

## APPENDIX I

### Agency Coordination and Public Participation Process Information

## APPENDIX I

### Part I.1 Agency Coordination Information



# Mn/DOT POLICY POSITION STATEMENT

**Date:** July 27, 1990

**Revised:** November 8, 2005

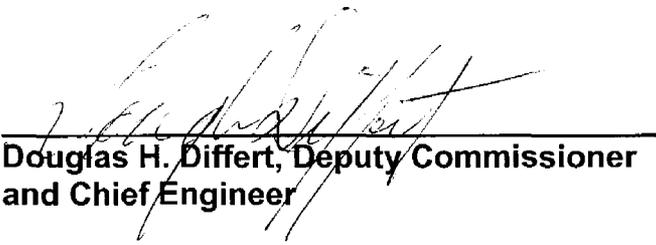
**Reference:** Highways No. 6.4  
Accommodation of  
Utilities on Highway  
Right of Way

## **Position Statement:**

The accommodation of utility facilities on Minnesota Trunk Highway right of way is permitted by *Minnesota Statutes and Rules*. It is in the public interest for utility facilities to be accommodated on the right of way of Trunk Highways, including local roads and streets receiving Federal aid, when use and occupancy of the right of way does not interfere with the free safe flow of traffic, or otherwise does not impair the highway or its visual quality, and does not conflict with any provision of Federal, State, or local law, rule, regulation or the Guidelines and Procedures adopted under this policy.

## **Background:**

This Policy Position Statement and the Guidelines and Procedures that follow were developed in accordance with: *Minnesota Statutes*, Section 161.45, 222.37, subd 2, and 216D; *Minnesota Rules*, Parts 8810.3100 through 8810.3600; *Code of Federal Regulations*, Title 23, Part 645, Subpart B; American Association of State Highway and Transportation Officials (AASHTO) publications entitled: *A Guide for Accommodating Utilities Within Highway Right of Way* and *A Policy on the Accommodation of Utilities Within Freeway Right of Way*.

  
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**Douglas H. Differt, Deputy Commissioner  
and Chief Engineer**

## **Any questions regarding this position statement should be directed to:**

Utilities Engineer, Minnesota Department of Transportation, Office of Technical Support, Pre-Letting Section, Utility Agreements and Permits Unit, (651) 296-7018.

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# Mn/DOT POLICY GUIDELINE

**Date:** July 27, 1990  
**Revised:** November 8, 2005  
**Reference:** Highways No. 6.4.G-1  
Permits for Accommodation  
of Utilities on Highway  
Right of Way

## Guideline:

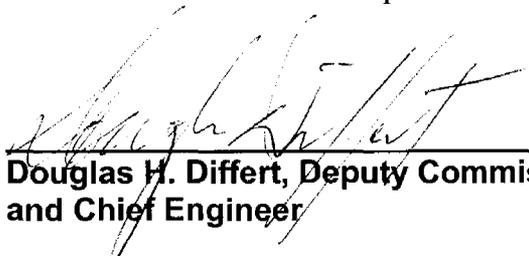
Under Minnesota law and rules it is necessary to obtain a utility permit in order to place utilities on Minnesota trunk highway right of way. Examples of utilities contemplated in Minnesota law are: electric transmission, telephone or telegraph lines, pole lines, community antenna television lines, railways, ditches, sewers, water, heat of gas mains, gas and other pipe lines, flumes, or other structures which, under the laws of Minnesota or ordinance on any city, may be constructed, placed, or maintained across or along trunk highway, or its right of way. Permits issued by the Minnesota Department of Transportation contain a copy of the current rules under which it is The Procedures that follow supplement these rules and provide internal guidance for Minnesota Department of Transportation employees when reviewing permit applications.

## Position Statement Reference:

Highways No. 6.4

## Background

Through the *Code of Federal Regulations* (23 CFR, Part 645.215(A)), the U.S. Department of Transportation requires each State to submit a statement to its Division Administrator on the authority of the State to regulate such use, and the policies the State employs or proposes to employ for accommodating utilities within the right of way of any highway project receiving Federal aid. Position Statement No. 6.3, the Guidelines and Procedures adopted thereunder form the basis of this submittal.

  
\_\_\_\_\_  
Douglas H. Differt, Deputy Commissioner  
and Chief Engineer

## Any questions regarding this position statement should be directed to:

Utilities Engineer, Minnesota Department of Transportation, Office of Technical Support, Pre-Letting Section, Utility Agreements and Permits Unit, (651) 296-7018.

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**Date:** July 27, 1990  
**Revised:** November 8, 2005  
**Reference:** Highways No. 6.4

**MINNESOTA DEPARTMENT OF TRANSPORTATION  
 PROCEDURES FOR  
 ACCOMMODATION OF UTILITIES ON  
 HIGHWAY RIGHT OF WAY**

Issued under: Mn/DOT Position Statement – Highways No. 6.4  
 Mn/DOT Policy Guideline – Highways No. 6.4.G-1

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## **I. Introduction**

### **A. Overview of Utility Accommodation**

1. It is in the public interest for utility facilities to be accommodated on the right of way of any highway when such use and occupancy does not interfere with the flow of traffic and the safe operation of vehicles, does not otherwise impair the highway or its visual quality, and does not conflict with provisions of federal, state, or local laws or regulations.
2. The Minnesota Department of Transportation (Mn/DOT) operates the state trunk highway system to provide a safe and convenient means for the vehicular transportation of people and goods. Utility owners provide other essential services to the public. Cooperation between these two entities is essential if the public is to be served in the most economical manner consistent with their respective public service needs, obligations, and interests. Although Mn/DOT strives to accommodate utility facilities whenever possible, the permitted use and occupancy of highway right of way for non-highway purposes is subordinate to the primary interests and safety of the traveling public.

### **B. Purpose of *Utility Accommodation Policy***

1. The purpose of this *Utility Accommodation Policy* is to prescribe policies and procedures to regulate and accommodate utility facilities along, across, or on the right of way of all trunk highways and other transportation facilities under the jurisdiction of the Minnesota Commissioner of Transportation.
2. This *Policy* applies to all public and private utilities. It also applies to all existing utility facilities retained, relocated, replaced, or altered, and to new utility facilities installed on State right of way, including those needed for highway purposes (such as for highway lighting or to serve a weigh station, rest area, or recreation area).
3. This *Policy* was and continues to be developed with integrated sections. Thus, two or more sections usually need to be read together to fully understand a utility accommodation issue. The reader is cautioned that by reading one section and not the other related sections may lead to misinterpretation of the *Policy*.
4. The Federal Highway Administration (FHWA) has approved this *Policy*.

### C. Source Documents

1. Minnesota Statutes and Minnesota Rules permit the accommodation of utility facilities on the right of Minnesota trunk highways. Trunk highways include all roads established under the provisions of Article XIV, Section 2, of the Constitution of the State of Minnesota. This includes all highways that are constructed, improved, and maintained as public highways under the jurisdiction of the Commissioner of Transportation. Thus, all State maintained highways, including highways on the Interstate Highway System, are trunk highways.
2. The policies and procedures contained in this *Utility Accommodation Policy* were developed in accordance with the following:
  - a. Minnesota Statutes, sections 161.45, 161.46, 222.37, subdivision 2, and 216D.
  - b. Minnesota Rules, part 8810.3100 through 8810.3600.
  - c. Code of Federal Regulations, title 23, part 645, subpart B.
  - d. American Association of State Highway and Transportation Officials (AASHTO) publications, *A Guide for Accommodating Utilities Within Highway Right of Way* and *A Policy on the Accommodation of Utilities Within Freeway Right of Way*.
3. In addition to the above, utilities must also be accommodated in accordance with the following:
  - a. *Minnesota Manual on Uniform Traffic Control Devices*, and
  - b. AASHTO publications, *Roadside Design Guide* and *A Policy on Geometric Design of Highways and Streets*.

### D. Application of Policy

1. The policies and procedures contained herein apply to all public utilities (and private lines that are only allowed to cross highways), including communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity that is to be accommodated within the right of way of highways under the jurisdiction of the Commissioner of Transportation and which by law are entitled to use public highways.
2. The policies and procedures contained herein apply to underground, surface or overhead facilities, either singularly or in combination, including bridge attachments.

**E. Scope of Policy**

1. These policies and procedures regulate the location, design, and methods for installing, adjusting, accommodating, and maintaining utility facilities on trunk highway rights of way and within local road and street right of way where federal-aid funds are used.
2. These policies and procedures are limited to sound engineering principles that preserve and protect the integrity and visual qualities of the highway and the safety of the motoring public.
3. Should new Minnesota Statutes, Minnesota Rules, or industry codes prescribe a higher degree of protection than is provided in these policies and procedures, the higher degree of protection shall prevail.

**F. Utility Accommodation**

1. Mn/DOT typically permits utility facilities to occupy State trunk highway right of way so long as the following conditions are met:
  - a. Such use and occupancy does not adversely affect the primary functions of the highways or materially impair their safety, operation, or visual quality,
  - b. There would be no conflict with the provisions of Federal, State, or local statutes, rules, or regulations or the accommodation provisions stated in this *Utility Accommodation Policy*, and
  - c. The occupancies would not significantly increase the difficulty or future cost of highway construction or maintenance.
2. A utility owner shall abide by the current version of this *Policy* each time a permit is authorized for its work. When future changes are made to this *Policy*, an existing utility facility is not required to meet the new version unless proposed changes to that facility require a new permit from Mn/DOT.
3. Nothing in *Policy* shall be considered as limiting to the rights of Mn/DOT to impose restrictions or requirements in addition to and/or deviations from those stated herein in any permit where Mn/DOT deems it advisable to do so. An appropriate explanation for such action should be provided to the utility owner.
4. The permitted facilities shall, if necessary, be altered by the utility owner to facilitate alteration, improvement safety, or maintenance of the highways as may be ordered after permit approval. All costs for constructing, maintaining, altering, and relocating the permitted facilities shall be the obligation of the applicant, unless a specific state-executed utility parcel or agreement otherwise provides

## **G. Exceptions to *Policy***

1. Exceptions to this *Utility Accommodation Policy* may be allowed if it is demonstrated that extreme hardships or unusual conditions provide justification and where alternative measures can be prescribed to fulfill the intent of these policies and procedures.
2. Any such exceptions must be:
  - a. Requested by an authorized person representing the utility owner;
  - b. Recommended for approval by Mn/DOT's District Engineer (or Authorized Representative);
  - c. Submitted to the FHWA for prior concurrence if the exception applies to a utility facility located on the National Highway System; and
  - d. Approved by Mn/DOT's Utilities Engineer, acting for the Commissioner of Transportation.
3. All requests for exceptions must include an evaluation of the direct and indirect design, environmental, and economic effects that would result if an exception is made, plus any other pertinent information.

## **H. Enforcement of *Policy***

1. Policies and procedures in the *Utility Accommodation Policy* shall be enforced as provided for in existing Minnesota Statutes and Minnesota Rules. Such enforcement might include, but is not limited, to the following:
  - a. Misdemeanor citations and responsibility for restoration costs when utilities begin work without a permit;
  - b. Increased bonding levels to recoup potential restoration costs;
  - c. Denial of future permits until past non-compliance is resolved; and
  - d. Litigation.
2. Every effort must be made by Mn/DOT to avoid the need for such enforcement. Establishing good working relationships with utility owners based upon coordination, cooperation, and communication can facilitate this effort.
3. In this regard, it needs to be made very clear that Mn/DOT districts do not have the authority to make promises to utility owners. All promises to utility owners and/or agreements between utility owners and Mn/DOT shall be handled through the Utility Agreements and Permits Unit by staff that possesses delegated authority. All such promises and/or agreements shall be documented.

## I. Prior Policies and Procedures

This *Utility Accommodation Policy* supersedes and replaces all policies and procedures, or portions of pertaining to the accommodation of utilities.

## II. Definitions

**Abandoned Facility** - An underground facility that is no longer in service and is physically disconnected from a portion of the operating facility that is in use or still carries service. An abandoned facility has been deemed abandoned by the operator. The state is the owner of any abandoned facilities.

**As-Built Drawings** - Depiction of the placed utility facilities within the highway right of way showing the location and elevation, and referenced to highway, stationing, and/or state grid system. Also known as record drawings, these plans depict the facility as constructed, incorporating all field changes.

**Average Daily Traffic (ADT)** - The average 24-hour volume, being the total volume during a stated period divided by the number of days in that period. Unless otherwise stated, the period is one year.

**Backfill** - Material used to replace or the act of replacing material removed during construction; also may denote material placed or the act of placing material adjacent to structures.

**Bedding** - Composition and shaping of soil or other suitable material to support a pipe, conduit, casing, or utility tunnel.

**Boring** - The operation by which large carriers or casings are jacked through oversize bores. The bores are carved progressively ahead of the leading edge of the advancing pipe as soil is mucked back through the pipe.

**Bridge** - A structure including supports erected over a depression or an obstruction such as water, highway, or railway; having a track or passageway for carrying traffic or other moving loads; and having an opening measured horizontally along the center of the roadway of ten feet or more between undercopings of abutments, between spring line of arches, or between extreme ends of openings for multiple boxes. This term also includes multiple pipes where the clear distance between openings is less than half of the smaller contiguous opening.

**Buffer Strip** - That portion of the roadside, usually vegetated, between the curb or curb line and the sidewalk or extending about four feet or more from the curb where there is no sidewalk.

**Cap** - A rigid structural element surmounting a pipe, conduit, casing, or utility tunnel.

**Carrier** - A pipe directly enclosing a transmitted fluid (liquid, gas, or slurry). Also an electric or communication cable, wire, or line.

**Casing** - A larger pipe, conduit, or duct enclosing a carrier.

**Clear Zone** - The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired width is dependent upon the traffic volumes, speeds, and roadside geometry.

**Coating** - Material applied to or wrapped around a pipe.

**Conduit** - An enclosed tubular casing, singular or multiple, for the protection of wires, cables, or lines, usually jacketed and often extended from manhole to manhole.

**Control of Access** - The condition where the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is fully or partially controlled by public authority.

**Full Control of Access** - The authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only by prohibiting crossings at grade or direct private driveway connections.

**Partial Control of Access** - The authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

**Coring** - The operation by which a small casing is drilled into firm soil. As the pipe advances, the core material is removed by sluicing during or after the drilling.

**Cover** - The depth to top of pipe, conduit, casing, cable, or similar line or utility tunnel below the earth or roadway surface. It is normally referenced from the bottom of the highway ditch.

**Cradle** - A rigid structural element below and supporting a carrier or casing.

**Direct Burial** - Installing a utility underground with or without encasement by plowing or trenching.

**Drain** - An appurtenance to discharge liquid contaminants from casings.

**Driving** - The operation by which a small pipe is driven through compressible soils by a steady thrust, hammering, or vibrating. A casing or corrosion-resistant covering is required to be used.

**Duct** - An enclosed tubular casing for protecting wires, lines, or cables, often flexible or semi-rigid.

**Encasement** - Structural element surrounding a carrier or casing.

**Encroachment** - The unauthorized use of highway right of way or easements by such items as signs, fences, buildings, utilities, parking, storage, etc.

**Environmentally Sensitive Areas** - Areas that include, but are not limited to, wet lands, flood plains, archaeological or historic sites; areas with stability or settlement problems; and areas with artesian conditions, animal or plant communities, landscapes or geologic formations with exemplary, unique, rare or threatened/endangered characteristics.

**Expressway** - A divided arterial highway for through traffic with partial control of access and generally with grade separations at major intersections.

**Fiber Optic Cable** - A communication cable that contains glass fibers.

**Force Main** - Construction that forces flow in a certain direction.

**Freeway** - An expressway with full control of access.

**Frontage Road** - A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.

**Gallery** - An underpass for two or more pipelines.

**Gravity Systems** - Elevation with a certain profile that only requires gravity for flow.

**Grounded** - Electrically connected to earth or to some extended conducting body that serves instead of the earth, whether the connection is intentional or accidental.

**Grout** - A cement mortar or slurry of fine sand or clay.

**Highway, Street or Road** - A general term denoting a public way for the transportation of people, materials, goods, and services but primarily for vehicular travel, including the entire area within the right of way.

**Horizontal Directional Drilling (HDD)** - Also known as directional boring and directional drilling. A method of installing underground pipes and conduits from the surface along a prescribed bore path. The process is used for installing telecommunications and power cable conduits, water lines, sewer lines, gas lines, oil lines, product pipelines, and casings used for environmental remediation. It is used for crossing waterways, roadways, congested areas, environmentally sensitive areas, and any area where other methods are more expensive and not feasible.

**Interstate Highways** - Freeways (as used herein). This includes, but is not limited to, highways on the Interstate System as defined below.

**Interstate System** - The Dwight D. Eisenhower National System of Interstate and Defense Highways. Highways on this system that are in Minnesota are included in the Minnesota Trunk Highway System.

**Jacket** - A concrete encasement placed around a carrier or casing.

**Manhole/Utility Access Hole** - An opening in an underground system that workers or others may enter for the purpose of making installations, removals, inspections, repairs, connections, and tests.

**Median** - The portion of a divided highway separating the traveled ways for traffic in opposite directions.

**National Highway System(NHS)** - An interconnected system of principal arterial routes serving major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and major travel destinations. The NHS includes all highways on the Interstate System, a large percentage of urban and rural principal arterials, the defense strategic highway network, and major strategic highway connectors.

**Normal** - Crossing at a right angle.

**Out-of-Service Facility** - An underground facility that is no longer maintained and is not intended for future use, but has not been deemed abandoned. An out-of-service facility may still be connected to a portion of the operating facility that is in use or still carries service. The utility owner retains ownership of such a facility.

**Pavement Structure** - The combination of subbase, base course, and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.

**Permit** - The document by which the Minnesota Department of Transportation regulates and gives approval for the use and occupancy of highway right of way by utility facilities or private lines. A permit is sometimes referred to as a “use and occupancy agreement”.

**Pipe** - A tubular product made as a production item for sale as such. Cylinders formed from plate material in the course of the fabrication of auxiliary equipment are not pipe as defined here.

**Flexible Pipe** - A plastic, fiberglass, or metallic pipe having large ratio of diameter to wall thickness, which can be deformed without undue stress.

**Rigid Pipe** - A pipe designed for diametric deflection of less than one percent.

**Semi-Rigid Pipe** – A pipe designed to tolerate from one percent to three percent diametric deflection

**Pipeline** - A continuous carrier used primarily for the transportation of liquids, gases, and/or solids from one point to another using either gravity or pressure flow.

**Plowing** - Direct burial of utility lines by means of a "plow" type mechanism that breaks the ground, places the utility line, and closes the break in the ground in a single operation.

**Pressure** - The relative internal pressure in a pipe (measured in pounds per square inch gauge, psig).

**Prairie Passage Route** - A continuous transportation route that starts in Minnesota and continues through Oklahoma, Kansas, Missouri, Iowa, and Tennessee. The partnership promotes awareness of natural and cultural resources and encourages the protection and planting of native wildflowers and grasses along roadsides.

**Private Lines** - Privately owned facilities that convey or transmit the commodities outlined in the definition of “utility facility” below, but are devoted exclusively for private use.

**Public Highway System** - Article XIV of the Minnesota Constitution authorizes the State to construct, improve, and maintain public highways and to assist political subdivisions in this work. To do so it establishes the following public highway systems:

**Trunk Highway System** - This system includes highways that are constructed, improved, and maintained as public highways under the jurisdiction of the Commissioner of Transportation. (Article XIV, Section 2, of the Minnesota Constitution). Also see definitions for “Interstate System” and “Trunk Highways”.

**County State-Aid Highway System** - This system includes highways that are constructed, improved, and maintained by the counties as public highways, including streets in municipalities of less than 5,000 population where necessary to provide an integrated and coordinated highway system and some similar streets in larger municipalities. (Article XIV, Section 3, of the Minnesota Constitution).

**Municipal State-Aid Street System** - This system includes highways that are constructed, improved, and maintained as public highways by municipalities having a population of 5,000 or more. (Article XIV, Section 4, of the Minnesota Constitution).

**Right of Way** - A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

**Roadside** - A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

**Roadway** - The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

**Roadbed** - Roadway (As used herein).

**Safety Rest Area** - A roadside area with parking facilities separated from the roadway provided for motorists to stop and rest for short periods of time. It may include drinking water, toilets, tables and benches, telephones, information, and other facilities for travelers.

**Scenic Overlook** - A roadside area provided for motorists to stop their vehicles beyond the shoulder, and primarily used for viewing the scenery in safety.

**Scenic Quality** - Environmental factors that influence the aesthetic and physical characteristics of the surrounding area.

**Slab, Floating** - A slab between a utility line and a structure or pavement, but not contacting either.

**Sleeve** - A short casing through a pier or abutment of a highway structure for passing conduit or pipe.

**Specimen Trees** - A notable and valued tree in consideration of species, size, condition, age, longevity, durability, crown development, function, visual quality, and public or private prominence or benefit as indicated in the contract documents or as determined by the Engineer.

**State** - State of Minnesota.

**Subsurface Engineering (SUE)** - The management of certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation, communication of utility data, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. SUE tools include traditional records, site surveys, and new technologies, such as surface geophysical methods and non-destructive vacuum excavation, to provide quality levels of information.

**Temporary Barrier** - A barrier used to prevent vehicular access into construction or maintenance work zones and to redirect an impacting vehicle so as to minimize damage to the vehicle and injury to the occupants, while providing worker protection.

**Traffic Barrier** - A device used to prevent a vehicle from striking a more severe obstacle or feature located on the roadside or in the median, or to prevent crossover median accidents.

**Transportation Agency** - The department, agency, commission, board or official of any State or political subdivision thereof charged by its law with the responsibility for highway administration.

**Traveled Way** - The portion of the roadway for the movement of through traffic.

**Trenched** - Installed in a narrow open excavation.

**Trunk Highways** - All roads established or to be established under the provisions of Article XIV, Section 2, of the Minnesota Constitution. This includes all highways that are constructed, improved, and maintained as public highways under the jurisdiction of the Commissioner of Transportation, including highways on the Interstate System.

**Untrenched (Trenchless)** - Installed without breaking the ground or pavement surface for such operations as jacking, tunneling, or boring.

**Utility Accommodation Policy** - A statement of the policies and procedures used by a transportation agency to regulate and accommodate utilities on the highway right of way.

**Utility Facility (Utility)** - A privately, publicly or cooperatively owned line, facility or system for producing, transmitting, or distributing communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity, including any fire or police signal system or street lighting system, which directly or indirectly serves the public. The term utility also means the utility company inclusive of any substantially owned or controlled subsidiary. For the purposes of this part, the term includes those utility-type facilities that are owned or leased by a government agency for its own use, or otherwise dedicated solely to governmental use. The term utility includes those facilities used solely by the utility that are a part of its operating plant. (See Minn. Stat., Sec. 161.45 and 23 CFR 645.207, M.).

**Utility Quality Level** - A professional opinion about the quality and reliability of utility information. There are four levels of utility quality information, ranging from the more precise and reliable, Level A, to the least precise and reliable, Level D. The utility quality level must be determined in accordance with guidelines established by the American Society of Civil Engineers in document CI/ASCE 38-02 entitled *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*.

**Utility Tunnel** - An underpass for one or more utility lines.

**Use and Occupancy Agreement** - The document by which the transportation agency approves the use and occupancy of highway right of way by utility facilities or private lines.

**Vent** - An appurtenance to discharge gaseous contaminants from a casing.

**Wildflower Routes, Designated** - State highway routes designated as wildflower routes in consideration of quality prairie stands.

### III. Permits

#### A. General

1. Under Minnesota Statutes and Minnesota Rules it is necessary for utility owners to obtain a permit in order to place utility facilities on trunk highway right of way. Such permits are issued by the Minnesota Department of Transportation (Mn/DOT). These permits contain a copy of the current rules under which they are issued. Before they can begin work, utility owners shall receive an approved permit from Mn/DOT. The utility owner or its contractor shall carry a copy of the approved permit at all times while working on the highway right of way.
2. The policies and procedures contained herein supplement the rules under which permits are issued and provide internal guidance for Mn/DOT employees when reviewing applications.
3. A valid permit includes the following signatures:
  - a. An authorized person representing the utility owner;
  - b. Mn/DOT's District Engineer (or Authorized Representative); and
  - c. Mn/DOT's Utilities Engineer, acting for the Commissioner of Transportation.
4. Mn/DOT is not required to submit permits to the FHWA for prior concurrence except when the proposed installation is not in accordance with Mn/DOT's approved *Utility Accommodation Policy*, and then only if the utility facility is located on the National Highway System.

#### B. Types of Permits

1. Mn/DOT issues three types of permits:

- a. Short Form No. 1723, Application for Installation of Utilities or Miscellaneous Work on Trunk Highway Right of Way. This form is used for minor work, such as the installation of utility service connections that do not cross or parallel the roadway within the trunk highway right of way. It is also used for the installation of miscellaneous guy wires and anchors, to place temporary obstructions on the right of way, for temporary relocations of a more minor nature to accommodate a construction project, and for other minor types of work to be done on highway right of way.
  - b. Drainage Form 30795-03, Application for Drainage Permit. This form must comply with the most current version of Mn/DOT Technical Memorandum No. 97-16-ENV005, Wetlands.  
Utility owners submit the Short Form and Drainage Form to the district for approval. The Assistant District Engineer, Maintenance, issues these permits.
  - c. Long Form No. 2525, Application for Utility Permit on Trunk Highway Right of Way. This form is used to request permission to place, construct, reconstruct, and thereafter maintain overhead and underground utility facility installations and extensions within trunk highway rights of way, whether longitudinally, oblique, or normal (perpendicular) in relation to the centerline of the highway. The Long Form is issued from the Mn/DOT Engineering Services Division, Preletting Services Section, with the approval of the District Engineer (or authorized Representative).
2. See <http://www.dot.state.mn.us/utility/index.html> for copies of these permits.

### C. Application

1. A completed “Application for Utility Permit on Trunk Highway Right of Way” includes the following information:
  - a. Highway number;
  - b. Location of the facility (including coordinates, if possible);
  - c. Type of construction (aerial or underground);
  - d. Voltage;
  - e. Number and size of conductors;
  - f. Conduit (type and size);
  - g. Casing (type and thickness);
  - h. Method of installation for underground facilities;
  - i. Vertical and horizontal clearances;
  - j. Tree clearances and trimming required;
  - k. Contemplated starting and completion dates;
  - l. Turf restoration plan/topsoil salvage, seed type, fertilizer, mulch, topsoil borrow, etc.

2. The applicant agrees to comply with the following environmental measures:
  - a. Protection measures required for specimen trees and environmentally sensitive areas;
  - a. Steps required to preserve the scenic quality of the highway; and
  - b. Erosion control measures, turf establishment, NPDES, use and disposal of treated wood/trash/waste and asbestos, and the disposal of waste material outside of the right of way.
  
