

Evaluation Criteria

The purpose of this section is to define the evaluation criteria and establish the framework for assessing and screening alternatives that will occur in Phase 2 of the PEL process. The evaluation criteria outlined in this section are based on the needs identified in Section 3 and 5 of the Purpose and Need statement.

Figure 6-1 summarizes the two levels of the screening and evaluation process that will be conducted during Phase 2. The intended outcome is not a single preferred alternative, but rather a corridor-wide vision that will be composed of a series of transportation improvement alternatives along both Highway 47 and Highway 65.

Given the scale of the study area and substantial variations in land uses from south to north along each corridor, it is anticipated that separate alternatives development and evaluation processes will be conducted for each roadway and within each of the five study sections illustrated on the following page in Figure 6-2, and further detailed in Section 2.2 of the Purpose and Need Statement. The five study sections are summarized below:

- Section 1 – Intersection of Hwy 47 and Hwy 65 to 27th Avenue NE
- Section 2 - 27th Avenue NE to 37th Avenue NE
- Section 3 – 37th Avenue NE to I-694
- Section 4 – I-694 to Osborne Road
- Section 5 – Osborne Road to County Highway 10

Figure 6-1. PEL Study Screening and Evaluation Process Overview

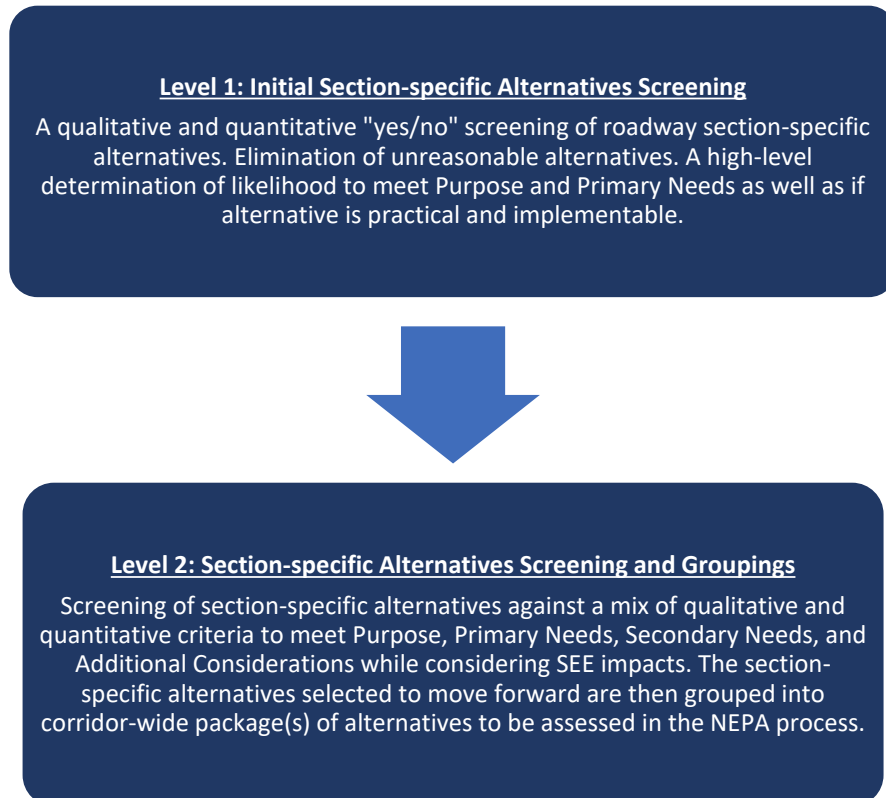
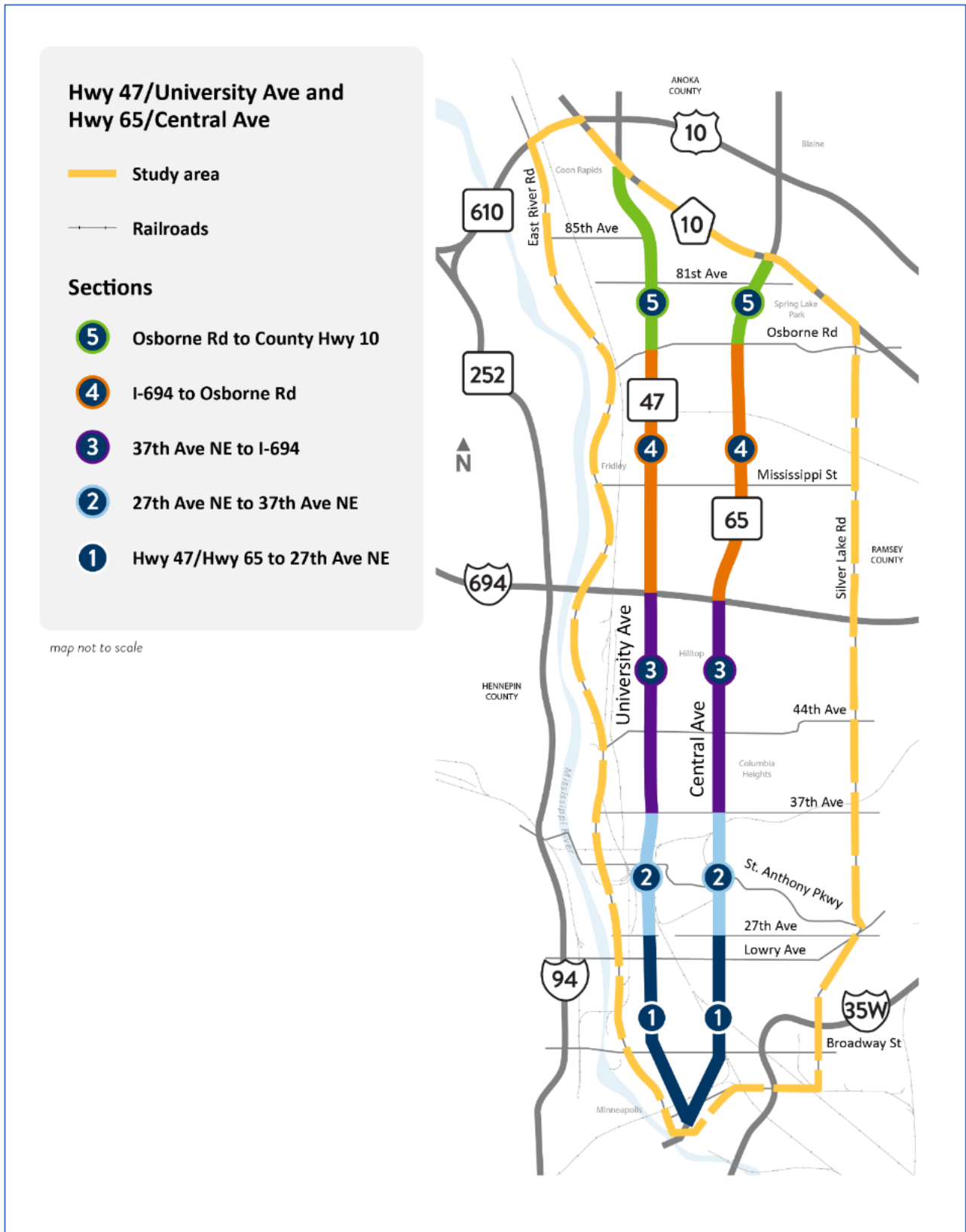


