



Potential Projects Reference Document

Chehalis River Basin Flood Relief Projects 2013-2015 Capital Budget

November 9, 2012

The following table summarizes projects submitted through the Chehalis Flood Authority's process for the Governor's 2013-2015 Capital Budget. Each project is summarized using the following basic information and criteria which were approved by the Flood Authority at their September 2012 meeting:

- Project Name, Location and Description.
- Project Cost Estimate.
- 2013-15 Funding Request.
- Project Type.
- Project Benefit.
- Project Readiness / Project Status.
- Known or Potential Impacts.
- On-Going Responsible Entity.
- Project Contact.

To see proposed project locations and access proposed project submittal forms, please go to <http://goo.gl/maps/WA1bj>.

Projects are presented below as follows:

- Tier I Projects, i.e., projects that have already received jobs now act \$\$ (see pages 2-8). [Note: Tier I projects tally to a total 2013-15 request of \$9,886,800.]
- Tier II Projects, i.e., projects that have not received any jobs now act \$\$ (see pages 9-15). [Note: Tier II projects tally to a total 2013-15 request of \$29,552, 263.]

Question, comments, corrections should be directed to Scott Boettcher, scottb@sbgh-partners.com, 360/480-6600.



-- Tier I Projects --

Projects That Have Already Received Jobs Now Act \$\$

<p>1. Grays Harbor County</p>	<p>A. Satsop River Floodplain Restoration -- The Satsop River Floodplain Restoration project consists of reclaiming 100 acres of migration zone by removing parts or all of 5,200 lineal feet of constructed dike and 2,500 lineal feet of riprapped riverbank. Project is intended to restore floodplain function, re-establish access to off-channel habitat and allow the Satsop River to access 2/3 of its lower reach migration zone. The expansion of the migration zone of the Satsop River will reduce the continuous eroding of the banks of the river creating losses of valuable prime agricultural soils. Eight agricultural landowners will directly benefit from this project.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$1,009,800 (Preliminary design, alternatives analysis, costing, final design, permitting and construction). • 2013-15 Funding Request-- \$509,800 (\$50,000 Jobs Now already spent and \$450,000 Jobs Now assumed for re-appropriation to 2013-2015 leaving \$509,800 in remaining cost for Preliminary design, alternatives analysis, costing, final design, permitting and construction). • Jobs Now Act \$\$ -- This project has already received \$50,000 in Jobs Now Act dollars. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Floodplain restoration. • Project Benefit -- Reduces erosion of farmland for ~8 agricultural landowners/businesses directly affected. • Project Readiness / Project Status – Project will very soon be in the design stage and is assumed to be able to be completed within the funding cycle. • Known or Potential Impacts – Will be identified when project specifics are known and final engineering is completed. It is anticipated that project will have positive fish benefits. • Community Support – Yes (Satsop Committee). Note: This project has received initial funding support through the State’s Jobs Now Act funding process. • On-Going Responsible Entity – Grays Harbor County, WDFW. • Project Contact -- Commissioner Terry Willis, twillis@co.grays-harbor.wa.us and commish@co.grays-harbor.wa.us, 360-581-4608 and 360-249-3731.
<p>2. Grays Harbor County</p>	<p>B. Wishkah Road (Kersh) Flood Levee – Major project elements for the project consist of: (1) Land acquisition to provide additional flood plain storage on two parcels located right along the Wishkah River; and (2) construction of a sheet pile wall (dike) or combination dirt dike 2,000 feet long to prevent rain and tidal flooding from closing the road. This project will prevent the road from closing to important emergency fire, police and EMS vehicles (as well to through-traffic for several hundred up-Valley residences) and will provide immediate vicinity flood damage relief to approximately nine homes and one business from tidal and river flooding. [Note -- The only alternative road route is to use the logging roads that are privately owned. In some cases these roads have been locked and unavailable and in other cases landowners have been found who can unlock them and let emergency vehicles through.] This project will also open up the tidal surge plain with the removal of derelict buildings and debris on the riverside of the dike, creating new and better habitat for fish and wildlife.</p>



	<p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$2, 642,000 (Final design and permitting for \$400,000; construction and land acquisition for \$2,242,000). • 2013-15 Funding Request-- \$2, 642,000 (Final design, permitting, construction and land acquisition). • Jobs Now Act \$\$ -- This project has already received \$125,000 in Jobs Now Act dollars. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Land acquisition, Levee/dike (new). • Project Benefit – Provides flood storage and habitat restoration benefits as well provides protection for: <ul style="list-style-type: none"> ○ Road to stay open for emergency fire, police and EMS vehicles, as well local through-traffic needing to access several hundred up-Valley residences. ○ ~9 residences. (Note: The figure increases to 60 if all the homes on the hill above the road or the ones up around the curve are considered as they are impacted by lack of ingress or egress access.) ○ 1 business. • Project Readiness / Project Status -- Project will very soon be in the design stage and is assumed to be able to be completed within the funding cycle. • Known or Potential Impacts -- Will be identified when project specifics are known and final engineering is completed. • Community Support – Yes (petition from 300 local citizens). Note: This project has received initial funding support through the State’s Jobs Now Act funding process. • On-Going Responsible Entity – Grays Harbor County (Public Works). • Project Contact -- Commissioner Terry Willis, twillis@co.grays-harbor.wa.us and commish@co.grays-harbor.wa.us, 360-581-4608 and 360-249-3731.
<p>3. Aberdeen</p>	<p>C. Market Street Dike – Project is to construct a 2,800 foot long dike along the western bank of the Wishkah River and tie it to existing higher ground on each end. The dike would be constructed primarily within the existing public street right of way of Market Street. The dike would consist of a combination of different sections constructed to above the base flood elevation. It is anticipated that most of the project would consist of raising the road and sidewalk to create sufficient high ground to function as a dike. The dike will prevent water from overtopping the existing river bank and flooding commercial and residential property to the west, as well work to prevent flooding of Market Street and adjacent streets. There are about 80 homes and five businesses within the City that are located landward of the dike that could benefit from the project. During flood events Market Street and some of the adjacent streets are flooded and traffic is either stopped or impaired.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$670,000 (\$113,000 for Preliminary engineering design, costing, \$557,000 for final design and construction). • 2013-15 Funding Request-- \$670,000 (Preliminary engineering design, costing, final design and construction). • Jobs Now Act \$\$ -- This project has already received \$0 in Jobs Now Act dollars. (Note: Flood Authority approved this project for funding though none was available.)



