

## Alternative Analysis

### Alternative Comparative Evaluation Matrix

Each alternative will be rated numerically within each category, such as, but not limited to, operational, safety, critical geometry, etc of the Tier 2 Analysis. Values should be organized so that the highest value among the alternatives indicates the best solution in each category. Criteria is project relevant and should correspond with identified problems in Chapter 2. Weighting factors may be different for each category but must sum to 100. This recommended baseline criteria Matrix should be discussed and approved at the Preliminary Tier 2 Alternatives Analysis meeting.

Below is an example of the criteria used for the baseline Alternative Evaluation Matrix:

	Traffic Operations	Safety	Construction Cost	Right of Way Impacts	Utility Relocations
<b>Weight Factor</b>	30	5	20	10	35
<b>Problem(s)*</b>	Corridor Travel Time is high in peak periods	Lower than state crash rates so weighted lower	Phasing constructability and cost of phases	Rural area with minimal impacts so weighted lower	Impacts at critical intersections significant to this project
<b>Rank</b>					
1	Worse than NO Build	Make it worse (more right angle conflicts)	Unable to be phased, or phases cost more than \$2 million	Taking of historic and/or 4F areas	All of gas, water, electric, drainage
2	~Equal to NO Build	-	-	Total taking of commercial or residential building	Three of gas, water, electric, drainage
3	< 10% Better than NO Build	-	Able to be phased and most phases are less than \$1 million, but none over \$2 million	Partial taking of commercial or residential ROW	Two of gas, water, electric, drainage
4	10 - 20 % Better than NO Build	-	-	Taking ROW without building or structure impacts	One of gas, water, electric, drainage
5	> 20% Better than NO Build	Make it better or stay the same (Less right angle conflicts)	Able to be phased and all phases less than \$1 Million	No ROW taken	None of gas, water, electric, drainage

\* Notes:

- *Problems used here are defined in Chapter 2 of the report. Other categories used must have a justification for being included in the ranking.*
- *It is OK for some alternatives to have the same ratings as another in the same category.*
- *Arrangement of the matrix is flexible as long as Weight Factors, Categories and Rank values are represented and easily understood.*

The Alternative Comparative Evaluation Matrix, along with criteria, shall be completed and placed in Appendix E. A simple example can be seen below:

Category	Weight	Alt 1		Alt 2		Alt 3	
		Rating	Score (Rate X Weight)	Rating	Score (Rate X Weight)	Rating	Score (Rate X Weight)
Traffic Operations	<b>30</b>	2	60	2	60	2	60
Safety	<b>5</b>	1	5	1	5	5	25
Construction Cost	<b>20</b>	3	60	3	60	5	100
Right of Way Impacts	<b>10</b>	4	40	3	30	1	10
Utility Relocation	<b>35</b>	2	70	2	70	3	105
<b>Total Score (Highest= Best)</b>			<b>235</b>		<b>225</b>		<b>300</b>