Figure 6-2 – Hwy 47/65 PEL Study Sections



Level 1 Fatal Flaw Screening and Evaluation

The purpose of the Level 1 screening and evaluation is to efficiently assess alternatives to determine whether individual sketch planning alternatives have the potential to address the Hwy 47 and Hwy 65 PEL Purpose and Primary Needs. The identified Secondary Needs and Additional Considerations for the corridors will not be evaluated in Level 1 but will be measured in the subsequent Level 2 screening process.

High level sketch planning alternatives will be qualitatively and/or quantitatively evaluated and screened in Level 1 by answering a series of “yes” or “no” (fatal flaw¹) questions associated with the identified primary transportation needs:

Primary Need: Improve Vehicle Safety

- Does the sketch planning alternative include elements that would reduce the number and severity of crashes in the section-specific study area and/or along the Hwy 47 and Hwy 65 PEL Corridor Study area?

Primary Need: Improve Walkability/Bikeability Safety

- Does the sketch planning alternative include elements that will reduce the number and severity of pedestrian and bicycle crashes in the section-specific study area and/or along the Hwy 47 and Hwy 65 PEL Corridor Study area?
- Does the sketch planning alternative include elements to improve non-motorized user comfort or stress levels in the section-specific study area and/or along the Hwy 47 and Hwy 65 PEL Corridor Study Area?

Primary Need: Improve Pavement Condition

- Does the sketch planning alternative address short term maintenance or rehabilitation needs in the section-specific study area and/or along the Hwy 47 and Hwy 65 PEL Corridor Study area?

A final question, unrelated to the Purpose and Need, will be considered in the Level 1 screening and evaluation. This question focuses on the ability to implement an improvement project.

- Is the sketch planning alternative practical and able to be implemented? Consider fiscal constraints and key social, economic, and environmental (SEE) effects.

