Appendix H
Noise and Vibration Memoranda

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TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office

From: Lance Meister, Cross-Spectrum Acoustics

Date: December 15, 2014

Project Reference: SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations

This technical memorandum provides information regarding the monitoring locations for existing noise and vibration measurements shown on Exhibit 3.4-6 of the Supplemental Draft EIS and information on the noise and vibration measurements conducted during the Draft EIS, as well as how they are planned to be incorporated into the Supplemental Draft EIS analysis.

All vibration measurements and as many noise measurements as possible were conducted during the week of July 22-26, 2013. The remaining noise measurements were completed during the week of August 5, 2013.

1 Noise Measurements

The noise monitoring of existing conditions along the corridor is used to establish the pre-project noise levels at sensitive receptors, or locations representative of sensitive receptors. The FTA noise impact criteria (described in the Draft EIS) are based on the existing noise levels, therefore the measurements of existing noise is essential in conducting a noise impact assessment. Table 1 identifies the locations of the noise measurements for the Supplemental Draft EIS. Each location is identified as either a new measurement or a repeat of a previous measurement from the DEIS. The new measurements supplement the Draft EIS measurement locations to adequately document existing noise conditions in the corridor. The repeated measurements are updates of the Draft EIS measurements taken in the St. Louis Park/Minneapolis Segment to update existing conditions in these locations due to changes in the freight train traffic and operations since the Draft EIS measurements were conducted in 2010 and 2011.

The specific dates for the measurements in July and August are shown in Table 1, along with notes for the completed measurements.

Noise measurement locations from the Draft EIS are noted in Table 2. The site numbers in this table match those for the noise measurements in the Draft EIS, along with location information and whether or not the measurements will be used in the Supplemental Draft EIS analysis.

Table 1. Noise Monitoring Locations for the Supplemental Draft EIS (SDEIS)

Noise Site No.	Noise Monitoring Locations	Measure Duration (Hours)	SDEIS Area	Date	Measurement Details	Status and Notes
2	Southwest Station Condos (new)	24	EP Segment	July 25	Condos close to proposed corridor	Complete
3	Purgatory Creek Park (new)	1	EP Segment	July 25	Sensitive site along adjustment that needs a dedicated measurement	Complete
`4	Apartments on Singletree Lane (new)	24	EP Segment	August 7	Residences on Singletree Lane along adjustment	Complete
14	Brunswick Ave South and West 37th Street (repeat of DEIS 29)	24	SLP/MPLS Segment	July 23	Representative of sites to south of corridor in this area and near Beltline Station	Complete
15	3427 St. Louis Ave or nearby (repeat of DEIS 31)	24	SLP/MPLS Segment	July 23	Representative of sites in southern portion of the Kenilworth Corridor	Complete – Measurement adjacent to tracks at the Calhoun Isle Condos
16	Kenilworth Place and South Upton Ave (repeat of DEIS 30)	24	SLP/MPLS Segment	July 23	Representative of sites in middle portion of the Kenilworth Corridor	Complete
17	21st Street Station Area near Thomas Ave S and Sheridan Ave S (new)	24	SLP/MPLS Segment	July 23	Representative of sites in northern portion of the Kenilworth Corridor	Complete

Notes: Noise Site Numbers are not sequential because noise monitoring was performed at other locations not listed in the table. Those sites will either be addressed in the forthcoming Final EIS or no longer fall within the area where they would potentially be impacted by project noise due to design refinements during Project Development. There are no noise sensitive receptors identified at the proposed Hopkins OMF site.

Table 2. Draft EIS Noise Monitoring Locations

Noise Site No.	Noise Monitoring Locations	Meas. Duration (Hours)	Date	Notes
25	11905 Technology Drive	24	3/2010	Used for SDEIS assessment
7	Fox News Studio	1	3/2010	Outside SDEIS assessment area
26	Nine Mile Creek Apartments 7475 Flying Cloud Drive	24	3/2010	Outside SDEIS assessment area
27	Smetana Road and Nolan Drive	24	3/2010	Outside SDEIS assessment area
28	6th Avenue and Excelsior Blvd	24	3/2010	Outside SDEIS assessment area
9	Monroe Ave and 2nd Street North	24	3/2010	Outside SDEIS assessment area
29	Brunswick Ave South and West 37th Street	24	3/2010	Outside SDEIS assessment area
31	3427 St. Louis Ave	24	4/2010	Repeated DEIS measurement on freight for new volumes and operations (#15 in Table 1)
30	Kenilworth Place and South Upton Ave	24	3/2010	Repeated DEIS measurement on freight for new volumes and operations (#16 in Table 1)
14	Cedar Lake Park	1	3/2010	
15	Kenwood Park	1	3/2010	

2 Vibration Measurements

The vibration propagation testing is conducted to determine the response of the soil to an input force. The information gathered during this testing is combined with the input force of the vehicle (taken from previous work by other consultants on the Central Corridor LRT (METRO Green Line) project, not from the Draft EIS) to determine the projected vibration levels from transit operations in locations with no current trains in operation. The vibration propagation testing is conducted where there are no current LRT trains in operation. The four sites in Table 3 were

selected to cover the areas included within the Supplemental Draft EIS (no sensitive vibration receptors are located at the proposed OMF location in Hopkins). Typically a vibration propagation test is conducted at one location, and the results are used for a larger portion of the alignment. An example of this is the Southwest Station Condos site (Site 2) below. The results at this site can be applied to the entire Eden Prairie Segment, including the apartments on Singletree Lane and other sites. Typically, fewer vibration propagation measurements are conducted on a project, as compared with the noise measurements. The exact location of each vibration measurement site (aside from the site specific locations) was determined in the field.

There were no vibration measurements taken for the Draft EIS. All vibration measurements for the Supplemental Draft EIS were completed in July, 2013. Specific notes, where needed, are shown in Table 3.

Table 3. Vibration Monitoring Locations for the Supplemental Draft EIS

Vib Site No.	Vibration Monitoring Locations	Measure Duration (Hours)	SDEIS Area	Measurement Details	Notes
2	Southwest Station Condos	3	EP Segment	Testing for Eden Prairie Segment	
7	Edgebrook Drive/West 37th Avenue	3	SLP/MPLS Segment	Testing for residences near Louisiana and Wooddale Stations	
8	West Lake Station	3	SLP/MPLS Segment	Testing for the southern portion of the Kenilworth Corridor	Measurement site near Calhoun Isle Condos
9	21st Street area	3	SLP/MPLS Segment	Testing for the northern portion of the Kenilworth Corridor	

Notes: Vibration Site Numbers are not sequential because vibration monitoring was performed at other locations not listed in the table. Those sites will either be addressed in the forthcoming Final EIS or no longer fall within the area where they would potentially be impacted by project vibration due to design refinements during Project Developments. There are no vibration sensitive receptors identified at the proposed Hopkins OMF site.

SWLRT Supplemental Draft EIS Noise and Vibration Impact Assessment Assumptions

TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office

From: Lance Meister, Cross-Spectrum Acoustics

Date: December 15, 2014

Project Reference: SWLRT Supplemental Draft EIS Noise and Vibration Impact Assessment Assumptions

This technical memorandum provides an outline of the assumptions used and information/mapping acquired that will be used for the noise and vibration analysis for the Supplemental Draft EIS study areas. Specific assumptions used in the noise impact assessment include:

- Light Rail Transit (LRT) speeds were provided by the Southwest LRT Project Office Engineering team. Speeds range from 20 mph to 55 mph for LRT revenue operations within the areas studied in the Supplemental Draft EIS. A speed of 10 mph was assumed for vehicle movements inside the proposed Hopkins Operation and Maintenance Facility (OMF). LRT speed in a tunnel was assumed to be a maximum of 45 mph.
- For freight operations, speeds were assumed to be 25 mph along the Bass Lake Spur until the City of St. Louis Park/City of Minneapolis boundary (at France Avenue). From this point north and east, the freight speed was assumed to be 10 mph in the Kenilworth Corridor.
- Distances to sensitive receptors were based on maps provided by the Engineering team (see below for details).
- Shallow tunnel depth, retained cut wall heights and other project features were based on plan sheets, found in Appendix G, supplemented with profile and typical section information provided by the Engineering team.
- LRT tracks were assumed to be ballast and tie at all locations studied in the Supplemental Draft EIS, except for the shallow tunnel segment, where the tracks were assumed to be direct fixation on slab, except at the channel crossing (see Appendix G) , where the tracks are ballast and tie.
- The retaining walls and crash walls were included in the impact assessment and evaluated as noise barriers.
- LRT vehicles were assumed to use 3-car trains during all hours of operation.
- The operating hours and headways were assumed to be the same as for the Central Corridor LRT (METRO Green Line), and included the following:
    - Early morning hours (4:00 AM to 5:30 AM) – 15 minute headways
    - Peak operating hours (5:30 AM to 9:00 PM) - 10 minute headways
    - Evening hours (9:00 PM to 11 PM) - 15 minute headways
    - Late evening hours (11:00 PM to 2:00 AM) - 30 minute headways
- Vehicle reference noise levels used in the SWLRT Draft EIS (p. 4-84) are based on measurements conducted for the Draft EIS on the METRO Blue Line (Hiawatha LRT) and are shown in Table 1.

Table 1. Blue Line Reference Noise Levels

Noise Source	Sound Exposure Level, (dBA)
LRT on embedded/direct fixation track	84
LRT on ballast and tie track	81
Crossing bells	106
LRT Bells	88
LRT Horn	99

The sound exposure level or SEL is the cumulative noise from a single noise event taking into account both the level and duration of the sound.

- Vehicle force density levels (reference vehicle input force) are based on measurements conducted for the METRO Green Line project for both ballast and tie and embedded track. (*Vibration Measurements and Predictions for Central Corridor LRT Project*, ATS Consulting, July 2008. Pages 28 and 45).
- Noise at tunnel portals was assumed to increase noise levels by 1 dB for locations within 100 feet of a tunnel portal to account for reverberation inside a tunnel. Modeled using "Terrain 1.4.3.0" Olive Tree Labs sound propagation modeling software. A comparison was made between noise levels from LRT vehicles in a free field condition and LRT in a tunnel with portals. The results indicated a small (1 dB) increase in noise levels very close to the portals due to reverberation in the tunnel. This result is consistent with findings presented in the literature.
- Crossovers and turnouts increase noise levels by 6 dB and vibration levels by 10 dB in the immediate vicinity of the crossover. (Industry standards.)
- Ventilation in the light rail tunnel is only required during emergency operations and will be tested on a monthly basis, and is therefore not included in the analysis.
- Noise from bells and horns devices was based on the following assumptions:
    - LRT bells are sounded for five seconds as vehicles approach grade crossings.
    - Bells are sounded twice when entering and exiting station platforms.
    - LRT horns are sounded at grade crossings where speeds exceed 45 mph.
    - Grade crossing bells are used at grade crossings for 20 seconds for each train.
    - No horn/bell sounding assumed at tunnel portals. This was included as part of the project's operation assumptions to limit noise levels in potentially sensitive areas, such as near residences.

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TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office

From: Lance Meister, Cross-Spectrum Acoustics

Date: March 5, 2015

Project Reference: SWLRT Supplemental Draft EIS Noise and Vibration Impact Results

This technical memorandum provides an outline of the impact results for the noise and vibration analysis for each of the Supplemental Draft EIS study areas. The date and location of noise monitoring and vibration testing sites is documented in the SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations (August 21, 2013). Existing noise levels and results from the vibration testing sites will be summarized in Chapter 3 of the Supplemental Draft EIS.

Proposed Operation and Maintenance Facility (OMF), Hopkins

There are no noise or vibration sensitive receptors located near the proposed site.

Eden Prairie Segment

Noise

There are moderate and severe noise impacts at the Baymont Inn and Residence Inn located on Flying Cloud Drive between Interstate 494, Highway 212, and Prairie Center Drive, due primarily to grade crossing noise.

Additionally, the auditorium at the Optum facility on Technology Drive has been identified as a noise sensitive receptor. Supplemental, site-specific measurements will be conducted at this site during the Final EIS to determine the potential for impacts and the corresponding need for any mitigation.

Based on the projected noise impacts identified in the Eden Prairie Segment and in compliance with FTA guidance, final determinations of noise mitigation measures to be incorporated into the project will be made in a noise mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional noise monitoring and/or testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed noise mitigation measures; and identification of committed long-term and short-term (construction) noise mitigation measures and their effectiveness. See Section 3.1.2.8 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a noise mitigation plan.

Vibration

There are no vibration impacts in this segment. However, the auditorium at the Optum facility on Technology Drive has been identified as a vibration and ground-borne noise sensitive receptor. Assessment of the facility will be conducted during the Final EIS to determine the potential for impacts and the corresponding need for any mitigation. Based on the projected short-term vibration impacts identified in the Eden Prairie Segment and in compliance with FTA guidance, final determinations of short-term vibration mitigation measures to be incorporated into the project for this segment will be made in a vibration mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed mitigation measures; and identification of committed long-term and short-term (construction) mitigation measures and their effectiveness. See Section 3.1.2.9 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a vibration mitigation plan.

St. Louis Park/Minneapolis Segment

Noise

There are a total of three severe and 66 moderate Category 2 noise impacts in the St. Louis Park/Minneapolis Segment. There is also one moderate Category 3 noise impact in the St. Louis Park/Minneapolis Segment. The impact results incorporate existing conditions in the area, as well as project design elements such as LRT vehicles running on ballast and tie track when not in the tunnel (which is quieter than slab track) and the presence of the retained cut walls of the portals, which act as noise barriers. A small adjustment in the noise level was made to account for the tunnel portal, as described in the impact assumptions memorandum, but it has a minimal effect.

Category 2 Impacts

One severe noise impact and 38 moderate noise impacts are between the proposed Louisiana Station and Highway 100 on the south side of the corridor. Thirty-two of the moderate impacts are at the Hoigaard Village apartment complex near Highway 100 and the rest are at single-family residences near Railroad Avenue and W 37th Street.

The remaining noise impacts are in the at-grade section of the Kenilworth Corridor, north of the channel. There are one severe impact and six moderate noise impacts at Burnham Road, just to the north of the channel crossing. The other severe noise impact and remaining 22 moderate noise impacts are in the vicinity of the 21st Street Station and grade-crossing. The impacts are due to a combination of LRT noise, grade-crossing noise, and noise at the station. Because of the location adjacent to the grade-crossing, operations, engineering, and safety concerns will be considered in determining the mitigation options available at this location.

Category 3 Impacts

One moderate noise impact has been identified at the Kenilworth Channel crossing for the channel itself. The channel is considered a Category 3 sensitive noise receptor due to the presence of noise-sensitive activities that occur on the channel (see the graphic on the next page, which shows land use categories at the Kenilworth Channel). There would be a moderate noise impact within 40 feet of the tracks on both sides of the channel relative to the tracks. The grassy area on the banks of the lagoon is considered Category 1 land use due to the passive and noise-sensitive recreational activities that occur there (where quietude is essential feature of the park), however there would be no impact to this area because of the distance from the tracks to the sensitive location. These two sensitive noise receptors are also included within the Kenilworth Lagoon and Grand Rounds Historic District, which are Section 106 historic properties (see Section 3.4.1.3 for additional detail on the historic resources).

Exhibit 1. Kenilworth Channel/Lagoon Noise Categorization

The banks of the lagoon are considered Category 1.
The channel and lagoon are active use parks and are considered Category 3.

Based on the projected noise impacts identified in the St. Louis Park/Minneapolis Segment and in compliance with FTA guidance, final determinations of noise mitigation measures to be incorporated into the project will be made in a noise mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional noise monitoring and/or testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the

committed noise mitigation measures; and identification of committed long-term and short-term (construction) noise mitigation measures and their effectiveness. See Section 3.1.2.8 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a noise mitigation plan.

Vibration

There are no vibration impacts in this segment.

There are 54 ground-borne noise (GBN) impacts where the LRT tracks are in the tunnel; mostly within about 100 feet of the tracks on both sides. The GBN impacts are due to the distance to the tracks and the vehicle characteristics, which include high-frequency vibration. The vibration impact discussion for the St. Louis Park/Minneapolis Segment is found in Section 3.4.2.4 B of the Supplemental Draft EIS.

Based on the projected vibration impacts identified in the St. Louis Park/Minneapolis Segment and in compliance with FTA guidance, final determinations of vibration mitigation measures to be incorporated into the project will be made in a vibration mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed mitigation measures; and identification of committed long-term and short-term (construction) mitigation measures and their effectiveness. See Section 3.1.2.9 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a vibration mitigation plan.

SWLRT Supplemental Draft EIS Overview of Noise and Vibration Criteria and Impacts and Effects on Historic and Cultural Resources

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TECHNICAL MEMORANDUM

To:	Nani Jacobson, Southwest LRT Project Office
From:	Lance Meister, Cross-Spectrum Acoustics
Date:	December 15, 2014
Project Reference:	SWLRT Supplemental Draft EIS Overview of Noise and Vibration Criteria, Impacts and Effects on Historic and Cultural Resources

This technical memorandum provides a summary of the Federal Transit Administration's (FTA) noise and vibration criteria and mitigation policy, and FTA's policy regarding effects of noise and vibration on historic and cultural resources. The last section of the memo provides information on the resources identified in the Supplemental Draft EIS segments: Eden Prairie Segment, the proposed Operations & Maintenance Facility (OMF), and the St. Louis Park/Minneapolis segment, and the potential noise or vibration effects for each resource.

1 FTA Noise Criteria

The noise impact criteria used for transit projects are based on the information contained in Chapter 3 of the FTA noise and vibration guidance manual[1]. The FTA noise impact criteria are based on well-documented research on community response to noise and are based on both the existing level of noise and the change in noise exposure due to a project. The FTA noise criteria compare the existing noise with the project noise.

The FTA noise criteria are based on the land use category of the sensitive receptor, and use the day-night sound level (Ldn) for locations where people sleep (Category 2) and the hourly equivalent sound level (Leq) for locations with daytime and/or evening use (Category 1 or 3), as shown in Table 1.

Table 1. Land Use Categories and Metrics for Transit Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq(h)*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h)*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

* Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.

Source: FTA Guidance Manual (2006)

[1] U.S. Federal Transit Administration, "Transit Noise and Vibration Impact Assessment." Report FTA-VA-90-1003-06, May 2006.

Category 1 includes uses where quiet is an essential element in the intended purpose, such as indoor concert halls, outdoor concert pavilions or National Historic Landmarks where outdoor interpretation routinely takes place. Category 2 includes residences and buildings where people sleep, while Category 3 includes institutional land uses with primarily daytime and evening use such as schools, places of worship and libraries. The criteria do not apply to most commercial or industrial uses because, in general, the activities within these buildings are compatible with higher noise or vibration levels. They do apply to business uses which depend on quiet as an important part of operations, such as sound and motion picture recording studios or vibration sensitive manufacturing or research facilities.

The noise impact criteria are defined by the two curves shown in Figure 1, which allow increasing project noise as existing noise levels increase, up to a point at which impact is determined based on project noise alone. The FTA noise impact criteria include three levels of impact, as shown in Figure 1. The three levels of impact include:

- **No Impact:** In this range, the proposed project is considered to have no impact since, on average, the introduction of the project will result in an insignificant increase in the number of people highly annoyed by the new project noise.
- **Moderate Impact:** At the moderate impact range, changes in the cumulative noise level are noticeable to most people, but may not be sufficient to cause strong, adverse reactions from the community. In this transitional area, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation, such as the existing level, predicted level of increase over existing noise levels and the types and numbers of noise-sensitive land uses affected.
- **Severe Impact:** At the severe impact range, a significant percentage of people would be highly annoyed by the new project noise. Severe noise impacts are considered to be "significant" under NEPA, and should be avoided if possible. Noise mitigation should be applied for severe impacts where feasible.

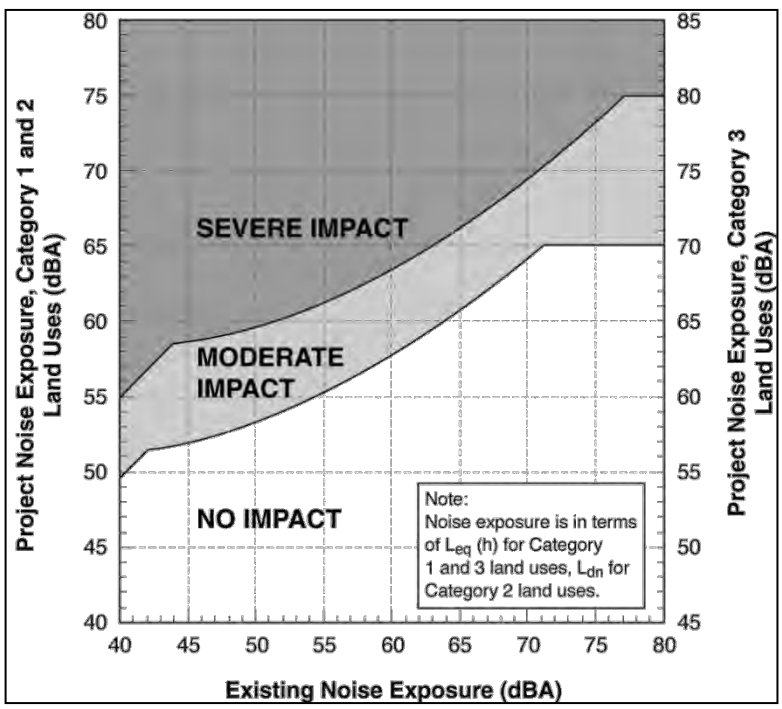

Figure 1. FTA Noise Impact Criteria

2 FTA Vibration Criteria

The vibration impact criteria used for transit projects are based on the information contained in Chapter 8 of the FTA noise and vibration guidance manual. The criteria for a general vibration assessment are based on land use and train frequency, as shown in Table 2. Some buildings, such as concert halls, recording studios and theaters, can be very

sensitive to vibration (or ground-borne noise) but do not fit into the three categories listed in Table 2. Because of the sensitivity, special attention is paid to these buildings during the environmental assessment of a project. Table 3 shows the FTA criteria for acceptable levels of vibration for several types of special buildings.

Table 2 and Table 3 include additional criteria for ground-borne noise, which is a low-frequency noise that is radiated from the motion of room surfaces, such as walls and ceilings in buildings due to ground-borne vibration. Ground-borne noise is defined in terms of dBA, which emphasizes middle and high frequencies, which are more audible to human ears.

Table 2. Ground-Borne Vibration (GBV) and Ground-Borne Noise (GBN) Impact Criteria

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch /sec)			GBN Impact Levels (dBA re 20 micro Pascals)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65[4]	65[4]	65[4]	N/A[4]	N/A[4]	N/A[4]
Category 2: Residences and buildings where people normally sleep.	72	75	80	35	38	43
Category 3: Institutional land uses with primarily daytime use.	75	78	83	40	43	48

Notes:
1. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. “Occasional Events” is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
5. Vibration-sensitive equipment is generally not sensitive to ground-borne noise.
Source: FTA Guidance Manual (2006)

Table 3. Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for Special Buildings

Type of Building or Room	GBV Impact Levels (VdB re 1 micro-inch /sec)		GBN Impact Levels (dBA re 20 micro Pascals)	
	Frequent Events[1]	Occasional or Infrequent Events[2]	Frequent Events[1]	Occasional or Infrequent Events[2]
Concert Halls	65	65	25	25
TV Studios	65	65	25	25
Recording Studios	65	65	25	25
Auditoriums	72	80	30	38
Theaters	72	80	35	43

Notes:
1. "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. "Occasional or Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. If the building will rarely be occupied when the trains are operating, there is no need to consider impact. As an example, consider locating a commuter rail line next to a concert hall. If no commuter trains will operate after 7 pm, it should be rare that the trains interfere with the use of the hall.
Source: FTA Guidance Manual (2006)

The criteria for ground-borne noise are much lower than for airborne noise to account for the low-frequency character of ground-borne noise. However, because airborne noise typically masks ground-borne noise for above ground (at-grade or elevated) transit systems, ground-borne noise is only assessed for operations in tunnels, such as in the tunnel south of the channel in the Kenilworth Corridor area, where airborne noise is not a factor, or at locations such as recording studios, which are well insulated from airborne noise.

Category 1 includes buildings where vibration would interfere with interior operations, Category 2 includes residences and buildings where people normally sleep and Category 3 includes institutional land uses with primarily daytime use. The criteria do not apply to most commercial or industrial uses because, in general, the activities within these buildings are compatible with higher noise or vibration levels. They do apply to business uses which depend on quiet as an important part of operations, such as sound and motion picture recording studios or vibration sensitive manufacturing or research facilities.

In addition to the criteria for annoyance and activity interference from vibration, there are additional criteria for damage to buildings. The criteria are based on the building type, as shown in Table 4. The allowable vibration levels, even for the most stringent category, are well above the typical vibration levels generated by transit operations, even at very close distances.

Table 4. Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approx L_v
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90
RMS velocity in decibels (VdB) re 1 micro-inch/second.		

3 FTA Mitigation Policy

For noise, project generated noise in the No Impact category is not likely to be found annoying. Noise projections in this category are considered acceptable by FTA and mitigation is not required. At the other extreme, noise projections in the Severe Impact category represent the most compelling need for mitigation. However, before mitigation measures are considered, the project sponsor should first evaluate alternative locations/alignments to determine whether it is feasible to avoid Severe impacts altogether.

If it is not practical to avoid severe impacts by changing the location of the project, mitigation measures must be considered. Impacts in this category have the greatest adverse effect on the community; thus there is a presumption by FTA that mitigation will be incorporated in the project unless there are truly extenuating circumstances which prevent it. The goal is to gain substantial noise reduction through the use of mitigation measures, not simply to reduce the predicted levels to just below the Severe Impact threshold.

Projected noise levels in the Moderate Impact category will also require consideration and adoption of mitigation measures when it is considered reasonable. The Moderate Impact category delineates an area where there is the potential for adverse impacts and complaints from the community, which must then be carefully considered in conjunctions with project specific requirements, as well as details concerning the affected properties, in determining the need for mitigation. While impacts in this range are not of the same magnitude as severe impacts, there can be circumstances where mitigation may be identified as necessary for the project.

4 FTA Policy on Noise and Vibration Impacts to and Mitigation for Historic and Cultural Resources

Under FTA guidance, historic sites are designated as noise or vibration sensitive depending on the land use of the site, not their designation as historic. Sites of national significance with considerable outdoor use required for site

interpretation would be in Category 1[2]. Historical sites that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3. These include museums, significant birthplaces and buildings in which significant historical events occurred.

Most downtown areas have buildings which are historically significant because they represent a particular architectural style or are prime examples of the work of a historically significant designer. If the buildings or structures are used for commercial or industrial purposes and are located in busy commercial areas, they are not considered noise or vibration sensitive and the impact criteria do not apply.

Similarly, historical transportation structures, such as terminals and railroad depots, are not considered noise or vibration sensitive land uses. These buildings or structures may however be afforded special protection under Section 4(f) of the DOT Act and Section 106 of the National Historic Preservation Act.

In the Section 106 process protecting historic and cultural properties, noise may or may not be considered an "adverse effect" depending on the individual circumstances and whether or not the use is noise sensitive, because, as previously noted, historic and cultural properties are only noise sensitive based on how they are used. The regulatory processes stemming from these statutes require coordination and consultation with agencies and organizations having jurisdiction over these resources. Their views on the project's impact on protected resources are given careful consideration by FTA and the project sponsor, and their recommendations may influence the decision to adopt noise reduction measures[3].

For vibration, there is only one impact category. Vibration impacts are considered to be significant, and should be mitigated, unless it is not reasonable or feasible to provide mitigation. The need for mitigation is based on the vibration sensitivity of the land use, as with noise. One difference between noise and vibration is that outdoor land uses are not considered vibration sensitive. Only indoor land uses are considered vibration sensitive. The determination of whether or not a historic or cultural site is vibration sensitive and any additional need for mitigation is similar to that described above for noise.

5 Historic and Cultural Resources within the Supplemental Draft EIS Segments

Based on data provided by MnDOT CRU of listed and eligible historic properties within the Supplemental Draft EIS study areas, an assessment of the historic and cultural resources was conducted for the Southwest LRT Project. The assessment was conducted to determine the noise and/or vibration sensitivity of the resources along the corridor. For each resource site, a determination was made regarding the noise or vibration sensitivity of the use and the FTA category it would fall under based on FTA guidance. The result of the assessment, which is summarized in Table 5 , is that the Kenilworth Lagoon/Channel is a historic resource that is potentially noise and vibration sensitive and close enough to the proposed Southwest LRT project to warrant a noise and vibration impact assessment.

In addition to the operational (long-term) assessment described above, the potential for vibration-related construction (short-term) impacts also was conducted. The criteria for construction vibration impacts to damage buildings is based on the building category and fragility of the building, not its designation or use as a historic resource. In most cases, vibration generated by construction activities does approach levels high enough to cause damage, even for very fragile buildings. The exceptions to this can be for activities such as vibratory rolling and impact pile driving. At

[2] Transit Noise and Vibration Impact Assessment, Chapter 3 (FTA, 2006)

[3] For historic or cultural resources, the following two circumstances in assessing impacts and mitigation measures: ***1) The noise sensitivity of the property.*** While Table 1 gives a comprehensive list of noise sensitive land uses, there can be differences in noise sensitivity depending on individual circumstances. For example, an historic park or recreational area could vary in its sensitivity to noise depending on the type of use of the park (active versus passive recreation) and the settings in which it is located. ***2) Special protection provided by law.*** Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation (DOT) Act (which protects historic sites, as well as publically-owned parks, recreation areas, wildlife and waterfowl refuges) come into play frequently during the environmental review of transit projects. See pages 3-12 and 3-13 of the FTA *Transit Noise and Vibration Impact Assessment* for additional information on considerations given to resources that have special protection provided by law.

distances within approximately 50 feet, these activities have the potential for damage to the most sensitive structures. Based on the list of the structures contained in Table 5, they would either not be included in the most stringent category or would not be close enough for there to be any potential for damage. Therefore additional assessment is not warranted.

Table 5. Supplemental Draft EIS SWLRT Historic Properties

Inventory #	Property Name	Address	FTA Cat.[1]	Notes
Historic Districts				
XX-PRK-001	Grand Rounds Historic District (E)	Minneapolis	N/A	
HE-MPC-9860	Lake of the Isles Residential Historic District	Vicinity of E/W Lake of the Isles Parkway, Minneapolis	2	Outside the limits of noise impact
HE-MPC-18059	Kenwood Parkway Residential Historic District	1805-2216 Kenwood Pkwy, Minneapolis	2	Most of this district is outside the limits of noise impacts. A few residences near the northern end will be assessed for noise impact as a part of the standard assessment in the Final EIS.
HE-MPC-16387	StPM&M RR Historic District (E)	Minneapolis	N/A	
Individual Resources[2]				
HE-SLC-0008	CM&StP RR Depot (L)	6210 W. 37th St, St. Louis Park	N/A	
HE-SLC-0009	Peavey-Haglin Concrete Grain Elevator (L, NHL)	Hwys 7 and 100, St. Louis Park	N/A	
HE-SLC-0055	Hoffman Callan Building (E)	3907 Hwy 7, St. Louis Park	N/A	
HE-MPC-17102	Minikahda Club (E)	3205 Excelsior Blvd, Minneapolis	N/A	
HE-MPC-1811	Lake Calhoun (E)[3]	Minneapolis	N/A	
HE-MPC-1833	Cedar Lake Parkway (E)[3]	Minneapolis	N/A	
HE-MPC-1820	Cedar Lake (E)[3]	Minneapolis	N/A	
HE-MPC-1822	Kenilworth Lagoon/Channel (E)[3, 4]	Minneapolis	1 & 3	The banks of the lagoon are considered Category 1 land use. The channel and lagoon are active use parks and are considered Category 3.(see Exhibit 1. Kenilworth Lagoon/Channel Noise Categorization)
HE-MPC-6901	Park Bridge No. 4 (E)[3]	Minneapolis	N/A	
HE-MPC-1825	Lake of the Isles Parkway (E) [3, 4]	Minneapolis	N/A	
HE-MPC-1824	Lake of the Isles (E) [3, 4]	Minneapolis	N/A	
HE-MPC-6068	Frieda & J. Neils House (L)	2801 Burnham Blvd, Minneapolis	2	Outside the limits of noise impact
HE-MPC-6766	Mahalia & Zachariah Saveland House (aka Benjamin & Cora Franklin Residence) (E)	2405 W 22nd St, Minneapolis	2	Outside the limits of noise impact
HE-MPC-1796	Kenwood Parkway (E)[3, 5]	Minneapolis	N/A	
HE-MPC-6603	Frank & Julia Shaw House (E)	2036 Queen Ave S, Minneapolis	2	Outside the limits of noise impact
HE-MPC-1797	Kenwood Park (E)[3]	Minneapolis	N/A	
HE-MPC-6475	Kenwood Water Tower (E)[3]	Minneapolis	N/A	
HE-MPC-8763	Mac Martin House (E)	1828 Mt. Curve Ave,	2	Outside the limits of noise impact

Inventory #	Property Name	Address	FTA Cat.[1]	Notes
		Minneapolis		
21HE0409[6]	(E)	Minneapolis	N/A	Not noise sensitive resource

(notes for Table 5)
Note: L = Listed; E = Eligible; NHL= National Historic Landmark; N/A = Not Applicable; Cat. = Category.
[1] Under FTA guidance, historic sites are designated as noise or vibration sensitive depending on the land use of the site, not their designation as historic. Sites of national significance with considerable outdoor use required for site interpretation would be in Category 1. Historical sites that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3. These include museums, significant birthplaces and buildings in which significant historical events occurred. N/A notes those resources that are not noise sensitive and thus do not fall within any of the FTA categories.
[2] Two existing wood pile bridges spanning the Kenilworth Lagoon were evaluated for eligibility to the NRHP as Section 106 historic resources (HE-MPC-1850, HE-MPC-1851). The Burnham Road Bridge (HE-MPC-1832), a two-lane automobile bridge with a steel beam span, was also evaluated for eligibility to the NRHP as a Section 106 historic property. The three bridges were found to be non-contributing features to the Grand Rounds Historic District and were not found to be eligible for listing on the NRHP as individual properties.
[3] Eligible as a contributing feature to the Grand Rounds Historic District.
[4] Eligible as a contributing feature to the Lake of the Isles Residential Historic District.
[e] Eligible as a contributing feature to the Kenwood Parkway Residential Historic District.
[5] This property is considered a sensitive historic resource under Section 304 of the National Historic Preservation Act of 1966, as amended. In accordance with Section 304, locational information on this sensitive historic resource may cause a significant invasion of privacy and/or put the resource at risk to harm and is not included in this document.

Southwest LRT Minnesota Pollution Control Agency Noise Rules

Cross·Spectrum Acoustics

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TECHNICAL MEMORANDUM

To: Nani Jacobson, Metro Transit

From: Lance Meister, Cross-Spectrum Acoustics

Date: April 13, 2015

Project Reference: Southwest LRT MPCA Noise Rules

The purpose of this technical memorandum is to document 1) the Metropolitan Council's (Council) Southwest LRT Project team's understanding of the Minnesota noise rules and statute, 2) recent coordination between Southwest LRT, Minnesota Pollution Control Agency (MPCA) and Federal Transit Administration (FTA) staff on this topic, and 3) the agreed-upon approach to addressing this issue in the Supplemental Draft EIS and the Final EIS.

Background

The Draft EIS and Supplemental Draft EIS noise assessment is based on FTA criteria and guidance for assessing and mitigating project impacts[4]. Using FTA criteria for the noise analysis provides the highest standard of measurement and mitigation and most accurately reflects how humans respond to and are affected by transit noise. Additionally, Metro Transit is developing a noise mitigation approach which is based on the FTA impact criteria and guidance and will be used to apply mitigation in a reasonable and feasible manner for project noise impacts, as defined by FTA.

Southwest LRT Project Team Understanding of Minnesota Noise Rules and Statute

Within the state, the MPCA is empowered to enforce the state of Minnesota noise rules (§7030 Noise Pollution) and statute (§116.07 Powers and Duties). Minnesota's noise limits are set by "noise area classifications" based on the land use at the location of the person that hears the noise. They are also based on the sound level in decibels (dBA) over ten percent (L10) or six minutes and fifty percent (L50) or thirty minutes of an hour.

The Minnesota noise rules and statute work well if there is one dominant continuous noise source (e.g., a highway or an industrial facility). However, the Minnesota noise pollution rules and statute are not well suited to evaluate noise impacts from a transit project. They are based on L10 and L50 noise descriptors, which are the noise level exceeded 10 percent (6 minutes per hour) or 50 percent (30 minutes per hour) of the time, respectively. If these standards are applied to the Southwest LRT project only, there would never be an exceedance of these standards, as there are only two minutes of transit activity per hour, based on the current Southwest LRT operating plan. However, the Minnesota rules and statute consider all sources of noise in assessing whether an exceedance occurs.

Predicting the effects of adding a noise source to measured existing noise to assess the L10 and L50 for all noise sources can be an issue with statistical measurements such as L10 and L50. Using the L10 as an example, this is the loudest 360 seconds (6 minutes) out of 3600 seconds (60 minutes) in an hour. If measurements of existing noise levels are made, and the 120 seconds of transit operations (2 total minutes of train pass-byes[5]) are added in, the

[4] U. S. Federal Transit Administration, "Transit Noise and Vibration Impact Assessment." Report FTA-VA-90-1003-06, May 2006.

[5] The maximum proposed hourly operations are headways of ten minutes in each direction. The headway is the amount of time between trains. This would result in six trains per hour in each direction, for a total of twelve trains per hour. Assuming each

question becomes, which of the 120 seconds from the existing measured noise levels are replaced by the 120 seconds of transit operations (i.e., the 120 loudest seconds, the 120 quietest seconds, or a random selection)?

This becomes a subjective issue, which can have a significant effect on the L10 calculation with the future noise source added. Additionally, the choice of the hour to be used for the statistical calculation could have a large effect. There are 15 daytime and nine nighttime hours that could be used for the statistical calculation at any location, each of which would likely have different L10 values to compound the potential subjective nature of the addition of a future noise source.

Recent Coordination between the Council, MPCA and FTA

The Southwest LRT project team contacted the MPCA in March 2015 to discuss how the Minnesota noise rules would apply to the Southwest LRT project. MPCA, FTA and Southwest LRT Project staff met on April 8, 2015 to discuss the relationship between the Southwest LRT project and the Minnesota noise rules administered by MPCA. Southwest LRT staff referenced the FTA Transit Noise and Vibration Impact Assessment guidance manual and how it is applied to transit projects, including the Southwest LRT project. MPCA noted that the noise rule is not well suited to transit projects.

The three agencies agreed to continue coordination to determine the appropriate method for applying the Minnesota noise rules and statute to the Southwest LRT project. The agencies further agreed that this approach would be documented in the Southwest LRT project's Final EIS, which is expected to be completed in 2016.

Incorporation in the Supplemental Draft EIS and the Final EIS

The Supplemental Draft EIS and Final EIS will continue to use the FTA methodology and criteria for assessing and mitigating noise caused by the Southwest LRT project. Using the FTA methodology and criteria would result in impacts, as shown in both the results in the Draft EIS and Supplemental Draft EIS. These impacts are based on the well-documented FTA noise impact assessment methodology, which reflect how humans respond to noise and changes in noise in their environment. There is also a procedure within the FTA guidance for applying mitigation. Mitigation would be applied at the appropriate locations and would be based on FTA guidelines and the Metro Transit noise mitigation procedures, which utilize the FTA impact criteria and guidance for noise impacts from transit projects. This approach provides for mitigation of all severe impacts, where reasonable and feasible, and mitigation at locations with moderate impacts, based on the criteria contained in the FTA guidance manual.

The Supplemental Draft EIS acknowledges that certain areas in the vicinity of the project may already approach or exceed the L10 and/or L50 noise levels and that adding operation of the light rail vehicles in those areas may contribute to an exceedance of the statutory noise levels. These locations are likely in areas near existing highways and other roadways within the corridor in areas such as Eden Prairie, as well as areas in downtown Minneapolis. These highways and roadways are typically exempt from the noise standards (116.07 Subd. 2a). In cases where existing noise levels within the project area corridor are at or near the MPCA standards, the project may or may not contribute to an exceedance of the MPCA standards. Further, because of the way the L10 and L50 are calculated, the Project would not be able to determine if there is an exceedance of the standards, using a predictive model, prior to Southwest LRT operation, however the Council and FTA will work with MPCA to ensure that the analysis adequately considers the state standard.

The Supplemental Draft EIS also notes that the Southwest LRT project team is working with MPCA and FTA to determine the best approach to addressing Minnesota noise pollution rules and statute for those areas of the project that are subject to them. This approach and its results will be documented in the Final EIS in the project's noise analysis.

LRT vehicle takes 10 seconds to pass (a conservative estimate), there would only be 2 minutes (120 seconds) of transit operations noise per hour.

Noise and Vibration Fact Sheets

Noise Fact Sheet

How is Noise Defined?

Level: Sound level is expressed in decibels (dB). Typical sounds fall between 0 and 120 dB. A 3dB change in sound level represents a barely noticeable change outdoors; a 10 dB change is perceived as a doubling (or halving) of the sound level.

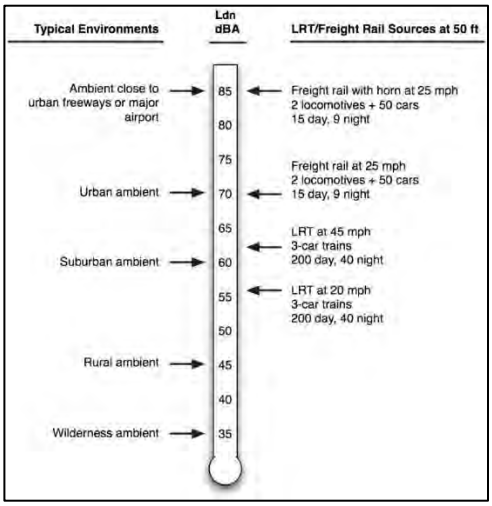
Frequency: The tone or pitch of a sound is expressed in Hertz (Hz). Human ears can detect a wide range of frequencies from about 20 Hz to 20,000 Hz. However, human hearing is not effective at high and low frequencies; we use a measure called an A-weighted level (dBA) to correlate with human response.

Time Pattern: Because environmental noise changes all the time, it is common to condense all of this information into a single number, called the "equivalent" sound level. It represents the changing sound level over a period of time.

For light rail transit (LRT) and freight rail projects, the Day-Night Sound Level (Ldn) is the common noise descriptor adopted by most agencies as the best way to describe how people respond to noise in their environment.

The Ldn is a ***24-hour cumulative noise level*** that includes all noises that happen within a day, with a penalty for nighttime noise (10 PM to 7 AM). This nighttime penalty means that any noise events at night are equal to ten events during the daytime.

Cumulative Noise Levels from LRT and Freight Rail



How Loud are LRT and Freight Rail?

Noise levels (in Ldn) from LRT and freight rail depend on the type of vehicle, how loud each individual vehicle could be (see table below), the number of trains per day, and train length and speed. In addition, noise levels decrease with increasing distance from the tracks.

Typical Maximum Noise Levels (dBA)

Distance	LRT @ 45 mph	Freight Rail @ 20 mph	Other Sources
50 feet	76	88	Lawnmower: 72
100 feet	71	83	Bus Idling: 66
200 feet	66	78	Diesel Generator: 67

Light Rail Transit (LRT) Vehicle

How is Noise Impact Assessed?

Noise impact from LRT and freight rail projects are assessed by comparing the existing (ambient) noise with the noise predicted to be generated by the project.

The Federal Transit Administration's (FTA) noise criteria take into account the noise sensitivity of the receiver by land use category, including:

Category 1: Highly noise sensitive, such as recording studios

Category 2: Residences and other places where people sleep

Category 3: Schools, churches and other places with daytime use

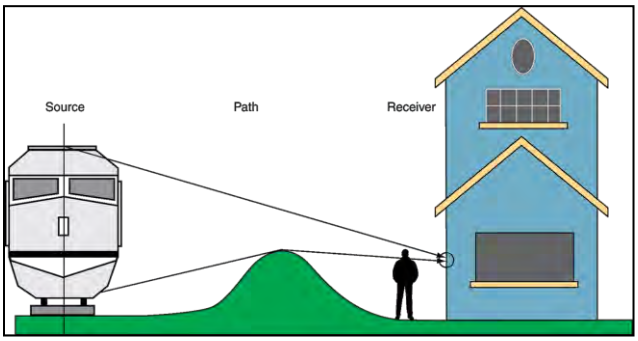
A noise assessment is broken down into three pieces:

Source: What is generating the noise (such as an LRT vehicle or freight train)?

Path: How far and over what type of ground does the noise travel?

Receiver: Who or what is experiencing the noise, such as a residence or a school?

The Source – Path – Receiver Concept



Noise impact assessments are based on applicable FTA and Federal Railroad Administration (FRA) models, and are assessed using the source-path-receiver framework. Some of the key components of a noise impact assessment include:

Source

- Noise levels of transit and freight trains
- Number, length, and speed of LRT and freight trains
- Time of day of train passing by
- Grade crossings, including horns and bells
- Track type, including elevated tracks, a tunnel, or at-grade track
- Special trackwork including crossovers

Path

- Distance to noise sensitive locations
- Rows of buildings
- Ground type

Receiver

- Type of land use (Category 1, Category 2 or Category 3)
- Sensitivity of the land use, including highly sensitive locations such as recording studios, residences or parks

Noise impact assessments also address the potential for impacts from maintenance facilities and stations.

Typical Output of a Noise Impact Assessment

The output of a noise impact assessment includes locations with Severe Impact (yellow) and Moderate Impact (orange). This information is used to determine the location and extent of any potential noise mitigation.

How is Noise Mitigated?

Noise mitigation is applied at locations where impact is identified. Severe impacts generally require noise mitigation. At the moderate impact level, noise mitigation is also addressed. Mitigation can be applied at the source of the noise, along the path, or at the receiver. Examples of typical LRT and freight rail noise mitigation include:

Typical Mitigation Measures

Mitigation measures can be applied to the source, the path and/or the receiver:

Source: Wheel damping, rail grinding, wheel truing, wheel skirts, quiet zones

Path: Noise barriers, berms, buffer zones

Receiver: Sound insulation

Vibration Fact Sheet

How is Vibration Defined?

Vibration is the motion of the ground transmitted into a building that can be described in terms of displacement, velocity or acceleration. Vibration velocity is used in light rail transit (LRT) and freight rail and is defined by the following:

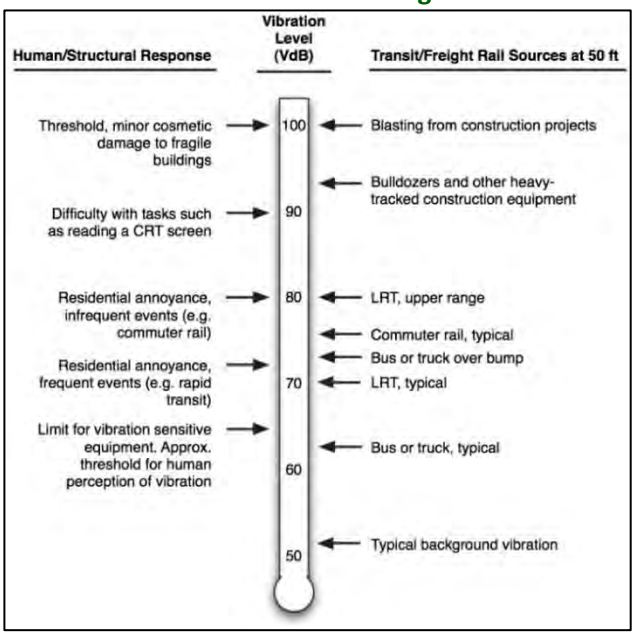
Level: Vibration is expressed in vibration decibels (VdB). The level of vibration represents how much the ground is moving. The threshold of human perception to LRT and freight rail vibration is approximately 65 VdB and annoyance begins to occur for frequent events at vibration levels over 70 VdB.

Frequency: Vibration frequency is expressed in Hertz (Hz). Human response to vibration is typically from about 6 Hz to 200 Hz.

Time Pattern: Environmental vibration changes all the time and human response is correlated to the number of vibration events during the day.

Vibration velocity (VdB) is used to describe LRT and freight rail vibration because it corresponds well to human response to environmental vibration. Vibration is defined by the maximum vibration level during a transit or freight rail event. Human sensitivity to vibration increases with increasing numbers of events during the day.

Vibration Levels from LRT and Freight Rail



Ground-borne noise (GBN) is also assessed. GBN is a form of low-frequency noise that radiates from building walls and ceilings due to vibration caused by LRT or freight rail operation. Because airborne noise typically masks GBN for above ground (at-grade or elevated) transit systems, GBN is only assessed for operations in a tunnel (where airborne noise is not a factor) or near locations such as recording studios that are well insulated from airborne noise.

How much Vibration is Created by LRT and Freight Rail?

Vibration levels from LRT and freight rail depend on the type of vehicle, track conditions, soil type, and train speed. Vibration levels also decrease with increasing distance from the tracks. Vibration levels based on typical LRT and freight rail operations and speeds are shown below.

Vibration and GBN Levels (VdB) at 45 mph

	LRT		
Distance	Vib	GBN	Freight Rail
50 feet	71	39	88
100 feet	66	34	82
200 feet	58	26	76

Light Rail Transit (LRT) Vehicle

How is Vibration Impact Assessed?

Vibration and GBN impact from LRT and freight rail projects are assessed by comparing the levels predicted to be generated by the project with the appropriate criteria.

The vibration and GBN criteria use by the Federal Transit Administration (FTA) take into account the sensitivity of the receiver by land use category, including:

Category 1: Highly vibration sensitive, such as manufacturing facilities

Category 2: Residences and other places where people sleep

Category 3: Schools, churches and other places with daytime use

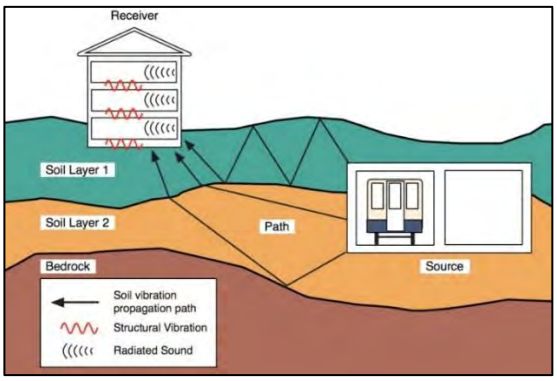
A vibration and GBN assessment is broken down into three pieces:

Source: What is generating the vibration or GBN (such as a transit vehicle or freight train)?

Path: How far and over what type of ground does the vibration or GBN travel?

Receiver: Who or what is experiencing the vibration, such as a residence or a school?

The Source – Path – Receiver Concept



Vibration and GBN impact assessments are based on applicable FTA and Federal Railroad Administration (FRA) models, and are assessed using the source-path-receiver framework. Some of the key components of a vibration impact assessment include:

Source

- Vibration levels of LRT and freight trains
- Number and speed of LRT and freight trains
- Track type, including elevated tracks, a tunnel, or at-grade track
- Special trackwork including crossovers

Path

- Distance to vibration sensitive locations
- Soil and bedrock characteristics
- Building foundations

Receiver

- Type of land use (Category 1, Category 2, or Category 3)
- Sensitivity of the land use, including highly sensitive locations such as manufacturing facilities, residences or parks

Vibration and GBN impact is primarily assessed to determine the potential for human annoyance. However, vibration is also assessed for activity interference at highly sensitive sites, and in very rare cases, damage to fragile structures, usually during construction. Vibration assessments also address the potential for impacts from maintenance facilities and stations.

Typical Output of a Vibration Impact Assessment

The output of a vibration or GBN impact assessment includes locations with vibration or GBN impact (purple). This information is used to determine the location and extent of any potential vibration mitigation.

How is Vibration Mitigated?

Vibration or GBN mitigation is applied at locations where impact is identified. Vibration impacts generally require mitigation where reasonable and feasible. Because mitigation is highly dependent on engineering details, specific mitigation measures are usually identified during the design of a project.

Vibration or GBN mitigation is most commonly applied at the source (in the tracks), but can also be applied along the path or at the receiver. Examples include:

Source: Rail grinding, wheel truing, resilient fasteners, ballast mats, floating track slabs

Path: Trenches, buffer zones

Receiver: Building modifications, isolated tables, floating floors

Example Vibration Mitigation: Resilient Fasteners

Appendix I

Responses to Comments Received on the Supplemental Draft EIS Scope

Index

Responses to Comments Received on the Supplemental Draft EIS Scope

Comments from the General Public

Comments from Businesses, Community Groups, and Non-Profit Organizations

Comments from Agencies and Other Public Entities

APPENDIX I

Responses to Comments Received on the Supplemental Draft EIS Scope

On July 22, 2013, the Metropolitan Council (Council) issued notice in the Environmental Quality Board *EQB Monitor* and the *Federal Register* of its intent to publish a Supplemental Draft Environmental Impact Statement (EIS) for the Southwest Light Rail Transit (LRT) Project, which was formerly referred to as the Southwest Transitway Project (see Appendix K for copies of those notices). As part of the EQB notice, the public was invited to comment on the proposed scope of the Supplemental Draft EIS. The Council accepted comments on the scope of the Supplemental Draft EIS through August 12, 2013.

As noted in the EQB and *Federal Register* notices, the purpose of the Supplemental Draft EIS is to supplement the evaluation of impacts included in the project's Draft EIS where there have been adjustments to the design of the light rail and freight rail stations, park-and-ride lots, and an operations and maintenance facility that would likely result in impacts not documented in the project's Draft EIS.

This appendix first provides a summary of the comments received during the comment period on the proposed scope of the Supplemental Draft EIS, followed by the Council's responses to those comments based on common themes among the comments. Finally, this appendix includes copies of the comments received during the comment period on the proposed scope of the Supplemental Draft EIS.

A. Summary of Scope Comments Received

The Council received 59 letters and emails during the comment period offering a variety of comments on the scope of the Supplemental Draft EIS and other topics. Of the letters and emails received: 43 were sent by private individuals; nine by businesses, interest groups, or organizations; and seven by agencies or jurisdictions.[1]

The following businesses, community groups, and non-profit organizations submitted comments:

- Safety in the Park
- Liberty Property Trust
- SPS Companies, Inc.
- Eaton Corporation – Hydraulics Group
- Sorensen Neighborhood Association Steering Committee
- Transit for Livable Communities
- SFI Ltd. Partnership 54, Claremont Apartments
- West Calhoun Neighborhood Council and the Edge Business Association

The following agencies and jurisdictions submitted comments:

- City of Minneapolis
- City of St. Louis Park
- City of Eden Prairie
- U.S. Department of Interior
- Hennepin County

[1] Note that multiple comments from individuals and entities, even if they are identical in their content, are accounted for in the total numbers of comments received.

B. Comment Themes and Responses

This section outlines the general themes of comments that the Council received on the proposed scope of the Supplemental Draft EIS. Under each theme, this section summarizes one or more comments received and it provides a response to each comment. The comments itemized in this section were taken from one or more of the comments documented in Section C of this appendix. The comments received generally fell within the following themes:

- Tunnel options, including a deep tunnel option
- LRT grade-separation options
- Different freight rail alignment options
- Other light rail alignments, features, connections, or lengths of alignment
- The location of proposed light rail stations, park-and-ride lots, and Operations and Maintenance Facility (OMF)
- Cedar Lake Trail options
- Comments of Scope Concerning Analysis of Social, Economic, Environmental, and Transportation Effects

Theme 1: Tunnel Options/Deep Tunnel

Comment: *Construct a deep tunnel through the Kenilworth Corridor; tunnel below the Kenilworth Channel; extend a deep tunnel back to Lake Street*

Response: Chapter 2 of this Supplemental Draft Environmental Impact Statement (EIS) describes alternative adjustments considered for the Kenilworth Corridor, including a deep tunnel option. Public testimony was received on the proposed Project scope and budget at the Corridor Management Committee (CMC) on April 2, 2014 and the Council meeting on April 9, 2014. The Council took action on April 9, 2014 on the project scope and budget including incorporating shallow LRT tunnels in the Kenilworth Corridor, after considering recommendations from the CMC, input from other project committees, public comments, and the analysis and findings prepared by the project team. Please refer to Section 2.5.3 of the Supplemental Draft EIS for additional information on the Kenilworth Deep Bore LRT Tunnels.

Theme 2: Light Rail Grade Separations

Comment: *Evaluate grade separations of light rail tracks with freight rail and streets at Yosemite Avenue, Xenwood Avenue, Beltline Boulevard, Wooddale Avenue, and 28th Street*

Response: The Supplemental Draft EIS identifies grade separations at roadway intersections where traffic analysis conducted for the Supplemental Draft EIS indicated operational conditions would not meet acceptable level of service and safety standards following construction of the project. Grade separations of light rail are proposed at Louisiana, Highway 100, West Lake Street, Cedar Lake Parkway, Burnham Road, and 21st Street. See Section 3.4.4.2 for additional information on proposed light rail grade separations and at-grade crossings.

Theme 3: Different Freight Rail Alignment

Comment: *Evaluate other freight alignments, including near Highway 169, modified MN&S to moderate grades and curves on wider berm; separate freight rail issue from LRT and start LPA process over; remove relocation alternatives*

Response 3A: Evaluate Other Freight Rail Alignments. In October 2013, the Council initiated an independent engineering analysis that re-evaluated freight rail relocation adjustments that were developed in prior studies and prior project phases. The results of that independent analysis are summarized in Section 2.5.3.2.A of the Supplemental Draft EIS.

Response 3B: Modify MN&S. Several options that would modify the existing MN&S spur to allow TC&W freight trains to be relocated out of the Kenilworth Corridor were developed and evaluated following the

close of the Draft EIS comment period in communication with the owning railroad (Canadian Pacific Railway), the primary operating railroad (TC&W Railway), and the City of St. Louis Park. In addition, in October 2013, the Council initiated an independent engineering analysis that identified and evaluated a new variation on the option to modify connections the MN&S Spur, known as the MN&S North freight rail adjustment. See Section 2.5.3.2.A of the Supplemental Draft EIS for additional information on freight rail modifications to the MN&S Spur that were developed and evaluated after publication of the Draft EIS.

Response 3C: Separate Freight Rail and LRT. During the Draft EIS, the Federal Transit Administration (FTA) determined that the issue of freight rail location must be addressed as a component of the Southwest LRT (METRO Green Line Extension) Project and directed Hennepin County Regional Railroad Authority (HCRRA), the local lead agency at the time, to evaluate the issue within the Southwest Transitway Draft EIS. The Council, transitioning to lead local agency in January 2013, continues to follow that direction from FTA. The Supplemental Draft EIS reflects the continued evaluation of freight rail location options relevant to the locally preferred LRT alternative consistent with FTA direction. See Section 2.3 of the Supplemental Draft EIS for additional information.

Response 3D: Remove Relocation Alternatives. On April 9, 2014, the Council, considering recommendations from the CMC, input from other project committees, public comments, and the analysis and findings prepared by the project team, determined that the Kenilworth Shallow LRT Tunnels should be incorporated into the LPA, which would allow TC&W to continue to operate freight rail train service in the Kenilworth Corridor. See Section 2.3.5 of the Supplemental Draft EIS for additional information.

Theme 4: Other LRT Alignments/Features/Connections/Length

Comment: *Evaluate LRT improvements that include: a revised alignment along Highway 100 north to I-394, then east; a route other than through the Cedar Lake area; single track LRT through the Kenilworth from West Lake Street to Penn Avenue; minimum operating segment; connectivity to other modes such as streetcars; elevated LRT structure with bike trail on paved "roof"; renewed consideration of the non-tunnel co-location options.*

Response: Section 2.3 of the Supplemental Draft EIS provides a summary description of the scoping process for the project's EIS, which included the development and evaluation of a wide range of alternatives and options. In addition, Sections 2.4 and 2.5 of the Supplemental Draft EIS provide a detailed description of the process used by the Council to identify a wide range of adjustments to the LPA that were developed and considered following publication of the Draft EIS.

Theme 5: Location of LRT Stations, Park-and-Ride Lots, and Operations and Maintenance Facility

Comment: *Remove park-and-ride lots not proposed by the Council; remove the OMF in Eden Prairie; add an LRT station and park and ride in northwest corner of Eden Prairie City Center property.*

Response: Section 2.2 of the Supplemental Draft EIS provides a summary of the park-and-ride lots included within the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments, as well as the proposed Hopkins OMF. Section 2.5 provides a summary of the range of adjustments to the LPA developed and evaluated following publication of the Draft EIS for those segments and the OMF.

Theme 6: Cedar Lake Trail Options

Comment: *Evaluate alternative locations for the Cedar Lake Trail, including tunnel under the MN&S at 27th Street West; bridge over the "iron triangle" wye; reroute south of 21st Street; reroute through Kenilworth corridor (suggested route provided on map)*

Response: Section 2.5.3.2 of the Supplemental Draft EIS summarizes design adjustments to the LPA considered in the Kenilworth Corridor, including one design that would have relocated the Cedar Lake Trail out of the corridor and one that would have placed the trail on a structure over the at-grade light rail line. These and other options were presented, along with other ideas from attendees, at public open houses on July 17 and 18, 2013.

Theme 7: Comments of Scope Concerning Analysis of Social, Economic, Environmental, and Transportation Effects

Comment 7A: *Social Effects—Include analysis of redevelopment/reuse of properties that consider development-friendly configurations; include relocation analysis for displaced public facilities, businesses, and residents (including affordable business locations); evaluate and compare residential and business impacts by alternative; analyze community services and community cohesion; analyze parklands, trails, and visual quality impacts.*

Response 7A: Chapter 3 of the Supplemental Draft EIS includes the analysis of effects of the LPA on potential development/redevelopment of land, potential property acquisitions and displacements/relocations (by residential, commercial, and public use), community cohesion, parks, recreation areas and trails, and visual resources in the Eden Prairie and St. Louis Park/Minneapolis Segments and the Hopkins OMF.

Comment 7B: *Address freight rail impacts, including the following: define and evaluate methods to mitigate impacts and the costs of mitigation for the Brunswick Central freight rail relocation and Minneapolis segment; analyze freight operations during construction; use a computer analysis of freight trains on re-routes at 25 mph.*

Response 7B: Section 3.5.3 of the Supplemental Draft EIS provides background on the range of potential adjustments to the LPA considered for the freight rail relocation and Kenilworth Corridor options, including cost elements that were considered among other evaluation measures. Section 3.4 provides analysis of freight operations during construction, focusing on the freight rail operations in the Kenilworth Corridor. Detailed computer-based analyses of freight train operations were not necessary to prepare an adequate analysis.

Comment 7C: *Environmental Effects—Evaluate impacts to the environment including the following: noise, vibration, air quality, water quality, wetlands, wildlife, trees/vegetation, and flood analysis; Section 106 Compliance (historic/archaeological resources); Section 4(f) compliance (park and recreation areas, wildlife/waterfowl refuges, historic/archaeological resources); lake water analysis in Cedar Lake and Lake of the Isles; and ground water movement between the lakes.*

Response 7C: Chapter 3 of the Supplemental Draft EIS assesses the environmental effects of the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments and for the Hopkins OMF. Section 3.1 provides a summary of the environmental categories addressed in Section 3.2, Section 3.3, and Section 3.4. In particular, Section 3.4 addresses the groundwater and water resources in the Kenilworth Corridor related to Cedar Lake and Lake of the Isles. Chapter 3 updates the project's documentation related to Section 106 compliance, including preliminary Section 106 findings of effects throughout the project corridor. Section 3.5 provides a Draft Section 4(f) Evaluation Update, including preliminary Section 4(f) determinations throughout the project corridor. Section 2.5 of the Supplemental Draft EIS identifies how environmental evaluation measures were considered in the development and evaluation of design adjustments to the LPA since publication of the Draft EIS.

Comment 7D: *Transportation Effects—Comments concerning the impact to transportation and safety issues that include the following: analysis of safety concerning construction of the project, emergency response times, and freight rail derailments; general safety of pedestrians, bicyclist and vehicles with the trail and roadway changes; analysis of traffic circulation and vehicle parking; analysis of the effects that each alternative would have on the full implementation of Met Council's regional transitways including ridership impacts from an underground West Lake Street station, elimination of the 21st Street station and the connection between SWLRT and the Midtown Corridor; rerouted freight trains in close proximity to the Xcel electric substation.*

Response 7D: Chapter 3 of the Supplemental Draft EIS includes an assessment of transportation and safety related impacts of the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments and for the Hopkins OMF. Section 3.1 provides a summary of the sub-categories under transportation and safety that are addressed for the two segments and OMF. Section 2.5 of the Supplemental Draft EIS identifies how transportation and safety-related evaluation measures were considered in the development and evaluation of design adjustments to the LPA since publication of the Draft EIS.

C. Comments Received on the Proposed Scope of the Supplemental Draft EIS

Following are copies of the letters and emails received by the Council proving comments on the proposed scope of the Supplemental Draft EIS. The letters and emails were received between issuance of the notice of intent to publish a Supplemental Draft EIS (July 22, 2013) and close of the comment period (August 12, 2013).

The letters and emails are listed in order of their receipt by the Council, under the following categories: 1) the general public; 2) businesses, interest groups, or organizations; and 3) agencies or jurisdictions. Responses to the general themes of comments received are included in Section B of this appendix.

Comments from the General Public

From: Curt Rahman
To: Jacobson, Nani
Subject: SWLRT SDEIS comments
Date: Monday, July 22, 2013 1:03:27 PM

I attended the "Minneapolis" SWLRT open house which presented cost estimates and the recommended 3 options from the project office which are:
1. Shallow cut and cover tunnel- $150 million
2. Deep Bore tunnel- $300 million
3. Relocation of Freight to St. Louis Park- Brunswick Central- $200 million

It was clear that Minneapolis residents do not want more train traffic in Kenwood. Both tunnel options try to solve this by keeping 5 freight trains per day in Kenilworth and moving the 220 light rail trains per day underground.

