

# **PROPOSAL OF HIGH CAPACITY URBANAUT® PUGET SOUND REGIONAL MONORAIL MASTERPLAN WASHINGTON STATE, USA**

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The Puget Sound Region in Washington State, USA, represented by the 3 counties, Pierce, King, and Snohomish should consider a high capacity Urbanaut® monorail as a potential extended transportation alternative in the future to relieve existing severe traffic congestion and gridlock in the region.

To evaluate such a potential, an Urbanaut® Puget Sound Regional Monorail Master Plan (PSRM) feasibility study will be needed, says Einar Svensson, an experienced authority on monorails. Svensson is president of the Urbanaut® Monorail Company and resides near Seattle, Washington. To learn more about the Urbanaut®, please see the website <http://www.urbanaut.com> where there is extensive data on the technology, including costs.

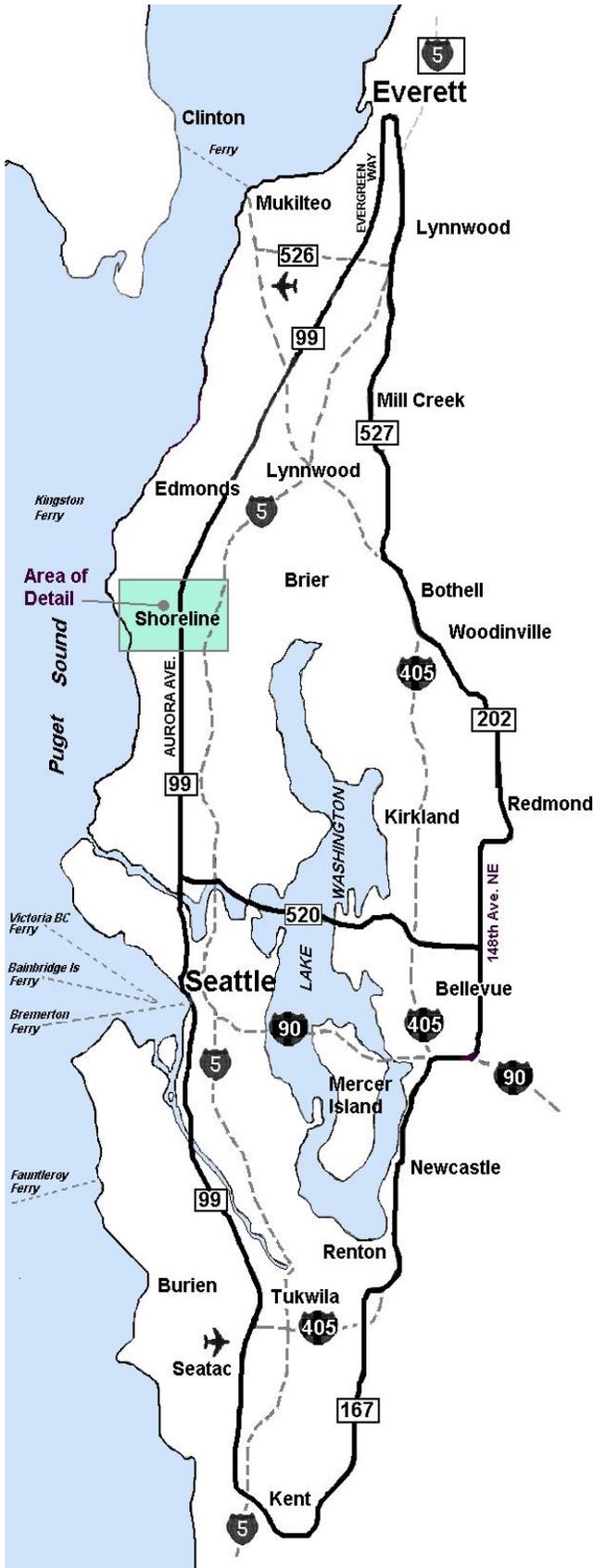
The Urbanaut® PSRM Plan, as outlined in the following, applies the Urbanaut® technology, a new, unique, high tech monorail with numerous practical, technical, and environment advantages that cost less to install and operate. Urbanaut® has far more flexibility than any other type of transit system, including light rail, and it is not dependent on a massive beamway. Future additions and deletions can be made much easier with the Urbanaut®, with several options of lightweight prefabricated guideway design and components.