Level 1 Screening and Evaluation Conclusion

A sketch planning alternative that fails to address the three primary needs will not move forward in the subsequent screening process. Similarly, a sketch planning alternative that is determined to be unpractical or unimplementable will be eliminated. A simple screening table will be used to efficiently complete the high level qualitative/quantitative screening for Level 1 alternatives (see Table 1).

¹ An alternative is considered to have a “fatal flaw” if the proposed improvements do not address the primary transportation needs or if the alternative is determined to be unpractical or unimplementable due to fiscal constraints and/or known adverse social, economic, or environmental impacts.

Table 1: Level 1 Alternatives Screening and Evaluation

Level 1 Evaluation Criteria	Data Source/Tool	Study Area Section Alternatives ^(a)		
		Alt. 1 ^(b) (No-Build)	Alt. 2	Alt. 3
		Yes/No	Yes/No	Yes/No
Improves Vehicle Safety – qualitative and quantitative evaluation of each alternative’s ability to reduce crashes	Qualitative/Quantitative assessment based on demonstrated ability of similar improvements/features (e.g., CMFs) to lower crash/severity rates			
Improves Walkability/Bikeability Safety	Qualitative assessment based on demonstrated ability of similar improvements/features (CMFs) to lower crash/severity rates or			
Addresses a Short-term Pavement Need	Quantitative review of MnDOT’s pavement indices against existing pavement conditions for each alternative			
Practical and Implementable	Qualitative review of potential for significant SEE or fiscal impacts			
Retained for Level 2 Evaluation/Screening^(c)				

^(a) Additional alternatives or design options can be added as needed.

^(b) The No-Build alternative will be retained for further consideration in Level 2 to provide a baseline for comparison.

^(c) Alternatives with “yes” answers to all four Level 1 screening questions, except the No-Build Alternate, shall be retained for Level 2 screening.

Level 2 Screening and Evaluation

This next level of screening and evaluation will be conducted for the alternatives carried forward from the fatal flaw (Level 1) screening. As part of Level 2 screening and evaluation, the design detail of each alternative will be further developed and refined into concept-level alternatives with a preliminary construction footprint. While the primary needs will remain a critical component in differentiating the performance of the alternatives, the Level 2 screening and evaluation will also consider a concept alternative’s ability to meet the identified secondary needs and additional considerations within the section-specific study area and the Hwy 47 and Hwy 65 PEL Corridor Study area.

The performance measures listed in Table 2 are a mix of qualitative and quantitative assessments, based on the criteria and the data available at this stage of project development. Further detail on the methodology and approach for each evaluation criteria and corresponding performance measure is discussed in the next section.

Table 2: Level 2 Alternatives Screening and Evaluation

CATEGORY	EVALUATION CRITERIA	PERFORMANCE MEASURE	TOOL USED	
Primary Needs				
Vehicle Safety	Network and/or Intersection Crashes	Expected crashes	Entering Volume and Expected Crash Rates / MnCMAT2 / Crash Modification Factors	
Walkability/ Bikeability (Safety)	Pedestrian/Bicycle Safety	Improve safety conditions, reduce conflicts	MnCMAT2/CMFs	
	Pedestrian Perception of Safety	Enhances user comfort/stress levels	PLOS	
	Bicyclist Perception of Safety	Enhances user comfort/stress levels	BLTS	
Pavement Condition	Need for Pavement Maintenance or Rehabilitation	MnDOT pavement indices	RSL, RQI, PQI, SR	
Secondary Needs				
Walkability/ Bikeability (Mobility)	Pedestrian Level of Service at Signalized Intersection(s)	Reduced crossing distance, pedestrian delay, conflicts with motor vehicles, turning vehicle speeds, and increases crossing visibility across corridor	PLOS	
	Pedestrian/Bicycle Directness	Network permeability/out of the way travel decrease/access to destinations	FHWA Guidebook on MM Network Connectivity, BLTS O/D data	
Vehicle Mobility	System Travel Time	System VHT	RTDM	
	Corridor Travel Time	Mainline (TH 47 or TH 65) corridor target speed(s)	RTDM	
	Intersection Traffic Operations	Level of Service	Synchro	
	Local Vehicle Access	Delays on cross streets	Synchro	
	Transit On-Time Arrivals	Improves transit mobility/operations	Metro Transit data/reports	
	Freight Movements	Access to freight generators/destinations		StreetLight Data, "Top Routes" Analysis
		Sufficient lane widths, turning radii, turn lane storage, etc.		Geometric data, StreetLight Data, HCAADT volumes
Access to Shoreham Yards freight facility			Geometric data, Concepts	