3. The applicant also agrees to the following conditions:
  - a. The applicant shall strictly conform to the terms of the permit and the Rules of the State of Minnesota as set forth in Minnesota Rules Parts 8810.3100 through 8810.3600, adopted as of July 31, 1983, together with the Special Provisions.
  - b. The applicant shall comply with relevant regulations of all other governmental agencies required for the protection of the public.
  - c. The applicant shall accomplish all work in a manner that will not be detrimental to the highway and that will safeguard the public.
  - d. The applicant shall provide complete information for any underground facility, including its purpose.
  - e. The applicant shall agree to collect and depict information about existing subsurface utility facilities prior to any excavation on highway right of way in accordance with procedures set forth in ASCE Standard 38-02 entitled, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*, and in *Minnesota Statutes*, Section 216D.
  - f. The applicant shall include a photo reproducible sketch with each copy of the permit that gives the location relative to the highway center line and/or right of way line, applicable control of access lines and access points, in-place utility facilities (including highway drainage), and identifying features (including stationing on the highway) when available.
  - g. The applicant shall submit as-built drawings with line and grade elevations of all utility facilities placed within the right of way, referenced to roadway alignment or the State grid coordinates.

**D. FHWA Review**

1. When a utility owner files a notice or makes an individual application or request to Mn/DOT to use or occupy the right of way of a Federal-aid highway, Mn/DOT is not required to submit the matter to the FHWA for prior concurrence. Mn/DOT's authority, by mutual agreement with the local Division Office of the FHWA, is manifested in the form of an approved Utility Permit, except when the proposed installation is not in accordance with Mn/DOT's *Utility Accommodation Policy* approved by the FHWA for use on Federal-aid highway projects [See 23 CFR 645.215(d)].

2. Exceptions to Mn/DOT's *Utility Accommodation Policy* may be allowed if it is demonstrated that extreme hardships or unusual conditions provide justification and where alternative measures can be prescribed to fulfill the intent of these policies and procedures. As set forth in the exception's procedure in Section I.G., requests for exceptions must be submitted to the FHWA for prior concurrence if the exception applies to a utility facility located on the National Highway System.

**E. Plan Review**

Before issuing a permit, Mn/DOT must:

1. Review the sketches, as well as pertinent information regarding the type of facility and compliance with codes, rules, and laws pertaining to the facility and
2. Assure that utility installations crossing state lines on roadways and bridges have been coordinated with appropriate highway permitting officials in the neighboring states.

**F. Traffic Control Plan**

A written traffic control plan shall be designed based upon the *Minnesota Manual on Uniform Traffic Control Devices* and approved by Mn/DOT's Traffic Office.

**G. Certification**

Upon completion of the permitted work, the utility owner must send two copies of the Certificate of Completion and "as built" plans to the Mn/DOT Assistant District Engineer, Maintenance.

**IV. General Information**

**A. Private Lines**

1. Private lines are privately owned facilities that convey or transmit communications, electricity, gas, oil, water, or any other similar commodities outlined in the definition of utility facility, but devoted exclusively to private use.
2. Since private lines serve only the owner, it is generally not in the public interest for them to be located within highway right of way. Even so, private lines may be allowed to cross State trunk highways, but longitudinal installations are not allowed. Reasons for needing to cross the highway right of way might vary. There might be a need by a private entity to expand its operations to the other side of a highway, or there might be a need to restore existing private facilities that would be severed by construction of a highway project.

3. Permit applications are required for private crossings. FHWA approval is not required. All private utility installations allowed to cross State highway right of way shall follow the requirements of this *Policy*.

**B. Service Lines**

1. Service lines are a special class of private lines. Whether the public utility facility is on or off highway right of way, the sole reason for a service line to be on highway right of way is to facilitate its connection with a public utility. Because it is in the interest of both the customer and the utility owner to have these connections, service lines may be allowed to cross State trunk highways wherever practical, but longitudinal installations are not allowed.
2. There is a wide variation among utility owners on the division of ownership, costs, and responsibility between the utility owner and the customer for the portion of the service line on highway right of way. Mn/DOT neither seeks nor desires to regulate this relationship, however, because the utility owner clearly benefits from these service lines and, as a practical consequence of effectively regulating utility occupancy of highway right of way, the utility shall locate any service lines when requested to do so.

**C. Manholes, Vaults, and Pits**

1. Manholes, vaults, and pits must be limited to those necessary to install and service the line and must be directly in line with the utility facility and of the minimum width to accomplish their intended function and comply with any other necessary codes or requirements. They must be installed flush with the roadway or ground surface and must be of sufficient strength to withstand the superimposed loads of the roadway and traffic, including that of construction equipment.
2. Manholes, vaults, or pits shall not be placed or permitted to remain in the pavement or shoulders of high-volume roadways. Exceptions may be permitted on roadways in urban areas in cases of extreme hardship.
3. Manholes may be placed or permitted to remain in place under traffic lanes of low-volume roadways in urban areas provided measures are taken to minimize these installations and to avoid their locations at intersections as practical.

## **D. Access to Utility Facilities**

1. Mn/DOT has the authority to control access to all highways under its jurisdiction. This authority is not exercised on most highways. It is most applicable to some divided highways and expressways and to all freeways. Its purpose is to maintain the undisturbed, free flow of traffic. This objective is accomplished by giving preference to through traffic by limiting interference with vehicles, pedestrians, and other disturbances or objects that are entering, exiting, or crossing the highway.
2. There are two types of access control in Minnesota:
  - a. Full Control of Access – The authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only by prohibiting crossings at grade or direct private driveway connections. This level is typical on all freeways.
  - b. Partial Control of Access – The authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections. This level is typical of many divided highways and some expressways that have some intersections and driveways.
3. Direct access to utility facilities may be permitted on both fully and partially controlled access highways where alternate locations and means of access are not available or are impractical, as long as such access does not adversely affect safety or traffic operations or damage any facility. The following conditions also must be met:
  - a. Access for construction and/or servicing a utility facility shall be limited to frontage roads, nearby or adjacent public roads and streets, or trails along or near the highway right of way line, connecting only to an intersecting road.
  - b. A locked gate along the fence may be used to meet periodic service access needs. If a utility owner wants to make use of gates for access to its facilities on both fully and partially controlled access highways, the following conditions are required:
    - 1) Access to and from the highway will be on the basis of a revocable permit.
    - 2) The gates shall be locked when not in use and can only be used by authorized utility personnel.
    - 3) Use shall not adversely affect traffic operations.
    - 4) Use will not give the utility owner a claim to permanent access rights.

4. Access to utility supports, manholes, or other appurtenances in medians, interchange areas, or other inaccessible portions of the right of way on both fully and partially controlled access highways may be permitted under the following conditions:
  - a. Entry to the median area shall be restricted where possible to nearby grade separation structures, stream channel crossings, or other suitable locations not involving direct access from through lanes or ramps.
  - b. All permits shall include a traffic control plan and adequate provisions for control of access to the utility work zone and protection of workers and the traveling public.
  - c. Advance arrangements must be made between the utility owner and Mn/DOT for emergency maintenance procedures.

**E. Emergency Work**

1. Emergency situations may arise when immediate action to protect the safety of the general public requires utility operations within a trunk highway that are not in full compliance with the provisions of this *Policy*. Nothing herein shall be construed as requiring a utility owner to delay an emergency repair.
2. Emergency repairs may be performed within the right of way when physical conditions or time considerations prevent application for the usual permit. However, as soon as feasible, the utility owner shall advise the appropriate Mn/DOT District office of the emergency, its plans or actions for alleviating the dangerous situation, and arrangements made for the control and protection of traffic and pedestrians affected by its proposed operations. When the *Policy* requires a permit for such work, a permit shall be obtained as soon as possible and any alterations deemed necessary through the permit approval process shall be made.

**F. Discontinued Use of Facilities**

1. Above Ground Facilities. If a utility owner discontinues use of an above ground facility, the facility shall be entirely removed from the right of way within one year after its use is discontinued, unless Mn/DOT grants written approval for a time extension. All removal costs shall be the responsibility of the utility owner.
2. Underground Facilities. If a utility owner discontinues use of an underground facility but desires to leave it in place on the right of way, written approval to do so shall be obtained from Mn/DOT and a record shall be kept in the utility owner's permanent files in order that such facility may be accurately located in the field. Mn/DOT may at its discretion require abandoned and out-of-service pipes and appurtenant facilities (e.g., manholes, pull boxes, etc.) to be filled in or removed. All necessary removal and related costs shall be the responsibility of the utility owner.

3. Bridge Attachments. If a utility owner discontinues use of a facility on a highway bridge but desires to leave it in place on the bridge, written approval to do so shall be obtained from Mn/DOT. Any abandoned or out-of-service facilities that are removed from a bridge must be done so utilizing removal procedures approved by the Mn/DOT Bridge Office. All required removal costs shall be the responsibility of the utility owner.

## V. Location Requirements

### A. General

1. The location of utilities on highway right of way is governed by the provisions of the most recent versions of the following AASHTO publications:
  - a. *Roadside Design Guide*;
  - b. *A Policy on Geometric Design of Highways and Streets*;
  - c. *A Policy on the Accommodation of Utilities Within Freeway Right of Way*;  
*and*
  - d. *A Guide for Accommodating Utilities Within Highway Right of Way*.
2. Utility facilities shall be located to minimize the need for later adjustments to accommodate future highway improvements, reduce risks to trunk highway and environmentally sensitive areas, and permit access for servicing such lines with a minimum of interference to highway traffic.
3. The location of utility installations along urban streets with closely abutting improvements usually requires special considerations. Such considerations must be resolved in a manner consistent with the prevailing limitations and conditions.
4. The location of utility facilities and appurtenances shall be in accordance with the Americans with Disabilities Act.
5. The horizontal and vertical location of utility facilities within the highway right of way must, to the extent practicable, conform with the clear zone policy applicable to the type of highway and specific conditions of highway section involved. Clear zone policies are employed by Mn/DOT to increase safety, improve traffic operations, and enhance the appearance of highways by designing, constructing, and maintaining highway roadsides as wide, flat, rounded, and as free as practical from physical obstructions above ground; such as from trees, drainage structures, massive sign supports, utility poles, and other ground-mounted obstructions. Mn/DOT's policy is based on criteria contained in the most recent version of the *AASHTO Roadside Design Guide*.

## **B. Crossings**

1. Utility crossings of highways shall be normal to the highway alignment, where practicable.
2. Non-Controlled Access Highways. For utility crossings on highways where access is not controlled, all supporting structures and above ground appurtenances shall be located outside the clear zone.
3. Controlled Access Highways. For utility crossings on highways with partial and full control of access, all supporting structures and above ground appurtenances shall be located outside the access control line, and preferably outside the right of way line. Installation and maintenance shall be from frontage roads, crossroads, or streets, whenever practicable, or otherwise from outside the access control line and preferably outside the right of way line. Occasional exceptions may be allowed for an unusually wide right of way or median. Utilities permitted to cross freeways should preferably be located under the freeway. More information about freeway crossings may be found in Section VI.B., Crossings.
4. Utility crossings shall be avoided in deep cuts, near footings of bridges, retaining walls, noise walls, and at highway cross drains where flow of water, drift, or streambed load may be obstructed; in wet or rocky terrain where it is difficult to attain minimum cover; and through paved or unpaved slopes under structures.

## **C. Longitudinal Installations**

1. Uncontrolled Access. New longitudinal installations on highways with uncontrolled access shall be located on uniform alignment as near as practicable to the right of way line and outside the clear zone. Pole lines shall normally be placed in the outer five feet next to the right of way line. Underground facilities, such as power cable and telephone cable, should be placed in the outer 10 feet. Distribution gas mains should be parallel and adjacent to these facilities. Other locations may be approved where particular circumstances warrant. The joint use of pole lines is acceptable, as is common trenching or plowing of underground facilities. All installations should be so placed that all servicing may be done with a minimum disturbance to traffic.
2. Partial Control of Access. Longitudinal installations on highways with partial control of access shall generally be discouraged. When such installations are allowed, individual service connections shall not be permitted unless no other reasonable alternatives exist. Factors to be considered include distance between distribution points, terrain, cost, and prior existence.

3. Full Control of Access. Longitudinal installations on highways with full control of access shall not be permitted. Exceptions may be allowed as discussed in Section VI.C., Longitudinal Installations. When such installations are allowed, individual service connections shall not be permitted, the utility facility shall not be installed or serviced by direct access from the fully controlled access roadways or connecting ramps, and the utility facility shall not interfere or impair the safety, design, construction, operation, maintenance, stability, or future expansion of the highway.

**D. Median Installations**

1. Poles, guys, or other related facilities shall not be located in a highway median. This applies to both crossing installations and longitudinal installations. Exceptions may be made for crossings of wide medians with sufficient width to provide sufficient clear zone from the edges of both traveled ways. If additional lanes are planned, the clear zone shall be determined from the ultimate edges of the traveled way. When right of way lines and access control lines are not the same, such as when frontage roads are provided, supporting poles may be located in the area between them.
2. No utility work shall be performed in the median of any highway without prior Mn/DOT approval. When median work is authorized, unless otherwise stated in the utility's approved permit, the work shall conform to the following provisions:
  - a. The utility or its contractor shall notify Mn/DOT and/or local law enforcement agencies of the expected beginning and completion time of work in the median.
  - b. All equipment, operations, and spoil material shall be located within the center area of the median.
  - c. No openings, vehicles, equipment, or materials of any type shall be located within the median overnight.
  - d. All vehicles used to conduct the work operation shall be equipped with conspicuously visible roof-mounted revolving or strobe lights. These lights shall be in operation just prior to and during the work operation. Hazard warning lights on the vehicles shall also be operating.

**E. Appurtenances**

1. Appurtenant facilities (e.g., pedestals, manholes, vents, drains, rigid markers, meter pits, sprinkler pits, valve pits, regulator pits.) shall be located outside the clear zone and as close to the right of way line as possible. Manholes, valve pits, etc. shall be installed so that their uppermost surfaces are flush with the adjacent undisturbed surface. Those appurtenances that protrude more than 4 inches above the ground line shall not be in the clear zone. If no feasible alternative exists, appurtenances within the clear zone shall be placed

in areas that are inaccessible to vehicular traffic or shielded by existing traffic barriers.

2. Utility accesses and valve covers should not be located in the roadway of rural highways. In urban and suburban areas there may be no feasible alternative to locating utility accesses and valve covers in the roadway, in which case they should not be located in a wheel path, if possible. Coordination among utility owners is essential where utility accesses and valve covers are to occupy highway right of way.
3. Buildings shall not be located on the right of way. Exceptions may be granted in cases where the building can be located outside the clear zone on Mn/DOT owned right of way other than a State trunk highway. Examples of this include, but are not limited to, park-n-ride lots, rest areas, and remnant parcels.
4. Cabinets shall not be located on the right of way. Exceptions may be granted in cases where cabinets can be located in areas where they are not vulnerable to errant vehicles and as near to the right of way line as possible.
5. Manholes shall not be located in the pavement or shoulders of heavily traveled highways. Exceptions may be made on highways where manholes are essential parts of existing lines. New manhole installations shall be avoided at highway intersections.
6. Vents, drains, markers, utility access holes, shafts, shut-offs, cross-connect boxes, pedestals, pad-mounted devices, and similar appurtenances shall not be located where they would interfere with accessible facilities for the disabled along or across the highway.

## **F. Vertical Location**

1. Underground
  - a. The depth of bury for underground facilities within the right of way, except gas and low voltage electric, shall be a minimum of three feet as measured from the finished ground surface to the top of the facility at the time of installation. Gas lines and low voltage electric for street lighting shall have a minimum depth of two feet.
  - b. The depth of bury for all underground facilities crossing the highway shall be a minimum of three feet under ditches and five feet under the pavement surface as measured from a straight line connecting the lowest points of the finished ground or pavement surface on each side of the right of way to the top of the facility at the time of installation.

- c. Where minimum bury is not feasible, the facility shall be rerouted or protected with a casing, concrete slab, or other suitable measures. In solid rock, the depth of bury may be reduced if adequate protection is provided.
- d. More information concerning specific utilities can be found in Section X of this *Policy*. All utilities shall obtain prior approval from Mn/DOT before burying any utility less than the minimum depth required.

2. Overhead

- a. Vertical clearances for overhead utility facilities shall comply with all applicable State and national electrical codes as set forth in Mn/DOT's document entitled, *Basic Clearances for the Installation of Electric Supply and Communications Lines*. [See Table I on Page 24.]
- b. In all cases, facilities crossing over highways shall at no time be less than 18 feet above the high point of the traveled way.

**G. Scenic Considerations**

- 1. Mn/DOT makes every possible effort to enhance visual qualities along trunk highways. They do this by the retention and/or planting of trees, shrubs, and other vegetation; the selection of special alignments and corridors; and the acquisition of scenic easements.
- 2. New utility installations, including those needed for highway purposes (such as for highway lighting or to serve a weigh station, rest area, or recreation area) are not permitted on trunk highway right of way or other lands acquired or improved with Federal-aid funds that are located within, or adjacent to, areas of scenic enhancement and natural beauty. Mn/DOT may permit exceptions under the following conditions:
  - a. New underground installations may be permitted only if extensive removal or alteration of trees or terrain features visible to the highway user is not required, or the aesthetic quality of lands being traversed is not impaired.
  - b. Aerial installations may be permitted only when other locations are not available, are unusually difficult or costly, or are less desirable from the standpoint of aesthetic quality or when placement underground is not technically feasible, or is unreasonably costly.
- 3. The proposed installation will be made at a location that will employ a suitable design and materials that give the greatest weight to the aesthetic qualities of the area being traversed. Suitable designs include, but are not limited to, self-supporting, armless, single-pole construction with a vertical configuration of conductors and cable.

**Table I**

**MINNESOTA DEPARTMENT OF TRANSPORTATION**

**Basic Clearances for the Installation of Electric Supply and Communications Lines\***

Nature of ground or rails underneath wires	Guys Messengers Communications	Open Supply Wire Lines and Service Drops Voltages are between conductors							
	Telephone Cable Telephone Wire	0 to 750 Volts	750 to 15000 Volts	15000 to 50000 Volts	69000 Volts	115000 Volts	169000 Volts	230000 Volts	345000 Volts

Where wires cross over

Track rails of railroads handling freight cars, men permitted on top	27 ft.	27 ft.	28 ft.	30 ft.					
Public streets, alleys, or roads in urban or rural districts	18 ft.	18 ft.	20 ft.	22 ft.	23 ft.	25 ft.	26 ft.	30 ft.	34 ft.
Public streets, alleys, or roads in Twin City Metro-District	22 ft.	22 ft.	22 ft.	22 ft.	23 ft.	25 ft.	26 ft.	30 ft.	34 ft.
Public streets, alleys, or roads in Twin City Metro-District being over height house-moving routes	24 ft.	25 ft.	26 ft.	30 ft.	34 ft.				
Driveways to resident garages	12 ft.	12 ft.	20 ft.	22 ft.	23 ft.	25 ft.	26 ft.	30 ft.	34 ft.
Spaces or ways accessible to pedestrians only	15 ft.	15 ft.	15 ft.	17 ft.					

Where wires run along and within the limits of public highways or other public right-of-way for traffic

Streets or alleys in urban districts	18 ft.	18 ft.	20 ft.	22 ft.	23 ft.	25 ft.	26 ft.	30 ft.	34 ft.
Roads in rural districts	14 ft.	18 ft.	18 ft.	20 ft.	23 ft.	25 ft.	26 ft.	30 ft.	34 ft.

Note: Grade B Construction is required at crossings over highways.

The conductor height shall be such that the basic clearances shall be obtained with the sag determined at 120 degrees F.

In areas, which are prone to sleet condition, the sag shall be determined under "heavy" sleet loading (1/2 inch ice at 0 degrees F). The condition providing the greater sag shall be used in determining the height of the supporting structures.

\*These clearances modify those published in the National Electrical Safety Code.

4. Ground-mounted and aerial utility facilities shall be of a design compatible with the scenic quality of the specific highway being traversed and shall blend in with the ground contours and the scenery wherever possible. In areas of unusual scenic interest, (e.g. major recreational areas, historic areas, and major publicly and privately owned tourist attractions) underground utility placement shall generally be provided.
5. New utility installations on highways with special scenic designations may encounter sensitive natural or scenic areas that require special treatment. Such highway corridors may include designated wildflower routes, the National Prairie Passage Route, the Great River Road, and Scenic Byways. Similar sites may be located elsewhere on the trunk highway system near public parks and recreational lands, wildlife and waterfowl refuges, historic sites, scenic overlooks, rest areas, and landscaped areas. The Office of Environmental Services can verify impacted sites and recommend permit language, when applicable.

**H. Tree Protection**

1. Where underground utility facilities are to be installed near specimen trees, as identified by Mn/DOT, the tree root systems are to be protected by boring (tunneling) under the roots in the manner described below. The minimum tunnel depth within the root zone shall not be closer than 36 inches to the soil surface. Open trenching will not be permitted within the protection limits described. Boring will be required if the trench is located within the following radius:

Tree Diameter 4½ ft. Above Ground	Distance from Face of Tree Trunk
0"-2"	1'
3"-4"	2'
5"-9"	5'
10"-14"	10'
15"-19"	12'
> 19"	15'

2. In lieu of boring (tunneling), the applicant may re-route underground utility lines to avoid damage to specimen trees.

## **VI. Freeways**

### **A. Locations**

1. Minnesota's metro and rural area freeway locations are maintained in a table that can be accessed from <http://www.dot.state.mn.us/utility/index.html>.
2. Mn/DOT reserves the right to add locations as existing highways are changed to freeway standards and as new census data is received.

### **B. Crossings**

1. New utility facility installations and relocations of existing utility facilities may be permitted to cross a freeway. Where a utility facility follows a crossroad that is carried over or under a freeway, provisions should be made for the utility facility to cross the freeway on the crossroad in such a manner that it can be constructed and serviced without access from the freeway traffic lanes or ramps.
2. Overhead utility lines crossing a freeway shall be adjusted so that supporting structures are located outside control of access lines. In no case shall the supporting poles be placed within the clear zone. Where required, intermediate supporting poles may be placed in medians of sufficient width to provide the clear zone from the edges of both traveled ways. If additional lanes are planned, the clear zone shall be determined from the ultimate edges of the traveled way. When right of way lines and access control lines are not the same, such as when frontage roads are provided, supporting poles may be located in the area between them.
3. At interchange areas, supports for overhead utility facility shall be permitted only when the appropriate clear zone is provided, sight distance is not impaired, and access can be safely obtained.
4. Manholes and other points of access to underground utility facility crossing a freeway may be permitted only when they are located beyond the clear zone of the freeway traffic lanes or ramps. If additional lanes are planned, the clear zone shall be determined from the ultimate edges of the traveled way.
5. Irrigation ditches and water canals should be excluded from freeways. When a crossing is absolutely necessary, it may be made by underground siphon or through culverts or bridges as appropriate to the size of canal, topographic conditions, and highway safety aspects. Locations and structures are to be designed in the same manner as facilities for natural transverse drainage. All access and egress for servicing such facilities shall be from outside the access control lines.

### **C. Longitudinal Installations**

1. The installation of new utility facilities shall not be allowed longitudinally within the right of way of any freeway, except in special cases under strictly controlled conditions. When a utility already exists within the right of way of a proposed freeway and it can be serviced, maintained, and operated without access from the freeway traffic lanes or ramps, it may be allowed to remain as long as it does not adversely affect the safety, design, construction, operation, maintenance, or stability of the freeway. Otherwise it shall be relocated.
2. Due to State legislation and legal arrangements that impact the State's development of fiber optics, a separate policy is being developed to address the installation of fiber optics along freeway right of way. The installation of fiber optics on all other highways is subject to the provisions contained in this document.
3. When utility owners believe special circumstances exist, they must present their case for longitudinal installations on freeways as early in the pre-design process as possible. Where such installations are requested, the utility owner shall in each case demonstrate to Mn/DOT's satisfaction that:
  - a. The accommodation will not adversely affect the safety, design, construction, traffic operations, maintenance, or stability of the freeway.
  - b. Alternate locations are not available or are cost prohibitive from the standpoint of providing efficient utility services.
  - c. The accommodation will not interfere with or impair the present use or future expansion of the freeway.
  - d. The location of the utility facility outside of the right of way would result in the loss of productive agricultural land or loss of productivity of agricultural land. In this case, the utility owner must provide information on the direct and indirect environmental and economic effects for evaluation and consideration by the Commissioner of Transportation.
  - e. Access for constructing and servicing utility facility will not adversely affect safety and traffic operations or damage any highway facility.
4. In all cases of new longitudinal utility accommodations, whether for freeways or non-freeways, the utility owner shall obtain a permit and install the utility facility in accordance with the approved permit.

### **D. Vehicular Tunnels**

1. Utilities shall not be permitted to occupy vehicular tunnels on freeways at new locations except in extreme cases. Under no circumstances, however, shall a utility facility that transports a hazardous material be allowed to occupy a vehicular tunnel.

2. When a utility facility occupies space in an existing vehicular tunnel that is converted to a freeway, relocation of the utility facility may not be required. Utilities that have not previously occupied an existing vehicular tunnel that is incorporated into a freeway will not be permitted therein except in extreme cases.

**E. Utility Access**

1. Mn/DOT has the authority to control access to all highways under its jurisdiction. This authority is particularly applicable to freeways.
2. Direct access to a utility facility is generally discouraged but may be permitted when alternate locations and means of access are not available or are impractical, as long as such access does not adversely affect safety or traffic operations or damage any facility. More details about this are contained in Section IV.D. of this *Policy*.

**VII. Structure Requirements**

**A. Utility Facilities on Highway Bridge Structures**

1. Utility facility installations on highway structures are allowed by utility permit or may be provided for by agreement when installed in conjunction with highway construction. Mn/DOT's Bridge Office shall approve such installations before construction of the facility begins.
2. The utility owner is responsible for the design of its facility, subject to Mn/DOT approval. Factors influencing the design of an installation are the effects on traffic flow, structural integrity of highway structures, ease of highway and utility maintenance, and aesthetic appearance of the installation.
3. All utility facilities installed on highway structures shall be constructed of durable materials designed with a long life expectancy, and must be installed in a manner that will minimize routine servicing and maintenance over the design life of the facility.
4. Future growth of a utility should be considered. The system should be planned so as to avoid interference with highway traffic should expansion be required. It may be advantageous to install utility facilities at the time of State bridge construction to minimize the expense of a future expansion program.