Project Information:

- **Project Type** -- Dike (new).
- **Project Benefit** -- Provides protection for:
 - Local adjacent streets.
 - ~80 residences.
 - ~5 businesses.
- **Project Readiness / Project Status** – Project can be designed and constructed within the funding cycle.
- **Known or Potential Impacts** – Impacts are not known at this time and are assumed (once the project is fully designed) to not be significant (construction will be above the ordinary high water line).
- **Community Support** – Yes (Public Works Master Project List).
- **On-Going Responsible Entity** – City of Aberdeen.
- **Project Contact** -- Bill Simpson, mayor@aberdeenwa.gov, 360-537-3227.

4. Aberdeen

D. Trail/Dike Behind Burger King – Project is to construct a 300 foot long concrete floodwall along the eastern bank of the Wishkah River between the two Wishkah bridges. The wall would consist of a footing and concrete wall constructed to above the base flood elevation. A five foot wide pathway would be placed on the land side of the wall and connected to higher ground near both bridges. The floodwall will prevent water from overtopping the existing river bank and flooding commercial and residential property to the east, as well work to prevent flooding of State Highway. There are about 30 homes and 30 businesses within the City that are located east of the floodwall that could benefit from the project. During flood events the State Highway is flooded and traffic is either stopped or impaired. [Note: This project works best in tandem with the Wishkah River East Bank Dike project for full (major flood) benefit. Without the tandem project the benefit is limited (minor flood).]

Project Cost:

- **Project Cost Estimate** -- \$140,000 (Final design and construction).
- **2013-15 Funding Request**-- \$140,000 (Final design and construction).
- **Jobs Now Act \$\$** -- This project has already received \$24,600 in Jobs Now Act dollars.

Project Information:

- **Project Type** – Dike (new).
- **Project Benefit** -- Provides protection for:
 - State Highway 101 and local streets.
 - ~30 residences.
 - ~30 businesses.
- **Project Readiness / Project Status** -- Project will very soon be in the design stage and as such will be able to be constructed within the funding cycle.
- **Known or Potential Impacts** -- Impacts are not known at this time and are assumed (once the project is fully designed) to not be significant (construction will be above the ordinary high water line).
- **Community Support** -- Yes (Public Works Master Project List). Note: This project has received initial funding support through the State’s Jobs Now Act funding process.
- **On-Going Responsible Entity** – City of Aberdeen.



	<ul style="list-style-type: none"> • Project Contact -- Bill Simpson, mayor@aberdeenwa.gov, 360-537-3227.
<p>5. Aberdeen</p>	<p>E. Wishkah River East Bank Dike – Project is to construct a 1,200 foot long dike along the eastern bank of the Wishkah River and tie it to existing higher ground on each end. The dike would be constructed primarily within the existing public street right of way. The dike will consist of a combination of sections constructed to above the base flood elevation. Some tide gates will be required on existing storm drain outfalls to the river. The dike will prevent water from overtopping the existing river bank and flooding commercial and residential property to the east; as well will work to prevent flooding of the State Highway. There are about 30 homes and 30 businesses within the City that are located east of the floodwall that could benefit from the project. During flood events the State Highway is flooded and traffic is either stopped or impaired. [Note: This project works best in tandem with the Trail/Dike Behind Burger King project for full (major flood) benefit. Without the tandem project the benefit is limited (minor flood).]</p> <p style="text-align: center;">Project Cost:</p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$270,000 (Final design and construction). • 2013-15 Funding Request-- \$270,000 (Final design and construction). • Jobs Now Act \$\$ -- This project has already received \$47,000 in Jobs Now Act dollars. <p style="text-align: center;">Project Information:</p> <ul style="list-style-type: none"> • Project Type -- Dike (new). • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ State Highway 101 and local streets. ○ ~30 residences. ○ ~30 businesses. • Project Readiness / Project Status -- Project will very soon be in the design stage and as such will be able to be constructed within the funding cycle. • Known or Potential Impacts -- Impacts are not known at this time and are assumed (once the project is fully designed) to not be significant (construction will be above the ordinary high water line). • Community Support -- Yes (Public Works Master Project List). Note: This project has received initial funding support through the State’s Jobs Now Act funding process. • On-Going Responsible Entity – City of Aberdeen. • Project Contact -- Bill Simpson, mayor@aberdeenwa.gov, 360-537-3227.
<p>6. Montesano</p>	<p>F. Mary’s River Lumber Bank Protection -- Ongoing erosion of the Chehalis River shoreline is currently threatening Mary’s River Lumber Mill. The Mill and the City of Montesano seek to stabilize the bank along the property so mill operations at the site can continue. Proposed project is to preserve jobs and critical facilities threatened by the loss of the Mill (employees 120 people), Montesano Road (SR 107 bridge) and the City’s \$20,000,000 wastewater treatment plant that serves the City’s ~4,000 residents.</p> <p style="text-align: center;">Project Cost:</p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$2,000,000 (Placeholder -- Final design, permitting, construction). • 2013-15 Funding Request-- \$2,000,000 (Placeholder -- Final design, permitting and construction).



