

# **DRAFT CONCEPTUAL DESIGN REPORT**

**FOR**

MILLWOOD TRAIL

SUBMITTED TO THE  
CITY OF MILLWOOD

MARCH 2016

# DRAFT CONCEPTUAL DESIGN REPORT

MILLWOOD TRAIL

PROJECT No. 51032

SUBMITTED TO THE:

CITY OF MILLWOOD



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PREPARED BY:



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## 1. PROJECT PURPOSE

Welch Comer Engineers was selected by the City of Millwood to plan and design a shared use path within the Spokane County right-of-way, formerly the Burlington Northern Railroad. The City has leased this property with the intent of providing a public asset that offers non-motorized transportation and recreation opportunities to the local community. The hope is that in the near future the Spokane County right-of-way in the neighboring City of Spokane Valley will be developed into an extension of the trail, further enhancing the functionality of the trail.

## 2. DESIGN PARAMETERS

Standards and guidelines used for the conceptual design are found in the 2012 AASHTO “Guide for the Development of Bicycle Facilities” and the Americans with Disabilities Act (ADA). These included horizontal and vertical alignment, separation from motor vehicle traffic, intersection control options and signage, and detectable warning panels.

Trail surfaces considered for this project included asphalt, concrete and gravel. A 12-foot wide asphalt surface was chosen to allow ample room for trail users and reduce conflicts. The proposed asphalt surface provides lower repair costs than concrete if the trail surface is disrupted for utility maintenance or other activities. It also reduces maintenance requirements associated with gravel while providing a better surface for bicycles, wheelchairs, and strollers. A 2-foot wide gravel shoulder is proposed on the south side for runners who prefer a gravel surface rather than an asphalt surface due to the lesser impact it provides. A typical section exhibit is provided in Appendix A.

The proposed trail alignment was set with several objectives in mind, including the existing NVI sewer, a potential future water reuse pipe, a potential future light rail, proximity to residential properties, street crossings, and maintaining parking at the West Valley High School. The Conceptual Alignment plan sheets are provided in Appendix B. Details of these objectives are as follows:

### Existing NVI Sewer

The proposed trail alignment attempts to avoid existing manholes of the sewer interceptor to avoid having manhole lids in the pavement and to allow sewer cleanout work to occur without closing the trail. In some areas where total avoidance was not feasible, the alignment was set to place the manhole in the center of the trail to allow bicyclists to ride past the lid, rather than over it.

### Future Water Reuse Pipe

The potential future water reuse pipe could be accommodated within the area reserved for the future light rail as described below. This placement allows for minimum separation distances from the sewer to be met.

### Future Light Rail

A 25-foot offset from the existing Union Pacific Railroad right-of-way was used as the assumed placement of any potential future light rail. This placement of the light rail allows the trains to run next to each other, rather than on each side of the proposed trail.

### Residential Properties

The proposed trail alignment was set to provide reasonable separation from residential properties. This prevents having to remove many personal landscape features and buildings that exist within the right-of-way and retains more privacy for the residents.

### Street Crossings

Grade-separated and at-grade crossings were considered for this trail. The low traffic volumes and speeds on Marguerite Road do not warrant a grade separated crossing. Argonne Road's traffic volumes, speeds and width make a grade-separated crossing more desirable. With the NVI sewer buried in the corridor, a tunnel is likely not a practical solution. A bridge over Argonne Road is a more desirable solution. Due to the flat topography and limited right-of-way, a bridge at this location is expected to cost \$900,000 to \$1,100,000. This cost is due to the large quantity of fill material, retaining walls, and relocation of railroad and intersection signal equipment. Bridge design and construction money could be sought in the future, if the desire exists.

Ultimately, for the short-term, at-grade street crossings were chosen for both Marguerite Road and Argonne Road. Due to the proposed trail's proximity to the signalized intersection on Argonne Road, a signalized crossing is practical and cost effective. The proposed trail alignment at both Marguerite Road and Argonne Road jogs to the north to increase visibility to northbound traffic and to allow for signal relocation/modification at Argonne Road. Trail signage is included to warn trail users and to identify which street they are crossing. High visibility crosswalk markings are proposed at these locations.

Two types of roadway intersection treatments are proposed for consideration. The conventional intersection treatment utilizes a bollard placed in the center of the path to restrict access by motor vehicles. Striping is placed to guide users around the bollard. Bollards are removable (but locked) to allow access by maintenance vehicles when needed. However, the presence of bollards creates the risk of trail users striking a bollard, especially at night. The split intersection treatment implements a landscape median that divides the trail into two equal halves that are narrower than a motor vehicle. Landscaping at the edges and in the median visually narrows each half to deter motor vehicles from entering. The median landscaping is kept low so that a maintenance vehicle can straddle the median to access the trail. However, unless a removable bollard is added to the median, it will not completely prohibit determined motorists from entering the trail.