5. Generally, utility facility installations on structures shall be above low superstructure and inside of the fascia elements. The strength of beams or girders cannot be reduced by drilling. Field welding on structures is not permitted. Expansion shall be provided for on all conduit and pipe runs. All supports shall be of a non-rusting material. Any abutment opening around a utility installation shall be sealed.
6. Because of concerns of potential strikes from high loads, gas and electric power installation designs shall generally be located in an interior girder bay (a minimum of two girders in from the edge of structure) and located vertically within one foot of the bottom of slab.
7. Installations of all utility facilities near bridge structures supported on spread footings shall be subject to the following restrictions:
  - a. No soils shall be disturbed below a line extending from the bottom of the footing horizontally for a distance of 3 feet from the edge of the footing and then continuing downwards and outwards on a 2:1 slope.
  - b. Any lines carrying fluids (e.g., water, sanitary sewer, storm lines,) that are within 50 feet of the edge of any spread footing shall be cased unless the elevation of the line is 15 feet or more above or 50 feet or more below the footing elevation. If it is impracticable to case storm sewer lines, they shall be placed outside the "50 foot line."
8. All visible utility facility installations shall be clearly marked at each substructure with the utility owners' name and the type of facility (e.g. gas, telephone, electric power, high voltage electric power).
9. Conduit shall be galvanized steel (may be coated) or fiberglass. A duct or conduit run shall generally terminate in the shoulder beyond the bridge approach panels.
10. Mn/DOT procedures limit parallel pipeline installations on highway structures to water, steam, sewer, cable TV, fiber optic lines, electrical power lines, and natural gas distribution pipelines. All are to be installed in accordance with the latest applicable codes.
11. Natural gas pipeline installations on highway bridge structures are subject to the following additional requirements:
  - a. Maximum operating pressure and corresponding nominal pipe diameters will be as shown below:

Operating Pressure (psi)	Maximum Diameter Pipe (inches)
0-100	6
101-175	4
176-400	3
> 400	Not Allowed

- b. Shut-off valves, automatic where practical, must be installed within 300 feet from each end of the structure, unless segments of the lines can be isolated by other devices within a reasonable distance.
  - c. Gas lines must be vented in an approved manner.
  - d. Pipelines shall be steel pipe and all joints, except expansion joints, shall be welded.
  - e. The pipeline shall be electrically insulated from the bridge structure.
  - f. The pipeline installation must be designed and installed so that the bridge structure and vehicle traffic do not create hoop stress on the pipe.
  - g. The operating pressure of the pipeline must not create hoop stress in excess of 20 percent of the specified minimum yield strength of the pipe. The specified minimum yield strength of the pipe shall be 42,000 p.s.i. (API X42).
12. High voltage electric power transmission line installations (> 35 kV) on bridge structures shall generally not be permitted except in extraordinary circumstances, and then only after a detailed analysis of all other construction methods or alternatives are determined not to be practicable. The increased cost of alternative construction methods will not be considered a reason for the installation of high voltage transmission lines on bridge structures. In addition, the utility owner shall address the following safety and operational issues to Mn/DOT's satisfaction.
- a. The proposed installation will not pose a hazard to bridge and roadway construction and maintenance personnel working on or near the installation.
  - b. The proposed installation will not pose a hazard to the motoring public.
  - c. The proposed installation will include adequate shielding protection to eliminate adverse effects of Electric Magnetic Field (EMF) on radio interference, fuel ignition potential, potential increased corrosion deterioration of reinforcing and structural steel, and long-term health effects of maintenance personnel working on the bridge for extended periods of time.
  - d. The proposed installation will be adequately designed to reduce the possibility of any shock hazards when installed on bridges that allow overtopping of flood waters or submersion of superstructure in high water.
  - e. The proposed installation would not pose environmental problems now or in the foreseeable future.

- f. The proposed installation shall be designed to allow shut down of lines. upon request of Mn/DOT, and that area to be serviced by the transmission line will have adequate and available alternate sources of power.

**B. Utility Tunnels and Bridges**

1. A utility tunnel or a bridge may be provided for a carrier or casing crossing a major highway at a strategic location. Such tunnel or bridge may serve a joint purpose as a utility and pedestrian facility and/or sign support structure. Where it can be foreseen that several utility crossings will be needed, the cost of a tunnel (either a large casing or a box culvert) or a bridge may be less than the cost of several untrenched or separate carriers or casings. Where these conditions exist, Mn/DOT should take steps as necessary to ensure that adequate coordination is performed with and among the utility owners to:
  - a. Anticipate utility needs for future crossings;
  - b. Combine facilities into a single joint use crossing;
  - c. Establish applicable permitting procedures; and
  - d. Establish applicable Mn/DOT requirements and expectations pertinent to designing, constructing, inspecting, and maintaining utility tunnels and bridges.
2. In a tunnel or on a bridge, provision shall be made to isolate mutually hazardous materials being carried, such as fuel and electric energy, by compartmentalizing or by auxiliary encasement of incompatible carriers.
3. The utility tunnel or utility bridge structure shall conform in appearance, location, cover, earthwork, and markers to Mn/DOT's standard culvert and bridge practices and shall be referenced by a bridge number obtained from the Mn/DOT Bridge Office.
4. Prior to installing a utility tunnel or bridge, utility owners shall agree that any maintenance, servicing, or repair of the utility lines will be their responsibility. They shall also agree that the cost of designing, constructing, and maintaining the utility tunnel or bridge is to be divided among the utility owners in an agreed upon and equitable manner. Mn/DOT will participate in these costs only to the extent that the utility owner would otherwise normally be reimbursable for such work or to the extent that the structure is used for highway purposes.

**C. Lighting and Other Above-Ground Structures**

1. Above-ground lighting facilities, lighting fixture supports, and all other above-ground structures shall be located outside the clear zone, except under the conditions listed below:

- a. Right of way width limits are less than the clear zone requirements and it is not cost effective to acquire additional right of way.
- b. Light poles conform to breakaway design features as defined in the most current edition of the *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals*.
- c. No ground structure or base protrudes more than four inches above the surface of the natural ground and can be maintained at that level
- d. The installation is at least ten feet from the roadway or two feet behind the face of the curb in an area where the posted speed limit is 40 miles per hour or less.
- e. The facility is shielded by an already existing guardrail or is located in an area that is inaccessible to vehicular traffic.

## VIII. Design Requirements

### A. General

1. Highway and utility facilities, by tradition, practice, and in some instances, laws, frequently co-exist within or along the same corridors. Therefore, it is essential that these public service facilities be compatibly designed and operated. Joint highway and utility planning and development efforts should be encouraged.
2. The potential impact on the highway and its use must be considered in the design and location of utility facilities on or along the highway. Consideration should also be given to the utility service needs of the area traversed where such service is to be provided from utility facilities on or near the highway.
3. All utility installations on, over, or under highway right of way and attachments to highway structures shall be of durable materials designed for a long service life expectancy and relatively free from routine servicing and maintenance.
4. Utility and highway facilities should be separated to avoid damage during installation and to provide for reasonable success in locating facilities with electronic devices. Separation of the facilities from highway facilities or other utilities may require the acquisition of additional property by the utility owner. Utility facilities should also be separated from one another as required by appropriate codes and ordinances.
5. On new utility facility installations or adjustments of existing ones, provisions should be made for known or planned expansion of the utility facilities, particularly those located underground or attached to bridges. They should be planned to minimize hazards and interference with highway traffic when additional facilities are installed at some future date.

## B. Responsibilities

1. Mn/DOT Responsibilities. Mn/DOT is responsible for the review and approval of proposals from utility owners in accordance with the provisions in this document.
2. Utility Owner Responsibilities. Utility owners are:
  - a. Responsible for the design of the utility facility to be installed within the highway right of way or attached to a highway structure. Full consideration must be given to measures necessary to preserve and protect the maintenance, operation, safety, and aesthetic characteristics of the highway. Depth, clearances, and separation between utility facilities and the work must be in accordance with provisions in this document.
  - b. Required to collect and depict information in accordance with Minnesota Statutes, Section 216D, and in accordance with procedures set forth in ASCE Standard 38-02, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*. See Section VIII.D. below for more information.

## C. Requirements

Utility installations on, over, or under highway right of way shall, as a minimum meet the following requirements:

1. Electric power and communication facilities shall conform to the currently applicable *National Electrical Safety Code*. Where the Code apparently does not apply, the minimum standards in that Code for the lowest voltage line shall apply. Utility owners or industry standards may prescribe more protection. Depending upon the installation, Mn/DOT may have more restrictive requirements (See Table I in Section V of this *Policy*).
2. Water lines shall conform to applicable standards by the American Water Works Association.
3. Pressure pipelines shall conform to currently applicable Federal, State, local, and industry codes. Federal codes are contained in 49 CFR Parts 192, 193, and 195.
4. Liquid petroleum pipelines shall conform to the currently applicable recommended practice of the American Petroleum Institute for pipeline crossings under highways.
5. Any pipeline carrying hazardous materials shall conform to the rules and regulations of the U.S. Department of Transportation governing the transportation of such materials.

## **D. Subsurface Utility Engineering**

1. SUE is defined as a branch of engineering practice that involves managing certain risks associated with the following: utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design.
2. The Subsurface Utility Engineering (SUE) process should be an integral part of the design for every new utility facility installation on highway right of way. The SUE process for collecting and depicting information about existing subsurface utility facilities is described in ASCE Standard 38-02, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*. This standard provides a system of classifying quality levels of existing underground utility data that are placed on plans. Such classifications allow the project owner, the engineer, and the contractor to develop strategies to reduce risk, or at a minimum, to allocate risk to existing underground utilities in a defined manner.
3. The SUE process basically involves systematically evaluating the need for accurate and comprehensive information. The SUE process typically and very generally works as follows:
  - a. SUE normally begins with the collection and correlation of existing utility records (Quality Level D) and surveyed visible utility facilities (Quality Level C).
  - b. It may then proceed to the application of appropriate surface geophysical methods to determine the existence and horizontal position of utility facilities within the area of proposed excavation (Quality Level B).
  - c. This information is surveyed to project control, correlated with previously obtained information, and analyzed for conflicts with the proposed installation.
  - d. It may then be determined that additional information is needed that involves physically exposing existing subsurface utility facilities (Quality Level A).
4. SUE is a step-by-step process. There are other steps in addition to those shown above, but the ones shown above establish the general framework for the process and utilize the basic technologies (surface geophysical methods for utility imaging and vacuum excavation for nondestructive excavation). Decisions are made at every step as to whether or not more information is needed.

5. The proper use of SUE during the development of highway projects will eliminate many of the utility problems typically encountered on highway projects, including:
  - a. Delays to projects caused by waiting for utility relocation work to be completed so highway construction can begin;
  - b. Delays to projects caused by redesign when construction cannot follow the original design due to unexpected utility conflicts;
  - c. Delays to contractors during highway construction caused by cutting, damaging, or discovering utility lines that were not known to be there;
  - d. Claims by contractors for delays resulting from unexpected encounters with utilities; and
  - e. Deaths, injuries, property damage, and releases of product into the environment caused by cutting utility lines that were not known to be there.

## IX. Construction Requirements

### A. General

1. Construction requirements are included as an integral part of Mn/DOT permits. These requirements will not be repeated verbatim in this *Policy*. It will be the permittee's responsibility to be aware of all the construction requirements contained in the approved permit and to comply with them.
2. A few items of particular interest that may or may not be included in the permit but should be complied with are included below:
  - a. Permit at Job Site. When Mn/DOT issues a permit to a utility owner for its proposed work, a complete copy of the approved permit shall be in the possession of the utility owner's work force, consultant, contractor, or subcontractor at all times when utility work is being performed within the highway right of way.
  - b. Use of Highway Median. Any use of a highway median is prohibited unless specifically authorized in the approved permit.
  - c. Use of Temporary Guard Pole. No guard pole (i.e., pole used to prevent aerial lines from falling onto the traveled way) shall be set within the right of way unless specifically authorized by in the approved permit.
  - d. Unexpected Field Conditions. Any modification of the terms of the approved permit to meet changed or unexpected field conditions shall require prior Mn/DOT approval before work may proceed.
  - e. Blasting. Blasting on the right of way is prohibited unless specifically authorized in the approved permit.
  - f. Survey Markers. Neither Mn/DOT survey markers (e.g., right of way marker, benchmark) nor any other survey markers (e.g., USGS, County) located on Mn/DOT right of way shall be disturbed unless prior approval

has been obtained from Mn/DOT or their owners. Mn/DOT or the utility owner, at the expense of the permittee, shall restore any survey marker that is disturbed, removed, or destroyed.

- g. Vegetation. No trees, shrubs, or other vegetation shall be sprayed, cut, trimmed, or damaged in any way to facilitate the installation of a utility facility unless specifically authorized in the approved permit.
- h. Rare or Endangered Species. Utility owners should be aware of rare or endangered plant species, or animal and insect species that feed off of native vegetation in the right of way that must be protected or avoided by law.
- i. Highway Signs. A utility owner shall not remove any highway sign unless approved to do so in its permit.

## **B. Traffic Control**

1. Traffic controls for utility construction shall conform to the *Minnesota Manual on Uniform Traffic Control Devices*. Any utility construction operation shall be planned with full regard to safety, and interference with roadway traffic shall be kept to an absolute minimum.
2. No utility work shall begin until all appropriate traffic control devices are in place and fully functional. These traffic control devices must be maintained until all utility work is complete.
3. For those operations that entirely close or encroach upon a traffic lane, shoulder, or ramp, a proper traffic control plan shall be submitted or made reference to with a utility owner's permit application. On heavily traveled highways, utility construction operations interfering with traffic should not be allowed during periods of peak traffic flow.
4. Long-Term, Intermediate-Term, and Short-Term Work. All utility work that takes longer than 15 minutes to perform should utilize appropriate typical diagrams contained in the *Minnesota Manual on Uniform Traffic Control Devices*. If desired, a utility owner may develop its own traffic control plan contingent upon Mn/DOT approval. Mn/DOT may require a more extensive traffic control plan if:
  - a. Utility work is to be performed during nighttime hours;
  - b. Traffic control zones are to be left overnight or during other non-work times;
  - c. Utility work is to be performed in a continuously moving traffic control zone; and
  - d. Typical diagrams in the *Minnesota Manual on Uniform Traffic Control Devices* do not adequately cover utility work.

5. Most utility operations fall into the category of short-term work. The work crew is present to maintain and monitor the temporary traffic control zone. Signs are mounted on portable stands and pavement markings are generally not removed.
6. Mobile Temporary Work. Mobile operations often involve frequent short stops for utility work during daylight hours that will be completed in 15 minutes or less. As compared to stationary operations, mobile operations are activities that might involve different treatments. Basic considerations for mobile temporary work are as follows:
  - a. Maintaining safe work and road user conditions is a paramount goal in carrying out mobile operations. During mobile work, it often takes longer to set up and remove the traffic control devices than to perform the work. Workers face hazards in setting up and taking down the temporary traffic control zone. Also, since time is short, delays affecting road users are significantly increased when additional devices are installed and removed. Considering these factors, simplified control procedures may be warranted for short-duration work. A reduction in the number of signs and channelizing devices may be offset by the use of appropriately colored or marked vehicles with rotating lights or strobe lights, preferably augmented with sign or arrow panels, and possibly the use of flaggers.
  - b. Mobile work usually does not require the use of a specific traffic control plan. Even so, a utility owner is still responsible for providing traffic control adequate to protect public safety. If a mobile operation does not move every 15 minutes it should be considered a short-term operation and the appropriate short-term layout should be used. If sight distance is limited or traffic volumes are high, a short-term layout should also be considered.
  - c. Safety should not be compromised by using fewer devices simply because the operation is only for a few minutes or will frequently change its location. Portable devices should be used and flaggers may be used, but caution must be exercised so they are not exposed to unnecessary hazards. The traffic control devices should be moved periodically to keep them near the work space. If mobile operations are in effect on a high-speed travel lane of a multi-lane divided highway, a flashing arrowboard should be used.

### **C. Work Site Safety**

1. The utility owner is responsible for securing the work site against any hazard to workers, pedestrians, bicyclists, and the motoring public at all times until all of the work is completed. Vehicles, equipment, and materials that are in active use at the work site shall be regulated by the utility owner to assure consistently safe conditions.

2. Sheeting, shoring, bulkheads, and concrete barriers may be required by Mn/DOT, as may anything else deemed necessary to comply with OSHA requirements for safeguarding work sites.
3. Utility hardware or equipment that is located at the work site but not in immediate use should be stored in a safe location off of the right of way. If this is not practical, the hardware or equipment may be stored beyond the clear zone as close to the fence or right of way line as possible.
4. Vehicles and equipment shall have their high intensity flashing lights (strobe or revolving) and hazard warning lights operating during work operations when they are within the right of way.
5. All workers (utility, Mn/DOT, contractor, etc.) who are exposed to or working adjacent to moving motor vehicle traffic or mobile earth-moving equipment shall wear high visibility apparel (vest, shirt or jacket) at all times. High visibility pants are also required at all times for flag persons and during low light and night time conditions for all others. When working in an area that does not require the use of a hard hat for head protection, a high visibility hat should be worn. High visibility apparel shall comply with requirements set forth in the *Minnesota Manual on Uniform Traffic Control Devices*.

**D. Trenching and Backfill**

1. Trenchless Construction

- a. Every possible effort should be made to avoid disturbing the pavement surface when installing new utility facilities, especially where underground utility lines are crossing major highways, expressways, or freeways. Trenchless construction should always be considered as a means of doing this. Trenchless methods may include driving, coring, or boring.
- b. The size of the trenchless construction operation should be restricted and the conditions specified under which the void outside the carrier or casing must be backfilled with grout. Where soils are favorable and the carrier is 4 feet or more deep, the diameter of the trenchless construction hole may be five percent larger than the diameter of the carrier. Grout backfill should be considered for carriers or casings more than 12 inches in diameter and for overbreaks, unused holes, or out-of-service carriers or casings.
- c. Portal limits (e.g., surface openings, bore pit limits) of pipeline crossings should be established beyond the clear zone of the highway so as to avoid impairing the roadway during installation of the pipeline. Where a bulkhead seals the pipeline portal, the portal should be suitably offset from the surfaced area of the highway. Where a bulkhead is not installed in the pipeline, the portal should be offset no less than the vertical difference in elevation between the surfaced area of the highway and the pipeline.

## 2. Trenched Construction

- a. At highway crossings, care must be taken to prevent the trench from becoming a drainage channel. On longitudinal lines, care must be taken to prevent the trench from interfering with surface or subsurface drainage.
- b. During construction, open trenches or other excavations within the clear zone shall not be permitted to remain beyond the workday unless backfilled, covered, delineated, or shielded.
- c. The following minimum specifications for trenching and backfilling shall be applied:
  - 1) When the existing highway pavement must be cut to accommodate a utility facility installation, the opening should be saw cut to a minimum depth of 1.5 inches.
  - 2) The width of pavement removal should be determined by the width of the required trench plus 12 inches minimum on each side of the trench. In the event the distance of any adjacent longitudinal or transverse joint or crack is less than 4 feet from the recommended width of cut, the pavement should be removed and replaced to that joint or crack. The additional pavement removal is intended to minimize later development of a sag in the surface of pavement over the trench.
  - 3) Trenches shall be cut to have vertical faces, where soil and depth conditions permit, with a maximum width of the outside diameter of the casing or carrier, plus 2 feet. They shall be shored where necessary. Lateral and vertical support shall be provided for all existing facilities and structures. Short tunnel sections should be used near adjacent facilities.
  - 4) Bedding should be provided to a depth of 6 inches or half the diameter of the casing or carrier, whichever is less. Bedding should consist of granular material, free of lumps, clods, stones, and frozen materials, and should be graded to a firm but yielding surface without abrupt change in bearing value. Unstable soils and rock ledges should be sub-excavated from the bedding zone and replaced by suitable material. The bottom of the trench should be prepared to provide uniform bedding throughout the length of the installation.
  - 5) Backfill under the roadway and foreslopes should be placed in two stages: first, fill to the level of the top of carrier or casing and second, fill to the former surface. Fill should consist of suitable material placed in layers of appropriate thickness to permit consolidation by compaction according to current applicable specifications. Consolidation by flooding or jetting may be permitted only in specific warranted conditions. For backfill of trenched pavement, materials and methods of compaction should be adapted to achieve prompt restoration of traffic service.

- 6) Mn/DOT may require that backfill and/or repaving be performed by its forces or under its direction at the expense of the utility owner. Where a utility owner can demonstrate that it is capable of acceptable and adequate repair, it may be authorized to perform its own restoration using specifications acceptable to Mn/DOT.

**E. Encasement**

1. Casings should be considered for the following conditions:
  - a. As an expediency in the insertion, removal, replacement, or maintenance of carrier pipe crossings of freeways, expressways, and other controlled access highways, and at other locations where it is necessary to avoid trenched construction;
  - b. As protection for carrier pipe from external loads or shock either during or after construction of the highway; and
  - c. As a means of conveying leaking fluids or gases away from the area directly beneath the roadway to a point of venting at or near the right of way line or to a point of drainage in the highway ditch or a natural drainage way.
2. The Commissioner of Transportation will determine the need for casing of pressurized carrier pipes and carriers of materials that are flammable, corrosive, expansive, energized, or unstable.
3. Jacked or bored installations of coated carrier pipes should be cased. Exceptions may be made where assurance can be provided against damage to the protective coating.
4. Consideration should be given to encasement or other suitable protection for any pipeline with less than minimum cover; near footings of bridges or other highway structures or across unstable or subsiding ground, or near other locations where hazardous conditions may exist.
5. Rigid encasement or suitable bridging should be used where support of pavement would be impaired by depression of flexible carrier pipe. Casings should be designed to support the load of the highway and superimposed loads thereon and, as a minimum, should equal the structural requirements for highway drainage facilities. Casings should be composed of materials of satisfactory durability under conditions to which they may be exposed.
6. Casing pipe shall be sealed at the ends with a flexible material to prevent flowing water and debris from entering the annular space between the casing and the carrier. The installations should include necessary appurtenances, such as vents and markers.

7. See Section X.C. for additional information pertaining to encasement of pipelines.

**F. Mechanical Protection**

1. For some conditions, pipeline crossings of the highway may be installed without encasement. Normally, such installations should be limited to trenched construction. The following controls are suggested for providing mechanical protection to uncased pipeline crossings of the highway.
  - a. On uncased construction the carrier should conform to the material and design requirements of utility industry and governmental codes and standards. In addition, the carrier pipe should be designed to support the load of the highway plus superimposed loads thereon when the pipe is operated under all ranges of pressure from maximum internal to zero pressure. Such installations should employ a higher factor of safety in the design, construction, and testing than would normally be required for cased construction.
  - b. Suitable bridging, concrete slabs, or other appropriate measures should be used to protect existing uncased pipelines, which by reason of shallow cover or location make them vulnerable to damage from highway construction or maintenance operations. Such existing lines may remain in place without further protection measures if they are of adequate depth and do not conflict with the highway construction or maintenance operations, provided both highway and utility officials are satisfied that the lines are, and will remain, structurally sound and operationally safe.
  - c. Uncased crossing of welded steel pipelines that carry flammable, corrosive, expansive, energized, or unstable materials, particularly if carried at high pressure or potential, may be permitted, provided additional protective measures are taken in lieu of encasement. Such measures would employ higher factor of safety in the design, construction, and testing of the uncased carrier pipe, including such features as thicker wall pipe, radiograph testing of welds, hydrostatic testing, coating and wrapping, and cathodic protection.

**G. Pavement Cuts**

1. Open cutting of the pavement to install utility facilities is highly discouraged because it adversely affects the structural integrity of the roadway. If it is not possible to install a utility facility without disturbing the pavement, the utility owner must provide written documentation and justification for an open cut. Where a longitudinal open cut is proposed or where several cuts are proposed to cross the pavement in the same area, Mn/DOT representatives responsible for the affected section of roadway will inspect the roadway to determine the extent of road repair that will be required.

2. The utility owner will be required to use patch materials at least equal in quality and thickness of layer to the original construction and the patch must be placed in accordance with Mn/DOT specifications. The limits of the pavement patch must extend at least two feet outside the limits of the trench. The edges of the trench must be beveled at least six inches. The limits of the patch must have vertical faces and must be saw cut for a clean break. The restored surface must be flush with and sloped at the same rate as the existing surface.

#### **H. Markers/Facility Protection**

1. A trace wire, metallic tape, or other method to effectively locate and mark the underground lines shall accompany all non-metallic underground lines. Whenever feasible, such methods shall include devices incorporated into the utility line.
2. No underground line shall be permitted within the highway right of way unless the line owner subscribes to the services of Gopher State One Call and/or some other appropriate "call-before-you-dig" system serving two or more utilities in the area.
3. The utility owner shall place permanent markers identifying the location of underground utility facilities, whether they are crossing the highway or installed longitudinally along the highway, where appropriate. Markers shall be installed in such a manner as to not interfere with highway safety and maintenance operations. Preferably, the markers shall be located at the right of way line if that location will provide adequate warning. The telephone number for one-call notification services (i.e., Gopher State One Call) to request marking the line location prior to excavation and for emergency response shall appear on the marker.
4. When it is likely that highway construction or maintenance activities could involve existing underground utility facilities it is desirable to locate and identify these facilities well in advance of the commencement of the work as an aid to work crews. The location of each underground utility facility should be identified by the utility owner with stakes, paint, or other temporary on-the-surface markings coded with an identifying color by utility type. The recommended uniform color code system is shown in Table II.

**Table II**  
**Uniform Color Codes**

Red	Electric power lines or conduits – distribution, transmission, and municipal electric systems.
Yellow	Gas or oil pipelines – distribution and transmission, all pipelines carrying hazardous or dangerous materials including petroleum products, steam, compressed air, or compressed gases.
Orange	Communication lines including telephone and telegraph systems, police and fire communications, and cable television.
Blue	Water systems, irrigation, reclaimed water, and slurry pipelines.
Green	Storm and sanitary sewers and drains.
Florescent Pink	Temporary survey markings.
White	Proposed excavation.

**X. Specific Requirements**

**A. Overhead Power and Communication Lines**

1. This *Policy* was developed with integrated sections. Thus, other sections may be applicable to overhead power and communication lines and need to also be read in order for the reader to fully understand this topic.
2. Location
  - a. In rural areas, new overhead power and communication pole lines shall be located on a uniform alignment as far from the roadway as possible, preferably near the right of way line. Guy wires placed within the right of way shall be held to a minimum. They may be located as needed but in no case shall they be located within the clear zone.
  - b. In urban areas, new overhead power and communication pole lines in uncurbed sections shall be located at or as near as practical to the right of way line. Where there are curbed sections, the utility facility shall be located as far as practical behind the face of outer curbs and, where feasible, behind the sidewalks at such locations that will not interfere with adjacent property use. In all cases there shall be at least a two foot clearance behind the face of the curb.

