

Safe Routes to New Schools

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This memorandum provides recommendations for additional safe to the new Vernonia Schools campus site on Missouri Avenue for the Vernonia School District #47J. Current and previously proposed bicycle and pedestrian routes in the area of the Missouri Avenue site are also summarized. The memo is divided into four sections:

- Executive Summary;
- Existing Conditions;
- Vernonia School Campus Access Studies Summary; and
- Safe Routes to New Schools Recommendations

Executive Summary

The key conclusions of this memo are summarized below.

Existing Conditions

- Access to the Missouri Avenue site from the east is challenged by missing sidewalks on Bridge Street (OR 47) east of Spencer Avenue, and a lack of bike lanes and ADA accessibility on the Nehalem River Bridge.
- The existing bicycle and pedestrian path on the southern shoulder of Bridge Street (OR 47) in the vicinity of O-A Hill is substandard, providing an obstacle to access to the Missouri Avenue site from the west.
- There are no existing sidewalks in the immediate neighborhood around the Missouri Avenue site.

Vernonia School Campus Access Studies

- Half (50%) of students inside the Vernonia city limits currently walk or bike to school.
- A previous proposal to bus all students who live west of O-A Hill could increase the number of students being bused by nearly 200. 215 students inside the Vernonia city

limits live west of O-A Hill, but only about 10% of them currently take the bus to school compared to 53% who walk or bike to school.

- Because students living west of O-A Hill represent over 70% of students who currently walk to school, an improved bicycle and pedestrian access across O-A Hill is essential to mitigate impacts on walking and bicycling that may be caused by the relocation of the schools site.

Safe Routes to New Schools Recommendations

- Access to the Missouri Avenue site from the east should be improved by extending bike lanes and sidewalks on Bridge Street (OR 47) east of Spencer Avenue, and by creating a walking and bicycling route along Alabama Avenue.
- Access to the Missouri Avenue site from the west should be improved by bringing the bicycle and pedestrian sidepath on Bridge Street (OR 47) in the vicinity of O-A Hill into accordance to current standards, and by relocating the path to the north side of the street in order to reduce the number of times students cross Bridge Street (OR 47).
- Local access between Bridge Street and the Missouri Avenue site should be provided by dedicated bicycle and pedestrian facilities along both Texas and Missouri Avenues.

Existing Conditions

Overview

Citywide conditions for bicyclists and pedestrians in Vernonia are summarized in Technical Memo #2: Existing Conditions. This section discusses existing facilities within the immediate vicinity of the new Vernonia Schools site in greater detail. Inventoried bicycle and pedestrian facilities near the new Vernonia Schools site are featured in Figure 1.

Existing Bicycle and Pedestrian Facilities

Access to the new Vernonia Schools site is comprised of three distinct segments:

- Bridge Street (OR 47) east of the site;
- Bridge Street (OR 47) west of the site; and
- Local roads connecting the site to the nearby neighborhood and Bridge Street (OR 47).

There is no existing connection between the new schools site and roads such as Mellinger Road to the north of the site.

Bridge Street (OR 47) East of Site

Bridge Street (OR 47) has bike lanes and sidewalks on both sides in the vicinity of the new Vernonia Schools site between Texas Avenue and Spencer Avenue. East of Spencer Avenue, Bridge Street (OR 47) has paved shoulders up to 4 feet wide on either side for 800 feet east to the Nehalem River Bridge. Pedestrians prefer to use the south shoulder in this area due to impaired visibility on the northern shoulder at the bend in the road between Spencer Avenue and Riverside Drive.

Connecting to the west side of the Nehalem River, the Nehalem River Bridge has 5 foot sidewalks on either side, but access to the sidewalks from the Bridge Street (OR 47) shoulder is constricted at the west end of the bridge. Concrete handrails on the outside of the bridge in conjunction with crash cushion barrels on the corner of each sidewalk reduce the clear travelway for pedestrians to less than 3 feet. There are no sidewalks on Mist Drive at the east end of the bridge.