CATEGORY	EVALUATION CRITERIA	PERFORMANCE MEASURE	TOOL USED
Additional Considerations			
Additional Considerations	Consistent/Compatible with Local, State and Regional Plans/Programs	Assessment of current plans/programs	20-Yr. SHIP, TPP, Local, Metro, and Statewide Ped/Bike plans, Connected/Automated Vehicle Plan, local ADA Plans, etc.
	Consistency with State and Regional Projects	Review and assessment of programmed improvements	STIP, City/County CIPs
	Cost	Dollars (Risk-Based Cost Range)	Concepts
	Maintenance	Size of facility, supporting infrastructure impacts, snow removal	Concepts
	Bridge Condition	National Bridge Inventory (NBI) Condition Rating and MnDOT Bridge Replacement and Improvement Management System (BRIM)	Concepts, NBI Rating Scale (1-9) ²
	Enhances Transit Ridership on Existing or Planned Routes	Improved pedestrian connectivity between land use and transit facilities/routes Improved facilities at transit stops	Ridership Forecasts, Concepts, Land Use Maps, EJScreen
	Supports Future aBRT	Does not preclude F-Line/aBRT plans	Concepts, aBRT stop design, etc.
Social, Economic, Environmental Considerations			
SEE Considerations	Storm Water Management	Addition/Reduction of impervious surface	Concepts
	Access Impacts	Number of access closures/relocations	Concepts
	ROW Impacts	Impacts based on concept footprint and will consider number, type, and amount of parcel impact (e.g., partial/strip acquisition, full acquisition, and relocation)	Concepts/Project Footprint, screening level tables by geographic section
	Historical/Cultural Resources	Number and type of resources affected	SHPO Data, CRIS, Phase I/II Reports
	Environmental Justice	Provides improved multimodal connectivity and safety (transit, ped, bike) for underrepresented – low income and minority populations - Improves access for minority and low income households - Service latent demand to trip generators	EJ Screen, https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_connectivity/fhwahep18032.pdf
	Section 4(f)/6(f) Resources	Number, size (acres), type of resources and functions affected	Concepts and MnDNR Data, City or County Park Maps

² [Bridge Method - Project Selection - MnDOT \(state.mn.us\)](https://www.mn.gov/transportation/bridge-method-project-selection)

Level 2 Evaluation Criteria and Performance Measures

The intent of using a series of performance measures is to determine if certain alternatives are substantially less/more effective in meeting the needs when compared to other alternatives that have been carried forward. Each alternative will be evaluated from a perspective of meeting the needs within the section-specific study area with a parallel assessment on how an alternative and/or design option fits into and addresses transportation needs within the larger TH 47/65 PEL Corridor Study area.

Below is a description of each evaluation criteria, proposed performance measure, recommended tool(s) to be used in the evaluation, and a ranking scale. Where practical, performance measures will involve quantifiable results, while other criteria will qualitatively assess the performance of a concept alternative. While some evaluation criteria have an established ranking scale, others still need to be set prior to the development of conceptual alternatives. The ranking scale will need to consider the unique characteristics of each roadway section along with the specific transportation needs in that particular roadway section. All criteria will be scaled and ranking using a simplified scale as follows:

 High  Moderate  Low

Network and/or Intersection Crashes (Safety)

Each concept alternative will be evaluated to determine the overall expected impact to safety. For intersections, forecast year traffic volumes will be used in combination with MnCMAT2 data and expected crash rates for the facility to estimate a total amount of crashes over the travel influence area. For corridor alternatives, each configuration or design option will be evaluated using crash modification factors, (CMFs), the Highway Safety Manual (HSM), along with forecast traffic volumes to determine level of safety benefits. Expected crash rates by facility type will be obtained from MnDOT “Green Sheets” for the most recent 5-year period.

Resources: [Crash Modification Factors Clearinghouse](#), [Minnesota Crash Mapping Analysis Tool \(MnCMAT2\)](#), [Highway Safety Manual](#)

Evaluation Scale:  High  Moderate  Low

Specific ranges/threshold values for expected crash reduction will be defined during the Phase 2 PEL process for each section-specific study area.

Pedestrian/Bicycle Safety – Reduced Conflicts with Vehicles

Historical crash data (i.e., MnCMAT2) will be reviewed along with CMFs to compare existing and future safety conditions. Each alternative will be reviewed for a comparison in conflict points between vehicles and pedestrian/bicyclist movements.

Evaluation Scale:  High  Moderate  Low

Specific ranges/threshold values for expected pedestrian/bicycle safety improvements will be defined during the Phase 2 PEL process for each section-specific study area.