- c. The location of overhead utility facilities on highways with narrow right of way or on urban streets with closely abutting improvements requires special considerations. Such cases must be resolved in a manner consistent with the prevailing limitations and conditions. Before locating the utility facility at other than the right of way line, consideration should be given to designs employing self supporting, armless single-pole construction, with vertical alignment of wires or cables, or other techniques permitted by governmental or industry codes that are conducive to a safe traffic environment. Exceptions to these clearances may be made where poles and guys can be shielded by existing traffic barriers or placed in areas that are inaccessible to vehicular traffic.
- d. New above ground facilities shall be located outside the clear zone. If the clear zone extends to the right of way line, then no installation should be permitted unless there is no feasible alternative. Where there are no feasible alternatives, new facilities that project more than four inches above the ground line should be shielded by existing traffic barriers or placed in areas that are inaccessible to vehicular traffic.
- e. Longitudinal lines on highway right of way shall be limited to single pole construction. Transverse lines shall also be limited to single pole construction where practicable, but may also be approved to use the same type supports that are used on the portion of the line immediately adjacent to the highway right of way provided all other requirements in this section are met.
- f. Where irregular shaped portions of the right of way extend beyond or do not reach the normal right of way limits, variances in the location of utility facilities should be allowed to maintain a reasonably uniform alignment for longitudinal installations. Such installations will reduce the need for guys and anchors between poles and roadway.
- g. Longitudinal installations of poles, guys, or other facilities shall not be located in a highway median. For crossings of a highway, poles should not be located in the highway median unless there is no feasible option, in which case, if located within the clear zone, they shall be shielded by existing traffic barriers or placed in areas that are inaccessible to vehicular traffic.
- h. The horizontal and vertical location of overhead power and communication lines relative to a highway bridge or other structure shall provide adequate clearance for construction and maintenance activities.

3. Design

- a. All overhead lines regardless of voltage or metallic content shall meet the requirements of the *National Electrical Safety Code*.
- b. Designs employing self-supporting, armless, single-pole construction, with vertical alignment of wires, cables, or other techniques permitted by governmental or industry codes should be considered whenever feasible. However, they must be conducive to safe traffic operations.

- c. Joint-use single pole construction should be encouraged at locations where more than one utility or type of facility is involved.
- d. The distance between utility poles should be the longest feasible span lengths consistent with geometric and design line loading considerations.
- e. Where practical and economically feasible, existing pole lines should be replaced with buried cables when relocation is necessary within the highway right of way. Buried cable may not be practical where there will be multiple connections to overhead lines, to utility customers, or where line voltage is high.

4. Vertical Clearances

- a. The minimum vertical clearance for overhead power and communication lines above the highway and approaches to the highway shall conform to the current *National Electrical Safety Code*.
- b. Greater clearances shall be used when required by State law, regulation, or policy as summarized in Mn/DOT's document entitled, *Basic Clearances for the Installation of Electric Supply and Communications Lines*. This document may be found in Table I and at <http://www.dot.state.mn.us/utility/index.html>.
- c. Lines crossing over highways shall at no time be less than 18 feet above the high point of the traveled way.

**B. Underground Power and Communication Lines**

- 1. This *Policy* was developed with integrated sections. Thus, other sections may be applicable to underground power and communication lines and need to also be read in order for the reader to fully understand this topic. Due to State legislation and legal arrangements that impact the State's development of fiber optics, a separate policy is being developed to address the installation of fiber optics along freeway right of way. The installation of fiber optics on all other highways is subject to the provisions contained in this document.

2. Location

- a. Underground power and communication lines may be placed longitudinally by plowing or open trench method and must be located on uniform alignment as near as practical to the right of way line to provide a safe environment for traffic operations, preserve the integrity of the highway, and preserve space for future highway improvements or other utility facility installations. The distance from the right of way line will depend upon the terrain involved and obstructions such as trees and other existing underground or aerial utility lines. On highways with frontage roads, longitudinal installation will be located between the frontage roads and the right of way lines. Underground lines shall not be placed longitudinally beneath the median or beneath through traffic roadways

including shoulders. Underground lines placed longitudinally along a connecting roadway shall not be placed under the median or beneath through traffic roadways, including shoulders, where the roadway connects with a State highway.

- b. Underground power and communication lines to be installed across any existing roadway shall be installed by boring, tunneling, or jacking in accordance with Mn/DOT specifications. When installed by jacking or boring, encasement may be required. Bore pits should generally be located at least 30 feet from the edge of the nearest through traffic lane and at least 20 feet from the edge of pavement on ramps. On low-traffic roadways and frontage roads, bore pits should be at least 10 feet from the edge of pavement and at least five feet from the face of curb. Adequate warning devices, barricades, and protective devices must be used to prevent traffic hazards. Where circumstances necessitate the excavation of a bore pit closer to the edge of pavement than established above, concrete barrier or other approved devices must be installed for protection of traffic. Bore pits must be located and constructed to not interfere with highway structural footings. Shoring must be used if necessary.
- c. Utility crossings should be avoided in deep cuts; near footings of bridges, retaining, and noise walls; at highway cross drains where flow of water, drift, or streambed load may be obstructed; in wet or rocky terrain where it is difficult to attain minimum cover; and through paved or unpaved slopes under structures.

### 3. Depth of Cover

- a. The critical controls for depth of cover for underground power and communication lines are the low points in the highway cross section. Usually these are the bottoms of the longitudinal ditches. The critical controls for cover are the depths of drainage facilities, bridge structures, and likely highway maintenance operations. The depth of cover should be sufficient to withstand the greatly increased impact loads transmitted through frozen soil.
- b. Minimum depths for longitudinal power lines are as follows:
  - 1) Lines that are not under or within five feet of the roadway shall have a minimum depth of cover of three and one-half feet and preferably four feet for both cased lines and non-cased lines. Low voltage lines for lighting shall have a minimum depth of cover of two feet for both cased and non-cased lines.
  - 2) Lines that are under the pavement surface or within five feet of the roadway shall have a minimum depth of cover of five feet for both cased lines and non-cased lines.
  - 3) All lines shall have a minimum depth of cover of three and one-half and preferably four feet under ditches.
- c. Minimum depths for longitudinal communication lines are as follows:

- 1) Lines that are not under or within five feet of the roadway shall have a minimum depth of cover of three feet for both cased lines and non-cased lines.
  - 2) Lines that are under the pavement surface or within five feet of the roadway shall have a minimum depth of cover of five feet for both cased lines and non-cased lines.
  - 3) All lines shall have a minimum depth of cover of three feet under ditches.
- d. The depth of bury for underground power and communications facilities crossing the highway shall be a minimum of (a) three and one-half feet and preferably four feet under ditches for power, (b) three feet under ditches for communications, and (c) five feet under the pavement surface for both as measured from a straight line connecting the lowest points of the finished ground or pavement surface on each side of the right of way to the top of the facility at the time of installation.
  - e. Where minimum bury is not feasible, the facility shall be rerouted or protected with a casing, concrete slab, or other suitable measures. In solid rock, the depth of bury may be reduced if adequate protection is provided.
  - f. Exceptions may be authorized for existing power and communications lines to remain in place with a reduction of six inches in the depths of cover specified. Where less than minimum cover will result, the utility line shall be provided with additional mechanical protection by the utility owner. In such instances, the designer should consider increasing wall thickness or encasing the utility facility when the depth of cover is less than desirable, taking into account the relative risk with respect to the product carried and engineering and safety factors.
  - g. Further reductions may be permitted if the line is protected by a reinforced concrete slab that meets the requirements as follows:
    - 1) Width: Three times the facility diameter but not less than four feet;
    - 2) Thickness: Minimum of six inches;
    - 3) Reinforcing: Minimum of #13 bars on 12 inch centers or equivalent; and
    - 4) Cover: Minimum of six inches between the slab and top of line.
  - h. All utility owners shall obtain prior approval from Mn/DOT before burying any utility facility less than the minimum depth required.
  - i. More information concerning specific utilities can be found in Section V.F. of this *Policy*. Minimum depths for all utility facilities are summarized in Table III at the end of this section.

#### 4. Encasement

- a. Underground power and communication lines may be cased or non-cased provided the installation complies with the depths of cover specified herein. Encasement, where used, may be metallic or nonmetallic. Such encasement shall be designed to support the load of the highway and superimposed loads thereon, including that of construction equipment.

The strength of the encasement must equal or exceed structural requirements for drainage culverts, and it must be composed of materials of satisfactory durability under conditions to which it may be subjected.

- b. Where used, encasement must be provided under center medians, from top of backslope to top of backslope for cut sections, five feet beyond toe of slope and under fill sections, five feet beyond face of curb in urban sections and all side streets, and five feet beyond any structure where the line passes under or through. Encasement may be omitted under medians that are substantially wider than normal standards for such roadways.
  - c. See Section IX.E. for additional information pertaining to encasement.
5. Appurtenances. See Section V.E. for information pertaining to appurtenances associated with underground power and communication lines.
6. Markers/Facility Protection. See Section IX.H. for information pertaining to markers and facility protection.

### C. Pipelines

1. This *Policy* was developed with integrated sections. Thus, other sections may be applicable to pipelines and need to also be read in order for the reader to fully understand this topic.
2. Codes
  - a. Pressure pipelines carrying gas and liquid petroleum shall conform to the currently applicable sections of Federal, State, local, and industry codes. Federal codes are contained in the Code of Federal Regulations, title 49, parts 192, 193, and 195.
  - b. High pressure gas pipelines shall conform to the currently applicable sections of the Standard Code of Pressure Piping of the American National Standards Institute and applicable industry codes.
  - c. Liquid petroleum pipelines shall conform to the currently applicable recommended practice of the American Petroleum Institute for pipeline crossings under highways.
  - d. Water lines shall conform to the currently applicable Specifications of the American Water Works Association.
  - e. Any pipeline carrying hazardous materials shall conform to the rules and regulations of the U.S. Department of Transportation governing the transportation of such materials, including Code of Federal Regulations, title 49, parts 192, 193, and 195.
  - f. Pipeline installation permits shall specify the class of materials being carried; the maximum working, test, or design pressures; and the design standards for the carrier.

- g. When it is anticipated that there will be a change in the class of materials being carried or an increase in the maximum design pressure specified in the permit, the utility owner shall give Mn/DOT advance notice and obtain approval for such changes. The notice shall specify the applicable codes to be used.

3. Encasement

- a. All high pressure pipelines less than six inches in diameter and all low pressure pipelines crossing under the roadbed of trunk highways may be cased or non-cased. However, only welded steel lines with adequate corrosion protection may be used for non-cased highway crossings.
- b. All high pressure pipelines six inches in diameter or greater carrying gases and all pipelines carrying hazardous liquids crossing under trunk highways shall be cased, unless the following conditions are met:
  - 1) Open trenching method: Pipelines placed by an open trench method must be of sufficient inherent strength to withstand the forces imposed by highway and vehicular traffic and must be coated or of a non-corrosive material that meets industry standards.
  - 2) Trenchless Technology: Pipelines placed using trenchless technologies, such as jacking, boring, or horizontal directional drilling methods, may be placed under highways without a casing pipe if they meet specified requirements. All proposed crossings using this method of installation will be reviewed and approved on a case-by-case basis considering the soil conditions, location of pipeline, pipeline size, other pipeline, pipeline size, other pertinent factors, and adherences to the following requirements:
    - a) It is a welded steel pipeline.
    - b) It is cathodically protected.
    - c) It is coated in accordance with accepted industry standards.
    - d) It complies with Federal and State requirements and meets accepted industry standards regarding wall thickness and operating stress levels.
    - e) The depth of the crossing is a minimum of three feet below the original ditch grade.
    - f) The bores are continuous from the beginning of the installation until the leading edge of the pipeline is through the entire crossing.
    - g) The completed pipeline crossings are all pressure tested.
    - h) During pipeline installation, traffic on the highway will not be restricted and all Mn/DOT regulations will be applied.
    - i) Grouting will be done along the top of the pipe to fill all voids.
    - j) Large mains that are out of service in the highway right of way will be removed or filled with approved materials.

- c. All water lines shall be cased when crossing under the roadbed of trunk highways, except service lines of two inch diameter or less. Encasement may also be omitted under entrances, depending upon the type and amount of traffic and the depth, condition, and maintenance responsibility.
- d. Where pipelines are cased, the encasement should extend a suitable distance beyond the slope or ditch lines. On curbed sections, the encasement should extend outside the outer curbs. Where appropriate, the encasement should provide for future widening of the highway without need for any utility adjustment.
- e. See Section IX.E. for additional information pertaining to encasement of pipelines.

4. Crossings

- a. Pipeline crossings should be avoided within basins of an underpass drained by a pump if the pipeline carries a liquid, liquefied gas, or other potentially hazardous materials.
- b. Installations crossing existing highways and made subsequent to highway construction may be placed by auguring from inside the pipe. Pre-auguring is not permissible. The leading edge of the auger head shall not protrude more than one inch from the end of the casing during boring operations.
- c. Carrier pipe six inches in diameter and under may be installed by pushing or jacking it under an existing roadway.

5. Depth of Cover

- a. The critical controls for depth of cover for pipelines are the low points in the highway cross section. Usually these are the bottoms of the longitudinal ditches. The critical controls for cover are the depths of drainage facilities, bridge structures, and likely highway maintenance operations. The depth of cover should be sufficient to withstand the greatly increased impact loads transmitted through frozen soil.
- b. Minimum depths for longitudinal pipelines are as follows:
  - 1) Pipelines, except those carrying gas and liquid petroleum, which are not under or within five feet of the roadway, shall have a minimum depth of cover of three feet for both cased lines and non-cased lines. Pressure pipelines carrying gas and liquid petroleum shall have a minimum depth of two feet for both cased lines and non-cased lines.
  - 2) Pipelines that are under the pavement surface or within five feet of the roadway shall have a minimum depth of cover of five feet for both cased lines and non-cased lines.
  - 3) Pipelines shall have a minimum depth of cover of three feet under ditches.

- c. The depth of bury for all underground facilities crossing the highway shall be a minimum of three feet under ditches and five feet under the pavement surface as measured from a straight line connecting the lowest points of the finished ground or pavement surface on each side of the right of way to the top of the facility at the time of installation.
- d. Where minimum bury is not feasible, the facility shall be rerouted or protected with a casing, concrete slab, or other suitable measures. In solid rock, the depth of bury may be reduced if adequate protection is provided.
- e. Exceptions may be authorized for existing pipelines to remain in place with a reduction of six inches in the depths of cover specified. Further reductions may be permitted if the pipeline is protected by a reinforced concrete slab that meets the requirements as follows:
  - 1) Width: Three times the pipe diameter but not less than four feet;
  - 2) Thickness: Minimum of six inches;
  - 3) Reinforcing: Minimum of #13 bars on 12 inch centers or equivalent; and
  - 4) Cover: Minimum of six inches between the slab and top of pipe.
- f. All utilities shall obtain prior approval from Mn/DOT before burying any utility less than the minimum depth required.
- g. More information concerning specific utilities can be found in Section V.F. of this *Policy*.
- h. Minimum depths for all utilities are summarized in Table III at the end of this section. Boring Specifications

6. Boring Specifications

- a. Casing pipe shall be installed using equipment that encases the hole as the earth is removed. Boring without the concurrent installation of a casing pipe is not permissible. Casing pipe shall extend through the entire fill and be installed in a manner that will not disrupt traffic nor damage the roadway grade and surface. The introduction of water into an excavation is prohibited.
- b. Steel casing pipe shall be new material, with minimum yield strength of 35,000 psig (pounds per square inch gauge). All joints in steel casing pipe shall be welded. The following minimum wall thickness shall be used:

**Casing Pipe Wall Thickness**

Outside Diameter	Under Highway
12" to 28"	0.250
30" to 34"	0.375
36" to 60"	0.500

- c. Reinforced concrete casing pipe must be properly classed based on the depth of cover over the pipe. A minimum of 5000 psi (pounds per square inch) concrete pipe must be used when casing pipe is jacked. Bell type ends are not permitted.
- d. No boring is to be started under any portion of the roadway until an approved permit to do so has been received by the contractor.

7. Vents

- a. Vents should be located at the high end of short casings and generally at both ends of casings longer than 150 feet.
- b. Vent standpipes should be located and constructed so as not to interfere with maintenance or use of the highway. They should not be concealed by vegetation. They should preferably stand on a fence or right of way line.
- c. In urban areas, vents should be permitted only where they do not affect pedestrian traffic.

8. Drains. Drains shall be provided for casings and tunnels enclosing carriers of liquid, liquefied gas, or heavy gas. Drains should empty outside the roadside area to a natural feature, a roadway ditch, or at other locations approved by Mn/DOT. Such outfall shall not be used as a wasteway for purging the carrier unless specifically authorized.

9. Shut-off Valves. Shut-off valves, preferably automatic, shall be installed in lines at or near ends of structures.

10. Appurtenances. See Section V.E. for information pertaining to pipeline appurtenances.

11. Markers/Facility Protection. The utility owner must place readily identifiable and suitable markers immediately above any underground pipelines it places within the right of way fence line. Signs shall identify the owner/operator name, the Gopher State One Call telephone number, and the type of facility. Utility sign markers shall be placed at maximum intervals of ¼ mile and on each side of all public roads, streets, and trails the utility facility crosses. Where plastic pipe is installed without a metal casing, a metal wire must be installed concurrently or other means provided for detection purposes. See Section IX.H. for additional information about markers and facilities protection.

12. Plastic Lines. The maximum size of plastic lines must not exceed industry standards.

## D. Sanitary and Storm Sewers

1. This *Policy* was developed with integrated sections. Thus, other sections may be applicable to sanitary and storm sewers and need to also be read in order for the reader to fully understand this topic.
2. Codes
  - a. Sanitary sewer shall be installed in accordance with industry standards.
  - b. Storm sewers shall be installed in accordance with Mn/DOT standards.
3. Encasement
  - a. Gravity systems shall be cased when installed by jacking and/or boring, unless the carrier pipe is of such size and material that it would normally be installed without a casing.
  - b. Force mains larger than two inches in diameter crossing the highway shall be cased under the roadbed.
  - c. Lines to be operated under pressure or which do not conform to the material, strength, or cover depths contained herein must be cased.
  - d. Encasement under entrances may be omitted, depending upon the type and amount of traffic and the depth, condition, and maintenance responsibility.
  - e. See Section IX.E. for additional encasement information.
4. Depth of Cover
  - a. The critical controls for depth of cover for sanitary and storm sewers are the low points in the highway cross section. Usually these are the bottoms of the longitudinal ditches, the depths of other drainage facilities, bridge structures, and likely highway maintenance operations.
  - b. The depth of cover should be sufficient to withstand the greatly increased impact loads transmitted through frozen soil.
  - c. Minimum depths for longitudinal sanitary and storm sewers are as follows:
    - 1) Sanitary and storm sewers that are not under or within five feet of the roadway shall have a minimum depth of cover of three feet for both cased lines and non-cased lines.
    - 2) Sanitary and storm sewers that are under the pavement surface or within five feet of the roadway shall have a minimum depth of cover of five feet for both cased lines and non-cased lines.
    - 3) Sanitary and storm sewers shall have a minimum depth of cover of three feet under ditches.
  - d. The depth of bury for all underground facilities crossing the highway shall be a minimum of three feet under ditches and five feet under the pavement surface as measured from a straight line connecting the lowest points of

the finished ground or pavement surface on each side of the right of way to the top of the facility at the time of installation.

- e. Where minimum bury is not feasible, the facility shall be rerouted or protected with a casing, concrete slab, or other suitable measures. In solid rock, the depth of bury may be reduced if adequate protection is provided. Exceptions may be authorized for existing pipelines to remain in place with a reduction of six inches in the depths of cover specified above.
- f. All utility owners shall obtain prior approval from Mn/DOT before burying any utility less than the minimum depth required.
- g. More information concerning specific utilities can be found in Section V.F. of this *Policy*. Minimum depths for all utility facilities are summarized in Table III at the end of this section.

5. Materials. New and relocated sewer lines may be of any material that has been proven to be of satisfactory strength and durability in local use, provided all other requirements are met and approved by Mn/DOT.

6. Markers/Facility Protection

- a. The utility owner must place readily identifiable and suitable markers immediately above any sanitary sewer lines it places within the right of way line.
- b. Signs shall identify the owner/operator name, the Gopher State One Call telephone number, and the type of facility.
- c. Utility sign markers shall be placed at maximum intervals of ¼ mile and on each side of all public roads, streets, and trails the utility facility crosses.
- d. Where non-metallic lines are installed without a metallic casing, a durable metal wire must be installed concurrently or other means provided for detection purposes. See Section IX.H. for additional information about markers and facilities protection.

**E. Irrigation and Drainage Pipes, Ditches, and Canals**

- 1. Irrigation and drainage pipes installed across highway right of way should be designed and constructed in accordance with Mn/DOT standards for highway culverts and bridges.
- 2. Ditches and canals not required for highway drainage that closely parallel the highway shall generally not be constructed within the highway right of way unless approved by Mn/DOT.

**Table III**

**UTILITIES ON MINNESOTA HIGHWAY RIGHT OF WAY**

**MINIMUM DEPTHS**

**Crossings**

	<b>Under Pavement Surface</b>		<b>Under Ditch</b>
All Underground, except Power (Cased and Uncased)	5'		3'
Power (Cased and Uncased)	5'		3.5'

**Longitudinal Installations**

	<b>Under Pavement Surface or Within 5' of Roadway</b>	<b>5' of More Away from Roadway</b>	<b>Under Ditch</b>
Power Lines (Cased and Uncased)	5'	3.5'	3.5'
Low-Voltage Power Lines (Cased and Uncased)	5'	2'	3'
Communications Lines (Cased and Uncased)	5'	3'	3'
All Pipelines (Except Gas) (Cased and Uncased)	5'	3'	3'
Gas Pipelines (Cased and Uncased)	5'	2'	3'
Sanitary and Storm Sewers (Cased and Uncased)	5'	3'	3'



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## Utility Relocation and Accommodation on Federal-Aid Highway Projects

### Chapter 2: Utility Accommodation

It is recognized to be in the public interest for utility facilities to jointly use the right-of-way of public roads and streets when such use does not interfere with primary highway purposes. The opportunity for such joint use avoids the additional cost of acquiring separate right-of-way for the exclusive accommodation of utilities. As a result, the right-of-way of highways, particularly local roads and streets, is used to provide public services to abutting residents as well as to serve conventional highway needs.

Utility facilities, unlike most other fixed objects that may be present within the highway environment, are not owned nor are their operations directly controlled by State or local transportation departments. Because of this, highway authorities have developed policies and practices that govern when and how utilities may use public highway right-of-way. The FHWA utility accommodation regulations have been developed to reflect this situation. A discussion of the development of FHWA policies may be found in the following documents:

- *Utility Relocation and Accommodation: A History of Federal Policy Under the Federal-Aid Highway Program, Part II: Utility Accommodation.*
- *Highway/Utility Guide, Chapter Two, Historical Perspective.*

These documents were distributed in 1981 and 1993, respectively. They are important reference sources for those dealing with utility accommodation on Federal-aid projects. A link to copies of these documents may be found on the FHWA's utilities web page at: <http://www.fhwa.dot.gov/programadmin/utility.cfm>.

The last major rewrite of the FHWA's overall utility accommodation regulations occurred on May 15, 1985, when a final rule was published in the *Federal Register*. The only significant changes since then occurred on February 2, 1988, July 5, 1995, and November 22,

2000, when amendments to the regulations were published in the *Federal Register*.

The 1988 amendments dealt with utility use of freeway right-of-way. It stipulated that each State must decide, as part of its utility accommodation plan, whether or not to allow longitudinal utility installations within the access control limits of freeways and under what circumstances. The FHWA retained the authority to approve each State's freeway utility accommodation plan. The State then operates under its plan and decides whether to permit specific utility installations along freeways.

The 1995 amendments brought the definition of "clear zone" into conformance with the definition in the American Association of State Highway and Transportation Officials (AASHTO) *Roadside Design Guide*, and incorporated an amendment conforming the utilities regulations to the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

The 2000 amendments emphasized that the most important consideration in determining whether a proposed facility is a utility or not, is how the State views it under its own laws and/or regulations, and eliminated a confusing provision to clarify the intent that the utility regulations are not applicable to longitudinal installations of private lines.

The following discussions examine the material presented in 23 CFR 645 subpart B on accommodation of utilities.

## **Applicability (23 CFR 645.203)**

### **Private Lines**

There has often been some confusion as to the extent private line use of highway right-of-way is covered by FHWA's utility accommodation regulations.

When the FHWA was developing implementing policies and procedures for utility accommodation, an issue was identified concerning the need for privately owned and used facilities which transport commodities to cross highway right-of-way (e.g., a farmer's water line or an industrial plant's pipeline). Reasons for needing to cross the highway right-of-way might vary. There might be a need by a private entity to expand its operations to the other side of a highway, or there might be a need to restore existing private facilities that would be severed by construction of a highway project.

Recognizing that private line crossings of a highway could be handled in a fashion similar to utility crossings, the FHWA's implementing policies and procedures for utility accommodation

- [Context](#)

provided the States the latitude to include this matter in their utility accommodation policies.

The FHWA intended for its utility accommodation regulations to apply to private lines crossing highway right-of-way, but did not intend for them to cover extensive longitudinal use of highway right-of-way by private lines. The mechanism for handling requests for extensive private line longitudinal use of Federal-aid highways (both freeways and non-freeways) is found in 23 CFR 1.23(c).

Questions may arise as to whether a particular facility is a "private line" or a "utility" (see discussion of "Utility" below). For a borderline case, a legal opinion may well be in order to establish the status of the facility.

### **Policy (23 CFR 645.205)**

#### **Public Interest Finding**

Section 645.205(a) is extremely important because it contains the Federal Highway Administrator's finding that it is in the public interest for utility facilities to be accommodated on the right-of-way of Federal-aid or direct Federal highway projects provided certain conditions are met. This finding is required under the provisions of 23 CFR 1.23, and is a prerequisite for permitting non-highway use of the right-of-way of Federal-aid or direct Federal highway projects.

[Sensitive](#)

It is important to note that this public interest finding covers only utility facilities. No similar blanket public interest finding has been made to cover private lines, although private line crossings of highway right-of-way may be addressed within a State's utility accommodation policy and have generally been accepted in a manner similar to utility crossings of highways (see discussion of "Private Lines" below).

Even so, extensive private line longitudinal use of highway right-of-way must be handled on a case-by-case basis. In each case it must be shown why it would be in the public interest for private facilities to longitudinally use and occupy public right-of-way for private purposes.

#### **State Authority**

Under 23 CFR 645.205(c), the State is required to control utility use of right-of-way on a Federal-aid project so as to preserve the operational safety and the function and aesthetic quality of the highway facility. The authority for this requirement flows from 23 U.S.C. 116 in that proper maintenance of a highway facility requires, among other things, adequate control over non-highway facilities, such as utilities which may be located within the right-of-way.

## **Federal Lands**

Section 645.205(d) was added when the utility accommodation regulations were revised in 1985. This section was inserted not to reflect a change in policy but rather to flag the issue that on some highway projects other Federal agencies may also have legal jurisdiction in determining whether certain uses of the land underlying the highway facility, including occupancy by utilities, are to be allowed.

## **Definitions (23 CFR 645.207)**

### **Clear Zone**

The clear zone definition conforms to that in the AASHTO *Roadside Design Guide*.

The State establishes the clear zone. Recognizing that the clear zone area may vary depending on the type of highway, terrain traversed, and overall road geometric and operating conditions, this section has not attempted to define specific clear zone criteria or standards. This information may be found in the *Roadside Design Guide*.

