

South Central Region

Route Development Plan

STATE ROUTE 903

From SR 970 (MP 0.00)
To National Forest Boundary (MP 10.06)

STATE ROUTE 903 Spur

Vicinity SR 903/SR 970 Intersection (MP 0.00) – (MP 0.52)



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SR 970 to National Forest Boundary
MP 0.00 to MP 10.06

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South Central Region

Route Development Plan

State Route 903: MP 0.00 to MP 10.06

State Route 903 SPUR: MP 0.00 to MP 0.52

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Executive Summary

Vision Statement

Our vision for SR 903 is to provide safe and efficient transportation for Upper Kittitas County, moving people and goods throughout the region. Any improvements recommended for this route should be balanced with the preservation of this region's wealth of natural, scenic, and recreational resources.

RDP Summary

This *Route Development Plan (RDP)* is a twenty-year plan that enables WSDOT to make informed decisions on future needs. It presents a long-range improvement plan for State Route 903 (SR 903). The study area begins at SR 903's junction with SR 970 (east of Cle Elum) at MP 0.00 and ends at the Okanogan-Wenatchee National Forest Boundary (Lake Cle Elum) at MP 10.06.

SR 903 is a north-south rural collector in Kittitas County. The ten-mile route connects the communities of Cle Elum, Roslyn, and Ronald and provides access to recreational areas in the Lake Cle Elum vicinity.

SR 903 is a two-lane rural collector. Trucks use this route to haul lumber, livestock, and grain products to Interstate 90 or State Route 970.

The level of service analysis indicates that without improvements **most** of SR 903 will have an acceptable congestion level throughout the twenty-year planning period. WSDOT strives to maintain a LOS C on rural highways.

RDP Development

This *RDP* was created with the help of an internal Stakeholder Steering Committee including representation from various South Central Region offices. The outside stakeholders who were invited to become involved in the development of this *RDP* included the Cities of Cle Elum and Roslyn, Kittitas County Planning, Okanogan-Wentachee National Forest, Quad County RTPO, Washington State Patrol, and the general public. The *RDP* will be updated periodically to keep pace with changing transportation needs and existing conditions.

Implementation of the *RDP*

The *RDP* identifies proposed improvements that support congestion relief, economic initiatives, and safety requirements for the SR 903 route during the next 20 years. The major recommended improvements for the SR 903 route include the following:

- Construct mobility improvements at I-90/SR 970 interchange and improved connections to SR 903 and SR 970
- Construct a new park and ride facility for Cle Elum vicinity
- Extend existing two-way left turn lane to Floral Avenue and widen roadway from Oakes Avenue to Ranger Station Road
- Construct intersection improvements at SR 903/Bullfrog Road intersection
- Realign SR 903 and Horvatt Road intersection from MP 6.57 to MP 6.45 to form a perpendicular intersection.
- Construct a traffic signal at Oaks Ave (construction planned summer 2003)
- Construct pedestrian bulb-outs at intersections on First Street (SR 903) through Cle Elum from Wright St. to Oakes Avenue (Historic “Old Town” Cle Elum Draft Subarea plan, October, 2000)
- Short-range: channelize major intersections from Ranger Station Road to Roslyn
- Long-range: construct two-way left turn lane from Ranger Station Road to Roslyn (MP 2.68 to MP 4.67)

The South Central Region recommends that any improvement work done on SR 903 be designed to **Modified Design Level**, with minimum lane widths of **twelve feet** and minimum paved shoulder widths of **six feet** in unincorporated areas and the City of Roslyn, and at least eight feet of paved parking, sidewalks, curb, and gutters in the City of Cle Elum.

Vision Statement

Our vision for SR 903 is to provide safe and efficient transportation for Upper Kittitas County, moving people and goods throughout the region. Any improvements recommended for this route should be balanced with the preservation of this region's wealth of natural, scenic, and recreational resources.

This *Route Development Plan (RDP)* enables WSDOT to make informed decisions on the future needs for State Route 903 (SR 903). Interested users and affected jurisdictions in the SR 903 study area have come together with WSDOT to create the long-range vision for safety and capacity improvements for the route. This plan will be used to provide further detail to the vision of Washington's Transportation Plan, in particular the 2003-2022 *WSDOT State Highway System Plan (HSP)* element.

RDP Summary

This *RDP* is a twenty-year plan that describes the future development of the section of SR 903 that begins at SR 970 (MP 0.00) and ends at the National Forest Boundary (MP 10.06); see *SR 903 Route Development Plan Vicinity Map* on the following page. A detailed description of the existing facility is provided as a basis for the present and projected operating conditions of this section of SR 903. The recommended improvement strategies give priority to enhancing operations, while protecting the recreational importance and environmental qualities of the transportation system in the SR 903 corridor. These recommended improvements are important to assure adequate, consistent, and safe operation of SR 903 in the future while preserving, to the greatest extent possible, the splendor and natural setting of the corridor.

Chapter 2 Highway Location, Classification & Function

Route Location and Study Area

SR 903 is a north-south route in the eastern foothills of the Cascade Mountain Range in Upper Kittitas County. The study area, shown in Figure 1-1 *SR 903 Route Development Plan Vicinity Map*, begins at the SR 970 junction (MP 0.00), just east of Cle Elum, and ends at the National Forest boundary (MP 10.06) near Lake Cle Elum, where it continues as Salmon La Sac Road¹. The roadway travels through the cities of Cle Elum (MP 0.81 to MP 2.69) and Roslyn (MP 4.67 to MP 6.24), and through the unincorporated community of Ronald (MP 7.13 to MP 7.54). The SR 903 route is 10.06 miles long.



Roslyn: Pennsylvania Avenue and SR 903 intersection (MP 5.36)

Travel Type

The character of traffic in this route section is mainly **local and recreational** travel. SR 903 is the main connection between the Upper County communities and the recreational areas near Lake Cle Elum. SR 903 provides access to the Cle Elum Grade School (MP 3.57) and the Cle Elum/Roslyn High School (MP 3.82 and MP 3.91), just west of Cle Elum. SR 903 also provides direct access to Interstate 90 and SR 970 and other local and regional roadways.