	<ul style="list-style-type: none"> • Jobs Now Act \$\$ -- This project has already received \$102,426 in Jobs Now Act dollars. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Bank stabilization, Erosion control. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ ~120 jobs at Mary's River Lumber Mill. ○ State Highway 107 (bridge). ○ Montesano Municipal Waste Water Treatment Plant. • Project Readiness / Project Status -- Project will very soon be in the design stage and is assumed to be able to be completed within the funding cycle. • Known or Potential Impacts -- Will be identified when project specifics are known and final engineering is completed. The scope and scale of the project will likely necessitate environmental review and permitting for any of the in-water work aspects of the project. • Community Support – Yes. Note: This project has received initial funding support through the State's Jobs Now Act funding process. • On-Going Responsible Entity – City of Montesano. • Project Contact -- Mayor Ken Estes, City of Montesano, mayor@montesano.us, 360-249-3021.
<p>7. Chehalis</p>	<p>G. Airport Levee (Phase II) -- Project consists of elevating the existing airport levy using (1) earthen material where the footprint at the base is large enough and (2) floodwalls constructed generally with pilings atop existing levy where drainage or rights-of-way occur at the base. Project is intended to protect the airport and its operations, the commercial area east of the airport runway, and assist in protecting Interstate 5 from closure during a major Chehalis River flood event. Airport road at the south end of the airport property would be elevated several feet and terminate in the West Street overcrossing approach.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$2,600,000 (Phase II -- Construction and mitigation). • 2013-15 Funding Request-- \$2,600,000 (Phase II -- Construction and mitigation). • Jobs Now Act \$\$ -- This project has already received \$1,239,829 in Jobs Now Act dollars for Phase I. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Levee raise/extend. • Project Benefit -- Provide protection for: <ul style="list-style-type: none"> ○ Airport and its operations. ○ Major commercial/economic retail area that generates ~\$550,000 in average daily income. ○ Helping (along with other projects) to protect Interstate 5. • Project Readiness / Project Status – Project is assumed to be able to be constructed within the funding cycle, assuming too Phase I is completed and impacts from Phase II can be mitigated. • Known or Potential Impacts -- Upstream impacts from elevating the levee are assumed; downstream impacts are not assumed. Impacts from elevating the levee will need to be addressed through identified mitigation prior to starting construction. • Community Support – Yes. Note: This project has received initial funding support through



	<p>the State's Jobs Now Act funding process.</p> <ul style="list-style-type: none"> • On-Going Responsible Entity – Chehalis-Centralia Airport. • Project Contact -- Allyn Roe, Airport Manager, Chehalis-Centralia Airport, 360-748-1230, aroe@flycls.com.
<p>8. Bucoda</p>	<p>H. Bucoda Levee Improvement (Phase II) -- Project is to raise and extend the existing levee in order to fully encircle the Town of Bucoda's wellhead and drinking water equipment with a continuous levee system that protects the Town's drinking water system. The proposed project is viewed as essential to protect the Town's drinking water system including the wellhead, pumps, generator and equipment from future flood damage. The drinking water system is the sole source of potable water and water for firefighting for the Town's citizens.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$305,000 (Phase II -- Final design and construction). • 2013-15 Funding Request-- \$305,000 (Phase II -- Final design and construction). • Jobs Now Act \$\$ -- This project has already received \$42,000 in Jobs Now Act dollars. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Levee raise/extend. • Project Benefit -- Provide protection and continued operation for Bucoda wellhead and drinking water system (sole source of Town's water for drinking and firefighting). • Project Readiness / Project Status – Project is assumed to be able to be completed within the funding cycle. • Known or Potential Impacts – No significant impacts from improving the levee are anticipated. • Community Support – Yes. Note: This project has received initial funding support through the State's Jobs Now Act funding process. • On-Going Responsible Entity – Town of Bucoda. • Project Contact -- Mayor Alan Carr, mayorofbucoda@scattercreek.com, 360-278-3525.
<p>9. Conservation Commission</p>	<p>I. Critter/Equipment Pads and Evacuation Routes -- Provide about 15 more escape and safe containment areas (pads) for livestock and provide safe storage areas for equipment above the flood level for agricultural operators in the Chehalis basin, specifically in Lewis and Thurston counties.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$750,000 (Design, permitting, construction of pads and escape routes). • 2013-15 Funding Request-- \$750,000 (Design, permitting and construction of pads and escape routes). • Jobs Now Act \$\$ -- This project has already received \$500,000 in Jobs Now Act dollars. <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type – Agricultural Critter pads, Safe storage areas and Escape routes. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ Agricultural livestock and equipment. ○ Public health as a result of fewer dead animals in the event of a major flood. • Project Readiness / Project Status – Conservation Commission has standards and



