

Alternative Evaluation Methodology



Introduction

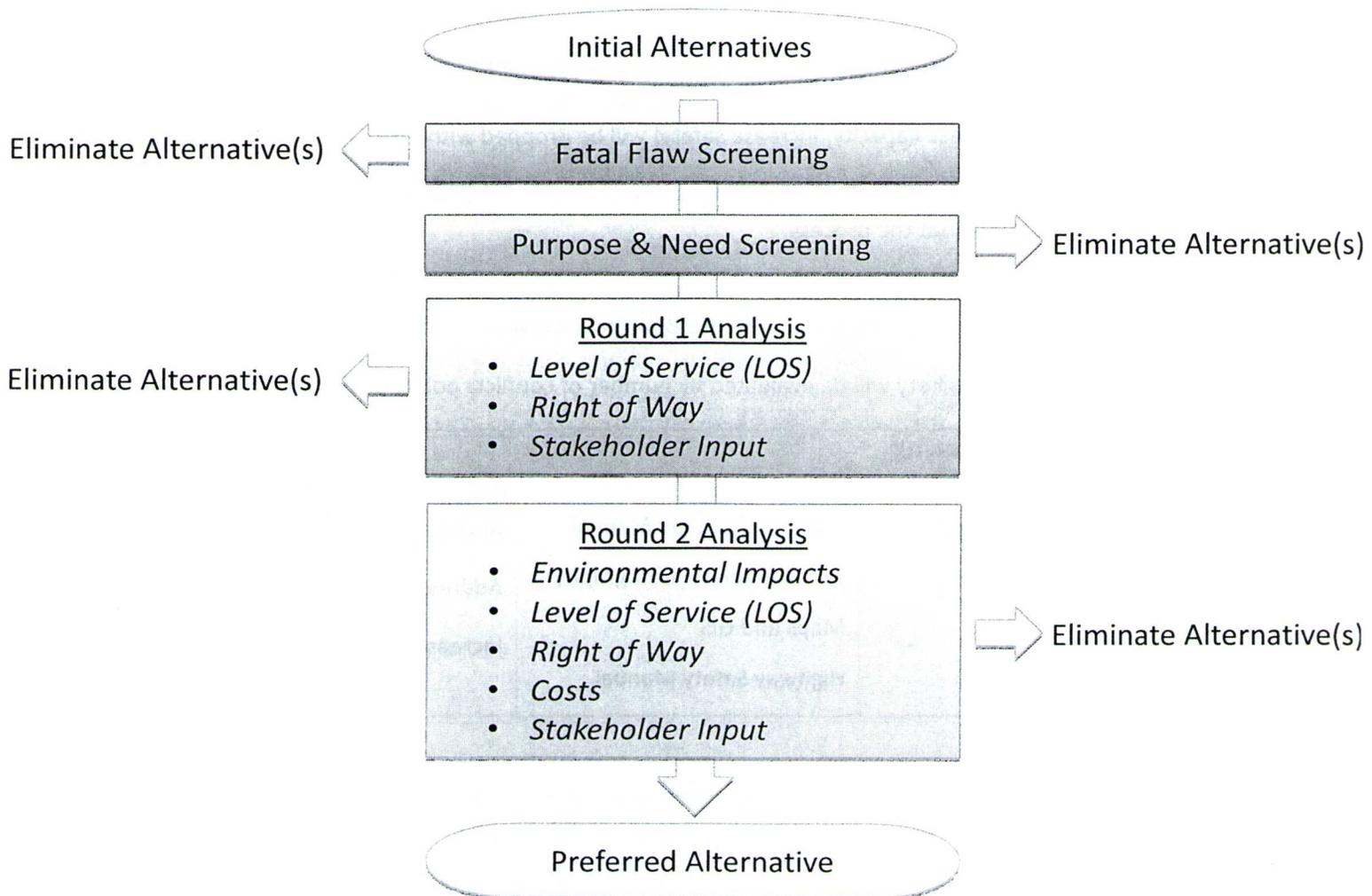
The purpose of this document is to describe the procedure for how alternatives will be developed and evaluated for the I-55 at Weber Road Interchange Study.

Development Process

The initial list of alternatives was developed from brainstorming sessions with the project stakeholders, soliciting ideas from the governing transportation agencies, and brainstorming with the project team. The resulting alternatives were consolidated to capture similar ideas and reduce the list to a reasonable range of alternatives.

Evaluation of Alternatives

Following is an illustration of the stepwise process to screen alternatives:



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Fatal Flaw Screening

Once the range of alternatives is defined, each will undergo fatal flaw screening. A fatal flaw is a characteristic or part of an alternative that would render it infeasible or unconstructable. During this initial screening, flaws are assessed at a broad level of detail based on existing aerial photography. A fatal flaw could include:

- Substantial direct impacts to industrial, commercial or residential buildings
- Substantial direct impacts to environmental or community resources
- Does not meet minimum design criteria or access spacing requirements

If any of the alternatives are determined to have fatal flaws, they may be altered to address the flaw if possible. Alternatives that pass this initial screening will move on for further analysis.

Purpose and Need Screening

After the initial fatal flaw screening, the alternatives will be evaluated to determine how well they meet the project's Purpose and Need. Alternatives that do not adequately meet the needs of the project (improve operation, increase capacity, increase safety) will be dropped without further study.

The evaluation will consider the deficiencies stated in the Purpose and Need Report in addition to stakeholder input throughout the process.

