

SR 26 – WEST OF OTHELLO ADD PASSING LANE



Visual Discipline Report

November 2009



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Chapter 1 Introduction and Project Description

What is the SR 26 West of Othello Passing Lane Project?

1 Why is the Washington State Department of Transportation (WSDOT) adding a passing lane?

This project proposes to create an eastbound passing lane with the widening for the passing lane on the south side of SR 26. The purpose of the addition of the passing lane is to provide commuters with a safe and easy means of passing on the eastbound side of SR 26. A significant portion of the 66 accidents that occurred on this stretch of roadway during the past five years were passing related. The passing lane will be 12 feet wide and the shoulders will add an additional 4 feet.

The End Result

By adding a passing lane, it is anticipated that the number of passing related collisions will be significantly reduced along this stretch of SR 26.

2 What is the project timeline?

This project is scheduled for construction in the 2010 construction season, in a single phase.

3 What is the no-build alternative?

The no-build alternative would involve routine maintenance on the roadway to maintain safety, but no passing lane would be built. It is anticipated that the number of passing related collisions in this area would increase over time as more people use the roadway.

Chapter 2 Methodology

1 Why do we consider aesthetics, light, and glare as we plan this project?

The visual experience is an important component of a project and its impact on the environment. How a project looks and fits into the natural or built environment is closely allied with how it functions as a facility. Visual quality is a fundamental concept in planning and analysis. Public concern over negative visual impacts of a project can be a major source of opposition to projects. The visual effect of any alteration must be thoroughly analyzed during project development. Temporary visual impacts during project construction must also be considered.

Both the State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA) require an environmental analysis be performed during project development to minimize harm to the human, physical, or biological environment. Both acts seek to provide safe, healthful, productive, and aesthetically and culturally pleasing surroundings.¹ The visual impact of a project is recognized by

¹ National Environmental Policy Act (NEPA), 42 USC 4321-4347 (1969) Declares that it is the “continuous responsibility” of the federal government to “use all practicable means” to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.”

State Environmental Policy Act (SEPA), RCW 43.21C.020 2b Assures for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings. <http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21C.020>

the Washington State Department of Transportation's (WSDOT's) approach to project development. For these reasons visual quality is an important element to consider in environmental documentation. Visual quality is just one of the many parameters evaluated to determine if a proposed project meets Federal Highway Administration (FHWA) and WSDOT standards and user expectations.

2 What are the key points of this report?

This visual discipline report describes the character and quality of the existing landscape and visual resources. It then looks at the degree of change in those visual resources and the anticipated viewer response to those changes, based on the sensitivity of the viewer and the frequency and duration of views. Views for analysis are selected to represent typical views from and toward the project area.

This analysis follows the guidelines found in the WSDOT *Environmental Procedures Manual*. Visual quality assessments were conducted in accordance with the United States Department of Transportation (USDOT) FHWA Visual Impact Assessment for Highway Projects, 1988.

3 What is the FHWA Assessment Method?

Visual quality is inherently subjective, however the FHWA methodology provides a process of evaluation that removes the subjectivity. It uses a qualitative and quantitative approach to analyze existing and proposed views of the project area. The process is repeatable by other experts.

Visual Quality

Landform, waterform, vegetation, and manmade elements are all analyzed according to three criteria. The three criteria used to perform an evaluative appraisal of the landscape visual quality are:

Vividness

The memorability of the visual impression received from contrasting landscape elements as they combine to form a

Exhibit 2-1
Form

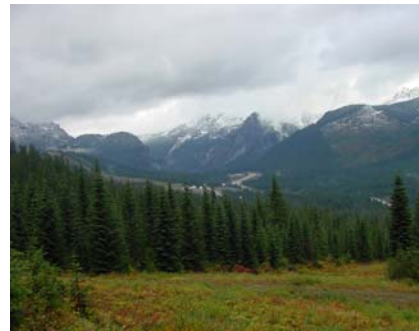


Exhibit 2-2
Line



striking and distinctive visual pattern. The photos on this page show exceptionally vivid scenes.

Intactness

Intactness is the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment, or eyesores.

Unity

The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

Expert evaluation based on the three criteria has proven to be a good predictor of the visual quality using the following sample equation:

$$\text{Visual Quality} = \text{Vividness} + \text{Intactness} + \text{Unity}$$

3

Each of the three criteria is independent. Each is intended to evaluate one aspect of visual quality.