	<p>specifications but not site specific designs for each project. Each project will require an engineer stamped site specific design for the permitting process. This will be done in-house Conservation Commission will do more outreach this 2013 be ready to apply for permits in Spring 2013 and construct in fall of 2013 and summer of 2014.</p> <ul style="list-style-type: none">• Known or Potential Impacts – Not known at present (site locations not yet chosen).• Community Support – Yes. The public has been supportive and has helped with the three completed projects that have already been funded with Jobs Now Act dollars and the four that are presently under permit and or contract.• On-Going Responsible Entity – WA State Conservation Commission.• Project Contact -- Butch Ogden, butch.ogden@scc.wa.gov, 360/274-6117.
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-- Tier II Projects --

Projects That Have Not Received Any Jobs Now Act \$\$

<p>1. Grays Harbor County</p>	<p>A. <i>Chehalis River Bank Erosion Risk Assessment for the Satsop Business Park industrial water line</i> -- The Grays Harbor Public Development Authority owns and operates an industrial water well site and water line that runs along the south shore of the Chehalis River in Grays Harbor County. A section of the pipeline and associated access road has experienced flood damage and needs protection or relocation from future bank erosion during flooding events. The Phase I project requires a hydrology analysis of the risks and costs associated with the continued flood damage. The exposed water line (cooling water and industrial supply), electrical cables, fiber optic cable and access road would represent a major economic loss for the Satsop Business Park and the 650 Megawatt Grays Harbor Energy plant if they were lost. [Note1: A 650 Mwt plant can provide the electrical needs for approximately 600,000 people. Note2: The industrial water well is on the Chehalis and a potable well is on the Satsop (just to the west of Keys Road).]</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$52,000 (Phase I -- Hydrology analysis and update of Chehalis River hydraulic model to understand risks, costs and alternatives). • 2013-15 Funding Request-- \$52,000 (Phase I -- Hydrology analysis and update of Chehalis River hydraulic model to understand risks, costs and alternatives). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Erosion control, Infrastructure preservation. • Project Benefit -- Ensures protection and continued operation of industrial utility infrastructure for: <ul style="list-style-type: none"> ○ 650 Mwt Plant (650K person capacity). ○ Industrial business park (30 businesses). • Project Readiness / Project Status – The Phase I project can begin immediately and be completed within the funding cycle. Phase I will take 3 to 6 months to complete. Phase II (once known) will likely be able to be completed within the 2013-2015 funding cycle (assuming supplemental Phase II funding). • Known or Potential Impacts – No known impacts for Phase I. Impacts for Phase II implementation will be assessed at a later date when Phase II project specifics are known. • Community Support – Community at large is not likely aware of this project. • On-Going Responsible Entity – Grays Harbor Public Development Authority. • Project Contact -- Joel Rett, jrett@satsop.com, 360/482-1626.
<p>2. Grays Harbor County</p>	<p>B. <i>Elma-Porter Flood Mitigation Project -- South Elma Road (Wakefield Rd.), Dunlap Road, Porter Creek Road West</i> – Project consists of following elements:</p> <ul style="list-style-type: none"> • Placing ~900 foot overflow bridge on Wakefield Road Bridge north of South Elma Bridge over the Chehalis River. • Performing river modeling, pre-design, and project permitting to improve through-flow on Dunlap Road. • Performing river modeling, pre-design, and project permitting to improve through-flow on Porter Creek Road West, at the South Bank Road/Porter Creek Road West Intersection, and on



	<p>South Bank Road between the South Bank Road/Porter Creek Road Intersection and Riding Road (at the Sharon Grange).</p> <p>Project is intended to provide a viable egress route for residents and businesses south of the Chehalis river from southwest of Porter to Montesano during major flood events. Businesses include Satsop Development park, Briggs nursery, commercial farms and the gas fired power plant. These can all be isolated by flooding along with several smaller businesses during flood events.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate – \$6,200,000. <ul style="list-style-type: none"> ○ \$6,000,000 (Construct overflow bridge on Wakefield Road Bridge). ○ Dunlap and Porter Creek Roads: <ul style="list-style-type: none"> ▪ \$50,000 (Refine model and perform alternatives analysis for the reach between Porter Creek Road and S. Elma Road). ▪ \$150,000 (Refine flood relief alternatives and do pre-design, final design and permitting for culvert installation in the Porter Creek/South Elma junction area). • 2013-15 Funding Request-- \$6,200,000 <ul style="list-style-type: none"> ○ \$6,000,000 (Construct overflow bridge on Wakefield Road Bridge). ○ \$50,000 (Refine model and perform alternatives analysis for the reach between Porter Creek Road and S. Elma Road). ○ \$150,000 (Refine flood relief alternatives and do pre-design, final design and permitting for culvert installation in the Porter Creek/South Elma junction area). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Modeling, Culvert installation, Bridge construction. • Project Benefit -- Provides through access (South Elma Road) and protection for: <ul style="list-style-type: none"> ○ Hundreds of workers from Satsop Development park, Briggs nursery, commercial farms, gas fired power plant and more. ○ ~12 residences directly affected. • Project Readiness / Project Status -- Project (all three elements) can begin immediately and be completed within the funding cycle. Note1 – Major project elements can be implemented in parallel, thus assuring completion within the funding cycle. Note2 – The overflow bridge has already been designed and is now ready to go construction. • Known or Potential Impacts – No known or potential impacts have been identified. • Community Support – Yes. • On-Going Responsible Entity – Grays Harbor County (Public Works). • Project Contact -- Jay Gordon, gordondairy@hotmail.com, 360-951-8419 or Karl Goeres, karlgoeres@hotmail.com, 360-485-9909. [Note: Fiscal agent for this project (if funded) will be Russell D. Esses, Grays Harbor County, County Engineer, 360/249-4222, resses@co.grays-harbor.wa.us.]
<p>3. Cosmopolis</p>	<p>C. Mill Creek Dam Improvements – Project is to replace the Mill Creek Dam that was breached during the November 2008 storm. The population directly affected by this project is approximately 325 people (130 homes) in Cosmopolis and at least 200 people (90 homes) in South Aberdeen. Also two businesses (Western Peterbilt with 25 employees and D4 Sports with seven</p>



