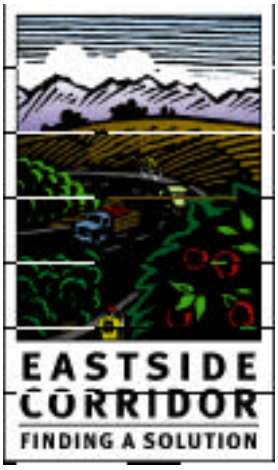
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

EASTSIDE CORRIDOR PROJECT

INITIAL SCREENING ANALYSIS

DRAFT FINAL REPORT

REVISED AUGUST 3, 2001



URS Corporation
And
INCA Engineers, Inc.

INTRODUCTION

The purpose of the Eastside Corridor effort is to identify a transportation alternative that will enhance safety and increase mobility, including the movement of people, goods, and services on the Sunset Highway Corridor (SR 28) in the East Wenatchee urban area from 9th Street to the Odabashian Bridge. Any proposal must meet the needs of the community, and comply with all Federal and State environmental laws. The Washington State Department of Transportation (WSDOT) has contracted with URS Corporation (URS) and their subconsultants (the project team), to develop an Environmental Impact Statement (EIS), which would assess the environmental impacts of a range of transportation alternatives and ultimately identify a preferred alternative.

An EIS for the SR 28 corridor was prepared by WSDOT in the mid-1980s. Alternatives presented in the 1980s EIS are analyzed as part of this process.

FUTURE NORTH/ SOUTH CORRIDOR CAPACITY NEEDS

In 1997, a study was prepared which assessed the future capacity needs of the north-south corridor. The study which is known as WATS (Wenatchee Area Transportation Study) originally assessed the capacity needs up to the year 2010 but was later extrapolated to 2017. The study predicted that by 2017 there would be demand for approximately four additional (two in each direction) arterial travel lanes for a total of six arterial, or four freeway lanes in the north-south corridor.

WSDOT has stipulated that the alternatives being considered in the Eastside Corridor effort must be able to accommodate traffic capacity needs up to the year 2025. Given that land use data is not yet available for 2025, precise capacity demands cannot be determined at this stage in the analysis. In the absence of this information, the evaluation of the different alternatives is based upon our best knowledge at the time and experience with different types of facilities.

The capacity per lane is different for different classifications of facilities and can even vary by region. A freeway can have a capacity ranging between 1800 and 2600 vehicles per hour per lane. An arterial street can have an ideal saturated flow capacity of approximately 1800 vehicles per hour of green light. However, the arterial has interruptions due to signals, left turns at those signals, parking maneuvers, transit operations, etc. that can reduce the capacity to less than one-half the ideal or less than 900 vehicles per hour. The capacity of a limited access facility, such as a parkway, is greater per lane than that of a road that has driveway access and possible parking maneuvers. One-way streets have potentially higher through capacities than do two-way streets with the same numbers of lanes because of the reduced numbers of conflicts at the intersections.

During the screening analysis, the placement and the types of facilities were taken into account. Fewer lanes are needed for limited access or freeway facilities. If the proposed improvement is to widen existing facilities without access control, more through lanes would be required to handle the same amount of traffic.

CONCEPTUAL ALTERNATIVES

The first step of this process involved brainstorming conceptual alternatives within the East Wenatchee urban area. Representatives from URS, INCA Engineers, JDL and TModel met in April and May of 2001, and through coordination with WSDOT and input from the Introductory Open House and the Stakeholders Workshop on May 16, 2001, developed potential concepts that would meet the projects goals. On May 25, 2001, the group began screening the conceptual alternatives against a set screening criteria. The goal was to reduce the number of alternatives for further engineering consideration. Attached is a screening analysis matrix showing the conceptual alternatives, the screening criteria and rating applied to each criterion. During this exercise, some conceptual alternatives identified were determined to be similar to other conceptual alternatives with slight difference in design-level issues such as right-in, right-out access control, HOV lanes, and signed business routes. These conceptual alternatives were combined or deleted from further analysis. To keep the original numbering system so that working maps were not compromised, the conceptual alternative numbers were not revised, and "not used" is stated in the matrix under concept description for those alternatives removed from the study.

