cost to represent the minor additional items as well as anticipated cost increases. The conceptual total project costs are shown below.

| Alternative | Project Cost |
|---|---|
| Alt #3 - Power Line | $122 M |
| Alt #4 - North Bridge | $95 M |
| Alt #6 - Pine Diagonal | $42 M |
| Alt #7 - Pine/118th Avenue | $50 M |
| Alt #10 – 154th Avenue | $84 M |
| Alt #11 – Improve Vicinity Wauna | $217 M |

# 11.0 Traffic Analysis

A traffic analysis was conducted for each of the alternatives evaluated during the Level 2 Screening process.

The analysis performed four kinds of travel demand modeling analyses for each alternative in the study area, using the 2035 SR 302 travel demand model:

***Corridor Travel Time*** – using the 2035 baseline to forecast the traffic assignment during the PM peak hour; or the travel time from Point A to Point B between the Borgen Blvd/SR 16 Interchange and the west terminus of the SR 302 corridor.

***Measures of Effectiveness*** – using the 2035 baseline and the existing conditions in a comparative analyses of the PM peak hour Vehicle Miles Traveled, Congested Vehicle Hours Traveled, and the Free-Flow Traffic provided by the travel demand forecasting model; the 2035 alternatives show the system wide improvements or degradation.

***Congestion Analysis*** – using the SR 302 project VISUM travel demand modeling analyses to provide the 2035 Alternative volume to capacity ratios for the PM peak hour, which indicates where and at what magnitude the congestion is expected to occur.

***Select Link Analysis*** – using a travel demand-modeling tool that focuses on roadway links and where traffic is going and coming from to provide the alternative corridor traffic distributions.

The results of this analysis were then used to rank each alternative based on peak direction travel time, area-wide vehicle miles traveled, total vehicle hour delay reduction, number of congested segments with v/c ratios higher than 0.9 and the majority of traffic served. This analysis also took into consideration the traffic analysis developed for improvement of the SR 16/Burley-Olalla Interchange currently being constructed along the SR 16 corridor.

A corridor alternative intersection analysis was performed to evaluate and compare the traffic scenarios between the 2007 existing conditions, 2035 baseline conditions, and the 2035 Alternatives. The traffic analysis and Level of Service summary is provided in Appendix G.

# 12.0 Engineering Analysis

An analysis of engineering issues associated with each alternative was conducted by the study team. The results of the analysis indicated that, besides those challenges that would normally be anticipated for development of a new or improved highway corridor, an extraordinary effort and further study would be required to construct a new interchange at the SR 16/Pine Road location. This SR 16/Pine Road interchange option l was identified as part of the Alternative 6 and 7 descriptions considered for Level 2 screening. As a result, the proposal for these alternatives was modified to show the interchange with SR 16 moved south to coincide with the existing interchange with SR 302 Spur. The engineering issues addressed in this study found that:

- Development of an interchange to the south near the existing SR 302 Spur would likely require cutting into a steep hillside along the east side of SR 16 to provide at least one auxillary lane to move traffic along the SR 302 Spur and SR 16 corridors.

- Constructing into the steep hillside east of SR 16 would require a new interchange, including a new freeway undercrossing at the location in order to reduce the scale of excavation necessary to construct access ramps on the east side of the freeway.