Relocation moves 5 freight trains per day to St. Louis Park and then moves **220 trains per day** through Kenilworth **above ground.**
With relocation, Minneapolis gets massively increased above ground traffic in Kenilworth and St. Louis Park endures all the issues of relocation. Both cities lose with relocation.

Curt Rahman, Business Advisor to the SWLRT
612-207-5411

From: Curt Rahman
To: Jacobson, Nani
Subject: More SWLRT SDEIS comments
Date: Monday, July 22, 2013 1:06:28 PM

As a Business Advisory Committee Representative to the SWLRT and as a business owner in Saint Louis Park I have learned a great deal about the various options and I have tried to keep an open mind on the re-route. The two latest proposals that do not require co-location, however, are not acceptable solutions no matter the amount of mitigation provided given the attendant costs, both actual and intangible. These proposals displace businesses and hundreds of jobs, cut off roads, eliminate parking and they literally build a "Great Wall of Freight" that cuts the city in half.

Re-Route- Brunswick West: In this proposal, there are 42 properties affected, but most of them are commercial. I happen to own three buildings with 10 business tenants that will have to be moved. How many businesses are affected? 80? Will those businesses stay in St. Louis Park? Are there locations available for them to move to? Does the new artificial turf Athletic Field count as one owner? Hundreds of teams use the new athletic field; school teams, associations and club teams.

Re-Route- Brunswick Central: In this proposal, there are 30 properties affected, but most of them are commercial. I own one affected building with 5 business tenants that will have to be moved. How many businesses are affected? 60?

Affordable business locations: Like affordable housing, not all businesses can afford the $25 to $50 per SF costs of rental space at new developments along 36th St, Excelsior and Grand or The West End. If you want "main street" businesses (versus chain and big box stores), you need "main street" business zones. These reroute options gut those "main street" business zones of commercial property.

All cost estimates need to include:

-loss of commercial tax revenue to the city, county, state and school districts

-loss of jobs in the community

-Relocation expenses for owners and tenants such as:

- Tenant improvements
- Moving costs
- New signs

- Assistance with closing costs and move logistics
- Any other compensable items under the law

I also must echo Anne Mavity's comments at the St. Louis Park Study Session. There are at least 40 personal residences on the North part of the reroute that are too close to the tracks. They need to be acquired as part of the re-route process because noise and vibration will exceed federal guidelines with the current planned right-of- way. Purchase and demolition of these 40 residences needs to be added to the cost estimates of this project.

Building a 20 foot and larger berm across the center of the city (16 feet high at Wooddale so trucks can get under it) harms the environment, road access, parking and is a visual eyesore. In the event of a derailment or accident, rail cars tumbling down the berm will certainly exacerbate the damage to the community as a result of the derailment. This "Great Wall of Freight" will severely offset any benefits light rail brings to the community.

If either re-route option is built, as few streets as possible should be cut off to retain traffic flow for the neighborhood and the businesses. This will mean building bridges. In addition, eliminating streets eliminates "on street" parking that is heavily used in these business districts and neighborhoods. Excess land taken by the project that is not being used should become parking. This includes:

- Central alignment: North and East of the Athletic field. Dakota should not be closed on the North side of the Athletic field as stated on the plans.

- Central alignment: The abandoned Canadian Pacific rail bed should all become parking to replace on street parking removed. With the new athletic field, the High School and the businesses on West Lake, this area has a parking problem today.

- West alignment: Parking is a problem near PSI, Central Community and 3540-50 Dakota. People often park on the dead end that fronts on the north side of Highway 7 (south of 3540-50 Dakota). This dead end is proposed to become a North HWY 7 frontage road on the plans. This will further reduce parking in the area. Walker Street is slated to dead end into a Cul de Sac. This should be made as large as possible and become all parking. 3540 Dakota also has two 16 foot loading doors on the northwest corner that become inaccessible for trucks if this is a dead end.

When all of the real costs, actual and intangible, are included I believe the co-location options will turn out to be most cost effective. The disproportionate impact on businesses and our schools, combined with effectively cutting the city in half, significantly and negatively impacts the City of St. Louis Park. Many other business owners in the area agree with my assessment. My vote is for **Co-Location**. Do not build the "Great Wall of Freight".

If you have any questions, please call me to discuss.

Curtis Rahman, Business Advisory Committee Representative to the SWLRT

612-207-5411

curtrahman@gmail.com

From:	Bill James
To:	Susan Sanger
Cc:	Anne Mavity SLP; jjacobs1956@yahoo.com Jacobs; Tom Harmening; Jake Spano; Susan Santa; Julia Ross; Steve Hallfin; Kevin Locke; Jacobson, Nani
Subject:	Re: PDF of SDEIS Notice of Intent
Date:	Tuesday, July 23, 2013 4:11:27 PM

Hi all,

All of these suggestions and any other documentation which the City chooses to include into a submittal for the SDEIS have to be submitted directly to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: 612-373-3808; E-mail:nani.jacobson@metrotransit.org by August 12, 2013.

She is the record keeper for your recommendations being entered into the official record for comment there at SWLRT SPO.

Thanks much,
Bill

Bill James
SWLRT CAC and CMC Rep
billjames@q.com
612.281.1089

On Jul 23, 2013, at 3:51 PM, Susan Sanger <suesanger@comcast.net> wrote:

> Regarding point #2 of Anne's note, we specifically requested in our recent letter to Met Council that Beltline Blvd be made into a tunnel under the trail and freight and LRT tracks.
>
> Sue
>
> On Jul 23, 2013, at 3:16 PM, Anne Mavity SLP wrote:
>
>> Hi Bill,
>>
>> I couldn't open the doc that Jami sent regarding talking points. But I would add these as well:
>>
>> 1. The trains are not moving FROM SLP to MPLS. Those trains (freight and LRT) will be co-located through SLP, and have co-location mitigation needs throughout, but especially at Wooddale and Beltline.
>>
>> 2. Key mitigation for co-location at Wooddale and Beltline is grade separation of some fashion. We have renderings of what that might look like at Beltline (trail goes over, traffic goes under, all trains at-grade) but are still exploring options

at Wooddale (trail under, traffic under but maybe a block EAST of Wooddale, etc). Grade separation is not currently a part of the Met Council's proposal or, I assume, their budget, but it should be. This is probably the most important point of all, in terms of minimizing the impact of traffic congestion under the co-location scenario in SLP.

3. Noise mitigation will be a big issue at Wooddale particularly, since I believe freight trains MUST blow their horns at the crossing.

Thanks.

Anne

On Jul 22, 2013, at 2:21 PM, Bill James <bjames@seeonic.com> wrote:

<2013-17506.pdf>

Bill James I Seeonic Inc. I Vice President Business Development **I** (c) 612-281-1089 **I** (o) 763-383-9360 **I** bjames@seeonic.com **I** 1848 Berkshire Lane North Plymouth, MN 55441

Ü **SAVE PAPER - THINK BEFORE YOU PRINT**

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From:	Michael Krogan
To:	Jacobson, Nani
Subject:	SWLRT
Date:	Sunday, July 28, 2013 6:43:08 AM

This project is a not needed and is a tremendous waste of taxpayer money. It is no wonder the Federal govt is 17 trillion dollars in debt and has an approval rating of about 10%.

Forget the re-routes and berms and tunnels, etc. Don't destroy the Kenilworth trails. Shut down the whole operation now.

Most people I know do not go to downtown Mpls., and will not go downtown Mpls., EVER.

Mike Krogan
Eliot View Neighborhood

From: Douglas Peterson
To: swlrt
Subject: KENILWORTH DEEP TUNNEL
Date: Monday, July 29, 2013 4:01:15 PM

Southwest Corridor LRT Must Include Deep Tunnel

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located, as had been planned for nearly 30 years by all parties concerned, through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, including the time it takes for the signal arms to operate, depending on the length of the train, is between 32 and 43 seconds. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, decided within the last few months that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It now wants the right of way to be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A

deep tunnel is the only practical solution.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. It would, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland. A deep tunnel, with the freight trains continuing to run through the corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year.. The Met Council suggests that a deep tunnel would add $420 million dollars to the originally estimated $1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must either be modified at the southwest end or scrapped completely.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the “locally favored” LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its “plans” for a tunnel were too expensive. The project was at that time too far along to stop. A deep tunnel must be constructed through the Kenilworth Corridor. The Met Council will be watched closely to make sure it completes this project correctly or perhaps not at all.

Douglas J. Peterson

3315 Saint Paul Ave.

Minneapolis, MN 55416

From:	Pierrobill@aol.com
To:	swlrt
Subject:	Southwest LRT
Date:	Monday, July 29, 2013 11:11:43 PM

Hello,

I have been reading recently about Minneapolis and the western suburbs and that they are looking at adding light rail, and the current options are going deep beneath the existing heavy rail or a shallow tunnel next to the heavy rail.

What are some options for a system that would be sleek & modern and above the heavy trains?

Less digging, less environmental impact, better views for the travelers etc?

The thought of displacing 32 homes, business and other properties and taking them off the tax rolls seams unnecessary.

What is available or in the mind's eye of some high tech architectural visionaries?

Something in between the very cool roller coasters that are popping up around the world and the heavy concrete structures that are used in some of the elevated systems developed in the past 20 years.

A sleek bridge over the current rail lines could be very architecturally pleasing.

Thank you

Bill Pierro
6324 Waterman Ave.
Edina, MN 55343
952-935-9922 Home
pierrobill@aol.com

From:	Sarai Brenner
To:	Jacobson, Nani
Subject:	Kennilworth corridor comments for supplemental DEIS
Date:	Sunday, August 04, 2013 12:36:15 AM

I do not support freight and LRT colocation. Freight was to be temporary through this corridor and continues to be so. It was put along Kennilworth when Hiawatha was modified for light rail, but at the time, the kenwood neighborhood was told that the kennilworth corridor was not ideal for freight, and that as soon as the superfund site was cleaned up in St. Louis Park, it would be moved there. What makes kennilworth ideal now, especially if two additional tracks for LRT are added? Additionally, why would the southwest transit project spend an additional 250 - 450 million dollars on tunnelling light rail to accommodate a temporary train? Kennilworth was promised that if LRT was to go through, the freight would be moved. It is clear that the issue of where freight should go was not considered in the original LPA. I believe that the only fair thing to do is to scrap the original LPA, and first resolve a permanent home for freight and then go back to the LPA process to pick the best route for transit.

Sincerely,
Sarai Brenner

Sent from my iPad

From:	arthur higinbotham
To:	Jacobson, Nani
Cc:	Stuart A Chazin; julieannsabo; Nancy Green; Tom Johnson; info cidna; lisa goodman
Subject:	Comments on Supplemental DEIS for SWLRT Transitway
Date:	Sunday, August 04, 2013 5:11:22 PM
Attachments:	THE PROBLEMS OF SWLRT IN A SHALLOW TUNNEL IN KENILWORTH.docx

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I am attaching a statement showing the shortcomings of a shallow tunnel for the SWLRT in the Kenilworth corridor; I would like to add that a shallow tunnel will be a major safety hazard for children using Park Siding during tunnel construction and for residents who live along the corridor.

I would like to object to the ridership being increased from 29,000 to 34,000-36,000 without any further ridership study when the 2030 basis for ridership should now show a decline due to the Great Recession of 2008-12.

Art Higinbotham
SWLRT CAC Representative

THE PROBLEMS OF SWLRT IN A SHALLOW TUNNEL IN KENILWORTH

1. Construction will close the bike and pedestrian trails for the length of the corridor for 2 years, diverting trail users to dangerous city streets
2. Excavation will close Cedar Lake Parkway, backing up vehicle and pedestrian traffic onto Dean Parkway and W. Lake of the Isles Parkway to the east and Sunset Boulevard to the west
3. Returning to grade to cross the Cedar Lake-Lake of the Isles boat channel will result in 3 bridges over the channel, violating the serenity for users. It will also be counter to the channel designation for the National Historic Register and the environmental requirements of Section 4F
4. During construction, excavation will result in visibility, noise, vibration, and exhaust fume issues for the adjacent residential properties and Park Siding Park
5. After completion, the tunnel will still result in vibration issues for the adjacent residential properties and Park Siding Park
6. During construction, access of emergency fire, medical and police vehicles to the Burnham Boulevard/Park Lane neighborhoods will be restricted and require longer response times
7. The failure of the proposed safety wall between the freight rail line and the LRT tunnel excavation could cause collapse of the 14 story Calhoun Isles condominium tower or a freight train pulling 80 tank cars carrying ethanol or other flammable liquids
8. These issues may cause the SWLRT Project Office to revert to previous plans to take up to 57 residences north of Lake St. and another 20 south of Lake St.
9. The shallow tunnel will still require accommodation of two tracks of light rail, a freight rail track, a trolley connection to Uptown and the Midtown Greenway trails at the W. Lake St. station
10. The shallow LRT tunnel will be subject to periodic flooding during storm incidents if not properly sealed, resulting in interruption of service and a safety hazard to LRT passengers

From: Douglas Peterson
To: Jacobson, Nani
Cc: mnrealtors@aol.com; eldonjohn@hotmail.com; docsafari@hotmail.com; kenilworthpreservationgroup@gmail.com; ahiginbotham@msn.com; bobbemel@mnmicro.net; michaelwilsonmpls@gmail.com; gail.dorfman@co.hennepin.mn.us; jmcolby@earthlink.net
Subject: Comments - SW Light Rail Transit Extension Project
Date: Sunday, August 04, 2013 9:33:12 PM

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:
Below are my written comments under the National Environmental Policy Act (NEPA) on the scope of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway) (the SDEIS). These comments are submitted on August 4, 2013, within the 20 day period for submitting comments which ends on August 12, 2013. In accordance with the Minnesota Environmental Policy Act (MEPA) these comments, and the responses to them, will be included in the SDEIS.

8-4-2013

Southwest Corridor Light Rail Transit Extension Project Must Include Deep Tunnel in Kenilworth Corridor or Be Rerouted

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so

would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, has declared that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It demands that the right of way be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest

Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A deep tunnel is the only practical solution if the LRT is run through the Kenilworth Corridor.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add $420 million dollars to the originally estimated $1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

The Star Tribune newspaper, in an editorial on August 4, 2013, stated in part:

"The Met Council needs to get it right. Given the high stakes, it should not limit its consideration set to the eight options that have been developed to address the dispute. Instead, the metro planning agency should consider rethinking the route altogether.

….

"Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA's cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders…."

A "Counterpoint" article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad ("Railroad is neutral in LRT dispute," August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden

Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the “locally preferred” LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its “plans” for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be

adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision, any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Douglas J. Peterson

3315 Saint Paul Ave.

Minneapolis, MN 55416

From: Raz, Rachel (WVR, GC)
To: Jacobson, Nani
Subject: SitP SDEIS - Scoping comment.docx
Date: Monday, August 05, 2013 10:16:10 PM

August 06, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,
The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.
This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know ourunderstanding of the issues and impacts of this project arestrong.
Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-makingprocess

Lack of Public Process: For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards and sticky notes on which to write comments.

Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the ***scope*** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.
Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- Safety: The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.
- Livability: An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled

will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.

- Community Cohesion: This planned elevated structure will create a very permanent physical division in our community.
- Mitigation: No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Rachel Raz
St Louis Park

From:	julie sabo
To:	arthur higinbotham; Jacobson, Nani
Cc:	Stuart A Chazin; Nancy Green; Tom Johnson; info cidna; lisa goodman
Subject:	Re: Comments on Supplemental DEIS for SWLRT Transitway
Date:	Monday, August 05, 2013 9:04:21 AM

Hi Art,

We need to point those things out. The modeling is illusionary, 1,000 a day at 21st Street? When they need more, change the model and wall-a! more riders. It's all crazy.

Julie

From: arthur higinbotham <ahiginbotham@msn.com>
To: nani.jacobson@metrotransit.org
Cc: Stuart A Chazin <Stuart@chazingroup.com>; julieannsabo <julieannsabo@yahoo.com>; Nancy Green <nancygreen1@comcast.net>; Tom Johnson <tom.johnson@co.hennepin.mn.us>; info cidna <info@cidna.org>; lisa goodman <lisa.goodman@ci.minneapolis.mn.us>
Sent: Sunday, August 4, 2013 5:11 PM
Subject: Comments on Supplemental DEIS for SWLRT Transitway

I am attaching a statement showing the shortcomings of a shallow tunnel for the SWLRT in the Kenilworth corridor; I would like to add that a shallow tunnel will be a major safety hazard for children using Park Siding during tunnel construction and for residents who live along the corridor.

I would like to object to the ridership being increased from 29,000 to 34,000-36,000 without any further ridership study when the 2030 basis for ridership should now show a decline due to the Great Recession of 2008-12.

Art Higinbotham
SWLRT CAC Representative

From:	Sean Gilbertson
To:	Jacobson, Nani; Safety In the Park; newsroom@mpr.org; stories@minnpost.com
Subject:	Re: SDEIS for southwest LRT proposals
Date:	Tuesday, August 06, 2013 10:50:36 AM

Any St. Louis Park location should be ruled out before or during the SDEIS because it's a mathematical certitude that any of those options would result in significant negative environmental impacts to the local population.

One of the proposals has an elevated train line passing so close to two large schools that one of the *playgrounds* would have to be destroyed. This is a perfect metaphor for what this proposal would do to our city: effect a deep laceration to our quality of life. We're not going to stand for our houses, our schools, our businesses, and our safety being destroyed or devastated because a few entitled rich people who live hundreds of feet above and away from an existing safe location stamp their feet and demand to get their way. There's nothing different here from what an environmental disaster would do to our neighborhood, except for the fact that we can prevent this disaster.

The people of Kenwood have no stake in this LRT project: they would not be affected by its location in the Kenilworth corridor, and they won't be using it for commuting. This is our project; those of us in the real world could benefit from LRT, but if we damage our communities and our quality of life, we've lost the very thing we're meant to be serving.

Thank you,
Sean Gilbertson
55426

DOUGLAS J. PETERSON
3315 SAINT PAUL AVENUE
MINNEAPOLIS, MN 55416-4317

August 6, 2013

RECEIVED
AUG 08 2013
BY: SPO-PMO

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Ms. Jacobson:
Below are my written comments under the National Environmental Policy Act (NEPA) on the scope of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway) (the SDEIS). These comments are submitted on August 6, 2013, within the 20-day period for submitting comments, which ends on August 12, 2013. In accordance with the Minnesota Environmental Policy Act (MEPA) these comments, and the responses to them, will be included in the SDEIS.

Southwest Corridor Light Rail Transit Extension Project Must Include Deep Tunnel in Kenilworth Corridor or Be Rerouted

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the

Telephone: 612-849-1415 Fax: 612-374-4993 E-mail: dlpeter18@aol.com

Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

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A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the

residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add $420 million dollars to the originally estimated $1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

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"Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA's cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders...."

A "Counterpoint" article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad ("Railroad is neutral in LRT dispute," August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail

location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the "locally preferred" LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its "plans" for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision,

any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Yours truly,

Douglas J. Peterson

From: bjschmitt89@aol.com
To: Jacobson, Nani
Subject: Supplemental Draft Enviromental Impact Statement for SWLRT
Date: Tuesday, August 06, 2013 12:17:52 PM

August 6, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:

I am in complete agreement with the statement sent to you by Safety in the Park dated August 6, 2013.

That the Brunswick Central remains as an option remains a mystery to me as it ranks higher on the scale of negative impacts than other co-location options that have already been removed from consideration.

Safety concerns, livability in an area of elevated rail (noise,vibration, nature of freight being hauled) as well as the lack of any mitigation plan or funding source for one makes me request that the SDEIS study should include the following:

1. A detailed analysis of relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.

2. A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.

3. A far and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Bert & Beverly Schmitt
2833 Brunswick Avenue South
St. Louis Park, MN 55416

From: Karen J. Scott
To: Jacobson, Nani
Subject: SLP Resident opposes Freight Rail Reroute
Date: Tuesday, August 06, 2013 11:29:02 AM

Hi Ms. Jacobson, I hope you have received numerous emails/ letters Opposing Freight Rail in SLP. I am not as eloquent a writer as those who organized SafetyinthePark! Or Lightraildoneright.org.
Both of these organizations have presented strong arguments for and against re- route and co-location and over the years have essentially opposed each other.

Now these neighborhoods are coming together and stating that if Light Rail happens, then the deep bore tunnel option is the best choice.

We cannot allow the unpredictable number of future riders to outweigh the predictability of events that will occur to St. Louis Park and the environment.

I am, overall, opposed to the entire Light Rail Line as it is stated. I do not stand alone in my concerns. Seriously, if the re-route/colocation is Technical issue #21 then what does that say about this entire plan?

I encourage you to please take into thoughtful consideration the future of St. Louis Park, the community, school district and children and allow that to take precedence over all other decisions. Then secondly, preserve the chain of lakes area and protect our environment. If SWLRT has to happen with the current line proposal, then you have an ethical civic responsibility to oppose any option that creates the most harm. You must protect St. Louis Park's community and the Environment.

Thank you for your time and serious attention to this matter.

Karen Scott
Proud St. Louis Park Community Member

RECEIVED
AUG 08 2013
BY: SWO-TRANS

August 7, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

This letter constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit (SWLRT) Project published in the Minnesota EQB dated July 22, 2013. As required, this comment is post-marked before the published comment deadline of August 12, 2013.

I have the following concerns regarding the proposed relocation plans (named by the SWLRT Project Office as Brunswick West and Brunswick Central):

- Decision Process and Criteria: The Met Council and SWLRT project team appear to be using arbitrary inconsistent decision criteria for choosing freight route options. They have not published their criteria, yet they approve a tunnel option for Kenwood stating above ground structures would be unsightly, yet an above ground structure is a key part of the St Louis Park options. Also, many years ago discussions started about light rail, and when asked about where freight trains would go, citizens were told those discussions would come later and we would be part of those discussions/decisions. Yet that never happened. Similarly, there are locally preferred alternatives to the location of the light rail itself. Again, the Met Council is choosing to put the trains where ridership is the least, in complete violation of their stated goal to attract young people to the twin cities. Uptown is where ridership is stronger.
- Safety: The St Louis Park options are not a safe alternative, give the other options that are or have been on the table. Running long freight trains hauling ethanol, coal and agricultural products at 25mph on an up to 18+foot high berm/bridge through our neighborhood is one thing, but to have it run next to an elementary school, removing that school's playground, within 100 feet of that school building (where babies and toddlers attend ECFE classes 100s of preschoolers attend preschool, and within 500 feet of our High School is not the best choice given there are other options that do not affect babies and children. This should be reason enough to remove the freight re-route option from consideration.
- Community: An elevated structure through the heart of St Louis Park is unsightly, and puts a 18+ foot wall in the middle of cohesive, safe, neighborhoods. At a time when the president is asking for neighbors to come together, help each other, and create safe places to work and live, the Met Council is proposing to destroy where that situation actually exists. Our own MN Governor is quoted as saying St Louis Park is one of the safest cities in MN. Our schools are in the top in the nation, and we can boast some of

the strongest neighborhood associations in the state. Our chief of police has been quoted saying neighboring cities have come to them to find out how to replicate what St Louis Park has in terms of its active, involved neighborhood associations. The re-route option would destroy what others hope to replicate, and should be removed from consideration.

- Mitigation: No mitigation plans have been shared with the public to address the above concerns. In fact, at the May 28 unveiling, it was stated that there would be no mitigation.
- Reroute opposition: The St Louis Park City Council, the State Legislator, The St Louis Park School Board have all sent letters to the Met Council rejecting the St Louis Park re-route options. The continuation of the SWLRT Project Office to consider these re-route options directly challenges a partner community municipality and those who represent it.

For these reasons, the SDEIS scope should be changed to include, the following:

A detailed analysis of the full environmental impacts to all buildings and people using the same geographic scope as the actual LRT path that was studied in the original DEIS

The analysis should include, but not be limited to, the following:

- o noise and vibration studies
- o air pollution studies
- o derailment studies
- o visual impact studies

A robust public process that allows for public hearings and INPUT (not just comment cards) BEFORE any decision is made or even considered by the Met Council. The decision made on SWLRT will impact the face of the Twin Cities for generations. It seems prudent to take a thoughtful community involved approach when affecting peoples' homes, lives, schools and tax dollars.

Thank you for your consideration.

Mary Beth Gaines
5740 W Lake Street
St Louis Park, MN 55416

From:	Thatcher Imboden
To:	Gail Dorfman; swlrt
Subject:	SW LRT: Trail reroute
Date:	Wednesday, August 07, 2013 5:38:31 PM
Attachments:	kenilworth.pdf

Commissioner Dorfman and project planners,

In reviewing a few of the documents pertaining to the Kenilworth corridor and various scenarios where the existing trail may be relocated, I wanted to inquire about another trail reroute option.

I've attached a quick plan I put together outlining a much shorter and potentially more enjoyable reroute than the reroute option that contemplated crossing Lake Street near France Avenue. I biked the route the other day and, while not as nice as the existing Kenilworth, it may be more politically viable and cost effective.

It essentially relocates the trail from just north of the Lake Street bridge then going west along the northwest bridge abutment. Today there is a cow path there and the area is generally sloped perhaps at a 2 to 4% incline in a wooded section. Near the end of the bridge abutment, the path would turn north through a grassy section and proceed onto Chowen Place.

I am assuming that it would cross the freight and light rail tracks at grade with some sort of signaling. Assuming that no laws prevent this type of crossing, I don't see it as any different than bikers having to cross both freight and light rail at grade at Cedar Lake Pkwy or any other number of LRT or freight tracks across this region.

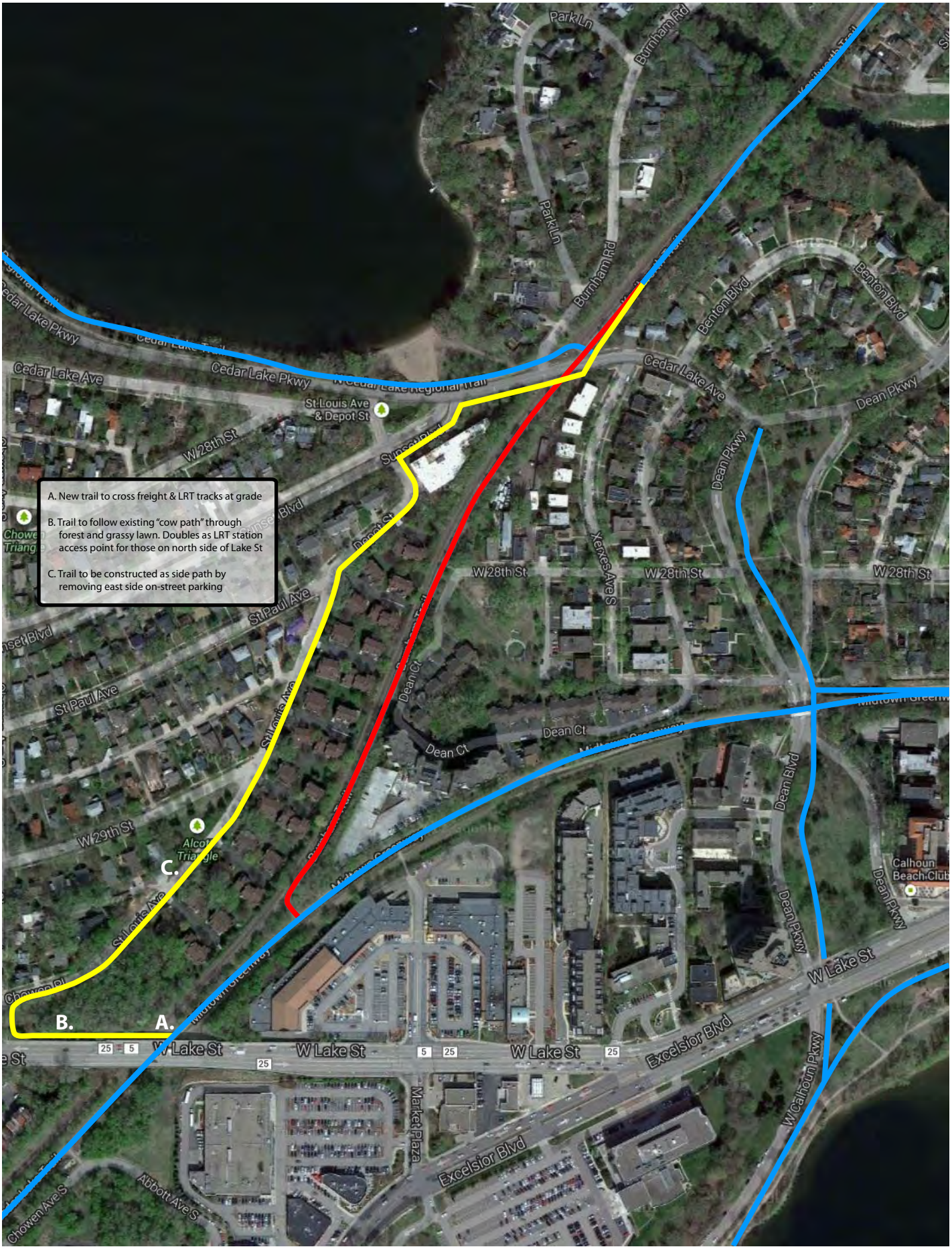
I would assume that the community preference would be to have the street section as a dedicated side path at the top-of-curb height adjacent the street. I would assume that one lane of parking from the east side would need to be removed. Given existing conditions, this may not be that big of a deal relative to other neighborhoods.

It would run along Chowen Place to St. Louis Avenue to Depot Street to Sunrise Blvd. At Sunrise, there is a grassy strip adjacent the apartment building except at the building's entryway. It would then cross at grade across Cedar Lake Pkwy, perhaps on the east side of the RR tracks.

I'm sure this has been considered but hadn't seen it out there, so I thought I'd pass it along just in case. I would love to hear your thoughts.

I'm not sure if I favor this solution or not, but as a biker, it would be far preferable than the other relocation plan.

Thanks,
Thatcher Imboden
thatcher@ouruptown.com
612-810-6642



Existing Trails | Removed Bike Trails | New Bike Trails

Prepared by Thatcher Imboden for Discussion Purposes | 8/7/13
Map is approximate.

From:	Joe King
To:	Jacobson, Nani
Subject:	freight trains by SLP school
Date:	Wednesday, August 07, 2013 9:30:01 PM
Attachments:	SitP SDEIS - Scoping comment (1).docx

I do not support the idea of the freight trains running through SLP by the elementary school. Attached is a letter in regards to this point. I'd be happy to show further support to reconsider or change these plans.

--

joe king
group account director

mono
612-454-4909 direct
612-454-4900 main
mono-1.com

August 06, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- ***Lack of Public Process:*** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the ***scope*** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- Safety: The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot

high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- Livability: An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- Community Cohesion: This planned elevated structure will create a very permanent physical division in our community.
- Mitigation: No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

From:	ggday@aol.com
To:	Jacobson, Nani
Subject:	SWLRT comment
Date:	Wednesday, August 07, 2013 4:49:21 PM

Dear Ms. Jacobson:

Please put me down as one more person who opposes co-location of freight rail and LRT in the Kenilworth Greenway.

The proposed co-location of freight and LRT (even with the supposed "win-win" of the shallow tunnel which is nothing more than at grade co-location) will permanently damage the unique and valuable regional asset that is the Greenway. There will be safety issues as well as negative environmental impact on the area. (water and air quality, noise and light pollution, wildlife and tree destruction)

The Metropolitan Council must re-consider the alignment of the LRT through the Kenilworth Greenway. It is NOT the only wa

Sincerely,

From:	O"Connell, Pat on behalf of PublicInfo
To:	Jacobson, Nani
Subject:	FW: Letter to Governor Dayton re SW LRT
Date:	Wednesday, August 07, 2013 7:14:38 AM
Attachments:	Ltr to Gov Dayton 8-6-2013.docx

From: Douglas Peterson [mailto:douglasjpeterson.djp@gmail.com]
Sent: Tuesday, August 06, 2013 10:35 PM
To: rep.frank.hornstein; Senator Scott Dibble; anita; lisa Goodman; Haigh, Susan; Gail.Dorfman; MNRealtors; jeanette Colby; Munt, Jennifer; EldonJohn; meg forney; peter.rogoff fta; cwreg w; Stuart A Chazin; peter.wagenius; julieannsabo; Shelley; mikeerlandson; Nancy Green; David Lilly; docsafari; kenilworthpreservationgroup; bobbemel; michaelwilsonmpls; thomas.johnson@gpmlaw.com; ahiginbotham@msn.com; abbyruben@earthlink.net; angie_sandeep@yahoo.com; Duininck, Adam; Zachary.Farley@minneapolismn.gov; PublicInfo; O'Connell, Sam; courtneyck@comcast.net
Subject: Letter to Governor Dayton re SW LRT

Attached is a copy of my letter dated 8-6-2013 to Gov. Mark Dayton. The last day to submit comments relating to the proposed Supplemental Draft Environmental Impact Statement (SDEIS) is August 12, 2013. If you have not already sent your written comments, we need to get them in immediately. At least as important, please immediately write to all of the federal, state, county and local politicians and officials who represent Minneapolis and express your views. The possibility of losing "free" federal funds must not be used as an excuse to construct an ill conceived and poorly designed light rail project.

> The Federal Transit Administration, has mandated that the Southwest Project Office prepare a supplemental DEIS report. FTA called for this primarily due to three items/changes that were not fully assessed in the original DEIS document related to location of the Operations and Maintenance Facility, Eden Prairie LRT alignments, and freight rail options. If you haven't already, you may want to take advantage of this opportunity to comment on the scope of the Supplemental DEIS. Particularly in regard to both shallow and deep tunnel options, this is an opportunity to make sure the supplemental document studies and responds to the many environmental concerns raised by community members over the past few weeks.
> >
> > The notice of intent to prepare a Supplemental Draft Environmental Impact Statement was released on July 22 and gave a 20 day period for public comment.
> . Ways to submit public comment:
> >
> > 1. Send a comment to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: 612-373-3808; Email:nani.jacobson@metrotransit.org.
> >
> > 2. Comment are also being accepted online. Post comments via the link below:

>
> https://www.federalregister.gov/articles/2013/07/22/2013-17506/intent-to-prepare-a-supplemental-draft-environmental-impact-statement-for-the-southwest-light-rail
>
>

Douglas J Peterson
3315 Saint Paul Ave.
Minneapolis, MN 55416

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DOUGLAS J. PETERSON
3315 SAINT PAUL AVENUE
MINNEAPOLIS, MN 55416-4317

August 7, 2013

The Honorable Mark Dayton
Governor of Minnesota
Office of the Governor
130 State Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

Re: Southwest LRT - Southwest Corridor Light Rail Transit Extension Project Must Include Deep Tunnel in Kenilworth Corridor, Be Rerouted or Not Built

Dear Governor Dayton:

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing,

Telephone: 612-849-1415 Fax: 612-374-4993 E-mail: dlpeter18@aol.com

depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, has declared that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It demands that the right of way be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A deep tunnel is the only practical solution if the LRT is run through the Kenilworth Corridor.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add $420 million dollars to the originally estimated $1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

The Star Tribune newspaper, in an editorial on August 4, 2013, stated in part:

> The Met Council needs to get it right. Given the high stakes, it should not limit its consideration set to the eight options that have been developed to address the dispute. Instead, the metro planning agency should consider rethinking the route altogether.
>
> ….

> Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA's cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders….

A "Counterpoint" article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad ("Railroad is neutral in LRT dispute," August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the "locally preferred" LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its "plans" for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact

agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision, any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Yours truly,

Douglas J. Peterson

CC: arthur higinbotham <ahiginbotham@msn.com>
rep.frank.hornstein <rep.frank.hornstein@house.mn>; Senator Scott Dibble <sen.scott.dibble@senate.mn>; anita <anita@robtabb.com>; lisa Goodman <lisa.goodman@ci.minneapolis.mn.us>; susan.haigh <susan.haigh@metc.state.mn.us>; Gail.Dorfman <gail.dorfman@co.hennepin.mn.us>; MNRealtors <mnrealtors@aol.com>; jeanette Colby <jmcolby@earthlink.net>; jennifer.munt <jennifer.munt@metc.state.mn.us>; EldonJohn <eldonjohn@hotmail.com>; meg forney <megf@visi.com>; peter.rogoff fta <peter.rogoff@dot.gov>; cwreg w <cwreg@msn.com>; Stuart A Chazin <stuart@chazingroup.com>; Tom Johnson <tom.johnson@co.hennepin.mn.us>; peter.wagenius <peter.wagenius@ci.minneapolis.mn.us>; julieannsabo <julieannsabo@yahoo.com>; Fitzmaurice, Shelley <sfitzmau@tcfbank.com>; mikeerlandson <mikeerlandson@gmail.com>; Nancy Green <nancygreen1@comcast.net>; David Lilly <dlilly@danburygroup.com>;
mnrealtors <mnrealtors@aol.com>; docsafari <docsafari@hotmail.com>; kenilworthpreservationgroup <kenilworthpreservationgroup@gmail.com>; bobbemel <bobbemel@mnmicro.net>; michaelwilsonmpls <michaelwilsonmpls@gmail.com>;

From:	Aimee Saloka
To:	Jacobson, Nani
Subject:	Opposed to Freight trains by SLP school
Date:	Wednesday, August 07, 2013 9:47:44 PM
Attachments:	ATT00001.gif SitP SDEIS - Scoping comment .docx

Dear Ms. Jacobsen,

I do not support the idea of the freight trains running through SLP by the elementary school. Attached is a letter in regards to this point. I'd be happy to show further support to reconsider or change these plans.

Thank you,

Aimee Saloka
Project Manager

Phone: 612-217-5074
E-mail: asaloka@us.ibm.com

901 Marquette Avenue
Minneapolis, MN 55402
United States

August 06, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- ***Lack of Public Process:*** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the ***scope*** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- Safety: The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot

high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- Livability: An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- Community Cohesion: This planned elevated structure will create a very permanent physical division in our community.
- Mitigation: No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

From:	Joel Schou
To:	swlrt
Subject:	Some thoughts on the freight rail issue for the Green Line Extension
Date:	Wednesday, August 07, 2013 12:49:11 PM

Good afternoon,

My name is Joel Schou. I'm a resident of the Field neighborhood in South Minneapolis, so while the Green Line Extension currently under discussion does not immediately affect or benefit me, I have a general interest in Metro-area transportation policy and execution. That, and I'm a huge train nut who finds LRT fascinating and interesting. I've been following the developments in planning the new line from afar and just have a few small thoughts to share regarding the Kenilworth corridor issues.

First of all, I am not going to harp on the 3A vs. 3C choice. I trust that the original plan made a sufficient case for why the particular alignment was chosen. That said, I think freight relocation is the proper choice, but not in the way that the Met Council is currently studying. I think neither of the considered alignments through St. Louis Park are the right choice; there's too much property taking, street disruption, and splitting of the community due to the huge embankments necessary to accommodate safe curves and grades.

So what do I suggest? I came across a document on the SLP web site discussing the freight reroute (http://www.stlouispark.org/pdf/freight_rail_realignment_study.pdf), with which you are certainly familiar. I realize that the study is >4 years old and the cost estimates have certainly changed, but the former ROW that runs along/near TH 169 (page 16 and Exhibit 8) seems to me to make a tremendous amount of sense. I realize that the cost estimate of $120MM in 2008 put it far behind the routes currently being studied. However, we've now learned that the MNS sub is far more expensive than the original $48MM estimate. Given that the current estimates for that alignment are anywhere from $190MM to $210MM, the TH 169 route strikes me as awfully competitive even if were to come in as much as 50% higher than its 2008 numbers.

I realize that it has some complications with property taking, road bridges, a freeway, and the new office development at Excelsior and TH 169, but these all seem solvable with less friction than we're experiencing currently. Obviously, there would be a whole new group of people (and a new city) to engage in the discussion, as there is currently nothing but a bike trail running through this corridor. However, the friendlier curves and grades of this route would allow trains to glide silently (relatively, of course) through the neighborhood. The ROW even appears to have enough room to preserve the bike trail next to the freight line, but it's tough for me to estimate that using just satellite imagery.

Thank you for taking the time to read my thoughts on the project. I think that high-quality transit lines are vital to the entire Metro region and I don't want to see this particular line discarded. For that reason, I think that reconsidering the TH 169 freight realignment has the potential to be a great solution. I hope those of you involved in

the decision-making process are willing and able to take another look at the option. This is a solvable problem. I'll be cheering for you.

Sincerely,
Joel Schou

From:	Brian Z
To:	Jacobson, Nani
Subject:	Response to Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013
Date:	Wednesday, August 07, 2013 8:32:58 PM

August 7th, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,
The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

My family owns and lives in the home closest to the MN&S Railroad tracks. The distance of the tracks to our home is 34 feet. In addition, the tracks are on a berm which is approximately 21 feet high. This puts me in the unfortunate position of having the most intimate knowledge of the physical danger, constant disturbance and extreme ugliness and unlivability which would be forced on hundreds of families in the city I love and would quite literally divide the city in half. Perhaps even more offensive, indefensible and disgusting is the Brunswick Central freight re-route plan's blatant disregard for the physical safety and educational needs of pre-schoolers and primary school students at our Spanish Immersion School.

As I have been deeply involved in the fight to stop the re-route for over 4 years, I can vouch for the truth and thoroughness of the SDEIS reply written by the neighborhood advocacy group Safety in the Park. I include their response below for your consideration.

****

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

· **Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

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· **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

· **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

· **Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

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· **Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.

· **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

· **A detailed analysis of the relocation options that includes:** noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.

· **A robust public process that allows for public hearings and input after the SDEIS is published BEFORE any decision is made or even considered by the Met Council.** In particular, the specific concerns of the City of St. Louis Park need addressing.

· **A fair and equal comparison of co-location and relocation must be possible.** Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Thank you for your careful consideration of this most important issue of physical safety, community and civil engineering.

Sincerely,

Brian, Wing and Zoey Zachek
6108 Minnetonka Blvd.
Saint Louis Park, MN 55438
952-922-9165

Ms Nini Jacobson
Project Manager SWLRT
Suite 500
6465 Wayzata Blvd
St Louis Park, MN 55426

RECEIVED
AUG 12 2013
BY:

Robert M. Brockway
3145 Dean Court #904
Minneapolis, MN 55416

rmbrockway@comcast.net
August 8, 2013

Reference: Supplemental DEIS Freight rail options for the LRT on the Kenilworth.

There are no good freight rail options unless the LRT is buried under ground.

If the LRT were buried:

- The present freight rail could stay where it is for now.
- There would be no need to try to relocate the freight to St Louis Park.

If the LRT were at grade:

- There is not enough space for the freight, the LRT, and the bike and walking trails unless many homes are removed.
- There would be an effort to move the freight to St Louis Park, over their strong objections.
- The environment of the Kenilworth Trail would be completely destroyed.
    - Two hundred and fifty trains a day.
    - The ugly posts and suspended wiring.
    - The complete separation of the communities on either side of the LRT.
    - The vibration, wheel screech (it's on a curve), station warning bells.
    - The environment at the Cedar Lake South Beach would be destroyed.
    - The environment of the beautiful channel between Cedar Lake and Lake of the Isles would be destroyed. If a tunnel were the ditch and cover type and go over the channel rather than under the channel, the results would be equally as bad.
- Car traffic at Cedar Lake Pkwy would be greatly reduced, forcing more cars to Lake Street.
- Condos and town homes on the south east side would be within 35 feet of the right of way, well less than the FTA minimum standard of 50 feet. The patios of some condos in the high rise building are at the very edge of the right of way, no space at all.

From: ggday@aol.com
To: Jacobson, Nani
Subject: SWLRT - supplemental DEIS comment
Date: Thursday, August 08, 2013 11:08:12 AM

Dear Ms. Jacobson:

With the newly announced fact that there will be a supplement added to the previous DEIS I would like to see these issues covered:

* What would the effect of the shallow or deep tunnel be on water quality of the channel and lakes ?

* How many trees would be destroyed in putting a shallow or deep tunnel in the Kenilworth Greenway?

* How would wildlife be affected?

* What will the noise level be--not simply at grade-- but at greater heights (affecting the condo's on the Greenway)?

* What will the vibration level be on the surrounding town homes, high-rise condo's, and experienced by bikers and walkers?

* What would the effect be on air quality during and after construction?

* If freight rail did not move: ditto all above questions as it relates to co-location.

If any of these were not covered in the original DEIS (before a shallow and deep tunnel and co-location were being considered) they should be added now.

Thank you. I hope citizen input is valued and used to make a more thorough investigation of the environmental impact of this project.

Georgianna Day Ludcke

RECEIVED
AUG 09 2013
BY: SPO-PAD

August 8, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobsen,

I wish to comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. I support the opinion that the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision.

I am 100% opposed to the SWLRT proposal to relocate freight rail traffic to St. Louis Park onto newly built tracks and tracks that were never built for such a purpose. The St. Louis Park City Council, School Board and Minnesota State Legislators share my opposition. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in extremely negative, unsafe and unjust ways. For example:

- Safety: I understand that no derailment studies have been enacted by the SPO. Placing freight trains on tracks on a 20 foot high berm and close to schools/playgrounds is by any logical way of thinking less safe than having the trains at grade or in tunnels, as in some of the co-location options. A criterion for the co-location options is having trains at grade which makes sense – yet that same standard is not being applied to the re-location options. This is UNJUST and reason enough to remove the re-route option from consideration.
- Livability: I live within 500 feet of where these elevated freight trains would be traveling in the re-location plans. I fear that the noise and visual pollution will make living in my home of over 20 years nearly impossible. I understand that no studies have been completed on this topic because the SPO has decided not to conduct them at this time which seems unfair to St. Louis Park residents.
- Community: Re-routed freight traffic would divide my award-winning community in two. Doing this would be unjust and unfair to my community.
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Therefore, the SDEIS scope should be changed to include the following:

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In addition, I have serious concerns about the integrity of the Met Council's decision-making process to date. On June13 and July 17 and 18 the Met Council held public meetings. I was at the July 18 hearing. This public process was inadequate for sufficient public input and comment on these re-route plans that were established about 2 months ago. There have been no detailed environmental impact studies on these new plans. **How is the Met Council supposed make a wise and informed decision without this fair public process and environmental information? This is irresponsible.** As I alluded to above, the SPO does not seem to be applying its criteria fairly to all plans (co-location and re-location) – that is: the taking of property, cost, above ground structures, and community opposition. The Brunswick Central option ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. The SPO should be held to a fair process – across the board - using its own self-declared criteria.

Thank you in advance for taking my concerns into consideration.

Mary Weddle
2667 Alabama Ave South
St. Louis Park, MN 55416

From:	weddleml@aol.com
To:	Jacobson, Nani
Subject:	scope of SDEIS comment
Date:	Thursday, August 08, 2013 11:12:02 AM
Attachments:	8.8.13.to.N.Jacobson.docx

August 8, 2013
Dear Ms. Jacobson,

Please see the attached for my comments on the scope of the SDEIS for SWLRT published in the MN EQB on July 22, 2013. I have serious concerns to share with you. I am also sending you a hard copy of this letter.
Thank you in advance for your careful reading of my input.
Mary Weddle
2667 Alabama Ave So
St. Louis Park, MN 55416

August 8, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

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Thank you in advance for taking my concerns into consideration.

Mary Weddle
2667 Alabama Ave South
St. Louis Park, MN 55416

From:	lewquin@comcast.net
To:	Jacobson, Nani
Cc:	Stephen Quinlivan; Lori Quinlivan
Subject:	Supplemental Draft Environmental Impact Statement - Comments
Date:	Friday, August 09, 2013 6:59:38 AM

August 9, 2013
Ms. Nani Jacobson
Project Manager, Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426
Via Email: nani.jacobson@metrotransit.org.
Dear Ms. Jacobson:
We are homeowners at Calhoun Isles, a large condominium and townhouse association that will be adjacent to the proposed Southwest Light Rail Transit Extension (SWLRT) Project. The purpose of this letter is to submit comments under the National Environmental Policy Act and related state and federal laws on the scope of the Supplemental Draft Environmental Impact Statement.
We believe at grade co-location of freight traffic and light rail along the Kenilworth Corridor will have adverse impacts on the environment and the quality of life of near-by residents. Some of the reasons include:

- Loss of homes by residents
- Impairment and elimination of parkland and trails along the Kenilworth trail
- Constant noise and vibration
- Traffic congestion at the crossing at Cedar Lake Parkway
- Safety concerns for vehicles and pedestrians

The only responsible solution to mitigate the adverse impacts of Light Rail is a deep tunnel. It is the only solution that accommodates the needs of SWLRT, the current freight train operator; Twin Cities and Western Railroad, and the interests of residents.
Other solutions do not properly mitigate the adverse impact of the project. A shallow tunnel still results in noise and vibration and will create pedestrian and vehicle safety issues. Because of its close proximity, Light Rail will have a disproportionate impact on Calhoun Isles.
This solution is important for the residents of the Calhoun Isles community. Thank you for the opportunity to submit these comments.
Very truly yours,
Steve and Lori Quinlivan
3141 Dean Court #704
Minneapolis, MN 55416
Email: lewquin@comcast.net

RECEIVED
AUG 12 2013
BY: SPO

August 9, 2013
Ms. Nani Jacobson
Project Manager, Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:

We feel the Metropolitan Council's Design Option for a deep bore tunnel through the Kenilworth Corridor with an underground West Lake Street Station best meets these three objectives for light rail:

- Preserving the Kenilworth Corridor as a "Natural Regional Resource"
- Insuring pedestrian, bicyclist, and vehicle safety
- Maintaining the area's quality of life

Respectfully yours,
Dr. & Mrs. Nicholas Shuraleff
3134 Dean Court
Minneapolis, MN 55416
Email: shuraleff@gmail.com

From:	Bob Bemel
To:	Jacobson, Nani
Cc:	jennifer.orourke@minneapolismn.gov; peter.wagenius@minneapolismn.gov; seantordibble@gmail.com; Ginis, Sophia; betsy@betsyhodges.org; swcorridor@hennepin.mn.us
Subject:	SW LRT comments
Date:	Saturday, August 10, 2013 12:27:50 PM

Dear Ms jacobson. I have been following the SW LRT planning and recent public communication about this significant project with great interest. Living within feet of the current freight rail tracks and proposed light rail line gives me direct and heightened interest. As Gail Dorman stated in her article in the Tribune last week, there "are losers, and winners" in projects of this magnitude, with so many interespted parties affected. I am one. Living so close to the tracks, within "feet", I fear I will be one of the losers. Can you, or do you think any of your planners, engineers, administrators, imagine, having your bedroom window, your deck, your living room window, within very close proximity, to over 200 trains passing each day. Every 3 minutes during rush hour twice per day, and, runing for 20 hours per day. With my home being directly opposite the proposed W. Lake Street station I would be with easy earshot/hearing, of the bells required of the trains as the enter and exit the station. Auditory, and visual pollution is what I imagine, in what is now a pastoral setting in the city. I am directly also on the greenway, and enjoy walking the trails daily and watching the bikers and walkers pass by.
I wondered how it could be possible that the distance now determined allowable between the center of the tracks, and dwellings could have been reduced from 24 to 15 feet? 15 FEET!!!!! This is come kind of cruel joke. Just a month ago when I learned at the most recent meetings that my building was identified for a possible buy out, this, seemed reasonable! It appeared that my quality of life was being considered, even though I would prefer NOT to leave my home. I have loved living there.
So, please, please, seriously consider, and choose, a deep bore tunnel. If this route continues to be the chosen route, to preserve a quality of life that has given the city of Minneapolis, and residents like me a quality of life that is nationally recognized, and, individually appreciated, by myself, and thousands of others! Thank you in advance for taking my opinions into consideration.
My fear though, that you and the other decision makers are heading off a cliff. That will negative impact the quality of life in Mpls. You should know that I am a believer in the needs for mass transit, to effieicntly move people in cities. I have traveled the world extensively and have ridden such transit. From subways in New York, Mexico City, Tokoyo and London. Implementing such transit in our area is your challenge. I know you must balance quality of "living", with transit needs. Please do this with wisdom!

If decisions are made that I do not consider "wise" I will oppose them. Including laswuits, if that is my only resort. And I would work politically to defeat politicians who would make adverse decisions. With time, and money.

I feel that strongly about what is transpiring.

Bob Bemel
3066 Lake Shore Drive
Mpls 55416
Lakes Citihomes

_____ Information from ESET NOD32 Antivirus, version of virus signature database 7403 (20120820) _____

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

From:	Zack Ellsworth
To:	swlrt
Subject:	Comment on the SW LRT
Date:	Sunday, August 11, 2013 11:10:21 PM

Hello,
I am currently an urban planning grad student at MSU Mankato and as such will soon be joining the ranks of professional planners as a planner or consultant. A recent article in Twin Cities Daily Planet has brought to my attention how off track, pardon the pun, the current alignment for the SW Light Rail favored by the Met Council is. I have detailed my criticisms here on my blog, which can be found here http://daydreamemporium.wordpress.com/2013/08/11/the-daydream-alignment-what-the-southwest-corridor-light-rail-should-be/ , as well as provided my alternative alignment which I feel would be much more successful and better serve the people of the southwest Metro.

Thank you for taking the time to read what I have to say and consider the points I raise.
Sincerely,
Zack Ellsworth

From: horizongreen@comcast.net
To: Jacobson, Nani
Subject: Comment Submitted fo SDEIS
Date: Sunday, August 11, 2013 10:27:18 PM
Attachments: SDEID Submission_Shannon Green.docx

Dear Nani:

Please include my attached comment in the Supplemental DEIS for the SWLRT. I am submitting this comment prior to the August 12, 2013 deadline. Please let me know by return email if you need any additional information from me or if this needs to be in any different format.

Thank you.

Sincerely,

Shannon Green
3429 St. Louis Avenue
Minneapolis, MN 55416
612-928-4871 Home
horizongreen@comcast.net

Related to Technical Issue #21, the SWLRT Shallow Tunnel option is portrayed deceptively—it is co-location of freight rail and LRT lines, with significant safety and livability issues for Minneapolis. Two LRT lines and the freight line would be co-located north of the Lake Street Bridge, to the juncture of the Kenilworth and Midtown Corridors, at the tightest point in the entire SWLRT, with only feet to the closest residences. Bells would be sounded for safety each time a train enters or leaves the tunnels, every 3-1/2 minutes, with noise echoing into the surrounding Cedar-Isles-Dean neighborhood, increasing the number of homes impacted. There is no room at this narrowest of pinch points for adequate noise mitigation for the sound of the bells.

With this option, freight rail is proposed to continue in the Kenilworth Corridor, despite not complying with the federal standard of 25 feet from center of the rail to nearest structure. The President of TC&W Railroad has asked for "shared liability," indicating his awareness that this option is not safe and limiting TC&W liability if people are killed or homes destroyed. It is clearly in TC&W's best financial interests not to have to relocate.

Without changes, the Shallow Tunnel is not an option. The Shallow Tunnel option could work for our area if livability and safety are addressed: extend the tunnel back to Lake Street, eliminating the need for extra neighborhood bells in addition to nearby station bells, and implement freight safety solutions such as an inner rail guides and frequent third-party inspections of rails and railcars to increase safety and prevent derailments. Similar ideas should be explored for crossing the Kenilworth Channel to address noise issues at that end of the tunnels. With changes, the Met Council could offer a medium-cost option, with improved neighborhood and bike/walking trail aesthetics, which would provide a better solution than running the LRT at grade and relocating the freight rail into neighboring St. Louis Park. While costs need to be managed to allow funding for other transit priorities, a counterpoint is that we need to do fewer projects and do each one right.

From: Robert Corrick
To: Jacobson, Nani
Subject: Comments for Supplemental DEIS
Date: Monday, August 12, 2013 4:28:43 PM

To: Metropolitan Council

Nani.jacobson@metrotransit.org

Ms. Nani Jacobson, Project Manager

Southwest Light Rail Transit Project Office

6465 Wayzata Boulevard, Suite 500

St. Louis Park, MN 55426

I have the following comments on the supplemental DEIS for SW LRT:

(1) Some sort of shallow tunnel or similar mitigation seems essential if freight is to stay in the corridor. The proposal at Jones Harrison in July fell short of the city's mitigation requirements. To keep freight in the corridor, LRT should be underground or covered. This means that the channel crossing could be covered and sound insulated. The bike trail could proceed on top of the cover if there is not room at the channel; i.e., the trail could rise gradually on the "roof" of the cover as the LRT proceeds over the channel. The bike trail might proceed to the side of a covered crossing if there was enough room. Any covered crossing should be treated aesthetically with attractive design and vines, etc. Of course, the LRT might proceed under the channel to solve this problem and meet the co-lo objections of the city, but I am sure that you have already considered this option. A covered bridge (old fashioned) is another possibility, but it seems that it would be a very long one (1000 freet or so).

2) In the July Jones Harrison presentation, you proposed the shallow tunnel emerging 1000 feet north of 21st St. It should be noted that the bike trail could be routed to the south at this point to preserve tranquility of the trail. The Kenilworth Corridor is quite wide at this point. So it seems co-lo at grade could happen in this section of the Kenilworth. Perhaps at-grade co-lo should happen a little beyond 1000 feet because there are still homes to be seen on the south side of the corridor at this point.

3) I would strongly encourage solution for the Cedar Lake Trail bike crossing (the

“confluence”). Some sort of bridge seems to be in order for the bike crossing.

I would strongly recommend a solution for the dangerous bike trail crossing at Cedar Lake Parkway.

4) To the extent that the LRT emerges from the shallow tunnel to the north of the Lake Street Bridge, I would strongly recommend a solution to the co-lo that would happen there. Perhaps another cover would be in order.

5) Provision must be made for connection with the Midtown Greenway Streetcar somewhere around the West Lake Street Station. Much as been made of this issue, but it seems that there must be a solution.

6) A wilder idea, which might solve de-watering problems, and cost less, is a “High Line” type of structure (à la New York City High Line) from the West Lake Street station to somewhere north of 21st St. The bike trail could proceed on an attractively designed trail on a “roof” of an LRT cover, which would sound insulated. This structure could be partially buried most of the way except of course for the channel crossing.

7) When the LRT emerges from a shallow tunnel or “High Line” type of structure north of 21st St., consider placing the LRT in a depression (like the Midtown Greenway) so that the 250 daily trains are heard less by trail users, homes, etc. Surround by landscaping.

8) Of course, we would not be talking about a lot of this mitigation if it were not for co-lo. Met Council is asking a lot to put both in the same corridor.

As a side comment, Met Council should be more proactive in proposing solutions that would be acceptable to the City and neighbors. Public relations is pretty terrible at the moment. I would also recommend a more direct connection with some trusted neighborhood representatives through this final process. But perhaps this is just not possible considering the negative campaigning that it going on.

Please feel free to contact me with questions. Let’s make this deal happen.

Robert Corrick

2816 West Lake of the Isles Parkway

Minneapolis, MN 55416

612.927.5599

robertcorrick@mentorplanet.com

From:	O"Connell, Sam
To:	"Robert Corrick"; Loring, Deborah; Eiler, Stephanie; Ginis, Sophia
Cc:	SPODMC; Jacobson, Nani
Subject:	RE: SW LRT Supplement DEIS Comment
Date:	Monday, August 12, 2013 4:49:38 PM
Attachments:	image001.png image002.gif image003.png image004.png image005.png image006.gif

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Thank you. Nani is receiving all e-mails regarding the SDEIS and yours has been received by the project office.

EMAILLOGO.png

Sam O'Connell, AICP
Manager | Public Involvement
sam.oconnell@metrotransit.org
P. 612.373.3815 | F. 612.373.3899
Southwest LRT Project Office
6465 Wayzata Blvd., Suite 500 | St. Louis Park, MN | 55426 | swlrt.org

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From: Robert Corrick [mailto:robertcorrick@mentorplanet.com]
Sent: Monday, August 12, 2013 4:35 PM
To: Loring, Deborah; Eiler, Stephanie; O'Connell, Sam
Subject: SW LRT Supplement DEIS Comment

My email to Nani Jacobson stated that she was out of the office even though Supplement DEIS Comments are due today, so I am sending my comments to you as well.

Thank you.

To: Metropolitan Council

Nani.jacobson@metrotransit.org
Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

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the corridor. The proposal at Jones Harrison in July fell short of the city's mitigation requirements. To keep freight in the corridor, LRT should be underground or covered. This means that the channel crossing could be covered and sound insulated. The bike trail could proceed on top of the cover if there is not room at the channel; i.e., the trail could rise gradually on the "roof" of the cover as the LRT proceeds over the channel. The bike trail might proceed to the side of a covered crossing if there was enough room. Any covered crossing should be treated aesthetically with attractive design and vines, etc. Of course, the LRT might proceed under the channel to solve this problem and meet the co-lo objections of the city, but I am sure that you have already considered this option. A covered bridge (old fashioned) is another possibility, but it seems that it would be a very long one (1000 freet or so).

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Please feel free to contact me with questions. Let's make this deal happen.

Robert Corrick
2816 West Lake of the Isles Parkway
Minneapolis, MN 55416
612.927.5599
robertcorrick@mentorplanet.com

From: John Doe
To: Jacobson, Nani; Jacobson, Nani
Date: Monday, August 12, 2013 11:57:11 PM

I would like to include in the scope of the SDEIS the removal of park and ride lots that are now not being proposed by Met Council. It is my understanding that the engineers do not want to have a park ride at the 21st station which my neighborhoods wants to see.

I also wanted to say that it was nearly impossible to find where to send this comment. There is no notice on the Met Council website. It is as if you do NOT want anyone to find out how to comment. I commented on teh scope of the DEIS and could find everythign really easy.....JD

From: dougildner@aol.com
To: Jacobson, Nani
Subject: Comments on SDEIS SWLRT
Date: Monday, August 12, 2013 12:01:15 AM

Dear Ms. Jacobson,
Because significant changes have occurred since the publication of the DEIS and the selection of the Kenilworth Corridor as the LPA (May 2010) I am writing with several questions and comments.

It would appear that the Project Goals are not being met, even with the solutions offered. The cost increase over budget, the unsatisfactory answers as to how to protect the quality of life, protect the environment and provide a cost effective travel option would indicate that the project needs more work.

If indeed, the Kenilworth Corridor is the best alternative, then the only acceptable solution is a Deep Bore Tunnel. How can this be accomplished without massive budget increases? Are the numbers presented in the Cost Estimate Summary correct? Are the comparisons of all solutions being presented fairly...ie: contingency budget, cost of stations, mitigation, groundwater systems cost etc. included in all design option costs? Why must the West Lake Street Bridge be demolished in this plan? Has the option of a single LRT track through the corridor option been explored? What about introducing a Minimum Operating Segment within the DEIS, thus allowing the best alternative, the deep tunnel, to be built?

Perhaps the project, which recently the Met Council Chair, Susan Haigh acknowledged appeared rushed, needs to re-open Scoping. The choice of the LPA might have been different had the relocation of the freight line been included as part of the project (see Scoping Summary Report "Issues outside of the DEIS.") This would also address the critique that the LPA ignores the transit needs of denser areas and could open the opportunity to explore an alignment running N. along HW 100 and E along HW 394, which was not considered in the earlier preferred alternatives.

There are many issues that have not been fully addressed and many questions that have not been answered. Most constituencies agree that all modes at grade, would be unsafe and negatively impact the neighborhoods, parks, and Grand Rounds Historic District that are part of or adjacent to the Kennilworth Corridor. It would also result in many many homes being taken. The Deep Bore Tunnel option would solve these problems and eliminate the Freight Rail re-location issue. It would also positively impact the construction process, causing less disruption to neighborhoods and traffic during this phase of the project. However, the engineers have not adequately addressed the levels of noise and vibration or the risk of potential settlement of adjacent buildings should the Deep Bore Tunnel be used. These are but a few of the issues that require further study.

I recognize the importance of keeping the project on schedule. However, in order to fully present the options and impacts of the various alternatives, I believe more time is needed. It is also possible, that on closer inspection the LPA will prove to be less acceptable and a new and much better alternative will emerge.

Thank you,
Gretchen Gildner

From: mnrealtors@aol.com
To: Jacobson, Nani
Subject: What the supplemental DEIS should cover
Date: Monday, August 12, 2013 4:57:33 PM

To whom it may concern:

I invite you all to re**-read** Chapter 1 of the DEIS...Purpose and Need...in particular 1.4 (pages 13 and 14) and ask **you (in the S-DEIS) to hold yourselves accountable to your Project Goals and Objectives,** in particular the following items:

1.4 Project Goals and Objectives

3) Protect the environment
4) Preserve the quality of life in the study area and the region

Goal 1: Improve mobility

- *Provide a travel option that enhances pedestrian and bicycle activity*... Running LRT and/or both LRT and freight along the Cedar Lake Trail/Kenilworth Trails, per the DEIS, has severe negative environmental impacts ("added negative visual and noise impacts where previously there were none", taking the area from that of "sounds of birds and recreation" to that of "constant noise levels over the HUD unacceptable livability level", removing the existing developed greenery and trees with no planned mitigation). Hopefully you are aware that nearly $1m bicyclists and pedestrians use the Cedar Lake Trail/Kenilworth Trail anually...with 30 % of the bicyclists using these trails as their preferred means of transportation year round. In addition, the Cedar Lake Trail is the first Federally designated Bicycle Highway. That designation draws not only tourists from around the world, but bicyclists from other regions of the twin cities. The Kenilworth section of the Cedar Lake Trail is THE connective trail for Regional Trails to the Ground Rounds...another major tourist and suburbanite draw. Consistent with your Goal #1, address in the S-DEIS how the Cedar Lake Trail/Kenilworth Trail will not only remain as they are currently environmentally, but ENHANCED to ENSURE bicycle and pedestrian transit use and activity.