Bridge Street (OR 47) West of Site

Bridge Street (OR 47) is the only existing street that provides access to the new Vernonia Schools site from the west. However, bike lanes and sidewalks on both sides of Bridge Street (OR 47) end at Texas Avenue. Pedestrians and bicyclists traveling east-west along Bridge Street (OR 47) across O-A Hill use a 6 foot wide shoulder on the south side of the highway, which is separated from the adjacent travel lane by a guard rail. This width is insufficient for bi-directional traffic, when accounting for the necessary shy distance from the guardrail on the north side of the shoulder path and the 6 foot tall chain link fence on the south side. Pedestrians and bicyclists can currently access the shoulder path from the north side of Bridge Street (OR 47) using a crosswalk on the east leg of the intersection of Bridge Street (OR 47) at Texas Avenue. A 150 foot gap separates the end of the sidewalk at Texas Avenue and the guardrail-protected shoulder path, including a 40 foot wide driveway that accesses the Vernonia Pioneer Museum parking lot.

The guardrail-protected shoulder path on Bridge Street (OR 47) around O-A Hill stretches approximately 1200 feet from its eastern end near Texas Avenue to its western end at California Avenue. At the three-leg intersection of Bridge Street (OR 47) and California Avenue a crosswalk on the south leg of the intersection connects the shoulder path to a 10 foot wide attached sidewalk in front of the existing Washington Grade School. One block further west, crosswalks on the east and west legs of the intersection of Bridge Street (OR 47) and East Avenue help bicycles and pedestrians to cross to the north side of the street.

Local Roads

Missouri Avenue, identified as the primary access to the new Vernonia Schools site in the 2010 Transportation Impact Analysis, currently exists as a 22 foot wide roadway with no sidewalks, within a 50 foot right-of-way. Texas Avenue, which is specified as a secondary school access for bicycle and pedestrian traffic as well as an emergency access route, has a similar roadway width and also lacks sidewalks. Texas Avenue widens slightly at its intersection with Louisiana Avenue, just north of Bridge Street (OR 47).

For students living in the immediate neighborhood surrounding the new Vernonia Schools site, local streets such as Louisiana Avenue, Arkansas Avenue, Oregon Avenue, and Mississippi Avenue have similar conditions to Texas and Missouri Avenues, with paved roadways approximately 20 feet wide and no sidewalks. East of Missouri Avenue and west of the Nehalem River, the existing local street network does not connect directly to the school site, requiring bicycle and pedestrian traffic to travel south to Bridge Street (OR 47), traveling west, and then turning back north to reach the school site via Missouri Avenue.

<SEE FIGURE 1 Existing Conditions>

Vernonia School Campus Access Studies Summary

This section focuses on the following two documents:

- Transportation Impact Analysis (March 9, 2010); and
- Student Travel Mode Survey Results (December 11, 2008).

Transportation Impact Analysis (March 9, 2010) Summary

Overview

This section summarizes the key findings of the Vernonia School Campus Transportation Impact Analysis (TIA) from March 2010, focusing on school bus and motor vehicle circulation and the proposed bicycle and pedestrian recommendations and routes. The recommendations from the 2010 TIA will be discussed and analyzed later in the memo.

School Bus and Motor Vehicle Circulation Improvements

Bridge Street (OR 47)

- Installation of an eastbound left-turn lane at the Bridge Street/Missouri Avenue intersection (unsignalized).

Missouri Avenue /Texas Avenue

- Elimination of parking on the southbound approach for at least 125 feet north of the Bridge Street/Missouri Avenue;
- Missouri Avenue provides the most direct path to the proposed campus and is free of potential sight distance issues

Bicycle and Pedestrian Recommended Improvements

Bridge Street (OR 47)

- Installation of a pedestrian refuge on the east leg of the Bridge Street/Missouri Avenue intersection;
- Extend the 25 miles per hour speed zone to about 500 feet east of Missouri Avenue;
- Retention of bike lanes on Bridge Street between Texas and Missouri Avenues;
- Installation of a multi-use pedestrian-bicycle path along the south side of Bridge Street between Texas and Missouri Avenues (see Figure 2);
- Staff the Bridge Street crosswalk at Missouri Avenue with crossing guards before and after school, flagging traffic to protect students.

