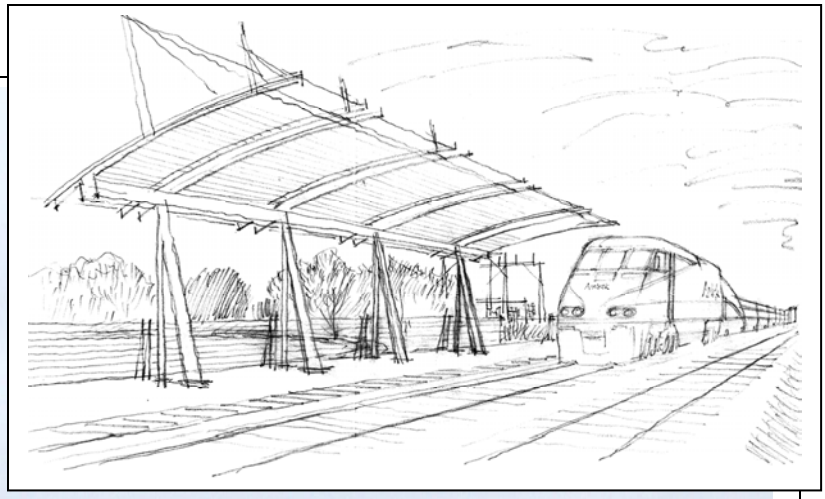
# Washington State

# Stanwood Station Project






Washington State Department of Transportation

May 2006

# Stanwood Station Project

**Prepared for the**

**Washington State Department of Transportation**

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**May 2006**

Washington State Department of Transportation

**Prepared by the Public Transportation and Rail Division**
**Washington State Department of Transportation**

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# Executive Summary

The Washington State Legislature provided the Washington State Department of Transportation (WSDOT) with $5.0 million to construct a new train station in the city of Stanwood. Upon completion of the station, Amtrak *Cascades* intercity passenger trains will begin stopping in Stanwood. This report was prepared by WSDOT to provide the public with an overview of the Stanwood Station Project and the steps WSDOT will take to complete the new facility by summer 2007.

## What is the Stanwood Station Project?

The Stanwood Station Project will create a place where the traveling public can get on and off Amtrak *Cascades* passenger trains. The new station is intended to serve as an interim facility that may be replaced by a larger multi-modal transportation facility some time in the future. The project will require close coordination with several entities, including the BNSF Railway Company (BNSF), city of Stanwood, Amtrak, private property owners, and local transit providers.

## Where will the new station be located?

The new Stanwood Station will be located on the west side of the BNSF main line and just north of where 271st Street NW crosses the railroad tracks (see **Exhibit ES.1** on the following page). The site is an undeveloped parcel of land that is one block away from Stanwood's downtown commercial business district.

## What are the key features of the project?

The new station will include a 750-foot long platform, passenger shelters, and other area improvements that will support safe and convenient access for rail passengers. The project will also include improvements to the adjacent roadway so that local transit service can be provided at the station.

## How much will the Stanwood Station cost?

The preliminary cost estimate for the new station is $4.5 million (in 2006 dollars). WSDOT intends to hold a portion of the $5.0 million funding in reserve in case construction costs increase or unforeseen environmental issues need to be addressed.

**Exhibit ES.1**
**General Vicinity of the Stanwood Station Project**


## When will the Stanwood Station be completed?

WSDOT intends to complete the project by summer 2007.

## What are some of the risks that could affect WSDOT's construction schedule?

WSDOT believes it is important to clearly communicate to the public any issues that could affect the department's ability to construct transportation projects on time and on budget. It is possible that the Stanwood Station Project could be delayed due to several factors. These are:

- Unforeseen environmental issues in the project area;
- The ability of WSDOT to obtain the necessary permits and approvals from the BNSF;
- Changes in federal regulations concerning rail platform design;
- Increasing costs for construction materials beyond the budgeted amount; or

- Loss of funding resulting from passage of voter initiatives in fall 2006.

## How will the community be kept up-to-date on the progress of the Stanwood Station Project?

WSDOT will provide regular updates on the status of the Stanwood Station Project on the department's Web site at:

www.wsdot.wa.gov/Projects/Rail/Passenger/StanwoodStation

WSDOT will also work with the city of Stanwood to schedule public meetings as the project moves ahead. The public is also encouraged to contact WSDOT at 800-822-2015 (in Washington State) or 360-705-7901, or by email at rail@wsdot.wa.gov with questions or suggestions.

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# Chapter One: Introduction

The city of Stanwood's development is closely tied to the growth of rail transportation in western Washington. In 1891, the Great Northern Railroad constructed its north-south main line one mile east of Stanwood's downtown. A rail depot was also built at this time. The location of the line and depot resulted in the development of East Stanwood. In 1904, a small trolley (the H & H Railroad) was built to connect the two Stanwood communities. The trolley provided passenger and freight rail service until the 1930s. Passenger rail service was also provided along the main line until the late 1960s.

The community's interest in passenger rail has not diminished over the years. As such, the Washington State Legislature appropriated $5 million (from the 2005 Transportation Partnership Account) for the study, design, and implementation of the Stanwood Station Project.


**The Great Northern Railroad (in the foreground) connects with the H & H Railroad**

*Photo courtesy of the Stanwood Area History Museum*

## What is the Stanwood Station Project?

The purpose of the Stanwood Station Project is to locate, design, and construct an interim rail station. The station will provide a place for passengers to get on and off Amtrak *Cascades* trains for the next several years. Pursuant to Substitute Senate Bill (SSB) 6241 PL, "Upon completion of the rail platform project in the city of Stanwood, the department [Washington State Department of Transportation] shall provide daily Amtrak *Cascades* service to the city."[1]

The Stanwood Station platform will be replaced by a permanent facility at some time in the future. The permanent facility will be a key component of

[1] *At the time of funding, the Washington State Department of Transportation was directed to construct a rail station to serve commuter rail. However, after reviewing the feasibility of extending commuter rail (from Everett) to Stanwood, it was decided by the legislature that providing Amtrak Cascades service would be more cost-effective. A summary of the requirements for commuter rail service at Stanwood is available from the WSDOT Rail Office.*

This minimal approach keeps costs down, facilitates the design and approval process, and allows for construction to begin as fast as possible.

While the station is intended to serve as an interim facility, it is being designed to last up to fifty years. This will enable the community to access Amtrak *Cascades* trains even if construction of the proposed Municipal Campus complex takes much longer than expected.

## Has Stanwood ever had passenger rail service?

Beginning in the late 1890s, passenger rail served the city of Stanwood. Train service varied over the years, ranging from one round-trip per day (in 1898) to as many as four in the 1930s. By 1969, just before the coming of Amtrak, all trains that had scheduled stops in Stanwood had been discontinued.

A route between Seattle and Vancouver, BC continued to run (without stopping in Stanwood) until Amtrak took over the route in May 1971.

After a year hiatus, Amtrak re-started service between Seattle and Vancouver, BC calling the trains the *Pacific Internationals*. In 1981, when ridership and revenues proved insufficient to sustain the service, all passenger rail north of Everett was discontinued.


**The Great Northern Railroad's Rail Depot in Stanwood circa 1960s**

Seattle to Vancouver, BC service did not begin again for more than a decade. But explosive growth in the region necessitated additional transportation alternatives, and in 1995, Amtrak's *Mount Baker International* began a daily round trip. In early 1999, the State-sponsored service became known as Amtrak *Cascades*. Later that year, a second train – between Seattle and Bellingham – was introduced. However, neither of these State-sponsored trains stop in Stanwood. Once the Stanwood Station Project is completed, both of these trains will provide passenger rail service to the community.