Goal 3: Protect the environment

- *Provide a travel option that protects natural resources including fish, wildlife habitat and water quality.* Per Goal #3, address in the S-DEIS a plan for mitigation to ENSURE protection of natural resources along the Cedar Lake Trail/Kenilworth Trail, the Grand Rounds, and Cedar Lake. Address guidelines which include consultation with affected neighborhoods, communities, the Park Board, and the City of Minneapolis for acceptable mitigation.

Goal 4: Preserve and protect the quality of life in the study area and the region

- *Provide a travel option that ensures fair distribution of benefits and (ensures fair distribution of) adverse effects of the project for the region, communities, and neighborhoods adjacent to the project area.*
Per the DEIS, the section of LRT between the West Lake Station and 21st Station had the most severely impacted property of the entire SWLRT line. However, as the SWLRT budget grows, the $$$ portion for Mpls is under debate and scrutiny, and even has been suggested to drop lower. Mitigation of co-location or LRT at grade for this area is unacceptable and goes completely against Goal #4. Address in the S-DEIS how you will achieve Goal #4 for the section of SWLRT between West Lake Station and 21st Station without co-location or LRT at grade.

Finally, as the DEIS quotes numerous times "connecting the Southwest Suburbs and downtown"; documents the need for "rail transit from the Southwest Suburbs to downtown" because of the declining mobility in the southwest suburbs"; expresses that the jobs are 1) downtown Mpls, 2) Golden Triangle,

3) Opus, 4) Eden Prairie Center, 5) Excelsior Grand. However, the same "connection" or "need" or "job growth areas" are NOT made in relation to Minneapolis and downtown or the Southwest Suburbs. As the SWLRT need seems to be Southwest suburbs to downtown Minneapolis, please address the obvious in the S-DEIS. Address a different LRT route other than going through Minneapolis/Cedar Lake. Address the possibility of a streetcar connecting LRT in St. Louis Park to Uptown, and then on to the Hiawatha Line.

Thank you for your considerations,

Cheryl LaRue
LRT Done RIght
Kenilworth Alliance

From: ggday@aol.com
To: Jacobson, Nani
Subject: Supplemental DEIS questions
Date: Monday, August 12, 2013 4:00:25 PM

Dear Ms. Jacobson:

As this is the last day to get in comments/questions for the supplemental DEIS I am sending you the following:

1. In 2010 MnDOT issued a "negative declaration" in response to whether a full blown EIS would be needed for the freight rail re-route to St. Louis Park meaning that they did not feel it was necessary to analyze the environmental impact because there would be nothing significant to report. Why is the re-route now considered to be a problem? What changed?

2. Previously in the DEIS process the RR said the Kenilworth Greenway did not meet safety standards for the industry. What happened to the results of those studies?

3. What safety standards were referenced by the RR that indicated it could not agree to heavy freight in Kenilworth Greenway?

4. There will clearly be significant impact if heavy freight and LRT are both allowed to go through Kenilworth Greenway:

a. Parkland will be not just disrupted but destroyed (trees removed, wildlife habitats destroyed)
b. Quality of life will be significantly downgraded (noise, air, light pollution).
c. Safety on trails and crossings will become a serious issue.
d. Traffic patterns around Dean Parkway and on Cedar Lake Parkway where there are already problems will be made chaotic.
e. Hazardous materials being carried by heavy rail through this neighborhood already pose potential danger.
f. Crossing accidents are more likely to occur with three rails carrying trains of different weight and speed.

The effect of co-location must be more thoroughly investigated in light of these factors.

5. Hennepin County purchased the Kenilworth Greenway for transit but not for heavy rail. Heavy rail was always meant to be a temporary solution. What has changed?

6. With co-location there would be times when both heavy and light rail would pass each other. When heavy rail is carrying toxic material how can assurance be made that any kind of potential accident would not be significantly dangerous to a large number of people traveling by LRT?

I look forward to seeing the answers to these questions among others included in any

supplement to the DEIS.

Georgianna Day Ludcke

From: Judy Meath
To: Jacobson, Nani
Subject: Comment on scope of supplemental DEIS
Date: Monday, August 12, 2013 8:19:32 PM

Dear Ms. Jacobson,

I recommend that the supplemental DEIS for the SWLRT answer the following questions:

1. Concerning the social and economic impact of shallow tunnel in Kenilworth corridor: Will potential future transit projects such as streetcars on the Midtown Greenway be able to connect to a shallow tunnel, where the Midtown Greenway meets the Kenilworth corridor? Transit experts tell me a shallow tunnel will create serious problems for future transit connections.

2. Please also investigate the impact of construction of a shallow tunnel on flora and fauna in the area, and on the water table.

3. Will light rail in the Kenilworth corridor create a barrier between St. Louis Park and Minneapolis?

4. Since a majority of people who work in downtown Minneapolis live in Minneapolis, and since the SWLRT is not going to serve the heavily populated Uptown neighborhoods, how will the SWLRT make economic sense?

Thank you for the opportunity to contribute my ideas to the scope of the supplemental DEIS for the SW LRT alignment.

Sincerely,

Judy

Judy L. Meath
2700 Kenilworth Place
Minneapolis, MN 55405
Home: 612-925-1771
Cell: 612-360-3445

From: Douglas Peterson
To: Haigh, Susan
Cc: MNRealtors; EldonJohn; Richard Logan; STUART CHAZIN; ahiginbotham@msn.com; Bob Bemel; michaelwilsonmpls; gail.dorfman@co.hennepin.mn.us; courtney Kiernat; Sara Gurwitch; hdevoto@hotmail.com; crannon4@gmail.com; odajos@hotmail.com; burke-john.e@gmail.com; Heid Erdrich; info@cidna.org; ltruckenbrod@gmail.com; campbelllindeke@comcast.net; jalcarroll@msn.com; appleman.michael@gmail.com; Sandeep Patel; borgessl@hotmail.com; anne_graham@caryacademy.org; clindeke@rrtlarchitects.com; Marya Morstad; Julie Darst; loudesjardins@aol.com; farra005@umn.edu; smfstan@gmail.com; larrymoran1955@gmail.com; marshajf@gmail.com; sarahkennedy63@gmail.com; mmc_1963@hotmail.com; Sara Brenner; Jennifer & Mark Labovitz; mark.labovitz@comcast.net; esthermullen@gmail.com; mickman@stolaf.edu; annikagutzke@gmail.com; cherdesign@aol.com; haleyking@gmail.com; pj.guernsey@comcast.net; Bill Lewis; dgutzke@earthlink.net; ruthjones73@gmail.com; cwreg w; docgarden@comcast.net; mtelfer@keyindicators.com; cburkefl@yahoo.com; emcconaghay@keyindicators.com; jmcommerford@hotmail.com; joel.tyler.carlson@gmail.com; graham.francors@gmail.com; Zoe & Gram Francois; Jim & Cindie Smart; Bryce Hamilton; Donna Hamilton; zookeeper@thelocalbar.com; betsyrhowe@gmail.com; kristi.granacher@gmail.com; laurel@betsyhodges.org; Jim & Cindie Smart; kreidkel@att.net; elarsson@att.net; ryan@ryanrfox.com; kbcram@yahoo.com; Nancy Crocker; cindy.marsh2588@gmail.com; bjmmurphy@msn.com; smurphy612@gmail.com; volleyballstar306@gmail.com; agreen4@comcast.net; Sally Rousse; cindacollins@comcast.net; jan.nielsen61@gmail.com; bjrasmus@comcast.net; dgporter2@comcast.net; docaloo@aol.com; bsdprg@hotmail.com; Dorothy Childers; bjwillette@hotmail.com; rsdye20@hotmail.com; jel@dpu.dk; luckylashlarue@gmail.com; meixi@hotmail.com; lorielizabeths@gmail.com; scott.harris@leonard.com; gail@mighty-fine.com; ypolydorow@gmail.com; rnoel@varde.com; lisanoel67@gmail.com; robertcorrich@motorplanet.com; rhudedg@yahoo.com; duffyfitz@mac.com; kendall@umn.edu; Lara.miklaseurs@gmail.com; doug@limonfineart.com; Dan & Barb Schmiechen; thomas.johnson@gpmlaw.com; hcrra@co.hennepin.mn.us; Kozlak, Connie; Elmer, Steven; PublicInfo; swlrt; Brimeyer, James; sen.terri.bonoff@senate.mn; rep.steve.simon@house.mn; peter.wagenius@minneapolismn.gov; Duininck, Adam; Senator Scott Dibble; rep.frank.hornstein; Munt, Jennifer; Schreiber, Lona; kevin.reich@minneapolismn.gov; diane.hofstede@minneapolismn.gov; Sandra.Colvin.Roy@ci.minneapolis.mn.us; admin@minnehahacreek.org
Subject: Southwest LRT Kenilworth Corridor
Date: Friday, August 16, 2013 2:35:06 PM

Metropolitan Council Chair Susan Haigh;

There is a serious issue that might have been swept under the rug relating to the quality of water in Lake Calhoun, Lake Harriet, Lake of the Isles, Cedar Lake and Brownie Lake resulting from the construction of LRT in the Kenilworth Corridor. There is a large section of land east of the West Lake Street bridge bordered by the corridor, West Lake Street, Chowen Ave., and Chowen Place that is owned by the Cedar Lake Shores Townhome Association (Association) that is designated as "protected wetland". There is also an adjacent section of land west of the bridge on the north side of the corridor that is also wetland. Although Chapter 4 of the DEIS extensively addressed wetlands throughout the entire proposed LRT route, it failed to address the wetland west of the bridge or the wetland owned by the Association in spite of the fact that there are signs on the Association property stating its presence.

If the Metropolitan Council elects to choose the co-location alternative or the shallow tunnel suggestion, it likely will require the taking for railroad purposes of a significant part of both wetlands. The wetlands are located within the Minnehaha Creek Watershed District and are located close to the northern shore of Lake Calhoun. As you know, various governmental organizations, which include the City of Minneapolis, the watershed district, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency and the U.S. Army Corps of Engineers,* all have an interest in protecting wetlands.

The City of Minneapolis is extremely concerned about how the construction and operation of the LRT project might affect the quality of water in the lakes. Partial destruction of the wetlands could adversely affect the filtration of surface ground water pollution which in turn would adversely affect the water quality of the lakes. It would be impossible to mitigate the destruction of the wetlands because there is no

other land near the chain of lakes that is available to create a wetland or holding pond for mitigation.

Any argument that it is premature to be concerned about the wetland permitting process just won't hold water. Ever since the Metropolitan Council decided to seriously entertain ignoring the railroad relocation agreement in the DEIS, the process has become poisoned. Issues that had been resolved in the DEIS have been reopened; each time, the City of Minneapolis and its residents living near the corridor have been further disenfranchised by the Council's actions. Delay in consideration of environmental pollution caused by the project will, tragically, result in it being ignored until it is too late and could be further grounds for a law suit.

Consequences of the destruction of the wetlands should be considered now, before any further action is taken by the Metropolitan Council or any of its committees. Destruction of the wetlands could, of course, be avoided by the construction of a deep tunnel in the Kenilworth Corridor.

* "Draft Guidance on Identifying Waters Protected by the Clean Water Act"
http://water.epa.gov/lawsregs/guidance/wetlands/upload/wous_guidance_4-2011.pdf

Douglas J. Peterson
3315 Saint Paul Ave.
Minneapolis, MN 55416

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From: benjamin@marth.benkay.net
To: swlrt
Subject: kennilworth trail bottleneck
Date: Sunday, August 18, 2013 3:21:28 PM

I was reading about the planned Southwest Light Rail extension in the news and learned that there is some disagreement about part of the alignment along the Kenilworth corridor. It seems that there is a "bottleneck" along this corridor where addition of the light rail line has the potential to disrupt an existing freight line and a pedestrian/bicycle trail. The proposed workarounds have been to either reroute the freight traffic or tunnel the light rail, both very expensive proposals! (Apparently changing the SWLRT alignment isn't an option.) Has anyone considered elevating the pedestrian/bicycle trail along the bottleneck to make room for the light rail? It seems this would be way less expensive than the alternatives, not to mention the bonus of a nicer view for trail users!

From: Miles Lindberg
To: Jacobson, Nani
Cc: Richard Weiblen (rweiblen@libertyproperty.com)
Subject: Southwest Light Rail Transit Project SDEIS
Date: Monday, August 05, 2013 3:42:44 PM

Ms Jacobson:

I have been asked to follow up on the preparation of the SDEIS as announced in the July 22, 2013 copy of the EQB Monitor. I am working with Liberty Property Trust, the owner of several land parcels adjacent to, and affected by the alignments of the LRT through the City of Eden Prairie. It is my understanding that the notice was to allow for input into the scope of the SDEIS, which I believe has been previously communicated through comments on the original DEIS and in subsequent meetings with Liberty Property Trust representatives. What is not included in the notice, and is of critical interest to Liberty Property Trust is the timing for the SDEIS preparation and the expected publication date and public comment period.

If you could provide a schedule for these events, even if it is subject to future changes based on how the study progresses, it would be very helpful to us.

Thanks in advance,

Miles Lindberg, ASLA
Senior Project Planner

Westwood Professional Services
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From:	Safety In the Park
To:	Jacobson, Nani
Cc:	Thom Miller; Ginis, Sophia
Subject:	SDEIS Scoping comment
Date:	Monday, August 05, 2013 8:59:53 PM
Attachments:	SitP SDEIS - Scoping comment.docx

Hello Nani,

Please see the attached letter. It is the Safety in the Park comment to the SDEIS scoping.

Thank you,

Jami LaPray

August 06, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- ***Lack of Public Process:*** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the ***scope*** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- Safety: The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot

high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- Livability: An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- Community Cohesion: This planned elevated structure will create a very permanent physical division in our community.
- Mitigation: No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

From: Bill Weber
To: Jacobson, Nani
Subject: Comments Regarding the Light Rail Project - Southwest Corridor
Date: Tuesday, August 06, 2013 8:26:22 AM

Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project:

I am the President of SPS Companies, Inc. located at 6363 Highway 7 in St. Louis Park, MN. At least a portion of our property would be taken if the freight re-route (Brunswick Central and Brunswick West) is chosen so SPS does have a stake in the outcome in the SWLRT freight re-reroute issue. The light rail has been proposed for a number of years and was assumed to follow the existing freight train corridor. However, the freight train re-route plans were introduced in May of 2013 to move the freight trains off the light rail route leaving little time to consider the issue. The re-routes, while I understand were required to be engineered and considered, cannot be a real possibility.

To move large freight trains through new areas, areas that are currently residential and light industrial, would significantly alter the City of St. Louis Park especially with large berms located throughout the City. The freight trains run next to our building now and from personal experience I can tell you they do create significant noise and vibrations. From a commercial standpoint, this is okay, but from a residential standpoint I cannot imagine what the thought process would be to even consider this alternative. A similar situation is the airport. How many years has the Metropolitan Airport Commission dealt with the noise issues and soundproofing required in homes? My guess is you would be in a similar situation in St. Louis Park if a re-route option is chosen. I have not even addressed the safety issues, but others will deal with that far better than me.

What I am asking is to take the re-route options off the table. The Star Tribune editorial a few days ago even suggested that the SWLRT go back and consider other routes rather than have St. Louis Park and Minneapolis compete as adversaries.

Thank you for your consideration,

Bill Weber

Thomas J. Radio
Attorney DIRECT 612.349.5680
tradio@bestlaw.com

RECEIVED
AUG 12 2013
BY: SDO-DMG

BEST & FLANAGAN LLP
225 South Sixth Street, Suite 4000 Minneapolis, Minnesota 55402
TEL 612.339.7121 FAX 612.339.5897 BESTLAW.COM

BEST & FLANAGAN

August 9, 2013

VIA EMAIL AND U.S. MAIL

Ms. Nani Jacobson
Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426
nani.jacobsonW@metrotransit.org

Re: Comments on Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project

Dear Ms. Jacobson:

Please find for inclusion in the official record the comments of Eaton Corporation-Hydraulics Group on issues raised in the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project. These comments are set forth in the attached letter from Mr. William VanArsdale, dated July 22, 2013.

Thank you.

Sincerely,

Thomas J. Radio

Thomas J. Radio
Attorney

TJR/cmc
Enclosure

cc:

020405/312001/1682506_1

EATON

Hydraulics Group

14615 Lone Oak Road
Eden Prairie, MN 55344
tel: 952-937-9800

July 22, 2013

VIA U.S. Mail and email

James Alexander
Project Manager
Southwest Project Office
Park Place West Building, Suite 500
6465 Wayzata Boulevard
St. Louis Park, MN 55426

Re: Southwest LRT: Siting of OMF

Dear Mr. Alexander:

Eaton Corporation-Hydraulics Group ("Eaton") wishes to state its deep and abiding concern over the locating of the Operations and Maintenance Facility ("OMF") near the Eaton campus in Eden Prairie. The siting of the OMF on the current Eden Prairie Public Works site would have a devastating effect on the Eaton's operations and property, which would cost millions of dollars to either correct or compensate Eaton.

In Eaton's written comments on the Draft EIS and repeated submitted comments at the various public forums, Eaton's position has been clear and consistent:

- Eaton supports the efforts to construct the Southwest LRT.
- Eaton will work with the City of Eden Prairie and the Southwest LRT planning agency on the siting of the Mitchell Road/Technology Drive station and the parking facility.
- Eaton is concerned that concentrating the OMF, the Mitchell Road/Technology Drive station, and the parking facility will create a situation that will severely damage the value and operational viability of the Eaton campus.

Eaton relies upon and incorporates its prior comments submitted in response to the Draft EIS. Those comments were based upon and supported by the independent analysis of a property valuation firm that concluded that locating the station and associated parking facility on Eaton's northern border will significantly impact Eaton, resulting in the loss of the manufacturing building and the loss of land for future expansion. The valuation consultant also noted the adverse impact of the resulting traffic congestion. The consultant concluded that the decision to locate

the station and parking facility will result in a significant cost of relocation and the potential loss of 650 jobs. Those conclusions are only strengthened and further supported if the OMF facility is located on the Eden Prairie Public Works site.

The OMF would exacerbate an already complicated and adverse impact on the Eaton campus. As Eaton representatives have explained at public forums and the recent tour of its facility, locating the OMF adjacent to the Eaton campus will create a "perfect storm" of impacts that will severely diminish the value and efficiency of the Eaton operation. The chief impacts are as follows:

- NOISE AND VIBRATION—Eaton maintains substantial and sensitive testing facilities on its site that will be adversely affected by noise and vibration generated by the OMF and its operations. These testing facilities are critical to Eaton's operations. The loss of them places in jeopardy the viability of the entire site.

- SECURITY—The OMF could present a direct threat to protection of Eaton's property and personnel.

- SAFETY—If the station is located on the northeast portion of Eaton's property, the connecting tracks between the station and the OMF will have to either run through the heart of the Eaton campus or require the acquisition of one of its testing facilities, with a resulting threat to the safety of Eaton employees, guests, consultants, and customers as they attempt to negotiate safe passage between Eaton's buildings and the tracks.

- LOSS OF EXPANSION POTENTIAL—In a similar fashion, the combined impact of the OMF, the Mitchell Road/Technology station, and the parking facility will likely result in the direct taking by acquisition or condemnation of part of Eaton's property, thereby limiting Eaton's ability to expand its operations on this site.

- COST—The cost to the public to address, correct, or compensate Eaton for the impacts will be considerable and certainly in the tens of millions of dollars.

In light of these factors and associated costs, Eaton urges the Southwest LRT and all associated decision-makers to weigh carefully the cost and adverse impact of locating the OMF on the Eden Prairie Public Works site, and, in light of those costs, to select an alternative site.

Thank you for your consideration of these comments.

Sincerely,

William VanArsdale
Group President
Hydraulics, Filtration, and Golf Grip
Eaton Corporation

August 10, 2013

RECEIVED
AUG 12 2013
BY: SPO-DMG

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

This letter constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. As required, this comment is post-marked before the published comment deadline of August 12, 2013.

This comment comes from the Sorensen Neighborhood Association Steering Committee. We represent the 763 households and 51 businesses of the neighborhood that would be most dramatically impacted by the relocation proposals.

We have the following concerns regarding the proposed relocation plans (named by the SWLRT Project office as Brunswick West and Brunswick Central):

The number one concern of this neighborhood is safety. Derailments do happen - we have seen multiple examples in the news over the past year. Running long freight trains hauling ethanol, coal and agricultural products at 25mph on an up to 20-foot high berm/bridge through our neighborhood is one thing, but to have it run next to and/or through the Park Spanish Immersion Elementary school playground, within 100 feet of that school building, which also houses an Early Childhood Family Education program and a pre-school, and within 500 feet of our High School is just asking for something to go wrong. This should be reason enough to remove the re-route option from consideration.

An elevated structure of the sort planned by the SPO, in combination with grade changes and the nature of the freight being hauled, will create noise, air and visual pollution that will have an impact on not only those people who live and work in this neighborhood, but especially on the schools it passes.

This planned elevated berm/bridge structure will create a very permanent physical and visual barrier within our neighborhood and between us and the surrounding neighborhoods.

No mitigation plans have been shared with the public to address the above concerns. In fact, at the May 28 unveiling of the new proposals, it was stated that there would be no mitigation. At the very least, there needs to be mitigation to protect the children and maintain an environment conducive to learning.

For these reasons, we ask that the scope of the Supplemental Draft Environmental Impact Statement be changed to include the following:

- A detailed analysis of the full environmental impacts to all buildings and people using the same geographic scope as the path that was studied in the original DEIS
- The analysis should include, but not be limited to, the following:
    - vibration studies
    - noise studies
    - air pollution studies
    - derailment studies
    - visual impact studies
    - the mitigations required to thoroughly address the results of each of the studies

We thank you for your consideration.

The Sorensen Neighborhood Association Steering Committee
Lois Zander, Meghan Phimister, Mary Beth Gaines, Bette Garske, Daniel Kriete, Jeff Persigehl

Cc: Marisol Simon
Gov. Mark Dayton

From:	Kulsrud, Geri M.
To:	Jacobson, Nani
Cc:	"mark.furhmann@metrotransit.org"; Haigh, Susan; "roxanne.smith@metc.state.mn.us"; Schreiber, Lona; Munt, Jennifer; Vaneyll, Gary; Elkins, Steve; "mes.brimeyer@metc.state.mn.us"; Cunningham, Gary; Duininck, Adam; Reynoso, Edward; Doan, John; Rummel, Sandy; Melander, Harry; Kramer, Richard; Commers, Jon; Chavez, Steven; Wulff, Wendy; "tschneider@eminnetonka.com"; "dallendorf@eminnetonka.com"; "pacomb@eminnetonka.com"; "bellingson@eminnetonka.com"; "twagner@eminnetonka.com"; "bwiersum@eminnetonka.com"; "jhiller@eminnetonka.com"; "edurbin@eminnetonka.com"
Subject:	Comments on the Supplemental Draft Environmental Impact Statement for the Southwest LRT Line
Date:	Monday, August 12, 2013 4:59:30 PM
Attachments:	Document.pdf

Good afternoon,

I am emailing the attached at the request of Bill Griffith on behalf of SFI Ltd. Partnership 54 the owner of Claremont Apartments located at 10745 Smetana Road, in Minnetonka MN.

Thank you.

Geri Kulsrud
Legal Secretary
p | 952-896-3285
f | 952-896-3333
www.larkinhoffman.com Larkin Hoffman Attorneys

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Larkin Hoffman
ATTORNEYS

Larkin Hoffman Daly & Lindgren Ltd.

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Minneapolis, Minnesota 55431-1194

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August 12, 2013

Ms. Nani Jacobson
Project Manager
Southwest Light Rail Transit Project Office
St. Louis Park, Minnesota 55426

Via Email and U.S. Mail

Re: Comments on the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest LRT Line ("SW LRT") on behalf of SFI Ltd. Partnership 54 ("Owner") of the Claremont Apartments located 10745 Smetana Road, Minnetonka, Minnesota ("Claremont Apartments") - Failure to Consider Impact to Section 4(f) Property
Our File # 36,292-00

Dear Ms. Jacobson:

This letter supplements our comment letter, dated December 28, 2012, on behalf of SFI Partnership 54, the owner of the Claremont Apartments. In our meeting with project management staff, including Mark Fuhrmann, Metro Transit, we expressed strong concerns that Segment 3 of the SW LRT-LPA severely and negatively impacts the Claremont Apartments and the public recreational trail (the "Public Trail"). The Public Trail travels through Opus Hill and is part of a citywide recreational trail system maintained and operated by the City of Minnetonka. (Please see the graphic depiction of the alternative under discussion by the Southwest Corridor Management Committee, identified as "TI #7 Opus Hill".)

It is important to note that the location of either the LPA or the proposed alternative will remove at least 50 percent of the existing vegetation through a densely wooded conservation area. In addition, the retaining wall design places a long wall a few feet from the trains causing noise from train operations to reflect back against the Public Trail and the Claremont Apartments, while removing the mitigating effect of the existing vegetation. This creates a significant negative environmental impact on both the Public Trail and the Claremont Apartments.

Further, Chapter 7 of the DEIS addresses the impact of the SW LRT-LPA on Section 4(f) property. (See 23 CFR Part 774.) The Public Trail is located in Segment 3 of the LPA, but the only potentially impacted Section 4(f) property identified by the DEIS in Segment 3 is 0.227 acres of land in the Nine Mile Creek Conservation Area. We believe the Public Trail must also be classified as Section 4(f) property. As a result, we ask if the project addressed whether the Public Trail was considered for Section 4(f) purposes? If so, what were the findings and results? If the Public Trail was not considered for Section 4(f) purposes, why was it excluded from Section 4(f) consideration?

If a Section 4(f) analysis has not been conducted for the Public Trail, then at a minimum, we expect a written determination of the applicability of Section 4(f) to the Public Trail before a final decision is made as to the alignment of LRT through the Opus Hill adjacent to the Claremont Apartments.

The Public Trail is located within a permanent public easement in favor of the City of Minnetonka for use as a public recreational trail within a large city wide trail system. In sum, the Public Trail is publicly owned through permanent easements, and it will be directly affected by the LPA or the alternatives under consideration. Therefore, a determination of applicability and Section 4(f) analysis must be performed for the Public Trail in the Opus Hill area.

Please address this analysis as part of the Supplemental DEIS and the FEIS and advise us of any actions or analysis regarding Section 4(f) that may have been conducted through the course of the project for the Opus Hill area and specifically the Public Trail. If no actions or analysis have been conducted then we fully expect a Section 4(f) determination of applicability to be initiated and a subsequent Section 4(f) analysis to be completed. The Southwest LRT project cannot go forward until its proposers fully satisfy the requirements of NEPA and applicable federal law.

Sincerely,

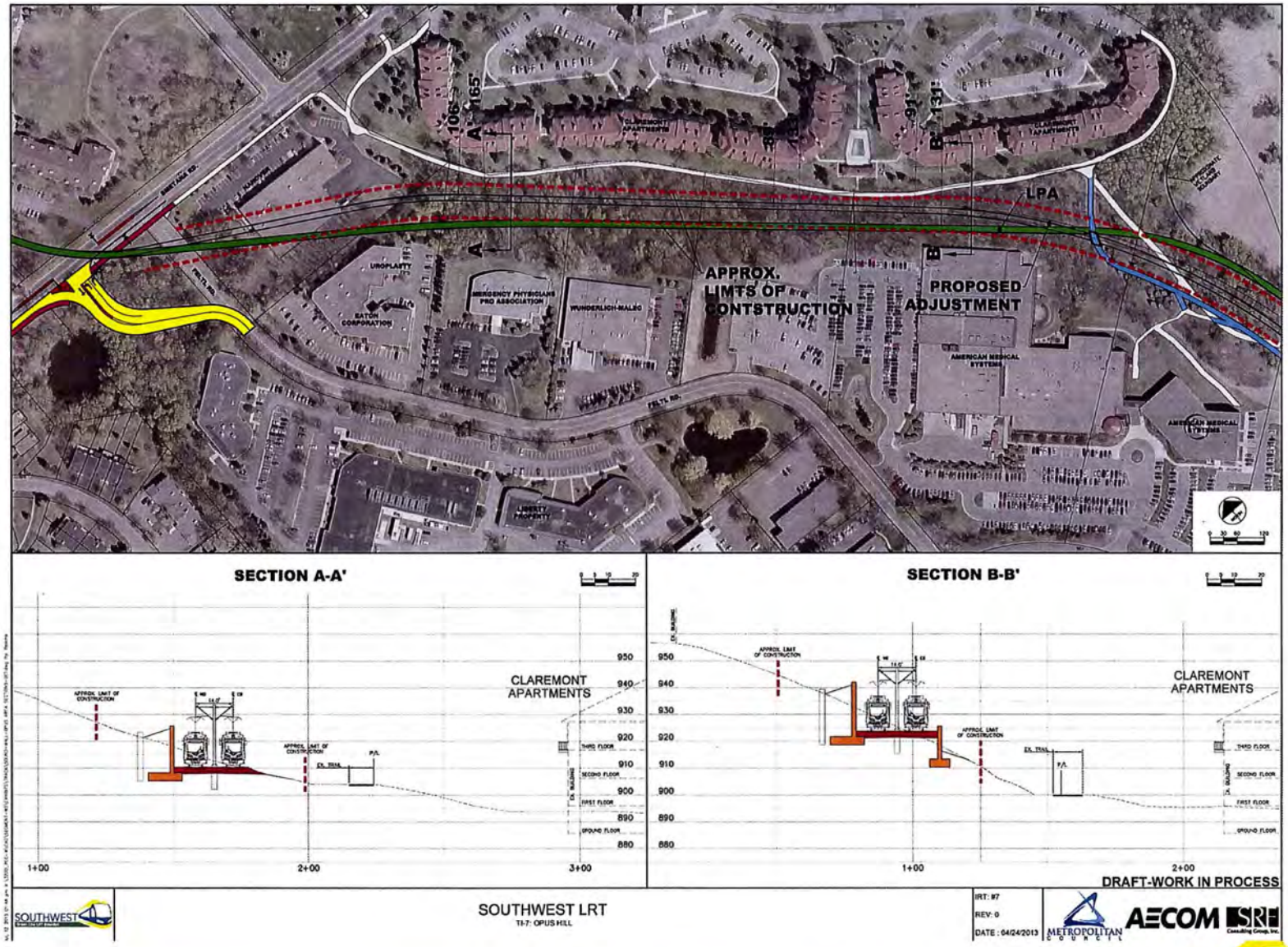
William C. Griffith, for
Larkin Hoffman Daly & Lindgren Ltd.

Direct Dial: 952-896-3290
Direct Fax: 952-842-1729
Email: wgriffith@larkinhoffman.com

cc: Mark Fuhrmann, Metro Transit
Members of the Metropolitan Council (via email with enclosures)
Members of the Minnetonka City Council (via email with enclosures)
Elise Durbin, Community Development Supervisor, City of Minnetonka (via email with enclosures)

1460396.1

TI #7: Opus Hill



Larkin Hoffman
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RECEIVED
AUG 14 2013
BY: JPO-PMO

August 12, 2013

Ms. Nani Jacobson
Project Manager
Southwest Light Rail Transit Project Office
St. Louis Park, Minnesota 55426

Via Email and U.S. Mail

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Please address this analysis as part of the Supplemental DEIS and the FEIS and advise us of any actions or analysis regarding Section 4(f) that may have been conducted through the course of the project for the Opus Hill area and specifically the Public Trail. If no actions or analysis have been conducted then we fully expect a Section 4(f) determination of applicability to be initiated and a subsequent Section 4(f) analysis to be completed. The Southwest LRT project cannot go forward until its proposers fully satisfy the requirements of NEPA and applicable federal law.

Sincerely,

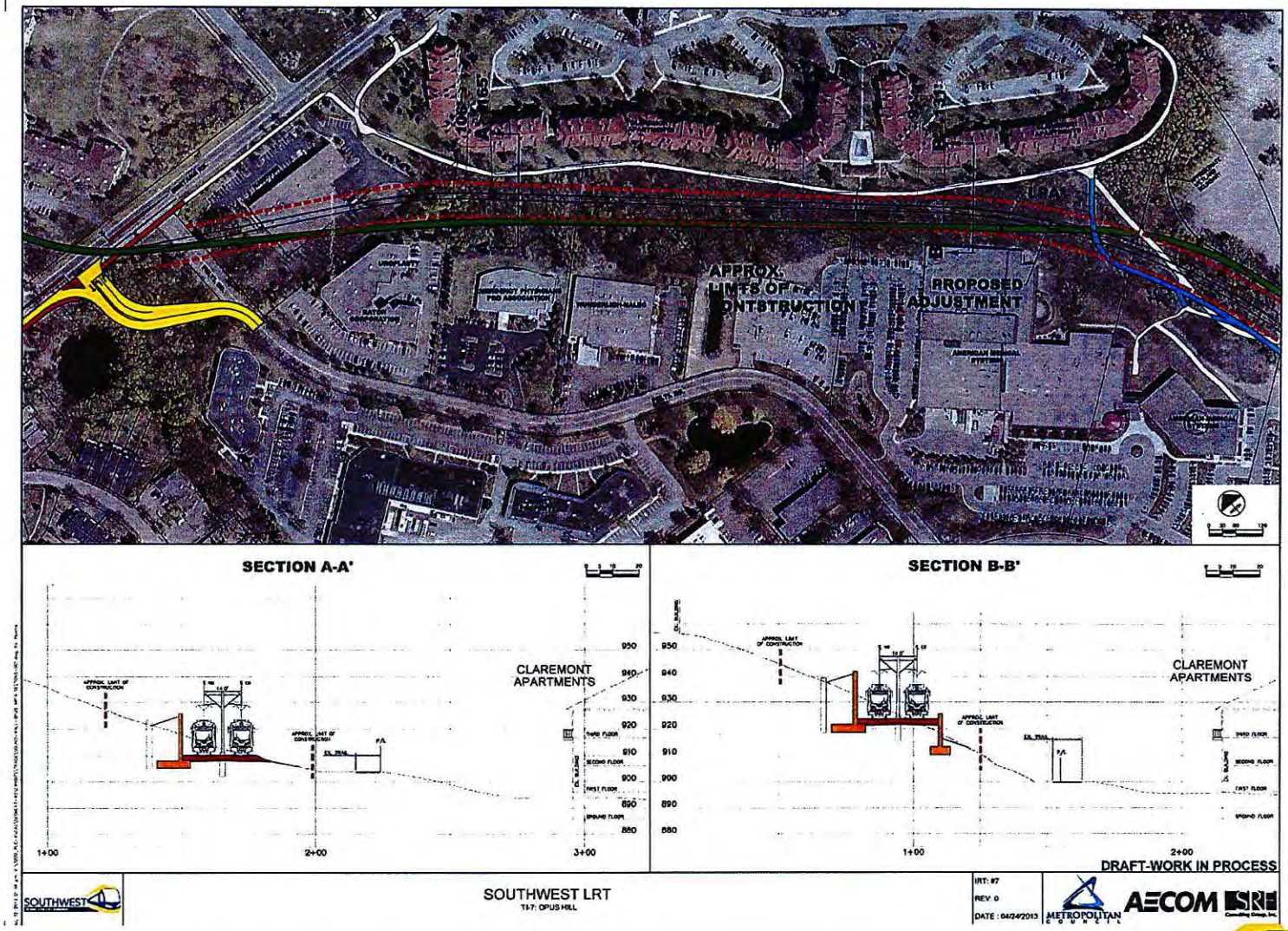
William C. Griffith, for
Larkin Hoffman Daly & Lindgren Ltd.

Direct Dial: 952-896-3290
Direct Fax: 952-842-1729
Email: wgriffith@larkinhoffman.com

cc: Mark Fuhrmann, Metro Transit
Members of the Metropolitan Council (via email with enclosures)
Members of the Minnetonka City Council (via email with enclosures)
Elise Durbin, Community Development Supervisor, City of Minnetonka (via email with enclosures)

1460396.1

TI #7: Opus Hill



From:	Barb Thoman
To:	Jacobson, Nani
Subject:	Comments on SDEIS
Date:	Monday, August 12, 2013 9:26:30 PM
Attachments:	SW LRT SDEIS 2013 TLC comments.pdf

Hello Ms. Jacobson:

TLC's comments are attached. Would you please confirm that you received my e-mail?

Thank you.
Barb Thoman

Barb Thoman, Executive Director
Transit for Livable Communities | Bike Walk Twin Cities
2356 University Avenue West, Suite 403
Saint Paul, MN 55114
Desk: 651-789-1405 | Cell: 651-500-5958
barbt@tlcminnesota.org
www.tlcminnesota.org | www.bikewalktwincities.org

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August 12, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Via e-mail: Nani.jacobson@metrotransit.org

Re: Comments on Scope of Southwest Light Rail SDEIS

Dear Ms. Jacobson:

Transit for Livable Communities strongly supports the implementation of Southwest Light Rail Transit (SWLRT) as a key part of a growing transit system in the Twin Cities region. This corridor already has solid bus ridership and a strong employment base. New light rail will provide attractive opportunities for future transit-oriented development and for the establishment and expansion of transit hubs along the corridor. When it opens, SWLRT is projected to carry 23,000 riders daily, traveling to work, school, and other destinations. [Ridership estimate is from July 2011 for a 2017 opening.]

Eden Prairie Alignment and Stations

TLC's interest is in ensuring that the routing of SWLRT is reasonably direct from a rider's point of view and the stations are spaced far enough apart so that travel time will be attractive and convenient. We hope that the Twin Cities region can avoid the outcome of light rail to Hunt Valley in Baltimore and light rail to Golden in Denver. In these cases, alignments and station spacing resulted in long ride times that are burdensome for transit riders and not an attractive alternative to people who drive.

Location of Operations and Maintenance Facility

The evaluation of the site location for an Operations and Maintenance Facility (OMF) should include a full exploration of the pros and cons of the Hopkins and Eden Prairie locations (including payment in lieu of property taxes if necessary) to secure the best location for the facility from an operations standpoint and from the perspective of access to potential future OMF employees.

Potential Increases in Cost Due to Freight Rail Relocation or Co-location

TLC is mindful of the need for adequate revenue to provide for the build-out of the Metropolitan Council's Transit System Plan of expanded bus and rail. In addition we seek a full build out of safe and convenient connecting networks for bicycling and walking. For that reason, we urge project planners to keep total capital costs for the SWLRT project within a budget target (that assumes new future state/local funding) that will not delay the implementation of the Bottineau Corridor, an east metro rail corridor, the proposed arterial rapid bus system, and the expansion of regular and express bus service.

Please consider identification of a Minimum Operating Segment within the DEIS tied to the original budget. Upgrades were made to the Hiawatha Line after project opening as funds became available (e.g., for structured parking, for additional stations, for longer station platforms). An additional station was added to the Northstar line after the line opened.

In addition to the study of relocation and co-location of freight rail, TLC recommends that the SDEIS include study of the feasibility of a single track LRT segment in the Kenilworth Corridor (West Lake Station to Penn Avenue Station). What would be the operational issues, including travel time impacts, of this option? The new west side light rail from Denver to Golden in Colorado includes several miles of single track.

Other issues

We ask that bicycle and pedestrian connections be carefully assessed including: 1) design of proposed LRT and freight rail alignments; 2) stations and park-and-ride lots; and 3) OMF site. Station locations along the line must allow for safe and convenient access by walking and bicycling and for people using a mobility assistive device.

We believe that the cost, feasibility, and impacts of elevating the bicycle/pedestrian trail in the Kenilworth Corridor should be examined. Based on a count made in September 2009, the trail carried approximately 2,300 daily bicyclists/pedestrians (More recent data is not available, but is likely substantially higher). An elevated trail could be landscaped, aesthetically pleasing, and in keeping with the corridors period housing and natural environment.

Land aquision at stations for development and redevelopment should be identified in the SDEIS, in addition to the land needed for the purposes of access by trains, buses, cars, bicycles and pedestrians. This would be consistent with the Metropolitan Council TOD Strategic Action Plan.

Sincerely,

Barb Thoman
Executive Director

From:	Margret Forney
To:	Jacobson, Nani
Subject:	Supplemental Draft Environmental Impact Statement Comments
Date:	Thursday, August 15, 2013 9:22:47 AM

NANI -

I just realized the due date was the 12th and not the 15th. I hope these comments from West Calhoun Neighborhood Council and The Edge Business Association will be taken into consideration.

MEG FORNEY
C:612-926-7707/W:612-924-4343/F:612-920-4706
www.megforney.com
https://www.facebook.com/meg.forney
Realtor, Coldwell Banker Burnet
Minneapolis Lakes Office

Think green. Please consider the environment before you print this email.

Dear Ms. Jacobson

Following the meetings and open houses of the past few weeks, West Calhoun Neighborhood Council (WCNC) feels compelled to make some points regarding the options for SWLRT that have been presented.

While WCNC is eager to welcome the SWLRT West Lake Street Station, we are concerned that the Project Office understand the careful planning that will be required to keep traffic flowing--pedestrian, auto, bus, bicycle--to, from and around the station. Without adding a bus lane on the Lake St. bridge, or taking the bus stops off the bridge entirely, traffic congestion will surely increase to a gridlock level. The current plan shows pick-up and drop off in the traffic lane.

WCNC does not support any co-location of freight rail. And we do not believe either tunnel plan is the solution. It is clear to us that freight rail has to be relocated. Given the high cost of both tunnel options--and the fact that the freight rail route was always considered to be temporary--WCNC strongly encourages the Project Office to seek a better route than the one through the middle of St. Louis Park.

WCNC does not want to derail federal support for this project; however, the current plans are unacceptable to both South Minneapolis and St. Louis Park residents who would be affected. We urge the Met Council to seek some fresh alternatives to the plans as they have been presented, and to do it soon. WCNC is also concerned that the controversy and contentious debate will sink what is truly an exciting project that will enliven cities along the route and serve the residents and businesses of all the communities involved.

We thank you for all your hard work, but please don't consider the planning finished yet.

West Calhoun Neighborhood Council and The Edge Business Association for West Calhoun
August 15, 2013

From:	Darby, Valincia
To:	Jacobson, Nani
Cc:	Lindy Nelson
Subject:	Southwest Light Rail Transit Extension
Date:	Monday, August 12, 2013 9:47:02 AM
Attachments:	er 13-0513.pdf

Good Morning,

U.S. Department of the Interior correspondence on the subject project is attached. If there are questions please contact this office at (215) 597-5378.

Regards,

Valincia Darby

--

Valincia Darby

Regional Environmental Protection Assistant

Department of the Interior, OEPC

200 Chestnut Street, Rm. 244

Philadelphia, PA 19106

Phone: (215) 597-5378 Fax: (215) 597-9845

Valincia_Darby@ios.doi.gov

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

August 12, 2013

9043.1
ER 13/0513

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:

The U. S. Department of the Interior (Department) has no comment on Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly referred to as the Southwest Transitway) located in Hennepin County, Minnesota.

Thank you for the opportunity to comment.

Sincerely,

Lindy Nelson
Regional Environmental Officer

From:	Gail Dorfman
To:	Jacobson, Nani
Subject:	Thank you for the opportunity to comment on the scope of the SDEIS.docx
Date:	Monday, August 12, 2013 4:58:59 PM
Attachments:	Thank you for the opportunity to comment on the scope of the SDEIS.docx

---

Hi Nani,

Here is the final version. I don't know why two versions were sent through before.

Please find attached a comment I'm submitting to the scope of the SDEIS. Thank you.

Gail Dorfman
Hennepin County Commissioner
District 3

Disclaimer: Information in this message or an attachment may be government data and thereby subject to the Minnesota Government Data Practices Act, Minnesota Statutes, Chapter 13, may be subject to attorney-client or work product privilege, may be confidential, privileged, proprietary, or otherwise protected, and the unauthorized review, copying, retransmission, or other use or disclosure of the information is strictly prohibited. If you are not the intended recipient of this message, please immediately notify the sender of the transmission error and then promptly delete this message from your computer system.

Thank you for the opportunity to comment on the defined scope of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit (LRT) Extension project.

The Southwest LRT Project is a critical link in the development of a comprehensive transit system for our Twin Cities region. More than a decade of planning and analysis went into studying more than 30 LRT alignments and building the community consensus and technical basis to support the approval of the Locally Preferred Alignment (LPA) by the Cities, County and Metropolitan Council in 2010.

As the County Commissioner representing the two cities impacted by both the LRT and freight alignments, and as the Chair of the Southwest Policy Advisory Committee that managed the Alternatives Analysis process and LPA recommendation, I am pleased to see that the Southwest Project Office, through the SDEIS, will thoroughly evaluate the environmental impacts associated with proposed adjustments to the LPA and to the freight alignment options. It is important that the public fully understands the environmental impacts and costs of all reasonable adjustments to the LPA and freight alternatives.

I ask that the scope of the SDEIS includes a thorough assessment of the following:

- For the Minneapolis Segment, all environmental impacts associated with the shallow and deep tunnel options and co-location of the freight should be identified, analyzed and shared with the public. Methods to mitigate those impacts and the costs of mitigation should be defined and evaluated. The impacts on economic development, affordable housing and community connections should also be identified, analyzed and shared with the public.

- For the St. Louis Park Segment, all environmental impacts associated with the Brunswick Central freight rail relocation option should be identified, analyzed and shared with the public. Methods to mitigate those impacts and the costs of mitigation should be defined and evaluated. The impacts of freight co-location on economic development, affordable housing and community connections at the Wooddale and Beltline Stations should also be identified, analyzed and shared with the public.

- For the St. Louis Park Segment, an analysis of a modified MN&S freight relocation alternative should be evaluated – one that would moderate grade increases and curves combined with property acquisition to widen the berm and the MN&S rail bed to address the safety, noise and vibration concerns expressed by TC&W, the City of St. Louis Park and members of the St. Louis Park community. This expanded scope and additional evaluation need not extend the time needed for SDEIS analysis as it calls for refining alternatives previously studied.

From:	Janet Jeremiah
To:	Jacobson, Nani
Cc:	Robert Ellis; David Lindahl; Rick Getschow
Subject:	SDEIS Scope Comments
Date:	Monday, August 12, 2013 4:22:42 PM
Attachments:	SDEIS Comments EP 2013-08-12 signed.pdf

Hi Nani – Attached are Eden Prairie's comments on the SDEIS scope for SW LRT. Thank you! – Janet

Janet Jeremiah, AICP
Community Development Director
City of Eden Prairie
952-949-8529
jjeremiah@edenprairie.org

EDEN PRAIRIE
LIVE • WORK • DREAM

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August 12, 2013

Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

SUBJECT: SWLRT SDEIS Comments

Ms. Jacobson:

The City of Eden Prairie appreciates the opportunity to provide input on the SDEIS and respectfully submit the following comments:

1) The Eden Prairie LRT alignment contemplates a station with a large Park and Ride facility west of Mitchell Road. The scope of the SDEIS analysis should include a station with a Park and Ride facility located on the northwest corner of the City Center property. The scope should review impacts and potential mitigation steps needed to address any potential degradation to emergency service response times of Hennepin County Ambulance, Eden Prairie Police and Eden Prairie Fire. Mitigation of unacceptable traffic impacts caused by an at-grade rail crossing at Mitchell Road should also be reviewed. If acceptable mitigation of Mitchell Road impacts cannot be accomplished, sites east of Mitchell Road and west of SW Station should be reviewed as alternate sites for a westernmost station with a Park and Ride facility.
2) The Eden Prairie Maintenance Facility property is a potential site for the SWLRT Operations and Maintenance Facility. If that location is selected as the preferred alternative, then the scope of the detailed analysis should further explore the impacts on the city's ability to provide reliable, timely and economical essential city services should a centralized location in Eden Prairie not be available for relocation.
3) The Town Center station alternatives analysis (including the modified LPA, Comp Plan, and Singletree alignments) should include analysis of the need for a new north-south roadway and/or pedestrian/bicycle connections between Singletree Lane and Technology Drive. A roadway connection would improve vehicular access during and after construction, while pedestrian/bicycle connections would serve transit dependent riders in the area and help reduce the need for others to drive to the station. The analysis should also include alternatives for providing park and ride facilities for each station alternative.

Thank you for your consideration.

Sincerely,

Janet Jeremiah, Community Development Director
City of Eden Prairie

Robert Ellis, Public Works Director
City of Eden Prairie

Minneapolis
City of Lakes

Department of Public Works
Steven A. Kotke, P.E.
City Engineer
Director

350 South 5th Street - Room 203
Minneapolis MN 55415

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Community Planning & Economic Development

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AUG 15 2013
BY: SDO

August 12, 2013

Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:

The City of Minneapolis appreciates the opportunity to comment on the scope of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project (formerly referred to as the Southwest Transitway). As indicated in the Federal Register notice, "the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e. Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS."

At the time of this writing, our understanding from the Southwest LRT Project Office is that the Metropolitan Council is carrying forward three options for freight rail alignments, all of which differ substantially from the alternatives considered in the October 2012 Draft Environmental Impact Statement. Two of the alignments involve LRT tunnels through the Kenilworth corridor in Minneapolis, with freight rail remaining in the corridor.

When documenting the environmental effects of the tunnel options in the SDEIS, the City of Minneapolis requests that the Metropolitan Council and the Federal Transit Administration include consideration of the following:

- The effect that a tunnel may have on lake levels in Cedar Lake and Lake of the Isles and the effect that a tunnel may have on groundwater movement between the lakes.
- The effect that tunnel dewatering may have on the aquatic environment of the lakes, including but not limited to the water temperature in Cedar Lake and Lake of the Isles, any effect on the lakes' current freeze-thaw cycle, and any effects on aquatic ecology.
- An analysis of the capacity of the sanitary and storm sewer systems and their ability to handle the additional load from tunnel dewatering.
- Documentation of the loss of vegetation in the Kenilworth corridor that results from each option, with an analysis of the degree to which vegetation would be re-established following construction.
- Documentation of the effects that each option would have on full implementation of regional transitways as shown in the Regional 2030 Transportation Policy Plan, including but not limited to the ridership effects of building the West Lake Street station underground, the ridership effects of eliminating the 21st Street

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City Information and Services

station, and the connection between Southwest LRT and the Midtown Corridor.

- Documentation of noise and vibration for all elements of the options that differ from the locally-preferred alternative, including the effect of freight and LRT noise resulting from the construction of crash walls, retaining walls, and other infrastructure that was not previously analyzed.
- Documentation of the environmental effects of any proposed changes to the layout of freight tracks in the Kenilworth corridor.

While it is important to understand and document the above environmental effects, there are likely other potential effects that have not been anticipated at this time but should be considered in your analysis and documentation. As you know, these alternatives are relatively new in the history of Southwest Transitway project development, and it is incumbent on the Metropolitan Council and the FTA to develop a comprehensive scope for the SDEIS.

Thank you for the opportunity to submit suggestions for scoping.

Sincerely,

Steven A. Kotke
City Engineer - Director of Public Works

Jeremy Hanson-Willis
Director of Community Planning and Economic Development

CC: Mayor Rybak
Council Member Colvin Roy, Chair Transportation & Public Works Committee
Jenifer Hager
Jack Byers

From:	Pflaum, Donald C.
To:	Jacobson, Nani
Cc:	Rybak, R.T.; Colvin Roy, Sandra K.; Kotke, Steven A.; Hanson Willis, Jeremy J.; Hager, Jenifer A; Byers, Jack P.
Subject:	SW Corridor: SDEIS Scope
Date:	Monday, August 12, 2013 2:35:26 PM
Attachments:	Minneapolis SDEIS NOI Comments.pdf

Nani,

Please see the attached letter, which includes the City of Minneapolis Comments on the SW Corridor SDEIS Notice of Intent. You will receive a copy of the signed letter in the mail.

Thank you.

Donald Pflaum, P.E., PTOE
City of Minneapolis Public Works
309 2nd Avenue South – Room 300
Minneapolis, MN 55401-2268
612-673-2129

Minneapolis
City of Lakes

Department of Public Works
Steven A. Kotke, P.E.
City Engineer
Director

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August 12, 2013

Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Ms. Jacobson:

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station, and the connection between Southwest LRT and the Midtown Corridor.

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Thank you for the opportunity to submit suggestions for scoping.

Sincerely,

Steven A. Kotke
City Engineer - Director of Public Works

Jeremy Hanson-Willis
Director of Community Planning and Economic Development

CC: Mayor Rybak
Council Member Colvin Roy, Chair Transportation & Public Works Committee
Jenifer Hager
Jack Byers

St. Louis Park
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www.stlouispark.org

August 12, 2013

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AUG 14 2013
BY: SDO

Ms. Nani Jacobson
Project Manager
Southwest LRT Project Office
Park Place West, 6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Nani,

This letter is in response to the July 22, 2013 Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project.

The City of St. Louis Park submits the attached list of "Key Issues and Comments on Freight Rail Alternatives" that was originally submitted to Mark Fuhrmann on July 9, 2013. This document specifies the issues that are of primary importance to St. Louis Park, especially related to the impacts of the new freight rail routing alternatives. The City of St. Louis Park requests that these issues and impacts, as well mitigation measures for each alternative route be addressed in the SDEIS.

In addition we request all of the standard and required Environmental Assessment Worksheet and Environmental Assessment Impact items and topics be addressed for to the new alignment options.

Thank you for this opportunity to comment.

Sincerely,

Tom Harmening
City Manager

5005 Minnetonka Blvd. • St. Louis Park, Minnesota 55416-2216
Phone: (952) 924-2500 • Fax: (952) 924-2170 • Hearing Impaired: (952) 924-2518

City of St. Louis Park

Key Issues and Comments on Freight Rail Alternatives July 8, 2013

The City of St. Louis Park has reviewed the eight (8) alternative freight rail routing alignments and provides the following comments and requests for further information for evaluating the alternatives. *It is important to note that any comment, question or suggestion relating to the Re-Location Alternatives should not in any way be construed that the City supports the re-location options.*

Key Issues to address for freight rail routing to be successful:

<u>Co-location Alternatives</u>

1. Presence of freight rail and trains potentially interferes with access to LRT station platforms by foot, bike, bus and auto. Significant traffic impacts will occur at Wooddale Avenue and Beltline Boulevard; these impacts must be assessed and addressed. A circulation study for the areas around the stations is needed to evaluate and mitigate traffic impacts in the area.
2. Grade separation of freight rail at Wooddale Avenue is not practical; however grade separating LRT and the Cedar Lake Regional Trail is feasible and would reduce traffic conflicts. The search for ways to eliminate the negative traffic and access impacts from freight rail and LRT crossing Wooddale Avenue needs to continue. This is a vital north-south route for the community and the Elmwood and Sorensen neighborhoods specifically, and long delays due to LRT and freight trains are not acceptable or safe. Alternative grade separated vehicular crossings or routes under or over the rail/trail corridor are needed at either Yosemite or Xenwood Avenues.
3. Beltline Boulevard must be grade separated from LRT, freight rail and the regional trail by putting Beltline with sidewalks below the rail/trail corridor. Beltline is the only north-south crossing of the rail/trail corridor between the W. Lake Street Bridge and Highway 100. It is critical for circulation in the community and emergency vehicles that traffic movements not be unduly delayed by the presence of freight trains or LRT. Only grade separation will ensure that no matter when freight trains and LRT trains arrive, or whether they are on schedule or not, traffic and emergency vehicles will be able to move where they need to go. The accumulative effects of at grade crossings at both Wooddale and Beltline are particularly troubling, since a train that creates traffic problems at one street crossing will move on to create crossing problems at the next street; and in some cases a single train will be long enough to block both intersections at once. Grade separation at Beltline would mean traffic could at least continue to flow there, and if the Wooddale crossing is blocked, traffic could divert to either Beltline on the east or Louisiana Avenue on the west if needed.

4. Presence of freight rail and LRT at station areas affects development opportunities; design must consider development-friendly configurations.
5. Emergency vehicle delays will occur when freight trains are present at Wooddale Avenue and Beltline Boulevard. Grade separation or other means of maintaining emergency vehicle accessibility in the community must be provided.
6. The Midtown trolley station/platform may be located at the West Lake Station and requires additional property takings; these costs must not be attributed to the SWLRT project.

Re-Location Alternatives

A. Community Cohesion and Aesthetic Impacts

1. Both relocation options create a completely new freight rail right-of-way where one has never existed before. The elevated freight rail right-of-way creates a major visual and physical barrier through the middle of St. Louis Park (SLP), the SLP school district campus, and the Sorensen/Lenox and Bronx Park/Birchwood neighborhoods. Community cohesion is compromised. Physical connections, such as walkways and roadways through the barrier must be created in order to provide needed community connections and reduce the barrier effect. These should include attractive, safe pedestrian underpasses or bridges at street crossings like Dakota Avenue, Wooddale Avenue, Lake Street and 27th Street, as well as facilities to connect portions of the community split by the elevated train tracks, including the Central Community Center with the football field, Roxbury Park with Keystone Park, and Birchwood neighborhood with Bronx Park neighborhood, Dakota Park, Peter Hobart School and Cedar Lake Regional Trail access.
2. Dramatic negative visual impacts will be created by the elevated trains and the structures that support them. A MNDOT Visual Quality Manual type of process must be undertaken to establish the visual treatments and mitigation needed to reduce the impact of the elevated trains. It should guide the aesthetics and appearance of the structure as it crosses through different areas of the city, each with its own characteristics and needs, such as the school campuses, residential areas, commercial areas, the overpass of Highway 7, etc. This process must be conducted with citizens and other stakeholders and must include much more than a bare minimum treatment. It should incorporate public art and other elements designed to minimize the negative aesthetic impacts on the City and use the structures where possible to build community cohesion, identity and sense of place. Specific mitigation items need to be incorporated as a part of the reroute cost.
3. The project budget must include not only the cost of preparing the Visual Quality Manual but also the cost of constructing the aesthetic and community cohesion improvements.

B. Safety impacts

1. Elimination of reverse curves, reductions in grade changes, upgrading of tracks and elimination of at grade freight rail crossings of streets inherently improves safety of freight traffic in St. Louis Park. These improvements reduce the potential for accidents and derailments. Elevating trains on bridges and earthen berms especially in sensitive environments, creates special safety risks and concerns. The impacts of spills and derailments can be more severe on elevated tracks. The proposed freight rail re-location routes elevate tracks significantly and introduce freight rail tracks to areas that have not had tracks before. Measures to improve the safety and eliminate potential negative impacts associated with elevated tracks need to be included in the SWLRT project. They should include:
    a. Softening of side-slopes. The proposed side-slopes are far too steep at 2:1 grades; they should be at 3:1 or flatter for safety, and to maintain proper vegetation.
    b. Inner guard rail should be used. A special extra rail should be placed on tracks to reduce the potential severity of derailments.
    c. Widening the MN&S right-of-way width to a minimum100 ft. or possibly more in some areas depending on the height of the tracks relative to adjacent property. The current right-of-way is 66 feet or less. This is inadequate especially for elevated tracks. A wider right-of-way must be provided to:
        i. provide an appropriate area for buffering single-family homes and yards from trains,
        ii. provide safe, maintainable side-slopes for the tracks elevated by earthen berms; and,
        iii. allow adequate space to access the tracks for maintenance.

    The homes along the west side of Blackstone Avenue between Minnetonka Blvd and 27th Street need to be acquired to create an adequate corridor for train operations and buffer nearby residents from trains. Similarly, four homes on Minnetonka Blvd; and, four homes near Lake Street, one home on Brunswick and three homes on Blackstone, also must be acquired to create adequate right-of-way. The locations of the homes that must be acquired are shown on the attached map.
    d. Align freight tracks in the right-of-way to provide adequate protection for residents and uses on both sides of the freight rail tracks. In general, this means locating the tracks in the middle of a 100 foot right-of-way, but in some cases more buffer area may be needed on one side or both sides of the freight rail tracks. An evaluation of the potential consequences of a train derailment may lead to the conclusion that more than a 50 foot buffer is needed between the center line of the tracks and the nearest property line on one or both sides of a portion of the tracks. Tracks elevated more than 13 feet above adjacent properties will require more than 100 feet of right-of-way to accommodate side-slopes and the freight tracks.
    e. Fencing and signage are needed to minimize railroad right-of-way trespassing.

f. A derailment study must be done to assess the risks due to the proposed elevated tracks and identify any actions needed to mitigate these risks including potentially widening of the freight rail right-of-way. The cost of the study and any mitigation items identified in the study must be funded by the project.

2. Retaining walls on raised sections of MN&S can be an attractive nuisance and present a dangerous situation for kids; tall retaining walls should be avoided.

3. Both relocation options pass by or through the Xcel electric substation on Hwy 7. The relocation concept plans provide no indication as to what the impacts of trains in close proximity to the electric substation will be, or how any negative impacts will be avoided and/or mitigated. A thorough evaluation of the risks and how those risks will be mitigated must be provided, as well as how the mitigation will be funded must be provided to ensure the safety of the electric substation and the residents, businesses and visitors to St. Louis Park.

C. Property Impacts

1. The information provided by the SPO to date does not fully describe the number and type of properties and acreage and costs of acquisition needed for each alternative. This information must be provided in order to accurately compare alternatives.

2. The height of tracks in relation to surrounding uses must be shown.

3. The property impacts for each alternative (besides takings), i.e. people and operations impacted at the football field, Park Spanish Immersion School, Central Community Center, etc. must be considered and evaluated. These facilities are used by a broad spectrum of the community. Any degradation of the quality, functionality or accessibility of these community wide facilities must be considered as part of the evaluation of the freight rail routing options.

4. The relocation alternatives place elevated freight rail close to Central Community Center and Park Spanish Immersion Elementary school and the young children that use this facility. There are inherent risks with trains in close proximity to young children and there is nothing provided in the proposed re-route plans for how this risk will be addressed and how children will be protected. A plan for how to mitigate any negative impacts and safety risks must be prepared along with a plan for funding the mitigation and safety improvements.

5. It is not shown how the SLP High School football stadium would be replaced. It would not appear to fit north of the proposed relocated Lake Street especially if the power lines are not also relocated and additional properties are not acquired. The football stadium must be replaced. Finding a nearby location will be very difficult. Relocating the football stadium comes with many challenges that go beyond simply obtaining property. They include how to effectively address potential negative neighborhood impacts of noise, lights, and traffic. Selecting a new location for the football stadium will require an

extensive public process of its own that will be time consuming and expensive. This process needs to be funded and completed before a freight rail routing decision is made, if the Brunswick West re-routing alternative is to be seriously considered. The future location and funding for replacing the football stadium must be resolved by the SWLRT project.

6. How the playground serving the Central Community Center (Central) will be replaced and funded must be established before freight rail decisions are finalized. The playground is critical to the operation of the Central facility. Access from Central to the football stadium must be addressed through a pedestrian tunnel or other measure. The connection between these facilities is important for the operation of Central and the commitments made by the SLP School District in the funding of the turf field. Access must be maintained.

7. Freight rail relocation options show a large loss of commercial properties that house many businesses that would have to move but may not be able to be relocated in SLP. The potential loss of locally owned businesses is of particular concern. Every effort to retain locally owned businesses and the jobs they provide must be utilized.

8. The loss of tax base, jobs, and businesses must be minimized.

9. There are significant impacts on commercial/industrial businesses and properties which need to be addressed. In some cases, through streets are turned into cul de sacs or re-routed. In other cases, existing streets are eliminated or re-aligned. All of these changes have impacts on the accessibility and visibility of existing businesses. The plans to date are rudimentary at best and only begin to scratch the surface of identifying issues, much less resolving them. The consequences of the changes to the street system, elimination of existing commercial buildings and the future of the remnant parcels created within the proposed changes in the Lake Street/Wooddale/Walker/Library Lane area must be fully evaluated and mitigation actions identified. Access issues for businesses and uses at Dakota and Walker St. where a cul-de-sac is proposed must be addressed and solutions acceptable to the businesses involved created.

10. How freight trains and the trail will operate during construction must be clearly identified. The massive nature of a freight rail reroute project raises concerns about the constructability of the re-route options. The proposed routes cut through the center of the City of St. Louis Park. How the new rail route can be constructed while the current trains continue to operate is not apparent. A plan for how freight rail service will be maintained during construction and how any negative impacts on the community, its residents, businesses, schools, parks and property owners from the actions needed to maintain freight rail operations will be mitigated must be prepared and approved by St. Louis Park before a decision to re-route freight trains is made.

11. The construction of either of the freight rail re-route options will entail significant disruption to all aspects of the community; residents' daily lives, schools, parks and businesses will all be dramatically affected. Construction will entail hauling massive amounts of fill material through single-family neighborhoods, school campuses, parks

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D. Environmental Impacts

1. Environmental impacts including noise, vibration, safety, wetlands, woodlands, traffic/road systems and all other standard environmental review items must be evaluated. No information on the potential environmental impacts has been provided. This is a critical component in the evaluation of the freight rail options and the design of the project, and must include mitigation measures. It is anticipated that the increased elevation of the tracks and trains will increase the potential for noise impacts on the surrounding neighborhoods. No indication has been provided for how these impacts will be addressed. Mitigation measures must be identified and funding for those measures included in the SWLRT project.
2. The football stadium, Central Community Center playgrounds, Roxbury/Keystone Park, Dakota Park, Birchwood Park and other properties present potential 4f parcel impacts; these must be evaluated, addressed and mitigated.
3. Several potentially historic homes and buildings may be taken and this situation needs to be evaluated. 106 reviews may be required for older buildings now potentially impacted by new re-location routes.

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12. Computer analysis of operating freight trains on the re-location routes must be completed prior to any decision to re-relocate freight trains to the proposed routes to ensure that trains can operate at the proposed speed of 25 mph. Any change in the operating speeds will change the potential freight train impacts including traffic, noise and vibrations impacts, in turn potentially changing the mitigation measures needed for the project.
13. The location of underground utilities near the proposed heavy earth berms need to be identified and the potential impacts of those berms on underground utilities evaluated. Mitigation must be provided to protect or relocate the underground utilities at the SWLRT's cost.

From:	Meg McMonigal
To:	Jacobson, Nani
Subject:	SDEIS
Date:	Monday, August 12, 2013 4:01:42 PM
Attachments:	SDEIS letter and comments.pdf

Letter and comments attached.