Recreational use of SR 903 is significant during the summer months as vacationers use the route to access Lake Cle Elum, the Okanogan-Wenatchee National Forest, and the Alpine Lakes Wilderness area. It provides access to vacation housing near Lake Cle Elum and Forest Service campgrounds including Wish-Poosh, Cle Elum River, Red Mountain, and Salmon la Sac. During the summer this area is popular for backpacking, camping, horseback

¹ WSDOT TRIPS State Highway Log

riding, Off Road Vehicle use and fishing. Popular winter activities include snowmobiling, snowshoeing, and cross-country skiing.



Snowmobiling near Lake Cle Elum

Continuity

North of the study area, this route continues as Salmon La Sac Road - a Kittitas County facility from SR 903 to the Salmon La Sac Campground and a Forest Service road from Salmon La Sac Campground to the end of the road. The shoulder widths change where SR 903 becomes Salmon La Sac Road, increasing from one to four feet wide. The road remains a two-lane facility with twelve-foot wide lanes. During the winter, snow is plowed on the road as far north as the Salmon La Sac Campground.

To the southeast of the study area is the junction of SR 903 and SR 970, west of I-90's exit 85. At this junction the roadway continues eastward as SR 970 in the southbound and eastbound directions.

Urban Network

The SR 903 route is utilized by several transportation modes and provides access to other types of transportation facilities including non-motorized facilities, air transportation, public transportation, and rail transportation. These transportation facilities are described below.

Non-Motorized Facilities

Progress Trail is a gravel path that runs parallel to SR 903 between Stafford Street (MP 2.24) and the High School entrance (MP 3.82). The pathway segment between Roslyn Creek Bridge and Ranger Station Road has not been constructed yet. This path provides a lighted walkway in the SR 903 corridor for pedestrians walking to the Cle Elum area schools.



Progress Trail, MP 3.57

The **Coal Mines Trail** is a multi-use recreational facility that was built on the abandoned Burlington Northern Railroad line. It begins in Cle Elum at Stafford Street (MP 2.24) and ends in Ronald near Atlantic Avenue (MP 7.23). Historical points of interest related to coal mining are described on the trail. The location of this path is shown on strip maps in Appendix C.



Coal Mines Trail, one block north of MP 5.36

The **Iron Horse State Park**, a cross state non-motorized trail, is about one mile south of SR 903. Access to this trail is available on South Cle Elum Road. The Park includes more than 100 miles of trail that were converted from an abandoned rail line, extending from Cedar Falls to the Columbia River. The trail is used primarily for recreation.



Iron Horse State Park South Cle Elum Trailhead

Pedestrian friendly downtowns are priorities in both Cle Elum and Roslyn. The County also reconstructed Salmon La Sac Road (north of SR 903) to provide four foot paved shoulders for non-motorized travel.



Cle Elum sidewalks

Air Transportation

There are two airports in Cle Elum, Cle Elum Municipal and De Vere Field. The Cle Elum Municipal Airport is located east of the City of Cle Elum at 1990 Airport Road. It is a predominately recreational airport with a single runway that can handle single engine light aircraft and some light twins. The De Vere Field is located at 5210 Airport Road, about three miles east of Cle Elum. It is a privately owned commercial airport with several single engine aircraft based at the airfield.

Public Transportation

Paratransit services (special needs transportation) are available through the Kittitas County Action Council (KCAC) for Medicaid clients in the Upper County. Transportation is provided door-to-door for eligible seniors and individuals with disabilities who make reservations 24 hours prior to the event.

The Kittitas County Coordinated Transportation Council (KCCT) was formed in the fall of 2000 to promote public transportation in Kittitas County. KCCT is currently preparing a countywide plan that is comprehensive and cost effective.

Rail Transportation

The Burlington Northern Santa Fe railroad has a rail line that runs parallel to SR 903 within the City of Cle Elum. It leaves the SR 903 corridor at Billings Avenue, where it curves to the southwest and parallels I-90 heading toward Stampede Pass. This line is used to haul freight between the Puget Sound area (via Stampede Pass) and Pasco.

Land Use, Zoning, and Population Trends

Land use, zoning, and population trends are summarized for the study area, including Cle Elum, Roslyn, and Kittitas County. Zoning controls what the land can be used for, while land use simply reflects how the land is being used. Zoning is usually more specific and divides a region into industrial, commercial, recreational, residential, and agricultural.

City of Cle Elum

- **Land Use and Zoning:** SR 903 bisects Cle Elum and serves as its main business street (First Street) in the downtown commercial area. Land uses adjacent to SR 903 in Cle Elum are zoned Commercial, Industrial, and Residential².
- **Population Trends:** The City of Cle Elum estimated the city's population to increase from 1,800 in 1996 to 4,212 in 2021.
- **Future Urban Growth Area:** Bullfrog Sub area was identified as the future Urban Growth Area to accommodate this growth. The Bullfrog Sub Area is a large undeveloped site between Cle Elum and Bullfrog Road and bordered to the north by SR 903. The Bullfrog Sub Area Master Plan includes approximately 1,334 housing units, a community recreation center, water treatment plant, business park, neighborhood clubhouse and lake, and an expansion of the Cle Elum – Roslyn school campus and the Cle Elum cemetery. The City of Cle Elum's Comprehensive Plan states that: *development in the Bullfrog Sub Area will include enhancements to SR 903.*

² City of Cle Elum Comprehensive Plan, Adopted Date: 8 July 1997

City of Roslyn

- **Land Use and Zoning:** SR 903 bisects Roslyn and serves as the main business street (First Street) in Roslyn's downtown area. Land uses adjacent to SR 903 in Roslyn are zoned Residential Low Density, Commercial Central, and Public.
- **Population Trends:** Roslyn projected that there will be an increase of 140 people by the year 2017, and that the City is capable of accommodating this level of growth within its existing city limits³.
- **National Register of Historical Places:** The National Register of Historical Places has designated the developed area within the Roslyn city limits as a Historic District, noting specifically the Northwestern Improvement Company Store (SR 903 and Pennsylvania Avenue).

