of way, low-income populations are not expected to be disproportionately impacted by the project. There is one manufactured home park near the project area at 6333 CSAH 49; however, the project is not anticipated to impact this property.

Anoka County's 2000 population of minorities was 8.0 percent. All of the tracts in the project area have a smaller proportion of minorities than the county as a whole. Based on this data, it is anticipated that there are no concentrated minority populations within the study area.

Table 2: Income and Poverty

Demographic Group	Tract 502.30 Block Group 1	Tract 502.31 Block Group 1	Tract 502.31 Block Group 2	Tract 502.31 Block Group 3	Tract 502.31 Block Group 4	Tract 502.32 Block Group 1	Tract 501.32 Block Group 2	Anoka County
Population	1,529	2,780	1,909	1,972	1,300	2,115	1,085	298,084
Number of Households	467	877	565	550	424	715	364	106,468
Number of Families	408	748	520	504	324	600	287	79,921
Median household income in 1999 (dollars)	82,576	90,312	93,228	82,449	71,250	64,395	62,500	57,754
Median family income in 1999 (dollars)	91,801	95,243	95,791	82,178	80,341	70,000	65,774	64,261
Per capita income in 1999 (dollars)	30,682	34,939	29,170	25,358	24,987	23,570	22,180	23,297
Percent of population for whom poverty status is determined – all ages (income in 1999 below poverty level) [2]	5.0	3.7	2.2	3.0	4.2	2.0	3.1	4.2
Percent of families for whom poverty status is determined (income in 1999 below poverty level)	3.4	2.5	1.7	3.0	2.5	0.8	0	2.9

Source: Year 2000 U.S. Census Data SF 3 (Tables P10, 53, 77, 82, 87, 90)
[1] Numbers are less / more than population numbers, as poverty status determined for smaller areas such as block groups use weighted samples

Table 3: Population and Race

Demographic Group	Tract 502.30 Block Group 1		Tract 502.31 Block Group 1		Tract 502.31 Block Group 2		Tract 502.31 Block Group 3		Tract 502.31 Block Group 4		Tract 502.32 Block Group 1		Tract 501.32 Block Group 2		Anoka County	
	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.
Households	467	N/A	877	N/A	565	N/A	550	N/A	424	N/A	715	N/A	364	N/A	106,468	N/A
Population	1,529	N/A	2,780	N/A	1,909	N/A	1,972	N/A	1,300	N/A	2,115	N/A	1,085	N/A	298,084	N/A
White	1,444	94.4	2,706	97.3	1,855	97.1	1,923	97.5	1,258	96.8	2,035	96.2	1,060	97.7	279,133	93.6
Minorities	101	6.6	98	3.5	67	3.5	62	3.1	50	3.8	108	5.1	43	4.0	23,912	8.0
- Black	9	0.5	7	0.2	2	0.1	8	0.4	8	0.6	8	0.4	0	0.0	4,756	1.6
- AIAN [1]	8	0.5	2	0.0	6	0.3	3	0.2	3	0.2	10	0.5	4	0.4	2,079	0.7
- Asian	36	2.4	34	1.2	21	1.1	22	1.1	7	0.5	13	0.6	10	0.9	5,038	1.7
- NHPI [2]	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	64	0.0
- Other Race	7	0.5	6	0.2	1	0.0	4	0.2	7	0.5	10	0.5	2	0.2	1,930	0.6
- Two or More Races	25	1.6	25	0.8	24	1.3	11	0.6	17	1.3	39	1.8	9	0.8	5,084	1.7
Hispanic Origin [3]	16	1.0	24	0.9	13	0.7	13	0.7	8	0.6	28	1.3	18	1.7	4,961	1.7

Source: Year 2000 U.S. Census Data SF 1 (Tables P3, 8, 15)
[1] AIAN = American Indian or Alaska Native
[2] NHPI = Native Hawaiian & Other Pacific Islander
[3] Those of Hispanic Origin may consider themselves white or of another race; therefore, population totals and percentages will be greater than 100 percent

Potential Impacts

- No disproportionate impacts to low-income or minority populations are expected.

Future Environmental Process

- After a preferred alternative is identified and during the official environmental documentation process, an analysis of recent census data and other information should be done to identify whether low-income or minority populations are present in the project area, and whether the project would disproportionately impact these populations.

Historic and Archaeological Resources

Consideration of historic and archeological resources is required by NEPA, MEPA, and the National Historic Preservation Act. A Minnesota State Historic Preservation Office (SHPO) file search was conducted to determine if historic or archeological resources may be present in the study area. There are currently no properties that have been listed on the National Register of Historic Places (NRHP) or determined eligible in the area adjacent to the corridor study area. A farmhouse is located at 509 Birch Street, but it is not currently included on the NRHP or NRHP-eligible list, and its historic significance is yet to be determined. The farmhouse would also require coordination with SHPO to determine its Section 4(f) status.