## Where is the project located?

The Stanwood Station Project is located next to the BNSF Railway Company's (formerly the Great Northern Railroad) north-south main line. **Exhibit 1.1**, on the following page, presents the general location of the

project. More specific information regarding the location of the station is presented later in this report.

## What is the purpose of this report?

The purpose of this report is to provide information regarding the design and cost of an interim rail station in Stanwood. The report includes conceptual site plans, cost estimates, a review of the environmental process that must be followed before the station can be constructed, and the coordination activities that WSDOT will undertake to support project implementation.

**Exhibit 1.1**
**General Vicinity of the Stanwood Station Project**

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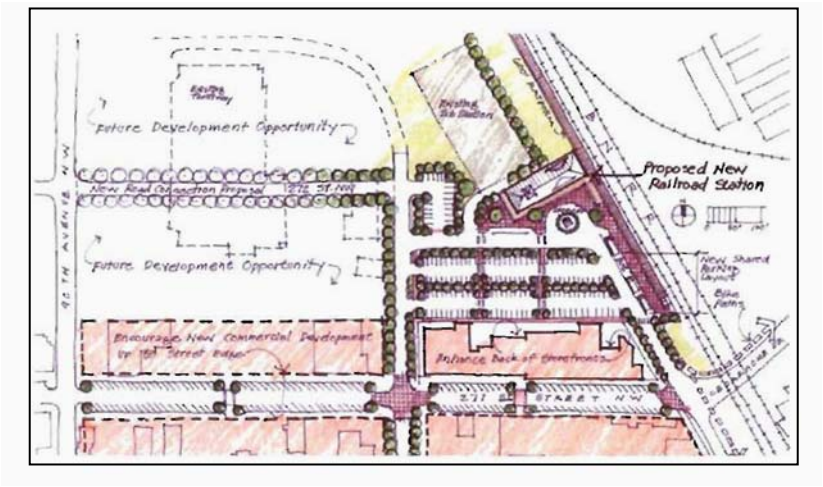
# Chapter Two: Project Site Description

WSDOT worked closely with stakeholders throughout the preparation of this report. A major objective was to ensure that the local community agreed with the location of the interim rail station. The project team first considered the Municipal Campus site identified by City staff and *Design Stanwood*[1] (see **Exhibit 2.1**). However, the development of the Municipal Campus project remains at the very early stages of planning, and therefore would not be compatible with the timeframe for construction of this Stanwood Station Project.

## Where will the station be located?

**Exhibit 2.1**
**Proposed Permanent Stanwood Station**



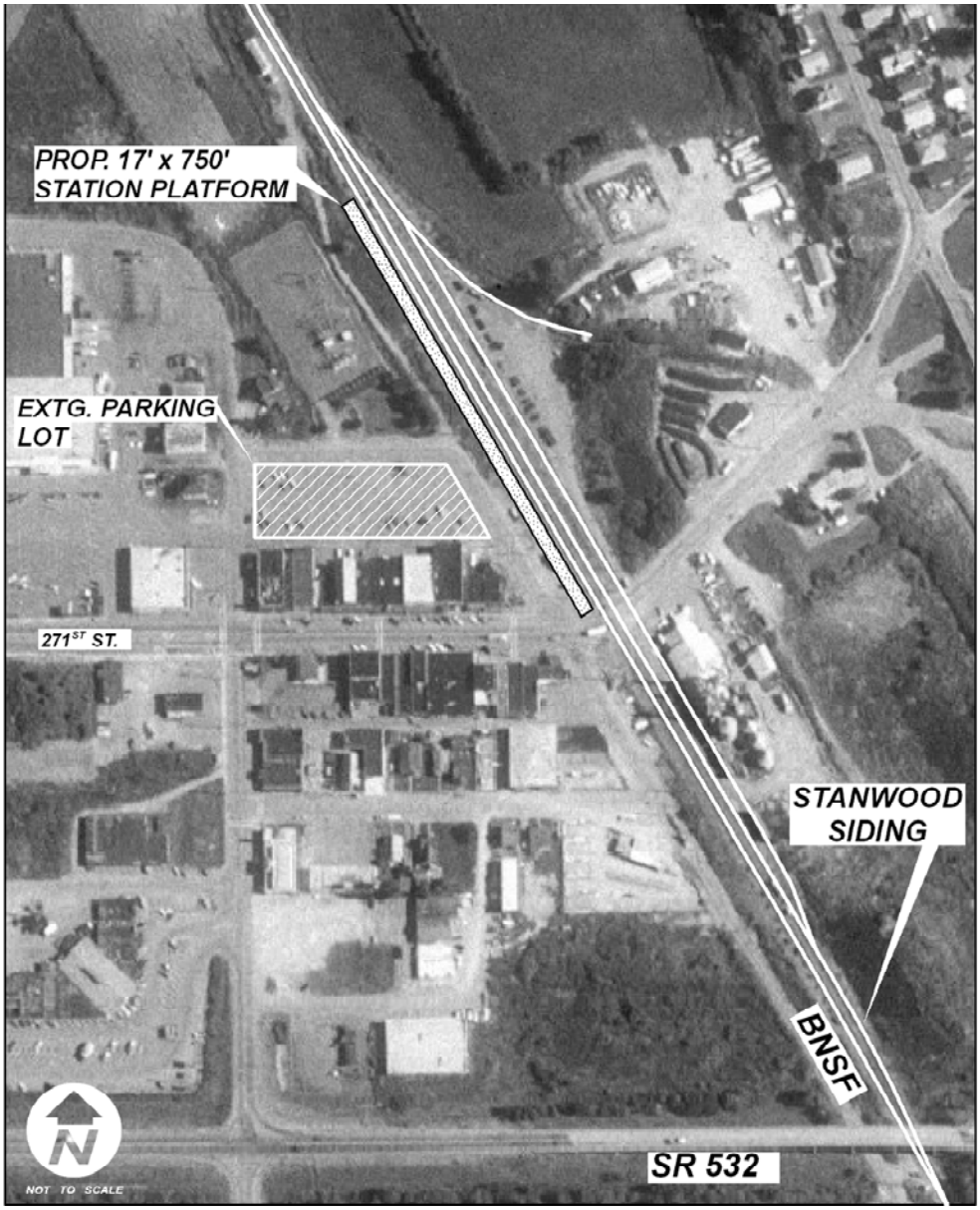

*Source: Design Stanwood, Design Assistance Team Report, May 2003*

The site selected for the interim station platform would be on the west side of the BNSF main line, beginning just north of the 271st Street NW grade crossing and extending north approximately 750 feet (see **Exhibit 2.2** on the following page).

This location would allow the use of the existing city parking lot (just north of 271st Street NW and west of Florence Avenue NW). The parking lot has 106 public stalls and seven reserved for police parking. Until the Municipal Campus is constructed, this would be the primary parking facility to serve rail customers. This location, is just south of (but overlaps slightly) the proposed Municipal Campus site location.

[1] *Design Stanwood, Design Assistance Team Report, May 2003*

**Exhibit 2.2**
**Location of the Interim Stanwood Station Platform**




## Does this location fit within the community?

The Stanwood Station will be located next to the East Stanwood downtown commercial area. By locating the platform near the 271st Street NW (Main Street) grade crossing, the facility would have immediate ties to the central business district where passengers have shopping and dining opportunities. The station and the businesses would be mutually accessible for pedestrians and waiting passengers.

## Existing Rail Line

The BNSF owns and operates the north-south single-tracked main line through Stanwood. The Stanwood segment is located on BNSF's Bellingham Subdivision, a subdivision that stretches from Everett north to the Canadian border.