### West Valley High School Parking

A reconfiguration of the parking is proposed at the north end of the West Valley High School to accommodate the trail. Although many parking spaces would be eliminated, removal of some existing curbing allows a number of new parking spaces to be created. The net loss of parking spaces as shown is 37. Currently, West Valley High School has 475 parking spaces available. If additional spaces are needed by the School District, alternative designs will be investigated.

### **3. CONNECTIONS**

In addition to West Valley High School, Marguerite Road and Argonne Road, several connections to the trail are proposed. These proposed connections are shown at Sargent Road, City Park, Locust Road and Frederick Ave. The City Park connections are proposed at existing gates located at the west end, near the restrooms, at the tennis courts and at the multiuse field. A connection to city right-of-way at Sargent Road would allow convenient neighborhood access and could be paved all the way to Frederick Ave, if desired. To complete this connection, the existing guardrail at Frederick Ave would have to be removed and replaced with an alternative form of intersection treatment. The proposed connection at Locust Road creates a de facto trailhead with the existing parking. The proposed connection at the eastern terminus of Frederick Ave is located on the north side of the street to avoid conflict with residential property access. Wayfinding signage is proposed at each of these locations to guide trail users to these important connections. Bollards are proposed where deemed necessary to prohibit motor vehicles from entering.

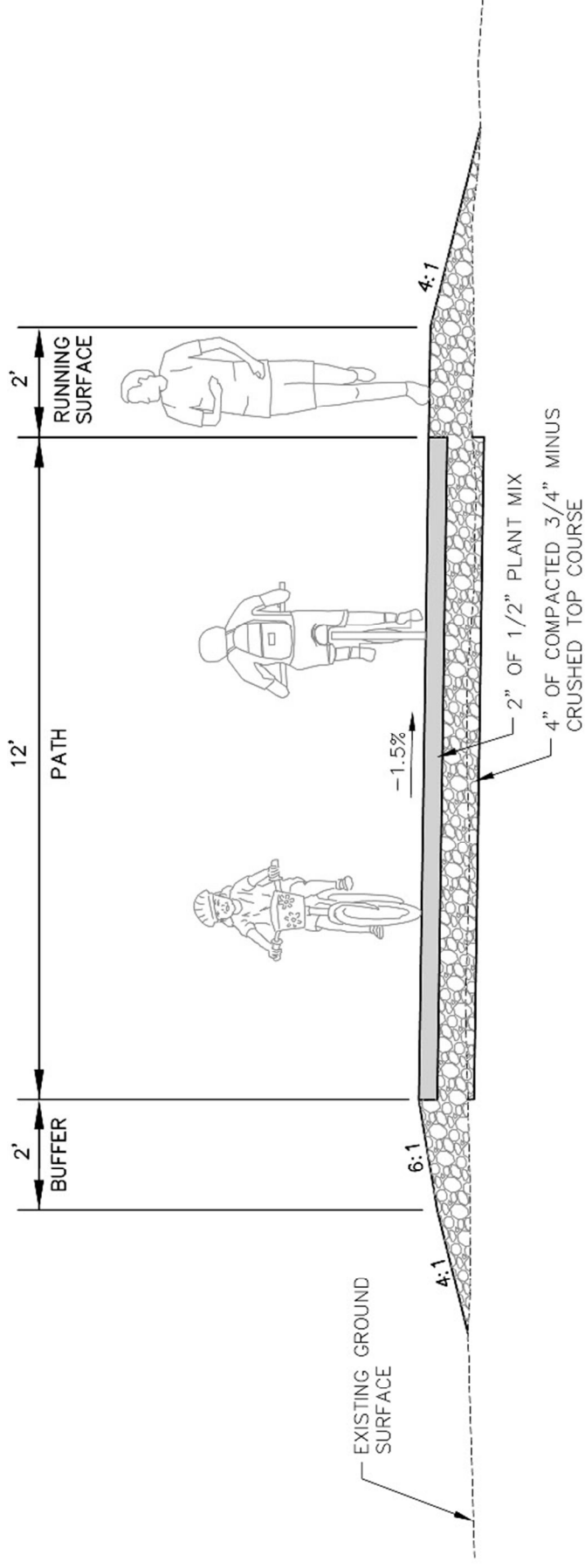
### **4. PUBLIC INPUT**

A public meeting was held on January 27th, 2016 to gather public input regarding the trail, connections to existing streets and potential trail amenities. Welch Comer prepared and submitted a public meeting summary to the City, provided in Appendix D. The most requested trail amenities were: lighting, trash receptacles/dog pickup stations, educational signs, landscaping, gateway treatments, benches, fitness equipment and restrooms. Because restrooms are located at City Park near the center of the trail, no additional facilities are proposed. Locations for the remaining amenities are shown on the plans. Various style options for these amenities are provided in Appendix C for your review. These are proposed to be shown at the next public meeting to gather public opinion on the options. The proposed trail alignment will also be shown at the meeting.

# **APPENDIX A:**

## **TYPICAL SECTION EXHIBIT**





## MILLWOOD TRAIL - PROPOSED

### LOOKING EAST

NOT TO SCALE