Such a Regional Master Plan as follows is applicable to numerous cities and areas worldwide that are in need of high capacity, environmentally friendly regional transportation systems.

# URBANAUT® PUGET SOUND REGIONAL MONORAIL MASTER PLAN

## Illustration 1

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The Urbanaut® Company, Inc. Monorail System

The Urbanaut® Puget Sound Regional Monorail Master Plan proposed for the Central Puget Sound, Washington, USA (Illustration #1) involves high capacity dual guideways along the following corridors:

1. A West Side Trunk Line along Highway 99 from SeaTac Airport in the south to Everett in the north.
2. An East Side Trunk line from SeaTac airport through Renton, Bellevue, and Redmond, with the northern portion along Highway 527, to Everett in the north.
3. A Central Connector between the West and East-side Trunk lines will be across the Lake Washington 520 Floating Bridge by adding pontoons to each side of the bridge for 2 Urbanaut® guideways, or constructing a new lake-crossing incorporating a high capacity Urbanaut® along the I-90 corridor (See Illustrations 2 and 3 below)

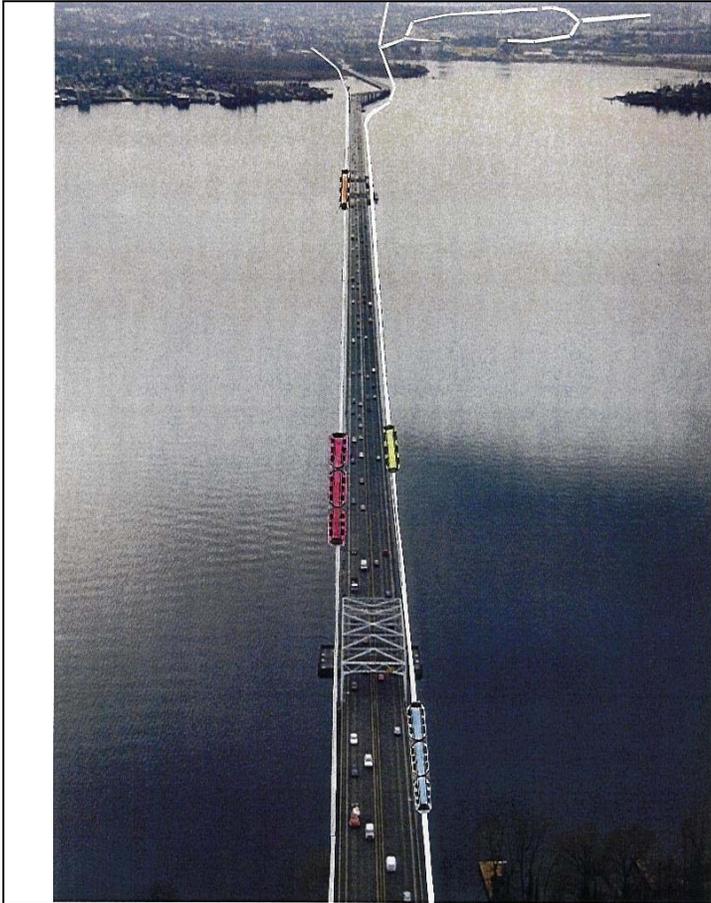
Basically the overall PSRM plan will be a Figure 8 layout with dual high speed switching connecting east and west ends of a Central Connector across Lake Washington.

A regional Figure 8 plan, as shown, gives the most flexibility and efficiency in a high capacity monorail distribution plan because it provides the passenger several route options, namely:

1. One large perimeter loop
2. 2 loops, 1 north and 1 south of 520 (or I-90)
3. A total figure-8 configuration plan
4. All options are reversible.