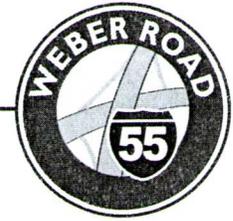
- The capacity improvements for each alternative will be evaluated by the reduction in volume-to-capacity ratios as compared to the 2040 No Build alternative.
- Improvements in safety will be evaluated by number of conflicts points and weaving.

Purpose and Need Screening		
Level of Detail:	Tools:	Comparison Criteria:
Identify preliminary footprint	Highway Capacity Manual Existing Aerial Photography Maps and GIS Highway Safety Manual	Improve Safety Address Operational Deficiencies Increase Capacity

Alternatives will be compared relative to each other with a goal to identify if a certain alternative or alternatives would perform better or worse in comparison to the No-Build Alternative.

All of the alternatives that pass Purpose and Need screening will move on for more in-depth analysis.

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Round 1 Screening

In the next round of screening, the project team will work to narrow the range of practical alternatives.

The goals of the Purpose and Need will again be the basis to compare the alternatives, with this evaluation being more detailed than what was previously done in the Fatal Flaw screening and Purpose and Need screening.

Round 1 screening will evaluate the remaining alternatives using a more detailed and in-depth approach for the following criteria:

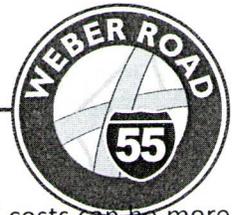
- Level of Service
- Interchange Operations
 - Conflict points
 - Presence/severity of weaving traffic patterns
- Right of way impacts

Round 1 Screening		
Level of Detail:	Tools:	Comparison Criteria:
Alternatives more defined	Highway Capacity Manual Existing Aerial Photography Highway Safety Manual Maps and GIS	Safety/Operation Improvement <ul style="list-style-type: none"> • # of interchange conflict points • Presence or severity of weaving traffic patterns Impacts <ul style="list-style-type: none"> • ROW required • Residential, commercial, and industrial impacts

Input from stakeholders will be used to complete the Round 1 screening. The alternatives will be compared with each other to determine what alternative or combination of alternatives would prove better or worse in comparison to each other and the No-Build Alternative. The alternatives that are determined to perform the lowest in this evaluation will be considered for elimination from the study.

Round 2 Screening

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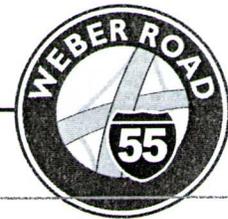
Details of each of the remaining alternatives will be determined so that impacts and costs can be more accurately compared. This evaluation will include identifying project specific features of each alternative and using more complete range of evaluation criteria. Combinations of alternatives may also be considered at this point and roadway capacity, operational factors, and safety will be further evaluated.

The goals of the Purpose and Need will again be used to compare the alternatives, with this evaluation being more detailed than what was previously done in the Fatal Flaw analysis, Purpose and Need and Round 1 screening.

Round 2 will evaluate the remaining alternatives using a more detailed and in-depth approach for the following criteria:

- Environmental
 - Socioeconomic
 - Parking
 - Employees
 - Access
 - Wetlands
 - Other
- Engineering
 - Level of Service
 - Estimated construction cost
 - Amount of right of way to be acquired

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Round 2 Screening		
Level of Detail:	Tools:	Comparison Criteria:
Highly defined alternatives	Highway Capacity Manual Existing Aerial Photography Highway Safety Manual Maps and GIS Geometrics and Cross-sections	<ul style="list-style-type: none"> • Environmental resource impacts • Level of Service • Cost • Right of way

Input from stakeholders will be used to complete the Round 2 screening. The alternatives will be compared with each other to determine what alternative or combination of alternatives would prove better or worse in comparison to the each other and the No-Build Alternative. The alternatives that are determined to perform the lowest in this evaluation will be considered for elimination from the study, and a preferred alternative will be chosen.

Public Meeting #3

A public meeting will be held to present the results of the evaluation process. Reasons should be stated for the elimination of the alternatives from the initial range. A technical report that summarizes the alternative evaluation process will be distributed for the stakeholders to review.

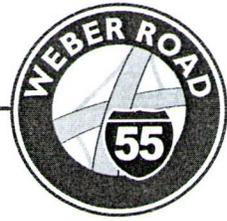
The Preferred Alternative

The preferred alternative meets the goals of the project stated in the Purpose and Need Report; it avoids, minimizes, and mitigates impacts identified, and it has cleared all the previous rounds of evaluation. The preferred alternative will continue to be further refined and detailed for the Environmental Assessment report.

The preferred alternative will be evaluated using the following factors:

- Social/Economic
- Environmental Impacts
 - Air Quality
 - Noise
 - Natural Resources

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- Water Quality/ Resources
- Flood Plains
- Wetlands
- Special Lands including 4(f), 6(f), and OSLAD lands.
- Drainage
- Cultural Resources
- Engineering
 - Level of Service
 - Safety
 - Operational efficiencies
 - Estimated construction cost
 - Amount of right of way to be acquired

Public Hearing

The public hearing process will follow the completion of the preliminary Environmental Assessment (EA) report. The EA will be made available for review by the resource agencies and public entities for a period of 30 days. The public hearing will be held to present the Preferred Alternative to the public, including all detailed analysis, design elements, impacts and mitigation measures, and plans. Comments from the public will be accepted for a period of time following the hearing, and substantive comments will be evaluated and responded to, and any required modifications will be made to the EA through supplemental documentation. A Finding of No Significant Impact (FONSI) will be prepared and reviewed. At the end of this process, the Federal Highway Administration will consider approval of the Phase 1 Study.