Pedestrian Perception of Safety (Safety)

Pedestrian Level of Service (PLOS) will be calculated for each roadway section along the corridor to determine user perception of safety. As defined in the Oregon Department of Transportation (ODOT)

Analysis Procedures Manual (page 14-60)³, section, PLOS is calculated based on sidewalk width, traffic volumes, traffic speeds, and number of through lanes.

Evaluation Scale:   

Pedestrian / Bicycle Level of Service Criteria	
LOS	Pedestrian & Bicycle LOS Score
A	≤1.5
B	>1.5 – 2.5
C	>2.5 – 3.5
D	>3.5 – 4.5
E	>4.5 – 5.5
F	>5.5

The pedestrian/bicycle LOS table and values are from the ODOT Analysis Procedures Manual. In evaluation of the alternatives, sections scoring LOS A and LOS B will be high, those scoring C and D will be moderate, and those scoring E and F will be low.

Bicyclist Perception of Safety (Safety)

While a small fraction of the population will tolerate sharing a road with heavy or fast-moving motor vehicles, a large majority is “traffic-intolerant,” willing to tolerate only a small degree of traffic stress. Bicycle Level of Traffic Stress (LTS) is a method of classifying road sections and bicycle facility networks based on how comfortable people with different confidence levels are when bicycling and interacting with motor vehicle traffic. LTS will be calculated for each section-specific study area using the methodology from the ODOT Analysis Procedures Manual.

Evaluation Scale:  High  Moderate  Low

MnDOT typically considers the needs of “Interested but Concerned” bicyclists in facility design. “Interested but Concerned” bicyclists generally will ride on LTS 1 facilities, will sometimes ride on LTS 2 facilities, and will not ride on LTS 3 or LTS 4 facilities (MnDOT Bicycle Facility Design Manual). In evaluation of the corridor alternatives, a high score= LTS 1, a moderate score= LTS 2, and a low score=LTS 3 or 4.

Need for Pavement Maintenance or Rehabilitation

Existing pavement conditions in each focus area will be reviewed using MnDOT’s Pavement Indices to determine roadway pavement maintenance or rehabilitation needs. As part of each concept alternative or design option, it is assumed that the pavement rehabilitation activities in each section-specific study area will be consistent between alternatives. For this reason, this evaluation category will likely not be a distinguishing criterion for the alternatives, but it may identify opportunities to address poor pavement conditions over a broader area.

Evaluation Scale:  High  Moderate  Low

³ [Analysis Procedures Manual Chapters 1-4 \(oregon.gov\)](http://oregon.gov)

MnDOT's Pavement Indices will be used ranking the alternatives

Condition Categories (Metric)	RSL (# of yrs from current yr to yr RQI=2.5; If RQI≤2.5 then RSL=0)	Condition Categories (Metric)	RQI	PQI	SR
High	12+ years	Very Good	4.1 – 5.0	3.7 – 4.5	3.3 – 4.0
		Good	3.1 – 4.0	2.8 – 3.6	2.5 – 3.2
Moderate	4 to 11 years	Fair	2.1 – 3.0	1.9 – 2.7	1.7 – 2.4
Low	0 to 3 years	Poor	1.1 – 2.0	1.0 – 1.8	0.9 – 1.6
		Very Poor	0.1 – 1.0	0.1 – 0.9	0.1 – 0.8

Pedestrian Level of Service at Signalized Intersections (Safety)

Pedestrian Level of Service at signalized intersections is calculated based on crossing distance, signal phasing and timing, pedestrian delay, corner radius, and crosswalk treatment. Each factor impacts the safety of people walking. Long crossing distances result in increased exposure to vehicle traffic. Signal phasing and timing can create or prevent conflicts with vehicles. Significant pedestrian delay at marked crossings presents a safety risk because people walking may choose to cross against the signal or at an unmarked mid-block location in an attempt to save time. Delay also can increase the amount of time people walking are exposed to solar radiation, precipitation, roadway noise, and vehicle emissions, impacting the health and comfort of people walking. The corner radius influences the speed of turning vehicles. Crosswalk treatments contribute to the visibility of the pedestrian crossing. Pedestrian Level of Service will be considered for each signalized intersection along the corridor using the methodology defined in the Oregon Department of Transportation (ODOT) Analysis Procedures Manual.

Evaluation Scale: ● High ● Moderate ○ Low

The table below from the ODOT Analysis Procedures Manual shows the interpretation of LOS values. In evaluation of the alternatives, intersections scoring LOS A and LOS B will be high, those scoring C and D will be moderate, and those scoring E and F will be low.