Site file searches indicate that there are no NRHP listed archaeological sites along the corridor study area. The file search does document a number of areas with archaeological sites near the study area, but the NRHP eligibility and exact locations of archeological sites will need to be determined through further coordination with SHPO. Figure 1 shows the locations of these sites; the results of the file search are shown in yellow, while some sites have defined borders shown in orange (these sites were mapped for a different project, so additional sites outside the project area are shown).

Potential Impacts

- If the project is contained within the existing right of way, it is anticipated that impacts to historic and cultural resources will be avoided.
- Expansion of the roadway outside current right of way limits could require that archaeological surveys be completed, to determine if eligible National Register sites are present.

Future Environmental Process

- At the time of an official environmental documentation process, initiate Section 106 review process and conduct necessary surveys and evaluations to determine historic properties and archeological sites eligible for the NRHP. If eligible properties are identified, work with Mn/DOT Cultural Resources Unit to determine any potential adverse effects and opportunities to avoid, minimize, and mitigate those effects.

- Based on needed analysis, coordinate with Mn/DOT CRU (if needed) and SHPO to determine whether there are impacts to historic and archaeological properties and to address any needed mitigation.

Farmland

Improvements to the CSAH 34 corridor have the potential to impact a limited amount of farmland by converting prime agricultural land to non-agricultural uses (roadways or new development). The NRCS monitors the effects of Federal programs or money on the conversion of farmland to non-agricultural uses. Early coordination with the NRCS found that some of the soils in the proposed construction site are prime farmland soils and farmland soils of statewide importance.

Since it is anticipated the project will remain within or close to existing right of way, and many of the surrounding land uses are non-agricultural, it is not expected that large amounts of farmland will be converted. In addition, future development may have already converted farmland to other land uses by the time of a future project. At the time of an environmental documentation process, a Farmland Conversion Impact Rating form should be completed. Specific amounts of farmland soils in the project area and impacts to these soils will be determined based on coordination that will occur as part of a future environmental document. Farmland can also be affected by right of way impacts that convert farm fields to roadway, or by changes in access that require new driveways to farmsteads, or new routes to access agricultural fields.

Potential Impacts

- Expanded right of way could result in strip takings of land along the proposed corridor.
- Removal of access to farmland or agricultural fields could impact farm operations; efforts will be made to provide alternative access, if a field access is closed or removed. Future development may have already changed land use in the project area, and access to farms may no longer be relevant.

Future Environmental Process

- Once a preferred alternative is identified and during the official environmental documentation process, determine whether new right of way needs would impact any farmland, and consider methods to minimize this impact. If Anoka County proposes a specific project, a Farmland Conversion Impact Rating form must be completed.
- At that time also determine if any current farms will be affected by highway access changes and identify alternative access options.

PHYSICAL AND NATURAL ENVIRONMENTAL ISSUES

Parks

Numerous park and recreational properties exist in the CSAH 34 vicinity, although only Quail Ridge Park is adjacent to the roadway corridor and could be affected by the project (on the north side of CSAH 34 between Pheasant Run and Wild Turkey Trail). Parks are shown in Figure 2.

The Section 4(f) legislation as established under the Department of Transportation Act of 1966 (40 USC 303, 23 USC 138) provides protection for publicly owned parks, recreation areas, historic sites, wildlife, and/or waterfowl refuges from conversion to transportation use. Quail Ridge Park described above is subject to Section 4(f) protection, as is the Rice Creek Elementary School playground. The farmhouse described earlier in this document would require coordination with SHPO to determine its Section 4(f) status. However, none of the roadway alternatives are anticipated to cause any impacts to these properties.

Section 6(f) covers properties planned, developed, or improved with funds from the Land and Water Conservation Fund. There are no parks adjacent to the roadway that would be subject to Section 6(f) protection.

Potential Impacts

- The proposed corridor improvements will be developed to avoid impacts to any park. Quail Ridge Park described above could be impacted by the project if right of way is expanded into the park. If the project results in any takings of park property, a Section 4(f) evaluation will be required.

Future Environmental Process

- When a preferred alternative is identified and during an official environmental documentation process, review the roadway alignment to determine if parks will be affected.
- If there are impacts to any portion of a park, a 4(f) evaluation may be required.

Fish, Wildlife, and Ecologically Sensitive Areas

The corridor area contains three Regionally Significant Ecological Areas (RSEAs), shown in Figure 2. The Minnesota Department of Natural Resources (MnDNR) requested that RESAs be preserved as part of future improvements. The MnDNR Central Region, in partnership with the Metropolitan Council, conducted a landscape-scale assessment of the seven-county metro area to identify ecologically significant terrestrial and wetland areas. RSEAs include places where intact native plant communities and/or native animal habitat are still found in the region and continue to provide important ecological functions such as:

- Habitat for game and non-game, including threatened, endangered, and special concern animals.

- Biological diversity.
- Connectivity in the landscape.
- Groundwater recharge and improved water quality.
- High to outstanding examples of native plant and/or animal communities or animal aggregations.

RSEAs are identified with a score of 1 to 3 (3 being the highest). The RSEAs that are found in Lino Lakes are ranked as 3, indicating areas larger in size with few land uses nearby that could adversely affect the RSEAs, or areas with isolated native plant communities, or outstanding biodiversity significance.