Thanks

Meg

Meg J. McMonigal
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St. Louis Park
MINNESOTA

www.stlouispark.org

August 12, 2013

Ms. Nani Jacobson
Project Manager
Southwest LRT Project Office
Park Place West, 6465 Wayzata Boulevard, Suite 500
St. Louis Park, MN 55426

Dear Nani,

This letter is in response to the July 22, 2013 Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project.

The City of St. Louis Park submits the attached list of "Key Issues and Comments on Freight Rail Alternatives" that was originally submitted to Mark Fuhrmann on July 9, 2013. This document specifies the issues that are of primary importance to St. Louis Park, especially related to the impacts of the new freight rail routing alternatives. The City of St. Louis Park requests that these issues and impacts, as well mitigation measures for each alternative route be addressed in the SDEIS.

In addition we request all of the standard and required Environmental Assessment Worksheet and Environmental Assessment Impact items and topics be addressed for to the new alignment options.

Thank you for this opportunity to comment.

Sincerely,

Tom Harmening
City Manager

5005 Minnetonka Blvd. • St. Louis Park, Minnesota 55416-2216
Phone: (952) 924-2500 • Fax: (952) 924-2170 • Hearing Impaired: (952) 924-2518

City of St. Louis Park

Key Issues and Comments on Freight Rail Alternatives July 8, 2013

The City of St. Louis Park has reviewed the eight (8) alternative freight rail routing alignments and provides the following comments and requests for further information for evaluating the alternatives. *It is important to note that any comment, question or suggestion relating to the Re-Location Alternatives should not in any way be construed that the City supports the re-location options.*

Key Issues to address for freight rail routing to be successful:

<u>Co-location Alternatives</u>

1. Presence of freight rail and trains potentially interferes with access to LRT station platforms by foot, bike, bus and auto. Significant traffic impacts will occur at Wooddale Avenue and Beltline Boulevard; these impacts must be assessed and addressed. A circulation study for the areas around the stations is needed to evaluate and mitigate traffic impacts in the area.
2. Grade separation of freight rail at Wooddale Avenue is not practical; however grade separating LRT and the Cedar Lake Regional Trail is feasible and would reduce traffic conflicts. The search for ways to eliminate the negative traffic and access impacts from freight rail and LRT crossing Wooddale Avenue needs to continue. This is a vital north-south route for the community and the Elmwood and Sorensen neighborhoods specifically, and long delays due to LRT and freight trains are not acceptable or safe. Alternative grade separated vehicular crossings or routes under or over the rail/trail corridor are needed at either Yosemite or Xenwood Avenues.
3. Beltline Boulevard must be grade separated from LRT, freight rail and the regional trail by putting Beltline with sidewalks below the rail/trail corridor. Beltline is the only north-south crossing of the rail/trail corridor between the W. Lake Street Bridge and Highway 100. It is critical for circulation in the community and emergency vehicles that traffic movements not be unduly delayed by the presence of freight trains or LRT. Only grade separation will ensure that no matter when freight trains and LRT trains arrive, or whether they are on schedule or not, traffic and emergency vehicles will be able to move where they need to go. The accumulative effects of at grade crossings at both Wooddale and Beltline are particularly troubling, since a train that creates traffic problems at one street crossing will move on to create crossing problems at the next street; and in some cases a single train will be long enough to block both intersections at once. Grade separation at Beltline would mean traffic could at least continue to flow there, and if the Wooddale crossing is blocked, traffic could divert to either Beltline on the east or Louisiana Avenue on the west if needed.

4. Presence of freight rail and LRT at station areas affects development opportunities; design must consider development-friendly configurations.
5. Emergency vehicle delays will occur when freight trains are present at Wooddale Avenue and Beltline Boulevard. Grade separation or other means of maintaining emergency vehicle accessibility in the community must be provided.
6. The Midtown trolley station/platform may be located at the West Lake Station and requires additional property takings; these costs must not be attributed to the SWLRT project.

Re-Location Alternatives

A. Community Cohesion and Aesthetic Impacts

1. Both relocation options create a completely new freight rail right-of-way where one has never existed before. The elevated freight rail right-of-way creates a major visual and physical barrier through the middle of St. Louis Park (SLP), the SLP school district campus, and the Sorensen/Lenox and Bronx Park/Birchwood neighborhoods. Community cohesion is compromised. Physical connections, such as walkways and roadways through the barrier must be created in order to provide needed community connections and reduce the barrier effect. These should include attractive, safe pedestrian underpasses or bridges at street crossings like Dakota Avenue, Wooddale Avenue, Lake Street and 27th Street, as well as facilities to connect portions of the community split by the elevated train tracks, including the Central Community Center with the football field, Roxbury Park with Keystone Park, and Birchwood neighborhood with Bronx Park neighborhood, Dakota Park, Peter Hobart School and Cedar Lake Regional Trail access.
2. Dramatic negative visual impacts will be created by the elevated trains and the structures that support them. A MNDOT Visual Quality Manual type of process must be undertaken to establish the visual treatments and mitigation needed to reduce the impact of the elevated trains. It should guide the aesthetics and appearance of the structure as it crosses through different areas of the city, each with its own characteristics and needs, such as the school campuses, residential areas, commercial areas, the overpass of Highway 7, etc. This process must be conducted with citizens and other stakeholders and must include much more than a bare minimum treatment. It should incorporate public art and other elements designed to minimize the negative aesthetic impacts on the City and use the structures where possible to build community cohesion, identity and sense of place. Specific mitigation items need to be incorporated as a part of the reroute cost.
3. The project budget must include not only the cost of preparing the Visual Quality Manual but also the cost of constructing the aesthetic and community cohesion improvements.

B. Safety impacts

1. Elimination of reverse curves, reductions in grade changes, upgrading of tracks and elimination of at grade freight rail crossings of streets inherently improves safety of freight traffic in St. Louis Park. These improvements reduce the potential for accidents and derailments. Elevating trains on bridges and earthen berms especially in sensitive environments, creates special safety risks and concerns. The impacts of spills and derailments can be more severe on elevated tracks. The proposed freight rail re-location routes elevate tracks significantly and introduce freight rail tracks to areas that have not had tracks before. Measures to improve the safety and eliminate potential negative impacts associated with elevated tracks need to be included in the SWLRT project. They should include:
    a. Softening of side-slopes. The proposed side-slopes are far too steep at 2:1 grades; they should be at 3:1 or flatter for safety, and to maintain proper vegetation.
    b. Inner guard rail should be used. A special extra rail should be placed on tracks to reduce the potential severity of derailments.
    c. Widening the MN&S right-of-way width to a minimum100 ft. or possibly more in some areas depending on the height of the tracks relative to adjacent property. The current right-of-way is 66 feet or less. This is inadequate especially for elevated tracks. A wider right-of-way must be provided to:
        i. provide an appropriate area for buffering single-family homes and yards from trains,
        ii. provide safe, maintainable side-slopes for the tracks elevated by earthen berms; and,
        iii. allow adequate space to access the tracks for maintenance.

        The homes along the west side of Blackstone Avenue between Minnetonka Blvd and 27th Street need to be acquired to create an adequate corridor for train operations and buffer nearby residents from trains. Similarly, four homes on Minnetonka Blvd; and, four homes near Lake Street, one home on Brunswick and three homes on Blackstone, also must be acquired to create adequate right-of-way. The locations of the homes that must be acquired are shown on the attached map.
    d. Align freight tracks in the right-of-way to provide adequate protection for residents and uses on both sides of the freight rail tracks. In general, this means locating the tracks in the middle of a 100 foot right-of-way, but in some cases more buffer area may be needed on one side or both sides of the freight rail tracks. An evaluation of the potential consequences of a train derailment may lead to the conclusion that more than a 50 foot buffer is needed between the center line of the tracks and the nearest property line on one or both sides of a portion of the tracks. Tracks elevated more than 13 feet above adjacent properties will require more than 100 feet of right-of-way to accommodate side-slopes and the freight tracks.
    e. Fencing and signage are needed to minimize railroad right-of-way trespassing.

f. A derailment study must be done to assess the risks due to the proposed elevated tracks and identify any actions needed to mitigate these risks including potentially widening of the freight rail right-of-way. The cost of the study and any mitigation items identified in the study must be funded by the project.

2. Retaining walls on raised sections of MN&S can be an attractive nuisance and present a dangerous situation for kids; tall retaining walls should be avoided.
3. Both relocation options pass by or through the Xcel electric substation on Hwy 7. The relocation concept plans provide no indication as to what the impacts of trains in close proximity to the electric substation will be, or how any negative impacts will be avoided and/or mitigated. A thorough evaluation of the risks and how those risks will be mitigated must be provided, as well as how the mitigation will be funded must be provided to ensure the safety of the electric substation and the residents, businesses and visitors to St. Louis Park.

C. Property Impacts

1. The information provided by the SPO to date does not fully describe the number and type of properties and acreage and costs of acquisition needed for each alternative. This information must be provided in order to accurately compare alternatives.
2. The height of tracks in relation to surrounding uses must be shown.
3. The property impacts for each alternative (besides takings), i.e. people and operations impacted at the football field, Park Spanish Immersion School, Central Community Center, etc. must be considered and evaluated. These facilities are used by a broad spectrum of the community. Any degradation of the quality, functionality or accessibility of these community wide facilities must be considered as part of the evaluation of the freight rail routing options.
4. The relocation alternatives place elevated freight rail close to Central Community Center and Park Spanish Immersion Elementary school and the young children that use this facility. There are inherent risks with trains in close proximity to young children and there is nothing provided in the proposed re-route plans for how this risk will be addressed and how children will be protected. A plan for how to mitigate any negative impacts and safety risks must be prepared along with a plan for funding the mitigation and safety improvements.
5. It is not shown how the SLP High School football stadium would be replaced. It would not appear to fit north of the proposed relocated Lake Street especially if the power lines are not also relocated and additional properties are not acquired. The football stadium must be replaced. Finding a nearby location will be very difficult. Relocating the football stadium comes with many challenges that go beyond simply obtaining property. They include how to effectively address potential negative neighborhood impacts of noise, lights, and traffic. Selecting a new location for the football stadium will require an

extensive public process of its own that will be time consuming and expensive. This process needs to be funded and completed before a freight rail routing decision is made, if the Brunswick West re-routing alternative is to be seriously considered. The future location and funding for replacing the football stadium must be resolved by the SWLRT project.

6. How the playground serving the Central Community Center (Central) will be replaced and funded must be established before freight rail decisions are finalized. The playground is critical to the operation of the Central facility. Access from Central to the football stadium must be addressed through a pedestrian tunnel or other measure. The connection between these facilities is important for the operation of Central and the commitments made by the SLP School District in the funding of the turf field. Access must be maintained.
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Appendix J
Visual Resources Technical Report

Southwest Light Rail Transit (Metro Green Line Extension) Supplemental Draft Environmental Impact Statement Visual Resources Technical Report

November 2014

Prepared by

CH2MHILL.

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Attachment J-2. Federal Highway Administration - Visual Impact Assessment for Highway Projects

APPENDIX J

1. Introduction

A Draft Environmental Impact Study (EIS) for the Southwest Light Rail Transit (METRO Green Line Extension) (referred to herein as Southwest LRT or the project) was published in October 2012. Since then, some substantial modifications have been made in the proposed light rail-related improvements and freight rail modifications that are a part of the Locally Preferred Alternative (LPA). In the Eden Prairie study area, adjustments have been made to the locations of two proposed light rail stations and the light rail alignments that would connect to them. In the St. Louis Park/Minneapolis study area, a segment of the LPA that was originally proposed for development at-grade would be placed in a light rail tunnel located in the area between the proposed West Lake Station and the Kenilworth Lagoon. This technical report documents the existing visual conditions and the project-related visual impacts within the Eden Prairie and St. Louis Park/ Minneapolis Segments of the route.

The proposed location of the Operations and Maintenance Facility (OMF) has also been proposed to be located in an industrial area in Hopkins. Because this facility is located in an industrial area where there are no sensitive views, the visual impacts in this area would be generally not substantial. Consequently, the proposed OMF area was not evaluated as a part of this analysis.

In addition to the light rail-related improvements and freight rail modifications described above, the LPA will also include TPSS facilities. The specific locations for TPSS's have not been defined; however, siting of these facilities will be determined by utilizing fully developed areas, including surface parking lots, existing roadway right-of-way, and vacant parcels where feasible. The potential mitigation strategies referenced below to minimize adverse visual impacts would also apply to the TPSS facilities.

This visual resources analysis was prepared using the systematic procedure described in Section 2, Analysis Approach. It identifies both long-term and short-term (construction-related) impacts that the LPA would have on visual quality, including potential impacts to sensitive user groups in the Eden Prairie and St. Louis Park/Minneapolis areas. This analysis also identifies potential mitigation strategies to minimize impacts.

2. Analysis Approach

A. Background

The visual quality and aesthetics assessment in Section 3.6 of the Draft EIS was based on a project-specific methodology that considered visual and aesthetic resources contributing to visual quality, sensitive viewers or receptors, and changes to the character of the area, resulting in potential visual impacts categorized as: generally not substantial, potentially substantial, or substantial. The categories used in this analysis to evaluate impacts are the same as those used in the Draft EIS. The methodology used to assess the visual impacts in this analysis differ from the Draft EIS. Because the Draft EIS evaluated a large number of alternatives, it used a qualitative analysis to reach its conclusions. Because the Supplemental Draft EIS evaluated a single alternative for which more design information was available than at the Draft EIS phase, it was possible to use a standard visual impact assessment method that made extensive use of drawings and photo simulations and employed a systematic evaluation protocol

The analysis of the project's visual quality and aesthetics effects in this Supplemental Draft EIS applies the principles of the standardized approach for visual impact assessment developed by the Federal Highway Administration (FHWA) (FHWA, 1988). This method has been widely adopted by state highway departments and other agencies responsible for development of transportation facilities as the standard for evaluation of project visual effects. For reference, a copy of the FHWA Visual Impact Assessment manual has been included as Attachment J-2 at the end of this appendix to provide complete documentation of the FHWA methodology.

The FHWA developed its visual impact assessment methodology in response to the National Environmental Policy Act of 1969 (NEPA), which requires that consideration be given to the impacts that proposed federal actions or projects are likely to have on the environment's visual quality. The method was designed to provide a systematic approach to the evaluation of visual changes. Since its inception in the late 1980s, this method has been successfully applied by the FHWA and state highway departments, as well as by other visual resource specialists, to evaluate highway and other transportation projects. It is now the standard approach for evaluating the aesthetic impacts of proposed transportation projects. The method applied in preparing this supplemental analysis is based on the principles of the FHWA methodology, and was selected because it is a standardized, widely recognized approach that is highly systematic. In addition, there is a reliance on representative view photographs of the project alignment, and on visualizations of the project's appearance, which provide a tangible sense of the visual character and quality of the areas that the project would affect, as well as an idea of how the project would affect these visual attributes. The discussion below provides a brief summary of how the FHWA assessment methodology was applied to prepare this section of the Supplemental Draft EIS.

B. Identifying and Assessing Viewpoints

The visual impact assessment process began with a review of Google Earth™ air imagery. KMZ files of the revised project layout were superimposed on this imagery to identify areas along the Eden Prairie and St. Louis Park/Minneapolis Segments where revised elements of the project would potentially have a substantial impact on views, particularly those of sensitive viewer groups. A representative subset of views in those areas was photographically documented and used as the basis for the analysis.

Once identified, the existing visual quality of these views was evaluated using a systematic procedure that entails application of numerical ratings. Under the FHWA methodology, the visual quality of a view was evaluated in terms of its vividness, intactness, and unity (which are defined below) and each of these dimensions were scored on a scale of from 1 to 7 for each of these three attributes, where a low score (1) represents low visual quality and a higher score (7) represents high visual quality. The scores for these three dimensions are then added up and divided by three, to produce a summary rating of the view's overall level of visual quality. This assessment considers whether this particular view is common or dramatic. Is it a pleasing composition (a mix of elements that seem to belong together) or not (a mix of elements that either do not belong together or contrast with the other elements in the surroundings)? The resulting metrics supported the overall visual impact determinations.

The visual quality of the identified viewpoints was evaluated and discussed using these terms:

- Vividness is the degree of drama, memorability, or distinctiveness of the landscape components. Overall vividness is an aggregated assessment of landform, vegetation, water features, and human-made components in a view.
- Intactness is a measure of the visual integrity of the natural and human-built landscape, and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features and is not segmented by features and elements that appear out of place. Low intactness means that visual elements that are unattractive and/or detract from the quality of the view can be seen.
- Unity is the degree of visual coherence and compositional harmony of the landscape, considered as a whole. High unity can be found with an undisturbed natural landscape or in developed environments where individual components of a landscape are well designed and "fit" well in the landscape.

In summary, the visual quality analysis for this Supplemental Draft EIS was initiated by reviewing the viewpoints identified in the Draft EIS and identifying any additional viewpoints that would be warranted due to changes in the definition of the project (i.e., new visually-sensitive areas affected or new major visual changes would occur). In this analysis, an assessment was then made of the visual quality of each of the representative viewpoints as they now exist and of the views as they would appear with the project in place.

C. Assessing Visual Change

For many of the views evaluated in the Supplemental Draft EIS, images were prepared to provide an understanding of how the project features would relate to the view. These visualizations provided the basis for assessing the project-related changes in the visual quality. The assessment of the visual changes for which simulations were not created was based instead on reviews of project plans and drawings, and on the visualizations that were prepared for other views in which similar changes were proposed. The visual conditions under the LPA were evaluated using the same numerical rating system that was used for evaluating the existing view. The numerical ratings of the existing views and views under the LPA were compared to determine the degree of visual change. In evaluating the numerical changes in visual quality between the existing and with-project conditions, a change in visual quality score in the range of 0.1 through 0.5 point was considered to indicate a low level of visual change; a change from 0.6 through 1.0 point as moderately low; a change from 1.1 through 2.0 points as medium; and a change of more than 2.0 points as high.

To identify the overall degree of impact, the assessment of the level of visual change was then related to the sensitivity of the view to the viewer. In assessing the sensitivity of the view, factors taken into account included the following:

- The number and kinds of people who see the view.
- The length of time the view is observed. An assumption was made that residents and recreationists generally have views of long duration, whereas motorists often experience views short duration.
- Potential levels of viewer concern about the visual character and quality of the view. Level of concern is a subjective response that is affected by factors such as the visual character of the surrounding landscape, the activity a viewer is engaged in, and the viewer's values, expectations, and interests. Some of the assumptions about level of concern are that residents and recreationists are likely to be highly sensitive viewers, while commuters and employees in industrial areas may be less sensitive.
- Low viewer sensitivity would occur in situations where there are few viewers who experience a defined view, or when viewers may not be particularly concerned about the view. High viewer sensitivity would occur when there are many viewers who have a view frequently or for a long duration, as well as viewers who are likely to be very aware of and concerned about the view, such as viewers in a residential neighborhood.

The overall levels of visual impact identified in the Supplemental Draft EIS are expressed in terms of the three impact levels (not substantial, possibly substantial, and substantial) used in the Draft EIS. In all situations in which the degree of visual change is low (a change in visual quality score in the range of 0.1 through 0.5 point), the impacts were assumed to be generally not substantial. Impacts were assumed to be potentially substantial in situations with moderately low to medium levels of visual change (i.e., a change from 0.6 through 1.0 point [moderately low] or a change from 1.1 through 2.0 points [medium] and high levels of sensitivity, and substantial impacts were assumed to occur in situations with high levels of visual change (i.e. a change of more than 2.0 points) and moderate to high levels of sensitivity.

3. Project Description

The proposed project, the Southwest Light Rail Transit (METRO Green Line Extension) is an approximately 16 mile proposed extension of the METRO Green Line (Central Corridor LRT) which would operate from downtown Minneapolis through the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment includes 17 new stations, approximately 3,800 additional park-and-ride spaces, accommodations for kiss-and-ride facilities, bicycle and pedestrian access, as well as new or restructured local bus routes connecting stations to nearby residential, commercial and educational destinations. Major activity centers from Eden Prairie to St. Paul, including the Eden Prairie Center regional mall, United Health Group campuses, the Opus/Golden Triangle employment area, Park Nicollet Methodist Hospital, the Minneapolis chain of Lakes, downtowns Minneapolis

and St. Paul, the University of Minnesota, and the State Capital area, will be accessible by a one-seat ride. Passengers will be able to connect to the greater METRO system, including METRO Blue Line (Hiawatha LRT), METRO Orange Line (I-35WBRT), Northstar Commuter Rail, METRO Red Line (Cedar Ave BRT) via Blue Line, and the planned METRO Blue Line Extension (Bottineau LRT) as well as future commuter rail, planned Bus Rapid Transit systems and intercity passenger rail line at one of more of the five downtown Minneapolis stations.

4. Affected Environment

Eden Prairie

Overview

This section describes the existing visual quality at 10 viewpoints in the Eden Prairie Segment not evaluated in the Draft EIS where changes to visual quality are possible.

A general description of visual elements within the Eden Prairie Segment was provided in Section 3.6.2.2 of the Draft EIS. As indicated in Table 3.6-2 of the Draft EIS, the environment in this area offers a moderate to low visual quality experience. The visual environment in the Eden Prairie Segment is dominated by relatively recent urban and suburban development. Prominent features include roadways, mid- to low-rise office building campuses, multifamily residential buildings, commercial buildings, water retention ponds, and Purgatory Creek Park. These elements exist in the foreground, the middle ground, and the background of the study area.

Many of the commercial developments and office parks in the segment have landscaping, including lawns and trees. Gently rolling hills toward the north of the segment provide topographical relief. The individual developments have architectural treatments on their façades and other specific design elements, but there are no consistent visual or design elements that link all of the developments together to create a visually integrated whole.

Ten viewpoints represent areas where changes to the visual environment (not discussed in the Draft EIS) could potentially occur as a result of the LPA. The locations of these viewpoints are shown on the key map, Exhibit J-1 in Attachment J-1.1. Photographs depicting the existing conditions seen in the views from these locations are presented in Attachment J-1.1 on the exhibits indicated in the following list. A project overview of the segment is shown on Exhibit 2.5-2 and is described in Section 2.5.1 of the Supplemental Draft EIS.

- **Viewpoint 1** is the view looking southwest from Technology Drive at Mitchell Road (Exhibit J-2).
- **Viewpoint 2** is the view looking southwest along Technology Drive in front of the Optum Health Services headquarters (Exhibit J-3).
- **Viewpoint 3** is the view from Purgatory Creek Trail looking north (Exhibit J-4).
- **Viewpoint 4** is the view from Technology Drive west of the Southwest Transit Center (Exhibit J-5).
- **Viewpoint 5** is the view looking south along Prairie Center Drive at Technology Drive. (Exhibit J-6).
- **Viewpoint 6** is the view from east side of Prairie Center Drive toward Purgatory Creek Park (Exhibit J-7).
- **Viewpoint 7** is the view from Purgatory Creek Park, looking east (Exhibit J-8).
- **Viewpoint 8** is the view north along Prairie Center Drive south of proposed elevated crossing of roadway (Exhibit J-9).
- **Viewpoint 9** is the view from Eden Road looking west (Exhibit J-10).
- **Viewpoint 10** is the Valley View Drive, view looking south toward the intersection with Flying Cloud Drive (Exhibit J-11).

Existing Visual Quality and Aesthetics

Table J-1 summarizes the existing visual quality and aesthetics of the views seen from these viewpoints, using the visual assessment criteria and rating system the FHWA developed. As described in detail in Section 3.1.2.5 of the Supplemental Draft EIS, the existing conditions in these views have been evaluated on a numerical scale from one to seven, where one indicates very low visual quality, four indicates medium or average visual quality, and seven indicates very high visual quality.

TABLE J-1
Existing Visual Quality and Aesthetics by Viewpoint in the Eden Prairie Segment
[Rating Range 1 (very low) to 7 (very high)]

					Existing Visual Quality and Aesthetics				
			Vividness		Intactness		Unity		
View Point	Viewpoint Description	Elements of the Visual Environment	Description	Rating	Description	Rating	Description	Rating	Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) [a]
1	View looking southwest from Technology Drive at Mitchell Road	Arterial roadways, asphalt jogging path, and landscaping to the north; natural vegetation and wetlands to the south. Buildings are set back with low visibility.	The overall level of vividness is moderately low.	3.5	With the presence of natural and landscaped vegetation, the visual intactness is medium.	4	Landscaping compatible with natural areas, but no unifying features. Medium overall visual unity.	4	3.8 Moderately Low
2	View looking southwest along Technology Drive in front of the Optum Health Services headquarters	The dominant element is a three-story building in a landscaped business park setting. There are trails and park-like landscaping rather than sidewalks along the arterial.	The overall level of vividness is moderate due to degree of extra landscaping and compatible construction design.	4.3	Components consistent with business park: setbacks, distance between buildings, parking and landscaping. Moderately low visual intactness.	3.8	While relatively new developments, there are no unifying features. Moderately low overall visual unity.	3	3.7 Moderately Low
3	View from the Purgatory Creek Trail looking north	The trail is raised from the natural terrain level with the road. The north side of the trail parallels Purgatory Creek, which is crossed by a rustic pedestrian bridge just south of Technology Drive. There is low vegetation cover and a few trees.	The overall level of vividness is moderate, with a glimpse of the water in the adjacent creek and views of the natural vegetation adjacent to the trail.	4.2	The balance between the natural and landscaped vegetation and the small-scale infrastructure elements results in a medium level of visual intactness.	4	The trail, the adjacent creek, the vegetation, and the low-scale infrastructure features combine to create a visual composition with a medium level of visual unity.	4	4.1 Medium

			Vividness		Existing Visual Quality and Aesthetics Intactness		Unity		
View Point	Viewpoint Description	Elements of the Visual Environment	Description	Rating	Description	Rating	Description	Rating	Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) [a]
4	View from Technology Drive west of the SouthWest Transit Center	View of multifamily residential and commercial buildings with landscaping and roadways. Architecture combines similar colors, textures. Views of Purgatory Creek Reservoir and a trail.	The commercial architecture and water features provide a moderate level of vividness.	4	The buildings and landscaping create a moderate level of intactness.	4.5	The surroundings and generally consistent architectural scale and materials create a moderately low level of unity.	3.6	4.2 Medium
5	View looking south along Prairie Center Drive at Technology Drive	View of divided arterial boulevard with large structures supporting traffic signals and road lighting. Dense landscape trees are present along the east side of the road. Purgatory Creek Park is to the west of the boulevard, with trees and lawn. A large office building is in the background.	Flat landform with low vividness. Lawns and planted trees with average level of vividness. Human-made features include roadway, support structures for signals/lighting, large, boxy office buildings. Moderately low level of vividness.	3.3	Given the presence of the visually dominant roadway and associated equipment, the visual intactness of this view is medium.	4.0	Given the somewhat visually disparate set of elements visible in this view, the overall level of visual unity is medium.	4.0	3.8 Moderately Low
6	View from east side of Prairie Center Drive toward Purgatory Creek Park	The view is a divided arterial boulevard and a landscaped park with a large decorative picnic pavilion structure. A large brick-faced parking ramp is present at Southwest Station.	The landform is flat, low level of vividness. Lawns and planted trees with an average level of vividness. Roadway, large parking ramp, the roof of the picnic pavilion, average level of vividness. Moderately low overall vividness.	3.6	Except for the visually dominant roadway, this view is relatively free of intrusive visual elements, creating a moderately high level of visual intactness.	5	The consistent scale and material of the structures and the dense mass of landscape trees across the middle of the view create a moderately high level of visual unity.	5.5	4.7 Medium
7	View from Purgatory Creek Park looking east	A parking lot is in the foreground, with lawns and dense plantings of evergreen and deciduous landscape trees. Dense tree plantings screen much of the commercial development located in the area east of Prairie Center Drive.	Landform is flat, low vividness. Lawns, planted trees with moderately high vividness. Human-made features have average level vividness. Moderately low overall vividness.	3.6	This view is relatively free of significant encroaching elements and has a moderately high degree of intactness.	5	The dense mass of landscape trees across the middle of the view creates a high level of visual unity.	6	4.9 Medium

			Vividness		Existing Visual Quality and Aesthetics Intactness		Unity		
View Point	Viewpoint Description	Elements of the Visual Environment	Description	Rating	Description	Rating	Description	Rating	Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) [a]
8	View north along Prairie Center Drive south of proposed elevated crossing of roadway	The view is a divided arterial boulevard, a large parking ramp at Southwest Station, lawns and landscape trees, and an asphalt trail.	Landform is flat, low vividness. Lawns, planted trees, average level of vividness. Roadway, large parking ramp, roof of picnic pavilion with average vividness. Moderately low overall vividness.	3.5	Except for the visually dominant roadway, this view is relatively free of intrusive visual elements, creating a moderately high level of visual intactness.	5	The consistent scale and material of the structures and the presence of landscape trees across the view create a moderately high level of visual unity.	5	4.5 Medium
9	View from Eden Road looking west	The view includes a portion of a parking lot for existing commercial establishments to the north and south of Eden Road. The view forward is of a natural, undeveloped area with deciduous trees with a large, white water tower over the horizon.	There is a moderately low level of vividness due to a mixture of commercial and natural elements, and a large water tower in view.	3.2	There is moderately low intactness since there is a mixture of development features, natural areas, and parking areas.	3	The unity is low to moderate. Unifying features are the grass and trees along the roadway, softening the asphalt parking areas in the view. The water tower breaks up the unity of the landscaping and natural areas.	3	3.1 Moderately Low
10	Valley View Drive, view looking south toward the intersection with Flying Cloud Drive	The view is of a major arterial intersection with multiple office complexes in the background.	The level of vividness is moderately low due to a dominant office park that does not provide any outstanding features.	3.2	Moderately low intactness because the large, dominant arterials intrude and contrast with the visual pattern of landscaped office parks.	3.4	There is low unity among the office buildings' architectural styles and the dominant transportation features.	2.8	3.1 Moderately Low

[a] Scale is from *Visual Impact Assessment for Highway Projects* (FHWA, 1988).

Viewer Groups and Viewer Sensitivity

Viewer groups in the Eden Prairie Segment include park users, drivers, pedestrians, workers, shoppers, and cyclists on the existing street network. Residents and park users are assumed to be more sensitive to change than the other viewer groups; this is assumed to be particularly true for any visual changes that might affect their enjoyment of Purgatory Creek Park.

St. Louis Park/Minneapolis

Overview

This section describes the existing visual quality at six viewpoints in the St. Louis Park/Minneapolis Segment not evaluated in the Draft EIS where changes to visual quality are possible. The visual environment in the St. Louis Park/Minneapolis Segment generally falls within Hennepin County Regional Railroad Authority - owned right-of-way. This environment includes existing trails throughout the length of the segment (i.e., Cedar Lake LRT Regional Trail, Kenilworth Trail, Midtown Greenway, and Cedar Lake Trail; see Exhibit 3.4-4 in the Supplemental Draft EIS) and directly adjacent properties. Views of the right-of-way

and adjacent properties are primarily provided from the existing trails. Views within the segment are dominated by the existing trails themselves and adjacent active freight rail track. The trails and freight rail alignment are generally surrounded by overstory and understory deciduous vegetation. There are some areas of clearing at several locations along the right-of-way that open up the bicycle and pedestrian trail to views of its surrounding urban environment. For example, at locations where the trail crosses roads, areas have been cleared adjacent to residential developments, and at the open, maintained trail corridor north of Burnham Pond. The trails include occasional views of adjacent residential development and occasional views of the distant Minneapolis skyline in the background. A further general description of visual elements along this portion of the segment is provided in Section 3.6.2.4 of the Draft EIS.

Six key viewpoints represent areas where major changes to the visual environment (not discussed in the Draft EIS) could potentially occur as a result of the LPA, suggesting design adjustments since publication of the Draft EIS. Attachment J-1.1 of this technical report presents exhibits with viewpoint locations (see Exhibit J-12), as well as photographs and renderings (see Exhibits J-13 through J-18) for each viewpoint. A project overview of the segment is shown on Exhibit 2.5-4 and is described in Section 2.5.3 of the Supplemental Draft EIS.

- **Viewpoint 1** (Exhibit J-13) is the view northeast from South Chowen Avenue toward the existing rail and trail corridor.
- **Viewpoint 2** (Exhibit J-14) is the view looking north near Lake Street..
- **Viewpoint 3** (Exhibit J-15) is the view from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing.
- **Viewpoint 4** (Exhibit J-16) is the view from the bike trail at the south side of the channel crossing.
- **Viewpoint 5** (Exhibit J-17) is the view from the channel looking northwest toward the channel crossing.
- **Viewpoint 6** (Exhibit J-18) is the view northwest from West 21st Street at Thomas Avenue toward the existing rail and trail corridor.

Existing Visual Quality and Aesthetics

Table J-2 summarizes the existing visual quality and aesthetics of the views seen from these viewpoints, using the visual assessment criteria and rating system the FHWA developed. As described in more detail in Section 3.1.2.5 of the Supplemental Draft EIS, the existing conditions in these views have been evaluated on a numerical scale from one to seven, where one indicates very low visual quality, four indicates medium or average visual quality, and seven indicates very high visual quality.

TABLE J-2

Existing Visual Quality and Aesthetics by Viewpoint in the St. Louis Park/Minneapolis Segment

[Rating Range 1 (very low) to 7 (very high)]

View Point	Viewpoint Description	Elements of the Visual Environment	Existing Visual Quality and Aesthetics						Overall Rating[a]
			Vividness		Intactness		Unity		
			Description	Rating	Description	Rating	Description	Rating	
1	View northeast from South Chowen Avenue toward the existing rail and trail corridor	Paved city street, on-street parking and no sidewalks bordered by low vegetation and dense rows of overhanging trees. Break in trees provides partial view into rail and trail corridor bordered at the far side by a dense mass of tall trees.	No topographic variation. The paved street is the only visible human-made element. The tree canopy over the street and the mass of trees bordering the far side of the rail and trail corridor are the most memorable elements.	3.8	View is relatively free of visual encroachment. The most visually intrusive elements are the cars parked along the street.	5	The parallel street and rail/trail corridors enframed by dense walls of trees create a degree of visual cohesion, but the view does not have focal point or a high level of visual organization.	4	4.3 Medium
2	View looking north near Lake Street	Paved bike and pedestrian trails paralleled by a narrow, at-grade freight rail line behind a rustic split rail fence. Corridor bordered by trees of a variety of species. Glimpses through trees of nearby low-rise and high-rise residential structures.	No topographic variation. Human-made features mostly utilitarian. Trees bordering corridor the most memorable element.	3.5	View is relatively free of visual encroachment. Visual intrusiveness of the rail line is reduced by its small scale and location behind the split rail fence.	5	Unity of the view is slightly reduced by the curving alignment of the corridor and the contrasting appearance of the trees of widely varying species planted along this segment.	5	4.5 Medium
3	View from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing	Wide, paved bike trail paralleled by a narrow, at-grade freight rail line, cutting through an area of overstory and understory deciduous vegetation. Rustic split rail fence separates trail from rail line.	No topographic variation. Human-made features mostly utilitarian. Dense regular mass of trees bordering corridor create a highly memorable element.	4	View is relatively free of visual encroachment. Visual intrusiveness of the rail line is reduced by its small scale and location behind the split rail fence.	5	Parallel trail and rail corridors enframed by dense wall of trees create a cohesive visual pattern.	6	5.0 Moderately High
4	View from the bike trail at the south side of the channel crossing	Wide, paved trail paralleled by a narrow, at-grade freight rail line, cutting through an area of overstory and understory deciduous vegetation. Rustic split rail fence separates trail from rail line. View includes at-grade bridges that cross over channels.	No topographic variation. Human-made features mostly utilitarian. Most vivid feature is dense massing of trees bordering corridor.	4	View is relatively free of visual encroachment. Visual intrusiveness of freight rail line is reduced by its small scale and location behind the split rail fence.	5	Parallel trail and rail corridors enframed by dense wall of trees create a cohesive visual pattern.	6	5.0 Moderately High

View Point	Viewpoint Description	Elements of the Visual Environment	Existing Visual Quality and Aesthetics						Overall Rating[a]
			Vividness		Intactness		Unity		
			Description	Rating	Description	Rating	Description	Rating	
5	View from the channel looking northwest toward the channel crossing	Waterway framed by banks with a dense cover of understory and overstory deciduous trees. Rustic and massive appearing trestle constructed of heavy timber is the focal point of the view.	Water and sloped banks add to vividness of view, along with dense massing of trees, and distinctive-looking trestle.	4.6	View is relatively free of visual encroachment. Heavy construction of trestle that partially blocks view down the channel creates an element of encroachment.	5	The view's elements generally combine to create a coherent composition.	5.5	5.0 Moderately High
6	View northwest from West21st Street at Thomas Avenue toward the existing rail and trail corridor.	Street intersection bordered by tall thick trees. View toward point where rail/trail corridor through heavily forested area crosses a two-lane street	No topographic variation. The human-made elements include the paved streets, the bike trail, and rail lines as they cross the streets. The tree masses that border the streets, and the glimpse of the cleared rail/trail corridor through the thick trees create a moderate degree of memorability	4	View is relatively free of visual encroachment.	5	The view up the tree-bordered road provides a focal point for the view, and the hint of the rail/trail corridor cut through the forest provides a point of visual interest.	5.5	4.8 Medium

[a] Scale is from Publication FHWA-HI-88-054, *Visual Impact Assessment for Highway Projects* (FHWA, 1988).

Source: CH2M HILL, 2013.

Viewer Sensitivity

The sensitive viewer groups present in the St. Louis Park/Minneapolis Segment include adjacent residents and recreational users of the trails and the channel connecting the lakes, who have a high level of visual sensitivity.

5. Potential Environmental Impacts

Eden Prairie

Introduction

This section identifies the potential long-term and short-term visual and aesthetic impacts of the visual changes that the project would bring about in the area along the Eden Prairie Segment. This analysis focuses on the changes that would occur in the views seen from each of the 10 representative viewpoints. Based on the predicted impacts, an identification is made of appropriate measures to mitigate the project's aesthetic impacts.

Long-term Direct and Indirect Visual Quality and Aesthetics Impacts

New elements introduced with the LPA in the Eden Prairie Segment would consist of light rail guideway (some at-grade and some structured), including tracks, signal systems, and overhead wires, stations, structured and surface park-and-ride lots, and traction power and signal substations. Viewpoints were selected in areas of potential change to the visual and aesthetic environment. Exhibits J-2 through J-11 in

Attachment J-1.1 present photographs of the existing view from each viewpoint, and below some of the photographs is a preliminary rendering that depicts the view as it would appear with the project elements in place. The rendering of the view with the project in place was compared with the photograph of the existing view. This comparison provided a basis for making a determination of the visual change the project would bring about and the nature and level of any visual impacts that would be created. Because visualizations were not prepared for all views evaluated in the Eden Prairie Segment, the assessments of the visual changes were made based on review of project plans and drawings and of the visualizations that had been prepared for other views in which similar changes were proposed.

Table J-3 summarizes the anticipated visual quality and aesthetics changes that would occur within each of the 10 Eden Prairie Segment viewpoints, and evaluates the changes to visual quality through application of the FHWA visual impact assessment system to assess the view as it would appear with the project in place. An assessment was made of each of the three landscape dimensions (vividness, intactness, and unity), rating each dimension using the seven-point evaluation scale. Comparison of these scores and the overall score versus the scores for the view's existing condition provided a basis for pinpointing the nature and degree of the changes to the view's level of visual quality. A brief narrative following the table summarizes the visual changes and the nature and degree of visual impact to each of the views.

TABLE J-3
Anticipated Direct Change and Impact in Visual Quality and Aesthetics from Eden Prairie Segment Viewpoints

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
1. View looking southwest from Technology Drive at Mitchell Road At-grade LRT would require removing vegetation and adding fill on the south side of the road in a corridor that extends to Mitchell Station.	The overall level of vividness of this view, which is currently moderately low, would remain the same.	3.5	The intactness of this view would be reduced by the removal of vegetation and widening the infrastructure corridor.	3.5	The level of visual unity would remain about the same, because the LRT would be a consistent element along this roadway.	3.5	3.5	From 3.8 to 3.5 Low
2. View looking southwest along Technology Drive in front of the Optum Health Services headquaters The at-grade LRT alignment would locate along the south side of Technology Road and require relocating the trail and landscaping.	The overall level of vividness would remain moderate because the LRT would be integrated into the landscaping.	4.1	While there would be a noticeable change, the visual intactness would remain moderate because landscaping and park-like features would remain.	3.7	The overall level of visual unity is medium to low and may be enhanced through integrating the LRT to unify the infrastructure with the landscaping.	3.4	3.7	From 3.7 to 3.7 Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
3. View from the Purgatory Creek Trail looking north at The trail would be relocated to the south of the LRT. The LRT guideway would cross Purgatory Creek in front of the existing pedestrian bridge.	The overall level of vividness may be lowered; signs and crossing arms visible among the natural setting nearest the trail. LRT facilities may be dominant in view from trail.	3.2	Visual intactness level would remain about the same. Although elements would be added to the view, they would be designed to be compatible with the existing landscape features.	3.5	The moderate unity would remain, because sensitive design features would accommodate the trail into the design. Native landscaping and detouring the trail would avoid an unsafe crossing of the LRT tracks.	4	3.6	From 4.1 to 3.6 Low
4. View from Technology Drive west of the Southwest Transit Center[b] The at-grade light rail would travel from the south side of Technology Drive, adjacent to Purgatory Creek Reservoir, and cross the road diagonally to access the Southwest Transit Center. A parking ramp would extend diagonally from the west side of the Southwest Transit Center, following the alignment of the light rail line, and the area between this parking ramp and Technology Drive would be converted to access drives.	The overall level of vividness of this view, which is currently moderate, would remain the same.	4	The intactness of this view would be slightly reduced by the LRT corridor, removing some natural areas along the Purgatory Creek Reservoir and some of the landscaping currently visible in front of the Transit Center.	4.0	The level of visual unity would be increased to some degree because the linear LRT features would visually tie together the disparate elements in the view.	4	4.0	From 4.2 to 4.0 Low
5. View looking south along Prairie Center Drive at Technology Drive A concrete elevated light rail structure would travel along the western edge of the roadway, adding a visually prominent structure to the setting that would split the view.	The overall level of vividness of this view, which is currently moderately low, would remain the same.	3.3	The intactness of this view would be substantially reduced by addition of the large, visually dominant LRT structure in the immediate foreground.	2.0	The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view, and because the structure would serve as a visually unifying view element.	4.5	3.3	From 3.8 to 3.3 Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
6. View from east side of Prairie Center Drive toward Purgatory Creek Park A concrete elevated light rail structure would pass along the opposite side of the road, adjacent to the park, adding a visually prominent structure to the setting. Because of the structure's height and widely spaced supports, views into the park would be maintained.	The vividness of this view would be slightly increased by the addition of the visually striking LRT structure.	4.0	Introduction of a new and visually dominant element into the view would reduce visual intactness.	2.0	The level of visual unity would remain about the same, because of consistency of the elevated light rail structure's alignment with the other linear features in the view; the structure would serve as a visually unifying element.	5.5	3.8	From 4.7 to 3.8 Moderately Low
7. View from Purgatory Creek Park looking east A concrete elevated light rail structure along eastern edge of park, adding prominent structure to setting. Densely planted landscape trees between the park's primary use areas and the elevated structure would reduce the structure's visibility and integrate it into the view. Over time, with tree growth, the degree of visual integration would increase.	The addition of the elevated LRT structure would create a slight increase in the overall vividness of this view.	4.3	The overhead LRT structure would contrast with the visual character of the other elements in the view, reducing the overall level of visual intactness.	3.0	The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view.	6.0	4.4	From 4.9 to 4.4 Low
8. View north along Prairie Center Drive south of proposed elevated crossing of roadway A large, concrete elevated light rail structure would cross the boulevard at this viewpoint and travel northwest along the opposite edge of the roadway, adding a visually prominent structure to the setting.	The vividness of this view would be slightly increased by the addition of the visually striking LRT structure.	4.0	The LRT structure would dominate and intrude on what is now an open view with a suburban character, substantially decreasing the level of intactness.	2.0	Visually dominant element would be present, but level of visual unity would remain due to consistency of elevated structure's alignment with other linear features; the structure would be a unifying element.	5.0	3.6	From 4.5 to 3.6 Moderately Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
9. View from Eden Road looking west The LPA includes a Town Center Station, which would extend Eden Road, replace some parking areas, and remove the natural vegetation north of Market Place Shopping Center.	The LPA may enhance the low to moderate vividness with the addition of modern transportation features.	3.6	The intactness of the view may be slightly reduced with the addition of rails and catenaries, which are likely to contrast with their surroundings.	2.5	Unless appropriate design and landscape measures are taken the new project elements may have the potential to reduce the visual unity of the view.	2.5	2.9	From 3.1 to 2.9 Low
10. Valley View Drive, view looking south toward the intersection with Flying Cloud Drive LRT alignment would be elevated east from Viking Drive to Prairie Center Drive. The guideway would block views from office building in southwest corner of this intersection.	The elevated guideway would not reduce the low to moderate vividness, because the area is dominated by large infrastructure features.	3.2	The elevated guideway may lower the already moderately low level of intactness, since it may increase the views of concrete transportation features to this area.	2.5	The LRT would slightly lower the already low unity, because the structure may block views of the office park; but this change is not significant, because the view is dominated by arterial roadways and access to the highway.	2.8	2.8	From 3.1 to 2.8 Low

[a] Scale is from *Visual Impact Assessment for Highway Projects* (FHWA, 1988). This rating is an assessment of the visual quality change. The overall level of impact is described in the text below.

[b] The scope of the LPA as identified by the Metropolitan Council (Council) includes a proposed western terminus at the Mitchell Station south of Technology Drive and west of Mitchell Road. As part of the design and engineering process, the Council also developed a design adjustment that would implement a western terminus of the proposed light rail line at the Southwest Station. Under this adjustment, the proposed structured park-and-ride lot at the Southwest Station would increase by approximately 600 spaces (from 450 spaces with the western terminus at Mitchell Station to 1,050 spaces under the western terminus at Southwest Station). With the western terminus at the Southwest Station, the height of proposed structured park-and-ride lot at the Southwest Station would increase by two floors and its footprint would approximately double (generally extending further to the south). Because of the nature of the potential improvements and the existing visual environment, there would be little change in the level of visual impacts at this viewpoint.

Viewpoint 1 – View Looking Southwest from Technology Drive at Mitchell Road (Exhibit J-2)

Overall Level of Impact: Not Substantial

Development of the at-grade LRT would require removing vegetation and adding fill on the south side of the road, in a corridor that extends to Mitchell Station. Although the visual character of this view would change somewhat (the view would appear more developed), the overall change to the visual quality of the view would be low, especially with attention to careful design, placement of LRT elements, and installation of appropriate landscaping.

Viewpoint 2 – View Looking Southwest along Technology Drive in front of the Optum Health Services Headquarters (Exhibit J-3)

Overall Level of Impact: Not Substantial

The at-grade LRT alignment would be located along the south side of Technology Drive, and would require relocation of the trail and landscaping. The visual character of the view would change with installation of the tracks and catenaries in the area in front of the buildings, but overall change to the visual quality would be

low, especially with careful design and placement of LRT elements and installation of appropriate landscaping to tie all of the elements of this view together.

Viewpoint 3 - View from the Purgatory Creek Trail Looking North (Exhibit J-4)

Overall Level of Impact: Not Substantial

The trail would be relocated to the south of the LRT alignment. The LRT guideway would cross Purgatory Creek in front of the existing pedestrian bridge. Project features visible in this view would include a new bridge structure located in front of the existing bridge, tracks, catenaries, and a fence along the LRT right-of-way. These features would be readily visible from this view and would create a moderate level of increase in the intensity of development seen in the view. However, the impact to the overall visual quality of the view would be low in that the project features will be similar in form and in their linear alignment to the other features along Technology Drive, and as a consequence, the effects on the visual intactness and unity of the view will be low. The new LRT bridge across Purgatory Creek is likely to result in a small increase in the vividness of the view. Taking these factors into account, overall, the change in the visual quality of the view will be low.

Viewpoint 4 - View from Technology Drive West of the Southwest Transit Center (Exhibit J-5)

Overall Level of Impact: Not Substantial

The at-grade light rail would travel from the south side of Technology Drive, adjacent to Purgatory Creek Reservoir and cross the road diagonally to access the Southwest Transit Center. A structured park-and-ride lot would extend diagonally from the west side of the Southwest Transit Center, following the light rail alignment, and the area between this parking ramp and Technology Drive would be converted to access drives. As a result of the project's development, there will be some removal of natural areas along Purgatory Creek Reservoir and the view will appear more intensively developed. The view's level of vividness will remain about the same, and there will be a moderate decrease in the level of visual intactness. The level of visual unity will increase because the LRT's tracks, catenaries, and fencing will create a linear feature that visually ties together the disparate visual elements now seen on the left and right sides of Technology Drive.

Viewpoint 5 - View Looking South along Prairie Center Drive at Technology Drive (Exhibit J-6)

Overall Level of Impact: Not Substantial

A concrete elevated light rail structure would travel along the western edge of the roadway, adding a visually prominent structure to the setting that would split the view. With the addition of the overhead structure, the visual character of this view would be changed by the enclosure of the view and the greatly increased level of development. . The overall level of vividness of this view, which is currently moderately low, would remain the same. The intactness of this view would be substantially reduced by addition of the large, visually dominant LRT structure in the immediate foreground. The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view, and because the structure would serve as a visually unifying view element. The overall change to the level of visual quality of this view would be low.

Viewpoint 6 - View from East Side of Prairie Center Drive toward Purgatory Creek Park (Exhibit J-7)

Overall Level of Impact: Substantial

A concrete elevated light rail structure would pass along the opposite side of the road, adjacent to the park, adding a visually prominent structure to the setting. Because of the structure's height and widely spaced supports, views into the park would be maintained. The overhead structure would become a visually dominant element in the view, and would change the visual character of this view, specifically the area seen in the view will appear to be more intensively developed and creating a sense of enclosure. The overall change to visual quality would be moderately low. The sensitivity of this view is moderate to high because of its visibility to high numbers of roadway users and pedestrians. Even though the change to visual quality will be moderate, given the view's visual sensitivity, the visual impact will be potentially substantial.

Viewpoint 7 - View From Purgatory Creek Park Looking East (Exhibit J-8)

Overall Level of Impact: Not Substantial

A concrete elevated light rail structure would be built along the eastern boundary of the park, adding a visually dominant linear element to the setting that would frame the park's eastern edge. Densely planted landscape trees between the park's primary use areas and the elevated structure would have high potential to reduce the structure's visibility and integrate it into the view. Over time, with tree growth, the degree of visual integration would increase. Even though this view is highly sensitive because it is seen by recreational viewers, because of the visual screening provided by the trees in the park, the LRT's overall impact on the visual quality of this view would be low.

Viewpoint 8 - View Looking North along Prairie Center Drive South of Proposed Elevated Crossing of Roadway (Exhibit J-9)

Overall Level of Impact: Substantial

A concrete elevated light rail structure would cross the boulevard at this viewpoint and travel northwest along the opposite edge of the roadway, adding a visually dominating structure to the setting. Although the presence of this structure would make this view feel more enclosed and intensively developed, the change to overall visual quality would be moderately low. This view is moderately sensitive because it is seen by large numbers of roadway users ate close range. Even though the change to visual quality will be moderately low, given the view's visual sensitivity, the visual impact will be substantial.

Viewpoint 9 - View Looking from Eden Road Looking West (Exhibit J-10)

Overall Level of Impact: Not Substantial

The LPA includes a Town Center Station, which would include construction of a short segment of local roadway extending west from Eden Road, replace some parking areas, and remove the natural vegetation north of Market Place Shopping Center. The visual character of this view would be substantially changed, with replacement of the lower density development, now hidden by trees, with the LRT and LRT station. The visual quality of the view would be reduced because of the removal of vegetation and the introduction of the tracks and catenaries, which could reduce the visual intactness and visual unity of this view.

Viewpoint 10 - Valley View Drive, View Looking South Toward Intersection with Flying Cloud Drive (Exhibit J-11)

Overall Level of Impact: Not Substantial

An elevated LRT structure would pass across this view from left to right and then continue along the north side of Flying Cloud Drive, seen on the right side of the photo. With the addition of the elevated structure, the visual character would be substantially changed, and there is likely to be obstruction of views from the upper stories of the office building seen in the center of the photo. The visual quality of this view is already moderately low. With the visual changes brought about by the project .the level of vividness of the view remain the same, but the presence of the contrasting overhead LRT structure would contribute to small decreases in the intactness and unity of the view. Overall, there would be a low level of change in the visual quality of the view.

Short-Term Visual Quality and Aesthetics Impacts

Potential short-term impacts on the 10 key viewpoints while constructing the LPA may occur because of the placement of staging areas, the presence of equipment, and materials storage in areas visible to sensitive users such as those in residences and recreational areas abutting the alignment.

The contractor would comply with appropriate federal, state, and local regulations concerning the removal of existing vegetation. Prior to construction, a plan for protecting existing trees and vegetation that could be injured during construction activities would be developed. Because any construction period visual changes would be limited in nature and short-term, they would be generally not substantial.

St. Louis Park/Minneapolis

Introduction

This section identifies the potential long-term and short-term visual and aesthetic impacts of the visual changes that the project would bring about in the area along the St. Louis Park/Minneapolis Segment. This analysis focuses on the changes that would occur in the views seen from each of the six representative viewpoints. Based on the predicted impacts, an identification is made of appropriate measures to mitigate the project's aesthetic impacts.

Long-term Direct and Indirect Visual Quality and Aesthetics Impacts

This section describes the potential long-term direct and indirect impacts to the six key viewpoints within the St. Louis Park/Minneapolis Segment where there would be a mix of at-grade and below-grade LRT infrastructure. Visual changes associated with the LPA in all areas of this segment would include those associated with vegetation removal, relocation of the existing freight rail tracks, relocation of trails, and the addition of station facilities. In the at-grade sections, there would also be impacts associated with the LRT tracks, signal systems, catenary wires, safety fencing, and sound walls. The at-grade crossing of the Kenilworth Channel would require construction of new bridge structures. In the transition areas between the at-grade and below-grade segments, there would be impacts associated with portal structures. The viewpoints selected to assess the visual changes created by the light rail-related improvements and freight rail modifications in the St. Louis Park/Minneapolis Segment are located primarily in areas where the highest levels of visual change would take place. Exhibits J-13 through J-18 present photographs of the existing view from each viewpoint, and below some of the photographs is a preliminary rendering that depicts the view as it would appear with the project elements in place. The rendering of the view with the project in place was compared with the photograph of the existing view. This comparison provided a basis for making a determination of the visual change the project would bring and the nature and level of any visual impacts that would be created. Because visualizations were not prepared for all views, the assessments of the visual changes were made based on review of project plans, drawings, and visualizations that had been prepared for other views in which similar changes were proposed.

Table J-4 summarizes the anticipated visual quality and aesthetics changes that would occur within each of the six St. Louis Park/Minneapolis Segment viewpoints, and evaluates the changes to visual quality through application of the FHWA visual impact assessment system to assess the view as it would appear with the project in place. An assessment was made of each of the three landscape dimensions (vividness, intactness, and unity), rating each dimension using the seven-point evaluation scale. Comparison of these scores and the overall score for the view with the scores for the view's existing condition provided a basis for pinpointing the nature and degree of the changes to the view's level of visual quality. A brief narrative following the table summarizes the visual changes and the nature and degree of visual impact to each of the views.

TABLE J-4

Anticipated Direct Change and Impact in Visual Quality and Aesthetics from St. Louis Park/Minneapolis Segment Viewpoints

VPN, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
1. View northwest from South Chowen Avenue toward the existing rail and trail corridor Addition of LRT right-of-way in corridor with catenaries and perimeter fencing on left side of view. Bike and pedestrian trails pushed closer to the street. Addition of West Lake Station with waiting platform, catenaries, and perimeter fencing.	Removal of trees along north side of street and along the northern perimeter of the rail/trail corridor would decrease the vividness of the vegetation. The addition of the station structures would make a positive contribution to the level of vividness that counterbalances the loss of vividness due to vegetation removal.	3.8	Intactness reduced by the removal of trees, the addition of the station infrastructure, and the overhead equipment required by the LRT.	4.5	The visual unity of this view is likely to be increased by the tree clearing that would open the view corridor along the road and open up a view toward the station, which would provide the visual focal point of a well-ordered rail/trail/transit corridor.	5	4.4	From 4.3 to 4.4 Low (positive increase)
2. View looking north near Lake Street LRT would be out of sight, buried under bike and pedestrian trail. Substantial removal of existing vegetation along the east side of the corridor.	Removal of trees along south side of corridor decreases vividness of vegetation. Exposure of distinctive residential tower structures increases vividness of human-made elements.	3.5	Intactness reduced by removal of trees along southern edge of corridor and the exposure of the tall, visually-intrusive residential towers.	3.5	Removal of trees and visibility of the residential towers combine to create a substantial decrease in the visual unity of the view.	3.5	3.5	From 4.5 to 3.5 Moderate
3. View from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing Addition of LRT right-of-way to north of bike and pedestrian trail, with shift of freight line into a widened area along the northern edge of the corridor. Addition of a fenced transition to the tunnel portal next to the bike trail.	Removal of large trees along the edges of the corridor that now contribute substantially to the vividness of the view would reduce the vividness of the view.	3.3	Intactness reduced by reduction in the tree canopy and by addition of fencing and overhead equipment required by the LRT.	4.0	Unity reduced by reduction of the extent of the tree canopy that currently frames the view and gives it a high level of visual unity.	4.5	3.9	From 5.0 to 3.9 Moderate

VPN, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating[a]	Visual Quality and Aesthetics Change[a] (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating[a]	Description of Change	Rating[a]	Description of Change	Rating[a]		
4. View from the bike trail at the south side of the channel crossing Trail corridor would be widened to accommodate aboveground segment of the LRT as it approaches the channel crossing. Freight line moved north up to 4 feet. Installation of fencing on both sides of the bike/pedestrian trail corridor.	Reduction in tree masses immediately adjacent to the trail and elimination of the fencing along the trail would reduce the vividness of the view.	3.3	Fencing located immediately adjacent to the trail corridor and presence of new rail corridor with overhead infrastructure would intrude on the view, reducing intactness.	3.5	View's current high level of unity would be reduced by reduction in the tree masses that now enframe the view and by the addition of disparate built elements.	4.5	3.8	From 5.0 to 3.8 Moderate
5. View from the channel looking northwest toward the channel crossing Vegetation on the banks at the channel crossing would be cleared to accommodate constructing a bridge across the channel to carry the LRT, bike and pedestrian trails, and freight.	The clearing would slightly decrease the vividness of the vegetation. The new bridge would include a careful design that would add to the vividness of the view.	5.0	The intactness of the view would be reduced by the creation of the cleared area adjacent to the bridge and the addition of more built elements to the view.	3.5	The attractive design of the bridge to carry bike and pedestrian trails, light rail, and freight rail would serve as a visually unifying element. The increased clearance and openness under the bridge would create a visual connection between the segments of the lagoon north/south of the new bridges.	5.5	4.6	From 5.0 to 4.6 Low
6. View northwest from West21st Street at Thomas Avenue toward the existing rail and trail corridor. Substantial clearing of vegetation currently screens views into station site. Station and associated catenaries and fencing would be visible. Wide sidewalks installed along edges of streets in views.	Removal of trees on left side of view would decrease the vividness of the vegetation. The addition of the station structures would make a positive contribution to the level of vividness that counterbalances the loss of vividness due to vegetation removal.	4	Intactness reduced by the removal of trees and the addition of the station infrastructure and the overhead equipment required by the LRT.	4.5	. Intactness reduced by the removal of trees and the addition of the station infrastructure and the overhead equipment required by the LRT.	6	4.7	From 4.8 to 4.7 Low

[a] Scale is taken from Publication FHWA-HI-88-054, *Visual Impact Assessment for Highway Projects* (FHWA, 1988). This rating is an assessment of the visual quality change. The overall level of impact is described in the text below.

Acronym:

VPN = viewpoint number

Source: CH2M HILL, 2013.

Viewpoint 1 – View Northeast from South Chowen Avenue toward the Existing Rail and Trail Corridor

Overall Level of Impact: Not Substantial (Exhibit J-13)

In this view, clearance of the trees and other vegetation along the left side of the street would open up the views into to the rail/trail/transit corridor. The corridor would have a more developed appearance, with the

addition of the LRT, its catenaries, and its perimeter fences; the addition of the West Lake Station, its waiting platform, catenaries, fencing, and surrounding paved circulation area would also contribute to a more developed appearance. The existing pedestrian and bike trails would be pushed closer to the street, where they would be more visible. After these changes, the overall visual effects of the project would be slightly positive. The removal of the dense trees along South Chowen Avenue would make the view more expansive, and the West Lake Station would provide a visual focal point, making the view more interesting and memorable than it is at present. The lines of the linear features in the rail/trail/transit corridor would be consistent with each other and with the lines of the street, contributing to the creation of a visually unified composition. Because this view is seen by the residents of the high-density buildings along South Chowen Avenue and Abbott Avenue, there is a high level of sensitivity; therefore, while the project's visual effects would be slightly positive, careful design of the project in this area would be required.

Viewpoint 2 – View Looking North Near Lake Street (Exhibit J-14)

Overall Level of Impact: Substantial

The LRT alignment would be out of sight, located under the bike and pedestrian trail. The primary visual impact would consist of removal of existing vegetation along the east side of the corridor. This tree removal would decrease the mass of the existing vegetation that is an important contributor to this area's visual quality, and would reveal the tall, visually intrusive residential tower structures located south of the trail corridor. The overall level of change to the visual quality of this view would be moderate. Given the high visual sensitivity of views in this area to recreational and nearby residential viewers, this moderate level of change to visual quality is considered substantial.

Viewpoint 3 – View from a Point North of Cedar Lake Parkway Looking North toward the Tunnel Portal South of the Channel Crossing (Exhibit J-15)

Overall Level of Impact: Substantial

In this view, a number of new elements would give the corridor a more highly developed character, including the insertion of the LRT tunnel portal, an alignment shift into right-of-way in the area to the north of the bike and pedestrian trail, and shifting of the freight line into a widened area along the northern edge of the corridor. In addition, these changes would require removal of many large trees along the edges of the corridor that now contribute substantially to visual quality. As a result, there would be a moderate level of change in the view's level of visual quality. As in other areas along the Kenilworth Corridor, the level of visual sensitivity is high. The result would be a moderate level of change to visual quality that is potentially substantial.

Viewpoint 4 – View from the Bike Trail at the South Side of the Channel Crossing (Exhibit J-16)

Overall Level of Impact: Substantial

The trail corridor seen in this view would be widened to accommodate the aboveground segment of the LRT alignment as it approaches the channel crossing. The freight line would be shifted slightly to the north. Fencing would be installed on both sides of the bike/pedestrian trail corridor. Reduction in the tree masses immediately adjacent to the trail and elimination of the existing split rail fencing along the trail would further reduce the visual quality of the view. The overall reduction in the visual quality of this view would be moderate. As in other areas along the Kenilworth Corridor, the level of visual sensitivity is high. Consequently, this moderate level of change to visual quality is substantial.

Viewpoint 5 - View from the Channel Looking Northwest towards the Channel Crossing (Exhibit J-17)

Overall Level of Impact: Not Substantial

Vegetation on the banks at the channel crossing would be cleared to accommodate construction of a bridge across the channel to carry the LRT alignment, bike and pedestrian trails, and freight. The vegetative clearing would cause some reduction in the visual quality of the view. However, the bridge, as currently conceived, would include a careful design that would become a positive focal point in the view. The overall change to the view's level of visual quality would be low. Because of the recreational activity in the channel, this view is

visually sensitive. However, because the potential level of change to visual quality would be low the potential visual impact would be generally not substantial

Viewpoint 6 – View Northwest from West 21st Street at Thomas Avenue toward the Existing Rail and Trail Corridor (Exhibit J-18)

Overall Level of Impact: Not Substantial

Removal and thinning of the vegetation on the left side of the view would open the view up, making it more expansive. The tree removal would permit views into the rail/trail/transit corridor, and would make the new 21st Street Station a focal point in the view. The addition of the light rail infrastructure would cause a moderate reduction in the visual intactness. Overall, though, the change in the visual quality of this view would be low. Because this view is seen by the occupants of homes in the nearby residential areas and those traveling to the recreational facilities on Cedar Lake, the level of visual sensitivity is high. Although the sensitivity of the viewers in this area is high, because the change to the level of visual quality will be low, the overall level of visual impact will not be substantial.

Short-Term Visual Quality and Aesthetics Impacts

Potential short-term impacts on the six key viewpoints while constructing the LPA would be consistent with those described in Section 3.6.4 of the Draft EIS. Such impacts would be associated with construction staging areas; concrete and form installation; removal of some of the existing vegetation along the trail; lights and glare from construction areas; and dust and debris.