Kittitas County

- **Land Use and Zoning:** SR 903 provides access for the unincorporated town of Ronald (MP 7.13 to MP 7.54) and residential developments near Lake Cle Elum such as Pine Loch Sun. Land uses adjacent to SR 903 in unincorporated areas are zoned Suburban, Rural 3, Urban Forest, Planned Unit Development, Master Planned Resort, General Industrial, and Forest & Range.
- **Population Trends:** Kittitas County has grown over 25% in the past decade, while Washington State as a whole grew 21%. The population of Cle Elum stayed stable over the past twelve years, falling one percent from 1990 through 2001. Unincorporated Kittitas County grew by more than 35% and South Cle Elum grew by almost 19% in the same time period. While the state's population grew 75% from 1970 through 2001, Kittitas County had only negligible growth through 1987. However, from 1987 to 2001, the county grew at a faster pace (33.9% compared to 32%).⁴
- **Labor Force:** More than 16% of the Kittitas County workforce commutes to employment outside the county, either to the Yakima area or over Snoqualmie Pass to King County. Kittitas County's labor force grew 2.2% between 1990 and 1999, lagging slightly behind the statewide average of 2.3%. In both 2000 and 2001 the county showed a 0.2% increase, while the statewide labor force declined by 1.0 and 1.6%.⁵
- **Master Planned Resort:** A Master Planned Resort known as the MountainStar Resort, northwest of Cle Elum, will bring additional growth to this area. This four-season destination resort is being developed over a 30-year period by Trendwest Resorts on a 6,225-acre site that is adjacent to Cle Elum's Bullfrog Sub Area, on the north side of Bullfrog Road and the west side of SR 903. This

³City of Roslyn Comprehensive Plan, Amended 1997

⁴ November 2002 Kittitas County Profile, Labor Market and Economic Analysis Branch, Employment Security Department

⁵ November 2002 Kittitas County Profile, Labor Market and Economic Analysis Branch, Employment Security Department

resort will include recreational facilities, a 300-unit lodge/spa/conference center, a 50-unit ranch lodge, a 200-unit retreat lodge/conference center, and 3,785 residential units. The recreational facilities are a major component of the development and will include two 18-hole golf courses, a mining museum, an equestrian center, approximately 68 miles of multi-use trails, swimming pools, sports fields, and indoor and outdoor sport courts.

Access from SR 903 to the resort site will be at the following three locations: Ranger Station Road (MP 2.68), a new channelized intersection to be constructed by the developer in the vicinity of MP 3.2, and a vacated county road intersection at MP 4.5 (Old #9 Road), that will be upgraded by the developer.

Federal Functional Classification

SR 903 is classified as a **Rural Collector** (R3) for the entire route⁶.

State Classification

SR 903 is a Regionally Significant Highway (**non-HSS**).

Freight and Goods Transportation System

Major commodities transported in Upper Kittitas County include timber, livestock, and grain products.

- Between 4.7 million and 7.0 million tons of freight (**T-2 class**) is transported annually on SR 903 from SR 970 to Pennsylvania Avenue.
- 1.1 million tons of freight (**T-3 class**) is transported annually from Pennsylvania Ave. to the National Forest Boundary.

⁶ WSDOT TRIPS State Highway Log

Access Classification

Limiting access to state highways protects the capacity of the highway and improves safety. The access classifications for SR 903 are shown in Table 2-1 and defined in Appendix A.

Segment Mile Posts	Vicinity	Existing Access Classification	Minimum Access Spacing
903 Spur MP 0.19-0.52	SR 903 to SR 970	Access Managed - Class 3	330'
MP 0.00-0.81	JCT. SR 970 to Cle Elum East City Limits	Access Managed - Class 3	330'
MP 0.81–2.79	Cle Elum	Access Managed - Class 5	125'
MP 2.79–4.55	Cle Elum West City Limits to Roslyn South City Limits	Access Managed - Class 4	250'
MP 4.55–6.24	Roslyn	Access Managed - Class 5	125'
MP 6.24-10.06	Roslyn North City Limits to Nat'l Forest Boundary	Access Managed - Class 4	250'

⁷ WSDOT South Central Region Access Management Guidebook

Chapter 3 Description of Existing Facility

Strip Maps in Appendix C

The Route Development Plan Strip Maps, attached as Appendix C, provide a great deal of information about the existing facility, as well as the improvements WSDOT has proposed. Details shown on the RDP strip maps include:

- Route description: terrain and roadside character.
- Route classifications: functional class; Freight and Goods Transportation System classification, and access classification.
- Existing characteristics: lane widths, shoulder widths, posted speed, etc.
- Operating conditions: present and future AADT, truck percentage, K and D values, and present and future LOS.
- Route development standards.
- Improvement strategies.
- Aerial photo of route, identifying intersecting roads, bridges, maintenance areas of concern, environmentally sensitive areas, and other important features.

Lanes and Shoulders

SR 903 is a two lane undivided highway. Lanes are generally 12 feet wide asphalt concrete pavement (ACP) roadway surface. Shoulders vary from 0 to 16 feet wide with either ACP or bituminous surface treatment (BST) surface. Parking is permitted on SR 903 within the city limits of Cle Elum and Roslyn. Two locations in Cle Elum have two-way left turn lanes.

The specific locations of these features are shown on strip maps in Appendix C.



Narrow shoulders, Cle Elum, MP 2.39

Horizontal and Vertical Alignment

Three horizontal curves have reduced speed limit warning signs (MP 5.67-5.75, MP 5.96-6.16, and MP 6.52-6.66). Because of the rolling terrain, some vertical curves have sight distance limitations

Sight distance concerns will be evaluated at the scoping or project level. Improvements will be considered based on the level of improvement and the benefit cost ratio.

Bridges and Structures

There is one bridge and two major drainage structures on SR 903. These are described below and displayed on strip maps in Appendix C.

Bridges

Roslyn Creek Bridge #903/003 at MP 2.28 is 211 feet long and 23 feet wide. It was built in 1938 and is classified as “functionally obsolete”(FO). This rating indicates *“the deck geometry, load carrying capacity, clearance or approach roadway alignment has reduced its ability to adequately meet the traffic needs to below accepted design standards.”*

The WSDOT Bridge Office prioritizes structures for repair, rehabilitation, or replacement based on the sufficiency rating, which evaluates the actual structural condition of each structure. The Roslyn Creek Bridge was identified in the 2001-03 and 2003-05 deficiency lists as “scour deficient” meaning erosion around bridge piers.