Pedestrian and Bicycle LOS Criteria

LOS	Pedestrian & Bicycle Total Points	Interpretation
A	≥93	Conditions should be generally acceptable for users.
B	74 - 92	
C	55 - 73	Some issues exist that may make users uncomfortable.
D	37 - 54	
E	19 - 36	Significant issues exist that will make a majority feel uncomfortable. Likely that this intersection will deter users from using it completely or from certain paths.
F	≤18	

Pedestrian and Bicycle Route Directness (Mobility)

Because active transportation relies on physical exertion, out-of-direction travel negatively impacts people walking and bicycling. Route directness considers the difference in trip distance between the shortest available path and the path a bicyclist or pedestrian will actually travel (FHWA Guidebook for Measuring Multimodal Network Connectivity, page 42). Network permeability will be used to understand the degree to which corridor alternatives create a barrier for people walking and biking between major origins and destinations. This analysis will determine the level of out-of-direction travel required to cross the corridor via low-stress crossings as defined by LTS methodology (LTS 1 or 2) for bicyclists, and PLOS methodology (PLOS A or B) for pedestrians. In example, it will evaluate if an alternative expands the 10-minute walkshed from trip generators using a low stress network including low stress crossings of Hwy 47 and Hwy 65. Trip generators include schools, parks, senior housing, transit stops, job concentration centers.

Evaluation Scale:  High  Moderate  Low

Specific ranges/threshold values for network permeability and out-of-direction travel will be defined during the Phase 2 PEL process for each roadway section-specific study area.

System Travel Time (Vehicle Mobility)

The forecast year (i.e., 2040) Regional Travel Demand Model (RTDM) will be used to forecast traffic volumes for each corridor alternative. Model outputs will be used to compute system vehicle hours traveled (VHT) for each alternative. System VHT is a useful metric for comparing alternatives because user costs associated with travel times are often the main factor in determining overall project benefits in a benefit-cost analysis (BCA). Additionally, system VHT helps give an indication on the impact to the overall system, as opposed to only a small segment of the highway corridor.

Evaluation Scale:  High  Moderate  Low

Specific ranges/threshold values for system VHT (or a percentage increase/decrease or existing conditions) will be defined during the Phase 2 PEL process for each section-specific study area and will be compared to conditions along the larger TH 47/TH 65 PEL Study area.

Corridor Travel Time (Vehicle Mobility)

In addition to system travel time, the RTDM will be used to estimate peak period congested travel time (average of all vehicles on a particular roadway section). This measure provides a metric that can be used to directly compare an alternative's ability to improve section-specific travel time, serving as an indicator of more localized congestion and improved travel reliability.

Evaluation Scale:  High  Moderate  Low

Specific ranges/threshold values for corridor VHT (or a percentage increase/decrease or existing conditions) will be defined during the Phase 2 PEL process for each section-specific study area and will be compared to conditions along the larger TH 47/TH 65 PEL Study area.

Intersection Traffic Operations and Local Vehicle Access (Vehicle Mobility)

Intersections in the identified influence area will be evaluated using Synchro modeling software and turning movements developed for each section-specific study area. The analysis will be used to determine level-of-service (LOS) at each intersection with corresponding grades for future operations. LOS results are based on average delay (seconds) per vehicle. This criterion will not only consider operations along the highway

corridor (TH 47 or TH 65) but will also consider local access to the regional system and operations/delays for cross streets.

Evaluation Scale: ● High ◐ Moderate ○ Low

Specific ranges/threshold values for LOS grades and expected average delay times will be defined during the Phase 2 PEL process for each section-specific study area and will be compared to conditions along the TH 47/TH 65 PEL Study area.

Transit On-Time Arrivals (Mobility)

Each of the alternatives will be reviewed in conjunction with Metro Transit F-Line Operation Plans and historical transit departure/arrival data to determine if transit benefits or advantages can be provided as part of the alternative that will support on-time arrivals at transit stops located within the section-specific area and throughout the highway corridor.

Evaluation Scale: ● High ◐ Moderate ○ Low

Specific ranges/threshold values for this criterion will be measured on the likelihood of an alternative improving transit route travel times and the ability to improve on-time departures/arrivals from stations located in the section-specific area and the TH 47/TH 65 PEL Study area.

Freight Movements (Mobility)

The freight movements evaluation criteria will qualitatively review access conditions to freight generators/destinations, including access to the Shoreham Yards Freight Facility (if applicable). A second item to be evaluated is the proposed geometric conditions for each concept alternative (e.g., lane widths, turning radii, turn lane storage, etc.). The assessment shall determine if freight movements will benefit or be adversely affected by each concept alternative. HCAADT data will be used for each roadway section-specific study area to assist in determining the magnitude of impact associated with these criteria.