Coordination with the MnDNR helped to identify wildlife corridor areas, shown in Figure 2. These areas of continuous habitat provide connections between natural areas and are vital to wildlife mobility. The wildlife corridors shown also indicate sightings of rare species described below.

If the MnDNR identifies that threatened or endangered species have been documented in the project area, or if the project is adjacent to the habitat of threatened and endangered species, the project is required to develop avoidance or mitigation measures. A search of the Minnesota Natural Heritage Information System found occurrences of rare features within a one mile radius of the corridor area. The CSAH 34 corridor is within an area of importance to the Blanding's turtle, a state-listed threatened species. The MnDNR has provided two lists of recommendations for avoiding and minimizing impacts to this species (one general list and one list specific to the areas of importance). The project should follow these recommendations, and also provide a DNR flyer to all contractors working in the area to alert them to the presence of this species.

At the April 2009 coordination meeting, agency representatives discussed possible features that could be included in a future corridor project to maintain or improve Blanding's turtle habitat, as future roadway expansion could impact the ability of turtles to cross the roadway. A box culvert with a skylight opening or the use of d-style curbs (curbs with flatter angles) would allow turtles to cross the roadway more easily, allowing them access to habitat on both sides of the road.

In addition to the nine reports of Blanding's turtles, there are 11 other reports of rare natural features within a one mile radius of the project area, including a colonial water bird nesting area, a native plant community, a Foster's Tern (a species of concern), a tamarack swamp, the lance-leaved Violet, a sandhill crane, and a Trumpeter Swan (a state-threatened species). The lakes and wetlands near and adjacent to the corridor study area provide habitat for many of these rare species. Species that are not listed as threatened or endangered at the state or federal level may still require additional coordination or permits. For example, the destruction of migratory bird nests would require a depredation permit from the MnDNR and/or Fish and Wildlife Service. Coordination with the MnDNR at the time of a future project would ensure the project adequately identifies and mitigates for impacts to fish, wildlife, and other species.

According to coordination with the Mn/DOT Office of Environmental Services (OES), no federally threatened or endangered species exist within or near the project area. No further coordination with OES is needed unless a future project would involve Mn/DOT roadways, but a future project should still verify that no threatened or endangered species occur in the project area.

Also, the CSAH 34 corridor has been identified as having a high concentration of deer-vehicle collisions. These major deer crossing locations have been identified as part of the study's safety analysis. Wide box culverts installed for drainage purposes could potentially also provide deer a safer grade separated crossing of CSAH 34 if topography allows, and such improvements are determined to be cost-effective. Deer detection technology could also prevent collisions by alerting drivers of deer approaching or in the road right of way. These solutions could be explored as part of the design for a future project.

Potential Impacts

- RSEAs adjacent to the corridor may be impacted by a widened roadway.
- Blanding's turtle habitat may be impacted by specific roadway improvements, and should be mitigated.
- Lake and wetland habitat or changes in water quality may be impacted by a wider roadway.
- Deer-vehicle collisions may increase if the roadway is widened and grade-separated crossings are not provided. Potential mitigation is discussed above.

Future Environmental Process

- Coordinate with the DNR (Natural Heritage Database Review) and U.S. Fish and Wildlife Service to verify that the information on wildlife, fisheries and ecological areas is up to date when an official environmental document is being prepared. Further the DNR recommends an updated database search be completed if a year has elapsed since the previous search. Future activities should include:
  - Coordinate with agencies to ensure avoidance of any impacts to Blanding's turtle habitat in the area.
  - Determine specific impacts to RSEAs, depending on the preferred alternative. Include discussion of the potential to avoid, minimize or mitigate any impacts.
  - Identify erosion and sediment control practices that should be implemented to avoid, minimize or mitigate impacts to lakes and wetlands near and adjacent to the corridor.
  - Determine the feasibility of methods to minimize deer-vehicle collisions, such as culvert crossings or deer detection systems.

Wetlands

Federal and state regulations require that wetlands be protected under no net loss principles. Therefore, the most efficient way to prevent loss of wetland functions and the high cost associated with mitigation (either through restoration or purchase from a wetland bank) is to prevent wetland impacts.

Wetland boundaries (shown in Figure 3) were provided by the Rice Creek Watershed District (RCWD) based on vegetation, soils and hydrology. All boundaries are approximate and were not formally delineated. The City of Lino Lakes and the RCWD have completed a Resource Management Plan which identifies high priority wetlands, including some near the corridor area in the vicinity of the ditch system (ditches are shown in Figure 4). As the CSAH 34 corridor layouts are developed, coordination with the RCWD will continue to minimize impact to these high priority wetlands.

The DNR Division of Waters maintains maps that document protected water bodies under Minnesota Statutes, Section 105.42 which requires a permit be obtained before making any alterations in the course current or cross-section of these waters. The types of protected waters that exist under this classification are basins, ditches and watercourses. Based on a preliminary examination of protected water bodies in the project area, the lakes in the project area and surrounding wetlands, water bodies in the vicinity of the County 25 Ditch system, and Talle Lane appear to be protected waters. Protected waters are shown in Figure 3.