The process in a visual analysis generally follows these steps:

1. Determine the project elements and their extent. This involves understanding all the elements of the project design. It also considers possible land use changes that may occur as a result of the project, such as conversion of farm fields to suburban uses or stormwater treatment areas.
2. Determine the visual extent of the project – this may extend far beyond the construction limits.
3. Determine who has views toward the project and what the views will be from the facility. The locations where the greatest change as a result of the project is also a factor in determining views selected for analysis.

Exhibit 2-3
Color



Exhibit 2-4
Texture



4. Evaluate viewer “sensitivity.” A person living along or next to the project may be more “sensitive” to visual changes than a traveler passing through once, because the resident’s duration or frequency of view will be greater. However, a person driving to the project vicinity to view the scenery would be very sensitive to changes. The number of viewers is also considered for selection of representative views.

5. Describe and evaluate representative views of the existing landscape before the project

6. Describe and evaluate the same representative views from and toward the project after its construction. This is possible because of the understanding gained in Step 1 and continuing conversation with the design team. It may also consider design simulations or models.

Visual Character

Visual character is an objective description of a landscape view that is made up of various natural and built elements. Each scene is made up of form, line, color, and texture. Features, or elements, that combine to form visual character are:

- Landforms – visual mass, scale, and shape of an object such as a mountain, hill, or plain.
- Vegetation – species, color, size, maturity, form, placement, and scale.
- Water forms – existence in the view, mass, color, linear form, and reflected light.
- Structural Elements – Buildings, utility lines, roads, lighting, bridges, walls, etc.

These four form types are evaluated for their vividness. Intactness and unity, as defined earlier, are rated separately. The scores for each are combined to give an overall rating for each representative, or key view, both before and after the project

**Exhibit 2-5
Landform**



**Exhibit 2-6
Vegetation**



**Exhibit 2-7
Waterform**



The change in ratings for each view is considered to be the positive or negative visual impact. Views may improve or decline after a project. Suggestions for mitigating negative visual impacts of the project are included in this report

Rating Scale

Vividness Ratings:

Very High (Rating Value = 7)

The visual impression received is highly memorable, in a good way, as contrasting landscape elements combine to form distinctive, yet harmonious visual patterns. Strongly defined landscape or landforms are noted, including mountains, large bodies of water, distinctive patterns, colors, and textures of vegetation or significant manmade structures. This often occurs where a change in landscape character occurs. For example, approaching Seattle from the water, or approaching the mountains from a valley.

Medium Rating (Rating value = 4)

The visual impression received is moderately memorable, with some distinctive patterns; moderately defined landscape or landforms are present, including low rolling hills, and smaller water bodies. Vegetation patterns, colors, and textures are less visible. Some significant manmade structures may be present.

Very Low Rating (Rating value = 0)

The visual impression received is not memorable, or may be memorable because it is so bad. Little visual pattern is formed because landscape elements have become mundane. There is often clutter that distracts from a natural setting. Homogeneous landforms or landscapes and small bodies of water may be present. Vegetation patterns, colors, and textures are not noticeable and well-designed manmade structures are insignificant or not present.

Exhibit 2-8 Structural Elements



This view toward Mount Rainier is an exceptionally vivid one, which would have a very high rating.

Intactness Ratings:

Very High (Rating Value = 7)

There is a high visual integrity between the natural and manmade landscape to the extent that the landscape is free from visual eyesores. Visual integrity occurs where natural areas and manmade landscapes blend into the surrounding character and create no visual discontinuity between the natural and manmade elements. Natural and manmade patterns are not disturbed and they maintain visual order.



This is an example of an intact rural scene with a very high rating

Medium (Rating Value – 4)

There is an average visual integrity between the natural and manmade landscape. Some visual encroachment on to the landscape is present and it lacks visual order. There is some disruption of the natural and manmade patterns.

Very Low (Rating Value = 0)

There is low visual integrity between the natural and manmade landscape features. Visual eyesores and clutter in the landscape is very apparent. The pattern of elements is disrupted and the integrity of the natural visual order is lost.

Unity Ratings:

Very High (Rating Value = 7)

The visual elements of the landscape join together to form a highly coherent, harmonious visual pattern. Manmade and natural elements blend with and reinforce each other.



This is an example of a unified rural scene with a very high rating.

Medium (Rating value = 4)

The visual elements of the landscape join to form a moderately coherent, harmonious visual pattern. Manmade elements blend with natural elements, but the visual order is disrupted.

