

Statewide Bicycle and Pedestrian Facility Inventory

Washington State

Washington State Department of Transportation

Data Collected

- Inventoried all state-owned non-motorized facilities in 2002-2003, and continue to update the inventory as projects are completed
- Used photo log and performed in-field quality-checks on some sections of roadway

Highlights

- Developed inventory format
- Stored data in GIS
- Used data to update non-motorized component of state transportation plan
- Compared locations of non-motorized transportation facilities with pedestrian and bicycle crashes

Purpose of Collecting Data

The State Secretary of Transportation, Douglas B. MacDonald, has pushed strongly for better data to address non-motorized transportation needs. Washington State is interested in providing more sidewalks, improving pedestrian and bicycle safety near schools, and making other improvements to non-motorized transportation facilities. The Washington State Bicycle and Pedestrian Program collected measurable data to help the Washington State Department of Transportation (WSDOT) make decisions about where and what types of bicycle and pedestrian facility improvements are needed. Better information about existing conditions was also needed for local Safe Routes to Schools projects because about half of the public elementary schools in Washington State are on state-owned roadways.

Geographic Area Description

There are over 7,000 miles of state-owned roadways in Washington State (population 5,900,000). This represents about nine percent of the state's total roadways. The western part of the state includes the Seattle metropolitan area.

Methodology

History of data collection effort

WSDOT keeps a video log of its entire state roadway system. About half of the state-owned roadways are videoed each year using a specially-equipped van. This van has a video camera that records an image of the roadway from a perspective similar to what a typical driver would see. Both directions of travel are recorded. The video recordings include the date that the roadway segment was observed. During 2002 and 2003 Bicycle and Pedestrian Program staff viewed the State Route Video Log to identify existing pedestrian and bicycle facilities.

Data Collection

The State Route Video Log was used to identify the locations of state-owned non-motorized transportation facilities. Two data collectors spent every day for two months going through the video log and recording characteristics of roadways [(see Figure 1)]. They identified the following features:

- Bike lanes
- Shoulders
- Shared-use pathways beside the roadway
- Sidewalks
- Walking paths (not worn dirt paths)
- Signalized and unsignalized intersections
- Roadway medians
- Marked crosswalks
- Transit stops
- ADA facilities

Figure 1. Roadway Inventory Sheet

State Route	SRMP	PedCW	Sidewalk	Far	Near	Increasing	Decreasing	Description_Ped	Other	B	ARM	Region	Direction	Ow
2	0.03	No	Yes								0.03	1	RIGHT	CT
2	0.77	No	No								0	1	RIGHT	CO
2	0.77	No	No								0.77	1	LEFT	CO
2	1.53	No	No								0.76	1	RIGHT	CT
2	1.64	No	No								0.87	1	BOTH SIDI	ST
2	3.85	No	No								3.85	1	RIGHT	CO
2	10.09	No	No								10.03	1	LEFT	CO
2	10.55	No	No								10.5	1	LEFT	CO
2	12.95	Yes	Yes	1	1	1	1	Striped and Signalized			12.9	1	LEFT	CT
2	12.95	Yes	Yes					Striped and Signalized			12.9	1	RIGHT	CT
2	13.87	Yes	No								13.82	1	BOTH SIDI	CT
2	14.13	No	No								14.08	1	LEFT	CT
2	14.37	Yes	No	1		1	1	Striped and Signed			14.52	1	BOTH SIDI	CT
2	14.6	Yes	Yes	1	1	1	1	Striped and Signed	14.61 Tra		14.52	1	BOTH SIDI	CT
2	14.92	Yes	Yes	1	1	1	1	Striped and Signed			14.87	1	RIGHT	ST
2	14.92	Yes	Yes	1	1	1	1	Striped and Signed			14.87	1	LEFT	CT
2	15.15	No	Yes								15.1	1	LEFT	CT
2	15.15	No	Yes							15.12 Tra	15.1	1	RIGHT	CT
2	15.22	Yes	Yes	1	1	1	1	Striped and Signed			15.17	1	RIGHT	CT
2	15.22	Yes	Yes	1	1	1	1	Striped and Signed			15.17	1	LEFT	CT
2	16.98	No	No								16.93	1	RIGHT	CO
2	16.98	No	No								16.93	1	LEFT	CO
2	17.9	No	No								17.85	1	RIGHT	CO
2	18.09	No	No								18.04	1	LEFT	CO
2	18.67	No	No								18.62	1	LEFT	CO
2	20.12	No	No								20.07	1	BOTH SIDI	CO
2	21.57	No	No						Under Co		21.52	1	RIGHT	CT
2	21.57	No	No						Under Co		21.52	1	LEFT	CT
2	21.92	No	No						Bridge 22		21.87	1	LEFT	CT
2	22.25	No	No								22.2	1	LEFT	CT
2	22.3	No	No								22.25	1	LEFT	CT
2	22.37	No	No								22.32	1	RIGHT	CT
2	22.37	No	No								22.32	1	LEFT	CT
2	22.43	No	No								22.38	1	BOTH SIDI	CT