**Stanwood siding looking north**

Typically, 25 to thirty BNSF freight trains move through Stanwood daily. The operating speed of the BNSF main line through Stanwood is rated at sixty miles per hour (mph) for freight trains and 79 mph for passenger trains. Trains operate under Centralized Traffic Control (CTC). The rail weight is 115 pounds and was laid in 1990 as continuously-welded rail. The ties are made of wood and were also installed in 1990.

Stanwood is the site of an existing 6,380-foot siding along the main line near rail milepost 56.0. The siding is used to allow trains moving in opposite directions to pass one another. An at-grade crossing at 271st Street NW splits the passing siding in two, diminishing its capacity to store long trains and causing the main line in this area to approach its carrying capacity. The siding is in poor condition and contributes to passenger train delays that range up to seventy minutes in duration.

WSDOT is currently working with the BNSF to improve the Stanwood siding so that trains can enter the siding at 35 mph rather than at the current speed of 10 mph. Construction will begin in 2007, and be completed in 2009. The siding improvements will upgrade the track to good condition. The goal of the siding project is to improve the operations of freight and passenger traffic on the main line.

In addition to the passing siding, there is also an industrial lead track in Stanwood that branches off the main line to the west, serving a foods warehouse.

## Roadway Network

The Stanwood Station platform site is located just north 271$^{st}$ Street NW. This roadway is linked to SR 532 (268$^{th}$ Street NW) via local streets, Old Pacific Highway, and Pioneer Highway. Some of these roadways may require

improvements in order to meet increased capacity needs due to new rail passenger traffic, as well as increased or re-routed bus service to the Stanwood Station platform.

## 271st Street NW Grade Crossing

The BNSF main line crosses 271st Street NW just south of the proposed station platform. Crossing gates are currently installed at this crossing. These gates are activated by an electronic motion detector. Essentially, whenever a train moving toward the crossing is within approximately one third of a mile of the crossing, the crossing gates are activated. If a moving train comes to a stop within one third of a mile of the crossing circuit, the lowered gates will recover to their normal raised position.

**271st Street NW Grade Crossing**

Locating the station platform near the grade crossing presents an operational concern. In practice, a southbound passenger train would activate the crossing gates as it approaches the station platform. Once the train stops, the gates would recover (return to the "open" position). When the train restarts, it would be required to "creep" at slow speed in order to activate the crossing gates so that they descend to a horizontal position at least ten seconds prior to the time the train occupies the crossing. To accomplish this, a locomotive engineer would be forced to "creep" the train for approximately twenty to thirty seconds. This can be a tricky maneuver for the locomotive engineer, as the nature of the locomotive's control systems increase the potential for rapid accelerations/ decelerations (which translate to a jerky ride for passengers) in such situations.

Another issue exists when trains stop near grade crossings and there are multiple tracks: motorists (or pedestrians) see the stopped train and, if the crossing gates are lowered, tend to assume that the gates are lowered due to the stopped train, without looking for other trains. In fact, if a single train came to a stop at the platform near the 271st Street NW crossing, the crossing controls would raise the crossing gates. However, if another train were approaching on the adjacent track, the gates would be lowered. A motorist could assume the stopped train was the cause of the lowered gates, and attempt to drive around the gates, only to be struck by the train approaching

on the other track. This situation is compounded when the moving train can't be seen because the view is blocked by the stopped train.

One way to reduce the potential for motorists to drive around lowered crossing gates is to locate the platform such that the locomotive will normally block the crossing when a train stops at the platform. This would require stopping a train that weighs several hundred tons, moving at nearly 80 mph, very accurately, which can be problematic. Any difficulties in accomplishing this are compounded by changing passenger loads, wet or slippery rail, or even wind conditions. Alternately, if the crossing is blocked by the train, the risk of a motor vehicle being struck on the crossing is greatly reduced. This situation, however, will result in more and longer in duration, crossing blockages. And, once again, if the train doesn't completely block the crossing, there is the possibility that a motorist might attempt to "sneak" around the end of the train, despite the lowered crossing gates.

### Local Transit Service provided by Community and Island Transit

Community Transit serves Snohomish County, including the Stanwood area with local and commuter service. Community Transit passengers can use two Park and Ride lots, known as Stanwood I and II. Stanwood I is located at Highway 532 and I-5, and is served by Community Transit local route 247 and commuter route 422 (Stanwood to downtown Seattle). Stanwood II, at Marine Drive and Highway 532, is served by local routes 240 and 247, and commuter route 422. A Park & Pool lot is available for carpools, vanpools and bus commuters at Viking Way and 90$^{th}$ Avenue NW. It is connected to local routes 240 and 247, and commuter route 422.

Stanwood is also served by Island Transit route 411C, which connects Camano Island with Stanwood and Mount Vernon.

Community and Island Transit representatives have expressed interest in providing bus service to the Stanwood Station platform.

## Was the proposed site screened for potential environmental impacts?

The project team performed a site review to document general environmental features in the project area. The team's observations are discussed below, by geographic location. **Exhibit 2.3** on the following page shows the general locations of these areas.

#### Area approximately 500 feet north of Main Street and twenty feet west of the BNSF main line, adjacent to the main line

A wet area approximately fifty feet long and twenty feet wide was observed in this location. It is located five to ten feet below the railroad embankment.

Most of the area (75 percent) is vegetated with reed canary grass (Phalaris arundinacea) with the remaining 25 percent containing pockets of shallow surface water. Due to underground utilities in this area, excavation of soil pits was not feasible; therefore, soil properties were not observed. Irregular-shaped and sharp-edged rocks were observed at the surface of this area. According to the BNSF, the old Stanwood depot and platform were located in this area. Both were removed in the 1960s. The rocks observed may be fill material associated with placement of the old rail facilities.

This area may be wetland. Further investigation of this area (e.g., excavating soil pits and completing data sheets) would be needed to determine if this area meets wetland criteria. If so, it may be subject to local (city and county), state, or federal regulations.

**Exhibit 2.3**
**General Locations of Observed Environmental Features**


## Area west of existing railroad tracks, along 276th Street NW

The area west of the existing railroad tracks is agricultural land. It is apparently used for crop production; no crops were visible, but evidence of tilled soil was observed. The presence of wetland indicators (vegetation, hydrology, and hydric soils) is unknown, because the project team did not have access to the property. Based on the *National Wetland Inventory*, no

wetlands are mapped at this location, although there are wetlands mapped south of the area. The *Snohomish County Area Soil Survey* indicates area soils are Puget silty clay loam and Snohomish silt loam; both are listed as hydric soils. Due to the presence of hydric soils and proximity to the Stillaguamish River, it is possible this area is a wetland.

Further investigation of this area, including excavating soil pits and completing data sheets, would be needed to determine if this area meets wetland criteria. If so, it may be subject to local, state, or federal regulations.

### Ditch in agricultural land

A ditch was observed approximately 400 feet west of the 276th Street NW and 92nd Avenue NW intersection. The ditch appears to originate north of the railroad tracks, but the point of origin was not visible from the railroad tracks. The project team did not have access to the property; therefore, were unable to walk the length of the ditch. It appeared to be approximately ten feet wide. Although no flow was observed during the field review, it is possible this ditch is hydrologically connected to the wetland.