	<p>employees) are adjacent to Mill Creek and are directly affected by its flood flows. Western Peterbilt provides Cosmopolis with tax base revenue on annual sales in excess of \$14,000,000. The Grays Harbor County Road Maintenance Shop (with 10-15 employees) is also directly adjacent to Mill Creek. It stores critical equipment for the maintenance of roads in the central part of Grays Harbor County.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$2,000,000 (Preliminary design, alternatives analysis, costing, final design, permitting and construction). • 2013-15 Funding Request-- \$250,000 (\$100,000 for Hydraulic analysis, \$150,000 for Alternatives analysis). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Dam replacement. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ ~325 residences and ~ 130 homes (Cosmopolis). ○ ~200 residences and ~ 90 homes (South Aberdeen). ○ Two significant employers (Western Peterbilt with 25 employees and D4 Sports with 7 employees). ○ Grays Harbor County Road Maintenance Shop (with 10-15 employees). • Project Readiness / Project Status – Phase I hydraulic analysis and alternatives analysis can be completed within the funding cycle. • Known or Potential Impacts -- Impacts are not known at this time and will be fully identified following Phase I. Project may require modification of downstream culverts and tide-gates. This will likely require environmental review and permitting. • Community Support – Yes (2012 City Multi-Objective Plan for Mill Creek, 2010 City Hazard Mitigation Plan) • On-Going Responsible Entity – City of Cosmopolis • Project Contact -- Darrin Raines, City of Cosmopolis Public Works / Community Development Director, PO Box 2007; Cosmopolis, WA 98537, 360-533-4280, draines@cosmopolis.us.com.
<p>4. Lewis County</p>	<p>D. Flow Channel Under SR 6 – Excavate approximately 550,000 cubic yards of earth for box culverts under State Route 6 just to the east of Scheuber Road and elevate the road with a bridge to above flood levels. This project will require property acquisition or flood easements on left bank properties. The proposed channel would be a high flow bypass and would not be constructed to provide fish habitat. The bed of the channel would be similar to the downstream flow path on the north side of SR-6. Presently flood waters pond/pool behind State Route 6 then overtops it (significant overtopping events have occurred four times in past decade). [Note: In 1984, when WSDOT expanded the highway it removed a “farm road overcrossing” in this area through which flood waters flowed. As such this project and its costs may be better suited for the state transportation capital budget. The ballpark cost estimate for this project is \$13.3 million for the 550,000 cy of Channel Excavation, 500-ft total span of bridges and raising SR6 1-ft for approximately 1-mile in length to provide a dry surface / freeboard above the proposed 100-yr flood.]</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$13,300,000 (Preliminary design, alternatives analysis, costing, final



	<p>design, permitting and construction).</p> <ul style="list-style-type: none"> • 2013-15 Funding Request-- \$13,300,000 (Preliminary design, alternatives analysis, costing, final design, permitting and construction). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Culvert installation. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ Preventing further overtopping State Highway 6. ○ Maintaining through access for EMS vehicles, vehicles accessing the hospital and many local landowners and residences. • Project Readiness / Project Status – Project can likely be designed and constructed within the funding cycle. • Known or Potential Impacts -- Will be identified when project specifics are known and final engineering is completed. • Community Support – Not known. • On-Going Responsible Entity – Lewis County (Public Works), WSDOT • Project Contact -- Tim Elsea, PE, Lewis County Public Works, Director/County Engineer, 2025 NE Kresky Ave., Chehalis, WA, 98532, 360-740-2697, Tim.Elsea@lewiscountywa.gov.
<p>5. Centralia</p>	<p>E. City of Centralia China Creek Flood Project – Project is to design and construct a series of water retention structures in the China Creek watershed for short term storage of runoff during high rainfall events. The major emphasis will be on storage in the upper watershed but some off-channel storage in the flood-prone area along China Creek may be incorporated. The major components of the project are project design, property agreements with landowners where the structures will be located or property acquisition, SEPA review and permitting, and construction. Upstream storage on China Creek will reduce flooding within the downtown residential and commercial areas of Centralia for several blocks on each side of China Creek between Yew Street and Railroad Avenue. Rainfall runoff and storage option modeling is presently underway and is being paid for (\$50,000) by Centralia. Modeling will be completed by January 1, 2013.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$16,800,000 (\$1,500,000 for Engineering design, SEPA and permitting, \$4,500,000 for Land acquisition and \$10,800,000 for Construction). • 2013-15 Funding Request-- \$6,000,000 (\$1,500,000 for Engineering design, SEPA and permitting, \$4,500,000 for Land acquisition). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Water retention. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ ~184 residential and commercial properties (documented as Repetitive Loss Area #5). ○ Local roads for City transportation and stormwater infrastructure. ○ Local roads for emergency responders. • Project Readiness / Project Status -- Engineering design, SEPA and permitting, and land acquisition are assumed to be able to be completed within the funding cycle. • Known or Potential Impacts – Will be identified through the engineering design and SEPA process. Impacts are assumed to be mitigable. Benefits to aquatic habitat are assumed to be a net gain over current conditions.



