

MEMORANDUM

Date:	June 18, 2009	TG:	08301.00
To:	Dan Penrose, City of Lakewood		
From:	Jon Pascal, Transpo Group Bruce Haldors, Transpo Group		
cc:	Richard Warren, WSDOT		
Subject:	Screening Methodology and Evaluation Criteria – I-5 Growth Study		

The purpose of this memorandum is to summarize the process for the development and evaluation of the improvement concepts within the study area. The project team is seeking feedback from the Technical Review Committee on the overall structure of the screening methodology and the specific evaluation criteria. Ultimately this screening and evaluation process will be used to focus on specific locations in the study area with the greatest need and then eliminate concepts that are not feasible, impractical, or are not directly applicable to the purpose and need statement for this project.

Screening Methodology Overview

Three levels of screening are proposed to adequately reduce the number and scope of improvement concepts that will be evaluated in a quantitative and qualitative manner. The end result will be a preferred concept or a group of concepts that will be recommended by the project team and the Technical Review Committee to be carried forward to the next phase of the project. The next phase of the project will largely be determined by the type(s) of improvement concepts that are recommended for further consideration.

The level of detail of the improvement concepts and the criteria used to evaluate each concept increase as part of each subsequent screening level. In other words, the screening levels build upon the previous outcomes and become more refined and detailed to further evaluate the remaining improvement concepts. The improvement concepts that will be considered could range from local arterial improvements, interchange modifications, additional freeway capacity, and concepts or strategies to better promote the use of alternative modes.

Level 1 Screening – Identify Area of Focus

The study area includes a total of nine interchanges, over 10 miles of interstate freeway, numerous local arterials, and many military installation gates and access roads. The present scope of the study does not allow the project team to develop a long list of improvement concepts to address every issue in the study area. Therefore, to develop specific improvement concepts that can be carried forward to subsequent phases, it is necessary to identify the locations in the study area with the greatest need of improvements and which are directly related to military operations or growth. This will allow the project team and the Technical Review Committee to then begin developing specific improvement concepts to address issues for only the areas most impacted by military operations and which have the greatest overall need.

This screening level is not intended to eliminate strategies or higher level concepts that could be applied throughout the study area, such as improved transit service or Intelligent Transportation Systems (ITS) technologies, but rather to reduce the number of geometric improvement concepts that would need to be evaluated at each interchange.

Therefore the first screening level will look exclusively at each of the nine interchanges to identify the **four** interchanges that more closely align with the criteria identified in Table 1.

Table 1. Level 1 Screening Criteria

Criteria ¹	Measurement Description ²
Purpose & Need Objectives	Are the anticipated issues and needs directly related to the purpose and need of the study?
Safety Issues	The number and severity of existing safety issues.
Operational Issues	The number and extent of existing operations issues.
Military Demand	The percentage of existing and future traffic that is attributed to the military installations.

1. General criteria used in refining the study area.
2. Describes how the criteria will be measured.

Each interchange will be reviewed to determine how closely the existing issues and needs align with the purpose and need of the study. For example, if the existing issues are more regional in nature due to growth along the I-5 corridor, improvements at the interchange might not be directly related to the impacts and operations of the military installations (which is the primary purpose of the study). The other criteria listed in Table 1 are quantitative measurements which will be evaluated to rank each of the interchanges against one another and identify the top four. Once these locations have been determined (**by the beginning of August**), the project team will begin developing improvement concepts that will be evaluated as part of the Level 2 screening process.

Level 2 Screening – Fatal Flaw

Typically a “fatal flaw” screening is conducted first; however the Level 1 screening process only focused on refining the study area and did not evaluate actual improvement concepts. As a result, the Level 2 screening process is still a relatively simple evaluation of “yes” or “no” to ascertain fatal flaws with any of the proposed improvement concepts within the refined study area. The fatal flaw questions are listed in Table 2.

Table 2. Level 2 Screening Criteria

Criteria ¹	Fatal Flaw Questions (Yes or No) ²
Military	Does the proposed concept address a military impact or need? Does the proposed concept negatively impact military operations?
Safety	Does the proposed concept address an existing safety deficiency?
Mobility	Does the proposed concept address a future capacity and congestion issue?
Local Impacts	Does the proposed concept positively benefit local arterials and streets?
Cost Effectiveness	Is the scale of the proposed concept consistent with the benefits it would likely provide?