With the trains stopping at every station at 2 miles apart, the maximum speed will be 80 mph (128 km/hr). For a traveling schedule where the trains stop every second station, or 4 miles apart the maximum potential speed is 115 mph (185 km/hr). This is close to twice the maximum allowable auto speed limit on a highway's right-of-way due to existing curvatures.

The system will have high capacity intersection stations incorporating organized effective passenger service systems, including facilities for loading and unloading of buses and vans, park and ride, car pools, and private carriers. The PSRM plan would integrate with ferry services in Seattle, Edmonds and Mukilteo. The Urbanaut® master plan has the potential capacity to move more than 500,000 passengers daily

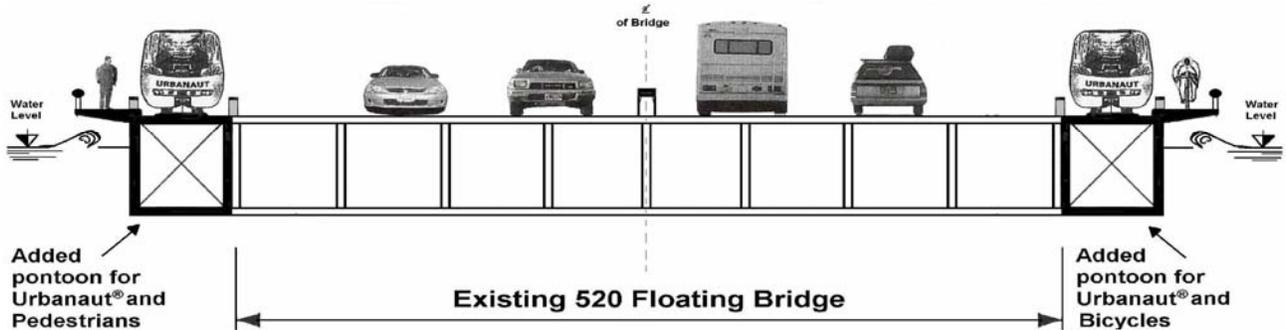


**Illustration #2**

**URBANAUT<sup>®</sup> GUIDEWAY**  
**Attached to Outside of *Floating***  
**Bridge**

**Illustration #3**

**Urbanaut<sup>®</sup> Monorail On Highway 520 Floating Bridge**



**Addition of 2 pontoons Strengthens Bridge for 2 Urbanaut Guideways  
 Overhang for Pedestrian and Bicycles Prevents Stormy Water Overflow**