Very Low (Rating Value = 0)

Visual resources do not join to form a coherent, harmonious visual pattern. Manmade elements do not have a visual relationship to natural landforms or land cover patterns and visual order is lacking.

A total visual quality rating change of 1.0 or greater is considered to be a significant visual impact for the purposes of this report. A total visual quality rating change of less than 1.0 point is not considered to be a significant visual impact.

Chapter 3 Affected Environment

1 What is the study area for this analysis and how was it determined?

The study area begins at mile post 34.75 to mile post 35.25 of SR 26. The eastbound passing lane will be constructed adjacent to the existing eastbound lane. The project work will consist of adding 16 feet of new pavement to the south, which will require cutting and filling slopes, extending five culverts, crushed surface base course, paving with HMA, removal of large rocks/boulders, and painting new lines. All roadwork will occur on the south side of the road. The *WSDOT Highway log* lists SR 26 a non-NHS route and functional class is Urban Minor Arterial.

Given the open nature of the area, changes to the existing roadway will be visible from views not adjacent to the roadway.

The *Roadside Classification Plan* (WSDOT 1996), classifies the roadside here as “Rural” and “Open” in character. This is a natural and agrarian environment. Vegetation is either native shrubs and grasses, or irrigated agricultural fields.

Exhibit 3-1 shows the project limits and key views that are analyzed in this report.

**Exhibit 3-1
Location of Key Views**



2 What studies were considered?

No other reports were available to review at the time of writing this report.

3 How was information on visual quality collected?

On-site investigation

Information on visual quality was collected during site visits and from photographs.

Viewer Analysis

People viewing this project are generally traveling through the area either for business, or as a commute. People traveling as a commute through the project are assumed to be moderately sensitive to the change in views. People traveling for business will likely fall into two classes, agrarian and non-agrarian business. Given the nature of the surrounding landscape, those who are in an agrarian business will likely be more sensitive to the changes to the roadside character than those in a non-agrarian business.

Views for Analysis

4 What is the existing visual quality in the study area?

Three Key Views were chosen to analyze existing visual quality and potential visual quality as a result of the project. These views were chosen because they are representative of views toward and from the roadway. There is only one Landscape Unit within the project limits. The topography is gently sloping or flat.

Key View 1 - View west towards the road – Approximate MP 34.87

Key View 1 is taken from the beginning of project; at mile post 34.63 looking west, the proposed passing lane will be located on the right hand side of the photo.

**Exhibit 3-2
Key View 1 - View towards project – MP 34.87**



Pavement and native vegetation is seen in the foreground. The middle ground contains native vegetation, power lines, and agricultural fields. A small hill is seen in the background, covered in native vegetation. Visual quality in this Key View is Moderately High (4.4), due to Unity and Intactness.

Visual Quality Ratings

Visual quality is measured on a scale from 0 to 7. Over the years, I have been able to match qualitative descriptors for my total visual quality ratings.

7 – Dramatic, pristine natural environment with water, mountains, and mature vegetation or a superb example of a built environment in a dramatic physical setting.

6 – Very High

5 – High

4 – Moderately High

3 – Average

2 – Moderately Low

1 – Low

Key View 2 - View West from Approximate MP 35.00

Key View 2 looks west from the roadway along the westbound lane. Foreground views are of the roadway. The middle ground view shows diverse native vegetation, overhead power lines and adjacent agricultural field, with water system. The back ground view shows the Saddle Mountains.

Exhibit 3-5

Key View 2 - View West from MP 35.00



This view rated High at 5.0, because of the intact rural character and the high degree of visual unity. The scene is vivid, or memorable because of the mountains in the background, the vegetation, and the rural character.

**Key View 3 - View South from neighboring Home,
Approximate MP 35.17**

Key View 3 looks south from an adjoining property back toward the project. Foreground views are of a fenced agricultural field. The middle ground view shows a circle irrigation system. Background views are of native vegetation, more agricultural fields across SR 26 and the foothills of the Saddle Mountains.

Exhibit 3-6

Key View 3 - View south from neighboring home



This view rated 4.3, Moderately High to High. Some man made elements and encroachments are visible in this view, lowering the vividness rating to Average. Although the vegetation visible in the fore and middle ground is mainly non-native, it does represent an intact and unified agricultural view, therefore Intactness and Unity were rated as High.