The Stakeholders Workshop was an all-day workshop that included but was not limited to: local citizens, city group representatives, state and local regulators, City and County staff, the trucking industry, growers and representatives from the business community including the Chamber of Commerce. The workshop broke into 5 working groups, and looked at potential alignments and key rating criteria. The second column in the attached screening analysis matrix identifies the conceptual alternatives identified in the Stakeholders Workshop.

The conceptual alternatives are grouped in like categories.

- Conceptual alternatives 1a through 1f are routes identified between Sunset and the Columbia River (also known as the river routes)
- Conceptual alternatives 2a through 2d are upper bench routes
- Conceptual alternatives 3a through 3g are lower bench routes
- Conceptual alternatives 4a through 4c are one way couplets
- Conceptual alternatives 5a through 5i are improvements to existing Sunset Highway
- Conceptual alternatives 6a through 6e include existing local street widening and extensions to SR2

SCREENING AND RATING CRITERIA

The screening criteria were determined based on the purpose and need of the project and input from the Stakeholders Workshop. It was determined that there are five criteria that could determine the success of the project. Each of the conceptual alternatives was rated according to the screening criteria on a scale of 1 to 5, 1 being the most unfavorable, 5 being the most favorable. The conceptual alternatives were rated qualitatively and ranked against all other conceptual alternatives. A description of the screening criteria and how they are scaled is provided below:

- **Does the concept improve level of service in the existing SR 28 corridor?** This is part of the purpose and need of the project, and is a cornerstone to its success. The preliminary rating is a qualitative judgement and factors considered were proximity to trip generators, service of growth areas including SR 2 around the Odabasian bridge, Fancher Heights, and near the airport, and whether the concept will improve level of service in the long term.
- **Does the concept improve safety?** The need to improve road safety for traffic moving through East Wenatchee is an important objective of the project. This rating is a qualitative judgement, and factors which were considered were formation of snow and ice, speed, change in severity of accidents, change in number of conflicts, and proximity to schools, parks and neighborhoods.
- **Is the concept constructable, and can it meet engineering criteria?** If a concept alternative cannot be constructed, or if it fails meet the design criteria/ standards set by WSDOT for the project, then that concept is not subject to further engineering evaluation. This rating is a qualitative judgement, with the construction of large cuts and fills, or the construction of interchange ramps in high-density locations receiving low scores.
- **Would the concept likely receive required permits and approvals?** If a concept alternative is not likely to receive the required permits or NEPA/SEPA approval, it can not be constructed. This rating is a qualitative judgement, where an average permitting approval effort scores a 3. A conceptual alternative was given a score of 1 if it was determined that it would be unlikely to receive the required permits and/or approvals. No 5 scores were given as each alternative would require some permits and approvals.
- **Does the concept minimize displacements?** Displacements of homes and businesses can be expensive and disruptive to the community depending on the scale. This rating is a qualitative judgement, and is scored based on the numbers of homes and businesses likely to be displaced by each conceptual alternative.

PROCESS

To screen the conceptual alternatives, a core group met on May 25, 2001, to agree on the screening criteria, score the conceptual alternatives and discuss the results. Team members included roadway design engineers, traffic engineers and environmental planners. The group consisted of:

Jim Catterfeld, URS Corporation
Gary Harshman, URS Corporation
Sarah Townsend, URS Corporation
Sandy Glover, INCA Engineers
Ken Wiley, INCA Engineers
Molly Johnson, JDL
Bob Shull, TModel

After scoring the conceptual alternatives on each of the screening criteria, a total score (out of 25) was determined for the conceptual alternatives.