Missouri Avenue /Texas Avenue

- Provide pedestrian and bike facilities along Missouri Avenue between the new school site and Bridge Street (such as sidewalks or a multi-use path) as well as at the Bridge Street intersection (see Figure 2);
- Provide an emergency vehicle and pedestrian-bike connection linking the school campus to Texas Avenue.

Connectivity

- Provide a pedestrian connection from the new school site to the city center of Vernonia (see Figure 2);
- Provide pedestrian-bicycle connectivity from the school campus via local streets to the neighborhood immediately west of the campus (State Street neighborhood) (see Figure 2);
- Provide bus service to all students who reside west of Ora Bolmeier City Park and all students who live greater than one mile from campus;

Student Travel Mode Survey Results (December 11, 2008) Summary

Overview

A travel survey was conducted at the Vernonia School District campus in downtown Vernonia during the week of Monday, November 3rd, 2008. The survey had an 87% response rate.

Key Findings

The student travel mode by geographic region is shown in Table 1. The extent of the four regions identified in Table 1 can be viewed in Figure 2.

Table 1. Student Travel Modes by Geographic Regions

Location	Number of Students	Transportation Mode			
		Bus	Car	Walk	Bike
City Region 1	81	12	38	28	3
City Region 2	61	1	21	37	2
City Region 3	73	9	19	43	2
City Region 4	98	17	41	37	3
<i>In Vernonia</i>	313	39 (13%)	119 (38%)	145 (46%)	10 (3%)
Outside of Vernonia	262	150	105	5	2
Total	575	189 (33%)	224 (39%)	150 (26%)	12 (2%)

Figure 2. Student Travel Mode Survey Geographic Regions (Source: Kittleson & Associates, *Vernonia School Siting Study Travel Mode Survey Results, 2008*)



Safe Routes to New Schools Recommendations

Travel Mode Survey Analysis

Mode Split

While Table 1 shows that overall the two most common methods of transportation to school are car (39%) and bus (33%), this overlooks some important facts regarding biking and walking to school. As Table 2 below shows, looking at travel behaviors by city region provides a different picture of how students travel to school in Vernonia.

Table 2. Student Travel Modes by Geographic Regions: Non-Motorized Split by Region

Location	Number of Students	Transportation Mode				Non-Motorized %
		Bus	Car	Walk	Bike	
City Region 1	81	12	38	28	3	38%
City Region 2	61	1	21	37	2	64%
City Region 3	73	9	19	43	2	62%
City Region 4	98	17	41	37	3	41%
In Vernonia	313	39	119	145	10	50%
Outside of Vernonia	262	150	105	5	2	
Total	575	189	224	150	12	

Table 2 shows that nearly two-thirds of students living in city regions 2 and 3 currently walk or bike to school, while the overall transportation mode split of students living in Vernonia is 50%. Furthermore, the Travel Mode Survey notes that the weather during the week of the survey was generally rainy and not conducive to bicycling. This indicates that despite challenging weather conditions, Vernonia students are biking and walking to school at significantly high rates. This walking and bicycling should continue to be encouraged, and providing the appropriate facilities is necessary to support this travel behavior.

Bussing

Recommendations in the TIA included bussing all students living west of Ora Bolmeier City Park. This would cause a dramatic decrease in the number of students who bike and walk to school, and the loss of exercise from time spent walking and bicycling compared to riding the bus could have negative health impacts for the affected students.

In addition to potential health impacts, the rise in the number of students bussed, and consequently the type and number of buses used, would also rise dramatically. The area west of Ora Bolmeier City Park is covered by City Regions 1, 2 and 3 in Tables 1 and 2 above. According to the Travel Mode Survey, approximately 22 students are currently bussed from those three regions. Under the bussing recommendation in the TIA, that number could rise as high as 215 students (all students in those three city regions). If all students in those three regions were bussed, 115 fewer students would walk and bike to Vernonia schools.

Providing the appropriate non-motorized facilities will allow for the continued high rates of walking and biking to school by students while providing facilities that benefit the entire community. Recommended routes are discussed further in the next section.

