

**Interim Targets – MARINE SEDIMENT QUALITY**

<b>Marine Sediment Quality</b>				
	<b>2014</b>	<b>2016</b>	<b>2018</b>	<b>2020</b>
<b>Progress Milestones and 2020 Target<sup>1</sup></b>	<p>Regions</p> <ul style="list-style-type: none"> <li>All regions meet marine sediment targets for SCI<sup>2</sup></li> </ul> <p>Bays</p> <ul style="list-style-type: none"> <li>SCI &amp; SQTI conditions in Elliott Bay improved relative to 2007<sup>3</sup></li> <li>Target conditions in Commencement Bay met in 2014<sup>4</sup></li> </ul>	<p>Regions</p> <ul style="list-style-type: none"> <li>All regions meet marine sediment targets for SCI</li> <li>Hood Canal SQTI in 2016 meets targets.<sup>5</sup></li> </ul> <p>Bays</p> <ul style="list-style-type: none"> <li>Target conditions in Bainbridge Basin met in 2015<sup>6</sup></li> <li>Target conditions for SCI met in Bellingham Bay in 2016<sup>7</sup></li> </ul>	<p>Regions</p> <ul style="list-style-type: none"> <li>All regions meet SCI and SQTI targets<sup>8</sup></li> </ul> <p>Bays</p> <ul style="list-style-type: none"> <li>Target conditions (SCI, SQTI, and SMS criteria) met in Budd Inlet in 2017<sup>9</sup></li> <li>Target conditions (SCI, SQTI, and SMS criteria) met in Everett Harbor in 2018<sup>10</sup></li> </ul>	<p>By 2020, all Puget Sound regions and bays achieve the following: Sediment Chemistry Index measures reflect “minimum exposure” (i.e., weighted mean SCI is ≥93.3), Sediment Quality Triad Index (SQTI) scores reflect “unimpacted” conditions (i.e., wmSQTI values ≥81), and no measurements exceed the Sediment Quality Standards chemical criteria set in the Washington State Sediment Management Standards (SMS).</p>
<b>Outputs</b>	<ul style="list-style-type: none"> <li>Source control portions of contaminated sediment site clean up are underway for all sites in Sinclair Inlet and Elliott and Commencement bays<sup>11</sup> (C9.2 ongoing programs) (EPA)</li> <li>Legacy pollutant removal projects are funded or underway (C2.3 NTA3) (Ecology and public &amp; private entities managing stormwater systems)</li> <li>Reductions in toxic chemical discharge in stormwater from stormwater permittees’ source control programs (C2.4 ongoing programs) <sup>12</sup> (Phase 1 permittees)</li> <li>High priority stormwater retrofit projects identified (C2.3 NTA1) (Ecology)</li> <li>Marine water TMDL or equivalent assessments for human-caused DO reductions completed<sup>13</sup> (C9.1 ongoing programs) (Ecology)</li> <li>6.8 million pounds reduction in statewide hazardous material use per year<sup>14</sup> (C1.4 and C1.6</li> </ul>	<ul style="list-style-type: none"> <li>Contaminated sediment site remedial actions underway in urban bays<sup>17</sup> (C9.2 ongoing programs) (EPA &amp; Ecology)</li> <li>Reductions in toxic chemical discharge in stormwater<sup>18</sup> (stormwater permittees)</li> <li>6.8 million pounds reduction in statewide hazardous material use per year (C1.4 and C1.6 ongoing programs) (Ecology)</li> <li>5 million pounds reduction in statewide generation of hazardous waste per year (C1.4 and C1.6 ongoing programs) (Ecology)</li> <li>Diesel soot emissions in Puget Sound counties reduced to 2,660 tons in the year ending June 2016. (C1.3 ongoing programs) (Ecology)</li> </ul>	<ul style="list-style-type: none"> <li>Improved sediment quality at all contaminated sediment sites in Puget Sound marine waters<sup>19</sup> (C9.2 key ongoing program activities) (Ecology &amp; EPA)</li> <li>Reduced toxic chemical loading to Puget Sound as a result of WWTP upgrades (C6.3 ongoing programs) and stormwater retrofits (C2.3 ongoing programs) (Local jurisdictions &amp; Ecology)</li> <li>6.8 million pounds reduction in statewide hazardous material use per year (C1.4 and C1.6 ongoing programs) (Ecology)</li> <li>5 million pounds reduction in statewide generation of hazardous waste per year (C1.4 and C1.6 ongoing programs) (Ecology)</li> <li>Diesel soot emissions in Puget Sound counties reduced to 2,500 tons in the year ending June 2018. (C1.3 ongoing programs) (Ecology)</li> </ul>	

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	<ul style="list-style-type: none"> <li>ongoing programs) (Ecology)</li> <li>• 5 million pounds reduction in statewide generation of hazardous waste per year<sup>15</sup> (C1.4 and C1.6 ongoing programs) (Ecology)</li> <li>• Diesel soot emissions in Puget Sound counties reduced to 2,870 tons in the year ending June 2014. <sup>16</sup> (C1.3 ongoing programs) (Ecology)</li> </ul>		

<sup>1</sup> Marine Sediment Quality reports being prepared for the 2012 State of the Sound indicate that the sediment chemistry index target is met in all regions and 80% of the most recently characterized bays; the sediment quality triad index target is met in 3 of 4 regions (with 4 areas not recently characterized) and all of the recently sampled urban bays (with 3 bays not recently characterized); and sediment standards are met in 3 of 5 recently characterized regions and one of the recently sampled urban bays.