1. General criteria used in defining fatal flaw questions.
2. Any proposed concept that receives a “no” to any one of these questions will be judged to have a fatal flaw.

Any concept that receives a “no” in any of the five criterion will be judged to have a fatal flaw and will not be moved forward to the Level 3 screening process. The first four criterion are items that can be easily assessed at this level of concept development; however the last criterion referred to as “cost effectiveness” is likely to be more difficult to assess. Therefore this last criterion is meant to identify those concepts that are likely very large in scale, but not likely provide a consistent level of

benefits relative to other concepts that have been identified. It is anticipated that the Level 2 screening will be completed by the **beginning of November 2009**.

Level 3 Screening – Evaluation of Improvement Options

The last screening level is much more detailed than the previous two. It measures several of the same items as the previous screening levels, but evaluates the remaining improvement concepts at a much more detailed level. This requires each of the remaining improvement concepts to be developed with a greater amount of detail in order to evaluate and analyze each as described by the metrics in Table 3.

Table 3. Level 3 Screening Criteria

Broad Category ¹	Items to Evaluate ²	Description of Metrics ³
Preservation	<ul style="list-style-type: none"> Does it improve geometric deficiencies? Does it address old or aging infrastructure in need of replacement? 	<ul style="list-style-type: none"> Number of geometric deficiencies addressed Remaining life (in # of years) of infrastructure
	<ul style="list-style-type: none"> What are the safety benefits it provides? Does it address safety for all modes? Does it improve at-grade rail crossings? 	<ul style="list-style-type: none"> Number and severity of collisions Number of modes addressed
Mobility	<ul style="list-style-type: none"> How well does it address a capacity problem and LOS standards for the freeway and local arterials? 	<ul style="list-style-type: none"> Mainline volume to capacity and LOS Interchange / Intersection volume to capacity and LOS
	<ul style="list-style-type: none"> How well does it reduce delays at interchanges & intersections? 	<ul style="list-style-type: none"> Total delay
	<ul style="list-style-type: none"> Does it improve conditions for all modes? 	<ul style="list-style-type: none"> Vehicle merging and queuing
	<ul style="list-style-type: none"> How does it specifically benefit military needs? 	<ul style="list-style-type: none"> Gate access & operations
	<ul style="list-style-type: none"> Does it improve or worsen freeway operations? 	<ul style="list-style-type: none"> Percent military traffic served
Environment	<ul style="list-style-type: none"> Does it impact sensitive areas? 	<ul style="list-style-type: none"> Amount and type of sensitive areas impacted
	<ul style="list-style-type: none"> Does it reduce vehicle delays (emissions)? 	<ul style="list-style-type: none"> Number of historic or cultural resources impacted
	<ul style="list-style-type: none"> Does it impact a historic or cultural resource? 	<ul style="list-style-type: none"> Location and type of impact on military installation
	<ul style="list-style-type: none"> Does it impact any military installation perimeter? 	<ul style="list-style-type: none"> Number and type of permits needed Total vehicle delay
Stewardship	<ul style="list-style-type: none"> Are the estimated costs proportional to the benefits? 	<ul style="list-style-type: none"> Estimated construction costs
	<ul style="list-style-type: none"> Is it feasible from a construction staging perspective? 	<ul style="list-style-type: none"> Cost to benefit ratio
	<ul style="list-style-type: none"> How well would it be supported by each jurisdiction? 	<ul style="list-style-type: none"> Amount of property to be displaced Relative support from participating jurisdictions
	<ul style="list-style-type: none"> Does it minimize right-of-way needs or property acquisition? 	<ul style="list-style-type: none"> Consistency with other plans
	<ul style="list-style-type: none"> Is it consistent with local and regional plans? 	

1. The broad categories are consistent and supportive with the WSDOT Washington Transportation Plan (WTP) statewide priority categories.

2. Types of questions to answer or investigate.

3. Metrics that would be used to prioritize the improvement options.

Following completion of the last screening level, one or several improvement concepts will be chosen as the preferred alternative. It is possible the preferred alternative will include one improvement concept for 2 or 3 interchanges. Ideally, no more than one concept per interchange would be identified as part of the preferred alternative. However the preferred alternative could also include strategies or concepts that are more study area focused relating to transit or ITS solutions. The Level 3 screening is targeted for completion the **beginning of March 2010** with a preferred alternative selected by May 2010.