Bicycle and Pedestrian Connections Analysis and Recommendations

Unless directly noted, all connectivity recommendations in this memorandum are alignment recommendations only, with no associated design. Specific designs will be addressed in Technical Memo #6: Transportation Solutions Report. Previously suggested pedestrian and bicycle access options (not recommended) are featured in Figure 3; the new alignment alternatives discussed in this section are featured in Figure 4.

2009 Transportation Impact Analysis Alternatives

In addition to bicycle and pedestrian facilities on Texas and Missouri Avenues, and a new crosswalk across Bridge Street at Missouri Avenue, the 2009 Transportation Impact Analysis proposed two alternative routes to connect the new Vernonia Schools site to central Vernonia across O-A Hill (Figure 3). Both alternatives would be located north of Bridge Street, and travel east to west over O-A Hill through Ora Bolmeier Park, connecting with either North Street or Bridge Street on the west side of the hill.

Neither of the alternatives proposed in the 2010 Transportation Impact Analysis is feasible. The slope of O-A Hill is up to 40%, climbing over 100 feet in elevation in a short horizontal distance, which would necessitate numerous switchbacks to create a moderate grade for a path crossing the hill. Switchbacks would in turn require extensive cut and fill work and the removal of many trees. These large scale changes to a community park, the loss of natural resource assets and a heavy financial cost make these routes less than desirable alternatives for improving bicycle and pedestrian connections to the new Vernonia Schools site.

