**Chapter 8. Visualizations**

Visualizations help the reader to “see” what the project would look like in the real world. For many readers, visualizations will be among the most valuable parts of an EIS. Lengthy text and engineering drawings can be confusing; a visualization that shows what a project would like can be the picture that is worth 1000 words.

There are many visualization techniques that can be used in NEPA documents. Some common examples include:

- **Computer-generated 3-D renderings.** Transportation projects include complex structures that can be difficult to describe in text or to depict in two dimensions on plan sheets. Computer-generated renderings give the reader a better understanding of the size and configuration of the structure. For example, renderings shown in this chapter depict a multi-level underground transit station, a new light rail-line located in the middle on an existing street, and the elements of a ferry terminal.

- **Photo simulations.** By inserting project elements into a photograph of the existing landscape, photo simulations can help to show how the project would alter the existing conditions. This approach can be especially useful in depicting the visual impacts of a project.

- **Cross-sections with artwork.** A cross-section drawing is a standard visual element in many NEPA documents for transportation projects. The value of a cross-section drawing can be enhanced by adding artwork that gives the reader a sense of context and scale. One of the examples in this chapter is a cross-section drawing that shows a bicyclist and pedestrians using a trail adjacent to a proposed transit line.

Developing visualizations will require involvement of team members with expertise in graphic design and may involve additional time and expense. If visualizations will be needed, it is important to allow for their development in the project schedule and budget.
Computer-Generated Renderings

- MD: Baltimore Red Line - Station
- MD: Baltimore Red Line - Tunnel Portal
- WA: Mukilteo FEIS - Ferry Terminal
Figure 2-13: Two-Level Underground Station Sections

Two-Level Underground Station – Cross Section

Two-Level Underground Station – Longitudinal Section

Techniques to note:
- renderings used to show project elements in three dimensions
Eleven parks, recreation lands, or open space areas are located within or adjacent to the Preferred Alternative. Long-term and short-term effects to park, recreation and open space areas are limited and include:

- Chadwick Elementary School – Of the 13.4-acre parcel, 0.7 acre of the property would be required for construction of and access to a proposed TPSS;
- Uplands Park – Of the 33.6-acre property, a temporary easement of 0.1 acre would be required to accommodate two eastbound lanes of traffic on the south side of Edmondson Avenue during construction, as well as a temporary sidewalk to maintain pedestrian access during construction.
- Edmondson-Westside High School – Of the 26.0-acre property, approximately 150 square feet of school property near the Edmondson Avenue and Athol Avenue intersection would be purchased in fee simple to accommodate intersection improvements and stormwater management. A temporary easement of 0.1 acre along Edmondson Avenue would be required for grading, and erosion and sediment control measures.
- Boston Street Pier Park – Of the 0.8-acre property, a fee-simple area of less than 0.1 acre would be required from this park to accommodate stormwater management for the Preferred Alternative. A temporary easement of less than 0.1 acre would be required for grading, sidewalk reconstruction and erosion and sediment control along Boston Street.
Key parts of a typical ferry terminal

**Fixed dolphin** – an assembly of steel piles or concrete drilled shafts supporting a concrete cap and a fendering system.

**Floating dolphin** – concrete or wooden barge structures located offshore clad with a perimeter fendering system and anchored to the seabed; used to help guide the ferry into the slip.

**Wingwall** – an assembly of steel piles or concrete drilled shafts supporting a steel or concrete cap and a fendering system to guide and stop the ferry at its loading and unloading position.

**Tower** – currently used to house and support the cable and counter weight system that supports, raises, and lowers the outboard end of the transfer span. (The tower system will be replaced by hydraulic lifts regardless of the alternative chosen.)

**Apron** – adjustable ramp at the end of the transfer span that accommodates varying water heights.

**Transfer span** – movable bridge that allows the vehicles and pedestrians access on and off the ferry; it is the link between the ferry and the trestle.

**Trestle and bridge seat** – over-water stationary pile-supported bridge structure that serves as a connection between land and the nearshore end of the transfer span for both vehicle and pedestrian traffic (pedestrians do not use the trestle if overhead passenger loading is available).