Evaluation Scale: ● High ◐ Moderate ○ Low

Specific ranges/threshold values for the freight criteria will be qualitatively measured on the perception of whether freight movements in the section-specific study area will be improved or diminished as the result of each alternatives.

Consistent/Compatible with State and Regional Plans, Programs, and Projects

Alternatives will be assessed on their consistency and compatibility with plans, programs, and other planned projects. The evaluation will consider key themes for safety, mobility, and access within or adjacent to the PEL Study Area. Consideration will also be given to whether any planned projects can be combined with an alternative to further address a transportation need.

Evaluation Scale: ● High ◐ Moderate ○ Low

Qualitative assessment of how each concept alternative complements local, regional, and state plans, programs, and projects (land use and transportation). The TH 47/TH 65 Purpose and Need provides an overview of several such plans, programs, and projects, which will be used in ranking an alternative's compatibility.

Environmental Justice (SEE Consideration) ● High ◐ Moderate ○ Low

Concept alternatives will be evaluated on the ability to provide improved multimodal connectivity and safety (transit, ped, bike) for underrepresented – low income and minority populations. Individual study areas will be reviewed to determine if there are strong indicators of EJ populations which is defined as;

minority and/or low income persons within a ¼ mile buffer surrounding the improvements are 10 percentage points higher than the county average; or represent greater than 50 percent of the total geographic unit. Data will be collected from EJSCREEN and FHWA’s Guidebook for Measuring Multimodal Network Connectivity will be used in this qualitative assessment.

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_connectivity/fhwa_hep18032.pdf

Evaluation Scale: ● High ◐ Moderate ○ Low

Specific ranges/threshold values for improved transportation equity will be qualitatively measured for each concept alternative in the roadway section-specific study area and will be reviewed from the standpoint of the larger TH 47/TH 65 PEL Study area.

Cost (Fiscal Consideration)

For each concept alternative (and design options) a risk-based cost range will be developed assuming MnDOT design standards and current Length, Width, Depth (LWD) cost estimating factors and template. The cost range will include costs associated with pavement, bridges, walls, barriers, TMS, lighting, signals, sign structures, engineering and a MnDOT determined contingency and risk factor.

Evaluation Scale: ● High ◐ Moderate ○ Low

Specific cost ranges for the concept alternatives in the section-specific study area will be used to assign a high/moderate/low-cost ranking.

Maintenance (Fiscal Consideration)

Maintenance considerations for each concept alternative will be developed using a qualitative assessment on the relative ability to maintain new or modified facilities by quantifying increase in infrastructure (pavement square footage, bridge sizes, drainage features, and retaining walls, noise walls). Any reduction in facility size would accompany reduced maintenance costs.

Evaluation Scale: ● High ◐ Moderate ○ Low

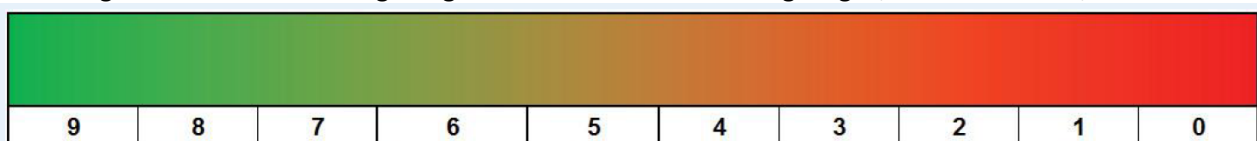
Specific ranges/threshold values for future maintenance costs and conditions will be qualitatively measured for each concept alternative in the roadway section-specific study area and will be reviewed from the standpoint of the larger TH 47/TH 65 PEL Study area.

Bridge Condition

Any bridge(s) located within each roadway section will be reviewed to assess the condition of the structure in accordance with the National Bridge Inventory (NBI) Condition Rating and MnDOT’s Bridge Replacement and Improvement Management System (BRIM). Similar to pavement conditions, under each concept alternative or design option, it is assumed that the bridge rehabilitation/replacement activities in each section-specific study area will be consistent between alternatives. For this reason, this evaluation category will likely not be a distinguishing criterion for the alternatives

Evaluation Scale: ● High ◐ Moderate ○ Low

NBI ratings will be used in ranking bridge conditions with 7-9 ranking “High”; 4-6 “Moderate”; and 0-3 “Low”.



Enhances Transit Ridership on Existing or Planned Routes

Transit ridership forecasts will be considered for each roadway section. Alternatives will be assessed based on the ability to improved pedestrian connectivity between land use and transit facilities/routes. Alternatives will also be assessed on the ability to improve transit facilities/infrastructure located at existing and/or future transit stops.