Key View 4 - View East from Approximate MP 35.25

Key View 4 looks east from the end of the project, back along the proposed passing lane. Foreground views are of native vegetation. The middle ground view shows an overhead power line and native shrubs. Background views are of native vegetation and distant hills.

Exhibit 3-6

Key View 4 - View east from MP 35.25



This view rated 4.4, Moderately High to High. Vividness was rated Average, with development and man made elements affecting the overall score. Intactness and Unity rated as High.

Chapter 4 Potential Effects

1 How are impacts identified?

Impacts were characterized using the methodology described in Chapter 2. A total visual quality rating change of 1.0 or greater is considered to be a significant visual impact for the purposes of this report. A total visual quality rating change of less than 1.0 point was not considered to be a significant visual impact.

2 Will project construction temporarily affect visual quality?

The project will temporarily impact visual quality during the construction period. There will be heavy equipment working within the project limits, which may create some dust and distractions for drivers in the project vicinity. Lanes will be narrowed or closed while work is being done. These impacts will be temporary and do not require mitigation.

The Contractor may use lighting to enable work at night. The project will use directional lighting to minimize night sky impacts.

3 Will there be effects on visual quality if the project is not built?

If the project is not built, traffic congestion will continue to worsen. Increased traffic increases light and glare. It is

anticipated that vehicular accidents will also continue to increase.

4 How will the project permanently affect visual quality?

The project will permanently widen the roadway thereby increasing the development in the environment. This report assumes that all roadside areas within the project limits will receive, at minimum, Treatment Level 2 as described in the *Roadside Classification Plan*. This includes seeding with native grass seed and contouring slopes to maintain a natural appearance.

Vegetation will be removed on the right side of the roadway throughout the project area, increasing the roadway width. Similar passing areas are found on SR17. A photograph of a similar passing lane, located northeast of the proposed project, is available below to demonstrate the visual impacts.

Exhibit 4-1

Anticipated design - photo on right is an existing passing lane on SR 17

Existing:

Proposed:



Key View 1 is taken from the beginning of project, mile post 34.87.

Post project the Key View is rated at 4.0, down from 4.4. This view was slightly impacted by the increase in the man made element ratings, and a slight decrease in the Unity of the view because of the increase in pavement.

**Exhibit 4-2
Key View 1**



Key View 2 - View North from MP 35.00

Key View 2 will likely have a cut bank on the right to accommodate the additional paving and shoulder. The removal of this bank, and the vegetation associated with it, drop the overall visual score from 5.0 to 4.3, a Moderately High rating.

**Exhibit 4-3
Key View 2**



Key View 3 - View south from MP 35.17

Key View 3 as existing was rated 4.3. After construction, more vegetation will be removed, and more asphalt will be added to create the additional lane. Whether that is visible from this location, is doubtful. However, this location

**Exhibit 4-4
Key View 3**



is a residential home and viewers can be expected to view the scene often and at a long duration. Because of this, total Visual

Quality for this view will drop to 4.2, reflecting the additional man made elements which may be perceived.

Key View 4 - View south from MP 35.25

Key View 3 as existing was rated the lowest of the views within the project. After construction, more vegetation will be removed, and more development will be evident. Total Visual Quality for this view will become 4.0, Moderately High, a slight drop from existing, which was 4.4.

Exhibit 4-5
Key View 4

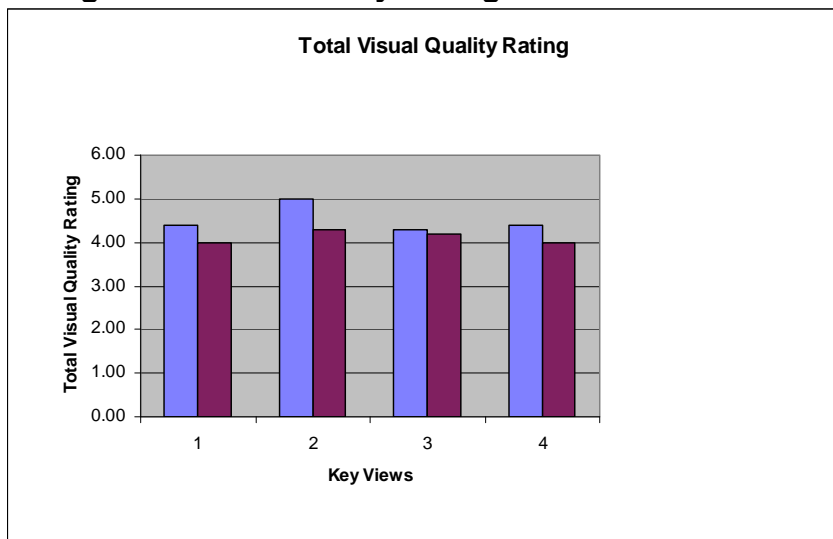


5 What are the direct effects to Visual Quality?

The project will lower the overall Visual Quality of the project corridor from 4.9 to 4.3. This slight changes results mainly from the additional expanse of pavement, and the associated loss of native vegetation. View 2 was impacted the most, due to the need to cut the west embankment to accommodate the lane.