After the facilities were identified from the video log, data collectors drove along many of the state highways to ground-truth the data. These field checks took an additional three months to complete.

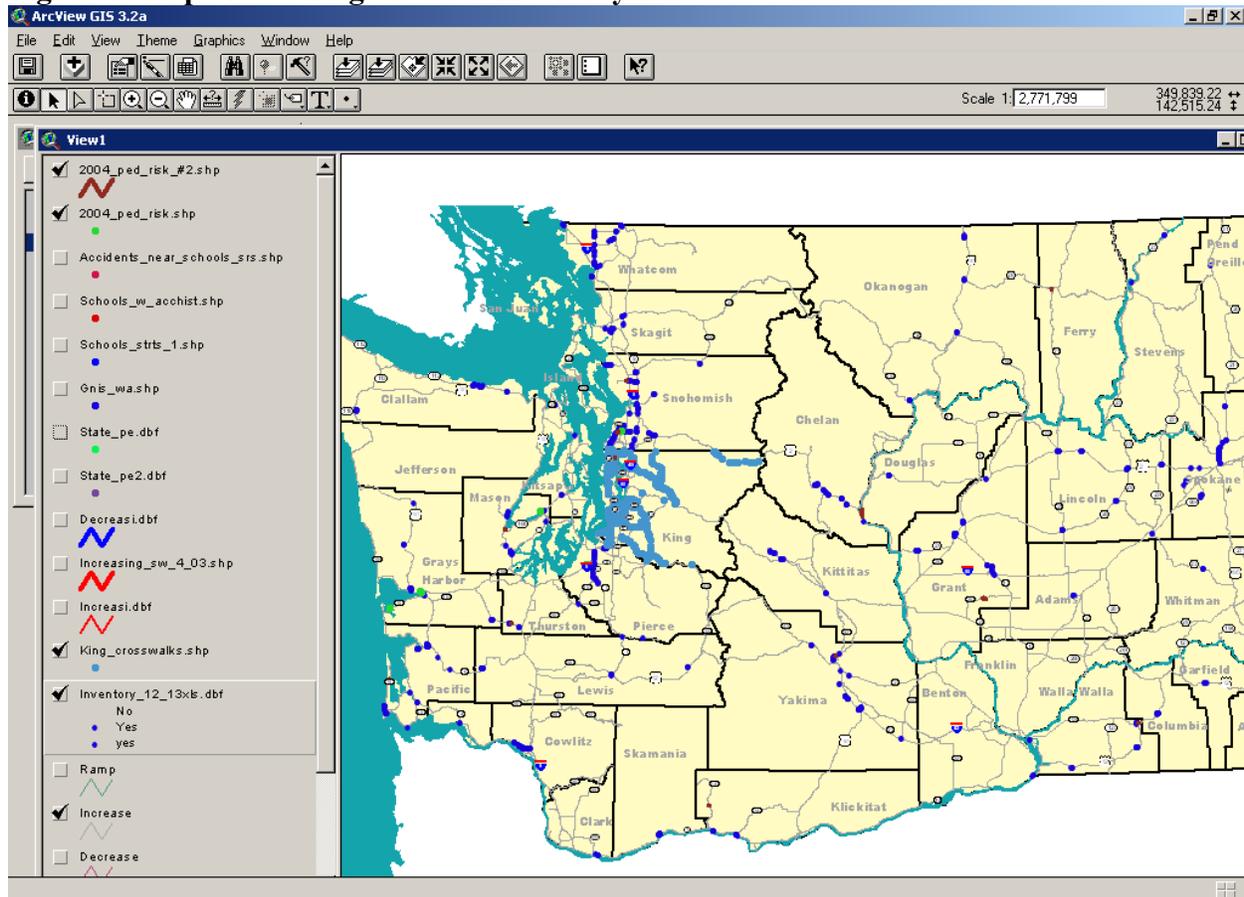
Data storage

The locations of each type of facility are stored in a GIS database. This database can be used to display the locations of one or more types of non-motorized facilities in a local area or for the entire state.

Data analysis

The Bicycle and Pedestrian Program produced a basic report to summarize the results of the facility inventory. This report summarized the miles of sidewalk within the state's urban growth boundaries average intersection spacing within central business districts, and other information (see Figure 2).

Figure 2. Map of Washington State Inventory Data



The pedestrian and bicycle facility data have helped WSDOT update its Non-Motorized Transportation Plan, which is a part of Washington's Transportation Plan (the statewide comprehensive transportation plan). WSDOT used the non-motorized facility inventory as a prioritization tool for the Non-Motorized Plan. The facility data helped planners identify projects that would have the greatest positive effects on bicycling and walking in Washington. Pedestrian and bicycle facility data were also compared to other state-owned roadway characteristics that had been documented in WSDOT's highway log.

Data maintenance and management

Non-motorized transportation facilities continue to be constructed throughout Washington State. The Bicycle and Pedestrian Program keeps track of when new facilities are added through WSDOT's project control forms. As a result, the facility inventory has been updated periodically to include all new projects.

Data dissemination

Results of the facility inventory have been presented to the WSDOT Bicycle and Pedestrian Advisory Committee and a highway safety group within WSDOT. The highway safety group is interested in using the data to identify roadway characteristics that are related to pedestrian and bicycle crashes. It would like to be able to predict high-risk areas for bicycle and pedestrian crashes so that injuries and fatalities can be reduced.