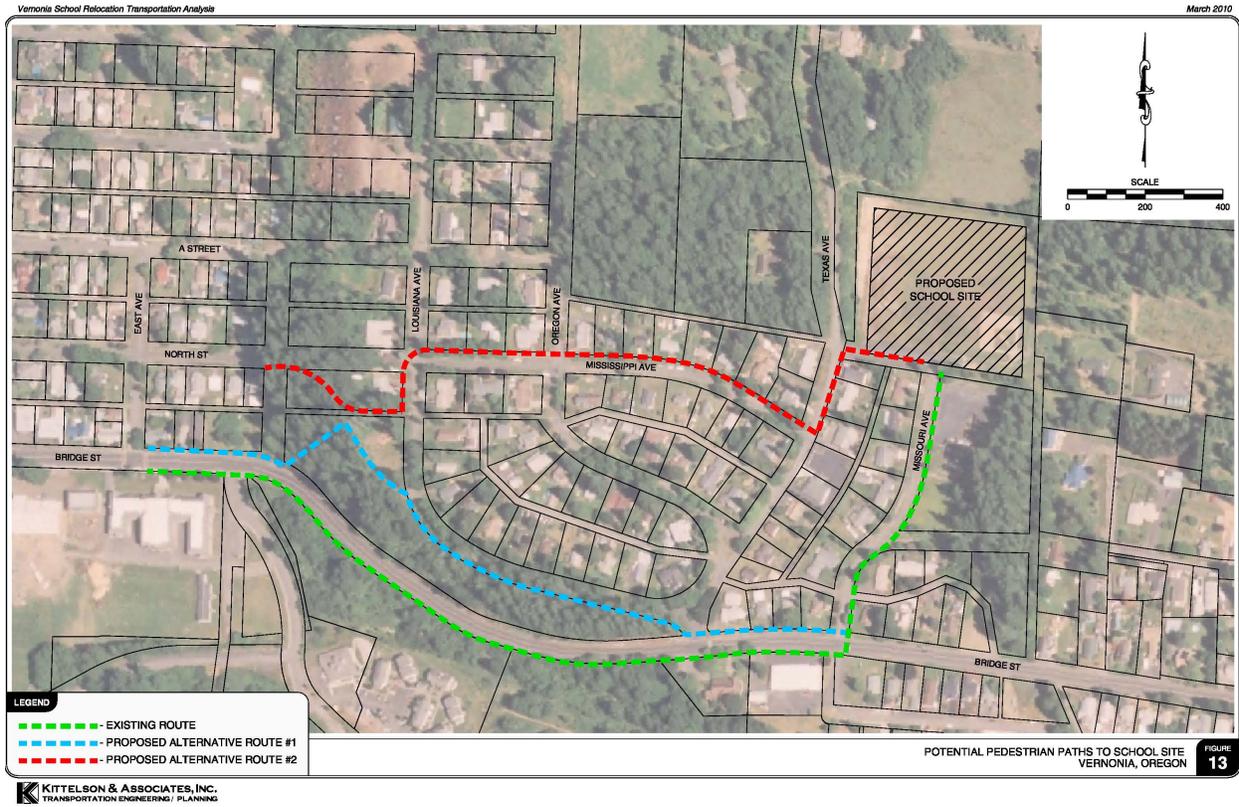
Access from West of O-A Hill

The relocation of Vernonia schools north of Bridge Street will make the existing shoulder sidepath on the south side of Bridge Street less attractive for bicyclists and pedestrians that need to cross O-A Hill. For the majority of students living west of O-A Hill who also live north of Bridge Street, walking and bicycling to and from school using the existing shoulder sidepath would require crossing Bridge Street four times each day. Moving the path to the north side of the street would allow these students to walk and bike to school without ever needing to cross Bridge Street.

Completion of this project would require:

- Expansion of the existing roadway within existing right-of-way on the north side of Bridge Street in order to provide a new path wider than the existing substandard 6 foot width;
- Construction of retaining walls in any locations where cuts are necessary to expand the roadway;
- Construction of a barrier between the new path and the roadway;
- Roadway restriping and construction of a new south side guardrail; and
- Intersection treatments at either end of the new path at Texas Avenue and East Avenue, to facilitate crossing movements and increase the visibility of pedestrians and bicyclists reentering the sidewalk and roadway network.

Figure 3. Previously Proposed Bicycle and Pedestrian Access Options (Source: Kittelson & Associates, Vernonia School Campus Transportation Impact Analysis, 2009)



<See Figure 4 Safe Routes to New Schools>

Access from Nehalem River Bridge

Bridge Street Improvements

Construction of new sidewalks could fill the gap in the pedestrian network that currently exists between Spencer Avenue and Nehalem River Bridge. Completion of this project may require cuts into the embankment on the north side of Bridge Street between Spencer Avenue and Riverside Drive. Sidewalks on the north side of Bridge Street will serve the majority of students walking to school who live north of Bridge Street, and who do not need to use sidewalks on the south side of the street in order to travel to school.

For students living east of Nehalem River Bridge, the current lack of bike lanes between Mist Drive and Spencer Avenue is an obstacle to bicycling to school. Extending bike lanes from Spencer Avenue and Vernonia Lake City Park to the Nehalem River will close this gap and encourage students to bicycle to school. The existing shoulders are less than 4 feet wide in some constrained areas; a modest roadway expansion will allow these shoulders to be expanded to 5 feet on the south side and 6 feet on the north side adjacent to sidewalk, to meet the standard width for bike lanes given in the Oregon Bicycle and Pedestrian Plan.

Alabama Avenue

A new route for bicyclists and pedestrians to access the school site following Alabama Avenue (with a connection to Bridge Street via Riverside Drive). This route provides a desirable more direct, lower traffic volume street for non-motorized users that avoids potential conflicts and the higher traffic volumes of Bridge Street.

There are two alignment options available at the west end of Alabama Street:

- Option A - utilizing the existing private road as a non-motorized connection and connecting into the school campus; or
- Option B - connecting through to an unused right-of-way and creating a multi-use path into the school campus.

Access from Texas/Missouri Avenues

Texas Avenue

As noted in the TIA, a pedestrian and bicycle-only connection is recommended connecting Texas Avenue to the school campus. With this connection, and the recommended restricted vehicle access, Texas Avenue becomes an attractive, low-traffic volume alternative to Missouri Avenue for non-motorized users to connect to both the residences above O-A Hill and to Bridge Street.

Missouri Avenue

As noted in several locations in the TIA, improved non-motorized access along Missouri Avenue is necessary to provide multi-modal access to the new school campus. Installing a multi-use trail along the west side of Missouri provides a direct connection from the recommended multi-use path along Bridge Street to the school campus, while avoiding any pedestrian crossings at the Bridge Street/Missouri Avenue intersection.

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