<sup>2</sup> Assumes: (1) Regions sampled 2004-2009 meet targets for SCI per results in 2012 State of the Sound, these areas will not be re-sampled by 2014. (2) All three regions sampled 2012 to 2014 will meet SCI targets (as they did in 1999-2003). (3) Impaired benthic communities will improve on the same time scale as marine water D.O. improvements are observed; no improvements in SQTI will be observed by 2014 because outputs to improve D.O. are not anticipated until after 2014 (see draft interim targets for marine water quality).

<sup>3</sup> Assumes: Detectable improvements in SCI and SQTI can be seen in 2007-2013 for Elliott Bay based on clean up and source control activities, but these improvements will not be sufficient for Elliott Bay to meet the SCI and SQTI targets.

<sup>4</sup> Rationale: Targets are met in Commencement Bay in 2007 and conditions need to be maintained so that targets continue to be met in 2014 (and 2020) re-sampling.

<sup>5</sup> Rationale: The only Hood Canal will be re-sampled in 2016, but not again before 2020. For the 2020 target for regions to be met, conditions in Hood Canal need to meet the target in 2016. A major improvement in SQTI will be needed between 2004 and 2016 for Hood Canal.

<sup>6</sup> Rationale: Bainbridge Basin will be re-sampled in 2015, but not again before 2020. For the 2020 target for bays to be met, conditions in this bay need to meet targets in 2015.

<sup>7</sup> Rationale: Bellingham Bay will be re-sampled in 2016, but not again before 2020. For the 2020 target for bays to be met, conditions in this bay need to meet targets in 2016.

<sup>8</sup> Rationale: (1) Re-sampling (second round) for all regions will be complete by 2016; Strait of Georgia and Whidbey Basin will be re-sampled (round three) by 2018. For the 2020 target for regions to be met, conditions in all regions need to meet targets in 2016 and 2018.

<sup>9</sup> Rationale: Budd Inlet will be re-sampled in 2017, but not again before 2020. For the 2020 target for bays to be met, conditions in this bay need to meet targets in 2017.

<sup>10</sup> Rationale: Port Gardner/Everett Harbor will be re-sampled in 2018, but not again before 2020. For the 2020 target for bays to be met, conditions in this bay need to meet targets in 2018.

<sup>11</sup> Assumes: Source control to address ongoing loading of the contaminants driving remediation is an essential step of contaminated site clean up that will be needed to improve conditions in urban bays.

<sup>12</sup> Assumes: Monitoring the effectiveness of source control programs is implemented as one of the areas of focus of “testing the effectiveness of non-structural ... and programmatic approaches used in stormwater management programs.”

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<sup>13</sup> Assumes: (1) SQTI improvements depend in part on reductions in nutrient loading so that benthic communities are not impaired by D.O. conditions. (2) TMDL or equivalent assessments (per C9.1) will lead to implementation of treatment upgrades and best management practices to reduce nutrient loading.

<sup>14</sup> The Department of Ecology reports statewide “pounds of hazardous materials reduced (in millions)” as a measure of its activity to “reduce the generation of hazardous waste and the use of toxic substances through technical assistance.” Actual annual reductions reported (statewide) during state fiscal years 2008 through 2012 ranged from 3 to 7.2 million pounds. (Total amount of statewide hazardous material use is not reported.) Ecology’s goals in recent years have been for reductions of 6.5 to 6.8 million pounds per year. As of late September 2012 Ecology has not published goals for timeframes beyond state fiscal year 2013.

<sup>15</sup> The Department of Ecology reports statewide “pounds of hazardous waste generated (in millions)” as a measure of its activity to “reduce the generation of hazardous waste and the use of toxic substances through technical assistance.” Actual annual amounts of hazardous waste generated (statewide) during state fiscal years 2008 through 2012 ranged from 94 to 122 million pounds. Ecology’s goals in recent years have been for reductions of 4 to 5 million pounds per year. As of late September 2012, Ecology has not published goals for timeframes beyond state fiscal year 2013.

<sup>16</sup> The Department of Ecology reports “tons of diesel soot emissions produced in counties contiguous to Puget Sound” as a measure of its activity to “reduce risk from toxic air pollutants.” Actual amounts of diesel soot emissions in these 12 counties declined during state fiscal years 2009 to 2012 from 3,700 to 2,880 tons per year. Ecology’s goals in recent years have been for annual emissions declining from 3,110 to 2,990 tons. As of late September 2012, Ecology has not published goals for timeframes beyond state fiscal year 2013.

<sup>17</sup> Assumes: (1) Cleanups will focus on bays identified as part of Ecology’s Puget Sound Initiative and Urban Waters Initiative; (2) Remediation action will be underway for projects that had been identified by 2012; any sites identified after 2012 will be investigated and remediated over a longer time frame.

<sup>18</sup> Assumes: (1) Monitoring the effectiveness of source control programs, legacy pollutant removal, etc. are implemented as areas of focus of “testing the effectiveness of non-structural ... and programmatic approaches used in stormwater management programs; (2) Stormwater effectiveness monitoring also includes “testing the effectiveness of retrofitting urban areas with various flow management and water quality treatment approaches ....” These are elements of the Stormwater Work Group’s strategic framework for effectiveness monitoring.

<sup>19</sup> Assumes: Improved sediment quality will be observed at sites that had been identified by 2012; any sites identified after 2012 will be investigated and remediated over a longer time frame.