**Potential wetlands located at northern end of the project area**

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# Chapter Three: Proposed Rail Improvements

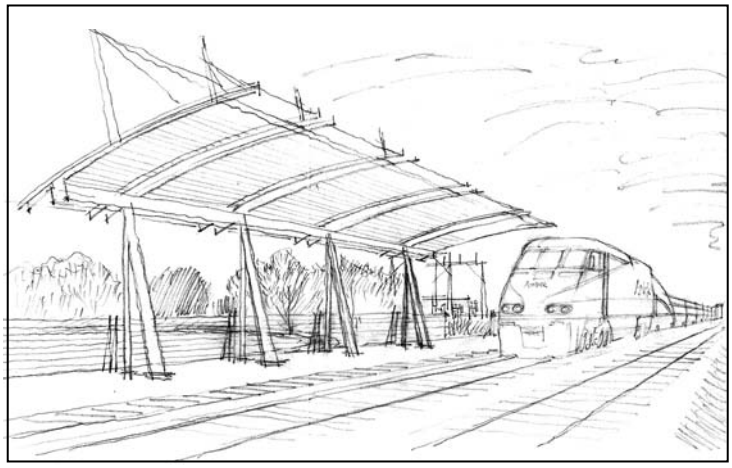
The Stanwood Station Project was designed as an interim facility to serve passengers until the Municipal Campus is constructed and a permanent station is built. Because the passenger trains share tracks with freight trains, specific design standards must be followed.

## What design standards did the project team use to design the station platform?

Station standards were developed to ensure compatibility with the wide variety of railroad equipment that could potentially operate on the BNSF main line. The primary consideration for the station platform is that it be located to provide sufficient clearance for all types of railroad equipment to safely pass at any speed. The minimum clearance, measured from the centerline of track to the edge of the platform is five feet, four inches. Similarly, the maximum height of the edge of the platform is eight inches above the top of the rail. This minimum clearance envelope has also been codified by the Washington Utilities and Transportation Commission in the *Washington Administrative Code*, and has been accepted by the BNSF.

To facilitate track maintenance activities and simplify construction, the platform will have a "cantilevered edge," where the edge of the platform nearest the track projects outward from its supports, which are located as far as practicable from the track. This reduces the need for formwork and shoring immediately adjacent to the track, and minimizes the disruption to track maintenance activities (regular track resurfacing and tie renewal). **Exhibit 3.1** provides a conceptual illustration of the station platform.

**Exhibit 3.1**
**Conceptual Illustration of the Stanwood Station Platform**



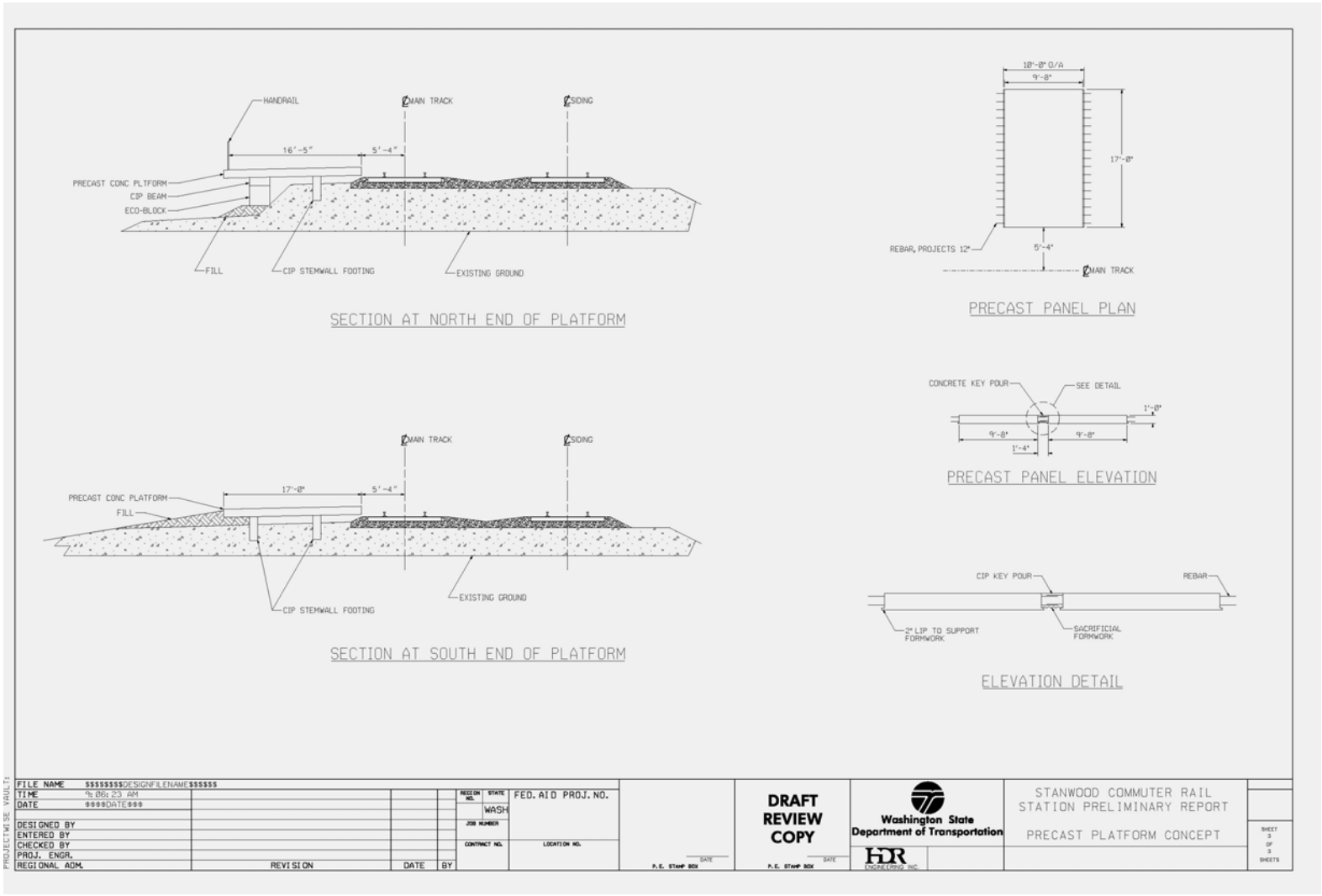
The proposed concept for the platform incorporates pre-cast concrete panels in an effort to minimize construction activities adjacent to the railroad track. Due to the nature of train operations, these delays could amount to several hours per day. The project team believes off-site prefabrication will reduce overall costs, while still providing a low-maintenance facility. These construction methods would provide a suitable lifespan for a permanent facility. Additional investigation, particularly geotechnical investigation at the site to determine soil bearing capacities and to address seismic concerns, will be necessary.

**Example of cantilevered edge platform**

Station facilities for the proposed platform design have intentionally been kept to a minimum. This has been done to control costs; encourage simplicity in an effort to facilitate rapid design, approval, and construction of the facility; and to avoid conflicts or redundancies with the city of Stanwood's future Municipal Campus.

Currently, waiting shelters located on or adjacent to the platform are contemplated as the only passenger accommodations at the facility. This simplicity is consistent with Amtrak's effort to minimize maintenance requirements at stations where no regular staff are present to "tidy-up" passenger waiting areas. The WSDOT project team assumes that no station building is to be built. **Exhibit 3.2** illustrates the preliminary design for the platform.

**Exhibit 3.2**
**Design of Station Platform**



This station incorporates a number of features and design requirements, as follows:

- Americans with Disability Act (ADA)-compliant passenger platform with a minimum length of 750 feet for Amtrak *Cascades* trains;
- Minimum platform width of 17 feet;
- Platform boarding edge eight inches above top-of-rail;
- Cantilevered edge platform design to facilitate construction and track maintenance;
- Platform lighting;
- ADA-compliant detectable warning edge material;
- ADA-compliant access routes to the platform;
- Convenient parking suitable for the expected ridership;
- ADA parking spaces;
- Wayfinding signage and ADA-compliant station signage;
- Passenger waiting shelters;
- Appropriate drainage design to permit the platform to drain away from the adjacent track;
- Buried or relocated utilities;
- Reconstruction of the adjacent track prior to construction of the platform, including replacement of all ties next to the platform. This is required as the presence of the track limits the major track maintenance activities that can be performed and complicates minor maintenance activities; and
- Sidewalk, curb, and gutter at the 271st Street NW grade crossing leading to the station platform.