6. Potential Mitigation Measures

Eden Prairie and St. Louis Park/Minneapolis

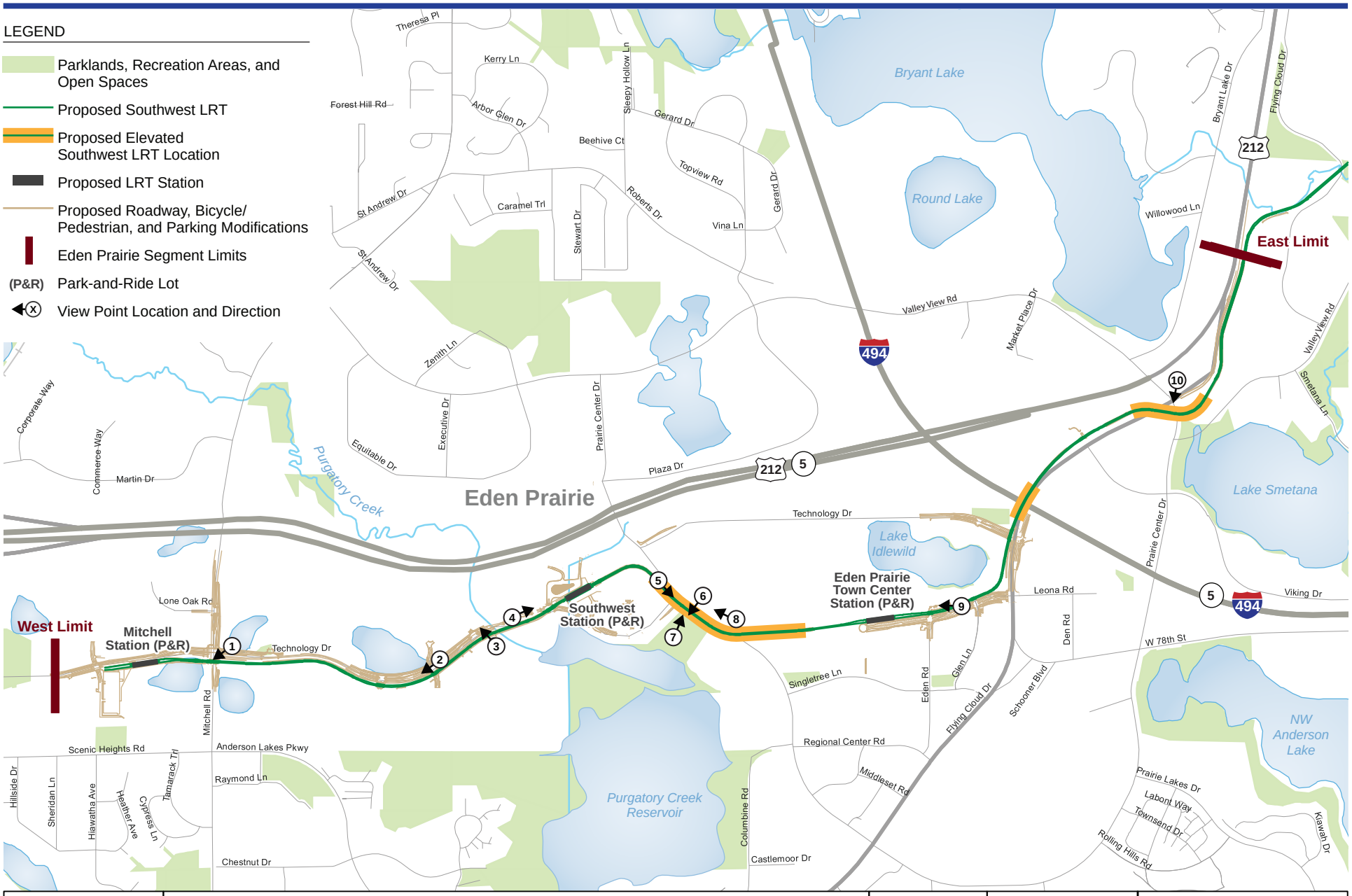
Based on FHWA guidelines the Council will consider mitigation measures for visual quality impacts that are deemed substantial and will identify in the Final EIS the mitigation measures to be incorporated into the project. The Council will develop aesthetic guidelines for the design of the project. These guidelines will address mitigation measures for visual impacts identified in the Final EIS and will address input from the affected communities. Mitigation measures for substantial adverse impacts resulting from the light rail elements will be identified during advanced engineering and could include measure such as landscaping, visual treatments and continuity with the elevated light rail structure design, lighting, and signage. As also indicated in the Cultural Resources analysis, for the Kenilworth Lagoon, the visual impacts caused by the project's design and the measures appropriate to mitigate them will be detailed in the 106 agreement.

Where appropriate, construction related mitigation measures will include elements such as locating staging areas in places not viewable by trail users or by otherwise incorporating visually screening, preservation of existing vegetation to the extent possible, implementation of dust suppression efforts, shielding of nighttime construction lights, continuous cleanup of trash and debris, and timely restoration of areas disturbed during construction.

7. References

U.S. Department of Transportation, Federal Highway Administration (FHWA). 1988. *Visual Impact Assessment for Highway Projects* (FHWA-HI-88-054).

Attachment J-1.1
Visual Resources Exhibits



SOUTHWEST Green Line LRT Extension

Southwest LRT Supplemental Draft EIS

Key View Point Locations
Eden Prairie Segment

Exhibit J-1

NORTH

0 750 1,500
Feet

METROPOLITAN COUNCIL

View looking southwest from Technology Drive at Mitchell Road toward proposed right of way along southern edge of Technology Drive.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 1** View Looking Southwest from Technology Drive at Mitchell Road Eden Prairie Segment	Exhibit J-2	METROPOLITAN COUNCIL

View looking southwest from Technology Drive toward the proposed right of way on the southern edge of Technology Drive where it would pass in front of the Optum Health Services Headquarters.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 2** View Looking Southwest along Technology Drive in front of the Optum Health Services headquarters Eden Prairie Segment	Exhibit J-3	METROPOLITAN COUNCIL

View looking north from the Purgatory Creek Trail toward the proposed right of way on the southern edge of Technology Drive.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 3** View from the Purgatory Creek Trail Looking North Eden Prairie Segment	Exhibit J-4	METROPOLITAN COUNCIL

View looking east from Technology Drive toward the proposed right of way where it would pass along the southern edge of Technology Drive, cross Technology Drive, and then pass along the west side of the SouthWest Transit Center. A new parking ramp and the station platform will extend from the existing Transit Center structures into the landscaped area now visible just beyond the driveway located between the condominium complex and the Transit Center.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 4** View from Technology Drive West of the SouthWest Transit Center Eden Prairie Segment	Exhibit J-5	METROPOLITAN COUNCIL

a. Photograph of the existing view looking south along Prairie Center Drive at Technology Drive toward the proposed alignment of elevated LRT structure.

b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 5** View Looking South along Prairie Center Drive at Technology Drive Eden Prairie Segment	Exhibit J-6	METROPOLITAN COUNCIL

a. Photograph of the existing view from the east side of Prairie Center Drive looking west toward the proposed alignment of elevated LRT structure and Purgatory Creek Park.

b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 6** View From East Side of Prairie Center Drive Toward Purgatory Creek Park Eden Prairie Segment	Exhibit J-7	METROPOLITAN COUNCIL

a. Photograph of the existing view from the parking lot in front of the picnic pavilion in Purgatory Creek Park looking east toward the proposed alignment of elevated LRT structure.

b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 7** View From Purgatory Creek Park Looking East Eden Prairie Segment	Exhibit J-8	METROPOLITAN COUNCIL

a. Photograph of the existing view looking north along Prairie Center Drive just south of the proposed location of the elevated LRT structure's crossing of the roadway.

b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

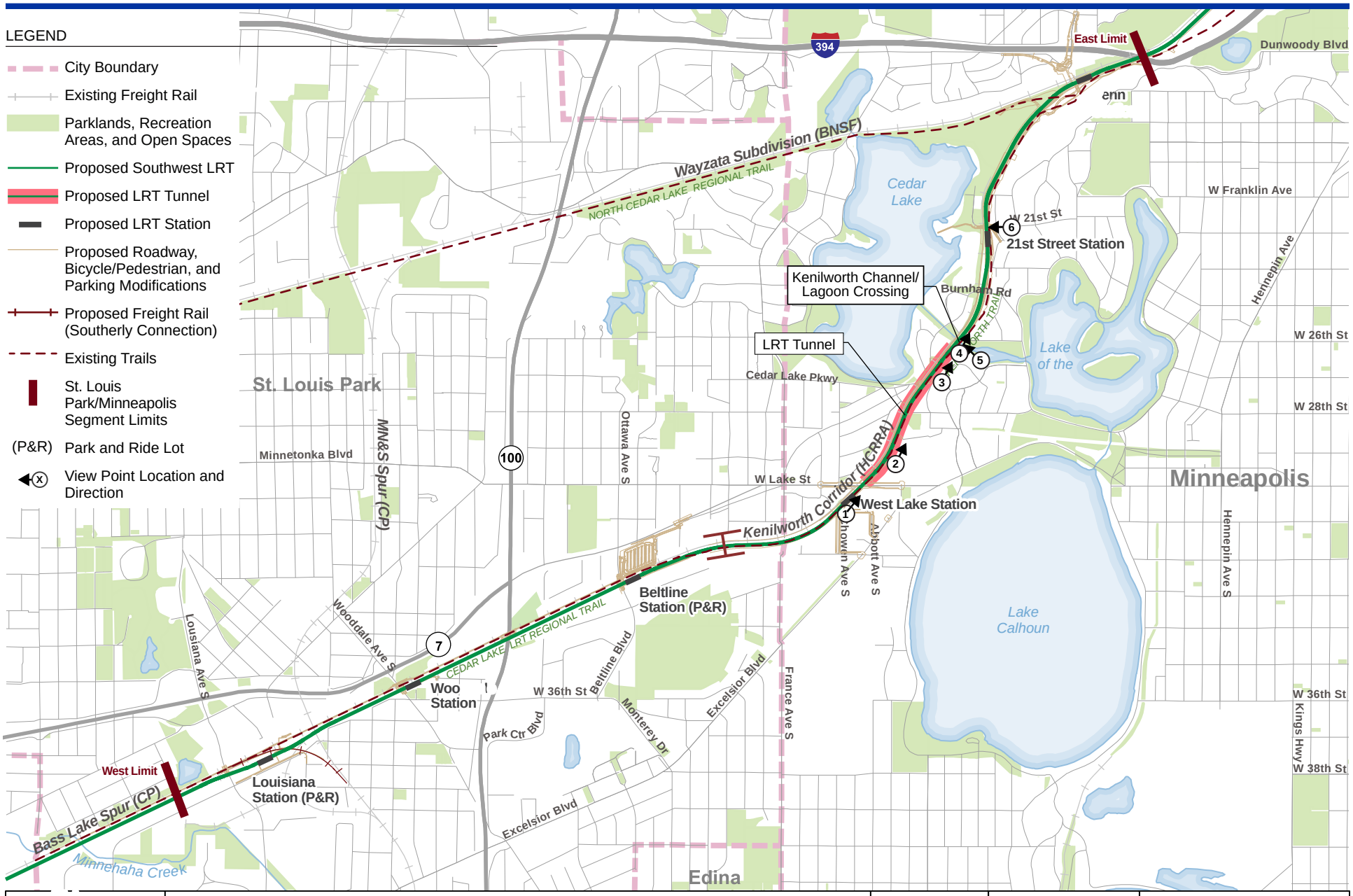
SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 8** View North Along Prairie Center Drive South of Proposed Elevated Crossing of Roadway Eden Prairie Segment	Exhibit J-9	METROPOLITAN COUNCIL

View from Eden Road looking west toward the proposed right of way that would pass along the north side of the road and into the undeveloped area by the water tower north of the Town Center Market Place.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 9** View from Eden Road Looking West Eden Prairie Segment	Exhibit J-10	METROPOLITAN COUNCIL

View looking south from Valley View Drive toward proposed route of elevated segment of the LRT that would cross Valley View Drive and continue along the north side of Flying Cloud Drive

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 10** Valley View Drive, View Looking South Toward Intersection with Flying Cloud Drive Eden Prairie Segment	Exhibit J-11	METROPOLITAN COUNCIL



SOUTHWEST Green Line LRT Extension

Southwest LRT Supplemental Draft EIS

Key View Point Locations

St. Louis Park/Minneapolis Segment

Exhibit J-12

METROPOLITAN COUNCIL

View northeast from South Chowen Avenue toward the existing rail and trail corridor and the proposed alignment of the LRT and the location of the West Lake Station.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 1** View northeast from South Chowen Avenue toward the existing rail and trail corridor St. Louis Park/Minneapolis Segment	Exhibit J-13	METROPOLITAN COUNCIL

a. Photograph of the existing view looking north along the trails and freight line at a point just north of West Lake Street.

b. Preliminary rendering of the view after project construction. The LRT is not visible because it would be underground. Excavation during construction could require clearing of trees along the right side of the trails, initially opening up the view toward the apartment tower complex.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 2** View Looking North Near Lake Street St. Louis Park/Minneapolis Segment	Exhibit J-14	METROPOLITAN COUNCIL

a. Photograph of the existing view from the trails at a point just north of Cedar Lake Parkway looking north toward the proposed tunnel portal south of the Kenilworth Channel/Lagoon Crossing.

b. Preliminary rendering of the view depicting the proposed light rail at the portal transition from the tunnel to the surface and the channel crossing.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

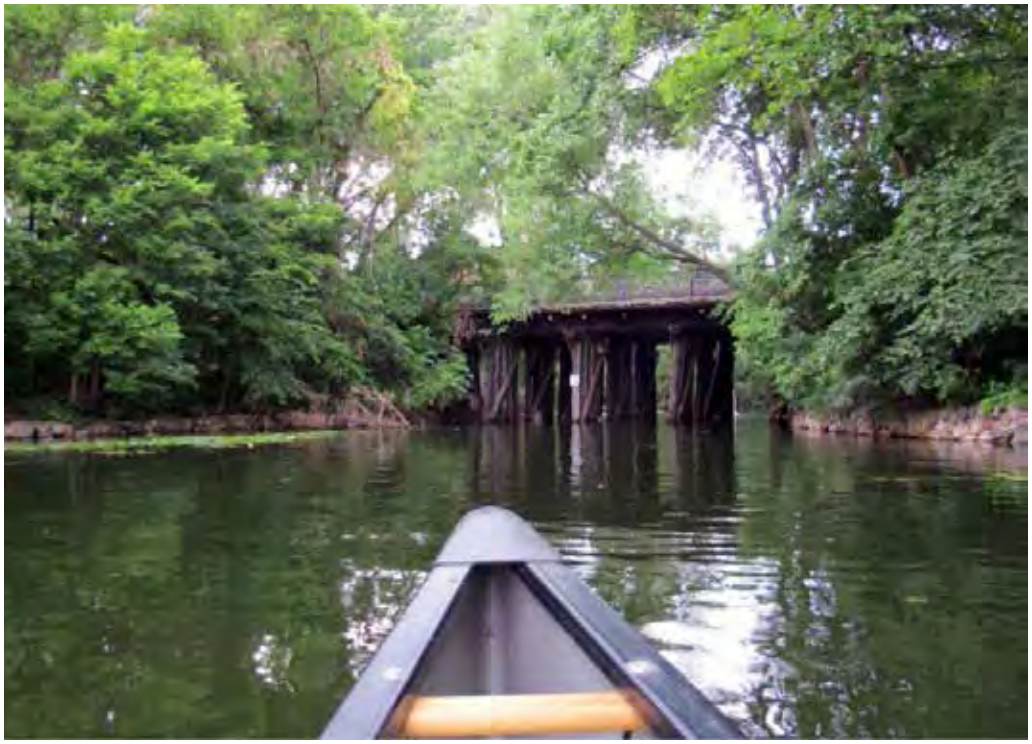
SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 3** View From a Point North of Cedar Lake Parkway Looking North Toward the Tunnel Portal South of the Canal Crossing St. Louis Park/Minneapolis Segment	Exhibit J-15	METROPOLITAN COUNCIL

a. Photograph of the existing view looking north from the trails at a point just south of the Kenilworth Channel/Lagoon Crossing.

b. Preliminary rendering of the view with the addition of the proposed crossing of the channel, which would include light rail tracks, freight rail tracks (partially obscured by safety and deterrent fences), as well as bicycle and pedestrian trails.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 4** View From the Bike Trail at the South Side of the Channel Crossing St. Louis Park/Minneapolis Segment	Exhibit J-16	METROPOLITAN COUNCIL



a. Photograph of the existing view looking northwest from the Kenilworth Channel/ Lagoon toward the freight rail and trail trestle bridges.

b. Preliminary rendering of the view with the addition of the proposed crossing structure that could be developed as a part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

SOUTHWEST	Southwest LRT Supplemental Draft EIS **Viewpoint 5** View from the Channel Looking Northwest Toward the Channel Crossing St. Louis Park/Minneapolis Segment	Exhibit J-17	METROPOLITAN COUNCIL

View northwest of West 21st Street at Thomas Avenue, looking west toward the Kenilworth Corridor, which includes an existing freight rail and trail alignment and which would include the proposed light rail alignment and 21st Street Station.

SOUTHWEST Green Line LRT Extension	Southwest LRT Supplemental Draft EIS **Viewpoint 6** View northwest from West 21st at Thomas Avenue toward the existing rail and trail corridor St. Louis Park/Minneapolis Segment	Exhibit J-18	METROPOLITAN COUNCIL

Attachment J-2

Federal Highway Administration - Visual Impact Assessment for Highway Projects

U.S. Department
of Transportation

**Federal Highway
Administration**

Office of Environmental Policy

Visual Impact Assessment for Highway Projects

Publication No. FHWA-HI-88-054

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of Transportation
**Federal Highway
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Visual Impact Assessment for Highway Projects

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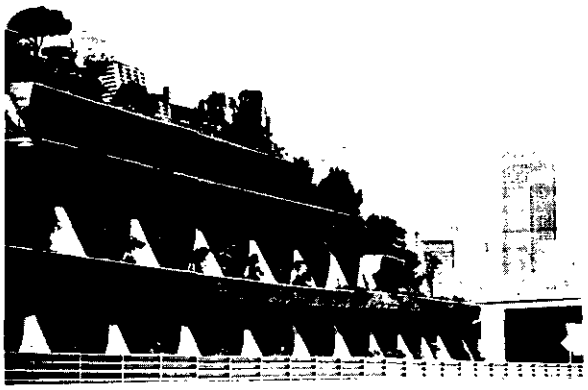
1 INTRODUCTION

This field guide is intended to help those who prepare or review the coverage of visual impacts in environmental assessments or impact statements for highway projects. This guide will discuss how to develop such coverage and how to review its adequacy.

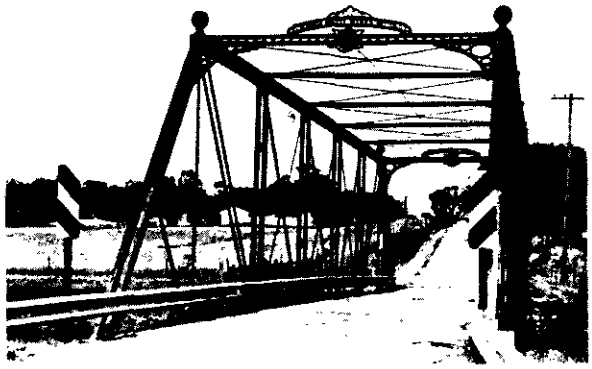
Many State highway agencies have been changing the emphasis of their programs from Interstate construction to the rehabilitation and upgrading of existing roads. It is usually obvious that constructing a new urban freeway will have a significant visual effect, positive or negative, on surrounding areas. It may be less clear whether visual considerations will be important in widening a road or reconstructing a bridge. In fact, experience has shown that visual considerations can sometimes be critical on such projects. This field guide will present an approach to identifying the potential importance of visual effects and then assessing the nature of these effects. Within the framework of this approach, the choice of specific assessment techniques should be tailored to the project in terms of appropriate detail and level of effort. It appears neither necessary nor desirable to apply the elaborate assessment process that is appropriate for a large project to a small project that will have only modest visual effect.



Visual considerations can be a strong influence in the design of major urban highway structures such as this retaining wall.

DOCUMENTING AND REVIEWING VISUAL IMPACTS

A visual impact assessment for a large and controversial highway project may be a considerable undertaking and may require a sizable report to explain the approach and its results. While this report may be a necessary and useful element of the environmental studies for a highway project, it will be too detailed for the Environmental Impact Statement (EIS) itself. The project EIS should be strictly limited in length and should cover only those environmental issues which have a significant bearing on project decisions.



Visual considerations may also be important in deciding how to repair or replace a minor bridge that has historic value.

While the full visual impact assessment report might be included in an EIS appendix, the EIS itself should contain only the findings on significant visual issues and the evidence sufficient to substantiate the findings. Given the limit of 150 pages for a typical EIS," coverage of visual impacts will be limited to a few pages on all but the most controversial projects. The visual assessment information for a finding of no significant impact (FONSI) must also be concise. In both cases, the narrative text should briefly describe the principal visual characteristics of the project, the visual resources and viewers affected, the significance of the main visual issues, the

effects of the project alternatives, and any mitigation measures. The scoping procedure suggested in this guide can be useful in the development of this assessment.

Much of the coverage of visual impacts should be graphic; visual effects are best conveyed visually. Graphic exhibits that are particularly helpful include the project viewshed, photographs of key views, and illustrations of the project's effect on these views. Techniques for developing these exhibits are discussed in this field guide.

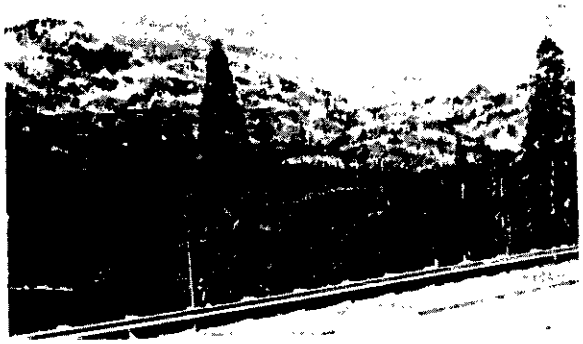
From a reviewer's perspective, visual impact coverage should contain enough information about the visual characteristics of the project, the people who will view the project, and the visual resources of the project area to support the findings of significance and effect. Evaluations should be supported by factual descriptions and illustrations; for example, an assertion that existing visual resources in the project area are "low in visual quality" should be preceded by a short description of these resources and representative photographs. Proposed mitigation measures should be logically related to adverse visual impacts or offsetting beneficial effects.

The terminology of esthetics is not uniform and reviewers should not insist on the exact words used in this guide (alternative terms in current use are given in the glossary). Rather than look for specific words, reviewers should seek evidence that all the major potential areas of visual impact have been considered. Again, the scoping questionnaire discussed in Chapter Three provides an outline of these areas and may be used as a starting point for review.

WHY VISUAL CONSIDERATIONS ARE IMPORTANT FOR HIGHWAY PROJECTS

The public nature and visual importance of our highways require that visual impacts—positive as well as negative—be adequately assessed and considered when a highway project is developed. Community acceptance of the project may also be strongly influenced by its visual effects.

Project visual impacts are seen both in the view *from* the road and the view *of* the road. The importance of the first has long been recognized. In recreation surveys, Americans have repeatedly ranked pleasure driving on scenic roads as one of their favorite activities. Researchers have also shown that the view from the road is the basis for much of what we know about our everyday environment and for our mental image of the city. For this reason, community groups are rightly concerned with the visual character of the highways entering their town or city; first impressions count.

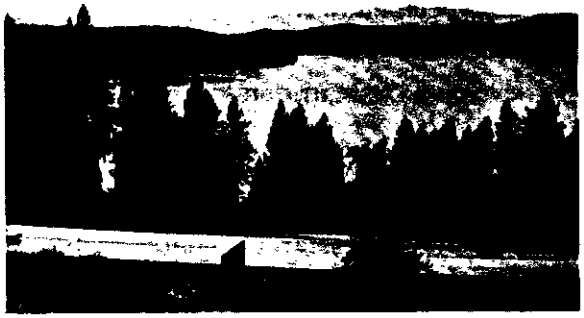


Americans often drive for the sheer pleasure of the view from the road.

On the other hand, the visual experience of entering our cities can be far from pleasant.

Systematic consideration of the view of the road is more recent. Particularly in urban or suburban areas, there may be many "eyes per mile" along the right-of-way of a proposed project. If existing views are very high in quality or are valued by large numbers of people, the visual costs borne by highway neighbors could outweigh the visual benefits accrued by highway users. In such cases, projects must be carefully planned to ensure that pleasing vistas for travelers are not developed at the expense of views from surrounding areas.

Public concern over adverse visual impacts can be a major source of project opposition. This is frequently true of urban viaducts and roadways in scenic areas, but other project types also generate controversy over their visual effects. Highway planners can help to resolve these controversies by assessing visual impacts and the effectiveness of mitigation measures in a clear and objective manner. This type of assessment can also help determine when actions that create positive visual impacts may reasonably be used to offset other adverse project effects.



Upgrading the highway to four lanes could have a significant effect on views of this outstanding scenic landscape.

Although many views of urban highways are not scenic, they may be important because of the number of "eyes per mile" that will see the road.

National policies direct that we carefully consider existing visual resources which are high in quality and that we enhance the built environment by good project planning and design. A systematic approach to visual impact assessment will help transportation agencies comply with these policies and achieve attractive highway projects that are appropriate to their viewers and visual settings.

WHAT FEDERAL LAWS AND REGULATIONS SAY ABOUT VISUAL CONSIDERATIONS

Federal legislation took its first notice of highway esthetics by protecting scenic road and parkway views. Billboards and junkyards along interstate and primary highways next drew attention. The initial funding for clean-up was followed by limited funding for roadside beautification. Up to this point, the mid-60's, the view from the road received all the attention.

The significance of the view of the road began to emerge with the Historic Preservation Act of 1966. This Act directs all federal agencies to account for the efforts of proposed projects on historic resources; the "criteria of adverse effect" include "the introduction of visual . . . elements that are out of character with the property or alter its setting." Coverage of the visual effects of highway projects was also recognized in 1966 by Section 4(f) of the Department of Transportation Act. It declares the national beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Highway projects can only cross these special lands if there is no feasible and prudent alternative and the sponsoring agency demonstrates that all possible planning to minimize harm has been accomplished. Visual resource mitigation may be required in certain instances as a part of this planning.

The National Environmental Policy Act of 1969 (NEPA) applied environmental awareness policies to all types of federally supported projects and all types of project settings. The Act declares that it is the "continuous responsibility" of the federal government to "use all practicable means" to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings." The Act, of course, requires Environmental Impact Statements for major Federal actions which significantly affect the environment. It also directs agencies to use an interdisciplinary approach to "identify and develop methods and procedures... which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations." It further

directs agencies to identify the means by which they will comply with NEPA.

The coverage of highway esthetics in Title 23 of the U.S. Code, which governs the Federal Highway Administration, was augmented to reflect NEPA's directives. Section 109(h) states that the project/environment balance point is the "best overall public interest." The costs of minimizing or eliminating the "destruction or disruption of manmade and natural resources," specifically including "esthetic values," must be considered in striking this balance. To further implement NEPA, Section 109(h) and Section 4(f), the Department of Transportation inaugurated its Design, Arts and Architecture in Transportation program in 1978. This program, outlined in DOT order 5610.1C, revised attachment 2, goes beyond the conservation of existing scenic resources and requires that environmental impact statements document the consideration of design quality in projects which involve public use areas or sensitive locations, such as parks or historic districts.

The Council on Environmental Quality (CEQ) published its final regulations for implementing the procedural provisions of NEPA in the same year. Lest esthetic values be construed as occuring only in wildlands or rural areas, the regulations direct that EIS discussion include "urban quality, historic and cultural resources, and the design of the built environment." To strengthen the relationship of the NEPA process to agency decision-making, the regulations encourage an early determination of EIS scope and of the environmental issues that are most significantly related to a decision among project alternatives. This important determination, called "scoping," can identify the potential significance of visual issues on a project, the nature of the particular visual issues, and the level of effort required for their resolution.

HOW THIS GUIDE CAN HELP IMPROVE HIGHWAY PROJECTS

The Federal Highway Administration has published this guide to help increase the responsiveness of highway planning and design to the national commitment to esthetic quality in federal projects. The guide attempts to achieve this goal by providing *technical assistance to people who prepare or review the coverage of visual effects in environmental assessments or impact statements. It is therefore oriented toward NEPA requirements, but the approach is also appropriate to Section 4(f) statements and to the determination of project visual effects on historic and archeological resources.*

More specifically, the objectives of this guide are to help readers:

- develop a basic understanding of the principles of esthetics and how they apply to highway planning and location;
- develop an ability to identify and evaluate location and design alternatives which minimize or eliminate adverse impacts on existing views and viewers, and which enhance the potential visual benefits of highway projects;
- develop an ability to prepare the coverage of positive and negative visual impacts in environmental assessments and impact statements, and/or to review the adequacy of such coverage.

The potential significance of visual effects depends not only on project type, but also on project setting. Moreover, federal laws and regulations require special consideration for the visual resources of certain settings. As we have already seen, these settings include parks, historic districts, and public use areas. The guide discusses how project visual impact assessments can respond to the issues posed by these special settings.

2 ESTHETICS AND VISUAL IMPACT ASSESSMENT

This chapter discusses the principles of esthetics that apply to visual impact assessment. It places esthetics and visual experience in the context of the National Environmental Policy Act, discusses how to identify the visual environment of a project, and examines the viewers and visual resources in that environment, including the highway itself.

The chapter outlines the principal esthetic considerations that should be addressed in a visual impact assessment. It also discusses each of these considerations in some detail. Readers examining this guide for the first time may wish to skim this chapter for basic concepts and return later to the detailed discussion of those concepts most at issue on a particular project.

ESTHETICS AND THE QUALITY OF VISUAL EXPERIENCE

The National Environmental Policy Act establishes the ground rules for the preparation of environmental impact statements. Visual effects are included within NEPA under the heading of esthetics. Therefore, we must understand what esthetics means within the context of NEPA before we can discuss how to adequately assess visual impacts.

Esthetics and NEPA

Esthetics is the *science or philosophy concerned with the quality of visual experience.* We cannot meaningfully assess project impacts on visual experience unless we consider both the stimulus and the response aspects of that experience. We will discuss these aspects separately, under the headings of "visual resources" and "viewers," to help keep the distinction clear.

We can use the word *quality* to refer simply to an attribute or characteristic of a subject. However, quality also can mean *excellence* or superiority in kind. Quality is used with this second meaning repeatedly in NEPA. The initial statement of need recognizes "the critical importance of restoring and maintaining environmental quality." To help meet this need, the Act declares a national goal to "enhance the quality of renewable resources" and directs the establishment of programs "to foster and promote the improvement of environmental quality." This NEPA language implies that esthetic assessments must not only describe the visual attributes of projects, but must also evaluate their effects on the relative excellence of visual experience.

The quality of visual experience depends in part on the characteristics of the visual resources that stimulate the experience.

The quality of visual experience also depends on the nature of the viewers: their location, number, activity, and values.

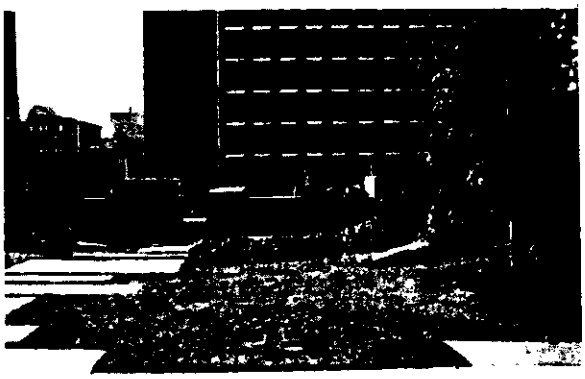
Three Levels of Project Esthetics

NEPA's emphasis on the quality of the overall environment has expanded the context in which we must assess project esthetics. Traditionally, visual design theory has followed the lead of the fine arts by looking at an individual project as a self-contained object, apart from its surroundings. Project esthetics have been judged by considerations like these: does the design visually express the project's functions? are the details visually consistent? do they support the total visual effect? We might summarize these and similar considerations as the *internal esthetics* of a project. This is the first level of project esthetics and is essential to a high-quality visual environment. It is also a principal focus of the Design, Art and Architecture in Transportation program that the U.S. Department of Transportation has instituted.

Internal esthetics: Seattle's Freeway Park is a well-detailed and internally consistent design with many delightful, self-contained spaces.

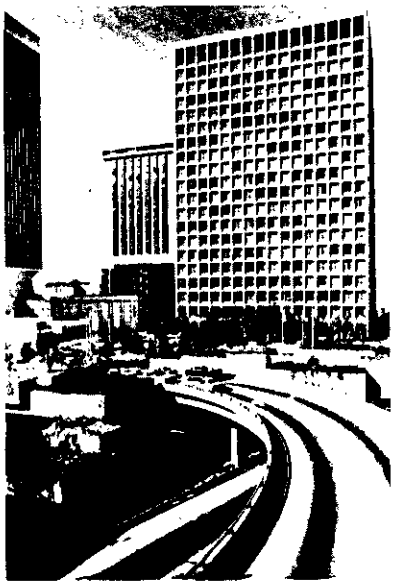
A second level of project esthetics considers the visual relationships between a project and specific elements of its surroundings: does the project contrast strongly?does it block existing views? We might call such considerations *relational* esthetics. They are the visual equivalent of good manners and can be very important to community acceptance of a project.

At the third and broadest level is *environmental* esthetics, to which NEPA particularly directs our attention. Here we must examine the esthetics of the total affected environment, of which any project is only a part: do project visual characteristics, however carefully designed and well mannered, enhance the quality of the environment? decrease it? or even affect it at all?



Relational esthetics: the forms and materials used in Freeway Park are also well-related to the rectilinear urban geometry of the city core.

In the past, much more attention has been given to the first level of esthetics than to the second and third levels. For this reason as well as the thrust of NEPA requirements, this guide will emphasize *how to assess visual relationships between highway projects and their surroundings and how to evaluate project effects on the quality of visual experience in the project environment*, as well as the internal esthetics of projects.

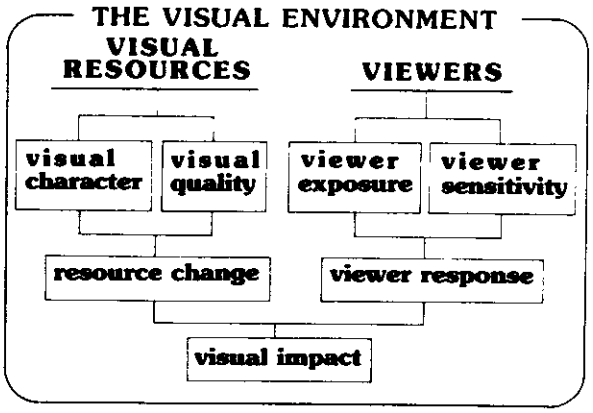


Environmental esthetics: the park is also an oasis of green that enhances the quality of the visual environment. It provides a handsome downtown entry and reconciles the differing visual orders of the freeway and the city center.

Visual Assessment Process

A generalized visual impact assessment process is illustrated in the accompanying diagram. This assessment process is similar in broad outline to the visual resource management (VRM) systems employed by

several major federal agencies. The major components of this process include establishing the visual environment of the project, assessing the visual resources of the project area, and identifying viewer response to those resources. These components define the existing or baseline conditions. We can then assess the resource change that would be introduced by the project and the associated viewer response; these allow us to determine the degree of visual impact.



These are the principal issues that a visual impact assessment should address; the relative importance of these issues will change from project to project.

HIGHWAY DECISIONS WITH ESTHETIC IMPLICATIONS

System Planning
- Design speed
- Capacity
- Access Control

Corridor/Location
- Alignment
  - horizontal
  - vertical
- Frontage roads
- Zoning
- Utility crossings
- Interchange location
- Intersections
- Joint development
- Urban vs. rural

Design
- Standards
- ROW width
- Sidewalks
- Pedestrian crossings
- Bikeways
- Erosion control
- Clearing limits
- Median width
- Signing
- Pavement surface
- Slope treatment
- Culverts
- Ditching
- Noise barriers
- Rest areas
- Stream relocation
- Structures
  - bridges
  - walls
- Shoulder treatment
- Sight distance
- Guardrail
- Median barriers
- Landscaping
- Fencing
- Grading
- Lighting
- Billboard control
- Junkyard screening

Maintenance
- Standards
- Mowing practices
- Litter pickup
- Painting
- De-icing practices
- Pavement maintenance
- Maintenance yards

Construction
- Temporary erosion control
- Clearing practices
- Borrow pit operation
- Clean up
- Waste areas

Operations
- Signing
- Pavement markings
- Lighting
- Traffic markings/lights
- Impact attenuators
- Delineators

3 SCOPING THE VISUAL IMPACT ASSESSMENT

SCOPING VISUAL IMPACTS

This guide has already shown that there are many different types of visual issues. For a few major projects, we may have to address all of them, but we need not adopt an "all or nothing" approach to visual impact assessment. Instead, we can apply the scoping concept to visual impacts and identify which visual issues, if any, require analysis for a given project. This chapter presents an "open question" approach for identifying significant visual issues. The questionnaire presented here can be used to help scope an EIS; it can also be used to guide the preparation of environmental assessments or to help identify the "extraordinary circumstances" under which environmental review is advisable for an otherwise excluded action. The questions, when properly analyzed, can serve as the primary basis upon which an esthetic or visual impact analysis can be written. They address those factors and esthetic considerations which are necessary in the development of an acceptable visual impact analysis. Although the questions can be self-serving in the visual impact assessment process, the remaining chapters in this field guide provide an explanation of the principles, evaluation techniques, and basic concerns which should be followed in analyzing the questions.

The questions are grouped under five main headings, discussed in the following paragraphs.

1 Project Characteristics

The first set of questions calls attention to project characteristics that may have a significant effect on project appearance. Alternatives may involve changes in these characteristics. For instance, a viaduct structure may be an alternative to a massive fill section across a low-lying area.

2 Visual Environment of Project

The next set of questions helps to identify and differentiate the visual environment of the project within the meaning of "affected environment" and "human environment" defined in NEPA regulations. The questions are intended to clarify the need for detailed analysis such as viewshed mapping.

3 Significant Visual Resource Issues

We can often identify the nature and likelihood of significant visual resource effects before we perform a detailed visual impact assessment. Sometimes visual resource effects are significant in themselves. For example, high visual quality is generally worth conserving wherever it exists. In most cases, however, the significance of these resource effects must be interpreted in combination with viewer response (the next set of questions).

For instance, the visual quality of an urban residential district may not be very high, but local residents may still value its visual character. On the other hand, highway projects are often related to urban improvement and redevelopment proposals; in these cases, community groups may be very concerned about improving the visual quality of urban travel routes by facility design and even the appropriate incorporation of art.

4 Significant Viewer Response Issues

Often, we can also identify the general nature of viewer response to a project before we undertake a detailed visual assessment, although the values and goals of local viewer groups may not become fully apparent until later in the process. For example, we can safely predict that residential and recreational viewer groups will be concerned about the appearance of their visual environment. We also know that various federal laws and regulations impose what we may call the test

of visual compatibility on projects located close to visual resources that are recognized for their cultural significance. Where this recognition is based on "scenic values," effects on visual quality will be equally important.

5 *Visual Impacts and Impact Management*

The last group of questions is intended to summarize the major visual effects—adverse or beneficial—that are likely to be associated with project alternatives. It is also intended to help identify potential visual mitigation measures for study in the assessment process. Mitigation can include avoiding, minimizing, and reducing impacts, as well as rectifying them or compensating for them. A mitigation measure should be related to a specific impact, or it may not only be ineffective, but may also compound the problem. For example, a color chosen to enhance the appearance of a bridge may prove incompatible with the surroundings of the bridge.

SCOPING QUESTIONNAIRE FOR VISUAL ASSESSMENTS

1. Project Characteristics

A. What are the major project design standards (capacity, access, speed, geometry)? Alternatives?

B. What is the typical highway cross-section (roadway, roadside slopes and drainage, right-of-way)? What major structures and appurtenances will be required? Alternatives?

C. Are any highway-related facilities (such as rest areas or maintenance yards) part of the project? What construction areas (borrow pits, spoil areas) will be needed? Alternatives?

D. What secondary effects (such as development at interchanges or conversion of land from rural to urban uses) may result from the project?

2. Visual Environment of Project

A. What landscape components (landform, water, vegetation, and manmade development) are characteristic of the regional landscape and the immediate project area?

B. Where is the project likely to be seen from?

C. What visually distinct landscape units can be identified within the immediate project area?

C. What levels of visual quality now exist (evaluated by criteria such as vividness, intactness, and unity or by other indicators) and how much would project alternatives affect these?

3. Significant Visual Resource Issues

A. How would the project alternative affect the landscape components which are present within the visual environment?

B. What is the existing visual character of the project environment (e.g., form, line, color, texture and dominance, scale, diversity, continuity) and how compatible would project alternatives be with this character?

4. Significant Viewer Response Issues

A. What major viewer groups are likely to see the project?

B. What is the viewer exposure to project alternatives for different groups (numbers, distance, duration and speed of view, etc.) and how would each alternative affect important existing views?

C. How are viewer activity and awareness likely to affect the attention that different groups pay to the project and its visual environment? Include both viewers from the road and of the road.

D. Are there any visual resources in the project environment that are particularly important to local viewers? Are there any districts, sites, or features that are regionally or nationally recognized for their cultural significance?

E. Is the project thought to threaten or support expectations for the future appearance of any areas it traverses?

5. ***Visual Impacts and Impact Management***

A. In summary, what significant visual impacts, if any, appear likely? Include both adverse and beneficial impacts.

B. What alternatives might avoid, minimize, or reduce any adverse visual impacts and by how much?

C. What actions might rectify or compensate for adverse visual impacts and by how much?

SAMPLE SCOPING QUESTIONNAIRE

To help illustrate the use of the scoping questionnaire, we have completed an example for an urban freeway on new location.

Project Introduction

The project is a freeway spur that would provide access to the downtown core of a medium-sized western coastal city, as well as a bypass route for traffic bound to the north and east of the core. It includes a 1.3 mile link between a major interstate freeway to the south and limited access parkway to the north, with two interchanges in the core itself. The north-south leg would be located along a waterway that is the eastern boundary of the urban core. The project also includes a 2.3 mile east-west connection across the waterway, leading to industrial port lands. Project alternatives include alignment options to reduce adverse effects on a redevelopment area along the waterway and on an historic rail station.

SCOPING QUESTIONNAIRE FOR VISUAL ASSESSMENTS

1. Project Characteristics

A. What are the major project design standards (capacity, access, speed, geometry)? Alternatives?

- Two travel lanes in each direction, with up to 50,000 total ADT
- Fully controlled access
- 50 miles per hour design speed on mainline, 35 on ramps
- Minimum radius curves can be used

B. What is the typical highway cross-section (roadway, roadside slopes and drainage, right-of-way)? What major structures and appurtenances will be required? Alternatives?

- Mainline (2-lane) roadways = 42 feet
- Ramp (1-lane) roadways = 28 feet
- Right-of-way = 120 to 400 feet
- Waterway and river crossings: 340 feet (45 feet clear) and 400 feet (52 feet clear)
- All of N-S roadways, much of E-W roadways elevated on structure over railroad tracks (23 feet clear)
- Balance of roadway elevated on fill, 1½:1 side slopes
- Lighting and sign bridges required

C. Are any highway-related facilities (such as rest areas or maintenance yards) part of the project? What construction areas (borrow pits, spoil areas) will be needed? Alternatives?

- Possible joint-use beneath structures
- Potential uses include parking, outdoor storage, industrial use, and parks

D. What secondary effects (such as development at interchanges or conversion of land from rural to urban uses) may result from the project?

- Increased potential for redevelopment of downtown and adjacent waterway
- Possible urban deterioration immediately next to right-of-way

2. Visual Environment of Project

A. What landscape components (landform, water, vegetation, and manmade development) are characteristic of the regional landscape and the immediate project area?

- Landform: glacial terraces and small bluffs; estuarine deposits and landfill on valley floor
- Water: stream (partially culverted), river, waterway, sound
- Vegetation: weedy species on disturbed uplands, including blackberry and Scotch broom; lowland vegetation includes stands of red alder and black cottonwood;
- Manmade development: highrise office core, brick warehouse and railroad district, port industry, recreational marinas, hillside residential neighborhoods

B. Where is the project likely to be seen from?

- Existing city streets, existing freeway and parkway, and new highway itself
- Downtown core, historic warehouse and rail station district
- Waterway, new parks, new marinas
- Residential areas
- Industrial areas

C. What visually distinct landscape units can be identified within the immediate project area?

- Downtown core, warehouse and rail station district, waterway district, port industry area

3. Significant Visual Resource Issues

A. How would the project alternative affect the landscape components which are present within the visual environment?

- Landform: heavily modified hillside terraces and estuarine lowlands; little additional modification
- Water: stream valley at south end of corridor may be further disturbed; waterway and river would be crossed by bridges

- Vegetation: stands of trees in stream valley and on lowland floor may be reduced in size
- Manmade development: highway would require clearing some industrial buildings; brick warehouses would not be removed

B. What is the existing visual character of the project environment (e.g., form, line, color, texture and dominance, scale, diversity, continuity) and how compatible would project alternatives be with this character?

Prominent aspects of existing character include:

- Form: hillside terraces and bluffs; buildings generally rectilinear, except rail station dome
- Line: horizontal bluff edges, rail lines, waterway shore, roofs of warehouses
- Diversity: very great, because of close juxtaposition of districts, and profusion of industrial structures and equipment
- Continuity: relatively low, due to demolition and high proportion of vacant land

Project alternatives may or may not visually interrupt rail station dome, bluff and shore edges; may further increase diversity and decrease continuity

C. What levels of visual quality now exist (evaluated by criteria such as vividness, intactness, and unity or by other indicators) and how much would project alternatives affect these?

Existing visual quality is low in foreground, moderated by good background views of sound and mountains

- Vividness: moderate due to rail station dome, waterway, towers in downtown core
- Intactness: low, due to demolition, vacant land, and lack of maintenance
- Unity: low, due to high diversity of development and lack of continuity

Project could adversely affect waterway and rail station; it could also improve intactness and unity, and thus improve overall visual quality significantly.

4. *Significant Viewer Response Issues*

A. What major viewer groups are likely to see the project?

- Commuters, office workers and shoppers, recreational boaters, neighborhood residents, industrial workers

B. What is the viewer exposure to project alternatives for different groups (numbers, distance, duration and speed of view, etc.) and how would each alternative affect important existing views?

View from road: improved visibility of downtown for entering drivers (up to 50,000 daily) view duration approximately 30 seconds

View of road:

- Neighborhood residents--several thousand, middleground to background, permanent view
- Recreational boaters--several hundred (may increase significantly in future), foreground, intermittent view
- Office workers and shoppers--several tens of thousands, foreground, intermittent view
- Industrial workers--several thousand, middleground to background, intermittent view

Project may block views between rail station and waterway, downtown and waterway

C. How are viewer activity and awareness likely to affect the attention that different groups pay to the project and its visual environment? Include both viewers from the road and of the road.

View from the road: drivers will have clearer orientation, limited ability to focus on foreground

View of the road:

- Residents may have high concern about effect of road on views
- Recreational boaters and users of waterway, redevelopment area may also have high concern
- Office workers and shoppers probably will have moderate to low concern
- Industrial workers may be expected to have low concern

D. Are there any visual resources in the project environment that are particularly important to local viewers? Are there any districts, sites, or features that are regionally or nationally recognized for their cultural significance?

- Rail station is on National Register and is important to community
- Warehouse district around it is also important to community and may be eligible for Register
- Waterway views are valued, where available
- Tree stands in lowlands and in stream valley at south end of north-south leg are important to environmental groups

E. Is the project thought to threaten or support expectations for the future appearance of any areas it traverses?

Community is divided:

- o Businessmen and most city officials anticipate project improving visibility of downtown and contributing to revitalization; project design could enhance downtown
- o Widespread community concern over possible adverse visual effects on historic rail station and warehouse district; compatible design could reduce concerns
- o Additional concern over possible adverse visual effects on redevelopment of waterway for commercial and recreation use

5. *Visual Impacts and Impact Management*

A. In summary, what significant visual impacts, if any, appear likely? Include both adverse and beneficial impacts.

Beneficial effects (potential):

- o Improved visibility of downtown core
- o Improved visual quality of city entry

Adverse effects (potential):

- o Lower visibility of rail station and waterway
- o Visual incompatibility between elevated road, rail station area, and waterway redevelopment
- o Decreased visual quality of expected views of rail station area and waterway redevelopment (present views are low in visual quality)

B. What alternatives might avoid, minimize, or reduce any adverse visual impacts and by how much?

- o Minimum profile elevated road could considerably decrease obstruction of views from rail station and waterway areas
- o Lower profile could enhance compatibility of elevated road by making it appear continuous with bluff edge of first terrace

C. What actions might rectify or compensate for adverse visual impacts and by how much?

- o Structural concepts, landscape development, and joint-use alternatives may enhance visual compatibility of elevated road somewhat and greatly improve general visual quality over present condition

4 THE VISUAL ENVIRONMENT

The NEPA requirement to consider the environmental effects of a project implies that we must first determine the environment that is affected. NEPA also requires us to compare the relative effects of project alternatives. Therefore, two related steps are necessary before we can assess the effects of a project on its visual environment:

- we must develop a framework for visual assessment that will help us compare project alternatives;
- we must define the physical limits of the visual environment that each alternative may affect.

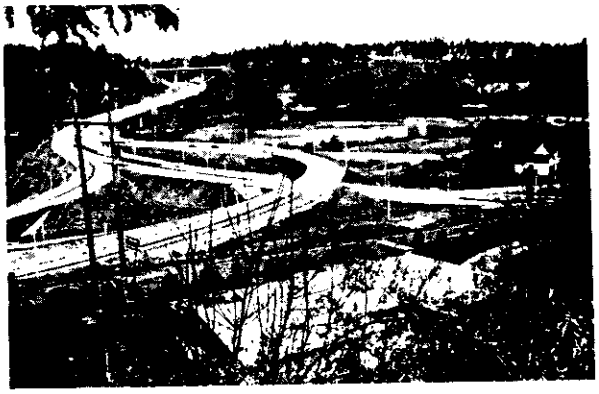
The concept of landscape classification enables us to establish the general visual environment of a project and its place in the regional landscape. Within this frame of reference, an analysis of project visibility can help us determine the limits of the actual or potential visual environment of the project.

The Landscape of the Geographic Region

The regional landscape can help us establish a frame of reference for comparing the visual effects of alternatives and determining the significance of these effects. In other words, we cannot assess the visual effects of a project unless we understand how the project's immediate visual environment is related to the visual environment of the geographic region. Characteristic combinations of *landscape components* distinguish one regional landscape from the next. Direct visual comparisons are only valid between landscapes with similar landscape components. The components of the regional landscape are its landform (or topography) and landcover; landcover components include water, vegetation, and manmade development.

Landscape types are relatively homogeneous combinations of landform and landcover that recur throughout a region. In the Puget Sound region, common landscape types include forested glacial plateaus, valley bottom farmlands, and the wooded but unstable bluffs between these two. Manmade landscape types can also be distinguished, such as the brick warehouse districts in the historic cores of many U.S. cities and the strip development along older urban highways. These natural and manmade landscape types may have visual implications for highway development. For instance, it may be considerably more difficult to fit a highway project unobtrusively into one landscape type than another. Roads that run across the grain of the landscape are particularly likely to cause visual problems.

To provide a framework for comparing the visual effects of highway project alternatives, we can divide the regional landscape (or specific portions of it) into distinct *landscape units*. These landscape units may be thought of as "outdoor rooms"; they will often correspond to places or districts that are already named. Units are usually enclosed by clear landform or landcover boundaries and



This highway route runs across the grain of landscape types: a deep cut scars the bluff and a massive fill blockades the valley floor.

many of the views within a landscape unit are inward-looking. Landscape units are usually characterized by diverse visual resources, too: several landscape types may be in view at any one time, just as we may see several walls of a room from one position. In other words, a landscape unit is perceived as a complete visual environment, while its landscape types are generally perceived as parts of that environment. The visual resources of project landscape units can be assessed and compared; the units can then be assigned priorities for planning, siting, and design decisions.

LANDSCAPE COMPONENTS

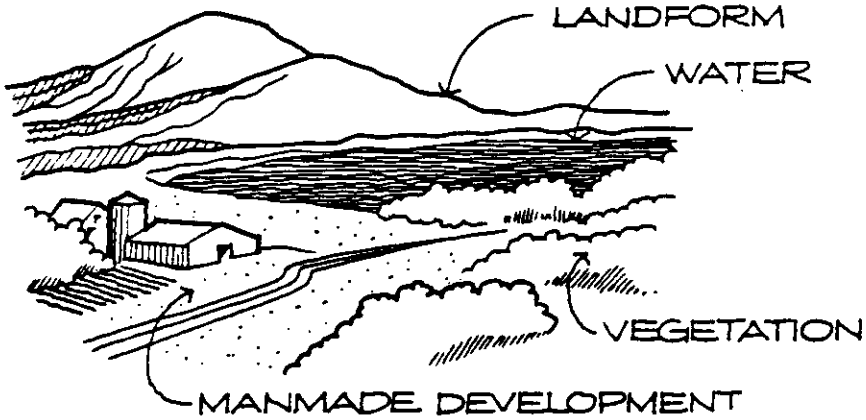
The underlying landform:

mountains, valley, beach

The landcover on it:

WATER

lake, river



VEGETATION

tundra, forest, crops

MANMADE DEVELOPMENT

house, barn, road

LANDSCAPE UNITS

Landscape Units are a framework for the assessment and management of visual resources and the effects of highway projects upon them.

Based on visual characteristics, and responsive to regional differences in these characteristics, ***Landscape Units*** *are a tool for mapping "outdoor rooms."*

The visual appearance of the landscape is dependent on the underlying landform and its landcover. Landscape types are homogeneous combinations of slope (landform surface) and landcover. Landscape types occur in more than one location and are generic within a region. Examples include "hillside hardwood forest" and "valley bottom industrial development".

LANDSCAPE TYPES
- multiple locations
- regional distribution
- usually unnamed
- visually homogeneous
- view orientation undefined

Landscape types combine to form specific landscape forms. These landform and landcover masses are geographically located and are often given place names (Bunker Hill is a named landform mass; Boston is a named landcover mass). They can also be classified into hierarchical systems on the basis of regional characteristics.

LANDSCAPE FORMS
- specific geographic location
- physical dimensions
- usually named
- heterogeneous visual elements
- view orientation varies

Landscape types and landscape forms combine to define visually bounded landscape units or "outdoor rooms". The spatial enclosure and visual interrelationships among the individual landscape types determine the visual character of the landscape unit. The edges dividing the unit from other landscape units are often defined by slope types, at watershed ridges and spatial constrictions.

SPATIALLY ENCLOSED LANDSCAPE UNIT
- geographic location
- visually bounded
- distinct landscape character
- interrelated but diverse visual elements
- high degree of intervisibility

In areas of vast spatial extent (characteristic of certain regions), the landscape unit may be the distant horizon. In this case, the landscape unit may consist of essentially a single homogeneous landscape type.

SPATIALLY UNENCLOSED LANDSCAPE UNIT
- geographic location
- visually unbounded
- distinct landscape character
- continuous, similar visual elements
- moderate degree of intervisibility

THE PROJECT VIEWSHED

The regional landscape establishes the general visual environment of a project. We can determine the precise limits of the visual environment by mapping the project *viewshed*. A viewshed is the surface area visible from a given viewpoint or series of viewpoints; it is also the area from which that viewpoint or series of viewpoints may be seen. Put another way, a viewshed is a tool for identifying the views that a project could actually affect. Viewshed mapping can go far to dispel exaggerated community fears over the visual effects of a project by accurately establishing which views have any potential of being affected. The extent of these views is often less than expected by the public. On the other hand, judgment must be exercised as to whether the area of assessment should extend to the farthest limits of the viewshed.

When a project involves location alternatives, each alternative may have its own viewshed. Often, these alternative viewsheds will include different landscape units. If the alternatives are all in the same valley, however, their viewsheds may be very similar. In such cases, as well as on existing roads, it can be useful to combine landscape unit and viewshed boundaries to define *visual assessment unit* as the visible portions of the landscape units through which the highway passes. Utilizing these composite units for evaluating and managing visual effects will help us limit our effort to the areas from which the highway may actually be seen. This approach is particularly well-suited for upgrading a road on its present location.

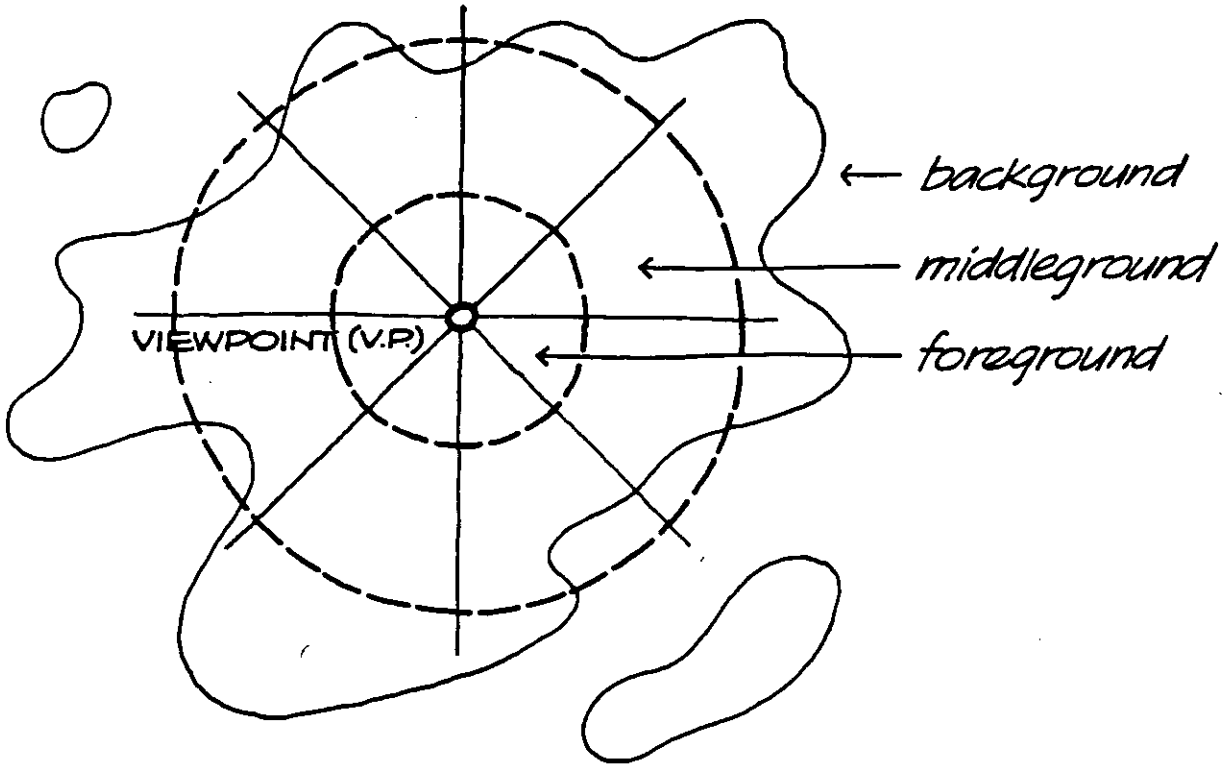
Viewsheds

KEY CONCEPTS

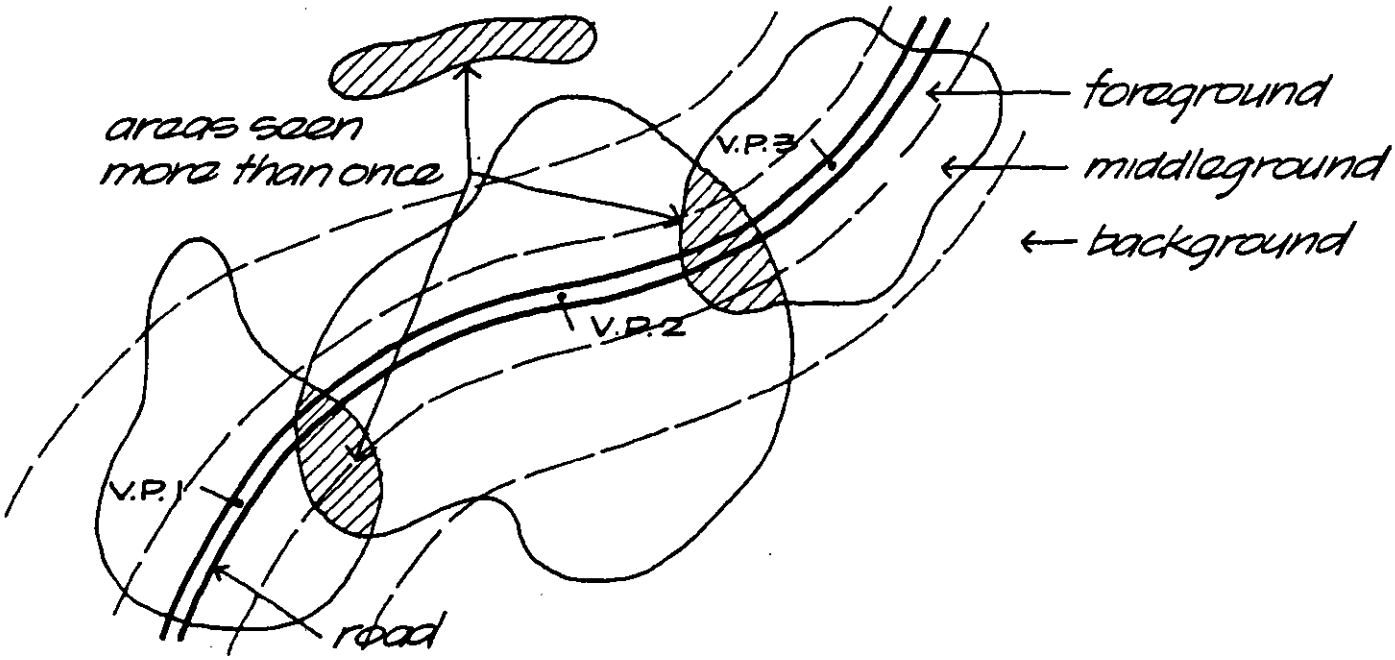
Viewshed:	1) All the surface area visible from an observer's viewpoint. 2) All the surface area from which the viewpoint is seen. Analogous terms: seen area, visible area.
Sightline:	The unobstructed line of sight between an observer and a viewed object.
Inter-visibility:	The principle that from any point visible to an observer, the observer can also be seen.
Observer viewpoint:	A point from which a selected view is analyzed and/or evaluated. Analogous concept: landscape control point (Litton).
Topographic (potential) viewshed:	The area which would be visible from a viewpoint based on landform alone, without the screening effect of vegetation and structures.
Composite viewshed:	The composite of overlapping areas visible from: 1) A continuous linear sequence of viewpoints along a road. 2) A network of viewpoints surrounding a road.
Visual Assessment Unit:	That portion of a landscape unit visible or potentially visible from a highway project or from which a highway project may be seen. To be useful in visual assessment the unit should be identified on the basis of visual distinctions, such as landscape unit boundaries or limit of visibility.