Innovations and Accomplishments

The non-motorized facility inventory has been useful for prioritizing improvements and analyzing safety. It has also been valuable to the Bicycle and Pedestrian Program because it has provided all WSDOT staff with concrete data on pedestrian and bicycle facilities. This has increased the awareness of state-owned non-motorized facilities throughout the agency.

Lessons Learned

Bicycle and Pedestrian program staff anticipate updating the inventory every three to four years. Even though the database is updated with new projects on a regular basis, a comprehensive inventory will pick up any projects that have been missed and identify facilities that have been lost during road widening or for other reasons.

Redoing the inventory will also give WSDOT an opportunity to incorporate adjustments that will make the data more useful. For example, the data collectors could collect more information about maintenance issues. This would result in a database with detailed fields showing where pavement repairs, debris removal, or other types of maintenance upgrades are needed.

Subjective assessments, such as the need for maintenance improvements, should be added to the facility inventory with caution. Maintenance issues should be identified in a consistent way, and the results should be reported in a way that people who interpret the results understand that they are subjective.

Cost of Data Collection Effort

Recording the characteristics of about 7,000 roadway miles from the video log took two staff members approximately two months (700 total hours of labor). Verifying the data in the field took the two-person team approximately three months (1000 total hours of labor). Analysis of the data required additional staff time.

Contact

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