## How much will it cost to build the platform?

The Stanwood Station Project is estimated to cost $4.5 million. Costs were developed in 2006 dollars, and are presented in **Exhibit 3.3**. Cost estimates presented in this study are conceptual.

### What are conceptual cost estimates?

Cost estimates can be conceptual, preliminary, or final (or someplace in between each of these steps, depending upon the level of project design). For conceptual cost estimates, known information is compiled, and then industry-wide, standard unit costs are used to estimate how much a particular element would cost. For example, in order to estimate the cost of rail for a 10,000 foot siding, that length would be multiplied by the current, industry standard cost for the particular rail that would be used.

The specifics of construction are not available during the conceptual stage of engineering. The unknown site-specific information will cause the cost of the

**Exhibit 3.3**
**Conceptual Cost Estimate for the Stanwood Station Platform**
**(in 2006 dollars)**

| | Unit | Unit Cost | Quantity | Total |
|---|---|---|---|---|
| Earthwork | | | | |
| Clear and Grub | AC | $4,500 | 1 | $4,500 |
| Embankment | CY | $20 | 200 | $4,000 |
| Sub-Ballast | CY | $30 | 1,100 | $33,000 |
| Erosion Controls | LS | $5,000 | 1 | $5,000 |
| Seeding | AC | $2,500 | 0.5 | $1,250 |
| Track | | | | |
| Track Construction: New Track | TF | $155 | 1,060 | $164,300 |
| Remove Existing Track | TF | $10 | 1,060 | $10,600 |
| Grade Crossing Panels | TF | $800 | 150 | $120,000 |
| Grade Crossing Approach (includes HMA paving) | SF | $75 | 156 | $11,700 |
| Station Platform | | | | |
| Pre-Cast Concrete Panels | Ton | $400 | 956 | $382,400 |
| 8 Inch Underdrain | LF | $18 | 750 | $13,500 |
| Excavation for Footings | Cy | $22 | 100 | $2,200 |
| Reinforced Cast-in-Place Structural Concrete Footings/Key Pours | CY | $600 | 340 | $204,000 |
| Landscaping | LS | $75,000 | 1 | $75,000 |
| Platform Striping | LF | $3 | 1,500 | $3,750 |
| Detectable Warning Tile | LF | $100 | 770 | $77,000 |
| Pre-Fabricated Shelters | EA | $45,000 | 2 | $90,000 |
| Platform Lighting | LS | $100,000 | 1 | $100,000 |
| Miscellaneous Hardscape | LS | $20,000 | 1 | $20,000 |
| Handrail | LF | $100 | 400 | $40,000 |
| Signage | LS | $25,000 | 1 | $25,000 |
| Public Pay Telephone | LS | $15,000 | 1 | $15,000 |
| BNSF Right of Entry Permit | LS | $4,000 | 1 | $4,000 |
| Repave/Restripe Existing City Parking Lot | LS | $120,000 | 1 | $120,000 |

**Exhibit 3.3 (continued)**
**Conceptual Cost Estimate for the Stanwood Station Platform**
**(in 2006 dollars)**

| | Unit | Unit Cost | Quantity | Total |
|---|---|---|---|---|
| Station Platform Continued | | | | |
| Concrete Sidewalk | SY | $33 | 263 | $8,679 |
| Crushed Surfacing Top Course | Ton | $19 | 711 | $13,154 |
| Hot Mix Asphalt Paving Along Marine Drive | Ton | $52 | 470 | $24,440 |
| Cement Concrete Curb and Gutter | LF | $14 | 760 | $10,640 |
| Mobilization, Bonds and Insurance | LS | | 2% | $24,575 |
| Railroad Signals & Utility Relocation/Adjustment | | | | |
| Relocate and/or Underground Railroad Pole Line | LS | $250,000 | 1 | $250,000 |
| Transmission Lines | LS | $200,000 | 1 | $200,000 |
| Fiber Optic Lines | LF | $95 | 1,000 | $95,000 |
| Contingencies | LS | | 30% | $645,806 |
| | | | Construction Total | $2,798,494 |
| Environmental Mitigation | | | 20% | $559,699 |
| | | | Subtotal | $3,358,193 |
| Engineering Administration | LS | | 12% | $335,819 |
| Construction Management | LS | | 15% | $419,774 |
| Right of Way | | | | |
| Commercial Property | AC | $250,000 | 0.5 | $125,000 |
| Tax | | | 8.2% | $229,477 |
| | | | TOTAL | $4,468,263 |

*Assumptions:*

All work in BNSF right of way, property acquisition required for permanent platform

Relocation of existing fiber optic line required for permanent platform

Existing grade crossing controls & hardware will stay in service; assume new sidewalk across 3 tracks will require rebuilding entire crossing

BNSF can relocate or underground a discreet portion of their pole line without major cost impact. This will be contingent upon type of existing circuits

Assume new pavement extends along Marine Drive, between 271st Street NW intersection and the north end of Marine Drive

*Abbreviations:* CY: cubic yard LF: linear foot AC: acre TF: track foot
SF: square foot EA: each SY: square yard LS: lump sum

individual items to vary. Experience indicates that for the level of detail of the available information, a contingency[1] of thirty percent is sufficient to cover issues found during engineering. In addition, a contingency of ten to twenty percent is often added to cover the cost of environmental mitigation. The environmental contingency is used to ensure that any mitigation that may be necessary is accounted for in the conceptual cost. At the conceptual level, it is rarely known what, if any, mitigation would be required.

The estimates can also be affected by time. There can be significant unpredictable factors in addition to the normally predictable effect of inflation. In recent years, the costs of building materials, notably steel, concrete, and fuel have been volatile.

### What is included in the cost estimate?

Costs were developed using 2006 dollars, and include:

- Earthwork;
- Station platform and related track work;
- Curb and gutter improvement;
- Grade crossing improvements; and
- Utility relocation.

Mobilization,[2] contingencies, environmental mitigation, engineering design, and construction management are also part of the estimate. Sales tax of 8.2 percent was also applied to each estimate.

### What is not included in the cost estimate?

The cost of constructing roadway improvements to support transit service at the station platform is not included in this cost estimate.

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*[1]Contingency is an amount intended to mitigate the unknown. As the level of detail in project plans increases, the contingency in the estimate is reduced because there is less that is unknown. The contingency in the final engineered estimate is small because the estimate includes all information that it is possible to know without beginning construction. There are almost always surprises, but their effect is generally small enough to fall within the contingency amount. Occasionally, a surprise such as the discovery of historical artifacts or underground water can have an impact that exceeds the amount estimated for contingency.*

*[2]Before the work can progress, the contractor must mobilize the necessary workers, equipment and supplies required to construct the rail line. Staging areas need to be set up and materials need to be brought to the construction area.*

## How much will it cost to maintain the platform?

Amtrak estimates that it will cost approximately $1,000 per year to maintain the Stanwood Station platform. The responsibility of paying for ongoing maintenance of the platform and the other improvements proposed for the area will need to be negotiated by WSDOT, Amtrak, the BNSF, and the city of Stanwood.

# Chapter Four: Amtrak *Cascades* Service

Amtrak *Cascades* service in Washington is provided by Amtrak and the Washington State Department of Transportation (WSDOT). Amtrak *Cascades* trains in the North Puget Sound region currently travel between Seattle and Bellingham/Vancouver, BC with stops in Edmonds, Everett, and Mount Vernon. South of Seattle, the trains stop in Tukwila, Tacoma, Olympia/Lacey, Centralia, Kelso/Longview, and Vancouver, Washington. Amtrak *Cascades* trains also serve communities in Oregon, including Portland, Oregon City, Salem, Albany, and Eugene. Amtrak *Cascades* service in Oregon is made possible through funds provided by Amtrak and the Oregon Department of Transportation. **Exhibit 4.1** illustrates Amtrak *Cascades* route and station stops.