Roslyn Creek Bridge, MP 2.28
Bridge Number 903/003

Major Drainage Structures

The culvert crossings are at MP 0.70 and MP 7.76 and have not been identified as fish passage barriers (see Environmentally Sensitive Areas for photographs of these culverts). Any future improvement work involving culverts will require investigating the fish passage capabilities of these culverts. This detailed evaluation will be accomplished at the project level, through coordination with WSDOT Environmental Office and Washington State Department of Fish and Wildlife.

Intersections

SR 903 provides direct connections to SR 970, twenty-nine county roads, forty-four city streets, and two private roads. Additional local access is provided to driveways. The specific locations of these intersections are shown on strip maps in Appendix C.

Intersection Channelization

The intersection of SR 903 and Cle Elum's Pennsylvania Avenue (MP 1.90) is channelized with left hand turn pockets in the northwest and southeast directions. The locations of these turn pockets are shown on strip maps in Appendix C.

Traffic Control

The traffic control features on this route include a fully actuated signal, a hazard identification beacon, and three stop signs.

The fully actuated signal is located in Cle Elum at Pennsylvania Avenue (MP 1.90). The hazard identification beacon is a warning light for Roslyn's Fire Station and is located at Dakota Avenue (MP 5.29). The stop signs are located at MP 0.01 in the westbound direction, MP 0.17 in the eastbound direction, and at Cle Elum's Oakes Avenue (MP 2.05) in the westbound direction. A new traffic signal with pedestrian bulb-outs will be installed at Oakes Avenue in the summer of 2003.

The traffic control features are shown on strip maps in Appendix C.



Cle Elum's Pennsylvania Ave., MP 1.90



Roslyn's Dakota Ave., MP 5.29

Heritage Markers

There is one Heritage Marker on SR 903 at Ranger Station Road (MP 2.68). This marker identifies the Cle Elum Cemetery. The National Register of Historical Places lists two historical places within the study area – the Roslyn Historic District and Roslyn's Northwestern Improvement Company Store at Pennsylvania Avenue. Additionally, three Historical Places are accessed by SR 903 - the Cle Elum-Roslyn Beneficial Association

Hospital at 505 Power Street in Cle Elum, the Douglas Munro gravesite in the Cle Elum cemetery, and the Salmon la Sac Guard Station northwest of the study area.

Terrain

SR 903 travels over **level** terrain for the first 2.28 miles from SR 970 to the Roslyn Creek Bridge (MP 0.00- MP 2.28). It then travels through **rolling** terrain for the remainder of the route from Roslyn Creek Bridge to the National Forest Boundary (MP 2.28 – MP 10.06).

Roadside Character

According to the State Highway Log, the roadside character classifications for the SR 903 route are Urban, Semiurban, and Forest as shown in Table 3-2. The classification descriptions are provided in Appendix A: Definitions and Descriptions.

Segment Mile Posts	Vicinity	Roadside Classification ⁸
0.00 – 2.30	SR 970 to Roslyn Creek Bridge	Urban – Cle Elum
2.30 – 6.10	Roslyn Creek Bridge to the City of Roslyn	Semi urban – Cle Elum
6.10 – 10.10	City of Roslyn to National Forest Boundary	Forest

Right Of Way

The right of way (R/W) widths along SR 903 vary from 50 to 100 feet. The official right of way maps and deeds should be consulted for the exact widths.

History of Construction Projects

The pavement for the entire length of SR 903 was planed, pre-leveled and paved with asphalt concrete pavement (ACP) in 1994. The SCR Materials Engineer has requested the Cle Elum through Roslyn route segment (MP 0.0 to 6.24) and the Ronald route segment (MP 7.10 – 7.60) to be resurfaced with ACP. A summary of the construction projects that have occurred over the past thirty years is provided in Table 3-3.

⁸ WSDOT Roadside Classification Plan, 1996

TABLE 3-3 SR 903 History of Construction Projects			
Date	Segment Mile Posts	Vicinity	Improvement Type
1977	0.0 – 2.28	Beginning of route to Roslyn Creek Bridge	ACP
1978	2.28 – 10.06	Roslyn Creek Bridge to end of route	BST
1980's	2.28 – 10.06	Roslyn Creek Bridge to end of route	BST
1994	0.0 – 10.06	Entire route	Planed, pre-leveled, ACP, guardrail, flattened slopes, left turn pocket for High School, and other safety enhancements
1994	1.90	Cle Elum's Pennsylvania Avenue	New signal

Major Environmentally Sensitive Areas

The following photographs illustrate some of the major environmentally sensitive areas that are **typical** to this section of SR 903, providing an overview of some of the sensitive areas along this route. These locations are shown on the strip maps in Appendix C.

There are no Priority Roadside Sensitive Management Areas along SR 903.

Note: When route improvements are being scoped or designed, the South Central Region's Environmental Office should be contacted for a more thorough and updated environmental assessment.



Culvert east of Cle Elum
MP 0.70



Culvert west of Roslyn
MP 7.76

Chapter 4 Operating Conditions

Level of Service Analysis

The level of service (LOS) analysis evaluates the operational conditions within a traffic stream on a roadway. Factors used to determine LOS include lane and shoulder widths, daily traffic volumes, truck percentage, peak hour traffic, the directional factor, and the percent of no-passing zones.

Values for both the congestion index analysis (WSDOT Travel Delay methodology) and the LOS analysis (*Highway Capacity Manual* methodology) are listed in Table 4-1. These values estimate the current and future operational conditions for the study area of SR 903, in the year 2002 and 2022. These values are also recorded on the plan sheets in Appendix C. AADT values from Table 4-2 were used in the analysis.

Additional information regarding the LOS analysis is discussed in Appendix A. Further information regarding the LOS analysis methodology can be found in the Transportation Research Board's *Highway Capacity Manual*, released in late 2000.