	<ul style="list-style-type: none"> • Community Support – Yes. • On-Going Responsible Entity – City of Centralia. • Project Contact -- Kahle Jennings, City of Centralia Public Works Director, 360-330-7512, kjennings@cityofcentralia.com.
<p>6. Chehalis</p>	<p>F. Dillenbaugh Creek Realignment -- Project is to excavate a meandering channel as necessary to divert the flow of Dillenbaugh Creek from its undercrossing at Rice Road through Stan Hedwall Park to a confluence with Newaukum River within the Park. Presently the channel meanders under Interstate 5 three times. The project concept is to create significant habitat enhancement for both the involved Newaukum and Dillenbaugh reaches and convey flood flows through the Park rather than through the southwest portions of Chehalis and the I-5 freeway. Project is intended to prevent flood damage by diverting flood flows of the Dillenbaugh and to some extent, the Newaukum, around currently affected areas of southwest Chehalis and the freeway. There are approximately 74 residential structures and 13 businesses (cursory map count – subject to detailed study), as well as the freeway itself that are affected by flood flows in this reach of the Dillenbaugh. Project also has introduced a small berm along the west side to act as a spectator seating area for the soccer field and possibly to help keep Dillenbaugh and Newaukum flooding from scouring the park. Other benefits of this project include significant habitat enhancement for fish migration and spawning, opportunities for public access points in the Park, creation of ponding areas for waterfowl, and significant reduction of the cost of construction when the I-5 freeway is widened in the future.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$500,000 (Hydraulic/hydrology analysis, preliminary design, alternatives analysis, costing, final design, permitting, and construction). • 2013-2015 Next Stage Cost -- \$500,000 (Hydraulic/hydrology analysis, preliminary design and costing, permitting, final engineering and construction). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Flood conveyance, Habitat enhancement. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ ~ 74 residences. ○ ~ 13 businesses. ○ Interstate-5 by removing the meandering channel that occurs under Interstate-5. • Project Readiness / Project Status -- Project is assumed to be able to be constructed (excavated) within the funding cycle. • Known or Potential Impacts – Impacts at the conceptual stage where the project is now are not known. Impacts identified through design and engineering are assumed likely to not be significant and to be mitigable (if found to exist). Project is intended to provide net gain in habitat value beyond current. • Community Support – Yes. • On-Going Responsible Entity – City of Chehalis • Project Contact -- Bob Nacht, RNacht@ci.chehalis.wa.us, 360/345-2227.
<p>7. Napavine</p>	<p>G. Kirkland Road Culvert Project – Project is to install a culvert along the north side of Kirkland Road to guide water to the Newaukum River via the culvert and an existing slough. Project</p>



	<p>would also raise Kirkland Road as a means of eliminating flooding issues on the road itself. Benefits of the project include alleviating flooding to major businesses in the area, ensuring emergency vehicle access and reducing impacts to traffic getting on and off the freeway at Exit 72. Major businesses include McDonald's, Burger King, Ramblin Jacks Restaurant, Subway, gas stations, and the Bethel church as well as many families living in the area.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$2,555,000 (Preliminary design, alternatives analysis, costing at \$55,000 final design, permitting and construction at \$2,500,000). • 2013-15 Funding Request-- \$2,555,000 (Preliminary design, alternatives analysis and costing). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Culvert installation, Road raise/regrade. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ Major businesses (McDonalds, Burger King, Ramblin Jack Restaurant, Subway, gas stations) whose access has been flooded in the past. ○ Local church (Bethel church). ○ Local residences. ○ Lewis County maintenance shed. ○ Continued access through Exit 72 (Interstate 5). • Project Readiness / Project Status – Project is assumed to be able to be designed, engineered, permitted and constructed within the funding cycle. • Known or Potential Impacts – Not known. Will be identified when project specifics are known and final engineering is completed. • Community Support – Yes. • On-Going Responsible Entity – City of Napavine. • Project Contact -- Steve Ashley, Public Works Director, City of Napavine, 360/262-3547, sashley@cityofnapavine.com.
<p>8. Pe Ell</p>	<p>H. Town of Pe Ell Wastewater Treatment Plant Flood Prevention Dike -- Project is to build a dike on the Chehalis River part of the wastewater treatment plant boundary to prevent flooding of the treatment plant. Project would prevent flooding of the treatment plant which could send raw sewage into the Chehalis River as did occur with the 2007 flood. Damage to the treatment plant from the 2007 flood required repairs at a cost of ~ \$1,000,000. Treatment plant was originally constructed in 2004.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$521,000 (Preliminary design, alternatives analysis, costing, final design, permitting and construction). • 2013-15 Funding Request-- \$521,000 (Preliminary design, alternatives analysis, costing, final design, permitting and construction). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Dike (new). • Project Benefit -- Provide protection and continued operation for Pe Ell Wastewater Treatment Plant (sole treatment capacity for 350 residences and ~20 businesses). • Project Readiness / Project Status – Project is assumed to be able to be designed,