This chapter provides an overview of Amtrak *Cascades* service and information for passengers who will be boarding the train in Stanwood.

## When will the trains stop in Stanwood?

It is anticipated that the Stanwood Station platform will be constructed by summer 2007. At that time, Amtrak *Cascades* trains will begin stopping in Stanwood. Four trains will stop in Stanwood each day. The first train will stop at approximately 9:00 am. This train is coming from Seattle and is destined for Vancouver, BC. The second train will arrive at approximately 9:30 am. This train is coming from Bellingham and is

**Exhibit 4.1**
**Amtrak *Cascades* Station Stops**

bound for Seattle and Portland. The third train will arrive in Stanwood at approximately 8:00 pm. This train is coming from Portland and Seattle and destined for Bellingham. The last train of the day will arrive in Stanwood at approximately 8:25 pm. This train is returning from Vancouver, BC and heading for Seattle. **Exhibit 4.2** on the following page shows the preliminary timetable for all Amtrak passenger trains along the rail corridor between Vancouver, BC and Portland, OR.

## How will passengers buy their tickets?

The new Stanwood Station will be an un-staffed station, so passengers will not be able to purchase their tickets at the new facility. However, passengers will still be able to obtain tickets. Passengers can call Amtrak at (800) USA-RAIL (800-872-7245) or go to Amtrak's Web site at www.amtrak.com to make reservations and purchase tickets. If purchased several days in advance, tickets can be mailed to customers. Otherwise, passengers can present their ticket reservation number to the conductor and obtain their ticket once they have boarded the train.

Tickets can also be obtained at a staffed Amtrak station (the nearest being Everett Station), or at the automated ticketing machines at Everett Station and Skagit Station in Mount Vernon. Passengers without reservations will be able to board the train at Stanwood, but they will be required to show proof of identity and pay the full fare. No discounted fares will be available for passengers boarding the train without reservations.

## How much will tickets cost?

The exact fare structure for Stanwood has not been developed. However, the fares will be very similar to those offered at Mount Vernon's Skagit Station. From Mount Vernon, a one-way trip to Seattle costs between $13 and $20; a one-way ticket to Portland, OR costs between $26 and $50; and a one-way ticket to Vancouver, BC costs between $15 and $23. These fare estimates are based on the current 2006 fare structure. Fares typically increase by approximately three percent per year.

## How will luggage be handled at Stanwood Station?

Passengers boarding and de-boarding trains at Stanwood will be responsible for handling their own luggage. Checked baggage service will not be available at Stanwood.

**Exhibit 4.2**
**Amtrak *Cascades* Future Timetable**

Amtrak CASCADES

## Proposed Daily Timetable

**Service Expansion Summer 2006**

AMTRAK

| Southbound | | | | | | | | | Northbound | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coast Starlight | Empire Builder | Empire Builder | | | | | | | | | Coast Starlight | Empire Builder | | Empire Builder | |
| 517 | 509 | 507 | 11 | 27 | 7 | 513 | 501 | Station | 510 | 500 | 504 | 506 | 516 | 14 | 8 | | 28 | 508 |
| 6:10 pm | | | | | | 6:58 am | | Vancouver, BC | 11:35 am | | | | 10:33 pm | | | | | |
| 7:40 | | | | | | 8:36 | | Bellingham | 9:46 | | | | 9:05 | | | | | |
| 8:12 | | | | | | 9:05 | | Mount Vernon | 9:16 | | | | 8:23 | | | | | |
| **8:24** | | | | | | **9:27** | | Stanwood | **9:03** | | | | **8:01** | | | | | |
| 8:56 | | | | | 8:41 am | 9:59 | | Everett | 8:31 | | | | 7:29 | | 5:44 pm | | | |
| 9:22 | | | | | 9:08 | 10:24 | | Edmonds | 8:07 | | | | 7:05 | | 5:17 | | | |
| 10:05 pm | | | | | 10:20 am | 11:02 AM | | Seattle | 7:40 am | | | | 6:38 pm | | 4:45 pm | | | |
| | 5:25 pm | 2:20 pm | 9:45 am | | | 11:20 AM | 7:30 am | Seattle | | 12:15 pm | | 3:45 pm | 6:20 pm | 8:45 pm | | | | 9:45 pm |
| | 5:40 | 2:35 | ~ | | | 11:35 | 7:45 | Tukwila | | 11:46 | | 3:16 | 5:51 | ~ | | | | 9:16 |
| | 6:10 | 3:05 | 10:31 | | | 12:05 | 8:15 | Tacoma | | 11:16 | | 2:46 | 5:21 | 7:11 | | | | 8:46 |
| | 6:49 | 3:44 | 11:21 | | | 12:44 | 8:54 | Olympia/Lacey | | 10:36 | | 2:06 | 4:41 | 6:22 | | | | 8:06 |
| | 7:10 | 4:05 | 11:44 | | | 1:05 | 9:15 | Centralia | | 10:15 | | 1:45 | 4:20 | 5:57 | | | | 7:45 |
| | 7:51 | 4:46 | 12:29 | | | 1:46 | 9:56 | Kelso/Longview | | 9:35 | | 1:05 | 3:40 | 5:14 | | | | 7:05 |
| | 8:27 | 5:22 | 1:08 | 9:20 am | | 2:22 | 10:32 | Vancouver USA | | 9:00 | | 12:30 | 3:05 | 4:36 | | | 5:07 pm | 6:30 |
| | 8:55 | 5:50 pm | 1:50 pm | 10:10 am | | 2:50 pm | 11:00 am | Portland | | 8:45 am | | 12:15 pm | 2:50 pm | 4:20 pm | | | 4:45 pm | 6:15 pm |
| | 9:05 | 6:05 pm | 2:10 pm | | | | | Portland | | 8:20 am | 11:35 am | | | 3:40 pm | | | | |
| | 9:26 | 6:26 | ~ | | | | | Oregon City | | 7:39 | 10:54 | | | ~ | | | | |
| | 10:12 | 7:12 | 3:22 | | | | | Salem | | 6:57 | 10:12 | | | 2:03 | | | | |
| | 10:41 | 7:41 | 3:55 | | | | | Albany | | 6:28 | 9:43 | | | 1:30 | | | | |
| | 11:40 pm | 8:40 pm | 4:47 pm | | | | | Eugene | | 5:45 am | 9:00 am | | | 12:44 pm | | | | |

**Future Canada Service Extension** | **Upon completion of the platform in 2007** | **Drop offs only; does not pick-up northbound passengers.**

- Each passenger may bring aboard no more than two pieces of carry-on baggage. Not included in this limit are personal items such as briefcases, purses, laptops, and infant paraphernalia such as strollers, diaper bags, and car seats.
- Each carry-on bag may weigh no more than 50 pounds.
- Each carry-on bag may not exceed 28 x 22 x 14 inches in size.
- Each carry-on bag must be visibly tagged with the name and address of the passenger. Passengers may use their own personal identification tags, or may obtain Amtrak baggage identification tags at station ticket offices, or onboard trains from a member of the train crew.

## How accessible are Amtrak *Cascades* trains for people with disabilities?

Amtrak *Cascades* trains are some of the most accessible trains in the world. The trains are equipped with hydraulic lifts so passengers in wheelchairs can be moved on and off the trains quickly and comfortably. The trains also have accessible restrooms, and allow disabled passengers to move freely between coaches and the bistro and lounge cars. Passengers with disabilities will require reservations before boarding the train to make sure that space is available.