Potential Impacts

- Widening of CSAH 34 could cause impacts to wetlands, including DNR Protected Waters.

Future Environmental Process

- A full delineation of wetlands in the project corridor will be needed for an official environmental document.
- At the time of roadway design, determine how to avoid, minimize and/or mitigate potential impacts to wetlands.

Water Resources

Stormwater Management

Stormwater management must be addressed for projects that increase impervious surface or alter drainage systems. Expanding the capacity of CSAH 34 will create additional areas of impervious surface. Impervious surface can adversely affect water quality by increasing the volume of runoff and peak discharge rates generated by a rainfall event, and increasing the loading of sediment and nutrients compared to pervious areas.

The Minnesota Pollution Control Agency (MPCA) requires implementation of stormwater treatment best management practices (BMPs) for certain projects that create new impervious

surface. The MPCA's rules are supplemented by more restrictive rules implemented by the Rice Creek Watershed District.

Roadside drainage conveyance structures (i.e. ditches) are found in the project corridor. These ditches were shaped to convey run-off from the roadway, and some may have taken on wetland characteristics. The ditches with wetland characteristics should be identified for water resources management and planning purposes. Because they were constructed to address storm water runoff, it is assumed that they ultimately flow into another water body. The Anoka Soil and Water Conservation District and RCWD officials have expressed concern that stormwater runoff should be sufficiently treated to avoid direct runoff into the lakes in the area, as they are impaired waters. At the time of formal delineation, these connections can be identified as needed.
Runoff would need to be routed to a stormwater treatment basin or through other BMPs prior to discharge to one of the lakes or waterways adjacent to the corridor. Ditches may be used to some degree to provide water quality treatment and rate control. Stormwater treatment basins would still be needed in these areas of the corridor to meet the regulatory requirements. The Resource Management Plan (RMP) identifies desirable treatment sites for runoff, and a future project should coordinate with the RCWD.

Receiving Waters

There are numerous lakes, streams, and drainage ditches in and around the corridor study area that may receive runoff from the highway. Runoff from the corridor study area flows to the adjacent water bodies and ultimately to receiving waters. Most of the corridor area flows via Ditch 25 to Reshanau Lake, but portions of the study area may flow to other water bodies.

Continued coordination to determine MPCA-designated special waters or scientific and natural areas within the corridor study area will occur as the project progresses. Impaired waters are water bodies or water courses that have been assessed by the MPCA and determined to not meet certain water quality standards or designated uses (recreational, drinking water, etc). According to the RCWD, the lakes near the project area are impaired, including Reshanau Lake, Centerville Lake, George Watch Lake, and Marshan Lake. The MPCA has developed Total Maximum Daily Loads (TMDLs) for each impaired water body. The TMDL establishes limits for the amount of an individual pollutant that a water body may receive from sources in the watershed. Impaired water bodies that have approved TMDLs may have specific requirements for stormwater treatment in addition to the requirements set forth by county or watershed district rules.

Floodplains

The corridor study area contains areas identified as 100-year floodplain on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). These areas are shown in Figure 4. Construction within designated floodplains would require a permit from the watershed district, city, or county. Adding fill to a floodplain area along the CSAH 34 corridor may require mitigation (e.g., compensatory storage). A floodplain assessment will need to be completed for the corridor as part of a future environmental document.

Wellhead Protection Areas

Community public water supply systems that utilize groundwater are required by the Minnesota Department of Health (MDH) to delineate, inventory, and manage wellhead protection areas around municipal wells in order to prevent contamination of the underlying aquifer. The center portion of the CSAH 34 corridor falls within the Lino Lakes Central Wellhead Protection Area, shown in Figure 4. In addition, the Lino Lakes West and Lino Lakes East Wellhead Protection Areas are near the project area, and stormwater could potentially flow to those aquifers. The susceptibility of the water supply to contamination depends on the construction of the wells and the geological location of the aquifer. Coordination with the MDA and City of Lino Lakes will determine if limits on infiltration of stormwater runoff within the wellhead protection areas are needed based on aquifer vulnerability (if the aquifer is located near the surface, or if there is known soil contamination in the area). If the aquifers are vulnerable, coordination will be needed to determine which contaminants are of concern, and what BMPs might be appropriate to manage those contaminants (such as lined treatment areas, etc).

County Ditch Systems

The corridor study area crosses County Ditch 25, for which stormwater velocity and volume are concerns. The ditch system is shown in Figure 4. Future work along the corridor will need to maintain existing surface and subsurface drainage systems. The ditch also provides wildlife habitat, including wetland habitat that is important for species described in the "Fish, Wildlife, and Ecologically Sensitive Areas" section of this report.

Culvert Crossings

There are several locations along the study area corridor where existing culverts cross the highway right of way. These culverts may convey water to minor drainage ditches or streams that flow between the lakes within the corridor study area.

Potential Impacts

- Increased runoff volume, peak flow rate, sediment loading, and nutrient loading to receiving waters are possible due to the increase of impervious surface area.
- Floodplain fill.
- Contamination of aquifer in municipal wellhead protection areas due to infiltration of stormwater runoff if the aquifers are vulnerable.
- Changes to existing surface drainage patterns as a result of changes to the roadway profile, which could potentially increase/decrease flow rate to particular receiving waters.