	<p>engineered, permitted and constructed within the funding cycle.</p> <ul style="list-style-type: none"> • Known or Potential Impacts -- Not known. Will be identified when project specifics are known and final engineering is completed. • Community Support – Yes. • On-Going Responsible Entity – Town of Pe Ell. • Project Contact -- Spencer Nichols, peellmayor@centurytel.net, 360-291-3543.
<p>10. Bucoda</p>	<p>I. Regrade Main Street – Project is to raise Main St. to allow passage of emergency vehicles during flood events and to install culverts to allow through-flow. When flooding occurs in Bucoda there are 50 homes in the southwest section of town (220 homes total in Bucoda) which are cut off from the main road. During the flood in Jan. 2009 these homes and the citizens were isolated from emergency services for two days.</p> <p style="text-align: center;"><u>Project Cost:</u></p> <ul style="list-style-type: none"> • Project Cost Estimate -- \$174,263 (Preliminary design, alternatives analysis and costing for \$109,506; Final design and permitting for \$49,657; Direct cost at \$15,100). Cost does not include construction costs. • 2013-15 Funding Request-- \$174,263 (Preliminary design, alternatives analysis, costing, final design and permitting). <p style="text-align: center;"><u>Project Information:</u></p> <ul style="list-style-type: none"> • Project Type -- Road raise/regrade, Culvert Installation. • Project Benefit -- Provides protection for: <ul style="list-style-type: none"> ○ Main St.to stay open for emergency fire, police and EMS vehicles, as well local through-traffic. ○ ~50 residences. • Project Readiness / Project Status – Initial Phase of project (preliminary design, alternatives analysis, costing, final design and permitting) can be completed within the funding cycle. • Known or Potential Impacts -- Not known. Will be identified when project specifics are known and final engineering is completed. • Community Support -- Yes • On-Going Responsible Entity – Town of Bucoda. • Project Contact -- Mayor Alan Carr, mayorofbucoda@scattercreek.com, 360-278-3525.

Chehalis River Basin Flood Relief Projects
Tier I Projects
2013-2015 Capital Budget

Jurisdiction	Project	Estimate Range 1	Estimate Range 2	2013-15 Cost	2013-15 Cost Description	2013-15 Public Safety Benefit
1. Grays Harbor County	A. Satsop River Floodplain Restoration	\$ 1,009,800	\$ 1,009,800	\$ 509,800	Preliminary design, alternatives analysis, costing, final design, permitting, construction	Provide protection for: <ul style="list-style-type: none"> o ~8 agricultural landowners/businesses directly affected.
2. Grays Harbor County	B. Wishkah Road (Kersh) Flood Levee	\$ 2,642,000	\$ 2,642,000	\$ 2,642,000	Final design, permitting, construction, land acquisition, home elevation	Provides flood storage and habitat restoration benefits as well provides protection for: <ul style="list-style-type: none"> o Road to stay open for emergency fire, police and EMS vehicles, as well local through-traffic needing to access several hundred up-Valley residences. o ~9 residences. o 1 business.
3. Aberdeen	C. Market Street Dike	\$ 670,000	\$ 670,000	\$ 670,000	Preliminary engineering design, costing, final design and construction	Provides protection for: <ul style="list-style-type: none"> o Local adjacent streets. o ~80 residences. o ~5 businesses.

4. Aberdeen	D. Trail/Dike Behind Burger King	\$ 140,000	\$ 140,000	\$ 140,000	Final design and construction	Provides protection for: <ul style="list-style-type: none"> o State Highway 101 and local streets. o ~30 residences. o ~30 businesses.
5. Aberdeen	E. Wishkah River East Bank Dike	\$ 270,000	\$ 270,000	\$ 270,000	Final design and construction	Provides protection for: <ul style="list-style-type: none"> o State Highway 101 and local streets. o ~30 residences. o ~30 businesses.
6. Montesano	F. Mary's River Lumber Bank Protection	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	Placeholder -- Final design, permitting and construction	Provides protection for: <ul style="list-style-type: none"> o ~120 jobs at Mary's River Lumber Mill. o State Highway 107 (bridge). o Montesano Municipal Waste Water Treatment Plant.
7. Chehalis	G. Airport Levee (Phase II)	\$ 2,600,000	\$ 2,600,000	\$ 2,600,000	Phase II -- Construction and mitigation	Provide protection for: <ul style="list-style-type: none"> o Airport and its operations. o Major commercial/economic retail area that generates ~\$550,000 in average daily income. o Helping (along with other projects) to protect Interstate 5.