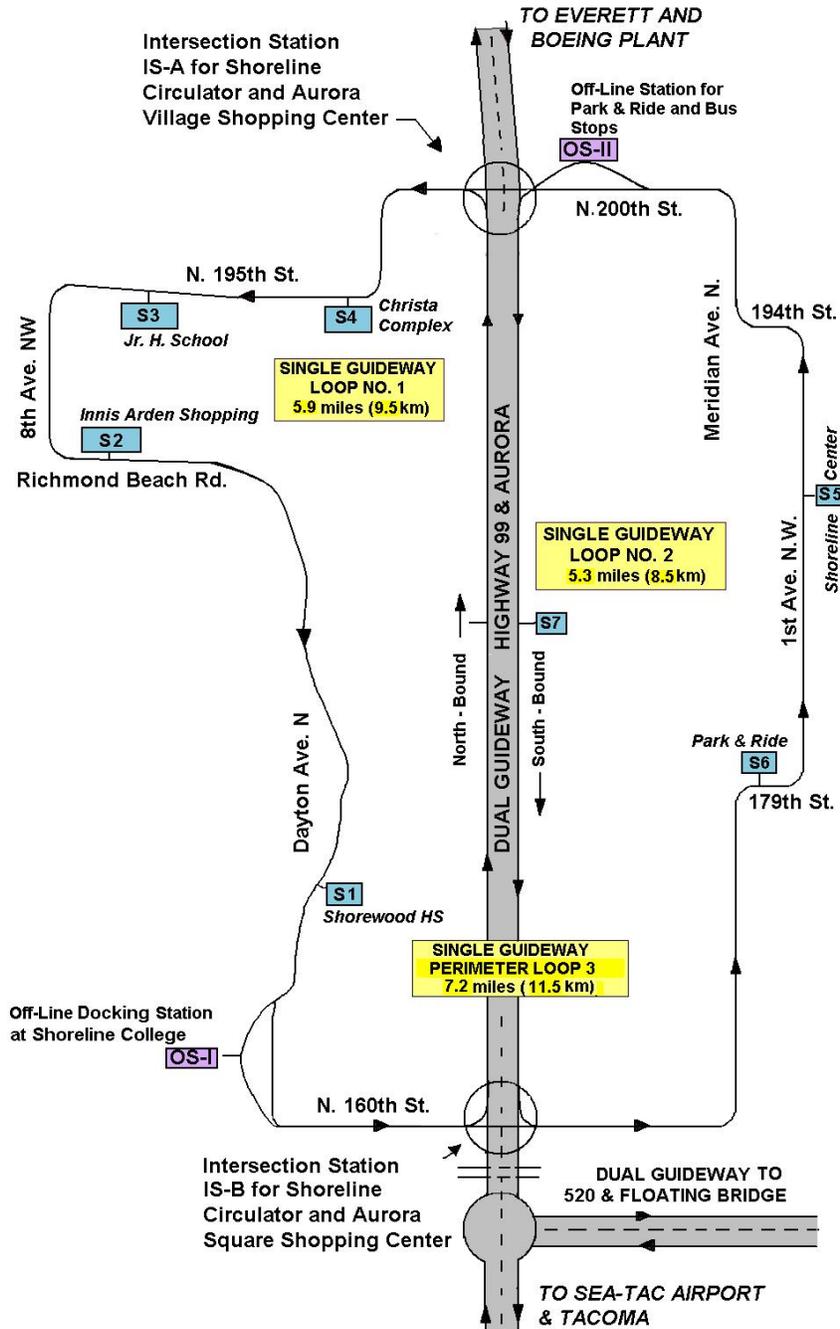
The Urbanaut<sup>®</sup> can double the existing bridge capacity.

An independent international transportation agency BWR (see References on urbanaut.com) recommended Urbanaut<sup>®</sup> as a safer and less costly choice on the floating bridge than Light Rail.

# SHORELINE URBANAUT® CIRCULATOR

Typical Feeding Lines for High Capacity Monorail Trunk line on Highway 99, Washington, USA

Illustration 4



The Urbanaut® Company, Inc. Monorail System  
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In addition special smaller, independent single guideway Urbanaut® monorail circulators, extending into high density communities, will interact continuously with passenger transfer to and from the trunk line. The circulators using smaller vehicles will have dual functions:

1. To distribute passengers within the community;
2. To feed (unload and load) the trunk line by transfer or simple, inexpensive switching of vehicles directly onto the trunk line.

**The Urbanaut® is the only monorail system where smaller vehicles operating on a smaller guide way can be switched onto a larger high capacity guide way.**

An example of such a community circulation system is the single guide way layout recommended for the City of Shoreline (Illustration #4, "Circulator for City of Shoreline – Detail of Regional Master Plan").

The Shoreline Circulator, using smaller vehicles, will serve schools, community colleges, public centers and shopping plazas, in addition to residential and multiple housing areas.

Such a circulator as shown has the potential of directly serving up to 50% of the residents within a city like Shoreline. Similar single guideway circulators can be planned for Everett, Mukilteo, Lynnwood, Edmonds, Ballard and Seattle in the north, and West Seattle, Burien, Renton, Tukwila, and SeaTac in the South, and communities like Issaquah, Redmond, the Microsoft campus along the east side of Lake Washington (including a circulator badly needed within the University of Washington district and campus).