MP's	Vicinity	2002		2022	
		*LOS	Congestion Index	*LOS	Congestion Index
Threshold Value		C	6	C	6
0.00- 0.81	I-90 interchange to Cle Elum east city limits	C	2	C	3
0.81- 1.80	Cle Elum east city limits to Harris Avenue	C	3	D	4
1.80- 2.00	Harris Avenue to Oakes Avenue	C	5	D	7
2.00- 2.24	Oakes Avenue to Stafford Street	B	2	C	3
2.24- 2.49	Stafford Street to Yakima Avenue	B	2	C	3
2.49- 5.03	Yakima Avenue to Roslyn (California Avenue)	B	2	C	3
5.03- 5.99	Roslyn (California Avenue to 6 th Street)	C	2	C	3
5.99- 7.54	6 th St. (Roslyn) to Patrick Mine Road (Ronald)	B	2	B	3
7.54-10.06	Patrick Mine Road (Roslyn) to End of SR 903	A	1	A	2
0.19- 0.52	SR 903 SPUR : SR 970 to SR 903	C	1	C	2

 = deficient

* **LOS** determines deficiency for non-HSS route

TABLE 4-2 SR 903 Traffic Values ⁹				
MP's	Vicinity	2002 AADT	Growth rate	2022 AADT
0.0 - 0.81	SR 970 junction to east city limits Cle Elum	5660	2.3%	7800
0.81-1.80	East city limit Cle Elum to Pennsylvania Ave.	7500	2.3%	10,400
1.80 - 2.00	Pennsylvania Avenue to Oaks Avenue	11,200	2.3%	15,400
2.00 - 5.99	Oaks Ave. (Cle Elum) to Nevada St. (Roslyn)	4100	2.3%	5650
5.99 - 7.54	Nevada Street to Patrick Mine Road (Ronald)	2340	2.3%	3230
7.54 -10.06	Patrick Pine Road to National Forest Boundary	1410	2.3%	1950
SPUR 0.0 - 0.33	East of Cle Elum, vicinity SR 970 junction	2800	2.3%	3850

⁹ WSDOT Transportation Data Office

Chapter 5 Route Improvements and Estimates

RDP Standards

WSDOT recommends that any improvement work for SR 903 be designed to **Modified Design Level standards** for all geometric improvements, which is consistent with Design Manual matrices for non-NHS routes. This recommendation is based on the travel characteristics described in previous sections and low AADT on this non-HSS route.

City of Cle Elum - pavement width standard

Within Cle Elum, WSDOT recommends retaining the existing roadway section of **twelve feet** lanes and providing at least **eight feet** of paved parking, sidewalks, curb, and gutters. This recommendation meets the modified design level standard and provides route continuity.

Unincorporated areas and Roslyn - pavement width standard

In unincorporated areas and the City of Roslyn, WSDOT recommends a minimum lane width of **twelve feet** and a paved shoulder width of **six feet**. The Quad County RTPO's Transportation Plan supports this recommendation, stating the need for wider shoulders to accommodate the increasing level of non-motorized traffic associated with the MountainStar and Bullfrog sub-area developments.

Existing pavement width

The existing lane widths are at least twelve feet wide except at the SR 903 Spur intersection (11 foot lanes) and the Roslyn Creek Bridge (11.5 foot lanes). Shoulder widths vary between **zero to sixteen feet**. Widening the top width to 36 feet will require additional right of way in many places. Further investigation will be required as projects are scoped.

Access Classification Improvements

There are no access classification changes proposed for SR 903.

Safety Needs

The safety needs, shown in Table 5-1 and described below, were identified through an extensive evaluation of accident data and intersection deficiencies.

Accident data analysis

Accident data is provided by the Washington State Patrol and recorded in the *TRIPS Standard Accident History Detail Report*. WSDOT analyzes this data to determine locations and corridors with high pedestrian accidents (*PAL*), high accident locations (*HAL*) and corridors (*HAC*), and high risk of run-off the roadway accidents (*RISK*).

The most recent analysis of data indicated there is one RISK location, east of Cle Elum in a curve approaching the intersection of SR 903 and the SR 903 spur. (MP 0.24 – 0.30). Realigning the roadway through this curve is listed as a safety solution in the current Highway System Plan.

A review of the accident history for the past three years reveals several locations of interest. There were seven intersection-related collisions at the signalized Pennsylvania Avenue intersection, six resulting in property damage only, and one with possible injuries. There is no correctable pattern to the accidents. The accident history does not justify protected left-turn phasing.

Ten collisions were reported from Ranger Station Road to Roslyn, seven involving vehicles entering or exiting the highway. Accidents were rear-ends of same direction vehicles or entering or leaving driveway collisions. Constructing the interim solution of left turn channelization, and the ultimate fix of a continuous two-way left turn lane will provide a refuge for the turning vehicle.

Twenty-three of the 67 reported accidents along the route included injuries. Forty-three collisions caused property damage only, and there were no fatal accidents.

Deficient intersection analysis

The South Central Region Traffic Office prioritizes a region-wide deficiency list of intersections needing signals and/or channelization. This list includes the SR 903 and Bullfrog Road intersection (MP 4.20) and the SR 903 and Oaks Avenue intersection (MP 2.00). A roundabout is recommended to improve traffic flow at the Bullfrog Road intersection. The City of Cle Elum plans to add a traffic signal and pedestrian bulb-outs at the Oaks Avenue intersection. ***The WSDOT South Central Region Program Manager should be contacted for an updated list of safety deficiencies when any improvement strategies are programmed.***

Other safety related requests

The South Central Region Development Services Branch recommends that Kittitas County and a private developer with property adjacent to SR 903 and Horvatt Road, realign the SR 903 and Horvatt Road intersection from its current location at MP 6.57 to MP 6.45. This realignment will form a perpendicular intersection and improve the sight distance for traffic entering SR 903.

Another recommendation by the Development Services Branch and the Kittitas County Planning Office is to establish a consistent and reduced speed limit in the section of SR 903 from MP 2.95 to MP 7.00 to improve traffic flow and safety in this high growth area. The South Central Region Traffic Office will continue to monitor the speeds in this area and adjust them in accordance with the Manual on Uniform Traffic Control Devices and Design Manual. As the development in this area becomes denser, the Traffic Office will likely lower the posted speed to 40 mph in the Bullfrog Rd./SR 903 intersection vicinity (MP 2.92 to MP 4.39).

Mobility Needs

Several sections of SR 903 are listed in the most current Highway System Plan (HSP) as having level of service (LOS) deficiencies and requiring mobility improvements. The LOS methodology used to determine mobility needs has changed since the HSP was developed. The current LOS methodology analysis indicates just one LOS deficiency projected to occur in twenty years on SR 903 from Cle Elum's east city limits to Oaks Avenue. Recommended improvements addressing this deficiency include extending the existing two-way left turn lane and providing a park and ride facility for the Cle Elum community.