All conceptual alternatives with a score of 1 for any screening criteria were removed from further analysis. This includes the following conceptual alternatives:

- **1a River route – previous EIS route 1 (longer route) – 4-lane parkway**
- **1b River route – previous EIS route 4 (shorter route) – 4-lane parkway**
- **1c River route – new alignment outside of 200-foot buffer zone – 4-lane parkway**
- **1d Extension of river or western route through Baker Flats – new alignment outside of 200-foot buffer zone, 4-lane parkway**

All four of these conceptual alternatives were given a 1 score for the screening criteria ***Would the concept likely receive required permits and approvals?*** It was determined that all alternatives with the new alignment within 200 feet of the Ordinary High Water Mark (OHWM) of the Columbia River would face major permitting and approval hurdles. This assessment was partially based on the past decision on the EIS prepared by WSDOT in the mid-1980s. The preferred alternative in that EIS was a "River route" that had portions of the project within 200 feet of the OHWM, and was denied permits based on a Shorelines Hearings Board judgement that the project was incompatible with acceptable shoreline uses.

In addition, it was determined that it would be difficult to obtain approvals for highway alternatives with new alignments within 300 feet of the OHWM based on the provisions of the Endangered Species Act requirements. This area is classified as critical habitat for endangered species in the Columbia River. A formal consultation process with National Marine Fisheries Service (NMFS) and possibly the United States Fish and Wildlife Services (USFWS) would be

required. Such consultation would address the issue that this project "may affect – likely to adversely affect" critical habitat. This process would add additional risk to the approval of the project. It should also be noted that all "River Routes", including those chosen for further analysis require some work within the 200-foot shoreline management zone for existing SR 28 widening between 15th Street and 9th Street. However, minimizing incursions into the shoreline area (and also the 300-foot ESA critical habitat area) to locations of existing highway widening is an approach that is more likely to be permitted without extended permit process time.

- **2a Upper bench - previous EIS route 6**
- **2b Upper bench to lower bench at S. Union**
- **2c Upper bench to Batterman**

Concepts 2a through 2c received a 1 for two screening criteria, ***Does the concept improve level of service in the existing SR 28 corridor?*** and ***Is the concept constructable, and can it meet engineering criteria?***. These conceptual alternatives each received a 1 for level of service because they are removed from the East Wenatchee urban area and therefore are unlikely to be used by the local traffic that currently use SR 28. These conceptual alternatives received a 1 for engineering because it was calculated that to achieve a 7% grade from SR 28/SR2 intersection to the connection at Badger Mountain Road, roadway cuts up to 200 feet would be required, costing approximately $127 million based on preliminary calculations. Roadway maintenance would be higher for the upper bench routes than other conceptual alternatives because of additional pavement and guardrail repair.

Additionally, the upper bench routes are not attractive routes for trucks. The roadway grades would be steep, resulting in longer travel times and additional costs for gas and truck maintenance.

- **4c SR 28 – one-way couplet Baker/ Sunset**

Concept 4c received a 1 in two of the screening criteria, ***Is the concept constructable, and can it meet engineering criteria?*** and ***Does the concept minimize displacements?*** This concept received a 1 for constructability because of the difficulty of the connection to existing SR 28 at the south end and a 1 for displacements because widening Baker Ave would displace a large number of houses and businesses.

- **5b Sunset – 7 lanes symmetrical widening**

Concept 5b received a 1 for the screening criteria ***Does the concept minimize displacements?*** This conceptual alternative received a 1 for displacements

because symmetrical widening of Sunset Highway would require the removal of many houses and businesses on both sides of the street. It was determined that a nonsymmetrical widening option would have less of an impact on homes and businesses in terms of displacements.

- **5g Sunset – 5 lanes with partial access control and frontage roads**

  Concept 5g received a 1 for the two screening criteria ***Does the concept improve safety?*** and ***Does the concept minimize displacements?*** This conceptual alternative received a 1 for safety on the basis that the frontage roads would provide a means by which drivers may race past traffic on Sunset Highway, and because the provision of frontage roads increases the number of conflict points with local streets and Sunset Highway. This concept received a 1 for displacements because the impact for this alternative was considered to be greater than widening Sunset Highway to seven lanes.

