Coalition for Effective Transportation Alternatives

Seattle Light Rail, Safety of School Children, and WSDOT

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by John S. Niles

Technical Director, CETA

The authorization of construction of the Sound Transit Link Light Rail Initial Segment through the Rainier Valley in Seattle is an error that will inevitably be revealed when people – in vehicles and on foot – are struck by trains and seriously injured or killed as a direct result of the at-grade design. Extrapolations from environmental record data (1999 Central Link EIS) and the history of light rail nationwide suggest eight fatalities from inter-modal collisions in the first decade of operation.

Because of the proximity of this fast-paced urban railroad operation to many school children, Sound Transit's light rail plan should be a special focus of Safe Routes to Schools professionals and the State Transportation Commission.

Although riding on trains is much safer for travelers than riding in automobiles, because of inter-modal collisions with road vehicles and pedestrians, light rail trains in America generate a higher fatality rate per vehicle mile and per passenger mile than urban automobile driving, as shown in the table.

	Fatalities per billion vehicle miles 1991-2000	Fatalities per billion passenger miles 1991-2000
Light Rail	355	14
Urban Driving	11	10

Sources: John Semmens, Arizona DOT, compiled from Federal Transit Administration, *Safety Management Information Statistics (SAMIS) 1999 Annual Report;* American Public Transportation Association, *2002 Public Transportation Fact Book; and* Federal Highway Administration, *Highway Statistics* and presented to the Transportation Research Board Annual Meeting, 2003.

Most light rail deaths are not train passengers, but people hit by trains. The relatively small light rail fatality count nationwide (114 from 1991 to 2000) is the result of fewer than two dozen systems in operation. More are scheduled to open soon, including Houston and Minneapolis in 2004. Link Initial Segment is planned to open in 2009.

The high rate of fatalities per hour of light rail operation is a concern for safety professionals. Federal Transit Administration safety guidelines published in the report *Hazard Analysis Guidelines for Transit Projects* (posted at http://transit-safety.volpe.dot.gov) set a goal of no more than one fatality per one million operating hours. Central Link Initial Segment will likely be more than ten times worse than that.

Building new urban street railroads given this track record is at odds with the USDOT's proclamation that safety is the top priority in America's transportation system. Making a

street-running trolley system the centerpiece of Puget Sound's 100 year vision for high capacity mass transit is at odds with the new USDOT initiative called Safety Conscious Planning, intended to reduce the incidence of intrinsically dangerous transportation infrastructure in the planning stage.

Nevertheless, at-grade light rail is now authorized and funded for construction in Seattle. Link Initial Segment is a new, street-running urban railroad that is envisioned over the decades ahead to expand into a 125 mile system operating between Everett and Tacoma, with a branch across Lake Washington to Redmond. The Initial Segment operating schedule calls for 272 trains per weekday, each 190-feet long, operating at up to 35 mph between stops. Each of these trains traveling along four miles of unfenced track in the Rainier Valley will pass through 18 grade-level street crossings and ten additional pedestrian track crossings. Maps are shown on the last page. There will be more, longer trains as the system expands. More safety data are at http://www.globaltelematics.org.

The map below on the right shows the Initial Segment route in the Rainier Valley as a solid north-south red line, and also shows the public schools nearby to the light rail tracks. There are 13 public schools for grade 8 and below in school service areas adjacent to the train tracks. There are probably some private schools in the area as well.

The extent to which school children on foot, on bicycles, in cars, or in school buses will have to cross the Link tracks during an average school day is at present undocumented. However, well before the trains start running, the numbers should be determined and pondered by professionals who care about the safety of children. Sound Transit cares about the safety of children, certainly. The Sound Transit approach to railroad safety includes warning signs and signals along the tracks, plus educational programs delivered in schools and elsewhere. Safety professionals should assess whether all the safety measures planned are good enough. If not, there may still be time to influence the design of the light rail line itself, or at least the infrastructure that lets school children cross the tracks safely.

Fortunately, the WSDOT has responsibilities for light rail safety in Seattle, set by Federal regulation. The Public Transportation and Rail Division is the designated State Fixed Guideway Safety Oversight Agency. Mr. Jeff Schultz is the responsible official.

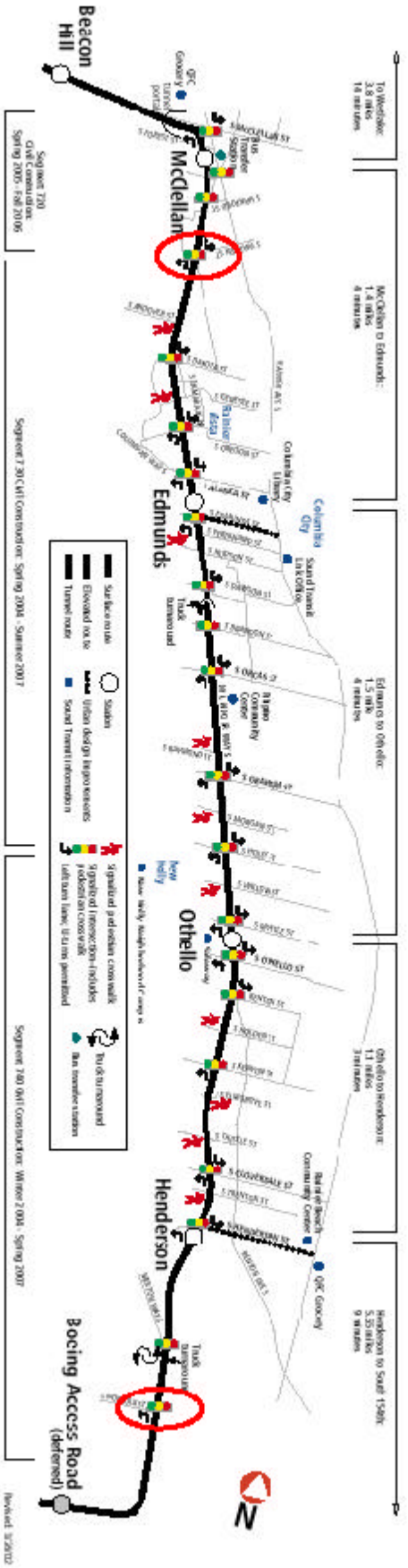
The overall Federal State Fixed Guideway Oversight Program is described in a report *Compliance Guidelines for States with "New Starts" Projects* (posted at http://transit-safety.volpe.dot.gov). The Federal Transit Administration actively encourages State Oversight Agencies to address safety during all pre-start-up phases, including planning and design.

