TRANSMISSION ROUTING ISSUES

Presentation to the Minnesota Legislature

House Energy Finance and Policy Committee

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MINNESOTA ROUTING CASE EXAMPLES

CapX2020 Brookings Project:

I represent property owners located on 220th Street in the Hampton area, a two-lane street designated as a state "highway." Applicants are proposing to route the power line on 220th Street, even though more homes are located on this route.

Impacts on Homes in Hampton Segment

	Homes 75'-150' from centerline	Total Homes within 500' from centerline
6P-Applicants Preferred	3	28
Alternative 6P-06	1	13
Increase if ApplicantsÕ Route is Selected	**200%**	**115%**

MINNESOTA ROUTING CASE EXAMPLES

***Hiawatha Project*:**
I represent the Midtown Greenway Coalition, a non-profit organization supporting the South Minneapolis Greenway as a bicycle trail, future transit location and engine for economic and community development.

Xcel Energy's preferred route in this area is along a publicly owned railway, the Midtown Greenway, owned by the Hennepin County Regional Rail Authority.

Alternative routes either follow city streets or highway corridors – Hiawatha and I-94.

The HCRRA opposes an overhead route on the Midtown Greenway and has not determined which underground route is preferable. The Midtown Greenway Coalition, a local business partnership, the City of Minneapolis and every neighborhood organization believe that the route that would cause the least impact is underground on 28th Street. The proposed language would give priority consideration to every alternative other than the one around which the entire community is prepared to unite.

MINNESOTA ROUTING CASE EXAMPLES

CapX2020 Fargo Project:
I represent property owners whose land would be impacted by cross-country routes proposed by the CapX2020 utilities.

In this case, the utilities didn't include the I-94 corridor from Freeport to St. Cloud as either a preferred or alternative route.

To be feasible, an I-94 corridor route might require a short underground segment in Avon.

Suggestion: "Careful" consideration.

MINNESOTA POLICY OF PRUDENT AVOIDANCE

Minnesota State Interagency Working Group on EMF Issues, A WHITE PAPER ON ELECTRIC AND MAGNETIC FIELD (EMF) POLICY AND MITIGATION OPTIONS (SEPTEMBER 2002)

The Minnesota Department of Health concludes that the current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects. However, as with many other environmental health issues, the possibility of a health risk from EMF cannot be dismissed. (p. 36)

Because adverse health effects resulting from EMF cannot be proven or disproven, **the Work Group considers it prudent public health policy to take a prudent avoidance approach**. This approach suggests that one should avoid any activity or exposure about which there are questions of safety or health, at least to the extent that the activity can be avoided easily or cheaply. (p. 36)

[U]tilities seeking to site new transmission lines in Minnesota should use low-cost engineering methods to decrease EMF wherever possible. (p. 37)

UtilitiesÕ primary methods of increasing distance include increasing the conductor height above ground, **increasing the width of the right of way, or relocating the line to a route more distant from inhabited areas**. (p. 31)

[Emphasis added]

Location	Date	PRECAUTIONARY POLICY Š HIGH VOLTAGE POWER LINES
Ireland	1998	Local government will not grant construction permits in vicinity of schools or daycare centers.
California		Restrictions on siting new schools near existing transmission lines. (Deparment of Education)
California		Low-cost alterations to the design or routing to reduce magnetic fields, benchmark 4 % of project costs. (PUC)
Minnesota	2002	Low-cost engineering methods to reduce magnetic fields wherever possible. (Interagency Working Group).
Connecticut	2004	New 345 kV lines must be buried, buffer zones required near residential areas, schools, day care facilities and youth camps. Conn. Gen Stat. ¤16-50p.
Texas	1987	Power company cannot condemn easement on school property for 345 kV power line. (1987 Tex. Ct. App)
Sweden		New power lines should be planned and positioned to limit exposure. (National Boards of Health, Housing, Safety, Welfare)

[References: WHO 2007 Report, Table 86, Exhibits 147, 148, 221 in Brookings routing case]

CHRONIC EXPOSURE LIMITS ŠSENSITIVE LOCATIONS

Location	Date	CHRONIC EXPOSURE LIMITS	Exposure (mG/μT)
Israel	2001	Limits for newly constructed facilities.	10 mG 1 μT
California		Limits adopted in some local ordinances. (e.g. Irvine, California)	2-4 mG 0.2-0.4 μT
Netherlands	2005	Requires distance between power lines and places children spend significant time to limit average exposure.	4.0 mG 0.4 μT
Switzerland	1999	Limit on magnetic fields near homes, apartments, schools, hospitals, playgrounds based on maximum rated current of power line.	10 mG 1 μT
Italy	1999	Regulations limiting magnetic fields near nurseries, schools, hospitals, homes, where people spend more than 4 hours per day. (Regions of (Tuscany, Veneto, Emilia -Romagna)	2.0 mG 0.2 μT
Australia	2002	Court applied magnetic field limit to impose conditions on substation and power lines. (Planning and Environmental Court of Queensland)	4.0 mG 0.4 μT

[References: WHO 2007 Report, Table 86; Brookings Powerline Tr. Volume 3, pp. 27-28, 82-84 (Dr. David Carpenter)]

KEY ISSUES FOR TRANSMISSION ROUTING

- Preserve Minnesota's use of multiple considerations to determine where a high voltage power line will have the least adverse impacts.

  Sometimes a "highway" or "publicly owned railway" route causes greater impact on human beings, special land uses (schools, churches, planned developments) the environment, scenic or natural resources than another route on a local street or field line.

  "Careful" rather than "priority" consideration.

- Consideration of undergrounding to minimize impacts on human settlement, land use and the natural environment.

- Prudent avoidance to minimize risk to human health and safety, particularly near locations where children may have long-term and continuous exposure.