Evaluation Scale: ● High ● Moderate ○ Low

As part of the Phase II PEL process, specific ranges/threshold values for enhancements to transit ridership will be defined in coordination with Metro Transit for each roadway section-specific study area.

Supports Future aBRT

The alternatives evaluation will considered the future aBRT (F-Line) implementation and operations along Highways 47 and 65. It will be important to determine if an alternative supports or precludes the viability of Metro Transit's F-Line plans. This criteria will only apply to roadway section-specific study areas where the F-Line is proposed.

Evaluation Scale: ● High ● Moderate ○ Low

As part of the Phase II PEL process, specific ranges/threshold values for supporting F-Line implementation and operations will be defined in coordination with Metro Transit for each roadway section-specific study area.

Storm Water Management (SEE Consideration)

The alternatives evaluation will consider potential stormwater management needs based on new impervious surfaces or reduction in impervious areas resulting from each alternative. When considering storm water mitigation, the infrastructure and physical space needed for new/expanded collection and treatment features can involve substantial mitigation costs and/or right of way implications.

Evaluation Scale: ● High ● Moderate ○ Low

Impervious surface changes (acreage calculation) and associated costs or physical impacts will be quantified for each of the concept alternatives. Specific ranges/threshold values for ranking the alternatives will be defined in in the Phase 2 PEL process.

Access Impacts (SEE Consideration)

Access impacts is an important contributor to project costs and risk. Quantification of access impacts will be used to evaluate alternatives by counting access locations impacted by each alternative. In review of the concept alternatives, access impacts will be counted and classified as partial or full closure.

Evaluation Scale: ● High ● Moderate ○ Low

The number of partial and full access closures/impacts will be quantified and the specific ranges/threshold values for the alternative rankings will be defined in the Phase 2 PEL process for the section specific study area.

Right-of-Way Impacts (SEE Consideration)

Right-of-way (ROW) is an important contributor to community/social impacts, project costs, and can be a risk to the project delivery schedule. Using geometric design criteria and ROW offsets, planning-level impacts on surrounding private property will be developed based on an improvement footprint for each concept alternative. Impacts will be identified by counting and categorizing impacts as partial acquisition,

full acquisition, and/or relocations for each concept. Summary level data of number, type, and acres of impact will be documented in screening tables by roadway section.

Evaluation Scale: ● High ● Moderate ○ Low

Specific ranges/threshold values for ROW impacts will be defined in the Phase II PEL process for each roadway section-specific study area.

Cultural Resources (SEE Considerations)

Each concept alternative will be screened for potential impacts to historical and cultural resources. An assessment will be conducted using the design concepts along with datasets from SHPO, MnDOT's Cultural Resource Information System (CRIS) application, and available Phase I/II investigations. A qualitative assessment will be based on whether an alternative has the potential to affect a listed or potentially eligible resource.

Evaluation Scale: ● High ● Moderate ○ Low

Specific ranges/threshold values for the number and type of potential historic/culture resource impacts will be defined in the Phase II PEL process for a section-specific study area.

Section 4(f) Resources (SEE Considerations)

Each concept alternative will be screened for potential impacts to Section 4(f)/6(f) resources such as parklands or historic resources. An assessment will be conducted using the concept alternatives along with available datasets such as MnDNR LAWCON property list, SHPO database, MnDOT's CRIS, and city/county park maps. Impacts will be quantified and ranked based on number of resources impacted and area of impact (acres).

Evaluation Scale: ● High ● Moderate ○ Low

Specific ranges/threshold values for the number and type of Section 4(f)/6(f) resource impacts will be defined in the Phase 2 PEL process for a section-specific study area.

Enhance Transit Ridership on Existing or Planned Routes

Each concept alternative will be qualitatively assessed on the ability to improve pedestrian connectivity between surrounding land uses and transit facilities/stops. City land use plans and Met Council ridership data will be reviewed to under-utilized stops/routes.

Evaluation Scale: ● High ● Moderate ○ Low

Specific ranges/threshold values for enhancing transit ridership will be qualitatively measured on the potential for attracting and sustaining transit ridership in the section-specific study area.

Supports Future F Line (aBRT) Plan

A planning level assessment will consider whether a concept alternative would preclude the future implementation of the planned arterial BRT route along portions of TH 47 and TH 65. The evaluation will consider the conceptual designs, proposed aBRT route and available transit stop locations/design, and input from the Metropolitan Council.

Evaluation Scale: ● High ● Moderate ○ Low

Qualitative assessment of how each concept alternative accommodates (or doesn't preclude) future aBRT plans along TH 47/TH 65.