VIEWSHED MAPPING

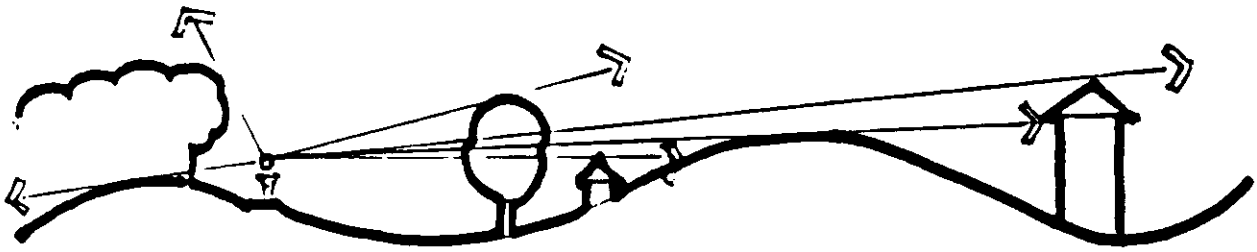
VIEWSHED FOR SINGLE VIEWPOINT



COMPOSITE VIEWSHED FOR MULTIPLE VIEWPOINTS

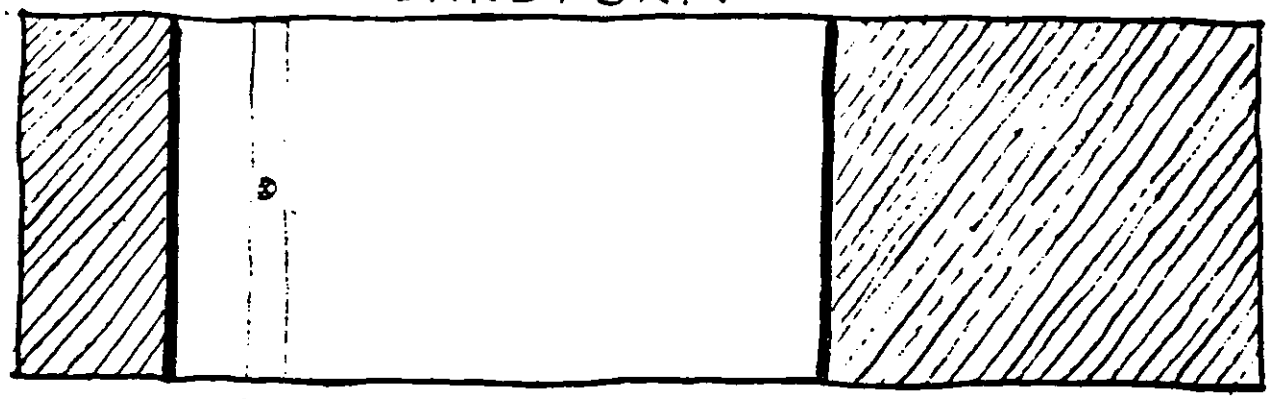


VIEWSHED MAPPING

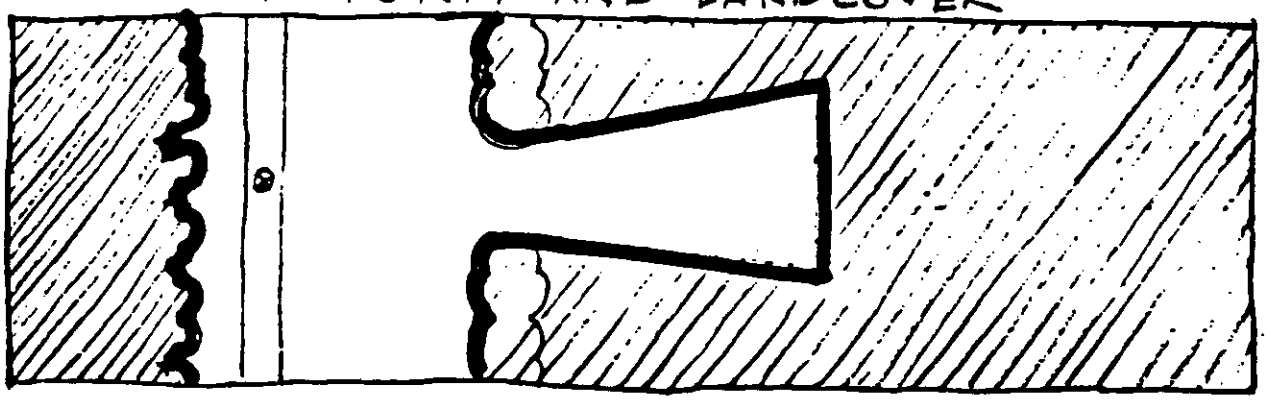


VIEWPOINT

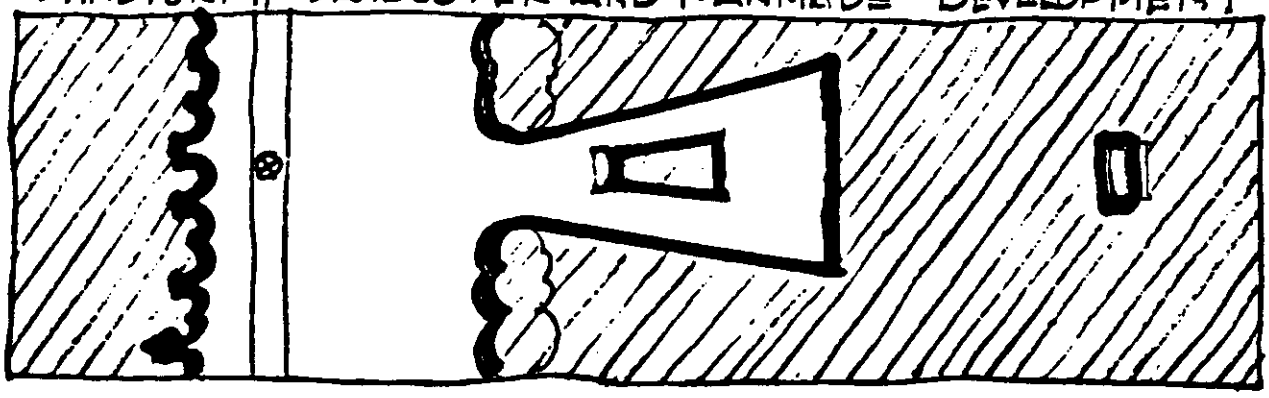
LANDFORM



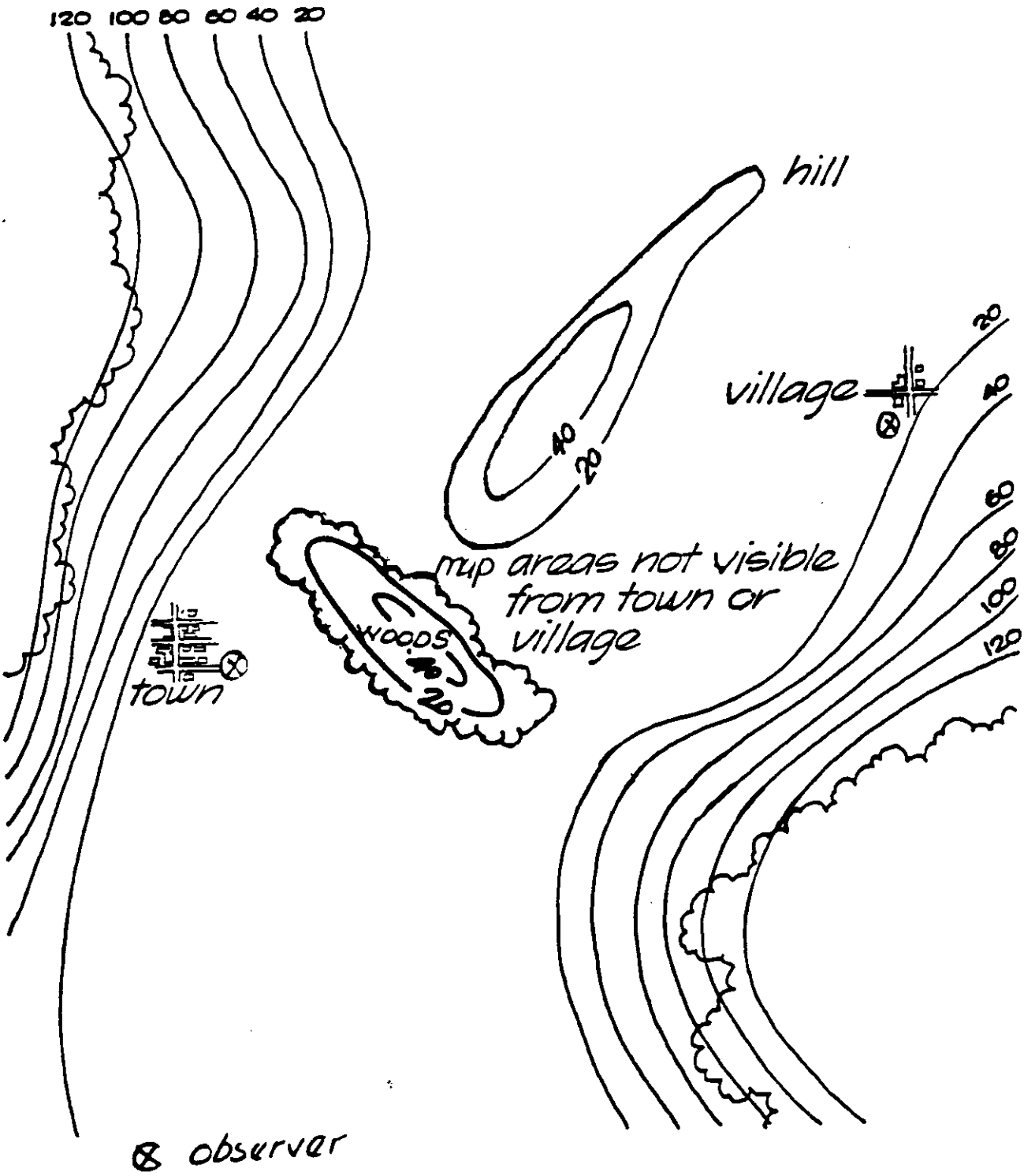
LANDFORM AND LANDCOVER



LANDFORM, LANDCOVER AND MANMADE DEVELOPMENT

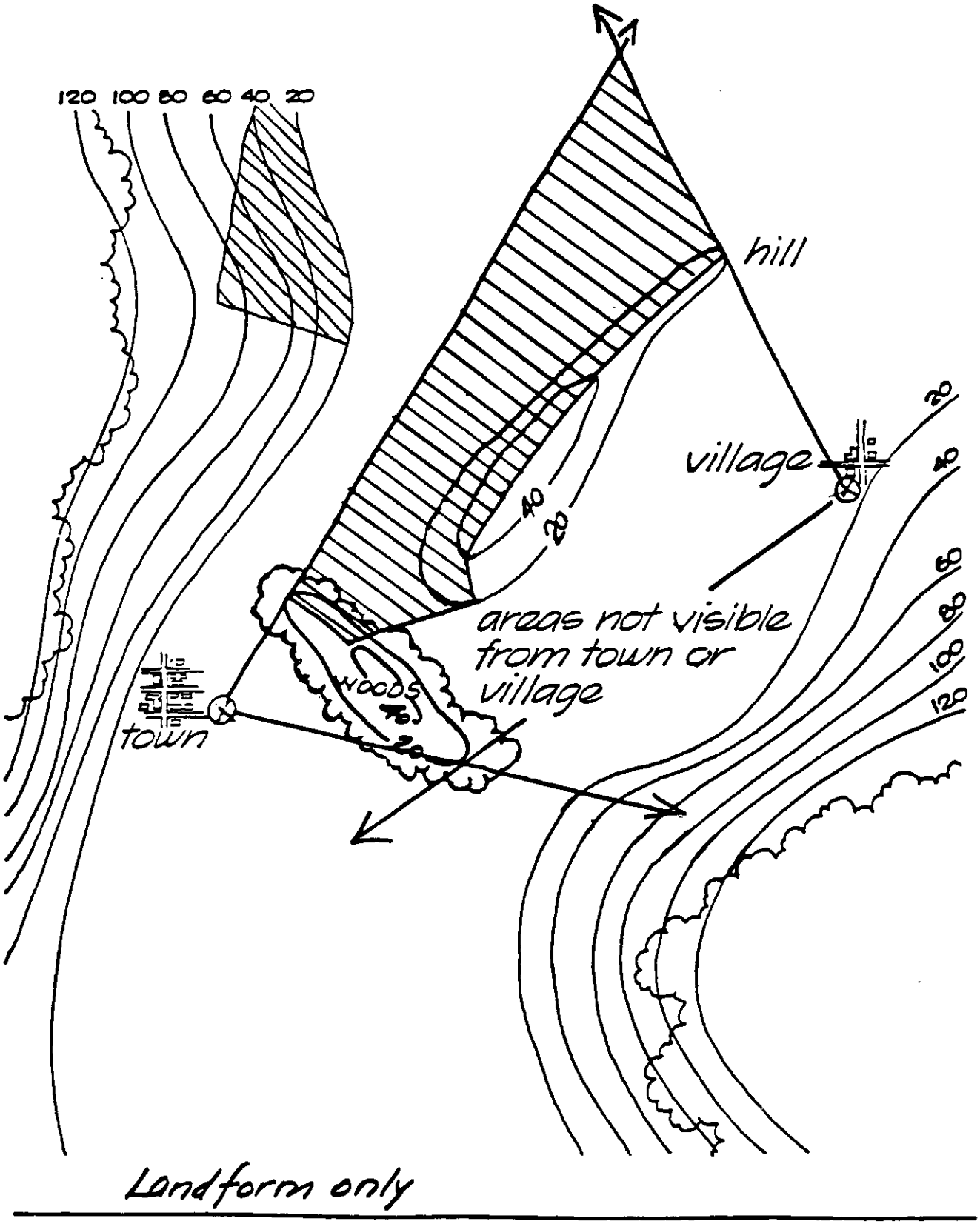


VIEWSHED EXAMPLE: Gravel Pit

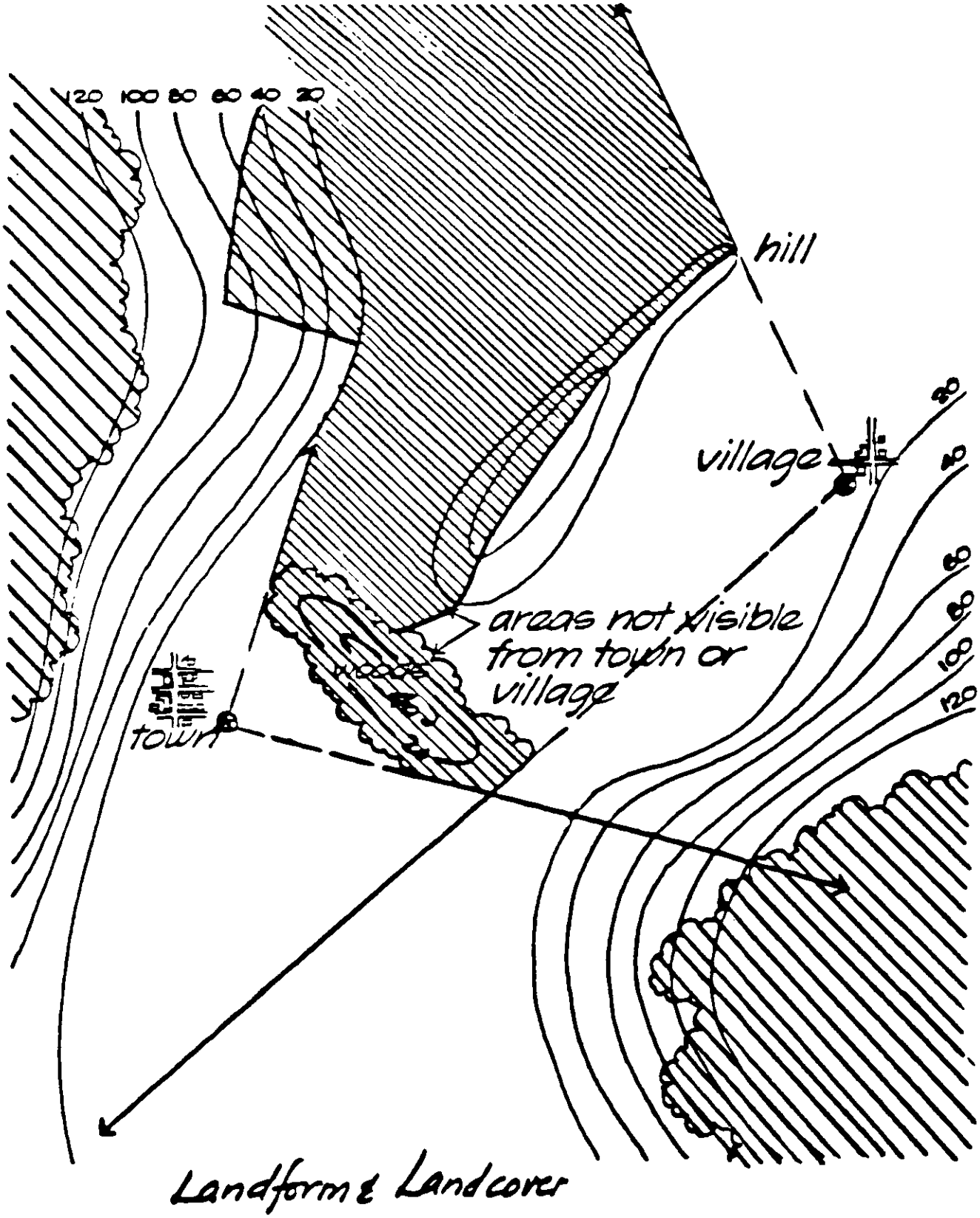


EXERCISE - map areas not visible from town or village using ① landform constraints.
② landform and landcover constraints

VIEWSHED EXAMPLE: Gravel Pit



VIEWSHED EXAMPLE: Gravel Pit



SELECTING OBSERVER VIEWPOINTS

BIAS
most

SENSITIVE POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- *Areas with high population*
- *Critical viewpoints*
- *Landscape transition points*
- *Critical visual resources:*

TYPICAL POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- *Representative of the character of the landscape*
- *Representative of the types of viewer*

RANDOM POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- *Evenly spaced points along the road*
- *Grid spacing over the area surrounding the road*
- *Random number table selection*

least

COST
least

most

VISUAL RESOURCES

The visual resources of a landscape are the stimuli upon which actual visual experience is based. A highway project can alter visual experience by changing the visual resource base. We must, therefore, be able to inventory the existing resources of the project visual environment and analyze their attributes before we can assess and manage visual impacts.

Visual Information

The visible components of a landscape—its landform and landcover—are its store of *visual information.* This is the basic data for the perception of objects in the landscape. An inventory of existing visual information, by landscape unit or visual assessment unit, will clearly display what we have to work with and will enable us to make basic comparisons of the visual effects of project alternatives. Specific inventory categories should derive from the regional landscape: its characteristic range of landforms, its types of water bodies, its vegetation communities, its land use and development types.

EXERCISE: INVENTORY

LANDSCAPE UNIT CHECKLIST: VISUAL INVENTORY AND ANALYSIS

Project Name _____
S.R. Number _____
Assessment Unit _____
L/F District _____
L/F Section _____
L/F Province _____

Evaluator _____
Date _____
Weather _____

	Visual Information (Perception)	Visual Character (Cognition)
	Resource Supply 3 High Prominence 2 Moderate Prominence 1 Present 0 Absent	
LANDFORM	___ Mountains ___ Steep Hills/Ridges ___ Rolling Hills ___ Undulating Land ___ Plateaus/Plains ___ Valleys ___ Cliffs, Bluffs ___ Points ___ Beaches ___	
Land Cover / WATER	___ Bays/Inlets ___ Rivers ___ Streams ___ Lakes ___ Ponds ___ Marshes ___ Waterfalls/Rapids ___	

	Resource Supply	Pattern Elements	Pattern Character
Land Cover / VEGETATION	___ Coniferous Woods ___ Deciduous Woods ___ Scrubland ___ Grassland ___ Pasture/Croplands ___ Parks/Lawns ___ Street Trees ___ Agriculture ___		
Land Cover / MANMADE DEVELOPMENT	___ Urban Centers ___ Suburban Areas ___ Industrial Areas ___ Commercial Areas ___ Institutional Areas ___ Residential Areas ___ Historic Features ___ Highways ___ Railroads ___ Utility Lines ___ Towers/Structures ___ Docks/Piers/Boats ___ Bridges/Dams ___ Parking/Storage Yard ___ Embankments/Cuts/ Pits ___ Billboards/Signs		

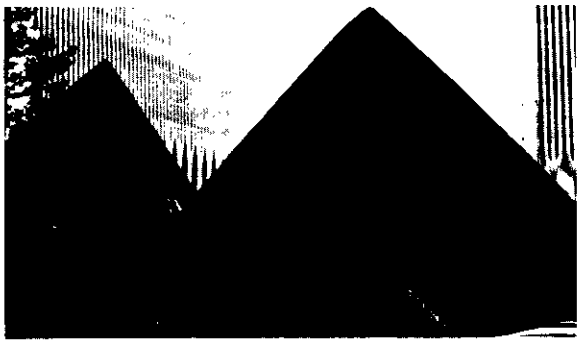
VISUAL CHARACTER

We do not simply experience the visual environment one object at a time; we experience the visual environment as an integrated whole. Our visual understanding or cognition of that environment is based on the *visual character* of objects and the relationships between these objects. The assessment of visual character is descriptive and not evaluative; that is, it is based on defined attributes that are neither good nor bad in themselves. Nevertheless, there can be strong public preference for the established visual character of a district and strong resistance to a project that would contrast with that character.

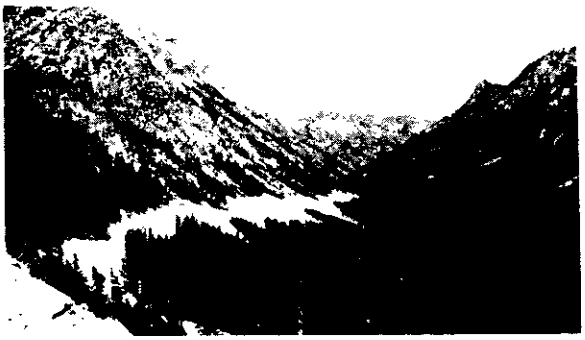
Descriptions of visual character can distinguish at least two levels of attributes: pattern elements and pattern character. Visual *pattern elements* are primary visual attributes of objects; they include form, line, color, and texture. The *form* of an object is its visual mass, bulk, or shape. *Line* is introduced by the edges of objects or parts of objects. The *color* of an object is both its value or reflective brightness (light, dark) and its hue (red, green). *Texture* is apparent surface coarseness. Our awareness of these pattern elements varies with distance. From afar, only the largest objects are seen as individual forms and we may see a city hillside as a textured surface. Distance also attenuates the intensity of colors.

The visual relationships between these pattern elements can be important secondary visual attributes of an object or an entire landscape. For example, there is a great difference between the visual character of a two-lane country road and an eight-lane freeway, although both may exhibit similar line, color, and texture. The visual contrast between a highway project and its visual environment can frequently be traced to four aspects of *pattern character:* dominance, scale, diversity, and continuity.

Specific components in a landscape may be visually *dominant* because of position, extent, or contrast of basic pattern elements. *Scale* is the apparent size relationship between a landscape component and its surroundings; an object can be made to look smaller or larger in scale by manipulating its visual pattern elements. Visual *diversity* is a function of the number, variety, and intermixing of visual pattern elements. *Continuity* is the uninterrupted flow of pattern elements in a landscape and the maintenance of visual relationships between immediately connected or related landscape components.



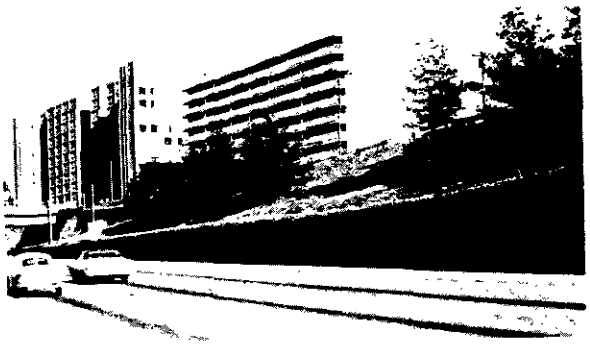
Visual character: form is the most prominent pattern element in this man-made setting.



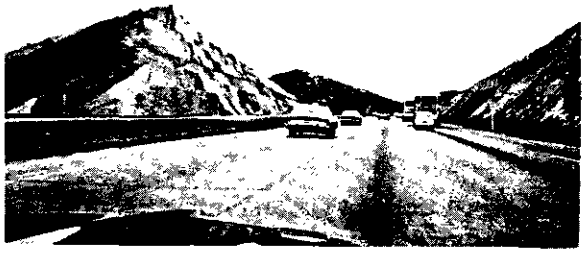
The horizontal line of this fresh highway cut contrasts with the characteristic diagonal lines in the natural landscape.

At a distance the individual structures in an urban district may merge into a relatively uniform visual texture.

The forms, colors and textures of this street improvement project increase the diversity of this urban view.



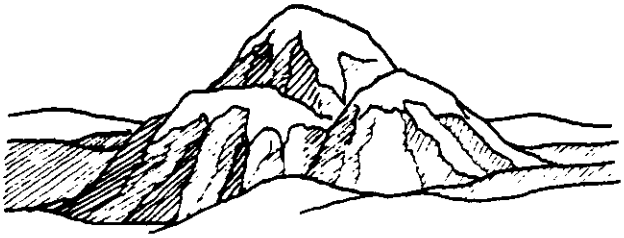
The visual scale of this freeway segment harmonizes with the scale of its urban setting because of the relatively low retaining wall and the planted slope above it.



The visual continuity of this ridge is breached, perhaps unavoidably, by the highway.

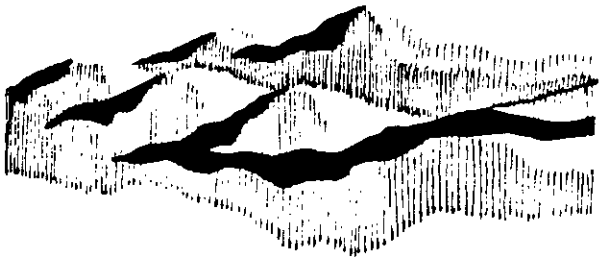
Visual character: this hotel is visually dominant because of a combination of pattern elements, including its form, color, and line—all in strong contrast with its setting.

VISUAL PATTERN ELEMENTS



Form
visual mass, bulk or shape of an object.

Line
horizons, silhouettes, edges of areas; man-made development.



Color
reflected hue (red, blue, yellow) and value (light and dark).

Texture
apparent courseness of visual surface.

LANDSCAPE COMPONENTS and VISUAL PATTERN

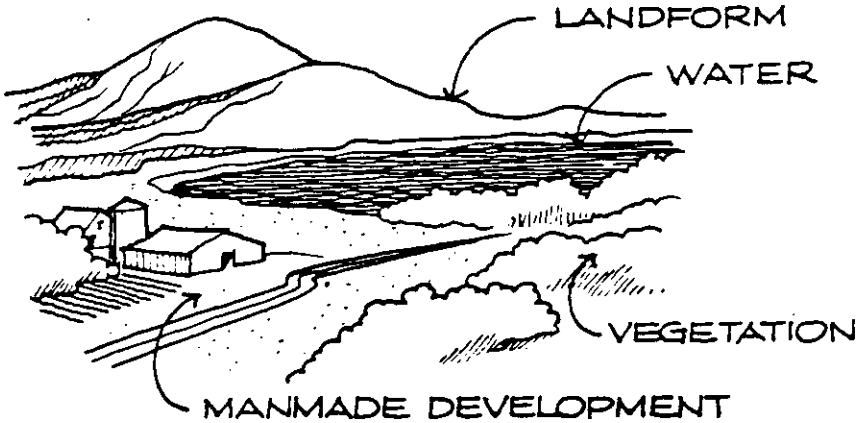
The underlying landform:

form and line

The landcover on it:

WATER

line and color (reflected light)



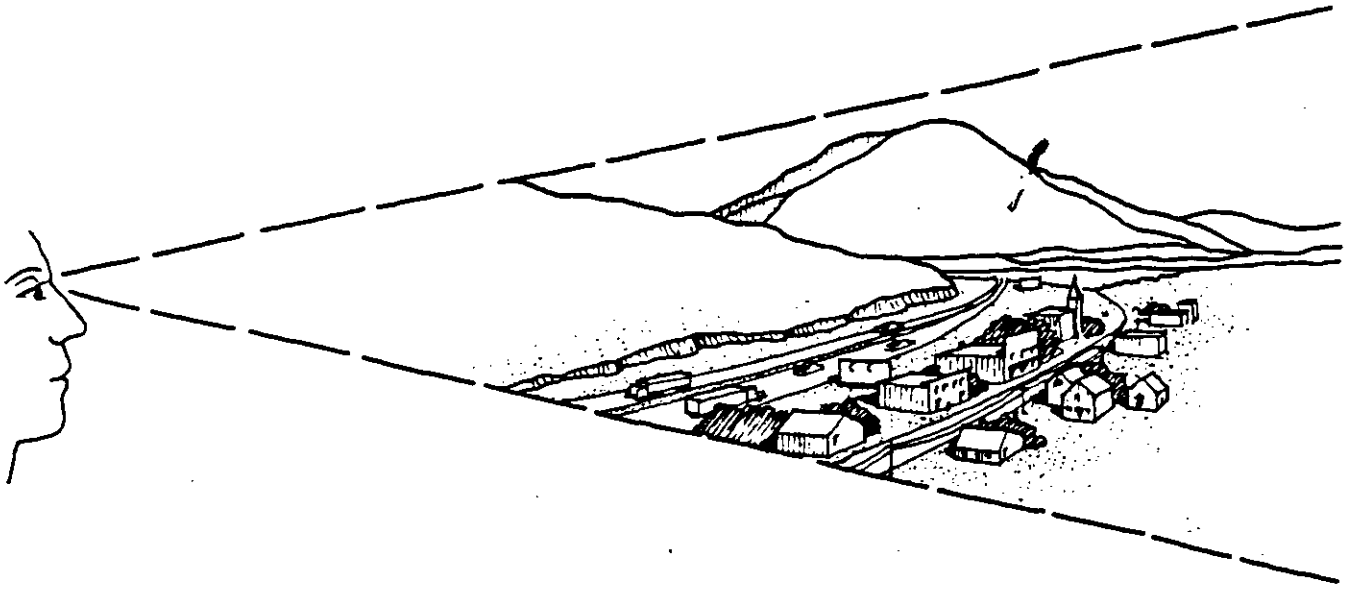
VEGETATION

color and texture

MANMADE DEVELOPMENT

form, line and color.

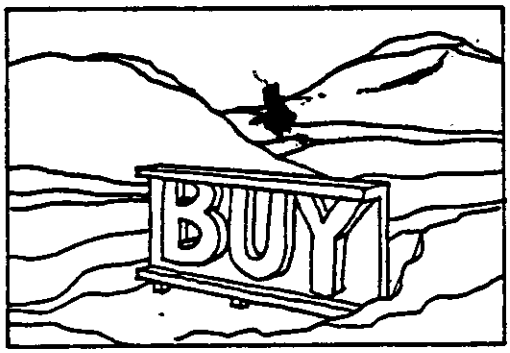
VISUAL CHARACTER



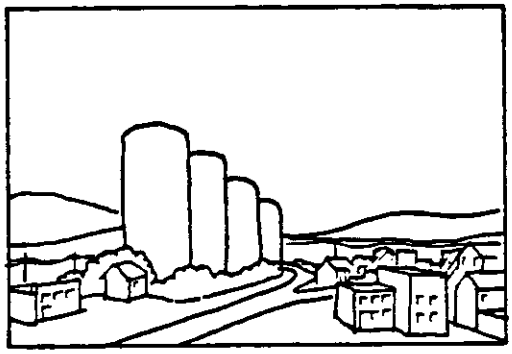
The character of the visible landscape can be objectively described.

PATTERN ELEMENTS	CREATE	PATTERN CHARACTER
FORM		DOMINANCE
LINE		SCALE
COLOR		DIVERSITY
TEXTURE		CONTINUITY

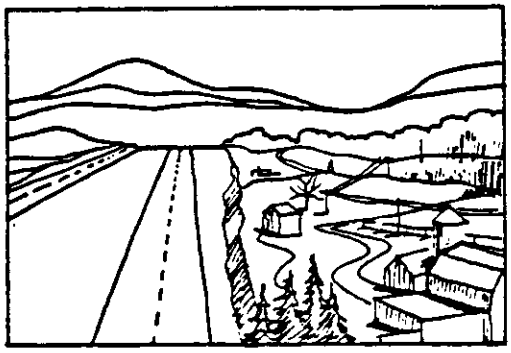
PATTERN CHARACTER



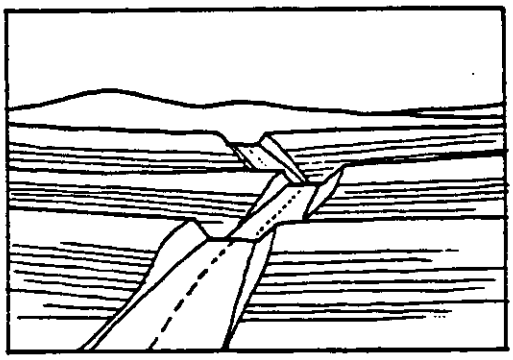
Dominance · Specific components in a scene may be dominant because of position, contrast, extent, or importance of their pattern elements. The sign is a dominant feature in this scene.



Scale · Apparent size relationships between landscape components and their surroundings; while overall size contributes, visual scale depends not only on overall size and position, but the pattern elements of a landscape component. The monolithic grain elevators are very large in scale compared to the town at their feet



Diversity · The number of pattern elements as well as the variety among them, and edge relationships between them; landscapes in which pattern elements are intermixed appear more diverse than landscapes with distinct boundries between types compare the right and left sides of this sketch.



Continuity · Uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connected or related landscape components or features. In this sketch, highway gradients have been maintained at the expense of landform continuity

EXERCISE: INVENTORY

LANDSCAPE UNIT CHECKLIST: VISUAL INVENTORY AND ANALYSIS

Project Name _____
S.R. Number _____
Assessment Unit _____
L/F District _____
L/F Section _____
L/F Province _____

Evaluator _____
Date _____
Weather _____

Visual Information (Perception)	Visual Character (Cognition)	
	Pattern Elements 3 High Prominence 2 Moderate Prominence 1 Present 0 Absent	Pattern Character 3 High Prominence 2 Moderate Prominence 1 Present 0 Absent
	___ Form ___ Line ___ Color ___ Texture	___ Dominance of Landforms ___ Scale of Landforms ___ Diversity of Landforms ___ Continuity of Landform Pattern
	___ Form ___ Line ___ Color ___ Texture	___ Dominance of Waterforms ___ Scale of Waterforms ___ Diversity of Waterforms ___ Continuity of Waterform Pattern

Resource Supply	Pattern Elements	Pattern Character
	___ Form ___ Line ___ Color ___ Texture	___ Dominance of Vegetation ___ Scale of Vegetation ___ Diversity of Vegetation ___ Continuity of Vegetation Pattern
	___ Form ___ Line ___ Color ___ Texture	___ Dominance of Development ___ Scale of Development ___ Diversity of Development ___ Continuity of Development Pattern

VISUAL QUALITY

Esthetics is concerned not only with the character of visual experience, but also with its excellence. Where it exists, this excellence has both viewer and visual resource dimensions. The enjoyment or interpretation of experience can have many preferential and subjective components, yet there is clear public agreement that the visual resources of certain landscapes have high *visual quality* and that plans for projects in these areas should therefore be subject to careful examination.

On the level of visual information or visual character, such landscapes may have little in common. For instance, high visual quality is recognized in urban landscapes such as the New York skyline, as well as in natural landscapes such as the Grand Tetons. Both of these exhibit striking vertical relief, yet horizontal landscapes such as Cape Cod are also recognized for their high quality. Visual quality has often been tied to water, always nearby on Cape Cod, but desert landscapes such as Bryce Canyon are also noted for visual quality. Because of these differences in the character of the visual environment, a project in an area with high visual quality does not always have an adverse effect on that visual quality. How do we establish which landscapes have high visual quality and what is its basis?

Approaches to Assessing Visual Quality

Pragmatic approaches to answering these questions start with the recognition that Americans agree on the high visual quality of many landscapes. Some of these places are already officially designated—national parks and scenic rivers, for example. This may be considered proof of high visual quality, and a first approach to establishing the visual quality of a project area is simply to check for designated scenic areas. However, there is no comprehensive official process for identifying areas of high visual quality, nor does NEPA allow us to consider only superlative environments.

A second approach is to ask project viewer groups their visual preference for the principal landscape types in the project area. This approach has the virtue of directness and can avert challenge based on the potential difference between professional judgment and public opinion. However, it can also have its difficulties, including time, cost, and statistical validity, particularly when there are strong differences in values between local and regional viewer groups. Viewer preference techniques can be very useful for identifying areas to avoid during project location, but are not as helpful for devising and evaluating mitigation measures for areas the project cannot avoid crossing.

A third approach, used by several federal land-managing agencies, looks to the regional landscape for specific resource indicators of visual quality. High quality ratings are assigned to those landscape units which most clearly or dramatically exhibit the natural processes characteristic of the geographic region. Resource indicators of visual quality may be on the level of visual information (e.g., rock faces, avalanche cones) or visual character (e.g., variety). This approach has primarily been used for settings that are natural in appearance. It also tends to presume a region-wide visual analysis as a starting point and may be difficult to implement on a project-by-project basis.

A fourth approach to the evaluation of visual quality looks for indicators on the level of visual relationships rather than on the level of landscape components. A number of such relationships correlate well enough with public judgments of visual quality to predict those judgments. In other words, professionals can use these relationships as valid and reliable criteria for evaluative appraisals of visual quality. These criteria can be used within different geographic regions, as long as direct comparisons of visual quality are kept within the same region.

Vividness, Intactness, Unity

Several sets of evaluative criteria have been proposed and tested. One set that has proven useful includes three criteria: vividness, intactness, and unity. None of these is itself equivalent to visual quality; all three must be high to indicate high quality. *Vividness* is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns; Niagara Falls is a good instance. *Intactness* is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings. *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

This evaluation approach can be particularly useful for highway project planning, since it does not simply presume that a highway project is an eyesore. It can also help identify effective ways of reducing specific adverse visual resource effects that are actually likely to occur.

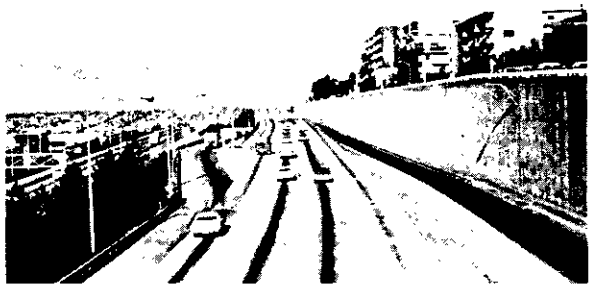
Whatever the approach to the evaluation of visual quality, direct validation by project viewer groups should be obtained whenever possible. Public opinion on visual quality issues can be included in the normal community involvement program. A full representative and random sample is generally not necessary; the point is to ensure that the assessors and the general public are on the same track. Some form of public participation, and validation of professional judgment, may be particularly important where legal challenge is a possibility.

We have identified the major factors in our experience of the visual environment and are now ready to examine some of the ways in which a highway project can affect this experience.

Visual quality: vividness or memorability is one of several criteria that can be used to help evaluate the visual quality of natural and manmade landscapes; the Manhattan skyline rates high on this criterion.

While the visual intactness and unity of this farm scene are both quite high, its overall visual quality is somewhat lower because it is not highly vivid.

A highway may also improve visual quality if it increases the unity and visual harmony of a landscape.



Large urban highways may disrupt the visual intactness of their city settings, lowering visual quality for highway neighbors.

Rio de Janeiro is a city recognized around the world for its high visual quality; the vivid combination of natural and urban forms, including transportation, is also characterized by high visual intactness of component elements and high visual unity in views such as this.

Visual Quality

KEY CONCEPTS

Visual Quality:	While many factors contribute to a landscape's visual quality, they can conveniently be grouped under three headings: Vividness, Intactness and Unity. Analogous concepts: scenery quality rating (B.L.M.), variety class (U.S.F.S.)
Vividness:	The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.
Intactness:	The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.
Unity:	The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$

SAMPLE VISUAL QUALITY EVALUATION, LEVEL 3

VISUAL QUALITY EVALUATION - VIEW FROM THE ROAD

Project _____
S.R. No. _____
V.R.M. Unit _____

Evaluator _____
Date _____
Weather _____

Evaluation Scale: 1-7
1 = Very Low
4 = Medium
7 = Very High

Observer Viewpoint	VIEW ZONE		General Visual Quality (L1	VISUAL QUALITY (Level 3) VIVIDNESS CRITERIA Landform	Water	Vegetation	Manmade Dev.	Vividness (1-7)	FEATURES	INTACTNESS CRITERIA Absence of Encroachment	Overall Intact.	Intactness (Av.;1-7)	ENCROACHMENT	UNITY CRITERIA Man/natural	Overall Unity	Unity (Av.; 1-7)	I Importance (1-3)	(V+I+U) ÷ 3	Vis. Quality (weighted av.)
	Inside R.O.W.																		
	O/S ROW	I/S Unit																	
		O/S Unit																	
	Inside R.O.W.																		
	O/S ROW	I/S Unit																	
		O/S Unit																	
	Inside R.O.W.																		
	O/S ROW	I/S Unit																	
		O/S Unit																	

O/S R.O.W. = Outside R.O.W.

I/S Unit = Inside Landscape Unit
O/S Unit = Outside Landscape Unit

SAMPLE VISUAL QUALITY EVALUATION, LEVEL 3

VISUAL QUALITY EVALUATION - VIEW OF THE ROAD

Project _____
S.R. No. _____
V.R.M. Unit _____

Evaluator _____
Date _____
Weather _____

Evaluation Scale: 1-7
1 = Very Low
4 = Medium
7 = Very High

VIEW					VISUAL QUALITY (Level 3)														
	SETTING				VIVIDNESS						INTACTNESS					UNITY			
					CRITERIA						CRITERIA					CRITERIA			
Observer Viewpoint	Land Use	Observer Position	Road Distance	General Visual Quality (L1)	Landform	Water	Vegetation	Manmade Dev.	Vividness (1-7)	FEATURES	Absence of Encroachment	Overall Intact.	Intactness (Av.;1-7)	ENCROACHMENT	Man/Natural	Overall Unity	Unity (Av.; 1-7)	(V+I+U) ÷ 3

LEGEND

Land Use
- URB = urban
- SUB = suburban
- IND = industrial
- COM = commercial
- INS = institutional
- RES = residential
- REC = recreational
- TRA = transportation

Observer Position
- S = superior
- N = normal
- I = inferior

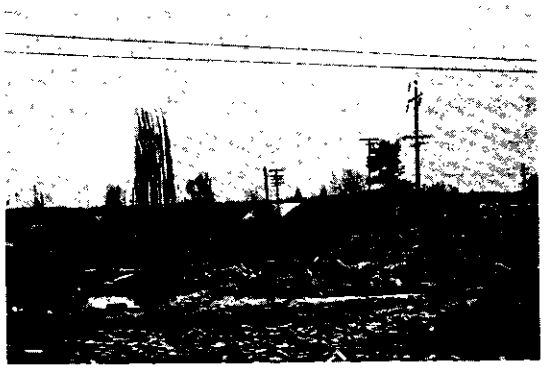
Road Distance
- F = foreground — to ½ miles (0.4 km)
- M = middleground — ½ to 3 miles (0.4 km to 5 km)
- B = background — beyond 3 miles (5 km)

Evaluation Scale: 1-7 (1=Very Low, 4=Medium, 7=Very High)

VIVIDNESS	MANMADE DEVELOPMENT	ENCROACHMENTS UNDESIRABLE EYESORES	UNITY/INTACTNESS
Very high	None	None	Very high
High	Little	Few	High
Moderately high	Some	Some	Moderately high
Average	Average	Average	Average
Moderately low	Moderately high	Several	Moderately low
Low	High	Many	Low
Very low	Very high	Very many	Very many

VISUAL QUALITY

Let us compare a view of a pristine alpine tarn to that of an unsightly marsh landfill. We may note that while both scenes consist of land, vegetation, water and sky, one scene is strikingly vivid and the other mundane and nondescript; that while one is intact and bears little or no trace of distrubance, the other is severely encroached upon; and that while one exhibits overall visual harmony, balance, and compositional integrity, the other is merely chaotic, jumbled and confused and lacking in strong visual unity.



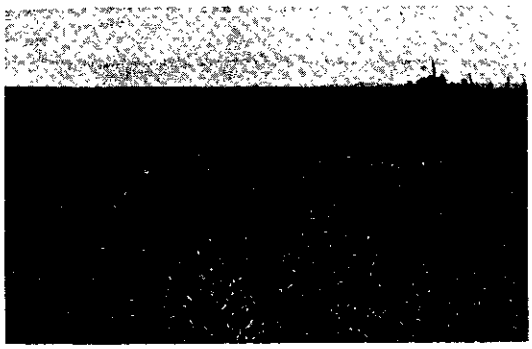
To perform an evaluative appraisal of landscape visual quality -- whether the landscape is a tarn or a landfill -- three criteria are particularly useful. These criteria are termed vividness, intactness, and unity. Expert evaluations based on these three criteria have proven to be good predictors of visual quality levels obtained from large numbers of public judgments, using the following simple equation:

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$

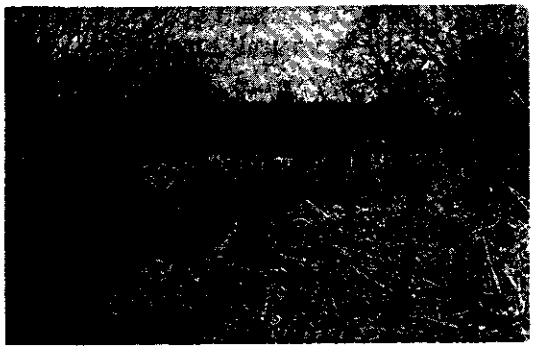
Each of the three criteria is independent; each is intended to evaluate one aspect of visual quality. In other words, no one criterion in itself captures visual quality. In the following pages we will examine the criteria of vividness, intactness and unity in more detail, with illustrations of each.

VIVIDNESS: LOW

The vividness or memorability of a landscape is derived from contrasting landscape components as they combine in striking and distinctive visual patterns. It is often useful to assess the vividness of individual landscape components. Landform vividness is frequently determined by the pattern elements of form or line. An example is the strongly defined skyline of the mountain landscape illustrated here.



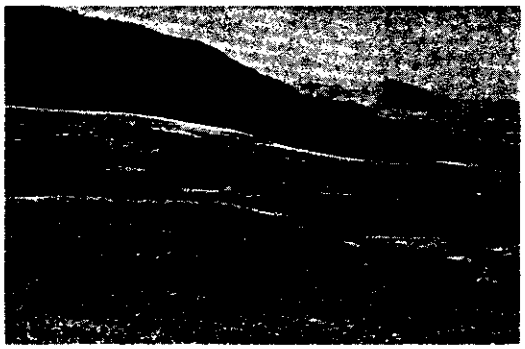
Landcover is comprised of water, vegetation and manmade development. Water is often a vivid landscape component because of line (the shoreline or the dramatic edge of a waterfall) and color. Reflection, clarity and motion are particularly important aspects of water in relation to color and its contribution to the vividness of water in the landscape.

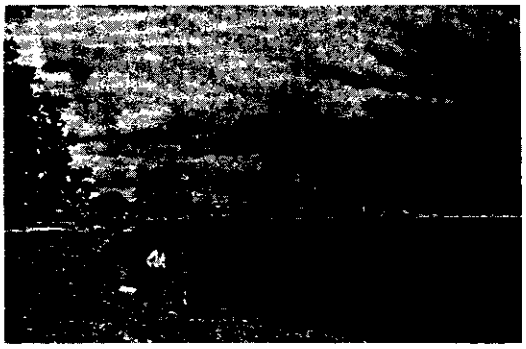


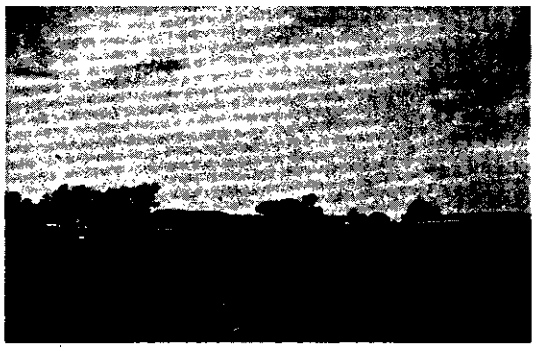
Vegetation is a major visual component in the landscape. It may frequently mask landform or water and can be manipulated for a variety of visual purposes. The degree of vividness in landscape vegetation is frequently due to the pattern elements of texture and color, Every year, autumn in New England provides many examples of landscapes which are highly vivid because of the colors and patterns of their vegetation.

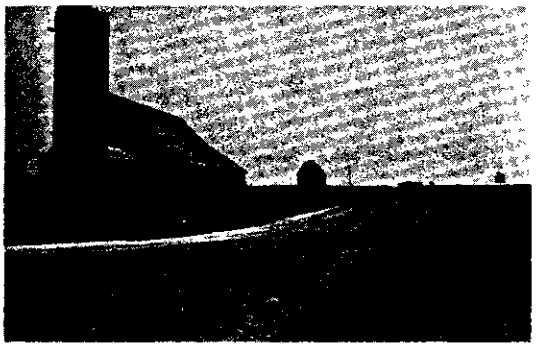
Manmade development often contrasts visually in form, line and color with its natural or manmade setting. Designers may deliberately utilize contrasting pattern elements to achieve a high degree of memorability for a particular building. Traditional land-use patterns and homespun construction may also result in vivid manmade development. On the other hand, too many contrasting visual elements may cancel each other and result in a scene of low memorability.

MODERATE

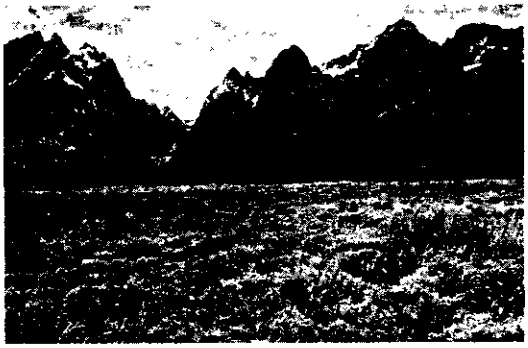


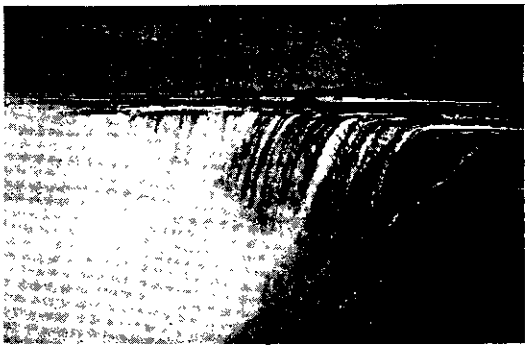


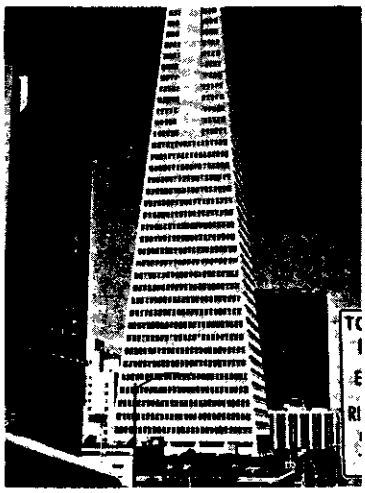




HIGH





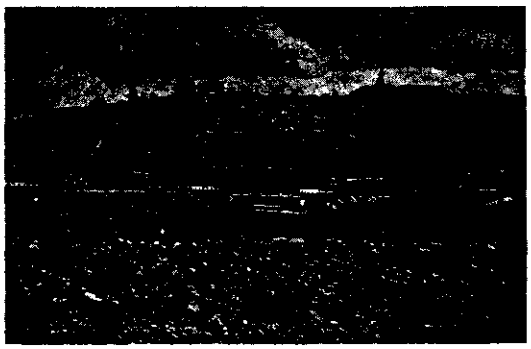


INTACTNESS: LOW

Visual intactness refers both to the integrity of visual pattern and the extent to which the landscape is free from visually encroaching features. In a predominantly natural environment, manmade development can be an additive element that does not necessarily encroach on its visual setting. However, the presence of visual encroachment or eyesores contributes to low visual intactness.

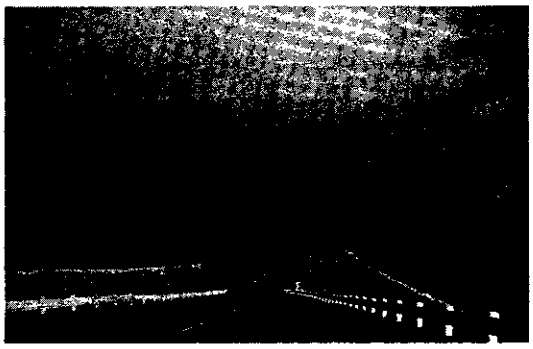
Predominantly manmade landscapes may have strong established visual character. Added manmade pattern elements may also encroach upon this type of landscape. The absence of eyesores or encroaching features thus contributes to high visual intactness in manmade environments.

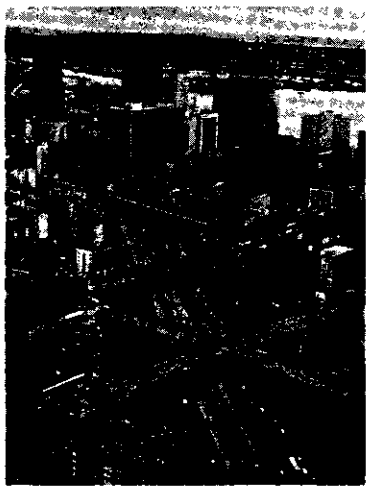
Visual intactness is also dependent on the integrity of visual order in the landscape. Overall intactness may be reduced by the obvious subtraction of visual elements. In a predominantly natural setting, an unreclaimed open-pit mine is an obvious example of low intactness. The natural visual order of an untouched landscape, such as these badlands, may be very intact, whatever its other visual qualities.



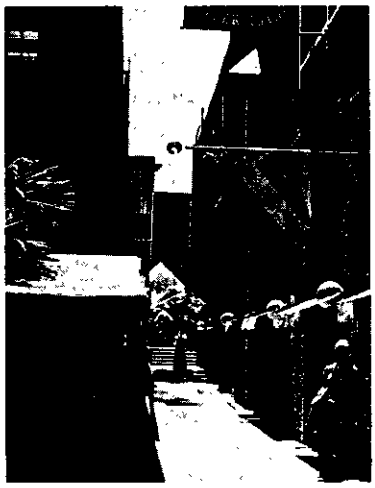
The visual integrity of manmade patterns and orders can also be disturbed. Subtractive disruptions of the urban pattern can reduce overall intactness in a particular cityscape to a low level. The urban pattern in the middle view has been partially re-established and visual intactness has been improved since the highway was first cut through.

MODERATE





HIGH

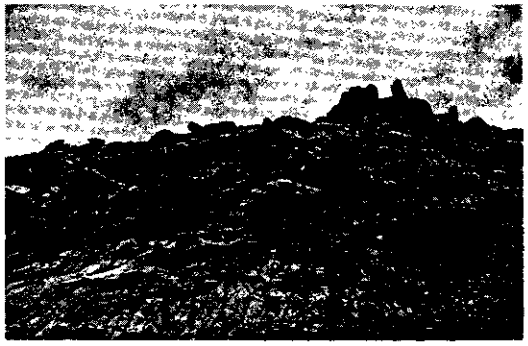


UNITY: LOW

Unity is the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. One aspect of this criterion is the unity between manmade and natural pattern elements. In the predominantly natural landscapes shown here, the way in which the manmade elements have been introduced has a noticeably different effect on the visual unity of each scene.

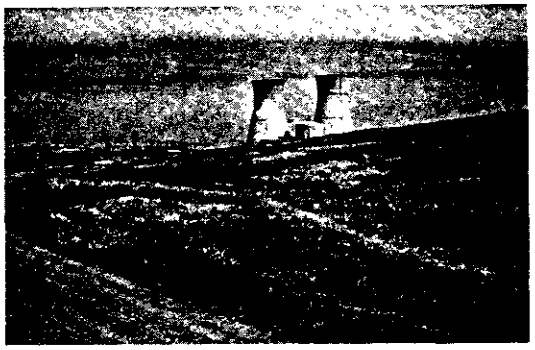
In a predominantly manmade setting, the inclusion of natural elements is a first condition of unity between manmade and natural elements. Manmade environments with no visual relation to natural landform or landcover patterns lack this element of unity. In other manmade environments, manmade and natural patterns may reinforce each other and result in high visual unity.

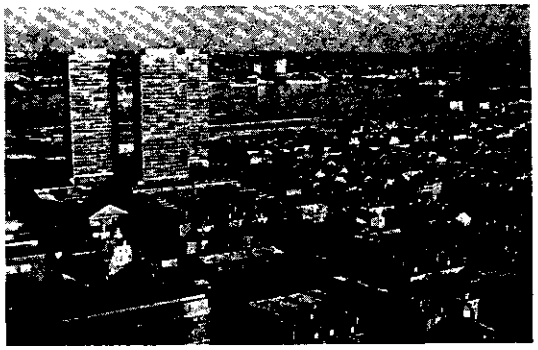
Overall unity is dependent on the degree to which all visual elements combine to form a coherent, harmonious visual pattern. In some instances, even entirely natural landscapes are visually chaotic and jumbled. They lack overall visual unity, to a greater or lesser degree, although they may be intact (the badlands scene) or vivid (the rock outcroppings). Characteristic, though ephemeral, light and atmospheric conditions may contribute to especially high overall unity.

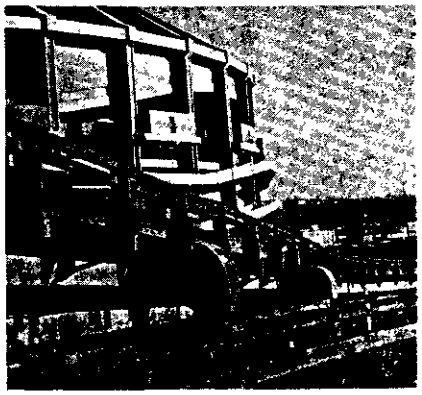


Predominantly manmade landscapes may also exhibit the full range of overall unity because of the compositional harmony of their visually interrelated components and patterns -- or the almost complete absence of this quality.

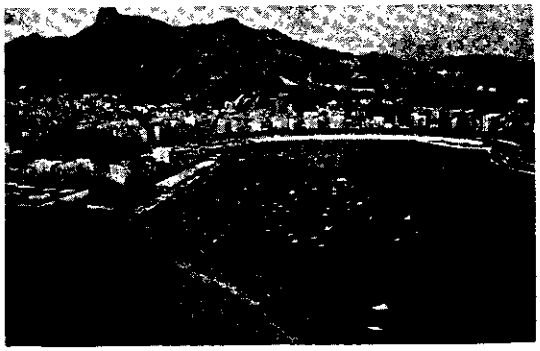
MODERATE

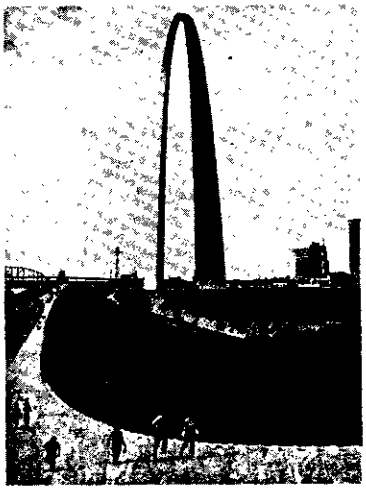






HIGH





EXERCISE: SUMMARY QUESTIONS

THE VISUAL ENVIRONMENT

1. Evaluation of visual quality between differing geographic areas of the United States (is) (is not) a valid comparative measure (i.e., the Rockies vis a vis New England).

2. A landscape unit can be thought of as:

   (a) everything that can be seen from a single point

   (b) an outdoor room

   (c) a single landscape type.

3. Identification (mapping) of a project's viewshed will usually (increase) (decrease) the percieved scope of its actual visual impact.

4. The visual resources within a project are quantifiable. True ____ False ___

5. The assessment of visual character is:

   (a) descriptive

   (b) evaluative.

6. The form of an object is its apparent surface coarseness. True ___ False ___

7. A highway will usually have a positive or unifying visual impact in a landscape which has a high level of:

   (a) pattern diversity

   (b) pattern continuity

8. The character of the visible landscape:

   (a) can be objectively described

   (b) is in the eye of the beholder

9. Visual quality can be objectively evaluated by:

   (a) Artists, Landscape Architects, Architects, and Visual experts

   (b) Citizens (d) Engineers

   (c) Public agencies (e) all of the above

10. Three evaluative criteria which can be used to evaluate visual quality are:

    (a) Form, color, texture

    (b) Vividness, intactness, unity

    (c) Pattern, continuity, character.

5 CHARACTERISTICS OF VIEWERS

Visual experience is a compound of visual resources and viewer response. To understand and predict viewer response to the appearance of a highway projects, we must know something about the viewers who may see the project and the aspects of the visual environment to which they are likely to respond. Vision is an active sense; we usually have some reason for looking at the landscape and what we see is unconsciously conditioned by what we are looking for. How we feel about what we see is conditioned by other human factors; many of these are shared among large groups of people and may be important for project planning.

Viewer Groups and Viewer Exposure

Visual perception is the basic act of seeing or recognizing an object. Naturally, we assume an unobstructed sightline, but other physical conditions can also affect perception. As observer distance increases, the ability to see the details of an object decreases. As observer speed increases, the sharpness of lateral vision declines and the observer tends to focus along the line of travel.

We can differentiate major *viewer groups* by physical factors that modify perception. For highway projects, we begin with the basic distinction of the view from the road (highway users) and the view of the road (highway neighbors). We can use viewshed mapping to further categorize these viewer groups by *viewer exposure:* the physical location of each viewer group, the number of people in each group, and the duration of their view.

Viewer Sensitivity

The receptivity of different viewer groups to the visual environment and its elements is not equal. This variable receptivity is *viewer sensitivity* and is strongly related to visual preference. It modifies visual experience directly by means of viewer activity and awareness; indirectly, sensitivity modifies experience by means of values, opinions, and preconceptions. High viewer sensitivity can be critical to project planning and design because it heightens viewer response and increases the importance of visual resource issues. In a few cases, high viewer sensitivity may tend to discourage any visible change to the project environment.

Activities such as commuting in heavy traffic or working on a construction site can distract an observer from many aspects of the visual environment. Head-mounted cameras, for instance, have demonstrated that a driver can look directly at a landmark and still not see it. On the other hand, activities such as driving for pleasure or relaxing in scenic surroundings can encourage an observer to look at the view more closely and at greater length. Therefore, *viewer activity* is another identifying characteristic of viewer groups.

This dramatic mountain gateway heightens the visual awareness of highway travelers.

For example, we may well want to distinguish among project viewers located in residential, recreational, and industrial areas.

Viewer awareness is the extent to which the receptivity of viewers is heightened by the immediate experience of visual resource characteristics. Visual change heightens awareness; a landscape transition, such as entering a mountain range or a major city, may heighten viewer awareness for a number of miles along a road. Measures that modify viewer exposure, such as selective clearing or screening, may also be deliberately employed to modify viewer awareness. For example, we well may want to distinguish among project viewers located in residential, recreational, and industrial areas.

Local values and goals operate indirectly on viewer experience by shaping view expectations, aspirations and appreciations. If the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals. At a regional or national level, viewers may be particularly sensitive to the visual resources and appearance of a particular landscape as a result of its *cultural significance*. This significance may be due to the presence of historic values, scientific or recreational resources, or other unique features; any visible evidence of change may be seen as a threat to these values or resources.

An elevated highway would traverse the unsightly industrial area on the other side of this waterway. Nevertheless, there has been strong public concern over the visual effects of the highway on future redevelopment and on the historic railroad station in the middle distance.

VIEWER GROUPS

Classes of viewers which differ in their visual response to the highway and its setting. Response is affected by viewer location, activity, and values.

GROUPS WITH A VIEW FROM THE ROAD

- *driver*
- *passenger*

GROUPS WITH A VIEW OF THE ROAD IN THE LANDSCAPE SETTING

- *residents*
  - *urban & suburban*
  - *rural*
- *commercial/industrial interests*
- *recreational groups*
  - *park, resort, overlook, & historic site visitors*
  - *river and lake users*
  - *scenic railroad passengers*
  - *trail users*
- *other special interest groups*
  - *civic*
  - *cultural*
  - *environmental*
  - *educational*
  - *economic*

GROUPS WITH A VIEW OF THE ROAD FROM THE ROADSIDE

- *wayside and rest area users*
- *cyclists and other traffic in right-of-way*

COMPARISON: Two Basic Groups

	HIGHWAY NEIGHBOR VIEW OF THE ROAD	HIGHWAY USER VIEW FROM THE ROAD
← Physical →	Maximum acuity	Reduced acuity
	Comprehensive field of vision	Narrowed cone of vision
	No constraint on vision	Point of concentration
← Psychological →	Desire for visual detail	Need for visual simplicity
	Viewer costs	Viewer benefits
	Visual problems	Visual opportunities

VIEWER EXPOSURE

The degree to which viewers are exposed to a view by their physical location, the numbers of people viewing and the duration of view

PHYSICAL LOCATION:

- *distance zones*
  - *foreground*
  - *middle ground*
  - *background*
- *observer position*
  - *superior*
  - *normal*
  - *inferior*
- *direction of view*
  - *north*
  - *south*
  - *east*
  - *west*

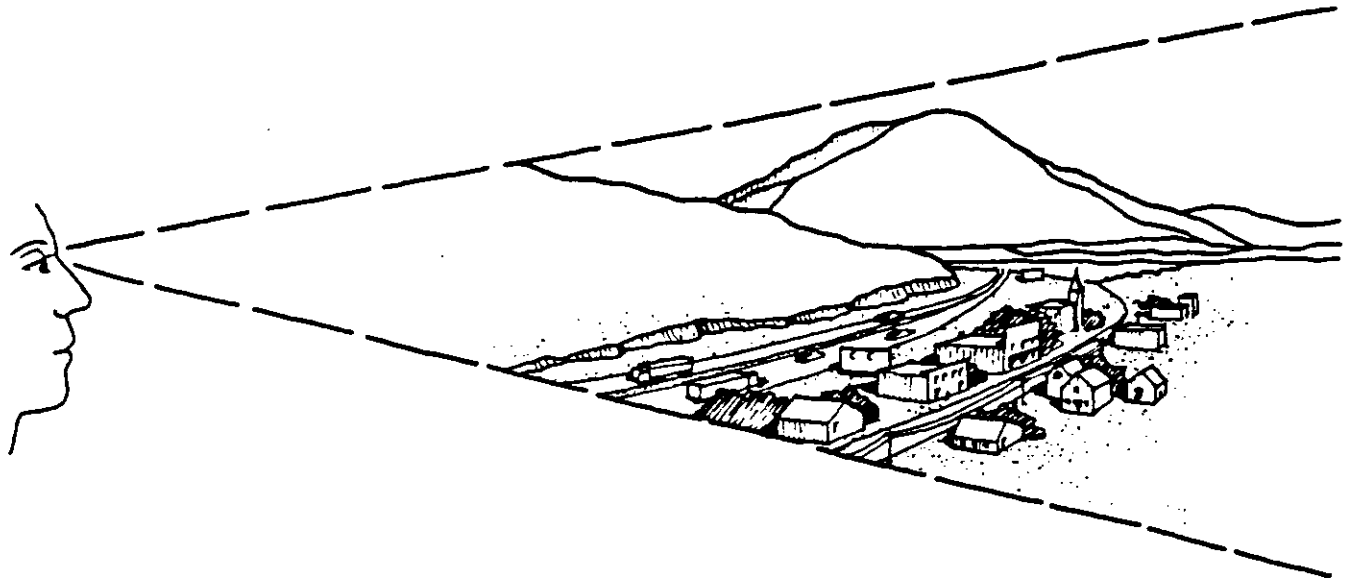
NUMBER OF VIEWERS:

- *residents*
- *visitors*
  - *view <u>of</u> the road*
  - *view <u>from</u> the road*

DURATION OF VIEW:

- *frequency of exposure*
- *stationary view*
- *moving view*

VIEWER SENSITIVITY



The preferences, values, and opinions of different viewer groups can be documented in the following ways:

- *viewer activity & awareness*
- *local values*
- *cultural significance of the visual resource*

ACTIVITY & AWARENESS

The degree to which viewers are likely to be receptive to the visual details, character, and quality of the surrounding landscape. Two principal factors affect viewer sensitivity: activity and awareness.