### [Solutions](#)

Clear zone should be viewed as an essential and integral design feature of a highway project. As such, it should be evaluated and its impact considered as part of the overall project development process. In doing so, the appropriateness of a particular clear zone design may become a legitimate area for discussion and input by the various parties involved in a project. The resulting designation of the clear zone should be appropriately described or delineated in the project documents to assure its continued maintenance (see discussion of "New Above Ground Utility Installations/Clear Zone Policies" below).

### **Utility**

For certain requests to place facilities on highway right-of-way care needs to be exercised to determine whether the facility involved is a "utility" or a "private line." This distinction is important because it may impact how the State treats the facility and also because FHWA has different mechanisms for handling its review and approval actions (see "Private Lines" above for more information on private lines).

When determining whether a facility is a "utility" or a "private line" several factors may come into play. The most important consideration is how the State views a particular facility under its own State laws and/or regulations. A secondary, but nonetheless important consideration is the definition of a "utility facility" in section 645.207.

As part of the 1988 rulemaking, the definition of a "utility facility" was expanded to include utility-type facilities that are owned by or dedicated to a governmental agency for its own use. For example, a State may establish its own communication system linking together various governmental offices. The definition was also expanded to include hardware facilities that are part of a utility's physical plant and necessary for the utility's operation.

Particularly within the telecommunication industry, the distinction between a "utility facility" and a "private line" can become blurred at times. Certain situations may be fairly straightforward. For example, a telecommunication line that provides a link between various operating units of a manufacturing company is clearly a "private line," since it is not providing any service to the public. On the other hand, telecommunication lines that are providing long distance service to the general public can be viewed as "utility facilities." However, not all situations are this clear cut and careful judgments may be necessary. Several examples follow:

- [Design](#)
- A regional telephone company (a recognized public utility) is placing a telecommunication line that connects its own administrative offices around a State. Generally, this line would be considered to be part of the utility's operating plant and, under the definition in the FHWA regulations, it could be viewed as a "utility facility."
- A recognized public utility providing telecommunication services requests a permit to install a line within highway right-of-way. This line will only provide service for a private user with no service for the public at large. The public utility is primarily acting as a contractor to install the line. Under these circumstances, the line would be considered a "private line" because it serves a private corporation, for example, a manufacturing company. However, if the line is for the use of a State or local governmental unit, then under the definition in the FHWA regulations the line would be viewed as a "utility facility."
- A telecommunication company is placing a line that will be available to a select group of users on a lease arrangement basis. Normally, such a facility would be considered a "private line."

## **General Requirements (23 CFR 645.209)**

### **Right-Of-Way Needs And Utility Use**

The FHWA's authority for allowing utility use and occupancy of the right-of-way of Federal-aid and direct Federal highway projects is contained in 23 CFR 1.23. Under the provisions of this section, the State must acquire right-of-way that is adequate not only for the construction of the highway facility but also for its operation and

maintenance.

The right-of-way must be devoted exclusively to public highway purposes. However, § 1.23(c) permits certain non-highway uses of the right-of-way which are found to be in the public interest provided such uses do not impair the highway or interfere with the free and safe flow of traffic thereon. As previously discussed above in "Public Interest Finding," such a public interest finding has been made for utilities.

A direct relationship exists between the § 1.23 requirements concerning the adequacy of right-of-way to be acquired and the provisions for permitted non-highway uses. Proposed non-highway uses cannot be of a nature that would negate the general requirement regarding the adequacy of the right-of-way. Therefore, it is implicit in the public interest finding for utility use of the right-of-way of Federal-aid or direct Federal highway projects that there must be adequate space available to locate the utility facilities in a manner that does not interfere with the safe and efficient operations of the highway.

#### Awards

Consequently, when a State intends to permit utilities to use and occupy public highway right-of-way, such potential use should be a consideration in determining the extent and adequacy of the right-of-way needed for the project. Failure to recognize the impact of such use, as well as other uses on private property located adjacent to the public highway right-of-way, may affect the safe and efficient operations of the highway and may result in the acquisition of right-of-way which is inadequate to meet the needs of the highway and the traveling public. For example, little would be gained by acquiring restricted right-of-way and denying its use to certain utilities if these utilities could locate their facilities on private property adjacent to the restricted right-of-way with substantially the same impact on the highway and its users.

Therefore, the issue of adequate accommodation of utilities is a legitimate consideration in the development of highway projects. This is particularly true of land service facilities where the highway user and utility consumer tend to be one and the same.

The concept of considering potential utility uses in the determination of right-of-way needs has been incorporated in § 645.209(a). A corresponding issue then becomes the use of Federal-aid highway funds for the acquisition costs of the needed right-of-way.

Utility use of highway right-of-way is not considered to be a use for a highway purpose. Therefore, Federal-aid highway funds are theoretically not eligible to participate in right-of-way acquired solely for the purpose of accommodating utility facilities in excess of that normally acquired in accordance with standard criteria and

procedures. Even so, when a State or locality routinely dedicates or permits a portion of the road and street right-of-way for use by utilities in accordance with established standard criteria pursuant to State law, ordinance, or administrative practice, such right-of-way may be considered eligible for Federal-aid reimbursement as an integral part of the project right-of-way.

### **New Above Ground Utility Installations/Clear Zone Policies**

On Federal-aid and direct Federal projects, new above ground utility installations are to be placed as far from the traveled way as possible, preferably along the right-of-way line. No new above ground utility installations are to be allowed within the established clear zone except in special situations, in which case appropriate countermeasures to reduce hazards shall be used.

As mentioned previously in the "Clear Zone" discussion, the FHWA procedures do not establish specific clear zones. Rather, this is a matter left to the States. The AASHTO *Roadside Design Guide* is to be used as a guide in helping to determine appropriate clear zone areas. The AASHTO Green Book (*A Policy on Geometric Design of Highways and Streets*) also provides information concerning horizontal clearances to obstructions.

- [Design](#) The following is offered on page 344 of the 1994 Green Book:

The width of the clear zone is influenced by the type of facility, speed, horizontal alignment and embankment slopes. The AASHTO *Roadside Design Guide* discusses clear zone widths as related to speed, volume, and embankment slope. The Guide may be used as a reference for the determination of clear zones for freeways, rural arterials and high-speed rural collectors. For low-speed rural collectors and rural local roads, a minimum clear zone width of 3.0 m should be provided.

For urban arterials, collectors and local streets where curbs are utilized, space for clear zones is generally restricted. A minimum distance of 500 mm should be provided beyond the face of the curb with wider clear zones provided where possible. Where shoulders are provided rather than curbs, a clear zone commensurate with rural conditions should be provided.

One issue which has arisen concerns the appropriate clear zone for above ground utility facilities on Federal-aid highway projects in urban areas. In particular, there has been a question as to whether or not the Green Book's 0.5 m (18-inch) offset is an established design standard for utility poles on an urban highway with curbs.

For curbed urban highways, the 0.5 m Green Book offset doesn't really have much to do with clear zone. It provides sufficient space for motorists to park next to the curb and open the passenger side door. It allows the State or local transportation department to put signs on utility poles and not have them clipped by trucks. The 0.5 m value should be viewed as an absolute minimum offset but not as a clear zone.

Providing greater offsets is particularly appropriate for utility poles. The Green Book recognizes this in discussing utilities on highway projects. For example, on pages 311-313, it is stated that longitudinal utility installations should be "located on uniform alignment as near as practicable to the right-of-way line."

Clearly, offsets greater than 0.5 m are recommended where the right-of-way is available. This also points out the need to obtain sufficient right-of-way to enable multiple and necessary joint highway-utility usage to occur in a safe and efficient manner.

## Standards

Additionally, the Green Book states that utilities that occupy the right-of-way of non-controlled access highways should conform to AASHTO's *A Guide for Accommodating Utilities Within Highway Right-of-Way*. This guide recommends placing ground-mounted utility facilities as far as practical from the traveled way and beyond the clear zone. Where there are curbed sections, the Guide recommends that utilities be located as far as practical behind the face of outer curbs and, where feasible, behind the sidewalks. The Guide does recognize, however, that the placement of utility installations on urban streets with closely abutting improvements are special cases which must be resolved in a manner consistent with the prevailing limitations and conditions.

The AASHTO documents discussed previously are not necessarily presenting inconsistencies. Basically, AASHTO has recognized the importance of locating utilities as near as possible to the right-of-way line. This is the policy FHWA has adopted in its utility accommodation regulations. AASHTO has recommended a minimum offset width of 0.5 m for curbed urban highways but recognizes that greater offsets are desirable. It is expected that the States will develop individual clear zone policies that will strive to obtain the desirable offsets whenever feasible.

### **Installations On Freeways**

Section 108(I) of the 1956 Federal-Aid Highway Act (now 23 U.S.C. 109) provided that "the geometric and construction standards to be adopted for the Interstate System shall be those approved by the Secretary of Commerce in cooperation with the State highway departments." As a result, the *Geometric Design Standards for the National System of Interstate and Defense Highways* were adopted by

AASHTO (then AASHO) on July 12, 1956, and were accepted by FHWA on July 17, 1956. These standards provided for full control of access on all sections of the Interstate system. Access control was, and continues to be, recognized as one of the most significant design features contributing to the safety of a freeway system and was considered an essential element in preserving the traffic carrying capacity of these important highways.

Highway officials also recognized that control of access could be materially affected by the extent and manner in which utilities were permitted to cross or otherwise occupy the right-of-way of Interstate highways. It was agreed that in order to be able to effectively carry out the intent of the highway legislation, a uniform national policy should be developed to establish the conditions under which publicly and privately owned utilities could be accommodated on Interstate right-of-way.

Thus, in 1957 AASHTO began the task of establishing such a national policy. In developing this policy, AASHTO arranged several meetings with national utility organizations and groups so that utility industry input could be taken into consideration. Finally, in 1959 AASHTO issued its document, *A Policy on the Accommodation of Utilities on the National System of Interstate and Defense Highways*, and the FHWA accepted the AASHTO policy as a design standard for Interstate highway projects.

- [Interstate System](#)
- [Subsurface Utility Engineering](#)
- [Utility Program](#)
- [Value](#)

The primary objectives of the AASHTO policy were -

- developing and maintaining access control;
- increasing highway safety and function to the maximum; and
- insuring uniformity of utility treatment among the States.

The AASHTO policy recognized the need for utility installations to cross over or under the Interstate right-of-way, as it was not intended for the Interstate to be a barrier to obstruct the development of expanding areas adjacent to the freeway.

Most important, the policy was viewed as strongly discouraging longitudinal utility use of Interstate right-of-way within the access control lines. However, the policy did not establish an outright prohibition of such use, as it was recognized that "extreme case exceptions" might be allowed when the conditions encountered were extraordinary and costly.

Over the years AASHTO reevaluated its position regarding utility use of Interstate right-of-way. The Policy was reissued in 1969 and in 1982 and was expanded to cover all freeway-type facilities. In each instance, the FHWA followed by adopting the AASHTO Policy for use on Federal-aid highways. In both 1969 and 1982 AASHTO reaffirmed the basic principles and policies it had been following in

## More Information

- [Utilities Program](#)
- [Utility Rights-of-Way](#)

## Contact

[Engineering](#) regard to utility use of freeway right-of-way.

**Jon  
Obenberger**  
[Office of  
Program  
Administration](#)  
202-366-2221  
[E-mail Jon](#)

The Surface Transportation Assistance Act of 1978, and the technical amendments that later followed, added § 109(l) to 23 U.S.C. This section specifically addressed the issue of utility use of highway right-of-way. It provided that utility use of the right-of-way on Federal-aid highways should not be permitted if such use would "adversely affect safety," and emphasized that highway and traffic safety were of paramount importance when considering the accommodation of utility facilities within highway right-of-way. However, this section also recognized that there could be adverse impacts resulting from not permitting such use, and it required that certain environmental and economic impacts be evaluated and considered in the denial of the use of Federal-aid highway right-of-way for utility facilities. The 1982 AASHTO Policy reflected these concerns and provided for their consideration in the decision-making process.

By the mid-1980s some State authorities and others were questioning the more restrictive provisions of the AASHTO and FHWA policies, particularly regarding longitudinal utility occupancy of freeway right-of-way. Some believed that certain types of utilities could be permitted to longitudinally use freeways with very little adverse impact on the freeway systems. In consideration of these views and concerns, the FHWA agreed that a more flexible Federal policy position would be appropriate.

Effective February 8, 1988, the FHWA modified its regulations regarding utility installations within freeways (see § 645.209(c)). The revised regulations no longer mandated that the States adhere to the AASHTO Policy. Instead, each State was given the flexibility to adopt its own freeway utility accommodation plan, one that was best suited to its needs and conditions.

In turn, AASHTO revised its policy covering utilities within freeway right-of-way in February 1989. This revised AASHTO policy was generally consistent with the FHWA's regulations in many respects, but continued to prohibit longitudinal utility installations on freeway right-of-way, except in special cases under strictly controlled conditions. For this reason, the FHWA opted not to adopt the AASHTO policy as a Federal standard.

### **Freeway Accommodation Policies**

Prior to the FHWA's regulatory change in February 1988, each State, as part of its overall utility accommodation policy, was required to address transverse utility crossings of freeways and how they were to be controlled. Once a State's policy was approved by the FHWA, the State could then approve individual utility requests for transverse freeway crossings without any further referral to the FHWA provided

the crossings satisfied the criteria in their approved policy. For longitudinal utility use of freeways, the States were required to adopt a position at least as restrictive as that in the then current AASHTO Policy. Hence, prior to 1988, the only longitudinal installations allowed on freeways were extreme case exceptions under provisions in the AASHTO Policy, and each individual request had to be approved by the FHWA.

Subsequent to the FHWA's 1988 regulatory change, each State was required to update its utility accommodation policy and include its own policy for permitting utility use of freeways, including longitudinal use if such use was to be allowed.

The States had to decide if they wanted longitudinal utility installations on freeways and if so to what extent and under what conditions. Whatever a State decided to do in this regard had to be documented in its utility accommodation policy and submitted to the FHWA for approval. A State could permit certain utilities and exclude others. And, if a State so chose, it could prohibit any longitudinal utility installations.

All the States are now operating under freeway utility accommodation policies that have been approved by the FHWA. Many States opted to stick with the AASHTO Policy prohibiting longitudinal utility installations, except in special cases under strictly controlled conditions. The States that opted to allow longitudinal installations no longer have to submit individual proposals to the FHWA for approval. It has become their responsibility to assure that proposals are in accord with provisions in their approved utility accommodation policies.

Exceptions to these policies, or changes, must be submitted to the FHWA Division Administrator for approval. In substance, this places all utility freeway installations under the same administrative process that other utility use proposals have been under since the late 1960s.

In summary, FHWA policy for longitudinal utility installations on freeways is as follows:

- The States may decide if they want to allow longitudinal utility installations on freeways and if so to what extent and under what conditions.
- Whatever a State decides to do in this regard must be documented in its utility accommodation policy and approved by the FHWA. Exceptions or changes must be approved by the FHWA Division Administrator.
- A State may permit certain utilities and exclude others. If a State so chooses, it can prohibit any longitudinal utility installations.
- Fees charged for utility use are at a State's discretion and may

be used as the State sees fit. The FHWA does, however, encourage States to use generated revenues for transportation purposes.

In approving a State's freeway utility accommodation policy, the FHWA must give careful consideration to measures proposed to insure safety of the traveling public, and features to protect the operation and integrity of the highway. Effects on both the present and future use of the freeway must be considered.

The FHWA recognizes that conditions vary. Highway safety matters are not the same on a low volume rural freeway as on a high volume urban one. Considerable latitude may be appropriate on these rural facilities. The nature and type of utility facilities may also differ from area to area. All these variables must be taken into account. It is noted that there is no such thing as an absolutely safe utility installation. The construction, operation and maintenance of any utility on or near a major high speed highway cannot be done without some risk. Judgment must be exercised by highway authorities in determining if the risks are acceptable and whether all reasonable measures have been taken to maximize the safety of the traveling public.

The FHWA regulation presented in § 645.209(c)(2)(v) includes a few details governing specific criteria a State's utility freeway accommodation policy should contain if it plans to allow longitudinal utility use within the access control lines. These are:

- A utility strip should be established along the outer edge of the right-of-way.
- Existing fences should be retained and, except along section of freeways having frontage roads, planned fences should be located at the freeway right-of-way line.
- The State or political subdivision should retain control of the utility strip, including its use by utility facilities.
- Service connections to adjacent properties to provide services to utility consumers should not be permitted from within the utility strip.

### **Median Installations**

Federal regulations indicate that a utility strip should be established along the outer edge of the right-of-way. The FHWA has interpreted this to mean that longitudinal utility installations as a general rule should not be allowed within the median area of a freeway. There may, however, be some exceptional circumstances where utility facilities could be safely accommodated in the median. For example, for very wide medians where a utility could be installed well beyond the clear zone of the roadways and where access to the site is from crossroads, a case could well be made that there is minimal impact on

the highway and its safe operation.

Another example might involve the installation of fiber optics needed for ITS purposes. In situations where it is not technically feasible or is unreasonably costly and there are no feasible alternate locations, it may be argued that the risk involved constructing, operating, and maintaining a fiber optic installation will be more than offset by the benefits derived by ITS and other systems that the fiber optic facilities will serve.

Hence, proposals by States for a median installation under these circumstances, if considered justified, may be approved by Division Administrators as an exception to the State's approved utility accommodation policy under the provisions of § 645.215(d).

### **Access To Utility Facilities (Including Gates)**

If a State allows utility facilities to longitudinally occupy freeway right-of-way within the access control lines, its utility accommodation policy must address access to construct, operate and maintain these facilities. The nature and extent of the access, including possible direct access from through roadways or ramps if allowed, and conditions for controlling and policing access should be covered in the State's policy. The State's policy on access should demonstrate that the State has taken adequate steps to ensure the permitted utility use, including access to construct, operate and maintain the utility facilities, can be accomplished in a manner that will not adversely affect the safety of the freeway.

The FHWA's approval of a State's utility accommodation policy is viewed as representing FHWA acceptance of the State's freeway access approval and control process (this could include locked gates, direct access from through roadways, etc.) as covered in the State's policy. No further submittal to FHWA on these matters would be necessary except in those instances where the proposed access is not in accord with the State's approved policy. In these cases, FHWA action on exceptions involving access can be handled under the provisions of 23 CFR 645.215(d) similar to other exceptions to a State's policy.

If a utility wants to make use of gates for access to its facilities, the following conditions are typically used in this situation:

- Access to and from the freeway will be on the basis of a revocable permit.
- The gates must be locked when not in use and can only be used by authorized utility personnel.
- Use must not adversely affect traffic operations;
- Use will not give the utility a claim to permanent access rights.

## **Uniform Policies and Procedures**

Section 645.209(d) requires State transportation departments to control utility use of Federal-aid highway right-of-way within the State and its political subdivisions. This is to be done by exercising, or causing to be exercised, adequate regulation over such use and occupancy through the establishment and enforcement of reasonably uniform policies and procedures for utility accommodation.

The term "highway" is defined in § 645.207 to mean any public way for vehicular travel constructed or improved in whole or part with Federal-aid highway funds. Hence, there is a distinction between highways actually constructed or improved using Federal-aid highway funds, and highways eligible for construction or improvement with Federal-aid highway funds.

Even though States may only be required to regulate utility use on highways where Federal-aid highway funds have been used, as a practical matter it is difficult for them to adopt one policy for Federally funded highways versus a different policy for adjoining State funded highways. As a result, States normally adopt a utility accommodation policy that covers highway routes under their jurisdiction as a group.

## **Utility Use Where State Lacks Authority**

Under § 645.209(g), for Federal-aid projects on highways where the State cannot exercise authority to control utility use of the highway right-of-way, the State is required to make adequate arrangements to ensure that utility use of the highway right-of-way is properly controlled. Typically this situation arises on roads off the State's system, such as those under county or city jurisdiction; however, it can also occur for roads that may be under the jurisdiction of another State level entity such as a toll road authority. In these situations, the local or toll road authorities have the option of developing their own utility accommodation policies but this is rarely done. Rather, the approach used is that the State/local or State/toll road agreement for the Federal-aid highway project will make reference to the State's utility accommodation policy and its application to the local or toll road project.

This is one area of utility accommodation that requires continued attention. If a State's utility accommodation policy will, in effect, serve as the document controlling utility use of right-of-way on highways under the jurisdiction of others, particularly on local Federal-aid projects, it is important that the State's policy include provisions to adequately address utility use on these types of roadway facilities. It is also important that these other highway authorities are not only aware that the State's policy is being used, but are familiar with the requirements to be applied.

## **Scenic Areas**

Section 645.209(h) maintains the same basic philosophy of not permitting the installation of utilities on highways within or adjacent to scenic areas except under special conditions. However, the method of administering this requirement was revised in 1985.

Under former PPM 30-4, if utility use was to be allowed in scenic areas under special conditions, the State was required to clear this matter through the Division Administrator. Sections 645.209(h) and 645.211(c)(3) change this process. Now the State is allowed to address the scenic areas issue, including special conditions under which exceptions will be allowed, within its utility accommodation policy. Thus, FHWA's acceptance of the State's utility accommodation policy should eliminate the need for clearance of individual exceptions through the Division Office.

Additionally, under former PPM 30-4.1, a mechanism was established for so-called hardship cases involving scenic areas. This process required a submittal to the Federal Highway Administrator, but none were ever made. As a consequence, when 23 CFR 645 was issued in 1985, this hardship procedure was not included. Should a need arise in the future to process a hardship type request involving scenic areas, it could be handled under 23 CFR 645.215(d) as a situation not in accordance with the State's approved policy. The FHWA's decisions on the matter can be made at the Division Office level.

## **Traffic Control Plan**

This provision was included in 23 CFR 645 to highlight the importance of having proper traffic control within utility work areas. It is not a new requirement since 23 CFR 630 subpart J, Traffic Safety in Highway and Street Work Zones, has been in place many years and covers utility construction and maintenance work activities on Federal-aid projects.

Under § 645.209(j) it is intended that the transportation department maintain control over the process of providing proper traffic control devices in work zones. Designation of who is to prepare a traffic control plan and who is to provide the necessary traffic control devices is to be determined by the transportation department under the its own established procedures.

## **Corrective Measures/Utility Pole Safety Programs**

Section 645.209(k), reads as follows:

When the transportation department determines that existing utility facilities are likely to be associated with

injury or accident to the highway user ... the highway agency shall initiate ... in consultation with the affected utilities, corrective measures ...

The intent of this regulation is for each State to work with pole owners to develop and implement programs to systematically remove, relocate, or mitigate hazardously-located utility poles in a reasonable, cost-effective manner.

A utility pole crash reduction program as envisioned in the Federal regulations should contain the following essential elements:

- Identification of hazardously-located utility poles.
- Analysis of hazardously-located poles and development of countermeasures,
- Establishment of a goal for removing, relocating, or mitigating hazardously-located utility poles.
- Actual removal, relocation, or mitigation of hazardously-located utility poles.

Ideally, the clear zone should be free of utility poles. Where poles exist in the clear zone, or where an analysis has shown that an existing pole located outside the clear zone may need treatment, many options are available. The following list has generally been considered as the desirable order of treatment:

- Remove the pole and underground the utility lines;
- Relocate the pole to a location where it is less likely to be struck;
- Reduce the number of poles by joint use, placing poles on only one side of the street, or increasing pole spacing by using bigger, taller poles;
- Reduce impact severity by using breakaway utility poles;
- Redirect a vehicle by shielding the pole with a longitudinal traffic barrier or crash cushion; and
- Warn of the presence of the pole if the alternatives above are not appropriate using warning signs, reflective paint, sheeting, or object markers placed on the poles.

There is also the possibility that keeping the driver on the road is the best solution to a crash problem. This may be done by positive guidance. For example, using pavement markings, delineators, advance warning signs, and other visual cues to tell the driver what to expect and to provide a visual path through a site. Physical enhancements such as improving the skid resistance of the pavement, widening the pavement travel lanes, widening or paving shoulders, placing rumble strips on the shoulders, improving the superelevation, straightening sharp curves, decreasing the speed of vehicles, or adding lighting in areas where crashes frequently occur at night, may also diminish crash potential by decreasing the number of vehicles

that for whatever reason leave the travelway.

Once specific corrective actions have been determined, it is expected implementation will be pursued through a prioritization process which takes into account resources available, replacement and upgrading planned both for the utility and highway physical plants, and overall accident potential.

To be effective this corrective program must be a joint effort between highway authorities and the affected utilities. It is strongly encouraged that the utility companies work closely with the transportation departments in identifying problem areas and establishing schedules for corrective actions. Such schedules should take into consideration, wherever possible, a utility's planned activities on line upgradings, replacements, and the like. An orderly, planned, effective process of safety improvements over time that would take into consideration the costs to both the highway user and utility consumer is preferred.

The Washington State Department of Transportation (WSDOT) has a model utility pole safety program. It was developed and implemented in coordination with the affected utility pole owners. The Division Office provided invaluable encouragement and assistance. WSDOT considers the most hazardously-located utility poles to be those that are: (a) outside of horizontal curves where advisory signed speeds for the curve are 15 mph or more below the posted speed limit of that section of highway; (b) within the turn radius of public at-grade intersections; (c) where a barrier, embankment, rock outcropping, ditch, or other roadside feature is likely to direct a vehicle into a utility object; or (d) closer than 5-feet horizontal beyond the edge of the usable shoulder. A goal has been established for removing, relocating, or mitigating a certain number of hazardously-located utility poles each year. This goal applies to each company owning utility poles and takes into account the size of the utility company, the number of poles in need of attention, available funding, and other factors. Hazardously-located utility poles may be removed, relocated, or mitigated in conjunction with planned highway or utility projects or individually. All utility poles removed, relocated, or mitigated, for whatever reason, count toward the utility company's goal. Efforts are made to systematically address the worst poles first.

Since most hazardously-located utility poles are on highway right-of-way, State law in most States requires the owner of the poles to pay for removal, relocation, or mitigation. If, however, the State can pay and does pay, Federal funds can participate in the cost, even up to 100 percent in some cases.

A strong case can be made for moving utility poles if they are located so as to present a significantly greater threat to motorists than anything else along the road. But, if they are not, States should not

ask the utility pole owners to do any more to improve roadside safety than they plan to do themselves.

Questions can arise as to the amount of corrective actions regarding utility facilities that should be undertaken as part of 3R (resurfacing, restoration, rehabilitation) projects. Overall, the FHWA has encouraged and supported efforts by each State to develop and implement reasonable and effective clear zone policies consistent with the principles set forth in the AASHTO Green Book (see above discussion of "New Above Ground Installations/ Clear Zone Policies").

In this respect a number of States have adopted individual 3R project design criteria that specifically addresses the clear zone issue. Considerable judgment must be exercised in actually establishing clear roadside areas on individual 3R projects to ensure that the safety benefits are reasonably commensurate with costs. Consideration should be given to this matter regardless of who pays for the utility work.

As clarified by FHWA's July 1988 final rule, which modified 23 CFR 645.107, costs incurred by transportation departments in implementing projects for safety corrective measures to reduce the hazards of utilities to highway users are eligible for Federal-aid participation.