Preservation Needs

The section of SR 903 from the intersection with SR 970 to Oaks Avenue (MP 0.0 to 2.0) is scheduled for paving in 2004. The SCR Materials Engineer has requested that the milepost limits for pavement designations be changed to ACP from Cle Elum through Roslyn (MP 0.00 to 6.24) and through Ronald (MP 7.10 to 7.60).

There is no bridge preservation work scheduled for the next six years. The Roslyn Creek Bridge (MP 2.28-2.29) was identified as deficient (see Bridges section), but did not rank high enough for replacement or rehabilitation in the near future due to the low AADT and the availability of alternate routes at this location.

Route Improvements and Estimate Summary

Proposed route improvements that support capacity improvements, safety requirements, and local needs for the SR 903 study area during the next 20 years are listed in Table 5-1. WSDOT, Quad County Regional Transportation Planning Organization, and local jurisdictions identified these improvements. Improvements identified during the route development planning process will be included, as appropriate, in the next update of the WSDOT Highway System Plan.

The designer should seek the most current update of the HSP to identify any improvements or deficiencies that may have been included in subsequent updates. It is also important to note that these improvements are conceptual planning solutions. Project scopes will be refined once they reach the programming and design level phases.

The improvements listed on the following page may not be funded solely by the Department of Transportation. Funding would likely be a combination of state funding, local jurisdictions, and developer mitigation.

TABLE 5-1 Route Improvement Solutions

MP's	Vicinity	Type of Solution	Solution	Source:	Estimated Cost (Millions)
0.00-10.06	Entire route	Route Standard	Provide minimum 12 ft lanes and 6 ft paved shoulders	RDP recommendation	\$8.5 to 10.2
0.00-0.19	SR 903 / SR 970 Jct.	Mobility	Improve 903/970 Intersection	2003-'22 HSP	\$0.44 to 0.60
0.00-2.00	Cle Elum	Preservation	Rehabilitate asphalt concrete pavement, provide basic safety restoration	'03-'05 Preservation Budget	\$0.71
0.24-0.30	Jct. SR 970 vicinity	Safety	Realign roadway	2003-'22 HSP	\$0.11 to 0.15
0.81-2.00	Cle Elum to Roslyn	Mobility	Coordinate with City of Cle Elum to locate and build centralized Park and Ride facility	2003-'22 HSP (modified)	\$0.18 to 0.24
0.96 - 2.68	Cle Elum to Roslyn	Mobility	Extend existing 2 way left turn lane easterly to Floral Ave.; widen roadway from Oakes Ave. to Ranger Station Rd., including replacing narrow bridge	2003-'22 HSP and Quadco RTP	\$1.51 to 2.05
1.73-2.00	Wright Ave to Oakes Ave	Local need	Provide pedestrian bulb-outs and wider sidewalks; replace Pennsylvania Ave span-wire traffic signal	Historic "Old Town" Cle Elum Draft Subarea Plan	\$1.0 to 1.5
2.00	Oakes Ave.	Safety	Construct Signal	SCR Signals/ Channelization List	\$0.1 to 0.2
2.30-2.80	West Cle Elum	Local need	Construct sidewalk for high volume pedestrian traffic, provide pedestrian crossing at Stafford Street	City of Cle Elum Comprehensive Plan	\$0.25 to 0.35 (included in widening to 12 ft lanes, 6 ft shoulders)
2.68-4.67	Ranger Sta. Rd to Roslyn	Safety	<i>Short term:</i> channelize major intersections <i>Long term:</i> construct two-way left turn lane	Public comment & WSDOT Development Services	<i>Short term:</i> \$0.11 each <i>Long term:</i> \$0.85 to \$1.15
2.95 - 7.90	Cle Elum to Ronald	Local need	Establish a consistent, reduced speed limit on SR 903	Public comment	---
4.20	Bullfrog Rd	Safety	Construct intersection improvements	SCR Signals/ Channelization List	\$0.25 to 0.30
6.57	SR 903 / Horvatt Rd	Safety	Realign intersection improvements	WSDOT Development Services	(funds provided by private developer and County)

Examples of Improvement Needs

The following photographs show examples of improvement needs listed in Table 5-1 and shown on the strip maps in Appendix C. The City of Cle Elum reports insufficient storm water drainage as a significant problem along SR 903 within the city limits. When route improvements are being scoped or designed, the South Central Region Maintenance Office should be contacted for a more thorough and updated assessment.



1

Narrow shoulders - Improvement strategies call for 12 ft lanes and 6 ft shoulders, MP 2.3 – 2.8



2

Entrance to Cle Elum and Roslyn Elementary School. Improvement strategies call for two-way left turn lane from MP 2.68 - 4.67.



3

Narrow shoulders – Vicinity MP 6.0
Improvement strategies call for 12 ft lanes and 6 ft shoulders entire route



4

Narrow roadway – Vicinity MP 8.4
Improvement strategies call for 12 ft lanes, 6 ft shoulders entire route.

Stakeholder Involvement

This *RDP* was created with the help of an internal Stakeholder Steering Committee including representation from **Construction, Environmental, Maintenance, Materials, Planning, Program Management, Project Development, Real Estate Services, Traffic, and the Regional Administrator. The Washington State Patrol** was also invited to provide details regarding operating conditions on the route.

External stakeholders were involved in the development of this *RDP* early in the planning process. The **Quad County RTPO** discussed the progress of this project at their quarterly meetings, which included representation from the **cities and towns throughout Kittitas County**. This *RDP* was presented to the RTPO member agencies for their review, comment, and verification of consistency with the RTPO Transportation Plans and local comprehensive plans.

Public Involvement

The *RDP* was also presented to the **general public, local business owners, Okanogan-Wentachee National Forest**, and the **Washington State Patrol** at a local open house on December 3, 2002, for public input and comments on the plan. Areas of concern brought up at the open house included:

- Establishing a consistent, reduced speed limit from Cle Elum to Ronald;
- Constructing the City of Cle Elum's planned pedestrian bulb-outs at city street intersections with SR 903; and
- Completing the Oakes Avenue interchange with I-90, and possibly providing a more direct connection to South Cle Elum.