## What will happen when a train is cancelled?

From time to time, Amtrak *Cascades* trains are canceled due to weather, major delays on the rail line, or equipment problems. When this happens, Amtrak will attempt to call passengers who have reservations to notify them of a service disruption. Amtrak will also send motor coaches to Stanwood to ensure that passengers get to their destinations even if the trains are not running.

## What is Amtrak's refund policy?

If passengers need to cancel their trip, this can be done online at www.amtrak.com or by calling (800) USA-RAIL (800-872-7245). However, cancellation fees may apply for canceled reservations. Not all tickets are eligible for cancellation and may have further restrictions based on the type of fare you reserved.

## What documentation will people need if they are traveling by train to Canada?

Amtrak *Cascades* passengers traveling to and from Vancouver, BC are subject to inspections by U.S. and Canadian Immigration and Customs, and documentation of citizenship and identity are required from all persons onboard. Customs and Immigration officers may delay Amtrak *Cascades* trains or buses if necessary to carry out their duties.

U.S. and Canadian citizens are strongly encouraged to carry a valid and current passport to help minimize questioning and delay. A passport is proof of both citizenship and identity. Other acceptable forms of identification are listed at www.amtrakcascades.com/BorderCrossing.aspx. Passengers that lack proper identification may be denied access into Canada or may be denied re-entry into the United States.

## What are some of the other important policies that rail travelers should know about?

When riding Amtrak *Cascades*, passengers should be familiar with a few general policies. These policies are:

- Smoking is prohibited on all Amtrak *Cascades* trains.
- Bicycles can be taken on Amtrak *Cascades* trains, but reservations are required and a $5 fee will be added to the passenger fare.
- Amtrak allows trained service animals accompanying passengers with disabilities in all customer areas in stations, trains, and Amtrak motor coaches. Trained service animals must be kept under the control of their owners or trainers at all times. No other animals are permitted onboard at any time**.**
- Food and beverage service is available on all trains. Passengers may bring their own food and non-alcoholic beverages onboard the train.
- For safety reasons, specific rules apply to children traveling without adults on Amtrak trains. Details can be found at: www.amtrakcascades.com/ChildrensPolicy.aspx.
- Amtrak reserves the right to remove passengers if they cannot pay for their ticket, are behaving in an offensive manner, refuse to comply with safety rules or with instructions of Amtrak personnel, or who pose a health or safety risk to other passengers or employees.

## How will Amtrak and WSDOT measure the public benefits of the Stanwood Station?

Amtrak and WSDOT gather a wide assortment of data on the performance of Amtrak *Cascades*. Performance measures include monthly and annual ridership, on-time performance, financial performance of each train, customer satisfaction, and passenger volumes per station. Amtrak is currently developing patronage projections for the new Stanwood Station. These projections will serve as performance benchmarks and will allow WSDOT and Amtrak to determine the degree of public benefits that will be generated by the new station stop at Stanwood. Performance data on Stanwood and all other Amtrak stations in Washington will be reported annually in WSDOT's *Measures, Markers, and Mileposts* performance report.[5]

[5] This document is available at www.wsdot.wa.gov/accountability.

# Chapter Five: Proposed Institutional Framework

Prior to implementing and constructing the Stanwood Station platform, a number of state and federal regulatory requirements must be completed. In addition, operational and ownership issues need to be resolved prior to implementation.

## What ownership and operational issues need to be resolved prior to implementation of the Stanwood Station Project?

At this time, ownership and maintenance responsibility of the station platform and the other proposed improvements have not been determined. Before construction begins, legal agreements between the various parties (WSDOT, BNSF, Amtrak, and the city of Stanwood) will need to be in place so that all parties understand who will be responsible for providing the funds to operate and maintain the new assets in the years ahead. Options include:

- state ownership and maintenance responsibility of all new improvements;
- state ownership and maintenance responsibility of the platform and city ownership and maintenance responsibility of the roadway, sidewalk and parking lot improvements; or
- Amtrak ownership and maintenance responsibility of the platform and city ownership and maintenance responsibility of the other improvements.

A lease for the use of BNSF property for the platform will also need to be negotiated.

## What regulatory requirements pertain to the design of the Stanwood Station Project?

Passenger platforms are configured so that the top edge of the platform is no higher than eight inches above the top of the rail, and extends no closer than 5-feet 4-inches to the centerline of the track. These maximum dimensions are included in the *Washington Administrative Code*, title 480-60. These dimensions allow for relatively easy boarding and de-boarding of passengers.

In early 2006, the United States Department of Transportation (USDOT) began the process of examining the feasibility of requiring "level-boarding" at all train stations across the country. The intent of level boarding is to provide

equal access by all members of the traveling public, including the disabled community, to all rail cars stopped at a station. Level boarding permits people who have difficulty walking or in wheel chairs to enter and exit passenger cars without having to navigate a steep incline between a platform and the train. As the USDOT continues to examine the feasibility of requiring level boarding at train stations, WSDOT will coordinate with the Federal Railroad Administration (an agency of the USDOT) to determine the most appropriate platform height and design for Stanwood Station.

## What type of environmental documentation will be required for the Stanwood Station Project?

Two environmental laws govern development within Washington State: the State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA). Both of these regulations require that environmental analysis be performed to ensure that minimal (or no) harm will come to the human, physical, or biological environment. Each of these regulations has their own documentation requirements, depending on the project.

### National Environmental Policy Act (NEPA) Requirements

Any federal action requires compliance with NEPA. A federal action can include a project that is:

- implemented by a federal agency;
- in need of a federal permit or approval;
- funded by a federal agency; or
- located on federal property.

At this time, it is assumed that there will be no federal action required for the Stanwood Station Project, therefore NEPA documentation will not be required.

### State Environmental Policy Act (SEPA) Requirements

SEPA requires that an environmental review be prepared for projects that may have substantial impacts. SEPA documentation can range from a fairly simple checklist to an environmental impact statement. Based on field reviews, the project team has determined that a SEPA checklist will provide the appropriate level of documentation for the Stanwood Station Project.

### Environmental Permits

In addition to NEPA and SEPA compliance, a project must adhere to specific laws and ordinances at the federal, state, and local levels. The following list of permits is general and not intended to be all-inclusive. As project design and environmental analysis moves forward, more specific permit requirements will be identified. Specific elements of project design will determine the need for permits.

#### Endangered Species Act

The preliminary environmental site investigation did not reveal evidence of any endangered species in the project area. Raptor nests were identified in a wetland approximately one half mile north of the Stanwood Station platform. It is possible these are nesting areas for eagles, which could be adversely impacted by additional activity in the project area.

#### Potential Federal Permits

The ditch originating in the agricultural land may be subject to the *Clean Water Act* and regulated by the U.S. Army Corps of Engineers. It drains to another ditch on the south side of 276th Street NW, which is likely hydrologically connected to a wetland.

#### Potential Local Government Approvals

Soil disturbing activity, including new construction or track rehabilitation, will trigger a review by the city of Stanwood and Snohomish County. These local agencies will issue grading permits for construction. A City building permit will also be required. No variance is required for the parcel, which is zoned light industrial.

Environmental permit fees and associated mitigation have been included as part of the environmental contingency incuded in the capital cost estimates presented earlier in this document.

## When will the station platform be built?

The Stanwood Station Project is scheduled for completion by 30 June 2007. Engineering and environmental documentation will be performed through 2006, followed by approvals and coordination with BNSF, Amtrak, the city of Stanwood, and Community and Island Transit. Permitting and construction will begin by Winter 2007. **Exhibit 5.1** on the following page provides an overview of this process and general timeline.

