

**Final tide zone node point locations for OPR-N438-NRT3-2003, Sheet F00487.**

Format: Tide Station (in recommended order of use)  
Average Time Correction (in minutes)  
Range Correction  
Longitude in decimal degrees (negative value denotes Longitude West),  
Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone CR42	944-0422	-30	1.20
-123.109087 46.189122			
-123.080374 46.17976			
-123.097367 46.160217			
-123.120053 46.16274			
-123.127252 46.16266			
-123.109087 46.189122			
Zone CR43	944-0422	-24	1.17
-123.080374 46.17976			
-123.046387 46.171211			
-123.054005 46.165511			
-123.073928 46.152479			
-123.097367 46.160217			
-123.080374 46.17976			
Zone CR44	944-0422	-18	1.14
-123.032323 46.156959			
-123.042285 46.14474			
-123.054591 46.138223			
-123.073928 46.152479			
-123.054005 46.165511			
-123.046387 46.171211			
-123.032323 46.156959			
Zone CR45	944-0422	-18	1.11
-123.032323 46.156959			
-123.010642 46.143926			
-123.026463 46.120295			
-123.040662 46.126258			
-123.054591 46.138223			
-123.042285 46.14474			
-123.032323 46.156959			

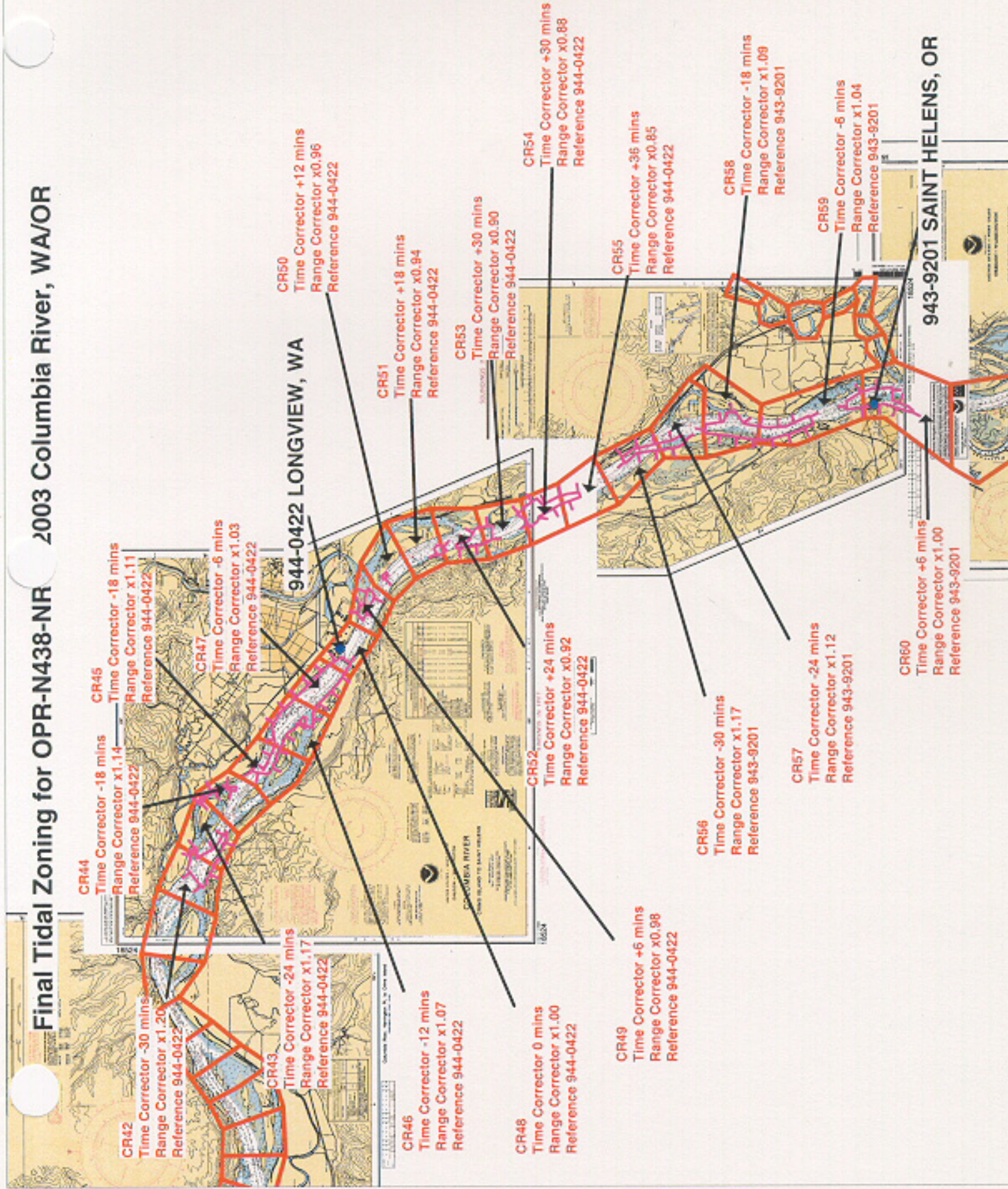
Zone CR46	944-0422	-12	1.07
-123.010642 46.143926			
-122.983101 46.130075			
-122.99775 46.110514			
-123.026463 46.120295			
-123.010642 46.143926			
Zone CR47	944-0422	-6	1.03
-122.983101 46.130075			
-122.959076 46.11622			
-122.971381 46.101954			
-122.99775 46.110514			
-122.983101 46.130075			
Zone CR48	944-0422	0	1.00
-122.935636 46.102362			
-122.959076 46.11622			
-122.971381 46.101954			
-122.945598 46.089315			
-122.935636 46.102362			
Zone CR49	944-0422	+6	0.98
-122.945598 46.089315			
-122.935636 46.102362			
-122.896961 46.097062			
-122.911611 46.090946			
-122.922159 46.081975			
-122.945598 46.089315			
Zone CR50	944-0422	+12	0.96
-122.922159 46.081975			
-122.911611 46.090946			
-122.896961 46.097062			
-122.87109 46.085832			
-122.907554 46.072167			
-122.922159 46.081975			
Zone CR51	944-0422	+18	0.94
-122.907554 46.072167			
-122.897424 46.05813			
-122.861904 46.065375			
-122.87109 46.085832			
-122.907554 46.072167			