The speed limit concerns and the pedestrian improvements are listed in Table 5-1, Route Improvement Solutions. Completing the Oakes Avenue/I-90 interchange is outside the limits of the SR 903 corridor. Providing the missing interchange movements will be added as an I-90 project in the next Highway System Plan. Building a direct connection from Oakes Avenue to South Cle Elum is a local project.

The *RDP* will be updated periodically to keep pace with changing transportation needs and existing conditions. It is important to keep the stakeholders involved during future updates of this *RDP* and as improvement solutions are being implemented.

Consistency with Other Plans

Development of this *RDP* is consistent with local plans of jurisdictions that the SR 903 route travels through. These plans include:

- Kittitas County Planning Commission's Recommendations on the Comprehensive Plan, May 30, 1996.
- Kittitas County Comprehensive Plan, April 1996.
- City of Cle Elum Comprehensive Plan, July 8, 1997.
- City of Roslyn Comprehensive Plan – 1997 amendment.
- Quad County RTPO's Regional Transportation Plan, June 1994.
- WSDOT's Highway System Plan – 2003-2022.
- WSDOT's Washington Transportation Plan – 2003-2022.
- City of Cle Elum's "Historic 'Old Town' Cle Elum Draft Sub-area Plan," October, 2000
- City of Cle Elum's Draft Bullfrog Sub-area Plan, approved January 2002, revised February 19, 2002, and clarified June 18, 2002

Appendix A: *Definitions and Descriptions*

Access Classifications

Limited Access Facilities: where access rights have been legally acquired, usually purchased, from the abutting property owners by the State. The WSDOT Master Plan for Limited Access Highways lists both established and planned limited access sections for state routes, and designates the type of limited access – full, partial or modified.

Access Managed Facilities: where the State permits abutting property owners access according to spacing and use guidelines based on the identified access management classification of the highway. Access management intends to provide coordinated vehicle access to the state highway system that is consistent with the local land uses. Typical characteristics of access management classifications are:

Class 1: High speeds and volumes, long trips, serving interstate, interregional, and intercity travel. Service to abutting land is subordinate to service of major traffic movements. One mile intersection spacing, minimum private connection spacing at 1320 feet, or one per parcel. Restrictive where multi-lane is warranted.

Class 2: Medium to high speeds and volumes, medium to long trips, serving interregional, intercity, and intra-city travel. Service to abutting land is subordinate to service of traffic movement. Restricted to intersections spaced one-half a mile apart, minimum private connection spacing at 660 feet, or one per parcel. Restrictive where multi-lane is warranted.

Class 3: Moderate speeds and volumes, short trips, balance between land access and mobility, serving intercity, intra-city and intercommunity travel. Used where land use is less than maximum build-out, but development potential is high. Restricted to intersections spaced one-half a mile apart, less with signal progression analysis, and minimum private connection spacing at 330 feet.

Class 4: Moderate speeds and volumes, short trips, balance between land access and mobility, serving intercity, intra-city and intercommunity travel. Used where land use is less than maximum build-out, but development potential is high. Restricted to intersections spaced one-half a mile apart, less with signal progression analysis, and minimum private connection spacing at 250 feet.

Class 5: Low to moderate speeds, moderate to high volumes, short trips serving intra-city and intercommunity travel. Service to land access dominant function. One quarter mile intersection spacing, less with signal progression analysis, and minimum private connection spacing at 125 feet.

Federal Functional Classification

A roadway's functional classification indicates its character and the traffic service it provides. The functional classifications used on highways, from highest to lowest classification, are *Interstate, principal arterial, minor arterial, and collector*. The higher functional classes give more priority to through traffic and less to local access.

Freight and Goods Transportation System

The transportation commission, in cooperation with cities, counties, and regional transportation planning organizations, designated the Freight and Goods Transportation System (*FGTS*). Routes are classified by total tonnage of freight carried each year with the designations shown below:

T-1: Over 10 million tons

T-2: 4 million to 10 million tons

T-3: 300,000 to 4 million tons

T-4: 100,000 to 300,000 tons

T-5: Over 20,000 tons in 60 days

Highways of State-wide Significance

The Highways of State-wide Significance (*HSS*) include highways, arterials, and ferry routes that connect major communities across the state and support the state's economy. State highways not classified as HSS facilities are referred to as Regionally Significant State Highways, or "*non-HSS*" facilities.

Highway System Plan

The Highway System Plan (*HSP*) is the state highway element of Washington's Transportation Plan. The Highway System Plan forms the basis for development of future state highway programs, projects, and budgets. The plan defines service objectives and proposes strategies for maintaining, preserving, and improving state highways.

Level of Service Analysis

As part of the development of Washington's Transportation Plan (*WTP*), WSDOT has developed the travel delay methodology for evaluating transportation system performance. In 1999, the Washington State Transportation Commission adopted a congestion relief policy underlying the development of the WTP. It states that WSDOT's improvement strategies should:

"... Improve travel time reliability and reduce travel delay for people and freight on the state highway system. These improvements should be measurable and noticeable to the public."

The travel delay methodology is a performance measurement tool to determine current and future 24-hour congestion conditions on state highways. Highway segments with capacity deficiencies are identified in the Highway System Plan list of needs.

On Highways of Statewide Significance, the congestion index (annual average daily traffic divided by hourly capacity ratio) is used to determine the congestion deficiency. Values of 6 for rural highways and 10 for urban highways were established as the deficiency thresholds for capacity improvements. Compared to traditional measures, these values equate roughly to LOS "D" operation in urban areas and LOS "C" in rural areas.

The traditional method of determining level of service is based on the Transportation Research Board's Highway Capacity Manual. This methodology gives LOS values from A through F. LOS A is the highest level of traffic operations and is characterized by virtual

free flowing traffic. The levels are scaled down so that LOS E represents flows that approximate capacity, and LOS F characterizes vehicle volumes on the roadway exceeding capacity. For LOS F conditions, flow is sporadic and occasionally completely stopped.

Daily Traffic Volumes: The number of vehicles that pass a given point in both directions during a specific period of time is recorded to determine Annual Average Daily Traffic Volume¹⁰ (AADT). The traffic counts are adjusted using various factors such as seasonal, axle, and historical counts for the previous four years.