## Are there any risks associated with this project?

WSDOT believes it is important to clearly communicate to the public any issues that could affect the department's ability to construct transportation projects on time and on budget. It is possible that the Stanwood Station Project could be delayed due to several factors. These are:

- Unforeseen environmental issues in the project area;
- The ability of WSDOT to obtain the necessary permits and approvals from the BNSF;
- Changes in federal regulations concerning rail platform design;
- Increasing costs for construction materials beyond the budgeted amount; or
- Loss of funding resulting from passage of voter initiatives in fall 2006.

**Exhibit 5.1**
**Stanwood Station Project Process and Timeline**

| Timeframe | Activity |
|---|---|
| Spring 2006 | ▪ Work with the BNSF Railway to identify potential infrastructure requirements and right-of-way boundary at the project site<br>▪ Begin real estate acquisition; get approval from the city of Stanwood on proposed roadway and parking lot improvements |
| Summer 2006 | ▪ With input from the community, finalize platform design and share plans with the BNSF Railway and Amtrak<br>▪ Obtain formal BNSF Railway approval to stop at Stanwood |
| Fall 2006 | ▪ Complete State Environmental Policy Act (SEPA) checklist and real estate acquisition<br>▪ Get official approvals of platform design from Amtrak and BNSF<br>▪ Negotiate WSDOT – Amtrak – BNSF — city of Stanwood property and maintenance agreements |
| Winter 2007 | ▪ Begin construction |
| Spring 2007 | ▪ Construction continues<br>▪ Work with Amtrak to get Stanwood added to the national timetables |
| Summer 2007 | ▪ Construction completed; Amtrak *Cascades* service begins at Stanwood |

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# Glossary

**Active warning device** Flashing lights and/or gates used at grade crossings.

**Advance warning signals** A sign used along a roadway to warn that a roadway-rail grade crossing is ahead.

**At-grade crossing** The surface where the rail and a roadway (or pathway) cross at the same level.

**Ballast** Material selected for placement on the roadbed for the purpose of holding the track in place.

**Bypass** A track that goes around other rail facilities (bypasses them) or provides a more direct route between two points. A bypass may be as simple as a track that goes around a small yard, or may be as significant as a complete route revision.

**Capital costs** Non-recurring costs required to construct (or improve) the rail line. Capital costs include the purchase of vehicles, track improvements, station rehabilitation, and design and administrative costs associated with these improvements.

**Centralized Traffic Control** An electronic system that uses remote controls to change signals and switches along a designated portion of railroad track.

**Chokepoint** An area along the railroad track that has less capacity than the adjoining tracks, resulting in congestion. This makes it difficult for trains to pass uninterrupted.

**Commuter Rail** Service between a central city and its suburbs, running on a railroad right of way. Examples include the Sound Transit's commuter rail system in Puget Sound, Metrolink in Los Angeles, California and British Columbia's West Coast Express.

**Consist** The number of vehicles forming a train.

**Continuous welded rail** Rails welded together in lengths of 400 feet or more.

**Crossover (and Power crossover)** A set of turnouts connecting multiple tracks. A crossover allows a train to move from one track to another. A power crossover may be controlled by Centralized Traffic Control.

**Deficiencies** Areas along the track that cannot handle expected increased train frequencies.

**Derail (and Power Derail)** A safety device on the track strategically located that when positioned, intentionally guides runaway rolling stock off the track to protect against collisions. A power derail may be operated by Centralized Traffic Control.

**Dispatcher** The individual who plans and controls the movement of trains.

**Double track** Two sets of main line track located side by side, most often used for travel in opposite directions, like roadways.

**Environmental Assessment (EA)** An environmental analysis prepared pursuant to the National Environmental Policy Act (NEPA) to determine whether a federal action (or project with federal investment) would significantly affect the environment and thus require a more detailed environmental impact statement.

**Environmental Impact Statement (EIS)** A document required by federal and state agencies under the National Environmental Policy Act (NEPA) and Washington State's Environmental Policy Act (SEPA). An EIS is required for major projects or legislative proposals that may significantly affect the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and identifies alternative actions.

**Fill sections** Depositing of dirt, mud, or other materials into aquatic areas to create more dry land.

**Flashing light signals** Used with the crossbuck signs at railroad crossings. When the lights are flashing, the motorist or pedestrian must stop.

**Gates** Used with flashing signals at certain crossings to warn that a train is approaching.

**Geometrics** An engineering term that refers to the design of the tracks.

**Grade crossing** The area along the track where a roadway or pathway crosses.

**Grade-separated** Crossing lines of traffic that are vertically separated from each other (i.e., a roadway that goes over or under a railroad track).

**Habitat** The place where a population (human, animal, or plant) lives and its surroundings.

**Hazardous materials** Material, often waste, that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, explosive, or chemically reactive.

**Intercity (Passenger) Rail** Service connecting central city to central city on a railroad right of way in densely traveled corridors. Amtrak's metroliner service between Washington, DC and Boston is a well-known example of higher-speed intercity rail. Locally, the Amtrak *Cascades* connecting Vancouver, BC to Seattle is an example of intercity passenger rail. Intercity passenger rail provides both regional and long distance service. The Amtrak *Cascades* service is a regional service.

**Intermodal** The use of different types of transportation modes to move freight shipments and people, i.e. ships, trains, buses, and trucks.

**Lock switch (and Electric lock switch)** Operated by Centralized Traffic Control to regulate when trains can enter on or off the tracks. An electro-mechanical device that prevents movement of a hand throw switch when a train is approaching

**Main line (Mainline)** A railroad's primary track that usually extends great distances. It usually carries both freight and passenger trains.

**Meet** A meet is the location where two trains traveling in opposite directions pass one another. Additional tracks and/or crossovers may need to be placed near these locations so that trains can maintain speeds and schedule reliability.

**Mitigation** Measures taken to reduce adverse impacts on the environment.

**National Pollution Elimination Discharge System (NPDES)** A provision of the Clean Water Act that prohibits discharge of pollution into waters of the United States unless a special permit is issued by the U.S. Environmental Protection Agency, a state agency, or where delegated, a tribal government.

**Operating costs** Recurring costs of operating passenger service. These costs include wages, maintenance of facilities and equipment, fuel, supplies, employee benefits, insurance, taxes, marketing, and other administrative costs.

**Passive warning device** Signs or markers used at all grade crossings.

**Pavement markings** Painted on the pavement in advance of a railroad highway crossing, to warn the motorist or pedestrian of the rail crossing.

**Positive train separation** A new railroad safety system, using high tech equipment to prevent train collisions.

**Rail yard** A system of tracks within defined limits, designed for storing, cleaning, and assembling (to each other) rail cars.

**Railroad crossbuck** A type of sign found at all public railroad crossings. This sign should be treated as a yield sign.

**Railroad tie** The part of the track, often wood or concrete, where the rails are spiked or otherwise fastened.

**Right-of-way** The horizontal and vertical space occupied by the rail service.

**Siding** An auxiliary track located next to a main line that allows a train to move out of the way of an oncoming train. Sidings are also used to store trains or to add/subtract rail cars.

**Switch** The component of a turnout consisting of switch rails and connecting parts providing the means for making a path over which to transfer rolling stock from one track to another. The switch may be thrown manually or electronically.

**Travel time** The elapsed time between a trip's beginning and end. It includes travel, transfers, and waiting time.

**Turnout** A track arrangement that connects tracks, allowing movement from one to another.

**Wetland** An area saturated by surface or groundwater with vegetation adapted for life under those soil conditions. Examples of wetlands are swamps, bogs, and estuaries.

**Yard limits** An area where locomotives may enter the main tracks under simplified conditions without authority from the dispatcher.