Figure S-3. Key Parts of a Typical Ferry Terminal
Photo Simulations and Artist’s Drawings

- NC: Mid-Currituck FEIS - Additional Lane
- WA: I-90 Snoqualmie - Avalanche Chute
- WA: I-90 Snoqualmie - 4(f) Avoidance
Techniques to note:
- photo simulations used to show how project elements overlaid on existing landscape.
What are the expected environmental consequences?

What beneficial effects would result?

No-Build Alternative

Under the No-Build Alternative, WSDOT would continue its slope stabilization program. This program would provide some direct beneficial effects, including improving safety and reducing the danger of avalanches and rock fall. These beneficial effects would be much smaller than for any of the build alternatives. There would be no indirect beneficial effects.
The eastbound bridge would be approximately 1,500 feet long and the westbound bridge would be approximately 1,200 feet long. Soldier pile tieback walls would retain the approach fills for both bridges. The average height above the Keechelus Lake reservoir high water level (pool) for both bridges would be 22 feet, with a maximum height of approximately 100 feet or more at low pool elevations.

Exhibit 5-10
Viaduct Bridge Avoidance Alternative - Artist's Rendition

The bridges would span an inlet and would be aligned mostly across the lake slope face, unlike a river crossing where bridges cross from one slope face to another. However, new geotechnical information...
Cross-Sections with Artwork
(e.g., to show landscapes elements, human activity, vehicles)

- CO: US 36 FEIS - Trail with Bicyclist
- MD: Purple Line FEIS - Trail and Hikers
- OH: Opportunity Corridor DEIS - Depressed Road
Techniques to note:
- Cross-section drawings include artwork (e.g., landscape, pedestrians, bicyclists) to provide sense of scale and context.
Continuing along the Georgetown Branch right-of-way, the transitway would cross Connecticut Avenue on a bridge. The Chevy Chase Lake station would be on the east side of Connecticut Avenue, elevated at the level of the bridge with connections to street level provided by stairs and elevators. The transitway would continue east, returning to grade, and then pass under Jones Mill Road. A new bridge, approximately 10 to 15 feet lower than the existing pedestrian bridge, would carry the transitway across Rock Creek. The Lyttonsville Yard would be located on the north side of the transitway, mostly west of the Lyttonsville Place bridge. The Lyttonsville station would be located east of the bridge. Continuing east in the Georgetown Branch right-of-way to the CSXT right-of-way, the transitway would continue parallel to the CSXT right-of-way on the south side (see Figure 2-7 for an illustration of a typical section along the CSXT right-of-way).

It would pass under the bridges at Talbot Avenue, 16th Street, and Spring Street within or adjacent to the CSXT right-of-way, at approximately the same elevation as the CSXT tracks. The Woodside station would be just east of the 16th Street Bridge. East of the Falkland Chase Apartments, the transitway would cross over the CSXT tracks to the north on an aerial structure and enter the SSTC parallel to, but higher than, the existing Metrorail tracks. The SSTC station platform would be located between the SSTC and the existing railroad tracks.

Silver Spring Transit Center to Takoma/Langley Park Transit Center—3.2 miles

For mapping of this area see the conceptual engineering plans CV-20 through CV-37, and environmental resource maps 9 through 15.

East of the SSTC, the transitway would turn away from the CSXT right-of-way and descend to grade on the south side of Bonifant Street in dedicated lanes. The transitway would cross Georgia Avenue at grade, shifting to the north side of Bonifant Street. Just before reaching Fenton Street, the transitway would turn north to pass through the future Silver Spring Library building, the location of a station, and enter the intersection of Fenton Street and Wayne Avenue. The transitway would continue on Wayne Avenue in mixed-use lanes in the center of the roadway. The Preferred Alternative would have a station in the center of Wayne Avenue east of Dale Drive.
Techniques to note:
- cross-section drawings include artwork (e.g., landscape, pedestrians, bicyclists) to provide sense of scale and context

Figure 1-3: Proposed Boulevard Section Views

- East 55th Street Bridge (Looking East)

- Typical Boulevard at Side Street Intersection