- **6c Baker Extension with widening – 5 lanes**

  Concept 6c received a 1 for the screening criteria ***Does the concept minimize displacements?*** This concept received a 1 for displacements because widening Baker Ave. displaces a large number of houses and businesses.

After eliminating those conceptual alternatives with a 1 in any screening criteria, it was agreed to eliminate all alternatives with a total rating of 14 or less. This includes the following conceptual alternative:

- **2d Upper bench revised down to SR 28 north of S. Nevada**

  Concept 2d received a total score of 13 out of 25. The elimination of this conceptual alternative was based on the low scores it received in numerous categories. This concept is located a significant distance from traffic generators; however, it is better than the other upper bench route alternatives in this category (2a, 2b, and 2c) as the south end terminates closer to the traffic generators. It received a low score for engineering due to the large cuts, fills and large bridges required to maintain the 7% grade.

The conceptual alternatives were then reviewed to determine if any alternatives within a group could be eliminated because the remaining concepts in that group were better options to proceed with to the next stage of analysis. The following conceptual alternative was eliminated during this process:

- **5a Sunset – 5 lane widening (previous EIS route 2)**

  Concept 5a was eliminated because the provision of 5 lanes on Sunset Highway does not appear to result in long term (year 2025) level of service based on

previous modeling. Since 7 lanes on Sunset Highway, or 5 lanes on Sunset Highway with additional improvements on a parallel street to add additional capacity in the north- south corridor appear to be required, the conceptual alternatives **5d, Sunset – 7 lanes non-symmetrical** and **6e, Sunset 5 lanes with Cascade extension and widening to 3 lanes** are recommended for further analysis.

Results

The attached matrix presents scoring results for each conceptual alternative. Conceptual Alternatives recommended for further evaluation are shown in boldface type. This section summarizes the results of the initial screening analysis.

Within the first category of conceptual alternatives, the western routes, any alternative that was within 300-feet of the Columbia Rivers ordinary high water mark was screened out due to environmental considerations. The two remaining alternatives within this category are located a minimum of 300-feet from the Columbia Rivers ordinary high water mark with the exception of the south end tie-in. The tie-in to existing Sunset Highway at the south end is within 200-feet of the ordinary high water mark because the existing facility is within 200-feet of the ordinary high water mark.

The second category of alternatives, generally known as the upper bench, were screened out due to not satisfying the purpose of the project. All of these alternatives faired poorly with respect to providing congestion relief along existing Sunset Highway. The distance between major traffic generators and these alignments indicate traffic will not likely use the route and therefore not provide congestion relief to existing Sunset Highway. The origin-destination study also indicated that less than ten percent of the trips along existing Sunset Highway are through or bypass trips. These alternatives also scored relatively low in the engineering feasibility as they offer significant challenges with respect to engineering relative to other alternatives.

Most of the lower bench alternatives, category three, were carried into the second level screening. These alternatives scored reasonably well and varied in configuration enough to warrant carrying the different alternatives forward.

Two of the couplet options, category four, were carried forward based on the matrix evaluation. One was dropped as it scored somewhat lower than the other two.

Several of the alternatives within the fifth category, along existing Sunset Highway, involved only slight variations in concept. Because of this, many were combined into other alternatives. Of the remaining five concepts within this category, two of these alternatives were eliminated due to the large number of residential and business acquisitions. One of the other alternatives was dropped due to it not scoring as well as the two which were carried forward into the second level screening analysis.

The alternatives in category six all scored relatively well with the exception of 6c. This one alternative was then dropped from further consideration, and the others carried forward into the second level screening analysis.

The next step in the process is to further evaluate the identified conceptual alternatives against more detailed screening criteria to determine approximately four preferred alternatives to carry into the EIS process.