Future Environmental Process

Any future environmental documentation process should complete the following water resource analyses:

- Identify stormwater discharge points from the highway right of way to individual receiving waters along the corridor.
- Determine impact of discharges from the highway right of way to quality of receiving waters.
- Determine governing stormwater regulations for designing treatment systems.
- Identify relevant TMDL studies and how they affect design of treatment systems.
- Identify locations where stormwater treatment BMPs may be constructed.
- Complete floodplain assessment.
- Determine if floodplain fill can be avoided, or suggest design improvements in order to minimize fill in floodplains.
- Determine potential locations where floodplain mitigation (compensatory storage) could be provided, if needed.
- Limit the use of stormwater infiltration BMPs within wellhead protection areas in order to protect community wellheads.

Soils, Erosion, Steep Slopes

A preliminary review indicates that some of the soil types found in the corridor may have steep slopes (greater than 12 percent). These steep slopes are likely in localized areas, such as drainage ditches. Disturbance of steep slopes can lead to increased soil erosion.

Many soil types in the study area exhibit a very low depth to the water table; for some, the soil survey ratings show groundwater existing at the surface, such as in wetland areas. This indicates a potential for groundwater contamination if a spill or other contamination were to occur in the corridor.

Potential Impacts

- Soil erosion in areas of localized steep slopes or highly erodible soils.
- Groundwater contamination.

Future Environmental Process

Any future environmental documentation process should complete the following soil analyses:

- Assess soils in the area of the preferred alternative by examining soil maps.
- Evaluate locations of steep slopes and highly erodible soils.
- Determine how to minimize disturbance of steep slopes or highly erodible soils.
- Assess the potential for groundwater contamination.

Contaminated Properties

The Minnesota Pollution Control Agency's (MPCA) database of contaminated properties lists no properties adjacent to the CSAH 34 corridor.

Future Environmental Process

- It is not likely that a Phase I Environmental Site Assessment would be needed; this should be verified through coordination with the MPCA as part of any future environmental documentation.

Air Quality

Air quality analysis for transportation projects includes two pollutant types: Carbon Monoxide and Mobile Source Air Toxics. Carbon Monoxide (CO) is the traffic-related pollutant of most concern in urban areas. It is also the pollutant with the most well established tools for determining the effects of air quality of a specific roadway improvement. Mobile Source Air Toxics (MSATs) are air toxics originating from on-road mobile sources.

Projects leading to roadway construction/reconstruction must consider carbon monoxide analysis. This is most commonly done by determining whether a project is regionally significant and by using Mn/DOT's "Hot-Spot Screening Methodology." If the proposed project meets these criteria, selected signalized intersections within the project area may require carbon monoxide analysis. A cursory appraisal of the CSAH 34 corridor indicates that it is not expected to be considered regionally significant and that no intersections would exceed the hot-spot screening threshold. If this remains true at the time environmental documentation is completed, detailed carbon monoxide dispersion analysis would not be required. However, an additional inspection of future traffic characteristics in the corridor should be made at the time of the study.

All environmental documentation must include a discussion of MSATs. However, due to lack of existing scientific evidence of the health impacts of MSATs, or tools to analyze their effects on a project-level scale, most of the text for this discussion is in the form of prepared statements developed by the Federal Highway Administration (FHWA). The project should fall into one of the following categories, which require the appropriate text.

1. Exempt projects or projects with no meaningful potential MSAT effects
2. Projects with low potential MSAT effects
3. Projects with higher potential MSAT effects

Projects with Higher Potential MSAT Effects are generally considered to include roadways carrying an Average Daily Traffic (ADT) of more than 140,000 vehicles per day. CSAH 34 is not expected to carry anywhere near this much traffic. Future construction projects on CSAH 34 are intended to improve the capacity of CSAH 34 and allow more vehicles to use the corridor on a daily basis, and are thus most likely to fall into Category 1 or 2.

Potential Impacts

- It is anticipated that this project would not be considered regionally significant and that no intersections would exceed the hot-spot screening threshold.
- It is likely that CSAH 34 would have No or Low Potential MSAT Effects.

Future Environmental Process

Projects leading to roadway construction/reconstruction must consider carbon monoxide analysis. This is most commonly done by determining whether a project is regionally significant and by using Mn/DOT's "Hot-Spot Screening Methodology." It is anticipated that this project would not be considered regionally significant and that no intersections would exceed the hot-spot screening threshold. If this remains true at the time a project is under environmental review, detailed carbon monoxide dispersion analysis will not be required. However, an additional inspection of future traffic characteristics in the corridor should be made at the time of the study. If analysis is required, the following steps must be coordinated:

- Meet with MPCA and Mn/DOT staff to select intersections for analysis
- Conduct background carbon monoxide concentration monitoring
- Perform intersection carbon monoxide dispersion analysis
- If it is determined that carbon monoxide analysis is not required, the environmental documentation should state that the screening method was used, and carbon monoxide dispersion analysis was not warranted.