Zone CR52	944-0422	+24	0.92
-122.897424 46.05813			
-122.861904 46.065375			
-122.861903 46.045335			
-122.894973 46.038514			
-122.897424 46.05813			
Zone CR53	944-0422	+30	0.90
-122.894973 46.038514			
-122.861903 46.045335			
-122.856394 46.024435			
-122.885789 46.019745			
-122.894973 46.038514			
Zone CR54	944-0422	+30	0.88
-122.856394 46.024435			
-122.845982 46.007798			
-122.874765 46.003105			
-122.885789 46.019745			
-122.856394 46.024435			
Zone CR55	944-0422	+36	0.85
-122.874765 46.003105			
-122.859455 45.980056			
-122.828835 45.991578			
-122.845982 46.007798			
-122.874765 46.003105			
Zone CR56	943-9201	-30	1.17
-122.859455 45.980056			
-122.829446 45.959557			
-122.810461 45.965961			
-122.828835 45.991578			
-122.859455 45.980056			
Zone CR57	943-9201	-24	1.12
-122.829446 45.959557			
-122.810461 45.965961			
-122.778196 45.948347			
-122.784541 45.941242			
-122.811075 45.942043			
-122.829447 45.940761			
-122.829446 45.959557			

Zone CR58	943-9201	-18	1.09
-122.820188 45.917782			
-122.829447 45.940761			
-122.811075 45.942043			
-122.784541 45.941242			
-122.778196 45.948347			
-122.769462 45.940832			
-122.794991 45.915737			
-122.820188 45.917782			

Zone CR59	943-9201	-6	1.04
-122.820188 45.917782			
-122.794991 45.915737			
-122.773752 45.870418			
-122.80393 45.868985			
-122.821485 45.900158			
-122.820188 45.917782			

Zone CR60	943-9201	+6	1.00
-122.80393 45.868985			
-122.803822 45.860216			
-122.83661 45.829399			
-122.782104 45.829772			
-122.7672 45.855002			
-122.770156 45.861761			
-122.773752 45.870418			
-122.80393 45.868985			



## Tides and Water Levels

Port Instructions define seventeen tide zones within F00487. Tide corrector values, referenced to tide stations at Longview, WA (944-0422), and St. Helens, OR (943-9201) are provided in the zoning file “N438NRT32003CORP” which is included with the project data.

Verified, six-minute water levels relative to Columbia River Datum were downloaded from the relevant station via the NOAA, NOS, CO\_OPS web site [http://co-ops.nos.noaa.gov/data\\_res.html](http://co-ops.nos.noaa.gov/data_res.html). These were imported into a text file on the local computer and appended to the appropriate CARIS tide file, 9439201.tid, or 9440422.tid.<sup>3</sup> Water level correctors were applied to all hydrographic data in CARIS using the tide utility and the zoning file, N438NRT32003CORP.zdf.