WSDOT EASTSIDE CORRIDOR PROJECT

DRAFT INITIAL SCREENING ANALYSIS MATRIX

Concept	Is this a concept identified by the Stakeholders Workshop? (Number of groups that identified it)	Concept Description	Comparison	Does the concept improve level of service in the existing SR 28 corridor?	Does the concept improve safety?	Is the concept constructable, and can it meet engineering criteria?	Would the concept likely receive required permits and approvals?	Does the concept minimize displacements?
1a	3	River route – previous EIS route 1 (longer route)- 4 lane parkway	18	4	4	4	1	5
1b	3	River route – previous EIS route 4 (shorter route) – 4 lane parkway	18	4	4	4	1	5
1c	2	River route – outside of 200' buffer zone – 4-lane parkway	17	4	4	4	1	4
1d	2	Extension of river or westend route through Baker Flats – outside 200 foot zone, 4- lane parkway	17	4	4	4	1	4
1e	**1**	**Western route – revised river route from north of Odabasian to 9th. _ cloverleaf interchange at Odabasian, diamond interchanges at 19th and 9th, access at 27th.**	**19**	**5**	**5**	**3**	**3**	**3**
1f	**1**	**Western route from Odabasian to 16th, with SR 28 widening from 16th to 9th. Outside 300 foot zone of OHWM, 4 lane parkway, with park on western side.**	**17**	**4**	**4**	**4**	**2**	**3**
2a	3	Upper bench (previous EIS route 6)	13	1	3	1	3	5
2b	1	Upper bench to lower bench at S. Union	11	1	3	1	3	3
2c	4	Upper bench to Batterman	14	1	3	2	3	5
2d	2	Upper bench revised down to SR 28 north of S. Nevada	13	2	3	2	3	3
3a	**2**	**Lower bench (previous EIS route 5)**	**15**	**3**	**3**	**3**	**3**	**3**
3b	**2**	**Lower bench to Batterman/ Grant**	**16**	**3**	**3**	**3**	**3**	**4**
3c		Not used						
3d	**1**	**Revised Lower bench to Airport Way to Batterman**	**16**	**3**	**3**	**3**	**3**	**4**
3e	**0**	**Revised Lower bench route – Eastmont/4th**	**17**	**4**	**3**	**4**	**3**	**3**
3f	**1**	**Revised lower bench- 8th – Batterman**	**16**	**3**	**3**	**3**	**3**	**4**
3g	**2**	**Revised lower bench down to SR 28 north of S. Nevada**	**16**	**4**	**3**	**3**	**3**	**3**
4a	**4**	**One-way couplet Sunset/ Cascade (previous EIS route 3)**	**18**	**4**	**4**	**4**	**4**	**2**
4b	**3**	**SR 28 – one-way couplet Cascade with Empire/ Columbia**	**17**	**4**	**4**	**3**	**4**	**2**
4c	2	SR 28 – one-way couplet Baker/ Sunset	14	4	4	1	4	1
5a	5	Sunset – 5 lane widening (previous EIS route 2)	16	2	3	5	4	2
5b	5	Sunset – 7 lanes symmetrical widening	17	4	3	5	4	1
5c		Not used						
5d	**4**	**Sunset – 7 lanes non-symmetrical**	**18**	**4**	**3**	**5**	**4**	**2**
5e		Not used						
5f		Not used						
5g	2	Sunset – 5 lanes with partial access control and frontage roads	12	2	1	4	4	1
5h		Not used						
5i	**0**	**Sunset widening, limited access with 3 interchanges (both ends and center) with 2 underpasses. 4 lanes.**	**18**	**5**	**5**	**2**	**4**	**2**
6a	**1**	**Columbia extension with improvements – 5 lanes with modified access control**	**17**	**4**	**4**	**4**	**3**	**2**
6b	**2**	**Empire extension with improvements – 5 lanes with modified access control**	**17**	**4**	**4**	**4**	**3**	**2**
6c	1	Baker extension with widening – 5 lanes	14	4	3	3	3	1
6d	**1**	**Cascade improvement extension – 5 lanes with modified access control**	**17**	**4**	**4**	**4**	**3**	**2**
6e	**1**	**Sunset 5 lanes with Cascade extension and widening to 3 lanes**	**17**	**4**	**4**	**4**	**3**	**2**

Bold = recommended for further analysis