# URBANAUT® PUGET SOUND REGIONAL MONORAIL MASTER PLAN

The technical data for the Urbanaut® PSRM Master Plan of a total of 100 miles of elevated and surface Urbanaut® guideways, together with cost estimates of 3 stages of construction for the PSRM Plan is shown in Illustration #5.

## Illustration 5

### TECHNICAL DATA

- 1) 100 miles (160KM) of Elevated and Surface Urbanaut® Dual Guideway
- 2) 50 high capacity stations, spaced 2 miles apart
- 3) Trains each capable of carrying 325 passengers
- 4) Daily potential moving capacity: 500,000 passengers
- 5) Maximum speed of trains = 80 mph (128 km/hr) for train stops every station
- 6) Maximum potential speed = 115 mph (185 km/hr) for train stops every second station
- 7) 2 Maintenance facilities
- 8) Apply SemiMaglev Urbanaut™ monorail technology  
(For information search internet under "Urbanaut Monorail")

### COST ESTIMATE OF 3 STAGES OF CONSTRUCTION

Stage I	West Side:	Everett to Seatac With 20 stations	= 40 miles	\$2.6 billion
Stage II	East Side:	Seatac – Kent – Everett With 25 stations	= 50 miles	\$3.0 billion
Stage III	Central Connector:	Highway 99 across 520 Bridge With 5 stations	= 10 miles	\$0.6 billion
	Total	100 miles of Urbanaut® dual guideway With 50 stations		\$6.2 billion

Cost Estimate does not include:

- 1) Updating the 520 Floating Bridge
- 2) Any underground (tunneling)
- 3) Major utility relocation
- 4) Cost of surface and aerial right of way (to be donated by state and local government)
- 5) Financing of capital  
(Revenue and other income may pay for operation, part or all of installation over a 15 year period) (Example: existing Seattle Monorail)

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## URBANAUT® TRAIN CAPACITY

### Illustration 6

The Urbanaut® system as shown is applicable to trunk-lines and as commuter vehicles and for large volumes of passenger traffic per hour. It can be made for high speed and longer distances between stops.



An Urbanaut® dual guideway and 6-car trains with a length of 145 ft (45m) has a potential carrying capacity of 26,000 passengers per hr (seated + standees), with a headway of 1½ minutes between trains.

### SUMMARY

An integrated, efficient transportation distribution of people in the Central Puget Sound is mandatory to healthy growth of our communities, and old and new industries. Boeing executives, as an example, have repeatedly complained that the existing gridlocked highways are severely hampering their operation of facilities spread from Everett to Kent; the moving of their headquarters to Chicago was just a beginning. Virtually all the other major industries in the regions are also adversely affected by inefficient, stressful employee commutes between home and work. The Urbanaut® PSRM plan has merit in relieving such congestion, practically, technically and economically and should be given serious consideration for further study.

Governments have to face the fact that their way of solving the transportation chaos by promotion of transportation dependent on imported oil has not worked. Our citizens are aware of this and are exhibiting their dislike of the way political leadership has been dragging their feet. Our leadership should commit fully to the positive potential of non-polluting alternatives such as the Urbanaut® Monorail Master Plan which has a projected passenger capacity equal or larger than the freeway system in central Puget Sound. Forty-five years ago Washington State's Governor Albert Rossellini (1957-1965) endorsed a monorail to be built from Everett to Sea-Tac airport (which is Stage I of the PSRM proposal). Since then our leadership in Olympia and Washington D.C. has accomplished little in solving our growing transportation needs. State, federal and local governments can cooperate by actively taking part in initiating studies and by donating right of way for Master Plan Trunk lines.

**A high tech Urbanaut® Monorail manufacturing industry could fit very well into any urban "transportation hub" environment in the world, including Puget Sound. To plan multibillion dollar monorail installations based upon imports of vehicle and guideway components makes little economic sense for a region or county. Local design, engineering, manufacturing, construction and testing could employ thousand of skilled people in an industry that has a tremendous world wide marketing potential - a study suggests a trillion dollar business.**