Truck Volumes (T-Factor): The volume of truck traffic, which also includes large recreational vehicle traffic, is displayed as a percentage of truck traffic as compared to total traffic during the peak hour, which is referred to as the T-Factor¹¹. The peak hour period is defined as the maximum hourly traffic during the day from actual counts.

K-Factor: The K-factor is defined as the percentage of the annual average daily volume occurring in the peak hour. The peak hour is the highest volume hour for the twenty-four hour period.

Peak Hour Factor: The peak hour factor is a measure of traffic demand fluctuation within the peak hour. The hourly volume during the peak hour is divided by four times the peak 15-minute flow during the peak hour.

Directional Factor (D-Factor): The percent of traffic volume during the peak hour period in the peak direction, as compared to the total daily traffic volume, is the directional factor or D-Factor¹² (%D). The directional factor is also referred to as the peak hour split percent. The peak hour is defined as the maximum hourly traffic during the day from actual counts.

Growth Factors: Growth factors are determined by the Traffic Data Office, and supplemented by information from the local jurisdictions.

Metropolitan Planning Organization (MPO)

The agency designated by the Governor to administer the federally required transportation planning process in a metropolitan area. An MPO must be in place in every urbanized area over 50,000 in population. The MPO is responsible for the 20-year long-range plan and the Transportation Improvement Program.

¹⁰ WSDOT TRIPS Traffic Count History

¹¹ WSDOT TRIPS Traffic Count History

¹² WSDOT TRIPS Traffic Count History

National Highway System

The National Highway System (*NHS*) is an interconnected system of principal arterial routes that serves interstate and interregional travel, meets national defense requirements, and serves major travel destinations.

Regional Transportation Planning Organizations

Authorized by the legislature in 1990 as part of the Growth Management Act. Regional Transportation Planning Organizations (*RTPO*) are voluntary organizations with representatives from state and local governments to coordinate transportation planning activities within a region. MPOs also function as a regional transportation planning organization.

Roadside Character

The roadside character describes the general character of the landscape from the pavement edge to the right-of-way boundaries, from the user's perspective. Roadside character is either natural, which includes *Forest* and *Open*, or built, which includes *Rural*, *Semiurban*, or *Urban*. The WSDOT Roadside Classification Plan, 1996, documents the classification process for all WSDOT highways.

The goals of the Roadside Classification Plan are to:

- Promote transportation safety and management efficiency.
- Minimize environmental and social impacts of transportation facility construction and maintenance.
- Facilitate protection and restoration of Washington's natural environment and cultural heritage within state highway roadsides.
- Promote cooperation and communication in roadside management.

Safety Programs

Pedestrian Accident Location (PAL) is the designation given to a highway section typically less than 0.25 miles where a two year analysis of pedestrian accident history indicates that the section has a significantly higher than average accident and severity rate.

High Accident Location (HAL) is the designation given to a highway section typically less than 0.25 miles where a two year analysis of collision history indicates that the section has a significantly higher than average collision and severity rate.

High Accident Corridor (HAC) is the designation given to a highway corridor (one mile or greater in length) where a five-year analysis of collision history indicates that the section has higher than average collision and severity factors.

RISK is the designation given to a highway location where geometrics, traffic volumes, and speed limits indicate a high probability of run-off-the-road accidents.

Scenic and Recreational Highway System

The Scenic and Recreational Highways Act of 1967 established the Scenic and Recreational Highways Program in response to the national interest in the highway beautification movement.

Federal funding is available for recognized Scenic and Recreational highways to develop the scenic byway programs and to accomplish corridor planning for maintaining the intrinsic qualities of the corridor.

Zoning in Cle Elum

Commercial: There are 52 acres of commercially zoned land in Cle Elum. These commercial land uses include pedestrian oriented businesses in the old central business district and automobile oriented resulting in a strip development corridor.

Industrial: There are 109 acres currently zoned industrial, most of which is located in the 100 year floodplain.

Residential: There are 294 acres or 62% of the total land ownership designated as residential in Cle Elum.

Zoning in Kittitas County

Forest and Range: This zone provides for an area where natural resource management is the highest priority. The minimum lot size is generally twenty acres, with one-half acre allowed for lots within approved platted cluster subdivision served by public water and sewer or six thousand square feet allowed for lots on existing municipal sewer and water systems.

General Industrial : This zone is intended to accommodate certain industrial structures and uses that could create serious problems of compatibility with other kinds of land uses and to protect such districts from encroachment by conflicting land uses.

Master Planned Resort: This zone includes properties the Board of County Commissioners determines are appropriate for development as a master planned resort. A master planned resort shall be located only on a site of at least 320 contiguous acres.

Planned Unit Development: This zone provides for and encourages a harmonious mixture of land uses with greater flexibility in land use controls than is generally permitted by other zoning sections.

Rural 3: This zone provides for an area where residential development may occur on a low-density basis. The minimum lot size is three acres for lots served by individual wells and septic tanks and one-half acre for platted cluster subdivisions served by public water and sewer systems.

Suburban: This zone provides for and protects low-density semirural residential development chiefly in outlying transitional areas where a mixture of residential and traditionally rural land uses will be compatible. The minimum lot size is one acre with an average width of not less than one hundred fifty feet; provided however, that minimum

lot sizes in platted subdivisions shall be computed on the basis of one lot per gross acre with a minimum size of not less than 0.75 acre.

Zoning in Roslyn

Commercial Central: Lands that are characterized as retail with some light manufacturing. Buildings are storefronts and are required to use the city's historical design code. The block long section of Pennsylvania Avenue between First Street and Second Street is the core of the commercial district, with most other commercial activity occurring within one block of this core.

Public: Lands that are owned by the city or other public agency. These lands are held primarily for the performance of public services. Encouraged uses include City Hall, Fire Station, Cemeteries, parks and school sites, city service sites and other public facilities. Other associated uses may include community centers, churches, recreational developments, and parking.

Residential Low Density: This designation is given to Roslyn's historic established neighborhoods consisting primarily of single-family homes. The intent of the district is to preserve these neighborhoods for detached single family dwellings in the historic style of the period in which most homes there were built, which was 1900-1940.

Appendix B: *Design Matrix*

The following page shows the design matrix current at the time this RDP was approved.

Appendix C: Route Development Plan Sheets

The following six sheets present a detailed look at the elements described in the previous chapters.