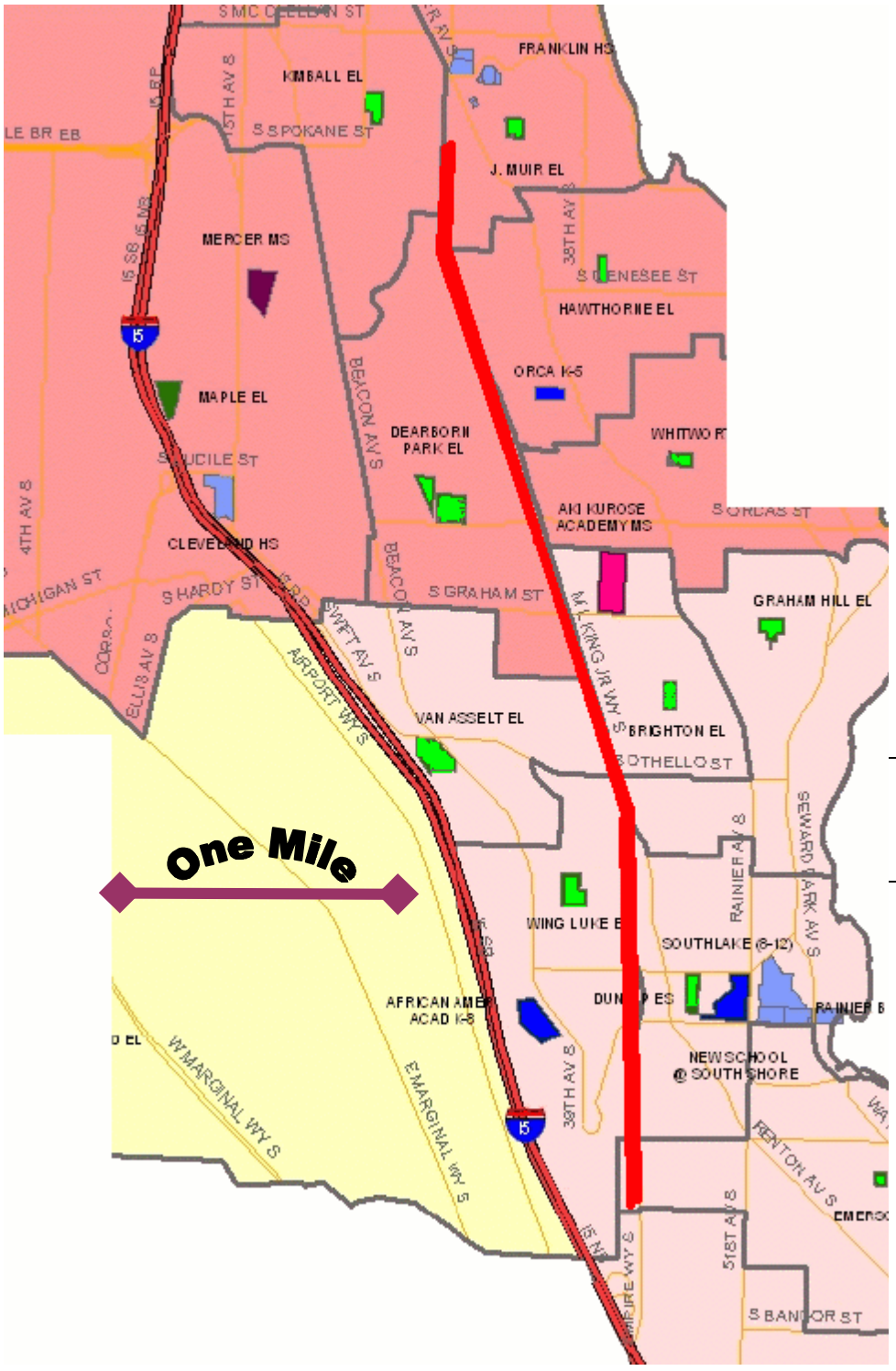
CETA recommends that professionals running the Safe Routes to School program work in tandem with the authority of the Washington State Fixed Guideway Safety Oversight Program in WSDOT to make sure that Link Initial Segment is a sufficiently safe addition to the Seattle urban landscape.

Contact: John Niles, jniles@alum.mit.edu or 206-781-4475.

Note: CETA members know that there are more effective mass transit alternatives for the Puget Sound Region than Central Link Light Rail, even if Link were of a much safer design. CETA describes an alternative system at http://www.effectivetransportation.org.

Public Schools Near Link Light Rail in the Rainier Valley.





Left hand map from Sound Transit. Right hand map from Seattle Public Schools.