### **Wetlands**

There has been concern that FHWA's utility regulations might be used by some as a basis for authority for allowing placement within highway right-of-way of structures or facilities to drain adjacent wetlands. Section 645.209(l) was specifically added to address this issue. The section clearly states that the installation of private lines on the right-of-way of Federal-aid or direct Federal highway projects to drain adjacent wetlands is inconsistent with Executive Order 11990, Protection of Wetlands, and is to be prohibited.

### **Utility Determination**

The 2000 amendments added paragraph (m) to 23 CFR 645.209 to emphasize that in determining whether a proposed installation is a utility or not, the most important consideration is how the State views it under its own State laws and/or regulations.

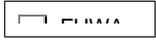
This determination is important because utilities are accommodated under the utility regulations; whereas, private lines and other non-utilities are accommodated under other regulations. As in many utility-related matters, the FHWA definition of "utility facilities" is broad enough to cover most situations, but nonetheless, in States where the State definition is more restrictive, or sometimes more

liberal, than the FHWA definition, the FHWA will normally look upon it in the same manner the State does.

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United States Department of Transportation - **Federal Highway Administration**

**8810.3300 PERMITS.**

Subpart 1. **Construction.** Except as otherwise permitted, utility construction and relocation on trunk highway right-of-way shall not be commenced until an application for a permit for construction has been made and such permit granted. The permit for construction sketch shall show the location of the proposed utility with reference to pertinent features such as the right-of-way lines, curb lines, trunk highway center line, etc. A copy of the sketch shall be provided for each copy of such permit. Prints of trunk highway right-of-way maps are available upon request from the Road Plans Information Office, Department of Transportation Building, Saint Paul, Minnesota 55155.

Subp. 2. **Maintenance.** The utility shall obtain a work permit from the office of the assistant district engineer, maintenance, prior to performing service and maintenance operations on the interstate highways and shall also obtain a work permit prior to performing service and maintenance operations on the noninterstate highways when such operations require opening and disturbing the surface of the right-of-way thereof. In all other instances the utility shall notify the office of the assistant district engineer, maintenance, prior to performing service and maintenance operations on the noninterstate highways which interfere with the normal flow of traffic thereon. However, the company may perform service and maintenance operations on the trunk highways including opening and disturbing the surface of the right-of-way without a work permit in those instances where an emergency exists that is dangerous to the life or safety of the public and which requires immediate repair. The utility upon knowledge of such an emergency shall immediately notify the State Patrol Division. The utility shall take all necessary and reasonable safety measures to protect the traveling public and shall cooperate fully with the State Patrol Division to that end. The utility in such an event will request a work permit from the office of the assistant district engineer, maintenance, not later than the second working day thereafter when a work permit would ordinarily have been required but for the emergency.

Subp. 3. **Orders to make improvements.** If at any time the state of Minnesota, acting through its commissioner of transportation, shall deem it necessary to make any improvements or changes on all or any part of the right-of-way of the trunk highway which affect a utility located on trunk highway right-of-way, then and in such event, the owner of the utility shall within 15 days after written notice from the commissioner of transportation or an authorized agent, proceed to alter, change, vacate, or remove said utility from the trunk highway right-of-way so as to conform to said trunk highway changes and as directed by the commissioner of transportation. Such work shall be done without any cost whatsoever to the state of Minnesota except as otherwise provided by law or agreement and shall be completed within the date specified in said written notice, which date shall be reasonable under the circumstances. The utility shall assume all liability and save the state of Minnesota harmless from any and all claims of damage of

any nature whatsoever occasioned by reason of not having removed said utility within the time specified in said notice. Notwithstanding the provisions of parts 8810.3100 to 8810.3600, the state may reimburse a municipality for the cost of the first relocation of a municipally owned utility located within the limits of a municipal street at the time that the street was taken over by the state as a trunk highway, when such relocation is required by construction or reconstruction of the trunk highway.

Subp. 4. **Along interstate highways.** Utilities along the interstate highways shall be located outside the control-of-access lines except as outlined below. Where the control-of-access lines coincide with the right-of-way lines, the utilities shall generally be located on private property. Where the control-of-access lines and right-of-way lines do not coincide, utilities may in general be located in the area between them. All utilities shall be serviced and maintained without access from the ramps, loops, and through traffic roadbeds. Utilities may be serviced from frontage roads and roads other than another interstate highway which cross either over or under the interstate highway. At aerial crossings of an interstate highway, supporting poles may be located on interstate highway right-of-way if they are a minimum of 30 feet beyond the shoulders of all through traffic roadbeds; however, in no event shall they be located in a median unless its width is 80 feet or more. Manholes and other points of access to underground crossings may be permitted on the interstate highway right-of-way only when located outside the shoulders of the through traffic roadbeds, loops, or ramps. The restrictions of this subpart shall not apply to utility lines which service facilities required for operating the interstate highway.

There may be extreme cases where, under strictly controlled conditions, a utility may be permitted inside the control-of-access lines along an interstate highway. In each case there must be a showing that any other utility location is extremely difficult and unreasonably costly to the utility consumer, that the installation on the right-of-way of the interstate highway will not adversely affect the design, construction, stability, traffic safety, or operation of the interstate highway and that the utility can be serviced without access from through traffic roadbeds, loops, or ramps.

Subp. 5. **Deposit, bond, or undertaking.** The commissioner of transportation may require the utility, or its contractor, to furnish a deposit in the form of a certified check, a surety bond or corporate undertaking in favor of the state of Minnesota, commissioner of transportation, for any expense incurred by the state in the repairing of damage to any portion of the trunk highway right-of-way caused by work performed under a work permit or a permit for construction, including any out of the ordinary engineering supervision and inspection expense provided by the state. In those instances wherein a deposit is required, the amount of the deposit shall be specified in the special provisions of the permit. If a check is furnished, any moneys remaining over and above such expense shall be returned to the applicant.

Subp. 6. **Liability.** Except for the negligent acts of the state, its agents, and employees, the utility shall assume all liability for, and save the state, its agents and employees, harmless from, any and all claims for damages, actions, or causes of action arising out of the work to be done herein and the continuing uses by the utility, including but not limited to the placing, constructing, reconstructing, maintaining, and using of said utility under this application and permit for construction.

Subp. 7. **No easement.** The work permit or permit for construction as issued does not in any way imply an easement on private property.

**Statutory Authority:** *MS s 161.45*

**History:** *17 SR 1279*

**Posted:** *January 20, 2005*



## Minnesota Department of Transportation

Office of Technical Support  
Utility Permits and Agreements Unit  
Mailstop 678  
395 John Ireland Blvd  
St. Paul, MN 55155

Telephone: 651-366-4635  
Fax: 651-366-4667

January 14, 2008

This letter is intended to provide guidelines for transmission line routing on or near Minnesota trunk highways. Please consider these factors when reviewing and planning new lines.

### Clearance for existing structures

For all appurtenances within the right of way such as light standards, type-A traffic signs, Road Weather Information Systems (RWIS) stations, etc., Mn/DOT will require a minimum vertical access zone of 10 feet plus an OSHA safety zone of 25 feet to allow for overhead maintenance of these structures. This 35 foot minimum vertical clearance is needed to accommodate boomed equipment.

### Clear zone Requirements

Clear zone requirements must be met for any structure on Mn/DOT right of way.

### Interchanges and separated grade crossings

Interchange areas are particularly important to keep clear of utilities due to bridge maintenance and construction requirements, increased presence of highway facilities, and traffic considerations. At ramped interchanges lateral crossings will be allowed at a minimum distance of 50 feet outside the interchange ramps. At interchanges with bridges over the highway, a safe distance for possible reconstruction or maintenance would need to be determined on a bridge by bridge basis. When bridges run parallel with the road, a minimum distance of 50 feet from the structures is required.

### Conductor Movement Envelope a.k.a. "blow out" zone or area of influence

(The area that is affected by the sway of the line under wind and heat conditions)

Mn/DOT would prefer to keep all lines far enough from the right of way that this has no influence on the highway.

### Crossings

As a general rule crossings are allowed. Mn/DOT prefers that they are perpendicular to the roadway.

### Vegetation

Anywhere inside the right of way, whether vegetation exists or not, as a minimum requirement, vegetation must be allowed to attain a minimum height of 35 feet. A vegetation management plan must be worked out with each District.

Safety rest areas

Mn/DOT will not permit the physical location of utility lines or structures to encroach. The vegetation requirements remain in force at rest areas and may be of a more strict nature for aesthetic reasons.

Additional Factors

A Utility Permit from Mn/DOT is required for any line that would affect Mn/DOT right of way.

General placement for aerial lines is within the outer 5 feet of trunk highway right of way.

By Policy any utility placed within Mn/DOT trunk highway right of way by permit would be required to relocate at the owner's expense if future highway construction necessitated.

The entire Mn/DOT Utility Accommodation Policy is available at [www.dot.state.mn.us/utility/files/pdf/appendix-b.pdf](http://www.dot.state.mn.us/utility/files/pdf/appendix-b.pdf) and needs to be adhered to.

For lines around rest areas contact the Safety Rest Area Program Manager at 651-366-4702.

For issues involving airports and their height clearances and restrictions contact Rick Braunig at 651-234-7230 or email at [rick.braunig@dot.state.mn.us](mailto:rick.braunig@dot.state.mn.us).

Mn/DOT's main contact for Transmission Line Route Coordination is Stacy Kotch. I can be reached at 651-366-4635 or by email at [Stacy.Kotch@dot.state.mn.us](mailto:Stacy.Kotch@dot.state.mn.us).

Mn/DOT District contacts are:

**District 1**

WAYNE SCHEER (218) 725-2780

**District 2A**

STEPHEN FRISCO (218) 755-6553

**District 2B**

EARL HILL (218) 277-7964

**District 3**

TERRY HUMBERT (320) 223-6527

CLAUDIA DUMONT (320) 223-6530

**District 4**

STEVE MAACK (218) 846-7949

JODY MARTINSON (218) 846-7964

**District 6**

CHRIS MOATES (507) 286-7594

PETER WASKIW (507) 286-7680

**District 7**

JIM FOX (507) 831-8012

RICHARD "KENT" PURRIER (507) 304-6151

**District 8**

GERI VICK (320) 214-6364

JARRETT HUBBARD (320) 214-6362

**METRO**

CURT FAKLER (651) 582-1382

Sincerely,

Stacy Kotch

Utility Transmission Line Coordinator



Minnesota Department of Transportation

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**Office of Technical Support**

Utility Permits Unit  
Mail Stop 678, 6th Floor  
395 John Ireland Boulevard  
St. Paul, MN 55155-1899

Office Tel: (651) 366-4668

Fax: (651) 366-4667

November 26, 2008

Darrin Lahr  
Xcel Energy  
8701 Monticello Lane  
Maple Grove, MN 55369

Re: CapX2020 projects

Dear Mr. Lahr:

The Minnesota Department of Transportation (Mn/DOT) Utility Permits Unit would like to acknowledge that it has had several meetings with your company to discuss general routes that Xcel Energy is proposing for the CapX2020 projects. I appreciate that Xcel has reviewed this information with Mn/DOT.

Included in the routes proposed by Xcel are some that would involve direct use of Mn/DOT right of way including air rights. Use of Mn/DOT interstate highway right of way for utilities is inconsistent with Mn/DOT policy. A request for an exemption from Mn/DOT policy involving use of Mn/DOT right of way must be in writing in the normal utility permitting process. The Mn/DOT Policy for Accommodation of Utility Facilities on Highway Right of Way includes this procedure for interstate and highway right of way. To date, Mn/DOT has not received any requests from Xcel for use of Mn/DOT right of way. Please understand that Mn/DOT has not consented or acquiesced to any physical placements or intrusions into Mn/DOT's right of way or airspace for the CapX2020 projects.

You may refer to the Transmission Line Routing Guideline of January 2008 when considering the placement of transmission line routes near Mn/DOT right of way.

Sincerely,

A handwritten signature in blue ink that reads 'Marilyn Remer'.

Marilyn Remer, P.E.  
State Utilities Engineer

# Meeting Summary

Date September 18, 2008

Meeting with – MNDOT central office

Attendees: From MNDOT: Marilyn Remer, Len Leitner, Mukhtar Thakur, Tim Quinn, Mike Barnes, Stacy Kotch  
From Xcel Energy: Grant Stevenson, Greg Chamberlain, Dave Callahan, Darrin Lahr

Purpose: Overview of Fargo-Monticello project, invite agency participation, and discuss next steps.

Materials provided: Mapbook of route corridors, power point presentation on CapX2020 and the Fargo-Monticello project.

Materials received: Flowchart of internal MNDOT procedures around transmission line siting.

Met with MNDOT to discuss overall route process to date. Went over presentation about CapX2020 in general and the Fargo project in specific. Discussed the need for the project, the reliability, load growth and backbone/foundation nature of the line. Provided mapbook of the Monticello-St. Cloud area of discussion. Invited the agency to participate in the process.

Discussed the public outreach process and meetings held until that time. Discussed the route corridors that were emerging and in particular the Interstate 94 option. We discussed the general public comments we had received to use the Interstate 94 corridor and our need to understand what would or would not work. MNDOT expressed the department's desire to work together on the issues and referenced the Accommodation Policy and how it may impact routing.

MNDOT thanked us for bringing the project to them early in the process and the need to keep communication lines open. They discussed Stacy Kotch's role as the utility and MPUC liaison for their interaction with transmission line routing projects. Lessons learned on both sides from the recent I90 line permitting process were discussed. All present stated their desire to get things worked out without having a large public disagreement.

We received a process flowchart of the MNDOT internal process for review of projects.

MNDOT directed us to work with each potentially affected "division" of MNDOT on the project for their individual input but that Stacy would be the point of contact. Stacy would be their internal aggregator of the divisions' concerns. Areas mentioned were bridge division, rest areas, districts, and permitting.

# Meeting Summary

Date October 15, 2008

Meeting with – MNDOT Bridges division

Attendees: From MNDOT, Victor Crabbe  
From Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Overview project and gather input and concerns about interaction with bridges, overpasses, flyovers, other concerns.

Materials provided: Mapbook of route corridors, Powerpoint presentation on CapX2020 and the Fargo-Monticello project.

Materials received: None

Presented an overview of the project and the possible impacts it may have on the bridges and other structures that cross the Interstate. Discussed the central office's recommendation that we seek input from each division impacted which is why we were meeting.

Went through a page turn of the project area via a mapbook provided to Mr. Crabbe. Mr. Crabbe provided general comments that around bridges, overpasses, and flyovers that there was a need for the transmission line to be located at least 50 ft. from the edge of the bridge deck or wing walls which in some cases extend further towards the right-of-way than the bridge deck. This setback is to ensure MNDOT's ability to work on the bridge in the future. An example given by Mr. Crabbe was the need for future crane access. There were no other major concerns raised.

# Meeting Summary

Date October 15, 2008

Meeting with – MNDOT District 3

Attendees: From MNDOT: Terry Humbert  
From Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Overview Fargo-Monticello project and discuss concerns or areas to be aware of for future expansion.

Materials provided: Mapbook of route corridors, power point presentation on CapX 2020 and the Fargo-Monticello project.

Materials received: Maps, design drawings

Met to discuss the Monticello-Fargo project and any interaction it may have with Interstate 94. Discussed that the MNDOT central office wanted us to go out and meet with the various divisions to gather input. We provided the CapX2020 general overview presentation, and a 11x17 mapbook of the Monticello-St. Cloud area of discussion with route corridors identified.

We described the entire project through review of the mapbook and discussed the application of the routing criteria for facilities located close to existing corridors such as the Interstate to avoid buildings, obstacles etc. We also identified some constrained areas, generally defined as pinch points. Mr. Humbert stated that he would not be able to comment on how close to the Interstate the new facilities could be placed as that was not his area of expertise. He advised us to contact persons in MNDOT's central office to discuss this issue.

Future expansion of the Interstate was discussed and we understand MNDOT's likely course will be that the Interstate would be expanded to the inside median, rather than outside towards the shoulders.

There was much discussion regarding the new interchange that is currently designed for an area south of Clearwater MN. We discussed the timing and certainty of the project and it appeared to be in the 20-year plan or potentially later depending on state funding. We discussed the height and spacing of the ramps and bridges associated with the new interchange. MNDOT has not acquired any right-of-way for the project as of yet and does not have permitting authority in that area. We stated that if we knew what MNDOT's plans and design were, the poles and spacing could be designed to minimize conflicts with new interchange. As the transmission route process goes further along, there should be additional discussions on this issue to prevent conflicts.

# Meeting Summary

Date October 21, 2008

Meeting with – MNDOT Rest Areas division

Attendees: From MNDOT: Stacy Kotch, Bob Williams  
From Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Overview of Fargo-Monticello project to discuss concerns and impacts on rest areas.

Materials provided: Mapbook of route corridors, power point presentation on CapX2020 and the Fargo-Monticello project.

Materials received: rest areas truck parking shortages, capacity shortages, at a later date also received 4 mapbook pages marked with comments

Meeting was held to provide an overview of the CapX2020 projects and the Fargo-Monticello project in particular. We went over the mapbook that shows initial potential routes.

MNDOT provided us information and discussion about the need for and purpose of the rest area program. There were currently problems with adequate parking at certain facilities as illustrated on a map provided. This was viewed as important because it meant that the rest areas would need to be revamped to expand parking. There was also a need to modify rest area facilities to accommodate larger trucks and with larger turning radiuses. MNDOT expressed concern that if our facilities were installed that may limit their options for expansion or remodeling in the future. MNDOT advised a concern that the proposed facilities could adversely affect the purpose for which the rest areas were acquired. In some instances there may be a scenic vista that the rest area was meant to take advantage of that may be obstructed by the transmission line. There was some discussion of whether our facilities may be better suited to be placed in a "cross country" style route. We explained that MN routing criteria places an emphasis on using existing corridors.

Addendum Maps were later provided by MNDOT to provide us more detailed comments on the impact on rest areas. The addendum maps included alignment suggestions, all of which were located away from the rest area.

# Meeting Summary

Date October 31, 2008

## Meeting with – MNDOT Permitting/District 3/Rest Areas

Attendees: MNDOT: Terry Humbert, Marilyn Remer, Len Leitner, Rob Williams, Stacy Kotch

Xcel Energy: Dave Callahan, Darrin Lahr

Great River Energy: Craig Poorker

Purpose: Discuss potential alignments within proposed route corridor for Monticello-St. Cloud.

Materials provided: Mapbook of proposed route corridor showing primary and secondary potential alignments

Materials received: none

Meeting was intended to provide further detail on where an alignment might be relative to the freeway route. The alignments shown were primarily a depiction of which side of the Interstate the line might follow or other parallel options such as the rail road corridor and Hwy. 75.

We discussed that the line on the map that shows the alignment could represent any setback from the fence. A page turn of the mapbook was completed that highlighted Interstate crossings and certain areas where the facilities would need to be immediately adjacent to the Interstate right-of-way (5 feet). These pinch points were generally around commercial areas and residential areas that were built in close proximity to the Interstate. There was discussion about how to address the new interchange south of Clearwater on our ability to plan ahead and build structures so as to not interfere with its future construction. In large part it appeared that the attendees understood why we have selected what we have although all agreed there are many details to be worked out. There was no specific concern raised about blowout. MNDOT indicated that overhang-at-rest would need to be an exception to their Accommodation Policy and therefore FHWA would need to be consulted. MNDOT did not advise that any part of the project was unpermittable based on their current level of review.

MNDOT stated they wanted to discuss this situation with FHWA on their own prior to going any further.

# Meeting Summary

Date November 18, 2008

## Meeting with – MNDOT Permitting/District 3/Rest Areas

Attendees: MNDOT: Len Leitner, Ann Driver, Stacy Kotch, Terry Humbert

FHWA: Bill Lohr

Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Discuss potential alignments within proposed route corridor for Monticello-St. Cloud with FHWA.

Materials provided: Mapbook of routes showing potential alignments on either side of interstate.

Materials received: None

A meeting was held with MNDOT and Bill Lohr of FHWA (right-of-way program manager) to discuss our ability to parallel the I94. We went through the mapbook to review potential alignments, as we had done previously with MNDOT.

After providing a project/CapX2020 overview, FHWA began by questioning how we arrived at the routes we have and questioned whether these routes were in fact the best opportunities due to development along the Interstate corridor. FHWA suggested that a route that went through the countryside would have fewer impacts than the Interstate. FHWA requested that we review with them our methodology and process that produced the current route options and stated that they needed to seek data for better understanding. We agreed to provide that discussion at a future meeting. FHWA advised that it considered its role was representing its constituents such as commercial property owners, developers, and the traveling public that use the freeway. Land use impacts and visual impacts were of concern to FHWA.

We discussed the MNDOT Accommodation Policy and the interaction with FHWA requirements. Mr. Lohr expressed concern about the current rules and policies and the circumstances where encroachment would require an explicit exception being made. Both MNDOT and FHWA stated that they believe the existing Accommodation Policy requires prior FHWA concurrence with any exception that MNDOT considers granting. FHWA stated that the agency would not likely agree to arm overhang, and that it would need to seriously consider the implications of blowout but indicated that it was against the agency's general preference.

Mr. Lohr also noted that other states allow utilities to share right-of-way with Interstate right-of-way. He stated that this was a bad policy it should not be allowed.

We agreed to meet again to discuss methodology and route impacts and continue the discussion from there.

# Meeting Summary

Date December 18, 2008

## Meeting with – MNDOT Permitting

Attendees: MNDOT: Len Leitner, Marilyn Remer, Ann Driver, Stacy Kotch, Tim Quinn  
FHWA: Bill Lohr  
Xcel Energy: Dave Callahan, Darrin Lahr  
Natural Resource Group: Doni Murphy

Purpose: Discuss routing methodology; provide comparative data for potential routes, present non interstate route option.

Materials provided: Powerpoint discussion of MN routing principles, *PEER* decision, administrative code, routing methodology, sensitivity comparisons, blowout diagrams, maps.

Materials received: None

Met with MNDOT and FHWA to discuss the route development methodology that led to route options along the Interstate 94 corridor. Discussion included description of alignments at varying offsets along the Interstate and the potential for impacts associated with these alignments. There was considerable discussion of what appears to be two conflicting policies, the State's policy of non proliferation which creates a preference for placing new power lines near existing infrastructure as a way to minimize the proliferation of new corridors for transmission lines via corridor sharing, and MnDOT's policy of minimizing encroachment of transmission lines on Interstates.

After discussing MN routing principles; route development and selection methodology; and reviewing the comparisons of the various routes, MNDOT and FHWA expressed concern about placing the proposed transmission line nearer to the Interstate. There was discussion regarding the need for additional Interstate crossings to avoid sensitivities such as displacing homes and the greater potential for impacts to agricultural uses if the line were placed farther from the Interstate. There was discussion about the competing interests that may be impacted by a non-interstate route vs. the potential for impacts to existing and future commercial uses along the Interstate. MNDOT indicated that the visual impacts to motorists along the Interstate would be a concern, as well as any safety issues that may be associated with the line along the Interstate or crossings of the Interstate. Questions were raised about the potential for a transmission pole to fall across the Interstate and create traffic hazards. It was noted that typically steel transmission poles such as those being proposed do not tip over at the base. Rather, they fail higher up and remain standing.

The Accommodation Policy was discussed, including the section on the factors applicable to longitudinal installations along the Interstate. It was acknowledged that these factors must be satisfied to be in compliance with the Policy. Both MNDOT and

FHWA stated that FHWA concurrence would be required for any longitudinal installation along the Interstate. FHWA stated that any encroachment by the arms or conductor at rest would likely not be deemed acceptable and that conductor blowout would need to be seriously considered.

We agreed to touch base prior to the filing of an Application for a Route Permit from the MNPUC.

# Meeting Summary

Date March 11, 2009

Meeting with – MNDOT central office

Attendees: From MNDOT: Len Leitner, Stacy Kotch  
From FHWA: Bill Lohr  
From Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Discuss proposed routes for route application and upcoming state process

Materials provided: Map route corridors

Materials received: None

Met with MNDOT to discuss the routes that will be applied for in the route application. We provided a map depicting the Preferred Route, Alternate A and Alternate B. We discussed how the issue of setback of the facilities from the interstate would be part of the application and that the application would include data for the various alignments. We discussed the language used for the various alignments such as maximum corridor sharing, minimum corridor sharing and no corridor sharing. There was general discussion about the need to provide information and concerns from all parties into the state process and have the public policy discussion to get to the correct route and alignment that worked for all parties.

There was also discussion about how state agencies can provide input into the state process and where those opportunities would exist. We talked about the potential for advisory groups and the EIS scoping process as the best venues. MNDOT and FHWA both expressed a desire to provide input to the process and questioned if their participation in the advisory group (if one was created) process was possible. The potential advisory process structure and composition for this project is uncertain but there was a general belief that MNDOT and FHWA participation would be possible. We agreed to continue to keep the lines of communication open and work through the process.

# Meeting Summary

Date September 18, 2009

Meeting with – MNDOT Engineering, Government Affairs, Permitting

Attendees: From MNDOT: Mike Barnes, Scott Peterson, Val Svensson, Marilyn Remer, Dave Seykora

From OES: Deb Pile.

From Xcel Energy: Dave Callahan, Darrin Lahr

Purpose: Provide update on CapX2020 projects

The meeting was held to provide an overview of the CapX2020 projects and provide a forum to keep dialogue open. We went over the history of CapX2020, discussed the state routing process, and the timing of upcoming route permit applications.

There was general discussion around the state routing process and the desire on the utilities part that the route permit eventually approved by the MPUC not conflict with state agencies' ability to permit what is approved. The requirement for state agencies to participate in the state routing process was discussed. The OES provided information about the different venues and opportunities for agency participation and when those opportunities will be available, such as the EIS and contested case hearings. MNDOT discussed that they were reviewing their accommodation policy and were also looking at what other states were doing with their policies. The letters that MNDOT provided to the OES as input to the EIS process for the Brookings to Hampton project and the Monticello to St. Cloud project were briefly discussed. MNDOT staff and OES expected that the issues raised in those letters would be addressed by the EIS.

It was agreed that we should meet again to further explore the issues raised by the MNDOT letters to OES, in order to seek a better understanding of the concerns raised. There was also a general desire to create a working group to review overall transportation and utility common areas of interest. This could help inform each party about the needs of the other.

# Meeting Notes

Date February 29, 2008

Meeting with – Minnesota Department of Natural Resources

Attendees: From MDNR: Matt Langdon

From Xcel Energy: Darrin Lahr

Purpose: Generally discuss the Monticello to St. Cloud project.

Materials provided: Project map

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule.

- Matt coordinates project review with other divisions within the MDNR.
- Matt works with PUC on route application and comments on state environmental review.
- Matt has overall knowledge of issues for specific departments, specific area knowledge comes from area managers.
- Avoid SNAs.
- Minimize crossings of WMAs.
- Matt will coordinate with regional managers (hydrogeologists, fisheries, etc) for contacts for each area of representation.
- Matt will set up a meeting some time next month with other departments within the MDNR.