8. Bucoda	H. Bucoda Levee Improvement Project (Phase II)	\$ 305,000	\$ 305,000	\$ 305,000	Phase II -- Final design and construction	Provide protection and continued operation for: o Bucoda wellhead and drinking water system (sole source of Town's water for drinking and firefighting).
9. WA Conservation Commission	I. Critter, Equipment Pads and Evacuation Routes --	\$ 750,000	\$ 750,000	\$ 750,000	Design, permitting, construction of pads and escape routes	Provides protection for: o Agricultural livestock and equipment. o Public health as a result of fewer dead animals in the event of a major flood.
Total -->		\$ 10,386,800	\$ 10,386,800	\$ 9,886,800		

Chehalis River Basin Flood Relief Projects
Tier II Projects
2013-2015 Capital Budget

Jurisdiction	Project	Estimate Range 1	Estimate Range 2	2013-15 Cost	2013-15 Cost Description	2013-15 Public Safety Benefit
1. Grays Harbor County	A. Chehalis River Bank Erosion Risk Assessment for the Satsop Business Park industrial water line	\$ 40,000	\$ 64,000	\$ 52,000	Conduct hydrology analysis to understand risks, costs and alternatives	Ensures protection and continued operation of industrial utility infrastructure for: <ul style="list-style-type: none"> o 650 Mwt Plant (650K person capacity). o Industrial business park (30 businesses).
2. Grays Harbor County	B. Elma-Porter Flood Mitigation Project: i. Wakefield Road Bridge overflow bridge. ii. Dunlap and Porter Creek Roads: * Refine model and perform alternatives analysis. * Refine flood relief alternatives and do pre-design, final design and permitting for culvert installation in the Porter Creek/South Elma junction area.	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	Permit and construct overflow bridge	Provides egress (South Elma Road) and protection for: <ul style="list-style-type: none"> o Hundreds of workers from Satsop Development park, Briggs nursery, commercial farms, gas fired power plant and more. o ~12 residences directly affected with many more additionally protected.
		\$ 50,000	\$ 50,000	\$ 50,000	Refine model and perform alternatives analysis	
		\$ 150,000	\$ 150,000	\$ 150,000	Refine flood relief alternatives; do pre-design, final design and permitting for culvert installation in Porter Creek/South Elma junction area	

3. Cosmopolis	H. Mill Creek Dam Improvements	\$ 2,000,000	\$ 2,000,000	\$ 250,000	Hydraulic analysis, Alternatives analysis	Provides protection for: <ul style="list-style-type: none"> o ~325 residences and ~130 homes (Cosmopolis). o ~200 residences and ~90 homes (South Aberdeen). o Two significant employers (Western Peterbilt with 25 employees and D4 Sports with 7 employees). o Grays Harbor County Road Maintenance Shop (with 10-15 employees).
4. Lewis County	J. Flow Channel Under SR6	\$ 13,300,000	\$ 13,300,000	\$ 13,300,000	Preliminary design, alternatives analysis, costing, final design, permitting, construction	Provides protection for: <ul style="list-style-type: none"> o Preventing further overtopping State Highway 6. o Maintaining through access for EMS vehicles, vehicles accessing the hospital and many local landowners and residences.

5. Centralia	K. China Creek Flood Project	\$ 16,800,000	\$ 16,800,000	\$ 6,000,000	Engineering design, SEPA and permitting, Land acquisition	Provides protection for: <ul style="list-style-type: none"> o Residential and commercial areas serving significant numbers of Centralia residents through several blocks on either side of China Creek (between Yew Street and Railroad Avenue). o Local roads for City transportation and stormwater infrastructure. o Local roads for emergency responders.
6. Chehalis	M. Dillenbaugh Creek Realignment	\$ 100,000	\$ 500,000	\$ 500,000	Hydraulic/hydrology analysis, preliminary design and costing, permitting, final engineering, construction	Provides protection for: <ul style="list-style-type: none"> o ~ 74 residences. o ~ 13 businesses. o Interstate-5 by removing the meandering channel that occurs under Interstate-5.

7. Napavine	N. Kirkland Road Culvert Project	\$ 2,555,000	\$ 2,555,000	\$ 2,555,000	Preliminary design, alternatives analysis, costing, final design, permitting, construction	Provides protection for: <ul style="list-style-type: none"> o Major businesses (McDonalds, Burger King, Ramblin Jack Restaurant, Subway, gas stations) that have been flooded in the past. o Local church (Bethel church). o Local residences. o Lewis County maintenance shed. o Continued access through Exit 72 (Interstate 5).
8. Pe Ell	O. Pe Ell Wastewater Treatment Plant Flood Prevention Dike	\$ 521,000	\$ 521,000	\$ 521,000	Preliminary design, alternatives analysis, costing, final design, permitting, construction	Provide protection and continued operation for: <ul style="list-style-type: none"> o Pe Ell Wastewater Treatment Plant (sole treatment capacity for 350 residences and ~20 businesses).
9. Bucoda	Q. Regrade Main Street	\$ 174,263	\$ 174,263	\$ 174,263	Preliminary design, alternatives analysis, costing, final design, permitting	Provides protection for: <ul style="list-style-type: none"> o Main St. to stay open for emergency fire, police and EMS vehicles, as well local through-traffic. o ~50 residences.

Total -->	\$ 41,690,263	\$ 42,114,263	\$ 29,552,263		
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