· Viewer Activity

A viewer's ability to perceive the landscape is affected by his activity. In a particular landscape setting, viewer activity may:

1) encourage him to look at the landscape, such as pleasure driving, or

2) distract him from the landscape, such as commuting in heavy traffic.

· Viewer Awareness

A viewer's receptivity to the visual character of the landscape can be affected by the landscape setting itself, or by expectations about the setting. Major variables are:

1) viewing position, such as an overlook or a position near a major landmark,

2) recent visual experience, such as a landscape transition, and

3) individual preconceptions about the landscape (and the highway's appropriateness in it).

CULTURAL SIGNIFICANCE

At a regional or national level, viewers may be particularly sensitive to the visual resources and appearance of a particular landscape because of:

· History

The landscape may commemorate some historic event.

· Scientific or Recreational Resources

The landscape may be singled out and widely known for values - scientific, recreational, esthetic - directly connected with its appearance.

· Uniqueness

Its visual resources, character or quality may be uncommon or rare in the region or nation.

LOCAL VALUES

The visual appearance of certain landscapes and certain visual resources within these landscapes may be important to the local community because of:

- *Local Visual Preferences*
- *Local Historical Associations*
- *Local Aspirations and Goals*

The highway agency's community involvement program can help to identify visual resources affected by local values and goals.

VIEWER RESPONSE

VIEWER EXPOSURE

- viewshed
- viewing groups and numbers
- viewer location, distance and position
- view duration and frequency

VIEWER SENSITIVITY: ACTIVITY AND AWARENESS

- current viewers
- new viewers

VIEWER SENSITIVITY: LOCAL VALUES

- current local values and plans
- project impacts on these values

VIEWER SENSITIVITY: CULTURAL SIGNIFICANCE

- existing historic, scientific, unique or recreation resources
- elimination or change of the resource and its setting

EXERCISE: SUMMARY QUESTIONS

CHARACTERISTICS OF VIEWERS

1. The visual experience which one receives from his or her surroundings depends heavily on what is seen and ones reaction to it. This can be characterized as:

   (a) Visual exposure and viewer awareness

   (b) Visual activity and viewer consciousness

   (c) Visual resources and viewer response.

2. An observer's ability to see the details of an object decreases when the distance from the object (increases) or (decreases).

3. A driver traveling at a high speed will have the same lateral vision as one traveling at a lower speed. True ___; False ___.

4. Visual awareness is generally heightened by:

   (a) Viewer exposure

   (b) Viewer activity

   (c) Visual Change.

5. The most important viewers to be addressed in a visual assessment are those with:

   (a) A view of the road

   (b) A view from the road

   (c) A view of the road from the roadside

   (d) All of the above.

6 VISUAL EFFECTS OF HIGHWAY PROJECTS

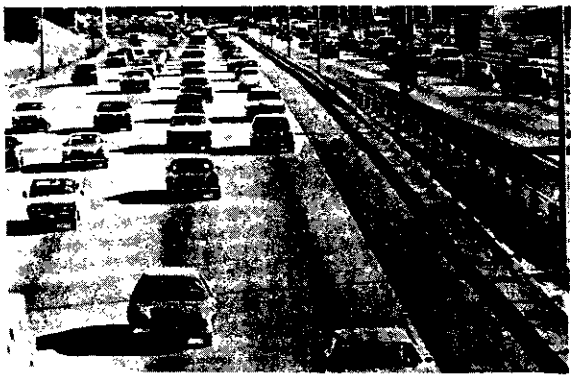
This chapter is designed to show how the principles that we discussed in the preceding chapters apply to the visual effects of highway projects. We will identify the visual characteristics of typical highway projects, look at some examples of their effects, and consider viewer response to these effects. Finally, we will discuss ways to assess the visual effects of projects at different stages in the highway development process.

VISUAL CHARACTERISTICS OF HIGHWAYS

Adverse visual impacts are not consciously designed into a project; they creep in when decisions are made without considering the visual consequences. This is particularly true of highway projects, which are very complex, take a long time to complete, and are planned by large, diverse teams of specialists. The visual effects of project decisions such as right-of-way limits and lighting are readily overlooked until it is too late. For these reasons, it is important that the project team systematically consider the visual appearance of the total highway early and throughout project development.

Roadway, Roadside and Right-of-way

The most immediately obvious visual component of a highway project is the road surface itself. The exact cross-section, plan, and profile proposed for a specific road are far more important to its visual effects than the generalized characteristics of its functional class. Roadway variables with clear visual implications include the number of travel lanes, their width, and pavement material and color. Shoulders can also be visually important; for example, paved shoulders enlarge the roadway's apparent scale and turf shoulders minimize it. Design speed and gradient standards help determine the roadway's visual effects on its visual environment. The relationship of opposing travel lanes is also visually significant; an undivided four-lane highway looks very different from a divided highway with independent alignment for each travel direction. Another visually important factor is the coordination of horizontal and vertical curves. Many of these roadway variables are hard to adjust because of capacity and safety requirements, and other limitations. Nevertheless, they can be significant in determining the visual effects of the highway.



The number of lanes and total width of the roadway go far to determine the visual effects of a highway.

Horizontal and vertical curves have been coordinated on this freeway, making it appear to flow smoothly over the rolling landscape, despite the high design speed.

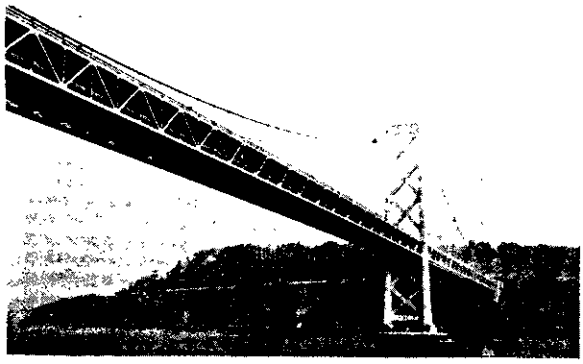
The roadside includes all lands within the right-of-way that are not part of the roadway. The visual characteristics of the roadside are determined by the landcover and landform modifications employed to fit the roadway into the right-of-way: clearing, earthwork, slope retention, drainage, and roadside planting. The appearance of the roadside helps to determine the visual scale and dominance of the highway. A wider right-of-way may actually allow us to reduce the visual scale of the highway by reducing apparent roadside width. For example, it may allow flatter side slopes which blend back into the surrounding landscape and are not perceived as roadside. It may also allow a natural-appearing median between independently aligned roadways, substituting the appearance of two smaller highways for one large highway.

Structures and Appurtenances

We may imagine a new highway as a ribbon of pavement flowing smoothly through its landscape. In reality, the view of this ribbon is often obscured by a profusion of highway structures and "highway furniture." The need for highway structures may be foreseen at the EIS stage and their visual effects can be identified if we remember to consider their visual characteristics, even though final grade and other details may not be known. The location and appearance of highway appurtenances can be more difficult to determine. Many of these have been developed as safety and environmental improvements; unfortunately, incremental change has sometimes been a principal cause of visual deterioration along existing highways. In situations where visual impact is likely to be an issue we need to think about appurtenances at the EIS stage, just as we do structures, recognizing that their final positions will not be assigned until later.

Structures for the roadway itself may include bridges, viaducts, tunnels, and their portals. Grade separation structures may include interchanges, overpasses, and underpasses for roads, railroads, and transit. Slope retention structures and drainage structures may include retaining walls, bin walls or gabions. While these may not be firmed up by the time of the EIS, except when forced by the 4(f) or historic preservation procedures, any of these structure types may be dominant because of size or viewer position. A new structure may also replace an existing structure which is an important visual resource or is valued for its historic significance. For these reasons, the visual characteristics of highway structures can be a major consideration in a project EIS.

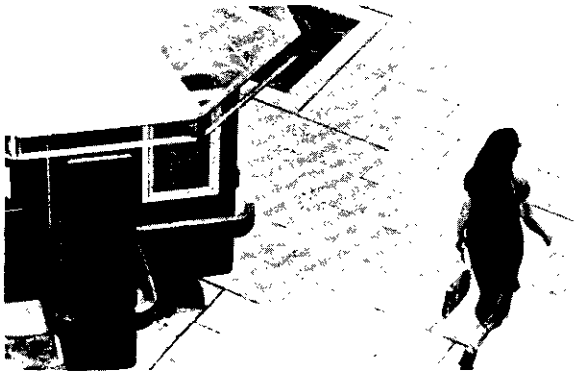
The visual appearance of minor highway structures, such as this series of retaining walls, can also contribute to the quality of the visual environment.



Careful consideration has been given to the visual appearance of major highway bridges; some have become regional landmarks and scenic elements.

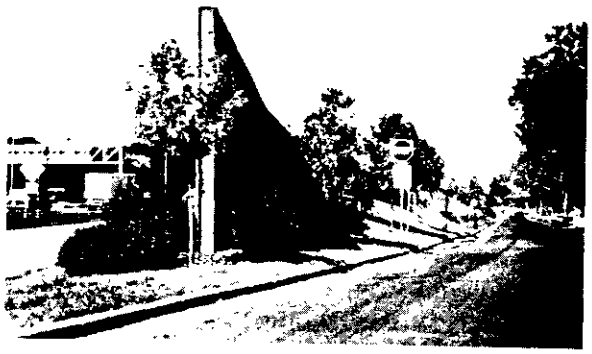
The visual unity of the highway can be enhanced by the design of highway appurtenances.

Lights, signs, and traffic control devices are among the highway appurtenances that can have significant visual effects. When lights are required, the height, spacing and configuration of the standards or supports are very important; we may also need to know the light distribution pattern of the fixture type, its glare cutoff characteristics, and the color of the light it produces. The visual characteristics of highway signs include placement, size, color (both front and back), lighting, reflectorization, and support structure. The last can be particularly important for examples such as the sign bridges on freeways. Traffic control devices include conventional traffic signals and new "readerboard" devices for metering congested freeways. Size, lighting, glare cutoff, and support structure can be very important; the size and location of signal control equipment can also be a significant consideration for urban streetscapes.



Traffic signal equipment is often bulky and unsightly. On urban streetscape projects, it can be consolidated in attractive kiosks with multiple functions.

Acoustic barriers or "noise walls" are increasingly prominent highway appurtenances. They have been installed along major highways to reduce community noise levels, but several communities have also objected to the installation of acoustic barriers because of fears over loss of views or other perceived visual impacts. Some of these objections can probably be traced to specific designs, since a wide selection of barrier types is available. The alternatives include earth berms and wood, concrete, or metal barrier construction, either singly or in combination. The visual characteristics of these alternatives should be carefully considered in acoustic barrier planning and design. Their general type and configuration can be envisioned, although noise walls are not normally designed by the time of the EIS, unless they are to protect 4(f) lands.



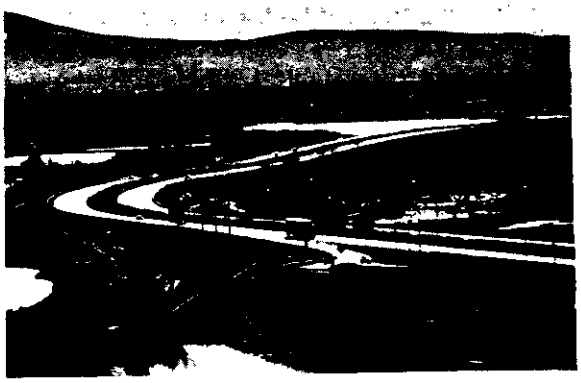
The visual appearance of noise barrier designs can complement the visual character of neighborhoods next to highways.

Highway appurtenances also include the various safety devices installed along the roadside edge. Concrete median barriers ("Jersey" barriers) guard rails, and impact attenuators are among these devices. These appurtenances can adversely affect the appearance of the highway if added incrementally, but they can also have positive visual effects if integrated into highway planning and design. The need for these devices should be identified in the visual assessment when possible, although design details will generally be unavailable. This is true of many of the preceding types of appurtenances, because their design is generally not finalized until later phases of the highway development process.

Impact attenuators and other safety improvements can affect the appearance of existing highways to which they are added.

Highway-related Facilities

Highway construction, operation, and maintenance requires a number of facilities which may be located either within or outside the right-of-way; their visual effects may also be significant. Highway-related construction facilities may have important short-term and long-term effects; they include construction staging areas, borrow pits, and spoil disposal areas. The location of these is frequently the contractor's option and may not be determined until the contract is let; however, consideration at the EIS stage could be advisable for very sensitive projects. Highway operation may also require a variety of facilities, including rest areas, scenic overlooks, service areas, inspection stations, and patrol stations. Joint-use facilities may be visually significant, including transit stops, park-and-ride lots, and bus parking, as well as recreational, office, and preservation uses. Schematics and feasibility studies for these are often available at the EIS stage. Finally, highway maintenance facilities may cause localized visual problems, particularly where equipment and material storage are involved. Secondary effects—developments which are likely to follow after the project is completed—should also be considered.



Highway borrow pits are often a visual problem, but they can also represent a visual opportunity.

Joint uses such as car-pool parking can enhance the visual appearance of otherwise wasted space beneath elevated highways.

KEY CONCEPTS

Visual Impact:

The degree of change in visual resources and viewer response to those resources caused by highway development and operations.

Visual Resource Change:

The degree of change in visual resources caused by highway development and operations, assessed without regard to viewer response.

Viewer Response:

Measures of viewer response to visual resource change include viewer exposure, sensitivity and cultural significance and local values.

Visual Impact = Visual Resource Change + Viewer Response

VISUAL RESOURCE EFFECTS

When highway projects alter the physical environment, they also alter the visual information in that environment, its visual character, and its visual quality. Several typical project examples will help to illustrate the nature and variety of these visual resource effects.

Visual Information

Highway projects substitute new visual information for old. The roadway always displaces existing visual resources, but the roadside sometimes retains these resources (particularly vegetation) or replaces them with other resources that are similar. The identity and extent of the landscape components involved can be important in themselves because of visual preferences; viewers may feel that forestlands are visually more important then farmlands—or vice versa. A simple tabulation of the landscape components affected by each project alternative provides a framework for considering these visual preferences.

Viewers also tend to notice and value the unusual. For example, a stand of large trees along an existing road can be sufficiently striking and unusual that a community may object to a widening project that would remove them. Highway projects may have to detour around such features; therefore it is often useful to identify any landscape components that are scarce or sensitive in the project area or the surrounding region.

Removing these live oaks would degrade the visual quality of this historic Florida town.

Visual Character

Concern over the appearance of a highway project often is based on how it will affect the overall visual character of an area rather than on the particular visual resources it will displace. Federal law identifies certain settings where effects on character are the paramount visual resource concern. Among these are wilderness areas, rivers in the National Wild and Scenic Rivers System, parks, recreational areas, wildlife and waterfowl refuges, and historic districts, sites, buildings, and structures.

Specific criteria have been adopted for evaluating the impact of development on historic properties. The introduction of visual elements "that are out of character with the property or alter its setting" is considered an adverse effect; such elements would jeopardize viewer perceptions of the reality of the past and its relevance to the present. It is important to note that the visual character of the project is at issue, not the project itself; if the character of the project can be made to complement the character of the historic property and its setting, it may have no adverse visual effects.

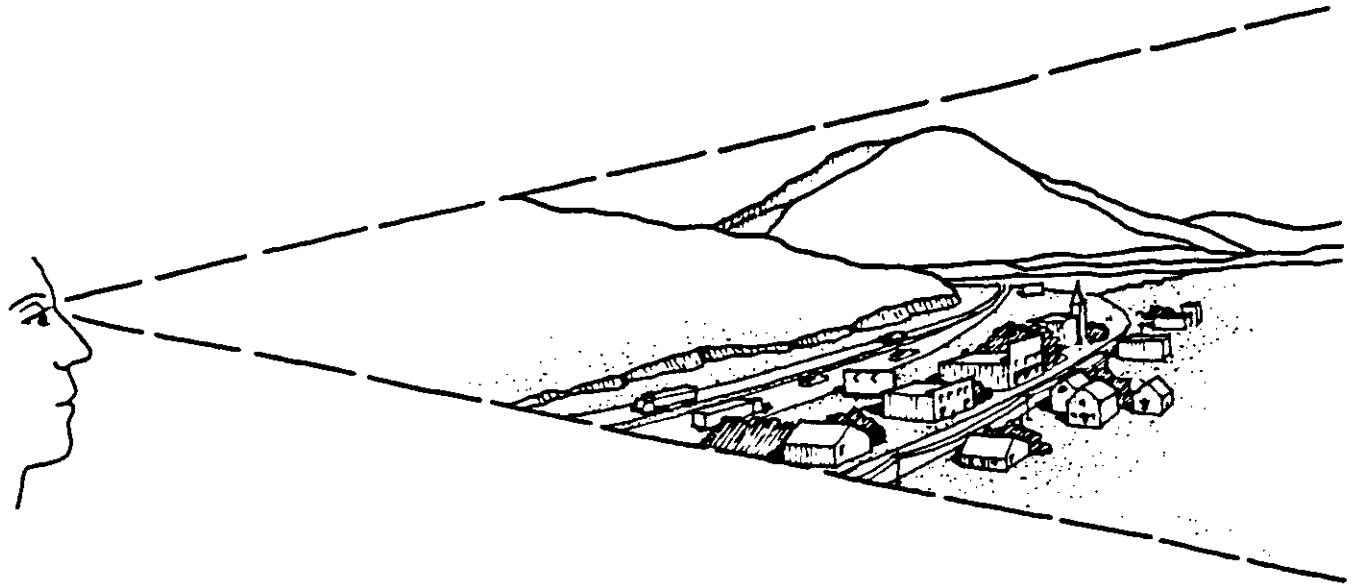
In chapter Four we discussed several attributes of visual character that are relevant to highway projects; these include pattern elements (form, line, color, and texture) and pattern character (dominance, scale, diversity, and continuity). Both the project and the project setting can be assessed according to these attributes; if their visual character is similar, the visual *compatibility* of the project will be high. If the visual character of the project contrasts strongly with the visual character of its setting, its visual compatibility will be low.

An explicit analysis of visual character frequently makes it possible to modify a

A steel guard rail was carefully designed to complement the visual character of this historic bridge after the appearance of a concrete barrier proved unsatisfactory.

project to improve its visual compatibility. For example, objections to the appearance of safety improvements for a historic bridge were resolved, through the required historic preservation coordination procedures, by substituting an unobtrusive steel guard rail for a visually dominant concrete barrier that would have contrasted strongly with the existing bridge in form, color and texture. The steel guard rail is small in scale and is not visually dominant. Some contrast in color and texture was considered desirable so that viewers would not misread the rail as part of the historic structure.

VISUAL COMPATIBILITY



The actual or potential compatibility of a project with its landscape setting can be objectively evaluated by examining the:

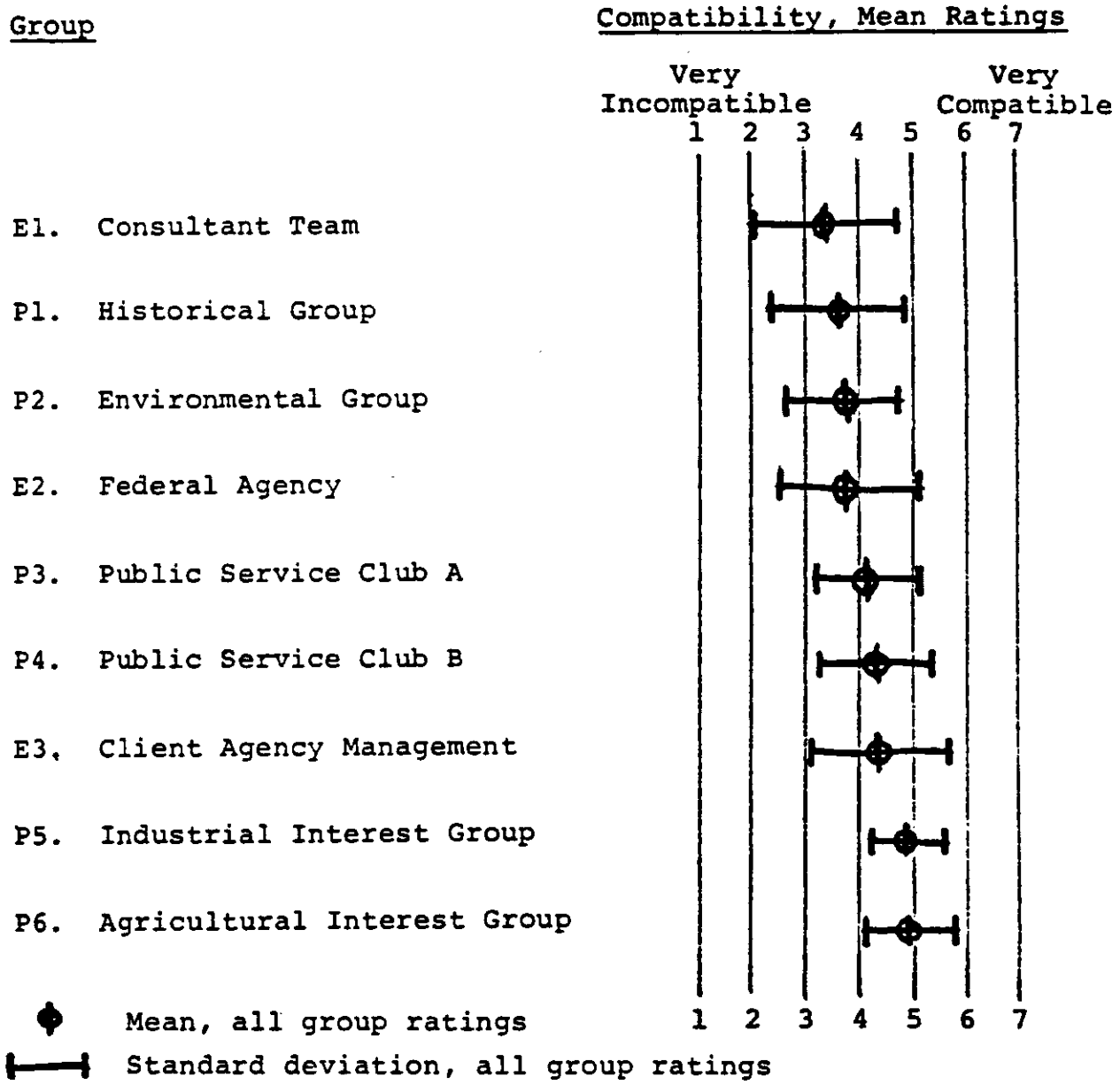
COMPATIBILITY OF PATTERN ELEMENTS

(form, line, color, texture)

COMPATIBILITY OF PATTERN CHARACTER

(dominance, scale, diversity, continuity)

COMPARISON OF GROUP VALUES AND ABILITY TO MAKE VISUAL DISTINCTIONS



What This Diagram Illustrates:

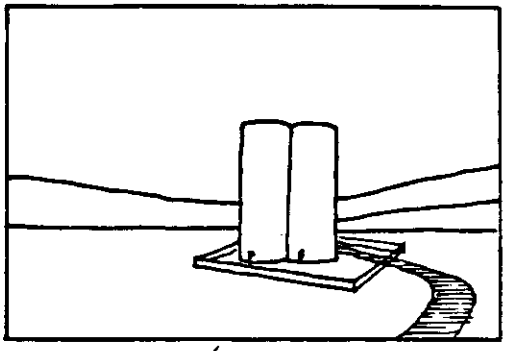
1. There are significant differences in group values about visual resources, related to overall group interests.

2. Expert groups make more discriminating judgments about visual compatibility than the general public.

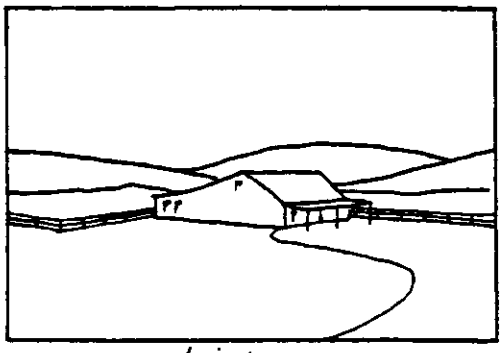
3. Agency expert groups appear to know how to fit a feature into its visual surroundings, although they may have to be convinced of the need to make the effort.

COMPATIBILITY: PATTERN ELEMENTS

Form

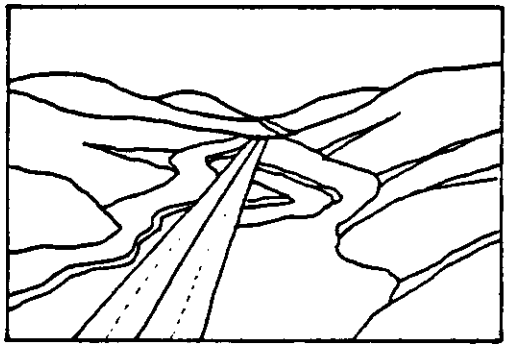


low



high

Line



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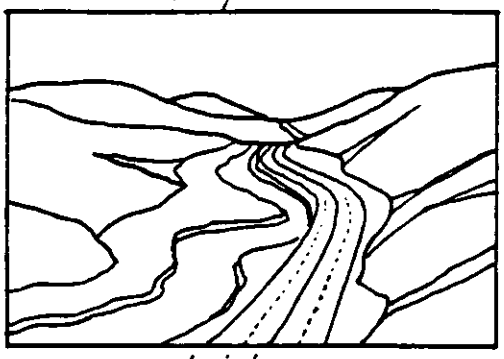

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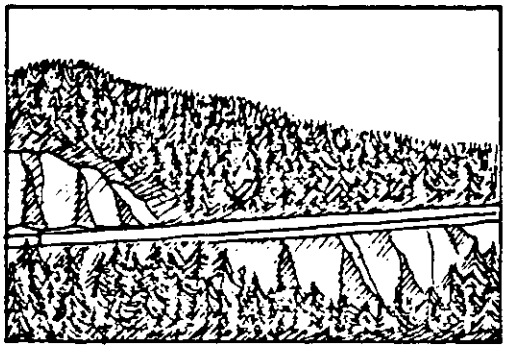
Color



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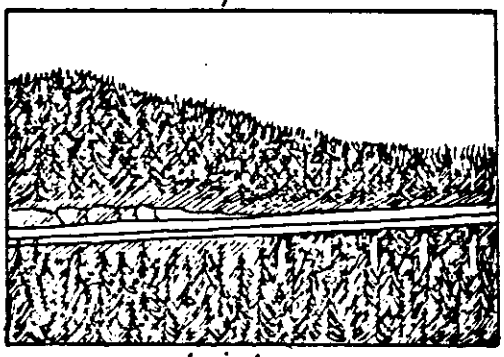

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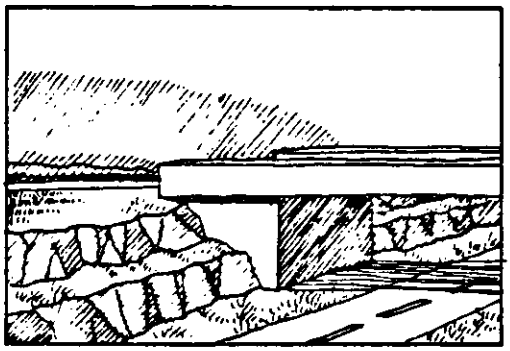
Texture



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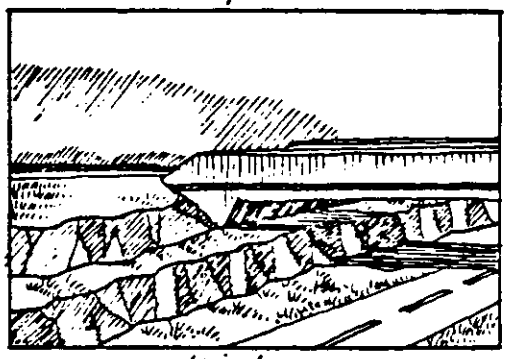
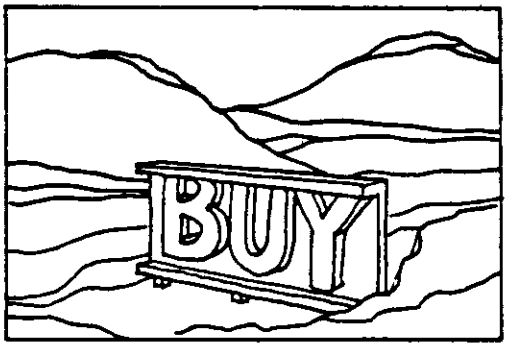


high

...and PATTERN CHARACTER

Dominance



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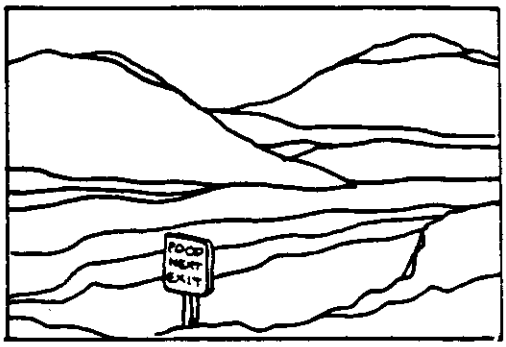

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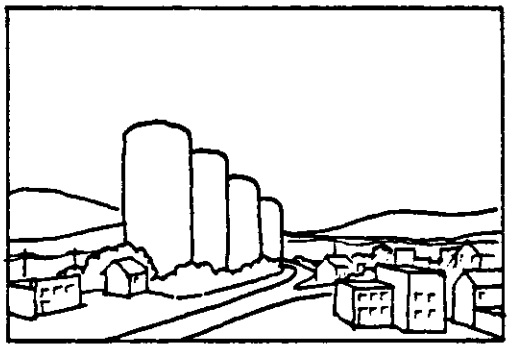
Scale



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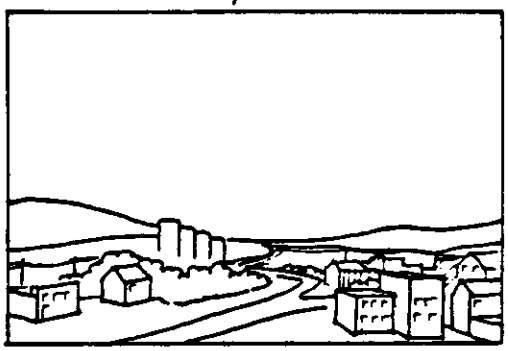

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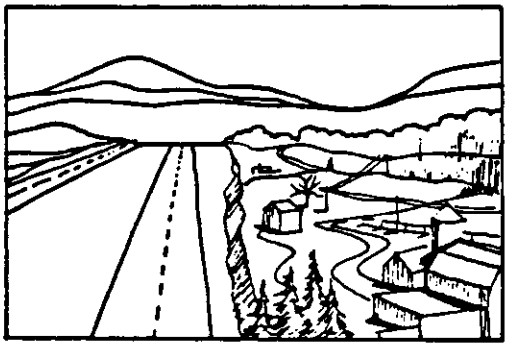
Diversity



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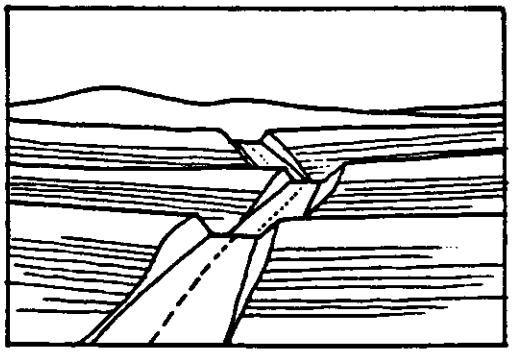
high

Continuity



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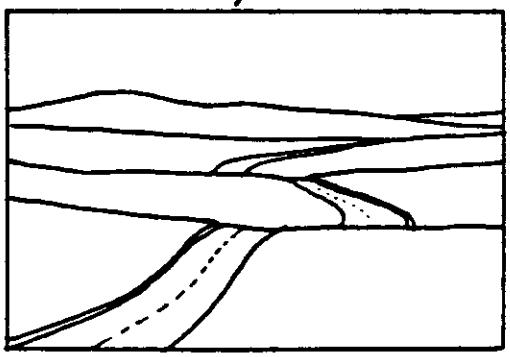


high

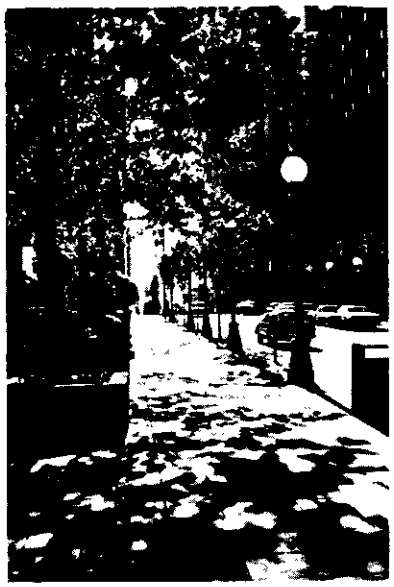
VISUAL QUALITY

One important indicator of the public concern a project is likely to generate is the visual quality of its landscape setting. Highway projects in landscapes with high visual quality are likely to receive close scrutiny. In certain classes of lands, areas with high visual quality are singled out for special consideration in highway project planning. These classes include "4(f) lands" (public parks, recreation areas, wildlife and waterfowl refuges, and historic sites) and lands associated with the National Wild and Scenic Rivers System. On other lands managed for their resource values, special management attention is paid to all types of development in areas with high visual quality; these lands include those managed by the U.S. Forest Service and the Bureau of Land Management. Where visual quality is high, we may have to carefully consider the visual effects of relatively simple projects, such as straightening a rural trunk highway and widening its shoulders.

When this trunk road to a wilderness canoe area is upgraded, its alignment will be adjusted to preserve several large "sentinel pines".

Low visual quality does not necessarily mean there will be no concern over the visual effects of a project, however. In instances such as urban entry roads, communities may ask that highway projects help improve existing visual quality. The DOT Design, Art, and Architecture in Transportation program supports such requests by emphasizing the consideration of the design arts in projects with high public visibility or use. In other words, improvements to the visual quality of everyday environments deserve consideration just because these environments are experienced so frequently by so many people. Streets and highways are major public investments and attention to their design quality can do much to raise visual quality around them.

Highway projects may affect the visual quality of an area by displacing attractive visual resources—or adding them. The "esthetic additive" approach was taken in the Highway Beautification program but proved vulnerable to budget cuts and maintenance reductions. Moreover we have seen that visual quality is often due to the visual relationships among all components of a landscape, rather then the presence of a single preferred feature. As we discussed in Chapter Four, explicit evaluative criteria may be used to appraise these relationships.



This major urban streetscape project widened travel lanes and sidewalks by removing curbside parking. A principal visual objective was also to unify the diverse commercial architecture along the street by the use of consistent color, texture, and scale in paving and "street furniture".

Vividness, intactness, and unity are three criteria that have proven to be effective indicators of visual quality. Visually successful projects usually achieve a balance among all three; too frequently, design emphasis is placed on one of these criteria at the expense of the other two.

For example, a pedestrian mall can be "oversized" and made so vivid that it is out of character with the surrounding urban environment and detracts from visual unity. This example is not meant to indicate that vivid contrast always causes an adverse effect on visual quality. The bridges of the Swiss engineer Maillart exhibit vivid form and color, but also maintain the visual intactness of their mountain settings and achieve strong visual unity with those settings. In many urban settings, however, the number and variety of existing manmade forms suggest that enhancing overall visual unity may be a more effective approach to improving visual quality than attempting to introduce vivid new forms into the setting. For example, an urban arterial improvement and streetscape project may deliberately understate individual design elements such as street lights, traffic signals, and paving patterns.

VISUAL IMPACT

VISUAL IMPACT = VISUAL RESOURCE CHANGE + VIEWER RESPONSE

VISUAL RESOURCE CHANGE

CHANGE IN VISUAL INFORMATION
- *existing visual resources*
  introduced resources

COMPATIBILITY OF VISUAL CHARACTER
- *existing character*
  compatibility of new feature

RESULTING VISUAL QUALITY
- *direct measurement of alteration (appraise built product)*
  - *existing visual quality*
  - *visual quality after development*
- *prediction of alteration (appraise simulated project)*
  - *existing visual quality*
  - *visual quality after development*

PREDICTING CHANGE IN QUALITY

PREDICTING CHANGE IN VISUAL QUALITY
(AT DIFFERENT STAGES IN THE
DEVELOPMENT PROCESS)

- PLANNING (*Project is not site specific*)

  CHANGE = VISUAL QUALITY (*before development*) + VISUAL COMPATIBILITY

- LOCATION AND DESIGN (*Project is site specific*)

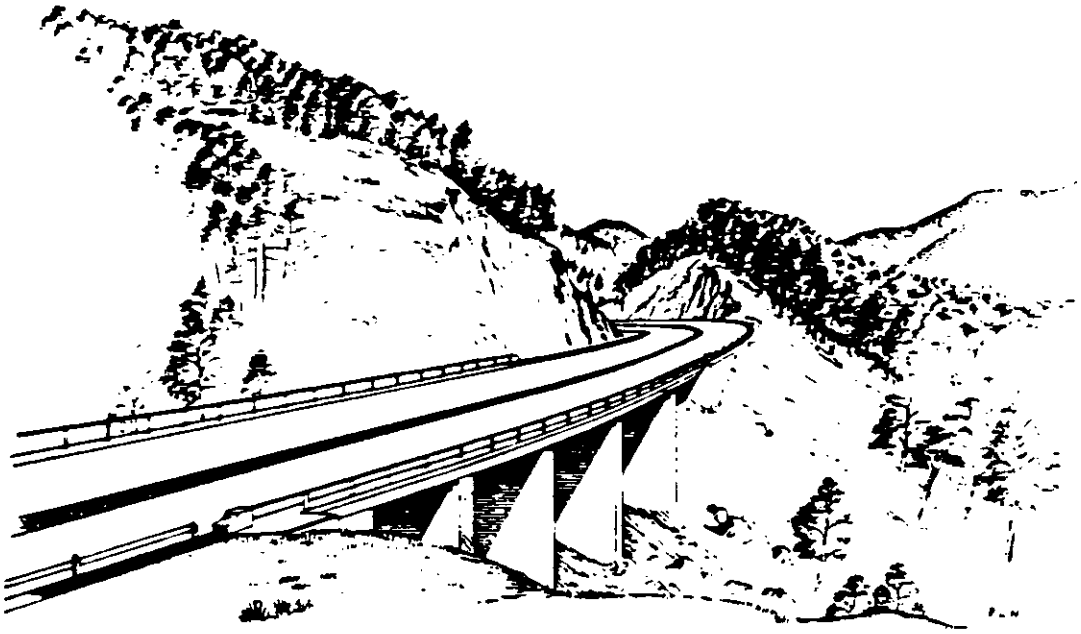
  CHANGE = VISUAL QUALITY (*before development*) + VISUAL QUALITY (*after development*)

- CONSTRUCTION AND MAINTENANCE
  (*Site has already been modified*)

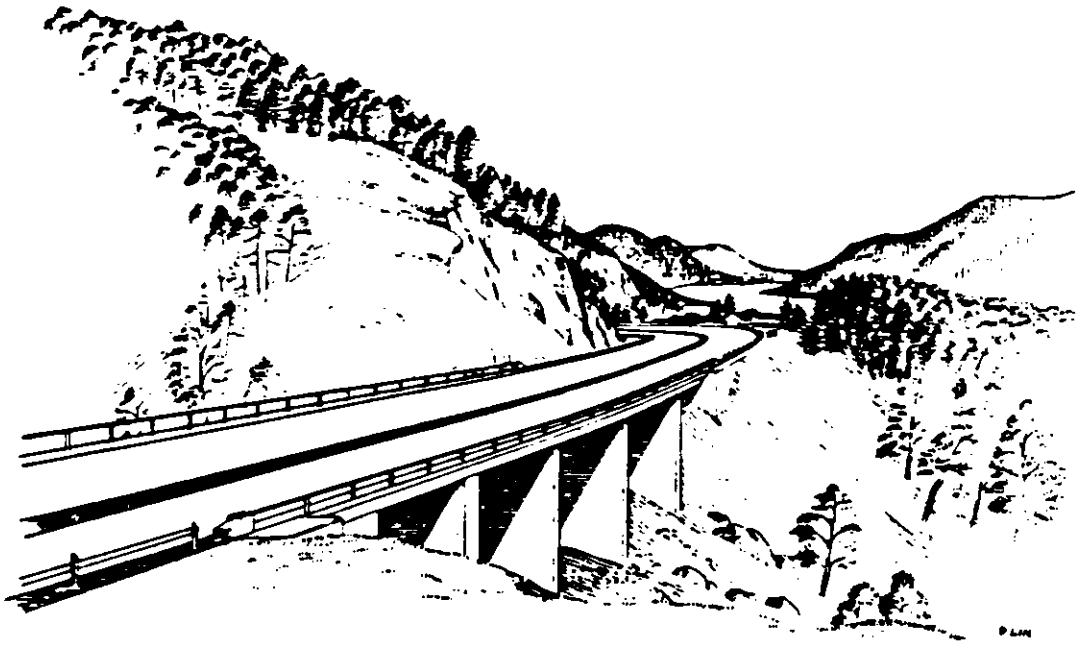
  CHANGE = VISUAL QUALITY (*after development*) + VISUAL COMPATIBILITY

SIMULATION

SIMULATING VISUAL RESOURCE CHANGE: ARTISTS' SKETCHES OF PROPOSED ACTIONS

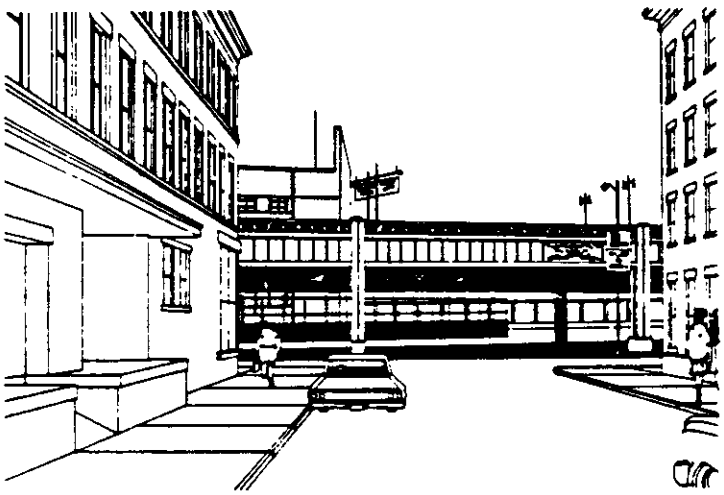


Removing a residual piece of rock between the freeway and a natural slope can lead to smoother landscape design and can open up vistas which are otherwise obscured



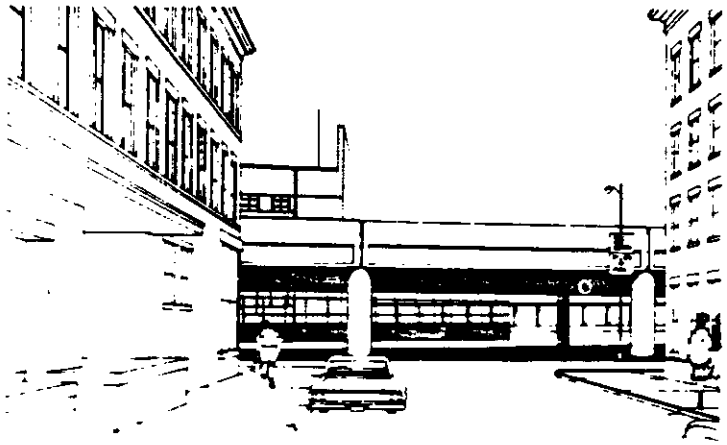
Source: C. Tunnard and B. Pushkarev, Manmade America: Chaos or Control? (New Haven, Conn.: Yale University Press, 1963), p. 226.

SIMULATING VISUAL RESOURCE CHANGE: ARCHITECTURAL RENDERINGS OF THE WEST SIDE HIGHWAY, NEW YORK

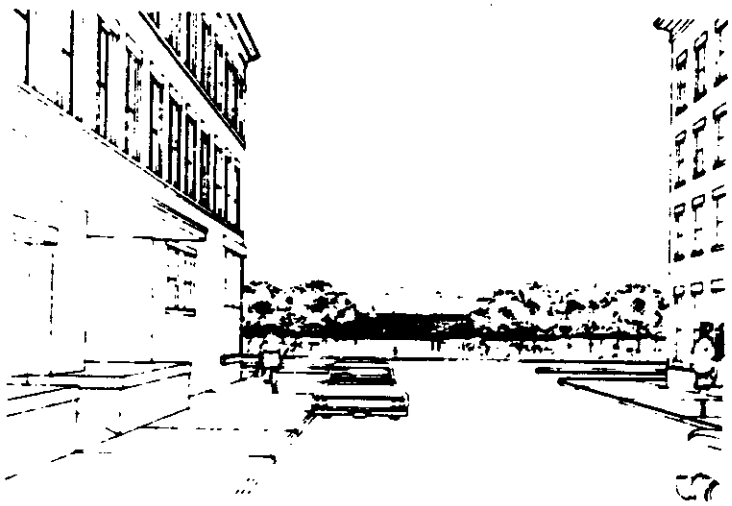


Source: U.S. Department of Transportation, New York Department of Transportation, West Side Highway Project Environmental Impact Statement (New York: 1974), p. 187.

MAINTENANCE



INBOARD RECONSTRUCTION



OUTBOARD

VISUAL IMPACT EVALUATION

LEVEL OF QUALITY

V.Q. BEFORE & V.Q. AFTER

- Vividness
- Intactness
- Unity
- V.Q. = $\frac{V+I+U}{3}$

NUMERIC DIFFERENCE

change = (V.Q. before) − (V.Q. after)

VISUAL QUALITY EVALUATION - VIEW OF THE ROAD

Project Name _____ Evaluator _____

Assessment Unit _____ Date _____

Weather _____

Evaluation Scale: 1-7
1 = Very Low
4 = Medium
7 = Very High

Observer Viewpoint	Proposed \ Existing	VIEW: SETTING * Land Use	VIEW: SETTING * Observer Position	VIEW: SETTING * Road Distance	General Visual Quality	VISUAL QUALITY: VIVIDNESS Overall Vividness	VIVIDNESS FEATURES: Memorability of landscape components as they combine in striking and distinctive visual patterns	INTACTNESS General Intactness	INTACTNESS ENCROACHMENT: The integrity of visual pattern. The extent to which the landscape is free from visual encroachments.	UNITY Overall Unity	UNITY ELEMENTS: The degree to which visual elements of the landscape join to form a coherent, harmonious visual pattern.	(V+I+U) ÷ 3	IMPACT: Visual Quality Difference	IMPACT: Positive Impact	IMPACT: Negative Impact
	E														
	P	X													
	E														
	P	X													
	E														
	P	X													
	E														
	P	X													
	E														
	P	X													
	E														
	P	X													

VISUAL QUALITY EVALUATION - VIEW FROM THE ROAD

Project Name _____

Assessment Unit _____

Evaluator _____

Date _____

Weather _____

Evaluation Scale: 1-7
1 = Very Low
4 = Medium
7 = Very High

VIEW			VISUAL QUALITY								IMPACT		
			VIVIDNESS		INTACTNESS		UNITY						
Observer Viewpoint	Proposed / Existing	General Visual Quality	Overall Vividness	Memorability of landscape components as they combine in striking and distinctive visual patterns FEATURES	General Intactness	The integrity of visual pattern. The extent to which the landscape is free from visual encroachments. ENCROACHMENT	Overall Unity	The degree to which visual elements of the landscape join to form a coherent, harmonious visual pattern. ELEMENTS	(V+I+U) ÷ 3		Visual Quality Difference	Positive Impact	Negative Impact
	E												
	P												
	E												
	P												
	E												
	P												
	E												
	P												
	E												
	P												
	E												
	P												

LEGEND

Land Use
- URB = urban
- SUB = suburban
- IND = industrial
- COM = commercial
- INS = institutional
- RES = residential
- REC = recreational
- TRA = transportation

Observer Position
- S = superior
- N = normal
- I = inferior

Road Distance
- F = foreground — to ¼ miles (0.4 km)
- M = middleground — ¼ to 3 miles (0.4 km to 5 km)
- B = background — beyond 3 miles (5 km)

Evaluation Scale: 1-7 (1=Very Low, 4=Medium, 7=Very High)

VIVIDNESS	MANMADE DEVELOPMENT	ENCROACHMENTS UNDESIRABLE EYESORES	UNITY/INTACTNESS
Very high	None	None	Very high
High	Little	Few	High
Moderately high	Some	Some	Moderately high
Average	Average	Average	Average
Moderately low	Moderately high	Several	Moderately low
Low	High	Many	Low
Very low	Very high	Very many	Very many

VIEWER RESPONSE TO HIGHWAY PROJECTS

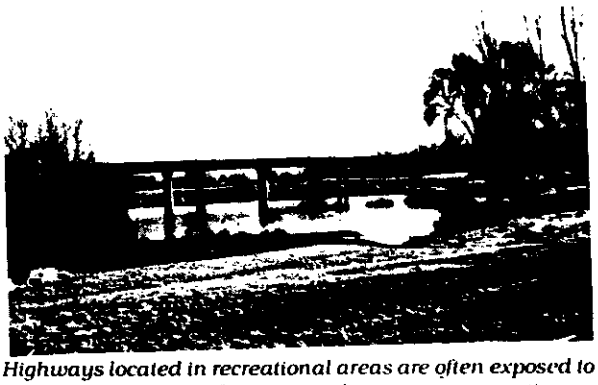
Several factors discussed in Chapter Two can help us gauge viewer response to a project's visual effects. These factors include viewer exposure and three aspects of viewer sensitivity: activity and awareness, local values, and cultural significance.

Viewer Exposure

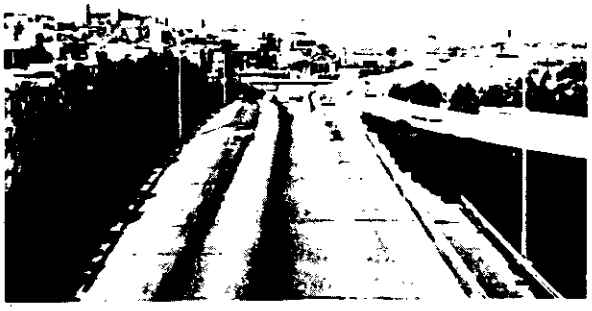
First, will the project be viewed by persons other than its users? If so, what are the viewer groups, how many people are in them and how far away are they? The answers help to establish viewer exposure to the project. Viewer exposure may be particularly high along urban rights-of-way and in public use areas; the latter may include safety rest areas, auto-restricted zones, transit malls, fringe parking and certain joint development projects. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project. As an alternative or supplement to managing those effects, we can manage viewer exposure by adjustments to project location and alignment, and by mitigation measures such as full or partial screening. Viewer exposure may become an important issue where the sight of the highway—however well designed—would intrude on the visual character of historic districts or natural areas. In extreme cases, projects have been depressed or placed in tunnels to restrict or eliminate views of the highway.

Viewer Sensitivity: Activity and Awareness

Viewer activity and awareness can be significant variables in the selection of highway alternatives. For example, one location may expose a highway to viewers in a recreation area, a second to viewers in an industrial zone. Alignment and design alternatives, such as "daylighting" a curve, may expose highway users to a view that heightens their awareness of an approaching destination. Conversely, bypass highways have sometimes eliminated views of bypassed communities and have diminished driver awareness of town centers.



Highways located in recreational areas are often exposed to a very sensitive group of viewers with strong preconceptions about the visual appropriateness of roads in these settings.



Sometimes a highway project can make a significant contribution to the renewal of a city center by increasing the traveler's awareness of the center and improving the visual quality of the entry to it.

Viewer Sensitivity: Local Values

Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. Highway planners can learn about these special resources and community aspirations for visual quality through project citizen participation procedures, as well as from local publications and planning documents. Community organizations such as arts councils and historic societies should also be consulted. The resulting information

will sometimes surprise the out-of-town expert. For instance, planners investigating location alternatives in a small western city found what appeared to be a promising alternative in a small river valley with open land, private ownership and industrial zoning. Its existing visual resources include an old dam and powerplant, exposed penstock, gravel roads, and several transmission lines. However, contact with community groups revealed that the valley

Hydropower development seriously encroaches on the visual quality of this river valley, but local residents regard it as a scenic area and oppose further development of any type.

is regarded locally as a wildlife refuge, an historic area, the scenic core of the city's open space system—and strictly off-limits for new transportation development.

Viewer Sensitivity: Cultural Significance

Regional or national cultural significance is usually accompanied by formal designation (or by study status for designation) that recognizes a property or district for its historic, wilderness, recreational, or other value. While such properties or districts are not necessarily high in visual quality, we have seen that their visual character is often considered important to their cultural value. The planning and design of a highway project in an historic district or the rehabilitation of an historic bridge may have to make concessions to the visual character of the district or bridge. Alternatively, project visibility may be controlled with vegetation, an appropriately-designed acoustic barrier, or other means to avoid perceived visual incompatibility with a setting savored for its absence of visible evidences of contemporary urban civilization.

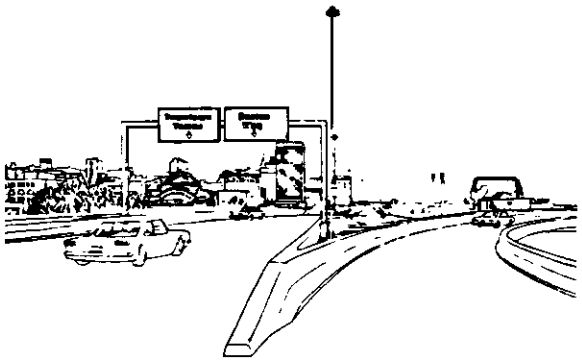
VISUAL EFFECTS AND PROJECT STAGES

The highway development process can be divided into five general stages: planning, location, design, construction and maintenance. The visual effects of a highway project are most clearly defined in the last project stages, but they are determined progressively throughout the process. The most broad-reaching effects are determined early. If the highway corridor contains resources that are highly valued for their visual character, highway alignment and design may be unable to completely avoid or

Despite considerable design effort, this bridge approach structure does not succeed in eliminating adverse visual effects on the church next to it.

mitigate adverse visual impacts that are "locked in" by corridor selection. Conversely construction and maintenance are crucial to the realization of design intentions. Consideration of visual effects and the highway development process can ensure that problems and opportunities are identified soon enough for effective action.

Drawings or simulations of project appearance from representative viewpoints provide a direct means of evaluating the visual effects of highway alternatives. At the design stage, we can illustrate the appearance of the alignment, alternative structures, roadside appurtenances, and roadside planting in detail. Unfortunately, most environmental assessments are prepared earlier, during the location stage. If approximate alignment and typical cross-section are known, these can provide sufficient information to illustrate the general appearance of the highway. If controversy over the visual effects of the project still exists, final environmental



A lighting and signing alternative is illustrated in this sketch of a view from the road; this visually simple alternative was preferred, partially because of the complex geometry of the roadway itself.

clearance may be delayed until the studies necessary to provide visual details can be carried out. This has occurred on a number of urban freeway projects and also on highways through scenic areas.

The probable broad-scale visual effects of a project can be considered early in the highway development process, even if project information is insufficient to simulate and assess specific project views. First, the visibility and viewer exposure of alternative corridors can be assessed by mapping the viewsheds of major existing viewer groups. Significant and valued visual resources can then be located and avoided. The landscape units can be identified and their visual quality assessed. Finally, the visual compatibility between the proposed project type and the landscape types representative of the project area can be established by comparing their visual character. By generalizing the principle that high contrast is likely to adversely affect high visual quality, conflict areas can be identified. Highway planners can then avoid placing corridors in these areas or can identify these conflicts for resolution during design.

EXERCISE: SUMMARY QUESTIONS

VISUAL EFFECTS OF HIGHWAY PROJECTS

1. The cross-section, plan and profile of a highway _____ (will or will not) be important to the visual effects of the highway project.

2. Since lights, signs, and traffic control devices are common highway safety appurtenances, it is not necessary that they be considered in determining the visual effect of a highway. True ___; False___.

3. If the visual character of a highway contrasts strongly with the visual character of its setting, its visual compatibility will be:

   (a) High

   (b) Low.

4. Projects located in landscape settings that have low visual quality will never have a visual impact. True___; False ___.

5. Highway projects can enhance existing visual quality. True ___; False ___.

6. Vividness, intactness, and unity are three criteria that are effective indicators of visual quality. In order to be visually successful, a project must:

   (a) Have any combination of all three

   (b) Achieve a high balance of all three

   (c) Be strong in any one of the three.

7. Visual significance of landscape components ____ (can or cannot) be determined by visual inventories or inspections alone.

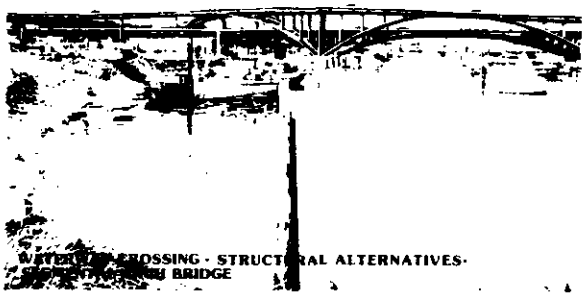
8. In assessing the visual impact of a project, concern should be given to the visual effects of the project during night hours.
   True ___; False ___.

7 VISUAL IMPACT MITIGATION

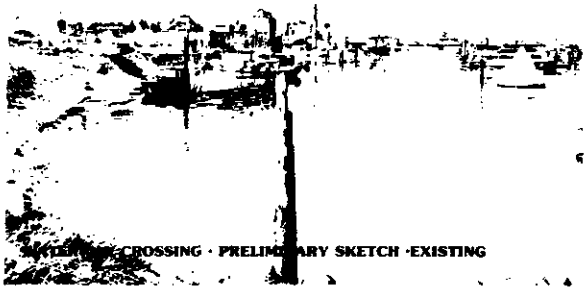
Mitigation encompasses the enhancement of positive effects as well as the reduction or elimination of negative effects. To be relevant, visual mitigation measures must address the specific visual impacts or problems caused by project alternatives. Different types of mitigation measures are appropriate to successive stages in the highway development process. In the location stage, highway corridors can avoid traversing visual resources that are exceptional in quality or visually incompatible with highway development, while maintaining the potential for views to these resources. On the viewer response side, viewsheds of sensitive viewer groups or historic sites can be bypassed.

During design, alignment can be manipulated to minimize blockage of existing views, to enhance good views from the road, and avoid bad ones. Care can be taken to maximize the visual compatibility of the project with adjoining parks or historic districts. Finally, special effort may be put into the design of structures and public use areas, including the incorporation of art and architecture, to ensure that these project components have high visual quality in themselves as well as in relation to the larger project environment.

To ensure the full realization of any mitigation actions, highway agencies must coordinate environmental assessment activities with the subsequent design, construction, and maintenance phases of highway development.



In response to community concerns about the future visual appearance of this area, the highway agency studied structural alternatives for this crossing. This segmental arch design would span the waterway cleanly and enhance its visual unity. This alternative would avoid adverse effects on existing visual quality, but would not markedly improve that quality.



Despite the presence of water and boats, the existing quality of this view is relatively low because of the encroachment of fill, dereliction, and a general lack of visual unity. Redevelopment for recreational boating has begun, however, and community expectations for visual improvement are high.

Development of a public boat launch and park under the crossing could help to bring the visual potential of the waterway to reality. The inclusion of joint use in this project would provide significant beneficial impacts on visual quality and land use.

MITIGATION PLANNING

1 Identify priority viewpoints

2 Rate and rank each viewpoint

3 Develop and prioritize objectives for critical viewpoints

4 Evaluate mitigation options to meet objectives

5 Finalize mitigation plan

MITIGATION OBJECTIVES

How to write a Visual Resource Management Objective:

environmental management principle	+ assessment of effect +	critical viewpoint	+ viewer groups
• protect • enhance • conserve • mitigate	• visual compatibility • visual quality	• view of project • view from project	• driver passenger • residents users occupants

EXAMPLES:

- Enhance + the visual quality + of the view of the project + for residents on Tumwater Hill.

- Mitigate + the diversity of pattern character + for the view from the project + for the driver.

MITIGATION OPTIONS

Corridor selection

Horizontal alignment

Vertical alignment

Slope ratios

Grading

Right of way width

Walls

Fences

Curbing

Pavement marking

Selective clearing

Landscaping

Signing

Lighting

Guard rail

Bridges

Service structures

Mowing patterns

Litter pickup

Roadside delineators

Noise barriers

8 MANAGEMENT BY VISUAL OBJECTIVES

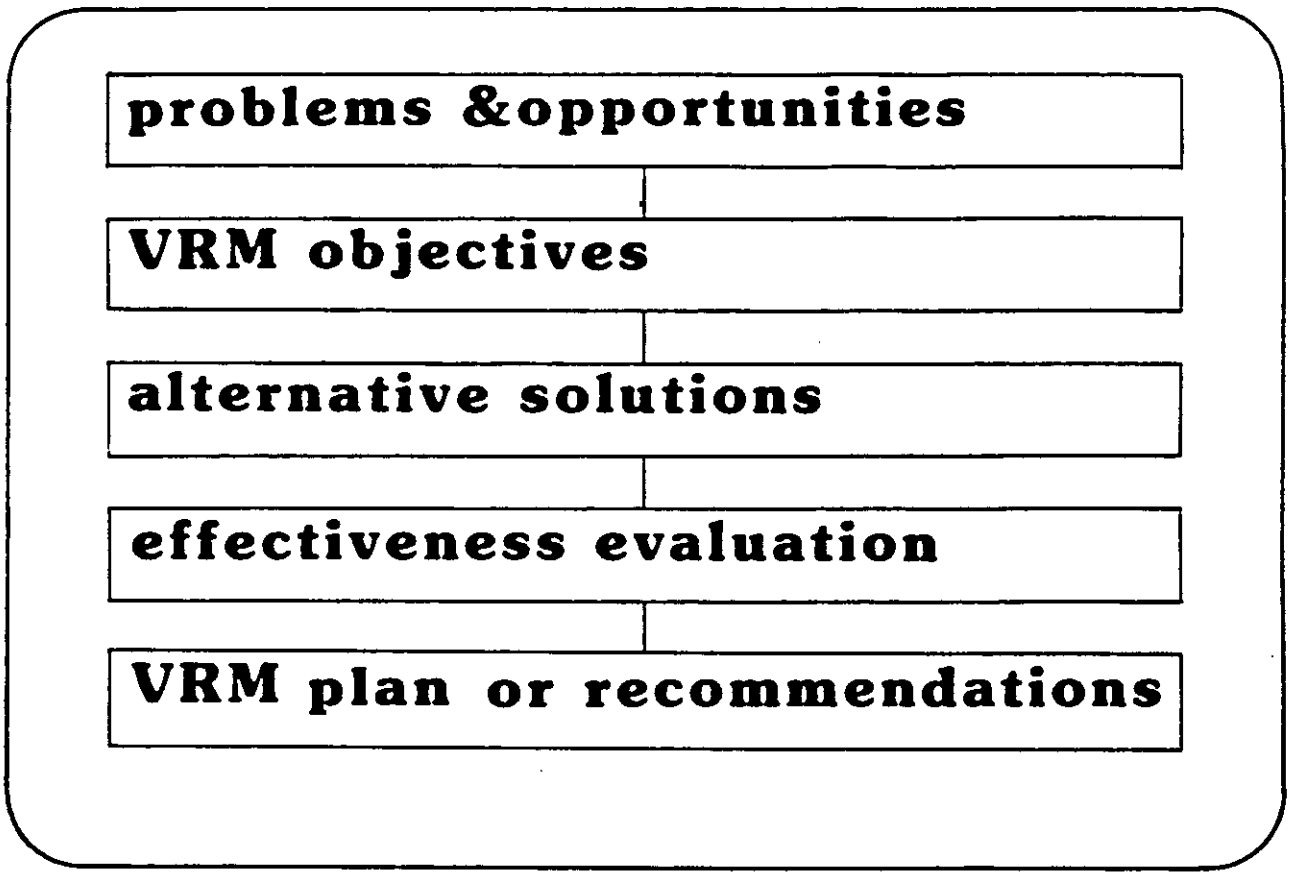
Visual assessment processes can be directly linked to management processes by the visual resource management (VRM) objective.

A VRM objective must specify the visual resources and viewer groups to be affected, the results to be achieved, the time for achievement, and the means for measuring achievement.

Establishing VRM objectives allows the planner or designer to compare the visual effectiveness of alternatives.

VRM objectives also make it easier to integrate visual considerations with other considerations in decision-making.

VISUAL MANAGEMENT PROCESS



MANAGEMENT PRINCIPLES

These principles are commonly applied to the management of a broad range of environmental resources, including visual resources.

PROTECTION

- *to guard resources from change,*
- *maintain existing resource quality,*
- *prevent adverse impacts.*

ENHANCEMENT

- *to augment resources,*
- *improve resource quality above some standard,*
- *heighten positive impacts.*

CONSERVATION

- *to utilize resources, with moderate change,*
- *hold resource quality at some standard,*
- *minimize adverse impacts.*

MITIGATION

- *to alleviate effects of resource utilization,*
- *upgrade resource quality to some standard,*
  offset adverse impacts.