# Meeting Notes

Date April 17, 2008

Meeting with – Minnesota Department of Natural Resources

Attendees: From MDNR: Trina Zeimann, Matt Langan, Cindy Buttlemann, Pete Buessler, Steve Colvin, Diane Anderson, Jade Templin, Paul Stolen, Walter Lindahl, Paul Telander  
From Xcel Energy: Darrin Lahr

Purpose: Discuss Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule. MNDNR did identify that they would like to receive a copy of the applications for a Route Permit at the same time as the Minnesota Public Utilities Commission.

# Meeting Notes

Date May 8, 2008

Meeting with – Minnesota Department of Natural Resources

Attendees: From MnDNR: Trina Zeiman, Cindy Buttleman  
From Xcel Energy: Darrin Lahr

Purpose: Discuss the Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map  
Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule. MDNR offered to help identify any unknown state land crossings.

# Meeting Notes

Date May 13, 2008

Meeting with – MnDNR

Attendees: From MnDNR: Mike North  
From Xcel Energy: Darrin Lahr

Purpose: Discuss the Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule.

- RWG meetings and open house discussion – how many and when, what we have done.
- Stearns County road realignments through substation area.
- Discussed routing process and reductions.

# Meeting Summary

Date June 26, 2009

## Meeting with – Minnesota Department of Natural Resources

Attendees: From MDNR: Randall Doneen, Nathan Kestner, Nicholas Snavelly, Fred Bengston, Trina Ziemann, Beau Liddell, Kevin Kotts, Don Shultz  
From Xcel Energy: Darrin Lahr  
From Natural Resource Group, LLC: Bob Doherty, Matthew Koch, Doni Murphy, Jeff Thommes

Purpose: Discuss Fargo to St. Cloud Project.

Materials provided: Fargo to St. Cloud Preliminary Proposed Routes and All Routes Considered maps; and Fargo to St. Cloud Preliminary Proposed Routes and Rare Features map

An overview of the project was provided, including a description of the project and a review of the project's purpose and need.

- The project endpoints are a new substation in the St. Cloud area and a new substation in the Fargo area.
- The project will also interconnect at a switching station in Alexandria.
- The project will be constructed using single steel poles six to eight feet in diameter at their base, generally 120-175 feet tall, and with generally 1,000 foot spacing between the poles. Poles will be self supporting with no guy wires. Poles will be built to accommodate two circuits, but conductors will only be strung for one circuit during construction. A ground clearance of at least 35 feet will be maintained at maximum load and system conditions. Pole foundation depths will typically be 15-40 feet below the ground surface. The permanent right-of-way will be 150 feet wide, but if adjacent to existing right-of-way there may be some sharing of the existing right-of-way.
- In response to a question from the USFWS, CapX identified that although the project will provide infrastructure to help support wind energy, wind energy projects will not be able to directly interconnect with the proposed line and therefore the location wind projects were not taken into consideration in the route selection process.

The routing process and how impacts are assessed was reviewed and discussed.

- CapX identified that as dictated by Minnesota routing policy, routes should follow existing linear features (existing roads, transmission lines, railroads, etc.) where possible. The area of study for routing purposes is generally 1,000 feet wide. Routes, which may be up to 1.25 miles wide, will be submitted in the Minnesota state route permit application. This width is chosen to allow for flexibility in identifying the best

alignment. Impacts on the ground will occur at the alignment and pole locations areas, not the entire route area.

- Route selection took into consideration numerous environmental and human criteria. Residences and residential zoning or land use was considered to be the highest criteria of concern.
- The public has shown a strong preference for the line to follow Interstate 94. An Interstate 94 route is also the shortest route for the project and there is a tie-in point in Alexandria along Interstate 94 between the two project endpoints.
- The state of Minnesota requires that at least two routes be filed in the state route permit application and that a preferred route is indicated. It is likely that the preferred route will parallel Interstate 94.
- Also discussed was why the existing 400 kV DC Great River Energy and 230 kV Western Area Power Administration transmission lines were removed from consideration as potential routes.
- DNR commented that biodiversity sites and key habitats for species in greatest conservation need should be used as metrics in comparative analysis of the proposed routes.

CapX provided a review of agency coordination that had been conducted to-date.

- CapX has met with the U.S. Army Corps of Engineers (USACE), Minnesota Department of Transportation (Mn/DOT), Federal Highway Administration (FHWA), Minnesota Department of Natural Resources, and Western Area Power Administration (WAPA).
- A federal nexus has not been identified. CapX would like to continue to coordinate with the affected federal agencies, including the USFWS, to identify if there is a federal nexus so that it can be built into the project schedule in advance of the submittal of the route permit application to the Minnesota Public Utilities Commission.
- USACE has indicated that they don't see a federal nexus from their point of view and they do not have interest in being the lead agency if there is a review of the project done under the National Environmental Policy Act (NEPA). As it relates to jurisdictional wetlands and waters permitting, the USACE is anticipating the use of a combined Section 404/Section 10 permit for the crossing of the Red River and a Section 404 Regional General Permit for all other project-related impacts to wetland and waters.
- As it relates to the FHWA and MnDOT, CapX provided a summary of considerations related to the placement of the proposed transmission line along the interstate. Based on correspondence received from MnDOT, if FHWA review or approval is required, NEPA may be required.
- The USFWS indicated that a federal nexus would most likely be triggered through USACE or FHWA approvals. Should NEPA be required, the USFWS would be a cooperating agency. The state and federal processes could parallel one another.
- The USFWS indicated that they will reach out to the other federal agencies in an effort to obtain additional agency insight related to NEPA considerations.

The Project schedule was discussed.

- The Certificate of Need (CON) for the project was issued in May 2009.
- Public outreach for the project has been ongoing for the last two years.
- Open house public meetings will be conducted the last week of July at which time the proposed routes will likely be shown to the public.
- CapX anticipates filing a route permit application to the Minnesota Public Utilities Commission by October 2009. The applicant prepares the route permit application and the Office of Energy Security prepares the state Environmental Impact Statement.
- The scheduled in-service date for the St. Cloud to Alexandria portion of the project is 2013 and Alexandria to Fargo is 2015.
- Scoping meetings for the Monticello to St. Cloud portion of the project, of which a route permit application has already been filed, are scheduled for July 2<sup>nd</sup>, 2009.
- The USFWS indicated that they would like to be kept involved in the state process and they may be able to assign someone within their offices to be the coordinator for their agency.

The location of and potential for impacts to MDNR lands and waters was discussed.

- There may be MDNR Wildlife Management Areas (WMAs) affected by the proposed routes, specifically the Sauk River WMA.
- MDNR indicated that if state lands were to be crossed, that they would prefer for the line to be next to a road to minimize conflicts with prescribed burning.
- The permitting process for crossing state lands and waters is in the process of changing. Licensing fees are increasing as well as monitoring fees being implemented.
- Many of the state lands have federal interest and this would require coordination with federal agencies in approving a license to cross these lands. This approval process could take two to eight months. The USFWS coordinator would review the purpose of the land versus the benefits of the project to determine whether the crossing license is approved.
- MDNR indicated that impacts to wetland hydrology from footing placement and disturbance to confining soil layers should be studied. Long term monitoring to gauge whether or not changes have taken place might need to be considered.
- MDNR indicated that impacts to wetlands and waters may be able to be minimized through the use of seasonal construction.
- MDNR indicated that the spread of noxious and invasive plants may be minimized by ensuring that construction vehicles are cleaned when leaving areas of known invasive or noxious plants. The spread may also be minimized by seasonal construction in these areas.

Protected species and migratory birds were also discussed.

- Impacts to birds were discussed. MDNR indicated that there is some concern with bird strikes, especially swans, and that mitigation should include bird diverters. It was identified that the CapX utilities are amenable to the use of bird diverters and expect

that they may be required in some locations. MDNR indicated a preference for the larger coiled diverters and not the smaller ones. MDNR also indicated that funding should be secured for best management practices (BMPs), such as bird diverters and monitoring, upfront to ensure implementation.

- MDNR indicated that birds are probably more aware of their surroundings when near the interstate than other areas.
- CapX has entered into a license agreement with the MDNR and has acquired the Rare and Unique Features datasets for the project area.
- MDNR indicated that surveys may be required and will be addressed in the state Environmental Impact Statement.

# Meeting Notes

Date May 7, 2008

Meeting with – U.S. Army Corps of Engineers

Attendees: From USACE: Tom Hinsberger, Tamera Cameron  
From Xcel Energy: Darrin Lahr

Purpose: Generally discuss the Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map  
Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule. May be able use credit from land exchanging (USFWS) for mitigation of wetland impacts for 404 permit, if needed.

# Meeting Notes

Date August 14, 2008

Meeting with – U.S. Army Corps of Engineers

Attendees: From USACE: Tom Hinsberger, Tamara Cameron  
From Xcel Energy: Darrin Lahr

Purpose: Discuss Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing, schedule, environmental documentation, forested wetlands, and permitting.

- Would like a map with routes and NWI mapping.
- Alternatives analysis for wetland impacts.
- Ditches along roadways would be looked at as having jurisdiction if they are associated with existing wetland (such as draining or physically being part of). Conveyance system drainage systems are not regulated by them. Of course, there are exceptions including some areas that seasonally flood which may be considered jurisdictional.
- A combined 404 and Section 10 permit is acceptable, if applicable.
- Standard consideration for permitting -- they still believe a Regional GP is appropriate.
- Would like CapX2020 to change the language in their information circular to reflect no EIS at the federal level.
- They would accept mitigation (if necessary) that would also meet any requirements that may be necessary with USFWS.
- They can now conduct a preliminary assessment of wetland impacts by recent guidance from Washington. However ALL wetlands (including isolated basins) would be considered as jurisdictional.
- They would like a map showing NWI wetlands when routes finalized.
- They want us to show that we have avoided or minimized wetland impacts where possible.

- They want us to continue to invite them to any meetings we may have and will try to attend as time allows.
- They are especially concerned about forested wetland because of the difficulty with replacement.

# Meeting Summary

Date June 10, 2009

## Meeting with – U.S. Army Corps of Engineers

Attendees: From USACE: Tom Hinsberger

From Xcel Energy: Darrin Lahr

From Natural Resource Group, LLC: Wade Hammer, Matthew Koch, Doni Murphy, Jeff Thommes

Purpose: Provide update on Fargo to St. Cloud and Monticello to St. Cloud projects; discuss approach to assessing, permitting, and mitigating potential for impacts to jurisdictional wetlands and waters.

Materials provided: Fargo to St. Cloud Preliminary Proposed Routes map, Fargo to St. Cloud Preliminary Proposed Routes and All Routes Considered maps, and Reviewed Red River Crossing Locations map

An update regarding status of the two projects was provided.

- Monticello to St. Cloud Project
  - CapX submitted a Route Permit Application to the Minnesota Public Utilities Commission in April 2009.
  - Scoping meetings are scheduled for early July 2009 and Community Advisory Task Force meetings are scheduled for June, July, and August 2009.
  - No federal nexus has been identified.
  - The state review process of the route permit application includes the development of a state Environmental Impact Statement (EIS).
  
- Fargo to St. Cloud Project
  - The Fargo to St. Cloud Project includes a new 345 kV electrical transmission line extending from the proposed Quarry Substation west of St. Cloud, Minnesota to the existing Alexandria Switching Station, and from the Alexandria Switching Station to a proposed substation to be located west of Fargo, North Dakota.
  - The project will be constructed as a double-circuit 345 kV line with steel monopole construction. Only one of the circuits will be strung initially.
  - The permanent right-of-way will generally be 150 feet wide.
  - CapX anticipates submitting the Red River to St Cloud (portion of the Fargo to St. Cloud Project within the state of Minnesota) Route Permit Application to the Minnesota Public Utilities Commission by October 2009.
  - CapX anticipates meeting with the public in late July to present the proposed routes that will be included in the Minnesota Route Permit Application.
  - No federal nexus has been identified however members of the Fargo to St. Cloud Project team are meeting with affected agencies to obtain any agency

input relative to the preliminary proposed routes and to confirm no anticipated federal action requiring an environmental review in accordance with the National Environmental Policy Act (NEPA).

- Should NEPA be anticipated, CapX would prefer to incorporate this review into the overall project schedule now.

Permitting considerations were discussed.

- The Corps would like to be at least a reviewing or cooperating agency, but unsure of being the lead agency should a federal EIS be required. Would need to discuss this further internally.
- The Corps does not anticipate that NEPA would be required for the project, as it relates to Section 404 and Section 10 permitting as administered by the Corps.
- The Corps like to be kept updated on the projects and especially any scoping meetings.
- CapX assumes that the Red River crossing would be permitted under a combined 404/Section 10 Nationwide Permit 12.
- CapX anticipates that Section 404 wetland and water impacts would be permitted under a Regional General Permit (RGP).
- The Corps agreed that the Red River crossing would likely be permitted under a combined Section 10/404 nationwide permit and that the wetland and water 404 impacts would be permitted under an RGP, but would have to see the level of impact before knowing for sure. The Corps identified it may be possible to combine all impacts into one permit.
- Although a public notice is not typically done for an RGP, one may be done for this project due to its size. This notice could also serve as a tribal notice.
- Jurisdiction can be determined through a preliminary jurisdiction determination (JD) or an approved JD. A preliminary JD could be reviewed by the Corps more quickly.
- Mitigation would likely be required for temporal impacts. The mitigation ratio would depend on the quality of wetlands impacted. The ratio would likely range from 0.5 acres: 1.0 acres to 0.03 acres: 1.0 acres.
- Mitigation would be required for permanent impacts if the mitigation threshold was exceeded. The mitigation thresholds vary by county and some uncertainty was identified as to which *de minimis* standard would be used since it varies by county.
- Permanent impacts may include the placement of the pole foundation and any conversion of wetland type / quality.

The routing process associated with the Fargo to St. Cloud project was reviewed.

- The routing process has incorporated public and agency involvement. The process is largely based on a comparative evaluation of routing options, assessing the overall potential for impact associated with these options, and minimizing the potential for impact to features identified as being key sensitivities. The process involves the balancing of various considerations, including cost and engineering as well as impacts to the environment and public comment / interests. Numerous comments have been received which identify a preference to follow Interstate 94.

- Preliminary proposed routes have been identified. These routes will continue to be reviewed and modified as necessary prior to their inclusion in the Minnesota Route Permit Application.
- The Corps commented that while they realize that CapX has a lot to look at, their primary concern is wetlands and waters. If there are other things of interest that have caused for a route to be carried forward that would potentially have higher impacts to wetlands or waters than one not carried forward, the Corps will need to see a more detailed discussion as to why.

Wetland delineations were discussed.

- CapX is unsure at this time what level of delineation will be done for the Monticello to St. Cloud and Fargo to St. Cloud projects. A field delineation will be completed, but uncertainty as to whether this will be just for where impacts could occur, such as pole locations, or if it will be for the entire right-of-way.
- The Corps would like to see field delineations at least done at impact areas and stream crossing locations.
- The Corps would hope that impacts can be avoided to the extent feasible.

Potential locations for crossing the Red River were discussed.

- CapX presented a map of the Preliminary Proposed Routes and a map indicating the various river crossing locations that had been studied. Three crossings have been carried forward as part of the Preliminary Proposed Routes.
- The Corps confirmed that they would rather the river crossing be an existing crossing rather than a new crossing.
- The Corps would like information about each of the three crossings and why the preferred crossing is the preferred rather than the other two locations.
- The Corps is the primary agency in regard to reviewing the crossing. Minnesota is within the Corps St. Paul District jurisdiction and North Dakota is within the jurisdiction of the Omaha District. Since the project is primarily in Minnesota, the St. Paul District would be the permitting district.

The identification and assessment of known cultural resources that may be affected by the Fargo to St. Cloud Project was also discussed.

- CapX has obtained site information for cultural resources from the Minnesota State Historical Preservation Office (SHPO) along routes that have been studied.
- CapX is in the process of obtaining more detailed site information for sites in close proximity to Preliminary Proposed Routes.
- The Corps expressed concern regarding cultural resource and tribal issues since these have been historically brought to the Corps attention late in the permitting process.
- The Corps recommends that the SHPO be involved in the pre-application process and as early as possible to minimize risk of unrecorded sites being identified during the wetland permit review process.

# Meeting Notes

Date February 29, 2008

Meeting with – U.S. Fish and Wildlife Service

Attendees: From USACE: Laurie Fairchild

From Xcel Energy: Darrin Lahr

Purpose: Discuss Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: None

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule.

- Laurie described the process for federal money granted to state for purchase of state lands for restoration or purchase such as Wetland Management Areas (WMA's).
- Laurie will provide contact name for WMA's where federal dollars have been spent (MDNR contacts for records).
- Impacts to federally funded WMA's require replacement (separate from Corps) can be combined for replacement.
- Necessary to get background process, going to address potential issues moving forward.
- Easement handled through the refuges; WMA impacts handled through the MDNR.
- Coordinate through Laurie on applications.
- Separate coordination with USFWS appropriations office for crossing of easements areas.
- Kevin Brennan is area manager at the Fergus Falls office.
- Bird concentration areas; mark lines; mitigation issues.
- List of landowners for potential mitigation; contact USFWS (local) and MDNR.

# Meeting Notes

Date May 6, 2008

Meeting with – U.S. Fish and Wildlife Service

Attendees: From USFWS: Laurie Fairchild, Kevin Brennan, Scott Gulp  
From Xcel Energy: Darrin Lahr

Purpose: Discuss Monticello to St. Cloud and Fargo to St. Cloud projects.

Materials provided: Project map

Materials received: None

Summary of Discussion: Discussed various aspects of the Monticello to St. Cloud and Fargo to St. Cloud projects, including routing and schedule.

- Project is not considered a compatible use of USFWS fee title land – avoid. This mainly refers to WPA's.
- Easements – Habitat easement, wetland easement.
- Wetland easements – possible siting within the easement area outside the wetland itself. May have to compensate the landowner if buffer area is affected.
- High quality wetlands, prairies, not for exchanges. There is a possibility for exchanges. Must be equal or greater value than existing area that is impacted.

# Meeting Summary

Date June 26, 2009

## Meeting with – U.S. Fish and Wildlife Service

Attendees: From USFWS: Tony Sullins, Kevin Brennan

From Xcel Energy: Darrin Lahr

From Natural Resource Group, LLC: Matthew Koch, Doni Murphy, Jeff Thommes

Purpose: Discuss Fargo to St. Cloud Project.

Materials provided: Fargo to St. Cloud Preliminary Proposed Routes and All Routes Considered maps

An overview of the project was provided, including a description of the project and a review of the project's purpose and need.

- The project endpoints are a new substation in the St. Cloud area and a new substation in the Fargo area.
- The project will also interconnect at a switching station in Alexandria.
- The project will be constructed using single steel poles six to eight feet in diameter at their base, generally 120-175 feet tall, and with generally 1,000 foot spacing between the poles. Poles will be self supporting with no guy wires. Poles will be built to accommodate two circuits, but conductors will only be strung for one circuit during construction. A ground clearance of at least 35 feet will be maintained at maximum load and system conditions. Pole foundation depths will typically be 15-40 feet below the ground surface. The permanent right-of-way will be 150 feet wide, but if adjacent to existing right-of-way there may be some sharing of the existing right-of-way.
- In response to a question from the USFWS, CapX identified that although the project will provide infrastructure to help support wind energy, wind energy projects will not be able to directly interconnect with the proposed line and therefore the location wind projects were not taken into consideration in the route selection process.

The routing process and how impacts are assessed was reviewed and discussed.

- CapX identified that as dictated by Minnesota routing policy, routes should follow existing linear features (existing roads, transmission lines, railroads, etc.) where possible. The area of study for routing purposes is generally 1,000 feet wide. Routes, which may be up to 1.25 miles wide, will be submitted in the Minnesota state route permit application. This width is chosen to allow for flexibility in identifying the best alignment. Impacts on the ground will occur at the alignment and pole locations areas, not the entire route area.

- Route selection took into consideration numerous environmental and human criteria. Residences and residential zoning or land use was considered to be the highest criteria of concern.
- The public has shown a strong preference for the line to follow Interstate 94. An Interstate 94 route is also the shortest route for the project and there is a tie-in point in Alexandria along Interstate 94 between the two project endpoints.
- The state of Minnesota requires that at least two routes be filed in the state route permit application and that a preferred route is indicated. It is likely that the preferred route will parallel Interstate 94.
- Also discussed was why the existing 400 kV DC Great River Energy and 230 kV Western Area Power Administration transmission lines were removed from consideration as potential routes.

CapX provided a review of agency coordination that had been conducted to-date.

- CapX has met with the U.S. Army Corps of Engineers (USACE), Minnesota Department of Transportation (Mn/DOT), Federal Highway Administration (FHWA), Minnesota Department of Natural Resources, and Western Area Power Administration (WAPA).
- A federal nexus has not been identified. CapX would like to continue to coordinate with the affected federal agencies, including the USFWS, to identify if there is a federal nexus so that it can be built into the project schedule in advance of the submittal of the route permit application to the Minnesota Public Utilities Commission.
- USACE has indicated that they don't see a federal nexus from their point of view and they do not have interest in being the lead agency if there is a review of the project done under the National Environmental Policy Act (NEPA). As it relates to jurisdictional wetlands and waters permitting, the USACE is anticipating the use of a combined Section 404/Section 10 permit for the crossing of the Red River and a Section 404 Regional General Permit for all other project-related impacts to wetland and waters.
- As it relates to the FHWA and MnDOT, CapX provided a summary of considerations related to the placement of the proposed transmission line along the interstate. Based on correspondence received from MnDOT, if FHWA review or approval is required, NEPA may be required.
- The USFWS indicated that a federal nexus would most likely be triggered through USACE or FHWA approvals. Should NEPA be required, the USFWS would be a cooperating agency. The state and federal processes could parallel one another.
- The USFWS indicated that they will reach out to the other federal agencies in an effort to obtain additional agency insight related to NEPA considerations.

The Project schedule was discussed.

- The Certificate of Need (CON) for the project was issued in May 2009.
- Public outreach for the project has been ongoing for the last two years.

- Open house public meetings will be conducted the last week of July at which time the proposed routes will likely be shown to the public.
- CapX anticipates filing a route permit application to the Minnesota Public Utilities Commission by October 2009. The applicant prepares the route permit application and the Office of Energy Security prepares the state Environmental Impact Statement.
- The scheduled in-service date for the St. Cloud to Alexandria portion of the project is 2013 and Alexandria to Fargo is 2015.
- Scoping meetings for the Monticello to St. Cloud portion of the project, of which a route permit application has already been filed, are scheduled for July 2<sup>nd</sup>, 2009.
- The USFWS indicated that they would like to be kept involved in the state process and they may be able to assign someone within their offices to be the coordinator for their agency.

The location of and potential for impacts to Waterfowl Production Areas and conservation easements occurring along the potential routes were reviewed and discussed.

- The USFWS explained that if the route avoids Waterfowl Production Areas (WPAs), grassland easements, and avoids placing poles in wetland easements, the USFWS would not need to issue any permit. However, the USFWS will provide comments related to concerns associated with high quality habitat along Interstate 94 regardless of whether or not they have to issue a permit.
- Even though a permit may not be required for an aerial crossing of a marsh on a wetland easement, the USFWS strongly recommends avoiding direct impacts to or aerial crossings of these areas if there is a known high concentration of birds that use the area.
- The USFWS mentioned that Tom Carlson, a Minnesota Department of Natural Resources (MDNR) staff member, could possibly provide information on locations of high concentrations of birds in the project area. The USFWS will contact the MDNR.
- The USFWS indicated that they had identified several WPAs along the proposed routes including one south and west of Hoffman, Pocket Lake WPA, Orange WPA, and several along Interstate 94. CapX indicated that there may be WPAs within the proposed routes, but an alignment can be placed within the route that avoids requiring an easement across a WPA.
- The USFWS provided information on a flood control project in North Ottawa Township that will have environmental components and will become a state refuge. The USFWS will be commenting on the project and part of the managing team, but is not funding it. The USFWS also indicated they would like to be the transmission line at least a half mile away from it.
- The USFWS indicated that they can provide additional information on conservation easements along the proposed routes. The USFWS also indicated that for the easements where the areas covered under the easement are not mapped, the USFWS can work with NRG to better identify the easement area.
- The USFWS indicated that they do not have as much concern with areas east of Douglas County. They have a high concern with the route that follows Interstate 94.

Protected species and migratory birds were also discussed.

- NRG commented that bird strikes are more common with distribution lines than transmission lines. CapX identified that bird strike concerns and the use of bird diverters were also raised by the MDNR.
- The USFWS mentioned that it is a responsibility of the USFWS to find data regarding transmission lines and bird strikes.
- The USFWS indicated that the piping plover is a federally listed species that is in the area but is miles away and not likely an issue.
- The USFWS indicated that there is probably not a need for a formal Section 7 consultation.
- The USFWS indicated that there is a possible concern with impacts to bald eagles and the Migratory Bird Treaty Act. Bald Eagle Guidance is available on their website and should be consulted. If the guidance is followed, there should not be any issues. The USFWS also indicated that bald eagle data is in the MDNR Natural Heritage Database.
- The USFWS indicated concerns with impacts to migratory birds near Lake Christine and Pelican Lake as there is high concentrations in these areas.
- The USFWS also indicated potential concerns with impacts to prairie chickens and prairie chicken leks that may be located near the Interstate 94 and Western 230 kV transmission line corridors. The USFWS indicated it may be possible to use the wind farm guidance for prairie grouse to help address possible concerns if applicable.

# Meeting Summary

Date September 16, 2009

Meeting with – U.S. Fish and Wildlife Service and Minnesota Department of Natural Resources

Attendees: From USFWS: Kevin Brennan  
From MDNR: Tom Carlson, Don Schultz  
From Natural Resource Group, LLC: Wade Hammer, Matthew Koch, Doni Murphy

Purpose: Discuss Fargo to St. Cloud Project, specifically the current status of identified routes, how these routes have been modified to accommodate USFWS lands (especially WPAs), how these routes minimize the potential for impacts to other conservation easements where possible, and how these routes may still affect wetland conservation easements.

- NRG provided an overview of the Monticello to St. Cloud and Fargo to St. Cloud projects.
- At previous meetings with USFWS, no preferred route had yet been identified. NRG identified that I-94 will likely be the preferred route.
- NRG indicated that it is not clear at this point how much, if any, of the MNDOT I-94 right-of-way can be shared if the I-94 route is ultimately approved. If no overlap is allowed, poles would be at least 75 feet from the edge of the I-94 right-of-way. If overlap is allowed, the minimum distance from the edge of right-of-way may be between five and 75 feet.
- The USFWS stated that the non-interstate route is preferred by the USFWS because they feel that the non-interstate route would impact fewer migratory birds than the I-94 route. The USFWS stated that it was their opinion that the I-94 route had more potential for migratory bird issues and impacts in general.
- Comments received from either agency were discussed, specifically a letter provided by the USFWS. The letter was generally commenting on the nature of fee-title lands versus easements, and some general comments on the routes, which the USFWS Wetland Management District indicated came from USFWS Ecological Services.