Noise

Noise is defined as any unwanted sound. Sound travels in a wave motion and produces a sound pressure level. This sound pressure level is commonly measured in decibels. Decibels (dB) represent the logarithm of the ratio of a sound energy relative to a reference sound energy. For highway traffic noise, an adjustment, or weighting, of the high- and low- pitched sound is made to approximate the way that an average person hears sound. The adjusted sound levels are stated in units of "A-weighted decibels" (dBA). A sound increase of 3 dBA is barely perceptible by the human ear, a 5 dBA increase is noticeable, and a 10 dBA increase is heard as twice as loud. For example, if the sound energy is doubled (i.e., the amount of traffic doubles), there is a 3 dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases to where there is 10 times the sound energy level over a reference level, then there is a 10 dBA increase and it is heard as twice as loud.

The following discussion of FHWA noise regulations only applies if federal funds are used to make improvements to CSAH 34 in the future. Since at this time the possible future federal funding opportunities that may exist (either via the Metropolitan Council or through other channels) is unknown, these contingency procedures are provided to assure County officials a full analysis.

The FHWA procedures for the evaluation and abatement of traffic noise are contained in Title 23 of the Code of Federal Regulations Part 772 (23 CFR 772). 23 CFR 772 applies to Federal-aid highway projects that are considered Type I projects. Federal-aid highway projects that are identified as Type I projects must follow FHWA procedures for abatement of highway traffic noise and construction noise.

A Type I project is the construction of a new highway on a new alignment or the physical alteration of an existing highway (e.g., change in horizontal or vertical alignment; increase in number of through lanes). Traffic noise studies for Type I highway projects require the following: (1) identification of traffic noise impacts; (2) examination of potential mitigation measures following FHWA Noise Abatement Policy; (3) incorporation of all reasonable and feasible mitigation measures; and (4) coordination with local officials regarding traffic noise and land use controls.

Potential Impacts

- At this time, it is not possible to describe the potential traffic noise impacts of future CSAH 34 construction/reconstruction on surrounding land uses. There are many variables that influence traffic noise levels at a given location. Some of these variables include, but are not limited to: vehicle speeds, class of vehicle and amount of heavy trucks, topography, surface properties between the receiver and highway, and shielding by existing structures.

  In addition to the factors listed above, the distance of a receptor from a sound's source is also an important factor. Sound level decreases as distance from a source increases. A rule of thumb regarding sound level decrease due to increasing distance from a line source (roadway) that is commonly used is: beyond approximately 50 feet from the sound source, each doubling of distance from the line source over hard ground (such as pavement or water) will reduce the sound level by 3 dBA, whereas each doubling of distance over soft ground (such as vegetated, or grassy ground) results in a sound level decrease of 4.5 dBA.

Future Environmental Process

- The Type I project determination for any future construction/reconstruction of CSAH 34, and need for highway traffic noise studies following FHWA procedures, should be made in consultation with FHWA and Mn/DOT.
- If it is determined that a traffic noise analysis is required as part of any future construction/reconstruction of CSAH 34, then these studies should be completed using the "MINNOISE" noise prediction model.[1] MINNOISE is a version of the FHWA "STAMINA" noise prediction program adapted by Mn/DOT. Output from the MINNOISE program will identify modeled noise levels given existing and projected traffic volumes on CSAH 34. Noise abatement and mitigation would follow FHWA Noise Abatement Policy, and would be considered for those locations where the future predicted noise levels either: (1) exceed the

[1] MINNOISE, a version of the FHWA "STAMINA" model adapted by Mn/DOT, is the noise prediction program currently in use for the prediction of traffic noise with federal-aid highway projects in Minnesota. Future projects that require detailed traffic noise studies should use the noise prediction program that is accepted by FHWA and Mn/DOT at the time of the future studies.

federal noise abatement criteria for established land uses at modeled receiver locations, or (2) where predicted future traffic noise levels substantially exceed existing noise levels. For federal-aid highway projects in Minnesota, a substantial increase is defined as an increase of 5 dBA or greater from existing to future conditions.

Traffic Noise and Land Use Planning

A majority of the CSAH 34 project corridor has already been developed. However, the east end of the corridor, from CSAH 21 to CSAH 54, is undeveloped. The prevention of future impacts is an important aspect of traffic noise control. The information provided below is intended to be used as a tool for local units of government if land use changes are contemplated for undeveloped properties along CSAH 34 east of CSAH 21.