MANAGEMENT ACTIONS

Manipulate the landscape components, landform and landcover (water, vegetation, manmade development),

to control the visibility of areas (viewsheds/ vistas),

- extent and duration of view
- number of viewers
- Location of viewers

to change visual elements and relationships, and

- visual information in the landscape
- visual character of the landscape
- visual quality of the landscape
- visual compatibility of the road in the landscape

to influence viewer groups,

- types of viewers
- viewer sensitivity

WRITING V.R.M. OBJECTIVES

How to write a Visual Resource Management Objective:

V.R.M. NEED — PROBLEM/OPPORTUNITY

environmental management principle + *assessment of effect* + *visual resources* + *viewer groups*

EXAMPLE:

Enhance + the visual quality + of the view of the project + for residents on Tumwater Hill

PLANNING FOR V.R.M. : AN OUTLINE

I. Design the Work Process

A. Organize the Visual Inventory, Analysis and Evaluation Techniques
   1. Level of effort appropriate to each stage
   2. Specialist staff required for each stage

B. Agree on a Format for VRM Recommendations and Plan

II. Perform Visual Assessment

A. Identify Assessment Units
   1. Landform and landcover
   2. Landscape units
      a. Area-wide (location alternatives)
      b. Highway alignment (fixed location)
   3. Major viewer groups
   4. Viewsheds
      a. Area-wide (location alternatives)
      b. From and of highway (fixed location)
   5. Visual resource assessment units

B. Analyze and Evaluate Visual Resources
   1. Inventory visual information in highway R.O.W. and setting
   2. Analyze visual character of highway and setting
   3. Evaluate existing visual quality of the landscape, including the highway and its setting
   4. Evaluate visual compatibility of the highway with its setting (or visual quality <u>after</u> development)
   5. Document effects of highway on visual resources

C. Analyze and Evaluate Viewer Response
   1. Additional viewsheds, as needed: from and of highway
   2. Analyze viewer exposure to highway and setting
   3. Evaluate viewer sensitivity to visual resources
   4. Evaluate cultural significance of specific resources
   5. Document viewer response to change in visual resources.

III. Establish Visual Resource Management Objectives

A. Establish VRM Needs
   1. Landscape Context
      a. Area-wide
      b. Within specific units
   2. Viewing Context
      a. View from the road
      b. View of the road

3. Phases of Highway Development Process
   a. Planning and location
   b. Design and redevelopment
   c. Construction and maintenance
4. Identify visual problems and opportunities
   a. Critical areas
   b. Existing positive effects (impacts)
   c. Existing negative effects (impacts)
   d. Identify potential visual effects (impacts) of new development
5. Determine applicable management principles
   a. Preservation
   b. Enhancement
   c. Conservation
   d. Mitigation

B. Formulate VRM Objectives
1. VRM Need
   a. Management principle
2. Visual problem or opportunity
   a. Assessment of effect
   b. Visual resources
   c. Viewer groups

IV. Develop VRM Recommendations or Plans

A. Propose Alternative VRM Actions
1. VRM Objective
   a. Viewers
   b. Visual resources
   c. Visual problem or opportunity
      i. Effect
      ii. Cause
   d. Management principle
2. Possible visual resource management actions
   a. Landform
   b. Water
   c. Vegetation
   d. Built form
3. Potential Effects
   a. Visual resource
      i. Information
      ii. Character
      iii. Quality
      iv. Compatibility
   b. Viewer Response
      i. Exposure
      ii. Sensitivity
      iii. Cultural significance

4. Select appropriate actions
   a. Planning and location
      i. Corridor
      ii. Route
   b. Design and redevelopment
      i. Alignment
      ii. Cross-sections
      iii. Structures
      iv. Landscaping
   c. Construction and maintenance
      i. Techniques for visual quality control during construction
      ii. Maintenance

B. Decision-Making
   1. Evaluate Alternative VRM Actions
      a. Priorities among alternative VRM actions
         i. Relative cost and effectiveness
         ii. Concentration of resources
         iii. Political process
         iv. Other considerations
      b. Integrate with other highway concerns
         i. Operations
         ii. Economy
         iii. Safety
         iv. Other environmental concerns
   2. Agree Decision Between All Members of Highway Development Team
      a. Resolve conflicts between objectives

C. Prepare Visual Resource Management Recommendations or Plans
   1. Highway Development Process
      a. Planning and location - general alternatives
      b. Design and redevelopment
      c. Construction and maintenance - specific actions
   2. Recommended VRM actions
      a. Effect of actions
      b. Cost of actions
      c. Prioritize actions
   3. Set level of effort and schedule appropriate to each phase
   4. Select specialist staff required
   5. Implications for next phase of Highway Development Process
      a. Appropriate and relevant VRM considerations
      b. Continuity
      c. Prior consultation

SUMMARY

Wide-ranging Federal laws and regulations require explicit consideration of visual resource issues in management programs and individual projects.

In addition, many states have parallel laws and requirements. With the demonstrated success of major agency systems, demand is growing for the use of VRM techniques by other agencies.

An increasing emphasis on movement from assessment into active management, for projects as well as lands, is also recurring.

Visual resource management offers a battery of techniques to assure appropriate consideration of esthetics at all project stages for an expanding range of project types.

GLOSSARY

Color:
The third of the four basic elements of visual pattern; the hue (e.g. red or blue) and value (e.g. light or dark) of the light reflected or emitted by an object.

Commemoration:
Landscapes and special districts formally or informally recognized for their connection with past events. The visual quality, character, or information of these settings may have acquired cultural value beyond that revealed in an assessment based strictly on visual resources.

Continuity:
Continuity is the uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connected or related landscape components or features.

Cultural Significance:
Specific landscape settings may be significant because of cultural values; the setting must be at least briefly examined in its regional and national contexts to determine if it is culturally significant. Three general criteria are: uniqueness, commemoration, and designation.

Designation:
Landscapes and special districts formally or informally recognized for their historic, educational, scientific, recreational, or esthetic value. Designation may affect viewer expectations about these areas.

Direction of Light:
Indicates how light strikes the surface of objects in terms of back, front, or side-lighting.

Backlighting: A viewing situation in which sunlight is coming toward the observer from behind a feature or elements in a scene.

Frontlighting: A viewing situation in which sunlight is coming behind the observer to a feature or elements in a scene.

Sidelighting: A viewing situation in which sunlight is coming from the side of the observer to a feature or elements in a scene.

Distance Zones:

Three conventional terms in painting--foreground, middleground, background--which can be helpful in describing distance relationships.

Foreground (0 to ¼-½ mile): That area which can be designated with clarity and simplicity not possible in middle and background because the observer is a direct participant. He can have the impressions of immediate details--bark pattern, boulder forms, or degraded parts. This is a zone of important linkage because it sets a tone of quality or its absence. Intensity of color and its value will be at a maximum level, lacking the effect of color diminution due to atmospheric scattering of light rays. At greater distances, the intensification of aerial perspective becomes an important means of discrimination.

Middleground (¼-½ to 3-5 miles): A critical area for two reasons. This is where the parts of the landscape can be seen to join together, where hills become a range or trees make a forest. This is also where manmade changes may be revealed as sitting comfortably upon the landscape. Or where conflicts of form, color, shape, or scale show up. Colors will be unmistakable but they will be more blue, softer than those of the foreground. Some of the sharpness of value contrasts will be reduced.

Background (3-5 to infinite miles): That area where distance effects are primarily explained by aerial perspective. Surfaces of land forms will lose detail distinctions, emphasis will be on outline or edge, with background becoming an effective foil against which foreground or background is more clearly seen--a figure-ground relationship. Silhouettes and ridges of one land mass against another are the conspicuous visual parts of the background with skyline the strongest line of all (Litton).

Districts:

The medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognizable as having some common, identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside. (Lynch)

Diversity.

The number of pattern elements as well as the variety among them, and edge relationships between them.

Dominance:

Dominance of components or specific features in a scene may be dominant because of prominent positioning, contrast, extent, or importance of pattern elements.

Edges:

The linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes. Such edges may be barriers, more or less penetrable, which close one region off from another; or they may be seams, lines along which two regions are related and joined together. These edge elements, although probably not as dominant as paths, are for many people important organizing features. (Lynch)

Ephemeral Influences:

Those diverse and transitory effects that defy cataloging. Some of them are positively related to light but represent somewhat more unusual phenomena; they could be described as "double-take" effects. As factors they are divided into four groupings: 1) meteorological conditions, 2) seasonal expectations, 3) projected and reflected images, and 4) animal occupancy and signs. (Litton)

Esthetics:

The science or philosophy concerned with the quality or sensory experience (in this course, limited to visual experience). A branch of philosophy dealing with the nature of the beautiful and with judgments concerning beauty. It is also viewed as a body of knowledge about those characteristics of objects that make them pleasing or displeasing to the senses, and those characteristics of human perception that affect sensation. The quality of being esthetic is not the opposite of the qualities of "practicality" or "reality," but rather another aspect or way of experiencing the same real world phenomena. Thus, blue skies, uncontaminated water and uncluttered urban landscapes all have aesthetic value, because they imply health, pleasure and security. (Murtha)

Form:

One of the four basic elements of visual pattern (usually the strongest); the mass or shape of an object.

Human Response to Landscape:

Descriptive Assessments: A human response to the landscape which simply seeks to depict, rate, measure, etc., the attributes of specific visual resources or landscapes.

Evaluative Appraisals: A judgment of the relative quality of specific visual resources or landscapes against some implicit or explicit standard of comparison.

Preferential Judgments: An expression of a wholly personal subjective appreciation of (or repugnance for) specific visual resources or landscapes. (Craik)

Imageability:
That quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which provides a strongly identified, powerfully structural, highly useful mental image of the environment.

Intactness:
The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.

Inter-visibility:
The principle that from any point visible to an observer, the observer can also be seen.

Landmarks:
Another type of point reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store or mountain. Some landmarks are distant ones, typically seen from many angles and distances, over the tops of smaller elements, and used as radial references. They may be within the city or at such a distance that for all practical purposes they symbolize a constant direction. (Lynch)

Landscape:
Landform and landcover forming a distance visual pattern. Landcover comprises water, vegetation and manmade development, including cities.

Landscape Control Points:
A network of permanently established observation sites which provide the means of studying the visual impact of alternations to the landscape. (Similar terms: Observation Points, Observer Viewpoints). (Litton)

Landscape Form:
A landform or landcover mass composed of heterogeneous visual elements, but distinguished from surrounding areas by overall form, pattern, and edge. Landscape forms have physical dimensions and a specific location. They also often have names: Bunker Hill is a named landform mass; Boston is a named area of landcover.

Landscape Type:
An area of landform plus land cover forming a distinct, homogeneous component of a landscape, differentiated from other areas by its degree of slope plus a single pattern of landcover.

A landscape type is a unique segment of the environment. This segment or portion of the environment can be separated from other segments on the basis of the land cover and the landform. Any landscape type can be subdivided into unique landscape sub-types, through definition of the desired homogeneity of the landscape type. For example, a forest is composed of different tree types, and each tree is itself made up of branches, a trunk and foliage and so on. (Vaughn)

Landscape Unit:

a. An area or volume of distinct landscape character which forms a spatially enclosed unit at ground level; it may include more than one landscape type; outdoor room.

b. The extent of a single landscape type which is not spatially enclosed at ground level.

Line:
Geometrically, a point that has been extended, or the intersection of two planes, e.g., a silhouette, or a boundary between patterns in the landscape. The second strongest of the four basic visual pattern elements.

Local Values and Goals:
The landscape setting and its visual resources may be valued by local viewer groups for reasons not evident in an assessment based strictly on visual resources and not widely known outside the community.

Management Principles:

Protect: To guard, maintain, prevent impact (U.S.F.S. "preservation").

Enhance: To augment, heighten positive impact, improve above a standard (U.S.F.S. "enhancement").

Conserve: To utilize with minimum impact on a standard (U.S.F.S. "retention").

Mitigate: To alleviate, moderate negative impact, upgrade to an acceptable standard (U.S.F.S. "modification" and "rehabilitation").

Nodes:
Points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character. (Lynch)

Observer Position:
A term employed to describe the observer's elevational relationship between himself and the landscape he sees. It is used to indicate if he is essentially below, essentially at the same level, or essentially above the visual objective. Three specific terms are used: 1) observer inferior, viewer below object; 2) observer normal, viewer on level of object; 3) observer superior, viewer above object.

Observer Viewpoint:
A point from which a select view is analyzed and/or evaluated. Analogous concept: Landscape control point. (Litton)

Orientation:
The necessary information and opportunities to see significant features indicating location, direction, and progress. The needs of orientation are:

1) Sense of Location: The driver's awareness of his location in the environment at any point during travel.

2) Sense of Direction: The driver's sense of travel direction, both compass direction (north-south) and geographic direction (i.e., along the shore).

3) Sense of Progress: The driver's sense that he is making progress from his origin to his destination.

Physical orientation elements in the landscape that satisfy such needs are the following:

1) Landmark Feature: A prominent or conspicuous object in the landscape that serves as a guide.

2) Landmark Areas: An area having distinctive characteristics and definable boundaries that are useful to the traveler in determining where he is.

3) Linear Elements: Features in the landscape with directional characteristics because they lie on a perceived axis and/or connect other features.

(Hornbeck)

Paths:
The channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it, and along these paths the other environmental elements are arranged and related. (Lynch)

Pattern Character Compatibility:
The degree to which the visual character of the highway blends with that of the surrounding landscape, in terms of dominance, scale, diversity, and continuity; related to intactness and lack of encroachment.

Pattern Element Compatibility:
The degree to which the line, form, color and texture of the highway and related facilities conform, rather than contrast, to the basic visual pattern of the landscape setting; related to the vividness of the highway in its setting.

Scale:
Visual scale is the apparent size relationships between landscape components or features and their surroundings.

Sightline:
The unobstructed line of sight between an observer and viewed object.

Slope:
An area of landform surface differentiated from other areas by its degree of slope. It is a component of landforms but is not limited in place or extent. E.g.: cliff, gentle slope, flat plain. Analogous concept: Landtype (U.S.F.S.)

Texture:
The visual or tactile surface characteristic of various elements in the landscape; often the least dominant of the four visual pattern elements.

Uniqueness:
A resource-oriented criterion: a visual resource, visual character, or visual quality which is rare or uncommonly found at a regional or national scale.

Unity:
The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

Viewer Activity:
The extent of a viewer's ability to perceive the landscape and its detail may be heightened or decreased by the visual requirements of his current activity and his past experience of the landscape.

Viewer Awareness:
A viewer's receptivity to the visual character of the landscape can be affected by elements and relationships in the landscape setting itself or by expectations about the setting. Visual experience contrary to expectation may be suppressed or heightened, depending on the degree of disagreement.

Viewer Response:
Measures of viewer response to change in visual resources include viewer exposure, viewer sensitivity, cultural significance and local values.

Viewer Exposure:
The degree to which viewers are exposed to a view by their physical location, numbers viewing and duration of view.

Viewer Groups:
Classes of viewers differentiated by their visual response to the highway and its setting; response is affected by viewer activity, awareness and values.

Viewer Sensitivity:
The viewer's variable receptivity to the elements within the environment that he is viewing, affected by viewer activity and awareness. A person cannot readily notice every object and all the attributes of the objects that compose the total visual environment. Analogous concept: sensitivity level (U.S.F.S. and B.L.M.).

Viewshed:

1) All the surface areas visible from an observer's viewpoint.

2) Surface areas from which a critical object or viewpoint is seen.

Analogous terms: seen area, visible area.

Existing and Topographic Viewsheds:

a) Existing Viewshed: The area normally visible from an observer's viewpoint, including the screening effects of intermediate vegetation and structures.

b) Topographic Viewshed: The area which would be visible from a viewpoint based on landform alone, without the screening effect of vegetation and structures.

Composite Viewsheds:

a) Definition: Composite of overlapping areas visible from:
- A continuous sequence of viewpoints along a road.
- A network of viewpoints surrounding a road (or object).

b) The Visual Corridor: Each visually and spatially distinct experience.

View:
A scene observed from a given vantage point.

Visual Absorption:
The physical capacity of a landscape to screen proposed development and still maintain its inherent visual character. Two major factors affecting the absorption capacity of a landscape are: 1) the degree of visual penetration, and 2) the complexity of the landscape. The degree of visual penetration (i.e., the distance into the landscape that you can see from a vantage point) is affected both by vegetation and topography. The higher the visual penetration, the lower the ability of the landscape to visually absorb development and still maintain its existing visual character. Also, the higher the visual complexity within a landscape, the greater the visual absorption. (Vaughn)

Visual Alteration:
The degree of change in visual resources caused by highway development and operations, assessed without regard to viewer response.

Visual Assessment Units:
A portion of the area visible or potentially visible from a highway project or from which a highway project may be seen; to be useful in visual assessment, it should be identified on the basis of visual distinctions, such as landscape unit boundaries.

Visual Character:
The visual character of a landscape is formed by the order of the patterns composing it. The elements of these patterns are the form, line, color and texture of the landscape's visual resources. Their interrelationships can be objectively described in terms of dominance, diversity, continuity, and so on.

(Visual) Cognition:
The process of recognizing visual relationships among objects and between objects and their setting.

Visual Compatibility:
The degree to which development with specific visual characteristics is visually unified with its setting. Visual compatibility can be evaluated with reference to Pattern Elements and Pattern Character. Analogous concepts: contrast rating (B.L.M.), visual absorption criteria (U.S.F.S.), external harmony (Tunnard and Pushkarev).

Visual Corridor:
A continuous succession of visually and spatially distinct experiences.

Visual Impact:
The degree of change in visual resources and viewer response to those resources caused by highway development and operations.

Visual Information:
Visual information in a landscape is:

1) The identity of landscape components or features such as mountains, valleys, rivers, forests, towns or highways.
2) The message conveyed by signs and symbols in verbal or graphic form.

(Visual) Interpretation:
The process of judging or evaluating the visual appearance of objects and/or their setting.

Visual Pattern Elements:
Form, line, color, texture. Analogous term: dominance elements (U.S.F.S.).

(Visual) Perception:
The process of visually identifying and distinguishing objects from their setting.

Visual Quality:
While many factors contribute to a landscape's visual quality, they can ultimately be grouped under three headings: Vividness, Intactness and Unity. Analogous concepts: Scenery quality rating (B.L.M.), variety class (U.S.F.S.).

Visual Resource Management in the Highway Development Process:
Making and implementing decisions during the Highway Development Process which affect the visual resources of the highway and its setting and viewer response on character, content and quality of those resources.

Visual Resources:
The appearance of the features that make up the visible landscape. Includes the land, water, vegetative, animal, and other features that are visible on all national resource lands. (U.S.F.S.)

Visual Vulnerability:
The degree to which manmade changes might be seen in the landscape and their potential for degradation (of scenic quality)--in essence, the landscape's resistance or susceptibility to visual changes. (Litton)

Vividness:
The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

VRM Needs:
The degree to which specific visual resources require management for specific viewer groups.

VRM Objective:
Statement of a Visual Resource Management result to be achieved, specifying:

1) management principle
2) measure of effect
3) visual resources to be managed
4) viewing group(s) for which resources are to be managed.

VRM Plan:
A specification of the management actions, timing, personnel, and financial resources by which given visual resources are to be managed, once a project has been geographically located.

VRM Unit:
A geographic unit for the management of visual resources; frequently identical to the assessment unit, or to a landscape type.

WSDOT
Visual Quality Assesment
Forms

Visual Quality Analysis

VIEW TO AND FROM PROJECT

Evaluation Scale

---comments---

VIVIDNESS

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW

INTACTNESS

(MAN-MADE DEVELOPMENT)

10	NO DEVELOPMENT
9	LITTLE DEVELOPMENT
7,8	SOME DEVELOPMENT
4,5,6	AVERAGE LEVEL OF DEVELOPMENT
2,3	MODERATELY HIGH DEVELOPMENT
1	HIGH LEVEL OF DEVELOPMENT
0	VERY HIGH LEVEL OF DEVELOPMENT

(NATURAL ENVIRONMENT)

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW

UNITY

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW

VISUAL QUALITY ASSESMENT

VIEW FROM THE ROAD

10-Feb-97

			VIEW UNIT NUMBER (E=existing, P=proposed)	1 E	1 P	2 E	2 P	3 E	3 P	4 E	4 P	5 E	5 P	6 E	6 P	7 E	7 P	8 E	8 P	9 E	9 P	10 E	10 P	11 E	11 P	12 E	12 P	13 E	13 P	14 E	14 P	15 E	15 P
LEVEL 1			GENERAL VISUAL QUALITY																														
			SPECIAL FEATURES																														
LEVEL 2	VIVIDNESS	I FOREGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II MIDDLEGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III BACKGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	INTACTNESS	I	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UNITY	I	MAN-MADE																														
			OVERALL																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	MAN-MADE																														
			OVERALL																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	MAN-MADE																														
			OVERALL																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGES		I	WITHIN R/W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	OUTSIDE R/W to NATURAL BREAK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	NATURAL BREAK to INFINITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACTOR		I	LEVEL OF IMPORTANCE																														
		II	•																														
		III	•																														
SUB-TOTAL		I	WITHIN R/W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	OUTSIDE R/W to NATURAL BREAK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	NATURAL BREAK to INFINITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VISUAL QUALITY				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			VIEW UNIT NUMBER (E=existing, P=proposed)	1 E	1 P	2 E	2 P	3 E	3 P	4 E	4 P	5 E	5 P	6 E	6 P	7 E	7 P	8 E	8 P	9 E	9 P	10 E	10 P	11 E	11 P	12 E	12 P	13 E	13 P	14 E	14 P	15 E	15 P

VISUAL QUALITY ASSESMENT

SR

10-Feb-97

VIEW TOWARD THE ROAD

			VIEW UNIT NUMBER (E=existing, P=proposed)	1 E	1 P	2 E	2 P	3 E	3 P	4 E	4 P	5 E	5 P	6 E	6 P	7 E	7 P	8 E	8 P	9 E	9 P	10 E	10 P	11 E	11 P	12 E	12 P	13 E	13 P	14 E	14 P	15 E	15 P
LEVEL 1			GENERAL VISUAL QUALITY																														
			SPECIAL FEATURES																														
LEVEL 2	VIVIDNESS	FOREGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		MIDDLEGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		BACKGROUND	LAND																														
			WATER																														
			VEGETATION																														
			MAN-MADE																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	INTACTNESS	I	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	MAN MADE																														
			NATURAL ENVIRONMENT																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UNITY	I	MAN-MADE																														
			OVERALL																														
			AVERAGE I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		II	MAN-MADE																														
			OVERALL																														
			AVERAGE II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		III	MAN-MADE																														
			OVERALL																														
			AVERAGE III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGES			WITHIN R/W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			OUTSIDE R/W to NATURAL BREAK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			NATURAL BREAK to INFINITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACTOR			LEVEL OF IMPORTANCE																														
SUB-TOTAL			WITHIN R/W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			OUTSIDE R/W to NATURAL BREAK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			NATURAL BREAK to INFINITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		TOTAL VISUAL QUALITY		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			VIEW UNIT NUMBER (E=existing, P=proposed)	1 E	1 P	2 E	2 P	3 E	3 P	4 E	4 P	5 E	5 P	6 E	6 P	7 E	7 P	8 E	8 P	9 E	9 P	10 E	10 P	11 E	11 P	12 E	12 P	13 E	13 P	14 E	14 P	15 E	15 P

Appendix K
Public Notices

Index

Supplemental Draft EIS Preparation Notices

Notice of Supplemental Draft EIS Preparation, *EQB Monitor Vol. 37, No. 15*, July 22, 2013.

Intent to Prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway), *Federal Register, Vol. 78, No. 140*, July 22, 2013.

Public Meeting Notices

Operation and Maintenance Facility site Selection Public Open Houses, May 2013.

Freight Rail Issues Public Open Houses, June 2013.

Light Rail Station Locations Public Open Houses, July 2013.

Freight Rail Issues Public Community Meetings, July 2013.

Southwest Light Rail Recommendations for the Minneapolis Segment, October 2013.

Southwest Light Rail Studies in the Kenilworth Corridor Town Hall/Community Meetings, January 2014.

Draft Results of the Southwest Light Rail Studies in the Kenilworth Corridor Town Hall/Community Meetings, February 2014

Supplemental Draft EIS Preparation Notices

NOTICE OF SUPPLEMENTAL DEIS PREPARATION

Project Title: Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project (formerly referred to as the Southwest Transitway)

RGU: Metropolitan Council

Description: The Federal Transit Administration (FTA), the Federal lead agency, and the Metropolitan Council (Council), the local lead agency, intend to publish a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit (SWLRT) Project (formerly referred to as the Southwest Transitway), in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, provisions of the Moving Ahead for Progress in the 21st Century (MAP-21), and Minnesota Administrative Rules Chapter 4410, Environmental Review.

On September 8, 2008, the notice to prepare a Draft Environmental Impact Statement (DEIS) for the Southwest Transitway project was published in the *EQB Monitor*. Availability of the DEIS was published in the *EQB Monitor* and the document was distributed on October 15, 2012. Public Hearings were held in November, 2012 and the public comment period concluded on December 31, 2012.

The Project is a new 15.8-mile light rail alignment with 17 new light rail stations, several new park-and-ride lots, and one new light rail operations and maintenance facility (OMF). The project requires modification to existing freight rail alignments within the project vicinity. The SDEIS will evaluate environmental impacts associated with proposed adjustments to the Locally Preferred Alternative, freight rail alignments, and location of the OMF. The SDEIS will also incorporate pertinent issues raised during the DEIS comment period. FTA and the Council anticipate that the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e., Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS.

Written comments on the scope of the SDEIS as outlined above may be submitted to Ms. Nani Jacobson (see contact information below) by August 12, 2013, which is within 20 days of publication this notice. Comments received within this period, and responses to the comments, will be included in the SDEIS.

Contact Person:
Ms. Nani Jacobson, Project Manager
Southwest Light Rail Transit Project Office
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426
Telephone: 612-373-3808
E-mail: nani.jacobson@metrotransit.org.

Notice regarding the intent to prepare the SDEIS will be sent to the appropriate federal, state, and local agencies that have expressed or are known to have an interest or legal role in this proposed action. Following publication and review of the SDEIS, a FEIS will be prepared and circulated.

Additional Information: The SWLRT Project (Green Line Extension) will operate from downtown Minneapolis through the southwestern suburban cities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment is primarily at-grade and includes 17 new stations and approximately 15.8-miles of double track. The line will connect major activity centers in the region including downtown Minneapolis, the Opus/Golden Triangle employment area in Minnetonka and Eden Prairie, Methodist Hospital in St. Louis Park, the Eden Prairie Center Mall, and the Minneapolis Chain of Lakes. Ridership in 2030 is projected at 29,660 weekday passengers. The project will interline with Central Corridor LRT (Green Line) which will provide a one-seat ride to destinations such as the University of Minnesota, state Capitol, and downtown St. Paul. It will be part of an integrated system of

transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, a variety of major bus routes along the alignment, and proposed future transitway and rail lines. The Metropolitan Council will be the grantee of federal funds. The regional government agency is charged with building the line in partnership with the Minnesota Department of Transportation. The Southwest Corridor Management Committee, which includes commissioners from Hennepin County and the mayors of Minneapolis, St. Louis Park, Edina, Hopkins, Minnetonka, and Eden Prairie, provides advice and oversight. Funding is provided by the FTA, Counties Transit Improvement Board (CTIB), state of Minnesota, and Hennepin County Regional Railroad Authority (HCRRA). Additional information on the SWLRT project can be found at www.swlrt.org.

ALTERNATIVE URBAN AREAWIDE REVIEW ADOPTED

Project Title: FMC Site Development

Project Description: The City Council of the city of Fridley approved Resolution #2013-33 on July 8, 2013, approving and certifying the adequacy of the Alternative Urban Areawide Review (AUAR) document for the FMC Site Redevelopment. Copies of the draft AUAR were available for public and agency review and noticed in the EQB Monitor on April 1, 2013. The Final AUAR with responses to the comments received during the draft AUAR review period was available for public and agency review on June 10, 2013.

Please direct any questions to Scott J. Hickok, AICP, Community Development Director, at 763-572-3590.

RGU: City of Fridley

NOTICES

Notification of Release of Genetically Engineered Organisms

File Number	Company	Crop	Project	County
13-NO-074	M.S. Technologies, LLC	soybean	Herbicide Tolerant	Renville

For more information contact Dr. Steve Malone, Minnesota Department of Agriculture, 625 Robert St N., St. Paul, MN 55155, 651-201-66531, stephen.malone@state.mn.us

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Intent To Prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway)

AGENCY: Federal Transit Administration (FTA), Department of Transportation.

ACTION: Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement

SUMMARY: The Federal Transit Administration (FTA), the Federal lead agency, and the Metropolitan Council (Council), the local lead agency, intend to publish a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension (SWLRT) Project (formerly referred to as the Southwest Transitway Project), in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, provisions of the Moving Ahead for Progress in the 21st Century (MAP–21), and the Minnesota Environmental Policy Act (MEPA). The original Notice of Intent to prepare a DEIS for the Project was issued on September 23, 2008. The Project's Draft Environmental Impact Statement (DEIS) was published on October 12, 2012, with a public comment period concluding on December 31, 2012. The Project is a new 15.8-mile light rail alignment with 17 new light rail stations, several new park-and-ride lots, and one new light rail operations and maintenance facility (OMF). The project requires modification to existing freight rail alignments within the project vicinity. The SDEIS will evaluate environmental impacts associated with proposed adjustments to the Locally Preferred Alternative, freight rail alignments, and location of the OMF. The SDEIS will also incorporate pertinent issues raised during the DEIS comment period.

For commenting purposes under NEPA, written comments on the scope of the SDEIS should be directed to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: 612–373–3808; Email: *nani.jacobson@metrotransit.org.* Comments on the scope may be submitted within 20 days of publication of the preparation notice in the state publication, the EQB Monitor. Notice in the EQB Monitor is anticipated to be published on July 22, 2013, with the 20 day period for submitting written comments ending on August 12, 2013. In accordance with MEPA, comments received within this period, and responses to the comments, will be included in the SDEIS.

FOR FURTHER INFORMATION CONTACT: For general information on FTA's NEPA review, please contact Maya Sarna, Department of Transportation, 1200 New Jersey Avenue SE., East Building, Washington DC 20590, Telephone: (202) 366–5811.

SUPPLEMENTARY INFORMATION: The SWLRT Project will operate from downtown Minneapolis through the southwestern suburban cities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment is primarily at-grade and will include 17 new stations and approximately 15.8-miles of double track. The line will connect major activity centers in the region including downtown Minneapolis, Methodist Hospital in St. Louis Park, the Opus/Golden Triangle employment area in Minnetonka and Eden Prairie, and, the Eden Prairie Center Mall. Ridership in 2030 is projected at 29,660 weekday passengers. The project will connect with the Green Line (Central Corridor LRT), which will provide a one-seat ride to destinations such as the University of Minnesota, the State Capitol, and downtown St. Paul. The proposed SWLRT will be part of an integrated system of transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, a variety of major bus routes along the alignment, and proposed future transitway and rail lines.

The SDEIS will supplement the evaluation of impacts included in the Project's DEIS where there have been adjustments to the design of proposed LRT and freight rail alignments, stations, park-and-ride lots, and an OMF site that would likely result in impacts not documented in the Project's DEIS. FTA and the Council anticipate that the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e., Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS.

Notice regarding the intent to prepare the SDEIS will be sent to the appropriate Federal, State, and local agencies. Following publication and review of the SDEIS, a FEIS will be prepared and circulated.

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of economy and efficiency in government, it is FTA policy to limit insofar as possible distribution of complete printed sets of NEPA documents. Accordingly, unless a specific request for a complete printed set of the NEPA document is received before the document is printed, FTA and its grant applicants will distribute only electronic copies of the NEPA document. A complete printed set of the environmental document will be available for review at the Metropolitan Council's offices and elsewhere as will be noted in the Notice of Availability; and electronic copy of the complete environmental document will be available on the Metropolitan Council's Southwest Light Rail Transit Project Web site (*http://www.swlrt.org*).

Issued on: July 11, 2013.

Marisol Simon,

Regional Administrator, FTA Region V.

[FR Doc. 2013–17506 Filed 7–19–13; 8:45 am]

BILLING CODE P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–2012–0075; Notice 2]

BMW of North America, LLC, a Subsidiary of BMW AG, Grant of Petition for Decision of Inconsequential Noncompliance

AGENCY: National Highway Traffic Safety Administration, DOT.

ACTION: Grant of petition.

SUMMARY: BMW of North America, LLC[1] a subsidiary of BMW AG.[2] has determined that certain model year (MY) 2012 BMW X6M SAV multipurpose passenger vehicles (MPV) manufactured between April 1, 2011 and March 23, 2012, do not fully comply with paragraph S4.3 (b) of Federal Motor Vehicle Safety Standard (FMVSS) No. 110, *Tire selection and rims and motor home/recreation vehicle trailer load carrying capacity information for motor vehicles with a GVWR of 4,536 kilograms (10,000 pounds) or less.* BMW has filed an appropriate report dated April 4, 2012,

[1] BMW of North America, LLC is a U.S. company that manufacturers and imports motor vehicles.

[2] BMW AG is a German company that manufactures motor vehicles.

Public Meeting Notices

PUBLIC OPEN HOUSES

Operation and Maintenance Facility Site Selection

The Southwest LRT (Green Line Extension) Project will host three public open houses in May to hear public feedback on a short list of potential locations for the Project's Operation and Maintenance Facility (OMF).

LOCATIONS & TIMES:

May 13 5:00–7:00 P.M.*
Eden Prairie City Center, Heritage Rooms
8080 Mitchell Road, Eden Prairie

* This open house is being held concurrently with Hennepin County's Transitional Station Area Action Plan meeting at the same location. Visit www.southwesttransitway.org for details.

May 15 4:30–7:30 P.M.
Southwest LRT Project Office
Park Place West Building
6465 Wayzata Blvd, Suite 500, St. Louis Park

May 22 4:30–7:30 P.M.
Hopkins Center for the Arts, Jaycees Studio
1111 Mainstreet, Hopkins

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Dan Pfeiffer, daniel.pfeiffer@metrotransit.org or 612-373-3897. Requests for special assistance should be made seven business days in advance of the scheduled open house.

The facility will house 180 permanent jobs for train operators, skilled mechanics, maintenance personnel and support staff.

At the OMF, light rail vehicles will be cleaned, stored and receive light maintenance.

Above: The Franklin Operation and Maintenance Facility, serving the Blue Line (Hiawatha LRT), features on-site parking for staff and fully enclosed storage areas for light rail vehicles.

To learn more about the Green Line Extension Project, visit **www.swlrt.org**

PUBLIC OPEN HOUSE & COMMUNITY MEETING

Operation and Maintenance Facility Site Selection

The Southwest LRT (Green Line Extension) Project will host three public open houses in May to hear public feedback on a short list of potential locations for the Project's Operation and Maintenance Facility (OMF).

May 22 Hopkins Center for the Arts
(Jaycees Studio)
1111 Mainstreet, Hopkins

Public Open House: 4:30 – 7:30 P.M.
Hopkins Community Meeting: 6:00 – 7:00 P.M.

ADDITIONAL OPEN HOUSES WILL BE HELD:

May 13 5:00 – 7:00 P.M.*
Eden Prairie City Center, Heritage Rooms
8080 Mitchell Road, Eden Prairie

* This open house is being held concurrently with Hennepin County's Transitional Station Area Action Plan meeting at the same location. Visit www.southwesttransitway.org for details.

May 15 4:30 – 7:30 P.M.
Southwest LRT Project Office
Park Place West Building
6465 Wayzata Blvd, Suite 500, St. Louis Park

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Dan Pfeiffer, daniel.pfeiffer@metrotransit.org or 612-373-3897. Requests for special assistance should be made seven business days in advance of the scheduled open house.

The facility will house 180 permanent jobs for train operators, skilled mechanics, maintenance personnel and support staff.

At the OMF, light rail vehicles will be cleaned, stored and receive light maintenance.

Above: The Franklin Operation and Maintenance Facility, serving the Blue Line (Hiawatha LRT), features on-site parking for staff and fully enclosed storage areas for light rail vehicles.

To learn more about the Green Line Extension Project, visit
www.swlrt.org

PUBLIC OPEN HOUSES
Freight Rail Issues

The Southwest LRT (Green Line Extension) Project will host two public open houses June 13, 2013, on engineering concepts for resolving the location of freight rail in the design of the Southwest LRT (Green Line Extension) project.

LOCATION & TIMES:

June 13 **8:00–9:30 A.M.**
4:30–7:00 P.M.
Benilde-St. Margaret's School
Commons Cafeteria
2501 Highway 100 South, St. Louis Park
(www.bsmschool.org)

The concepts explore various possibilities for co-locating freight and LRT tracks in Minneapolis, as well as options to reroute freight rail traffic in St. Louis Park to make way for LRT tracks. The relocation concepts to be presented will be different than the one described in the Draft Environmental Impact Statement (DEIS).

See map of concepts on reverse side.

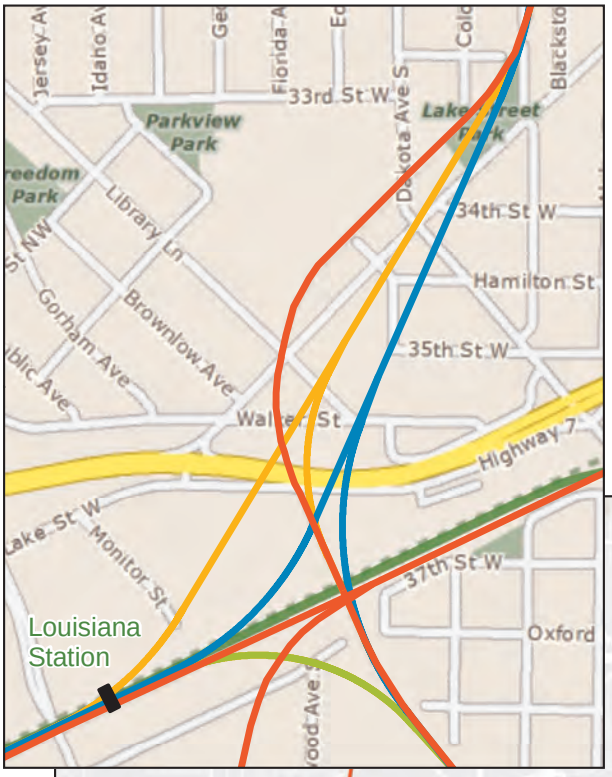
Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, Sophia.Ginis@metrotransit.org or 612-373-3895. Requests for special assistance should be made seven business days in advance of the scheduled open house.

Both co-location and relocation options would have impacts on residences and businesses, including the freight railroads. The goal is to choose one option and design it in a way that is safe and operationally efficient for both LRT and the freight railroads and cost effective.

Public input at open houses will be summarized and shared with project engineers as they advance the designs. The feedback also will be shared with members of the project's business and community advisory committees, the Corridor Management Committee and the Metropolitan Council to help them understand the issues around co-location and relocation as they provide input.

Additional open houses later in June will cover stations and other project elements. Cost impacts of the co-location and relocation concepts will be developed and presented in midsummer.

To learn more about the Green Line Extension Project, visit
www.swlrt.org

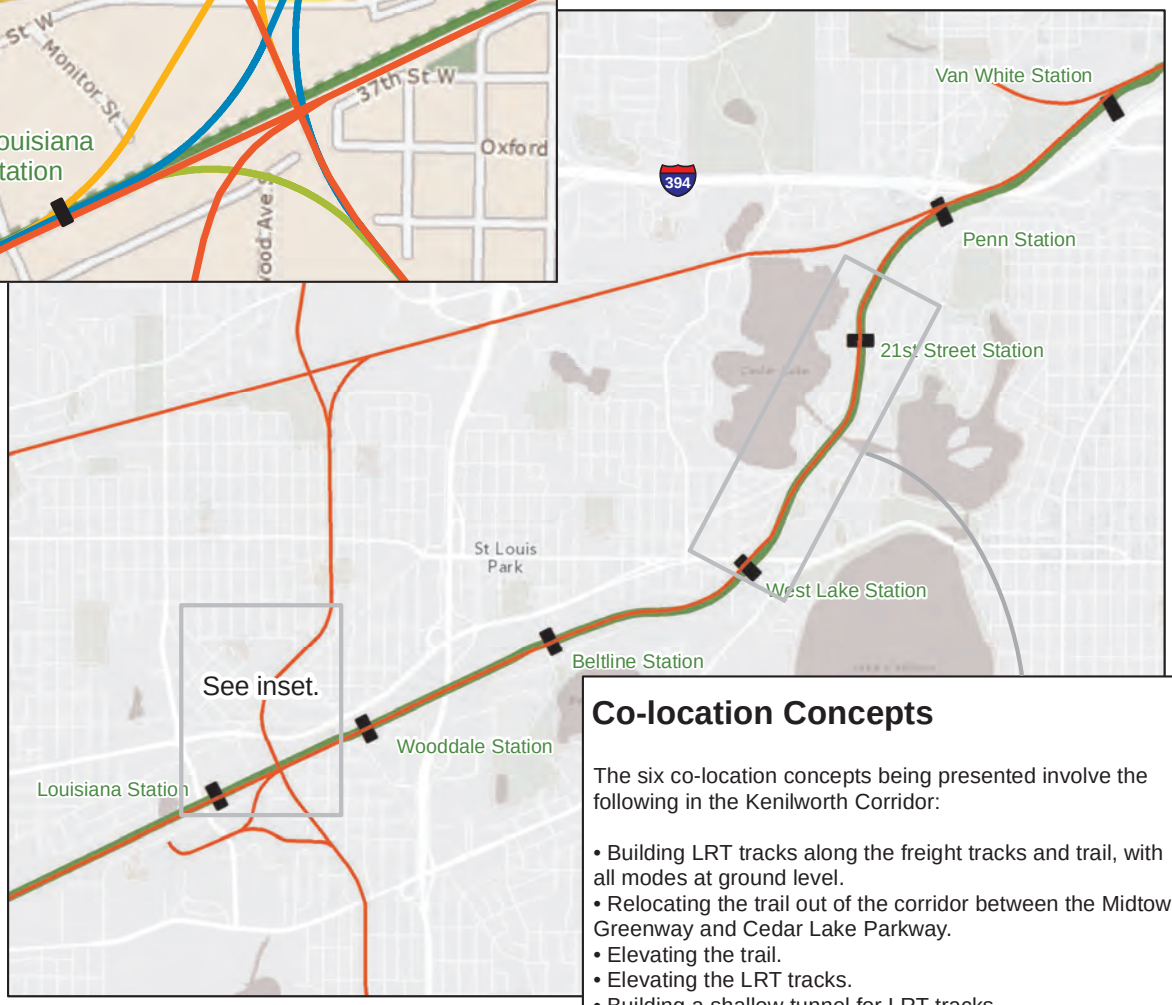


Relocation Concepts

- Existing Freight Rail
- Brunswick West
- Brunswick Central
- Southern Connection
- Proposed LRT Route

N

0 0.5 1 Miles



Co-location Concepts

The six co-location concepts being presented involve the following in the Kenilworth Corridor:

- Building LRT tracks along the freight tracks and trail, with all modes at ground level.
- Relocating the trail out of the corridor between the Midtown Greenway and Cedar Lake Parkway.
- Elevating the trail.
- Elevating the LRT tracks.
- Building a shallow tunnel for LRT tracks.
- Building deep twin tunnels, with one tunnel for each LRT track.

SOUTHWEST
Green Line LRT Extension

METROPOLITAN COUNCIL

PUBLIC OPEN HOUSES
Light Rail Station Locations

The Southwest LRT (Green Line Extension) Project will host six open houses in June for the public to learn about, and provide feedback on, proposed locations for all 17 proposed stations.

LOCATIONS & TIMES:

The public is encouraged to attend the open houses held in the city where they live.

MINNEAPOLIS – All Stations

June 17 8 – 9:30 a.m.
Metro Transit's Fred T. Heywood Office Building, 560 Sixth Ave N, Minneapolis (http://goo.gl/maps/uDQZG).

June 17 4:30 – 7 p.m.
Harrison Recreation Center, 503 Irving Ave. N, Minneapolis (http://goo.gl/maps/UHtBP).

June 24 4:30 – 7 p.m.
Kenwood Community Center, 2101 Franklin Ave. W, Minneapolis. (http://goo.gl/maps/oguGh).

ST. LOUIS PARK – All Stations

June 20 4:30 – 7 p.m.
Beth El Synagogue, 5224 W 26th St., St. Louis Park (http://goo.gl/maps/aRVEP).

MINNETONKA/HOPKINS – All Stations

June 18 4:30 – 7 p.m.
Hopkins Center for the Arts, 1111 Mainstreet, Hopkins (http://goo.gl/maps/oG0SK).

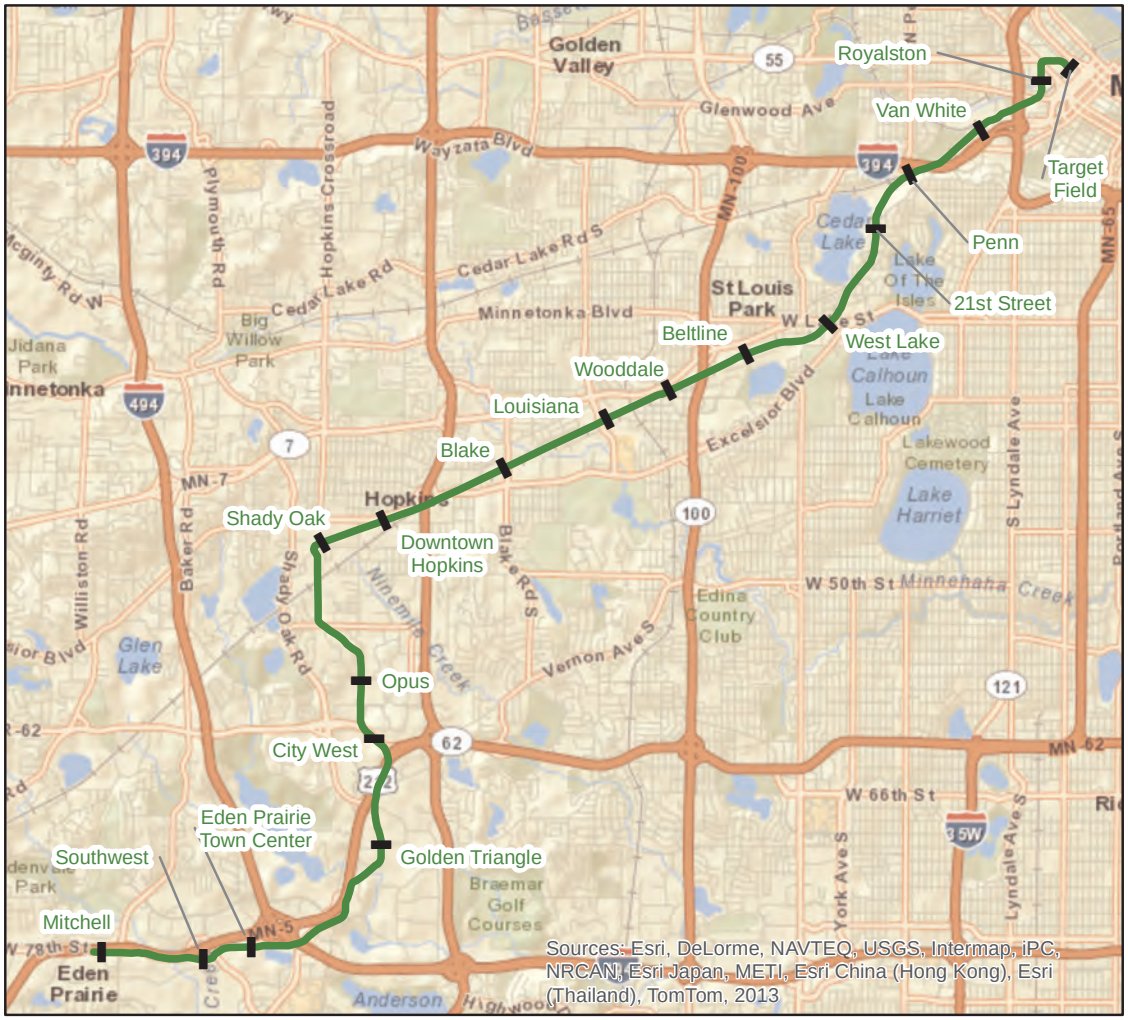
EDEN PRAIRIE – All Stations

June 26 4:30 – 7 p.m.
Eden Prairie City Center, 8080 Mitchell Rd., Eden Prairie (http://goo.gl/maps/zpK5l).

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, Daren.Nyquist@metrotransit.org or 612-373-3894. Requests for special assistance should be made seven business days in advance of the scheduled open house.

See map of proposed station locations on reverse side.

To learn more about the Green Line Extension Project, visit
www.swlrt.org



Proposed Southwest LRT (Green Line Extension) station locations.

Proposed Station Locations - Nearest Cross Streets

Eden Prairie

Mitchell Road: Hwy 212 & Mitchell Rd.

Southwest:
Technology Dr. & Eden Prairie Center Dr.

Eden Prairie Town Center:
Technology Dr. & Flying Cloud Dr.

Golden Triangle:
70th St. W & Shady Oak Rd.

City West: 62nd St. W & Shady Oak Rd.

Minnetonka

Opus: Bren Rd. E & Bren Rd. W

Hopkins

Shady Oak Road:
5th St. S & 16th Ave S

Downtown Hopkins:
Excelsior Blvd. & Eighth Ave. S

Blake Road: Blake Rd. & Second St. NE

St. Louis Park

Louisiana Avenue:
Louisiana Ave. & Oxford St.

Wooddale Avenue:
Wooddale Ave. & 36th St. W

Beltline Boulevard: Beltline Blvd. & Park Glen Rd.

Minneapolis

West Lake Street:
Lake St. W & Chowen/Abbott Ave. S

21st Street:
21st St. W & Thomas Ave. S

Penn Avenue: I-394 & Penn Ave. S

Van White Boulevard:
I-394 & Dunwoody Blvd./Van White Blvd.

Royalston Avenue:
Royalston Ave. & Holden St. N

SOUTHWEST
Green Line LRT Extension

METROPOLITAN COUNCIL

PUBLIC COMMUNITY MEETINGS

Freight Rail Issues

The Southwest LRT (Green Line Extension) Project will host two community meetings July 17 & 18, 2013, on engineering concepts for resolving the location of freight rail in the design of the project.

LOCATIONS & TIMES:

JULY 17 MINNEAPOLIS

Jones-Harrison Residence
3700 Cedar Lake Avenue, Minneapolis
Open House: 4:30–5:30 P.M.
Presentation: 5:30–6:15 P.M.
Facilitated Q&A Session: 6:15–7:00 P.M.
MAP: http://goo.gl/maps/UhXfh

JULY 18 ST. LOUIS PARK

St. Louis Park High School
6425 W 33rd Street, St. Louis Park
Open House: 4:30–5:30 P.M.
Presentation: 5:30–6:15 P.M.
Facilitated Q&A Session: 6:15–7:00 P.M.
MAP: http://goo.gl/maps/DLBmJ

The concepts explore various possibilities for co-locating freight and LRT tracks in Minneapolis, as well as options to reroute freight rail traffic in St. Louis Park to make way for LRT tracks. The relocation concepts to be presented will be different than the one described in the Draft Environmental Impact Statement (DEIS).

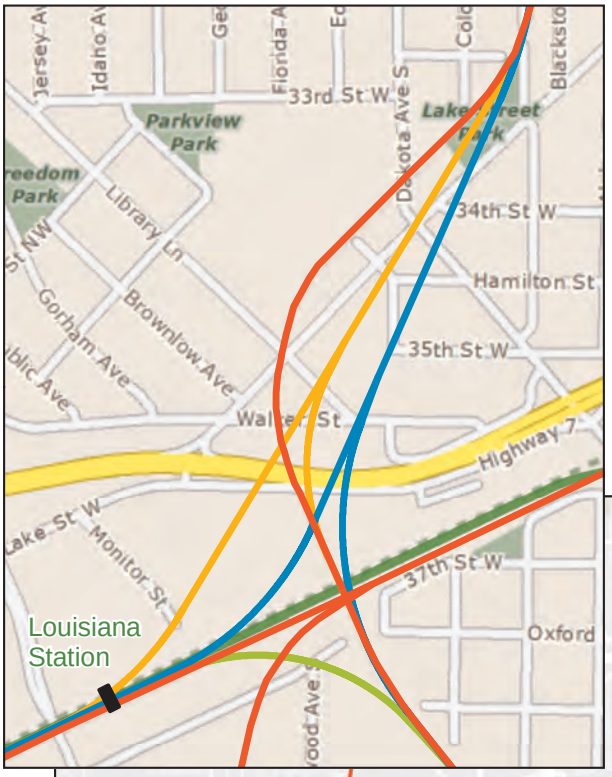
Both co-location and relocation options would have impacts on residences and businesses, including the freight railroads. The goal is to choose one option and design it in a way that is safe and operationally efficient for both LRT and the freight railroads and cost effective.

Feedback from these community meetings will be shared with members of the project's Business and Community Advisory Committees, the Corridor Management Committee and the Metropolitan Council to help them understand the issues around co-location and relocation as they provide input.

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, 612-373-3895 or Sophia.Ginis@metrotransit.org. Requests for special assistance should be made seven business days in advance of the scheduled community meetings.

See map of concepts on reverse side.

To learn more about the Green Line Extension Project, visit **www.swlrt.org**



Relocation Concepts

- Existing Freight Rail
- Brunswick West
- Brunswick Central
- Southern Connection
- Proposed LRT Route

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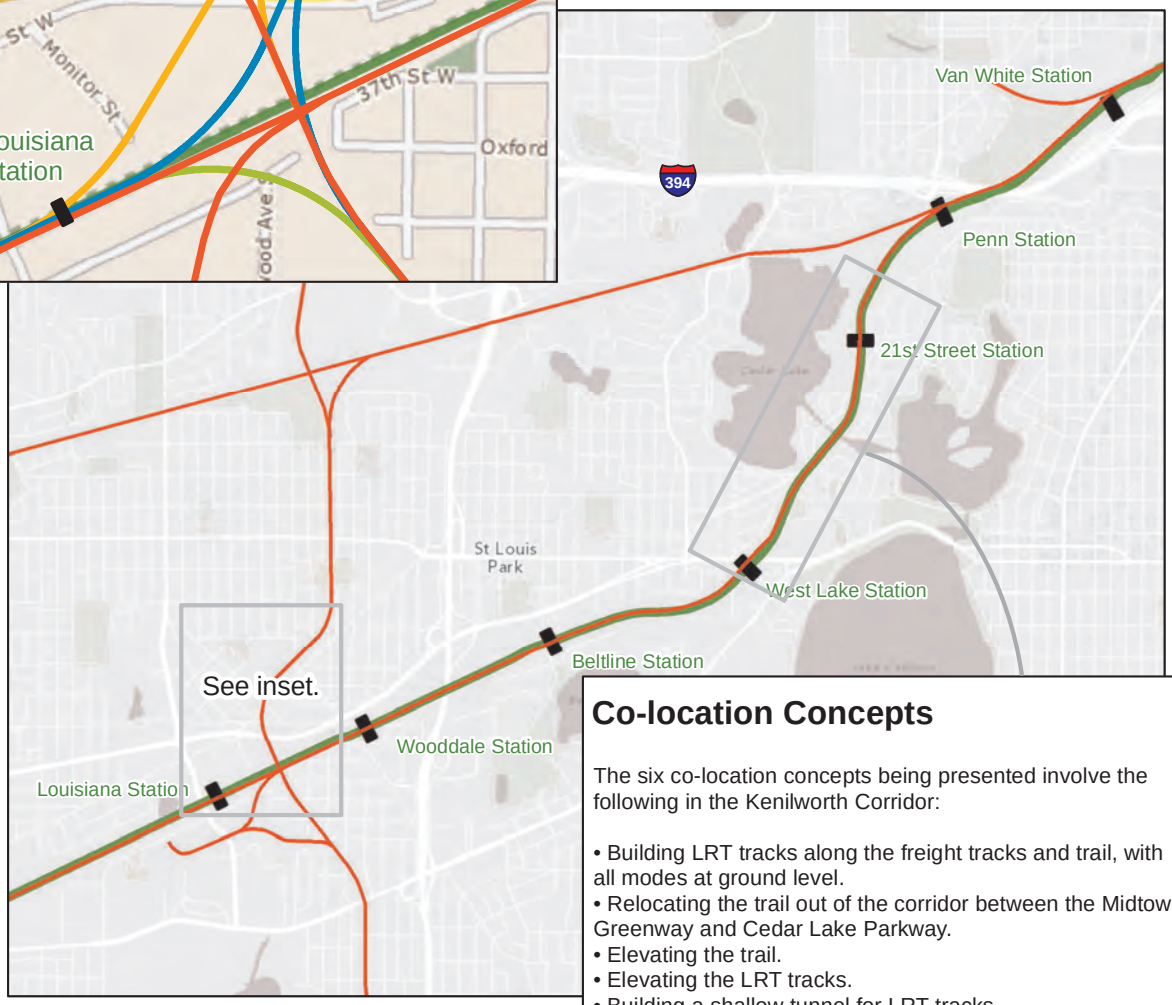


Co-location Concepts

The six co-location concepts being presented involve the following in the Kenilworth Corridor:

- Building LRT tracks along the freight tracks and trail, with all modes at ground level.
- Relocating the trail out of the corridor between the Midtown Greenway and Cedar Lake Parkway.
- Elevating the trail.
- Elevating the LRT tracks.
- Building a shallow tunnel for LRT tracks.
- Building deep twin tunnels, with one tunnel for each LRT track.

SOUTHWEST
Green Line LRT Extension

METROPOLITAN COUNCIL

PUBLIC OPEN HOUSE

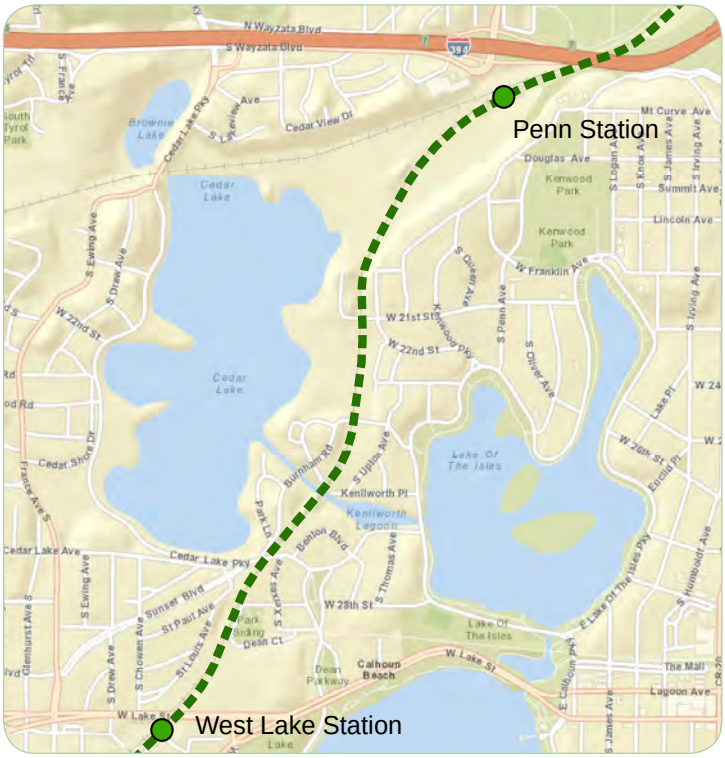
Southwest LRT Recommendation for the Minneapolis Segment

The Metropolitan Council will host a public open house on Thursday, October 10, 2013 to receive public input on the project office's draft recommendation for the scope and basic design of the Southwest LRT (Green Line Extension) project in Minneapolis.

The Southwest LRT Project Office presented a draft recommendation for the scope and basic design of the light rail line to the project's Corridor Management Committee on October 2.

The draft recommendation includes building shallow tunnels for LRT trains through the Kenilworth Corridor in Minneapolis, eliminating the proposed LRT station at 21st Street and keeping existing freight rail service in the area.

Proposed route between Cedar Lake and Lake of the Isles.



LOCATION & TIME

Thursday, October 10, 2013
5:30–7:30 P.M.

Kenwood Community Center
2101 West Franklin Avenue, Minneapolis

MAP: http://goo.gl/maps/Tkq84

This open house will provide an opportunity for community members to ask questions and give feedback on the draft recommendation before the Metropolitan Council considers it.

At this open house, the public will be able to talk with Council members and project staff one-to-one and view engineering drawings of the shallow tunnels. No testimony or formal presentations are planned. Comment cards will be provided.

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, 612-373-3895 or Sophia.Ginis@metrotransit.org. Requests for special assistance should be made at least 24 hours in advance.

Learn more about Southwest LRT at www.swlrt.org

TOWN HALL/COMMUNITY MEETINGS

Southwest LRT Studies in the Kenilworth Corridor

The Metropolitan Council will host facilitated public community meetings on January 7 & 9, 2014 focused on studies that are currently underway of freight rail, water resources and landscaping/greenscaping in the Kenilworth area of Minneapolis.

LOCATIONS & TIMES

Tuesday, January 7, 2014
5:00–7:30 P.M.
Kenwood Community Center
2101 Franklin Avenue West, Minneapolis
MAP: http://goo.gl/maps/oguGh

Thursday, January 9, 2014
5:00–7:30 P.M.
St. Louis Park Recreation Center
3700 Monterey Drive, St. Louis Park
MAP: http://goo.gl/maps/waC5T

In December 2013, the Southwest LRT (Green Line Extension) Project began three studies to clarify important issues that affect the proposed light rail line between Eden Prairie and downtown Minneapolis:

- The location of freight rail service in the Kenilworth Corridor
- Potential impacts of LRT construction on Cedar Lake and Lake of the Isles
- Landscaping and greenscaping in the Kenilworth area

Results of the studies are expected in early 2014.

These meetings will provide opportunities to learn about these studies, talk to project staff and participate in discussions.

MEETING AGENDA

5:00 – 5:30	Open house (project staff on hand to answer questions)
5:30 – 7:30	Welcome and review of meeting purpose
	Overview of scopes of work for three studies
	Facilitator-led discussion
	Wrap-Up/Next Steps

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, Daren.Nyquist@metrotransit.org or 612-373-3894 at least seven business days in advance of the scheduled meeting.

Learn more about Southwest LRT at www.swlrt.org

DESIGNING A LINE THAT STANDS THE TEST OF TIME

SOUTHWEST
Green Line LRT Extension

The Southwest Light Rail Transit (Green Line Extension) Project is moving forward with additional studies of technical issues that matter to Twin Cities residents.

To learn more and stay involved, visit www.swlrt.org.

METROPOLITAN COUNCIL

In December, the Southwest LRT (Green Line Extension) Project began three studies on important issues that affect the proposed light rail line between Eden Prairie and downtown Minneapolis. Results of the studies are expected in early 2014.

Freight Rail: An independent consultant will review options for the relocation of freight rail service that now runs near the proposed LRT route through Kenilworth.

Water Quality Impacts: A second independent consultant will review potential impacts of LRT construction and operation on the quality of lake water and groundwater in the Kenilworth Corridor area.

Accelerated Landscaping & Greenscaping: The project is creating an inventory of trees and vegetation in the Kenilworth area to identify landscaping and greenscaping opportunities.

In January, the Metropolitan Council will host community meetings focused on the three additional studies. For details on these and other upcoming meetings and events, go to **www.swlrt.org.**

January 7, 5:00–7:30 p.m., Kenwood Community Center, 2101 Franklin Ave. W, Minneapolis

January 9, 5:00–7:30 p.m., St. Louis Park Recreation Center, 3700 Monterey Drive, St. Louis Park

To learn more about Southwest LRT and stay connected: Visit www.swlrt.org, email swlrt@metrotransit.org or call 612-373-3888 to be connected to a Community Outreach Coordinator.

Southwest LRT Project
6465 Wayzata Blvd., Suite 500
St. Louis Park, MN 55426

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

TOWN HALL/COMMUNITY MEETINGS

Draft Results of Southwest LRT Studies in the Kenilworth Corridor

Independent consultants will present draft reports on freight rail location alternatives and water resources impacts. The public is invited to ask questions and share comments with Metropolitan Council members and Southwest LRT project staff.

Monday, February 10, 2014
6:00–9:30 P.M.

Dunwoody College of Technology
Decker Auditorium
818 Dunwoody Blvd., Minneapolis

Park in west lot; enter via west entrance.

Map: http://goo.gl/maps/wf1uO

Wednesday, February 12, 2014
6:00–9:30 P.M.

St. Louis Park Senior High School
Carl A. Holmstrom Auditorium
6425 West 33rd Street, St. Louis Park

Park in west lot or on street; enter via School District office door (#2) or main foyer entrance (#5).

Map: http://goo.gl/maps/5s4WQ

In December 2013, the Southwest LRT (Green Line Extension) Project began studies of freight rail location alternatives and water resources impacts that could affect the proposed light rail line in the Kenilworth Corridor.

Draft reports from these studies were released on January 30 and are available on the Southwest LRT website at www.swlrt.org. Comments may be submitted online at www.swlrt.org or via email to swlrt@metrotransit.org.

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, Daren.Nyquist@metrotransit.org or 612-373-3894 at least seven business days before the scheduled meeting.

MEETING AGENDAS

Agendas will differ at each meeting to reflect the concerns expressed by the communities.

	Minneapolis	St. Louis Park
Welcome & meeting purpose	6:00	6:00
Water Resources presentation, Q&A, Comments	6:15	6:15
Freight Rail presentation, Q&A, Comments	7:05	6:50
General Q&A; Comments	8:10	8:10
Close and Evaluation	9:10	9:10

Learn more about Southwest LRT at www.swlrt.org