The graph below shows the changes by view in visual quality. None of the views had changes of 1.0 or greater. Therefore, there are no significant impacts to the view shed as a result of this project.

Exhibit 4-6
Changes in Visual Quality Ratings



Chapter 5 Measures to Minimize and Mitigate Project Effects

1 What has been done to avoid or minimize negative effects?

There will be some unavoidable negative visual impacts due to the increase in pavement. The project design team is working to minimize the project footprint. In addition, the project will follow all the requirements in the *Roadside Classification Plan* for restoring the roadside to its open and rural character, this involves restoring native grass on the roadside.

2 What additional measures could be implemented to further reduce negative effects?

The project should minimize the amount of shrub steppe vegetation removed for the construction of the passing lane. Any shrub steppe vegetation which must be removed could be mitigated for by the inclusion of a shrub steppe seed species into the native grass seed applied to all disturbed roadside areas.

Appendix

Exhibit 7-1
Visual Analysis Matrix

VISUAL ANALYSIS MATRIX																		
SR 26 West of Othello - Add Passing Lane																		
ALTERNATIVE	EXISTING / PROPOSED	ORIENTATION TO FACILITY	VIEWPOINT	VIEW DISTANCE			VIEWER POSITION		VIVIDNESS				INTACTNESS		UNITY		TOTAL VISUAL QUALITY	
				FOREGROUND	MIDDLEGROUND	BACKGROUND	INFERIOR LEVEL	SUPERIOR	LANDFORM	WATERFORM	VEGETATIVE	MANMADE	AVERAGE	DEVELOPMENT	ENCROACHMENT	AVERAGE		UNITY
KEY VIEW 1	EXISTING	Toward	1				2		4	0	5	4	3.3	5	5	5	5	4.4
MP 34.87	PROPOSED								4	0	4.5	3.5	3	5	5	5	4	4.0
KEY VIEW 2	EXISTING	Toward	2				3		5	0	5	4	3.5	5	6	5.5	6	5.0
MP 35.00	PROPOSED								4.5	0	4	3	2.9	4.5	5.5	5	5	4.3
KEY VIEW 3	EXISTING	Toward	3				2		4	0	4	4	3	5	5	5	5	4.3
MP 35.17	PROPOSED								4	0	4	3.5	2.9	5	4.5	4.8	5	4.2
KEY VIEW 4	EXISTING	Toward	4				3		3.5	0	5	4	3.1	5	5	5	5	4.4
MP 35.25	PROPOSED								3	0	3.5	3.5	2.5	4.5	4.5	4.5	5	4.0

Riser's Total Visual Quality Score Breakdown
 7 - Dramatic, Pristine Natural Environment with water, mountains, and mature vegetation or Superb example of built environment in dramatic physical setting.
 6 - Very High
 5 - High
 4 - Moderately High
 3 - Average
 2 - Moderately Low
 1 - Low

Legend:
 Existing
 Equal to Existing
 Higher than Existing

Unity:
 7 - Very High
 6 - High
 5 - Moderately High
 4 - Average
 3 - Moderately Low
 2 - Low
 1 - Very Low
 - Non existent

Vividness:
 7 - Very High
 6 - High
 5 - Moderately High
 4 - Average
 3 - Moderately Low
 2 - Low
 1 - Very Low
 - Non existent

Intactness:
 Development:
 7 - No development
 6 - Little development
 5 - Some development
 4 - Average level of development
 3 - Moderately high development
 2 - High level of development
 1 - Very high level of development
 Encroachment (undesirable eyesores):
 7 - None
 6 - Few
 5 - Some
 4 - Average
 3 - Several
 2 - Many
 1 - Very Many

List of Preparers

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Affiliation		Certifications, Licenses, and Professional Organizations	Experience
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References

Visual Assessment for Highway Projects, U.S. Department of Transportation,
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