The FHWA encourages local governments responsible for land use and land development processes to practice land use planning and controls in the area of highways to help minimize noise impacts and help prevent future traffic noise impacts on currently undeveloped lands. These practices include prohibiting noise sensitive land uses from being located immediately adjacent to a highway, providing buffer zones between the highway and noise-sensitive land uses (e.g., increasing the distance between the highway and the noise-sensitive land use), or ensuring that developments are planned in such a way as to minimize noise impacts.[2]

Potential traffic noise impacts along the CSAH 34 project corridor between CSAH 21 and CSAH 54 should be considered in planning and approving land use changes (e.g., residential development) adjacent to this portion of the highway. Examples of site plan elements that could reduce noise on any future residential developments include: berms, fencing and increased setbacks. Vegetation is only effective if it is at least 100 feet deep, tall enough to block views of the roadway, and dense enough so that the roadway can not been seen through the vegetation (e.g., branches down to ground level with trees/shrubs planted very close together so there are no gaps in the vegetation). As such, the depth, height and density of vegetation needed make vegetative screening impractical as an element to reduce noise levels. Vegetative screening is more effective in providing aesthetic benefits and acting as a visual barrier. Commercial buildings directly adjoining the roadway could also block some traffic noise for residential receivers, as well as increasing the distance between the roadway and residential land uses.

CUMULATIVE IMPACTS

Cumulative impacts are defined by the Council on Environmental Quality (CEQ) as “Impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are not causally linked to the project, but are the total effect of all known actions (past, present, and future) in the vicinity of the proposed action that impacts the same resources as the proposed

[2] U.S. Department of Transportation. Federal Highway Administration. Office of Environment and Planning. Noise and Air Quality Branch. June 1995. Highway Traffic Noise Analysis and Abatement Policy and Guidance. 67 pp.

action. The purpose of the cumulative impacts analysis is to look for impacts that may be minimal, and therefore neither significant nor adverse when examined within the context of the proposed action, but that may accumulate and become significant and adverse when combined with other actions.

Potential Impacts

- Resources that are likely to be considered for cumulative impacts would include water resources, wetlands, and farmland.

Future Environmental Process

- Cumulative impacts analysis will be undertaken in a future environmental document when a preferred alternative is identified.

KBY/smf

Attachments (4)

cc: Brian Shorten, SRF Consulting Group, Inc.

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Archaeological Sites

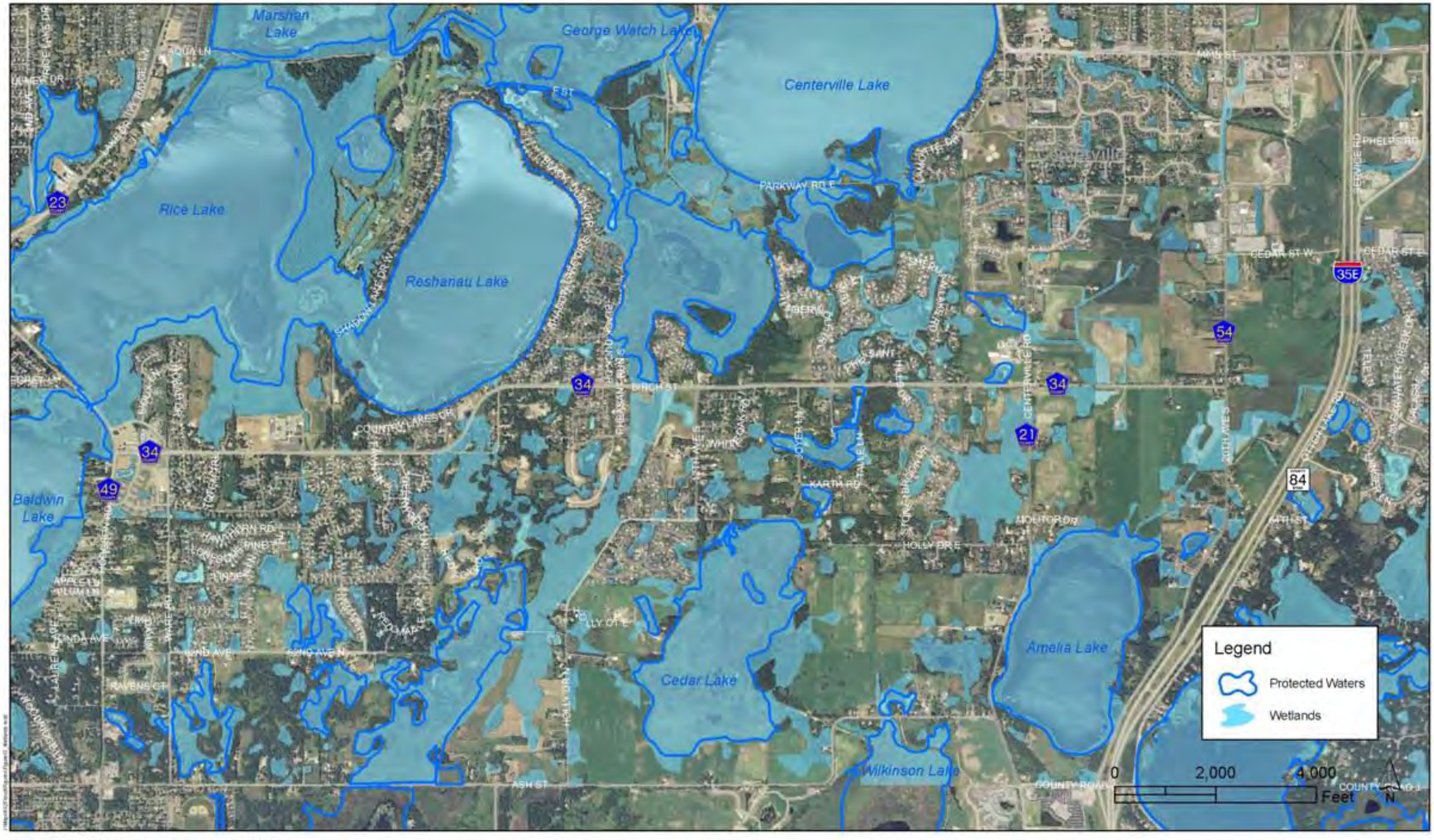
CSAH 34 (Birch Street) Corridor Study
Lino Lakes, Anoka County, Minnesota