Locations along the proposed routes where wetland conservation easements occur were then reviewed in detail. The USFWS offered additional data pertaining to these areas and related to areas within proximity of the proposed routes.

- The USFWS identified that their primary concern associated with wetland conservation easements is keeping poles out of the associated wetland areas or basins.

- The USFWS identified that wetland conservation easements cover all basins on a property. The easement document does not specify exact locations but states that all basins (swales, swamps, sloughs, marshes, etc.) are covered by the easement. Also, typical 1987 Manual delineations are not used. The USFWS determines the extent of basins based on site visits.
- The USFWS identified that where the crossing of wetland conservation easements is expected, he anticipates a need to have USFWS staff complete a site visit with CapX representatives to determine the location and extent of these basins to assure no poles are located within a basin.
- The MDNR inquired as to use of bird diverters. The USFWS indicated that they would like to see, at a minimum, bird diverters used where the proposed line crosses wetland basins, and perhaps extending out some distance in certain instances. However, the USFWS identified some uncertainty as to what jurisdiction the USFWS would have to request bird diverters across wetland conservation easements as the jurisdiction really ends with the basin. The USFWS identified that draining or filling a basin would certainly fall in USFWS jurisdiction, but having lines cross the easement may not necessarily be within USFWS jurisdiction. The use of bird diverters would likely then be a requested mitigation measure where the USFWS otherwise had no discretionary authority or approval.
- The USFWS also discussed the consideration of potential avian mortality and any implications.
- NRG inquired as to the comment provided by the USFWS in their letter which stated that no temporary construction impacts would be allowed in a basin. As an example, NRG asked how the USFWS would consider the use of an ATV for wire stringing. The USFWS identified that draining or filling of a basin, despite how marginal or temporary, is discouraged.
- The MDNR inquired as to extent of coordination with the MDNR. NRG indicated that detailed discussions with the MDNR had not occurred, however the MDNR Land/Minerals Division commented during a previous meeting that if a WMA was to be crossed that they preferred it be along a road since this would allow for management techniques, such as burning, to continue to be feasible.
- NRG reiterated that the route permit application was anticipated to be submitted within the next few weeks and that the documents would be distributed to agencies too, allowing MDNR to comment further.
- The MDNR identified that they would prefer the non-interstate route.
- The MDNR and USFWS both described their concern regarding the high concentration of migratory waterfowl traveling through the area between Pomme De

Terre Lake to the south of the interstate and Pelican Lake to the north of the interstate.

- The USFWS identified that in one location along the west side of the interstate and abutting the Otter Tail/Grant County boundary is a property of which the USFWS is very close to having an option to purchase in fee. Upon purchase, this property would likely then become a WPA and if purchased before the right-of-way was acquired for the Project, would be a prohibited property resulting in a necessary reroute.
- The USFWS and MDNR identified concern regarding the high concentration of migratory waterfowl traveling through the particular area between North Ten Mile Lake and Mineral Lake to the south of the interstate and Swan Lake to the north of the interstate.

Migration corridors and waterfowl staging areas were then discussed.

- The USFWS and MDNR identified two main migration and staging areas where there are a high concentration of waterfowl:
  - 20% of canvasbacks congregate on Lake Christina along the migration corridor between Christina-Pelican-Pomme De Terre Lakes.
  - Flight path between Swan, Mineral, and Ten Mile Lakes, also high concentrations and during inclement weather, low flight over the interstate between these lakes is common.
- The USFWS and MDNR both suggested that these migration corridors are the largest issue of concern and that placing the lines in these areas will likely become a larger issue down the road.
- NRG asked if optional mitigation measures could be used in these areas in an effort to lessen concerns or mitigation the potential for impacts.
- The USFWS and MDNR agreed that at the very minimum, bird diverters should be considered and their effectiveness be further evaluated.
- The USFWS inquired as to undergrounding in these areas, especially in the area where the migration corridor between two staging areas is likely less than one mile wide.
- Along the non-interstate route, the MDNR noted that the Mustinka River would be a point where similar migration route issues would be a concern to them.

**AGRICULTURAL IMPACT MITIGATION PLAN**  
**CapX2020 345 kV Electric Transmission Projects in Minnesota**

**CapX2020**

**June 2009**

# AGRICULTURAL IMPACT MITIGATION PLAN

## CapX2020

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# AGRICULTURAL IMPACT MITIGATION PLAN

## CapX2020

### Purpose

This Agricultural Impact Mitigation Plan ("AIMP" or 'the plan') was developed by Northern States Power Company, a Minnesota corporation and wholly-owned subsidiary of Xcel Energy Inc., and Great River Energy, a Minnesota generation and transmission cooperative (together, referred to as "the Utilities"), representing the CapX2020 utility consortium and with the Minnesota Department of Agriculture ("MDA"). The overall objective of this AIMP is to identify measures the Utilities will take to avoid, mitigate, repair and/or provide compensation for impacts that may result from 345 kV electric transmission line construction of the CapX2020 projects on Agricultural Land in Minnesota.

CapX2020 ("CapX2020") is a joint initiative of 11 transmission-owning utilities in Minnesota and the surrounding region. The purpose of CapX2020 is to study, develop, permit and construct electric transmission infrastructure as needed to implement long-term and cost-effective solutions for customers to meet the growth in energy use expected by the year 2020. The three CapX2020 projects included in this AIMP are described as:

- 1) the 345 kV transmission line from Brookings County, South Dakota to Hampton, Minnesota;
- 2) the 345 kV transmission line from Monticello, Minnesota to St. Cloud to the Fargo area, North Dakota; and
- 3) the 345 kV transmission line from Hampton, Minnesota to Rochester to La Crosse, Wisconsin.

Collectively, these three transmission lines are referred to as the "CapX2020 Projects".

The construction standards and policies in this plan apply only to construction activities occurring partially or wholly on privately owned Agricultural Land. The measures do not apply to construction activities occurring entirely on public rights-of-way, railroad rights-of-way, publicly owned land, or private land that is not Agricultural Land. The Utilities will, however, adhere to the same construction standards relating to the repair of agricultural tile (Item No. 3 in the AIMP) when Tiles are encountered on public highway rights-of-way, railroad rights-of-way, or publicly or privately owned land.

Appendix B of this AIMP applies only to Organic Agricultural Land as described in the National Organic Program Rules, 7 CFR Parts 205.100, 205.202, and 205.101.

Unless the Easement or other agreement, regardless of nature, between the Utilities and the Landowner or Tenant specifically provides to the contrary, the mitigative actions specified in the construction standards and policies set forth in this AIMP will be implemented in accordance with the General Provisions.

## **General Provisions**

The mitigative actions are subject to change by Landowners or Tenants, provided such changes are negotiated with and acceptable to the Utilities.

Certain provisions of this AIMP require the Utilities to consult with the Landowner and Tenant of a property. The Utilities will engage in a good faith effort to secure the agreement of both Landowner and Tenant in such cases.

Unless otherwise specified, the Utilities will retain qualified contractors to execute mitigative actions. However, the Utilities may negotiate with Landowners or Tenants to carry out the mitigative actions that Landowners or Tenants wish to perform themselves.

Mitigative actions employed by the Utilities pursuant to this AIMP, unless otherwise specified in this AIMP or in an Easement or other agreement negotiated with an individual Landowner or Tenant, will be implemented within 45 days following completion of Final Clean-up on an affected property, weather permitting, or unless otherwise delayed by mutual agreement between Landowner or Tenant and Utility. Temporary repairs will be made by the Utilities during construction as needed to minimize the risk of additional property damage or interference with the Landowner's or Tenant's access to or use of the property that may result from an extended time period to implement mitigative actions.

The Utilities will implement the mitigative actions contained in this AIMP to the extent that they do not conflict with the requirements of any applicable federal and/or state rules and regulations and other permits and approvals that are obtained by the Utilities for the project or they are not determined to be unenforceable by reason of other requirements of federal and state permits issued for the project. To the extent a mitigative action required by this agreement is determined to be unenforceable in the future due to requirements of other federal or state permits issued for the project, the Utilities will so inform the Landowner or Tenant and will work with them to develop a reasonable alternative mitigative action.

Prior to the construction of the transmission line, the Utilities will provide each Landowner and Tenant with a telephone number and address which can be used to contact the Utilities, both during and following the completion of construction, regarding the agricultural impact mitigation work which is performed on their property or other construction-related matter. If the contact information changes at any time before completion of Final Clean-up and/or after the completion of construction, the Utilities will provide the Landowner and Tenant with updated contact information. The Utilities will respond to Landowner and Tenant telephone calls and correspondence within a reasonable time.

The Utilities will use good faith efforts to obtain a written acknowledgement of completion from each Landowner and Tenant upon the completion of Final Clean-up on their respective property.

If any provision of this AIMP is held to be unenforceable, no other provision will be affected by that holding, and the remainder of the AIMP will be interpreted as if it did not contain the unenforceable provision.

## **Mitigative Actions**

The Utilities will reasonably restore or compensate Landowners and/or Tenants, as appropriate, for damages caused by the Utilities as a result of transmission line construction, and as outlined in this plan. The decision to restore land or compensate Landowners will be made by the Utilities after discussion with the Landowner or Tenant.

### **1. Pole Placement**

During the design of the project, the Utilities' engineering, land rights and permitting staff will work together to address pole placement issues. Utilities' staff will work with Landowners on pole placement. When the preliminary design is complete, the land rights agents will review the staked pole locations with the Landowners.

### **2. Soil and Rock Removal for Bored Holes**

Any excess soil and rock will be removed from the site unless otherwise requested by the Landowner.

### **3. Damaged and Adversely Affected Tile**

The Utilities will contact affected Landowners or Tenants for their knowledge of Tile locations prior to the transmission line's installation. Utilities will make every attempt to probe for Tile if the Landowner does not know if Tile is located in the proposed pole location. Tile that is damaged, cut, or removed as a result of this probe will be immediately repaired. The repair will be reported to the Inspector.

If Tile is damaged by the transmission line installation, the Tile will be repaired in a manner that restores the Tile's operating condition at the point of repair. If Tiles on or adjacent to the transmission line's construction area are adversely affected by the construction of the transmission line, the Utilities will take such actions as are necessary to restore the functioning of the Tile, including the relocation, reconfiguration, and replacement of the existing Tile. The affected Landowner or Tenant may elect to negotiate a fair settlement with the Utilities for the Landowner or Tenant to undertake the responsibility for repair, relocation, reconfiguration, or replacement of the damaged Tile. In the event the Landowner or Tenant chooses to undertake the responsibility for repair, relocation, reconfiguration, or replacement of the damaged Tile, the Utilities will not be responsible for correcting Tile repairs after completion of the transmission line (the Utilities are responsible for correcting Tile repairs after completion of the transmission line, provided the repairs were made by the Utilities or their agents or designees).

Where the damaged Tile is repaired by the Utilities, the following standards and policies will apply to the Title repair:

- A. Tiles will be repaired with materials of the same or better quality as that which was damaged.

- B. If water is flowing through a damaged Tile, temporary repairs will be promptly installed and maintained until such time that permanent repairs can be made.
- C. Before completing permanent Tile repairs, Tiles will be examined within the work area to check for Tile that might have been damaged by construction equipment. If Tiles are found to be damaged, they will be repaired so they operate as well after construction as before construction began.
- D. The Utilities will make efforts to complete permanent Tile repairs within a reasonable timeframe after Final Clean-up, taking into account weather and soil conditions.
- E. Following completion of the Final Clean-up and damage settlement, the Utilities will be responsible for correcting and repairing Tile breaks, or other damages to Tile systems that are discovered on the Right-of-Way to the extent that such breaks are the result of transmission line construction. These damages are usually discovered after the first significant rain event. The Utilities will not be responsible for Tile repairs the Utilities have paid the Landowner or Tenant to perform.

#### **4. Installation of Additional Tiles**

The Utilities will be responsible for installing such additional Tile and other drainage measures as are necessary to properly drain wet areas on the Right-of-Way caused by the construction of the transmission line.

#### **5. Construction Debris**

Construction-related debris and material which are not an integral part of the transmission line, and which have been placed there by the Utilities, will be removed from the Landowner's property at the Utilities' cost. Such material to be removed would include excess construction materials or litter generated by the construction crews.

#### **6. Compaction, Rutting, Fertilization, Liming, and Soil Restoration**

- A. Compaction will be alleviated as needed on Cropland traversed by construction equipment. Cropland that has been compacted will be plowed using appropriate deep-tillage and draft equipment. Alleviation of compaction of the topsoil will be performed during suitable weather conditions, and must not be performed when weather conditions have caused the soil to become so wet that activity to alleviate compaction would damage the future production capacity of the land as determined by the Agricultural Monitor.
- B. The Utilities will restore rutted land to as near as practical to its pre-construction condition.
- C. If there is a dispute between the Landowner or Tenant and the Utilities as to what areas need to be ripped or chiseled, the depth at which compacted areas should be

ripped or chiseled, or the necessity or rates of lime, fertilizer, and organic material application, the Agricultural Monitor's opinion will be considered by the Utilities.

## **7. Damaged Soil Conservation Practices**

Soil conservation practices such as terraces and grassed waterways which are damaged by the transmission line's construction, will be restored to their pre-construction condition.

## **8. Weed Control**

On land which is owned by Utilities for substation facilities, the Utilities will work with Landowners if requested on weed control activities outside of the substations with the intent to not allow the spread of weeds onto adjacent Agricultural Land. Any weed control spraying will be in accordance with State of Minnesota regulations.

## **9. Irrigation Systems**

- A. If the transmission line and/or temporary work areas intersect an operational (or soon to be operational) spray irrigation system, the Utilities will establish with the Landowner or Tenant, an acceptable amount of time the irrigation system may be out of service.
- B. If, as a result of the transmission line construction activities, an irrigation system interruption results in crop damages, either on the Right-of-Way or off the Right-of-Way, compensation of Landowners and/or Tenants, as appropriate, will be determined as described in section 11 of this AIMP.
- C. If it is feasible and mutually acceptable to the Utilities and the Landowner or Tenant, temporary measures will be implemented to allow an irrigation system to continue to operate across land on which the transmission line is also being constructed. Utilities will work with the Landowner or Tenant to identify a preferable construction time.

## **10. Temporary Roads**

The location of temporary roads to be used for construction purposes will be discussed with the Landowner or Tenant.

- A. The temporary roads will be designed so as to not impede proper drainage and will be built to mitigate soil erosion on or near the temporary roads.
- B. Upon abandonment, temporary roads may be left intact through mutual agreement of the Landowner or Tenant and the Utilities unless otherwise restricted by federal, state or local regulations.

- C. If a temporary road is to be removed, the Agricultural Land upon which the temporary road is constructed will be returned to its previous use and restored to equivalent condition as existed prior to their construction.

**11. Construction in Wet Conditions**

If it is necessary to construct during wet conditions, and if the Agricultural Monitor believes conditions are too wet for continued construction, damages which may result from such construction will be paid for by the Utilities and/or appropriate restoration will be conducted. Compensation for Landowners and/or Tenants, as appropriate, will be determined as described in section 12 of this AIMP.

**12. Procedures for Determining Construction-Related Damages and Providing Compensation**

- A. The Utilities will develop and put into place a procedure for the processing of anticipated Landowners' or Tenants' claims for construction-related damages. The procedure will be intended to standardize and minimize Landowner and Tenant concerns in the recovery of damages, to provide a degree of certainty and predictability for Landowners, Tenants and the Utilities, and to foster good relationships among the Utilities, Landowners and their Tenants over the long term.
- B. Negotiations between the Utilities and any affected Landowner or Tenant will be voluntary in nature and no party is obligated to follow any particular method for computing the amount of loss for which compensation is sought or paid. The compensation offered is only an offer to settle, and the offer shall not be introduced in any proceeding brought by the Landowner or Tenant to establish the amount of damages the Utilities must pay. In the event the Utilities and a Landowner or Tenant are unable to reach an agreement on the amount of damages, the Landowner or Tenant may seek recourse through mediation.

**13. Advance Notice of Access to Private Property**

The Utilities will endeavor to provide the Landowner and/or Tenant advanced notice before beginning construction on the property. Prior notice will consist of a personal contact, email, letter or a telephone contact, whereby the Landowner and the Tenant are informed of the Utilities' intent to access the land.

**14. Role and Responsibilities of Agricultural Monitor**

The Agricultural Monitor will be retained and funded by the Utilities, but will report directly to the MDA. The primary function of the Agricultural Monitor will be to audit the Utilities' compliance with this AIMP. The Agricultural Monitor will not have the authority to direct construction activities and will not have authority to stop construction. The Agricultural Monitor will notify the Utilities' Inspector if he/she believes a compliance issue has been identified. The Agricultural Monitor will have full access to Agricultural Land crossed by the CapX2020 projects and will have the option of

attending meetings where construction on Agricultural Land is discussed. Specific duties of the Agricultural Monitor will include, but are not limited to the following:

1. Participate in preconstruction training activities sponsored by the Utilities.
2. Monitor construction and restoration activities on Agricultural Land for compliance with provisions of this AIMP.
3. Report instances of noncompliance to the Utilities Inspector.
4. Prepare regular compliance reports and submit to MDA, as requested by the MDA.
5. Act as liaison between Landowners and Tenants and MDA, if necessary.
6. Maintain a written log of communications from Landowners and/or Tenants regarding compliance with this AIMP. Report Landowner complaints to the Utilities Inspector and/or Right-of-Way representative.
7. In disputes between Utilities and a Landowner and/or Tenant over restoration, determine if agricultural restoration is reasonably adequate in consultation with the Utilities Inspector.

#### **15. Qualifications and Selection of Agricultural Monitor**

The Agricultural Monitor will have a bachelor's degree in agronomy, soil science or equivalent work experience. The Agricultural Monitor will have demonstrated practical experience with pipeline or electric transmission line construction and restoration on Agricultural Land. Final selection of the Agricultural Monitor will be a joint decision between the MDA and the Utilities.

#### **16. Role of the Utilities Inspector**

The Utilities Inspector will:

1. Be full-time member of the Utilities inspection team.
2. Be responsible for verifying the Utilities compliance with provisions of this AIMP during construction.
3. Work collaboratively with other Utilities Inspectors, Right-of-Way agents, and the Agricultural Monitor in achieving compliance with this AIMP.
4. Observe construction activities on Agricultural Land on a regular basis.
5. Have the authority to stop construction activities that are determined to be out of compliance with provisions of this AIMP.

6. Document instances of noncompliance and work with construction personnel to identify and implement appropriate corrective actions as needed.
7. Provide construction personnel with training on provisions of this AIMP before construction begins.
8. Provide construction personnel with field training on specific topics as needed.

## Appendix A: **Definitions**

Agricultural Land	Land that is actively managed for cropland, hayland, or pasture, and land in government set-aside programs.
Agricultural Monitor	Monitor retained and funded by the Utilities, reporting directly to the Minnesota Department of Agriculture (“MDA”) and responsible for auditing the Utilities' compliance with provisions of this AIMP.
Cropland	Land actively managed for growing row crops, small grains, or hay.
Easement	The agreement(s) and/or interest in privately owned Agricultural Land held by the Utilities by virtue of which it has the right to construct, operate and maintain the transmission line together with such other rights and obligations as may be set forth in such agreement.
Final Clean-up	Transmission line activity that occurs after the power line has been constructed. Final Clean-up activities include but are not limited to: removal of construction debris, de-compaction of soil as required, installation of permanent erosion control structures, final grading, and restoration of fences and required reseeding. Once Final Clean-up is finished, Landowners will be contacted to settle all damage issues and will be provided a form to sign confirming final settlement.
Landowner	Person(s) holding legal title to Agricultural Land on the transmission line route from whom the Utilities is seeking, or has obtained, a temporary or permanent Easement, or their representatives.
Non-Agricultural Land	Any land that is not "Agricultural Land" as defined above.
Right-of-Way	The Agricultural Land included in permanent and temporary Easements which the Utilities acquires for the purpose of constructing, operating and maintaining the transmission line.
Tenant	Any Person lawfully renting or sharing land for agricultural production which makes up the "Right-of-Way" as defined in this AIMP.
Tile	Artificial subsurface drainage system.
Topsoil	The uppermost horizon (layer) of the soil, typically with the darkest color and highest content of organic matter.
Utilities Inspector	Full-time on-site inspector retained by the Utilities to verify compliance with requirements of this AIMP during construction of the transmission line. The Inspector will have demonstrated experience with transmission line construction on Agricultural Land.

## **Appendix B: Mitigative Actions for Organic Agricultural Land**

### **Introduction**

The Utilities recognize that Organic Agricultural Land is a unique feature of the landscape and will treat this land with the same level of care as other sensitive environmental features. This Appendix identifies mitigation measures that apply specifically to farms that are Organic Certified or farms that are in active transition to become Organic Certified, and is intended to address the unique management and certification requirements of these operations. All protections provided in the Agricultural Impact Mitigation Plan will also be provided to Organic Agricultural Land in addition to the provisions of this Appendix.

The provisions of this Appendix will apply to Organic Agricultural Land for which the Landowner or Tenant has provided to the Utilities a true, correct and current version of the Organic System Plan within 60 days after the signing of the Easement for such land or 60 days after the issuance of a Route Permit to the Utilities by the PUC, whichever is sooner, or, in the event the Easement is signed later than 60 days after the issuance of the Route Permit. The provisions of this Appendix are applicable when the Organic System Plan is provided to the Utilities at the time of the signing of the Easement.

### **Organic System Plan**

The Utilities recognize the importance of the individualized Organic System Plan (OSP) to the Organic Certification process. The Utilities will work with the Landowner or Tenant, the Landowner or Tenant's Certifying Agent, and/or a mutually acceptable third-party Organic consultant to identify site-specific construction practices that will minimize the potential for Decertification as a result of construction activities. Possible practices may include, but are not limited to: equipment cleaning, planting a deep-rooted cover crop in lieu of mechanical decompaction, applications of composted manure or rock phosphate, preventing the introduction of disease vectors from tobacco use, restoration and replacement of beneficial bird and insect habitat, maintenance of organic buffer zones, use of organic seeds for any cover crop, or similar measures. The Utilities recognizes that Organic System Plans are proprietary in nature and will respect the need for confidentiality.

### **Prohibited Substances**

The Utilities will avoid the application of Prohibited Substances onto Organic Agricultural Land. No herbicides, pesticides, fertilizers or seed will be applied unless requested and approved by the Landowner. Likewise, no refueling, fuel or lubricant storage or routine equipment maintenance will be allowed on Organic Agricultural Land. Equipment will be checked prior to entry to make sure that fuel, hydraulic and lubrication systems are in good working order before working on Organic Agricultural Land. If Prohibited Substances are used on land adjacent to Organic Agricultural Land, these substances will be used in such a way as to prevent them from entering Organic Agricultural Land.

## **Temporary Road Impacts**

Topsoil and subsoil layers that are removed during construction on Organic Agricultural Land for temporary road impacts will be stored separately and replaced in the proper sequence after the transmission line is installed. Unless otherwise specified in the site-specific plan described above, the Utilities will not use this soil for other purposes, including creating access ramps at road crossings. No topsoil or subsoil (other than incidental amounts) may be removed from Organic Agricultural Land. Likewise, Organic Agricultural Land will not be used for storage of soil from non-Organic Agricultural Land.

## **Erosion Control**

On Organic Agricultural Land, the Utilities will, to the extent feasible, implement erosion control methods consistent with the Landowner or Tenant's Organic System Plan. On land adjacent to Organic Agricultural Land, the Utilities' erosion control procedures will be designed so that sediment from adjacent non-Organic Agricultural Land will not flow along the Right-of-Way and be deposited on Organic Agricultural Land. Treated lumber, non-organic hay bales, non-approved metal fence posts, etc. will not be used in erosion control on Organic Agricultural Land.

## **Weed Control**

On Organic Agricultural Land, the Utilities will, to the extent feasible, implement weed control methods consistent with the Landowner's or Tenant's Organic System Plan. Prohibited Substances will not be used in weed control on Organic Agricultural Land. In addition, the Utilities will not use Prohibited Substances in weed control on land adjacent to Organic Agricultural Land in such a way as to allow these materials to drift onto Organic Agricultural Land.

## **Monitoring**

In addition to the responsibilities of the Agricultural Monitor described in the AIMP, the following will apply:

- A. The Agricultural Monitor will monitor construction and restoration activities on Organic Agricultural Land for compliance with the provisions of this appendix and will document any activities that may result in Decertification.
- B. Instances of non-compliance will be documented according to Independent Organic Inspectors Association protocol consistent with the Landowner's Organic System Plan, and will be made available to the MDA, the Landowner, the Tenant, the Landowner's or Tenant's Certifying Agent, the Utilities Inspector and to the Utilities.

If the Agricultural Monitor is responsible for monitoring activities on Organic Agricultural Land, he/she will be trained, at the Utilities' expense, in organic inspection, by the Independent Organic Inspectors Association, unless the Agricultural Monitor received such training during the previous three years.

### **Compensation for Construction Damages**

The settlement of damages will be based on crop yield and/or crop quality determination and the need for additional restoration measures. Unless the Landowner or Tenant of Organic Agricultural Land and Company agree otherwise, at the Utilities expense, a mutually agreed upon professional agronomist will make crop yield determinations, and the Minnesota Department of Agriculture Fruit and Vegetable Inspection Unit will make crop quality determinations. If the crop yield and/or crop quality determinations indicate the need for soil testing, the testing will be conducted by a commercial laboratory that is properly certified to conduct the necessary tests and is mutually agreeable to the Utilities and the Landowner or Tenant. Field work for soil testing will be conducted by a Professional Soil Scientist or Professional Engineer licensed by the State of Minnesota. The Utilities will be responsible for the cost of sampling, testing and additional restoration activities, if needed. Landowners or Tenants may elect to settle damages with the Utilities in advance of construction on a mutually acceptable basis or to settle after construction based on a mutually agreeable determination of actual damages.

### **Compensation for Damages Due to Decertification**

Should any portion of Organic Agricultural Land be Decertified as a result of construction activities, the settlement of damages will be based on the difference between revenue generated from the land affected before Decertification and after Decertification so long as a good faith effort is made by the Landowner or Tenant to regain Certification.

## Definitions

Unless otherwise provided to the contrary in this Appendix, capitalized terms used in this Appendix shall have the meanings provided below and in the AIMP. In the event of a conflict between this Appendix and the AIMP with respect to definitions, the definition provided in this Appendix will prevail but only to the extent such conflicting terms are used in this Appendix. The definition provided for the defined words used herein shall apply to all forms of the words.

Apply	To intentionally or inadvertently spread or distribute any substance onto the exposed surface of the soil.
Certifying Agent	As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
Decertified or Decertification	Loss of Organic Certification.
Organic Agricultural Land	Farms or portions thereof described in 7 CFR Parts 205.100, 205.202, and 205.101.
Organic Buffer Zone	As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
Organic Certification or Organic Certified	As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.100 and 7 CFR Part 205.101.
Organic System Plan	As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
Prohibited Substance	As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.600 through 7 CFR 205.605 using the criteria provided in 7 USC 6517 and 7 USC 6518.