Figure 1

Natural Areas and Widlife Habitat

CSAH 34 (Birch Street) Corridor Study
Lino Lakes, Anoka County, Minnesota

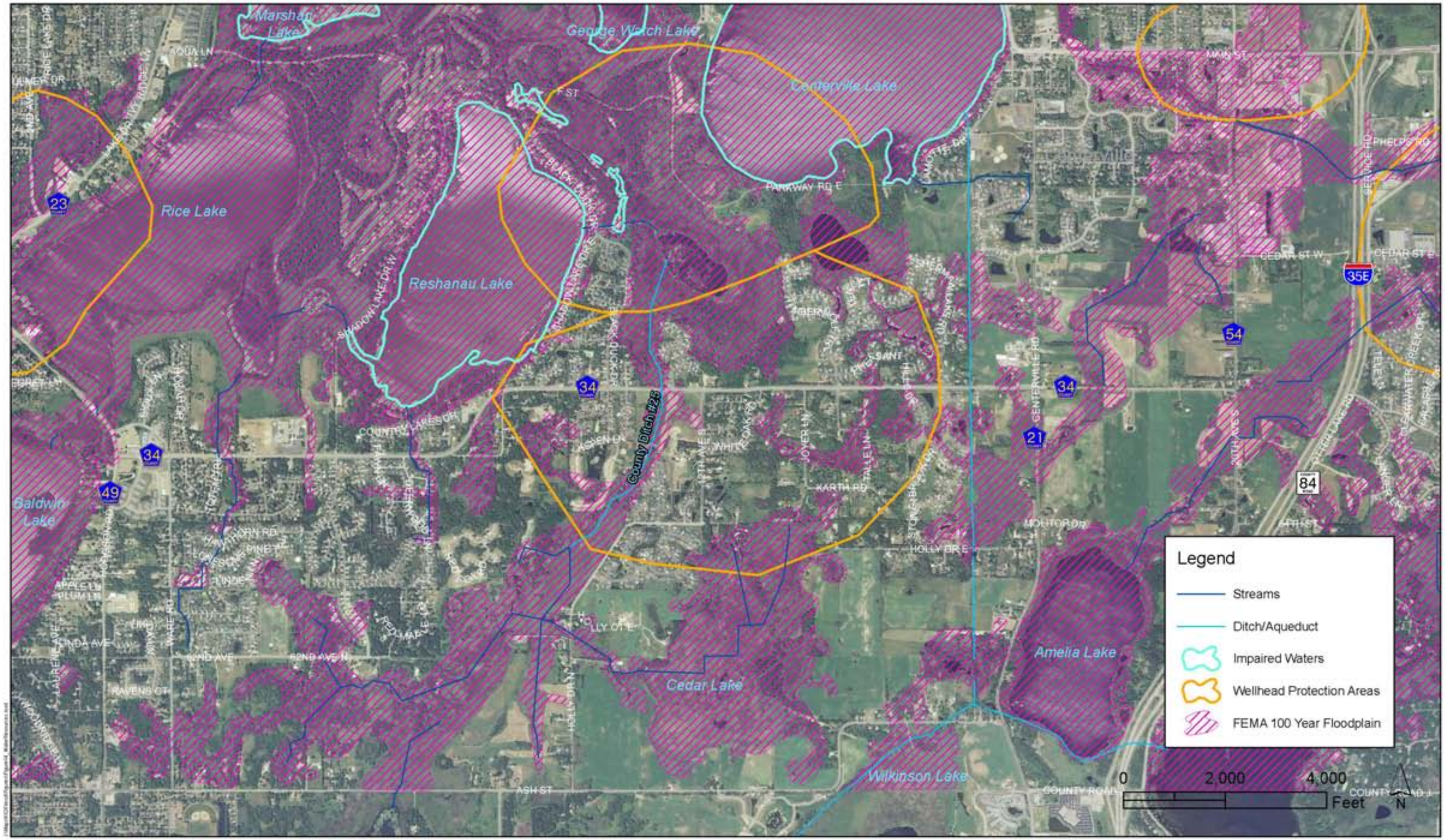
Figure 2



Wetlands and Protected Waters

CSAH 34 (Birch Street) Corridor Study
Lino Lakes, Anoka County, Minnesota

Figure 3



Water Resources

CSAH 34 (Birch Street) Corridor Study
Lino Lakes, Anoka County, Minnesota

Figure 4