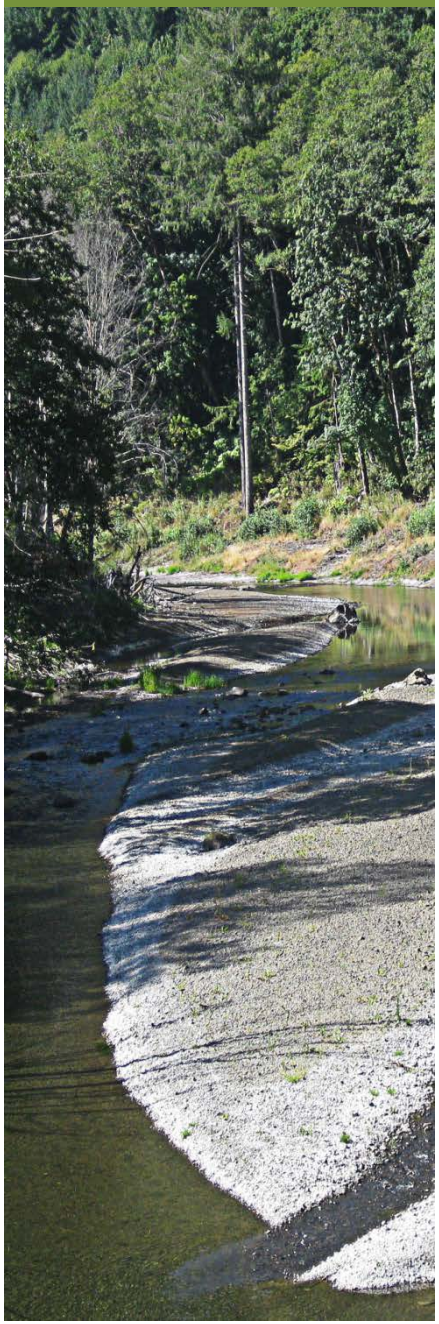
Chehalis Basin Strategy Small Projects Scenario

Technical Workshop

May 8, 2014



Purpose

- Identify small scale projects to consider for reducing flood damage in the Chehalis Basin. The list of projects identified will serve two purposes:
  - Provide flood damage reduction as an alternative to or in combination with large projects (Dam, I-5 Alternative)
  - Provide a list of recommendations to the legislature for funding as part of the 2015-17 Capital Budget

Process

- Identified a long list of projects through review of past reports and meetings with communities
- Developed criteria to prioritize projects
- Prepared a short list of 37 projects most likely to meet criteria
- Consultant team evaluated projects using criteria
- Project Committee reviewed evaluation, agreed with final list of 11 projects for additional design analysis now
- Floodproofing is also being evaluated in this task

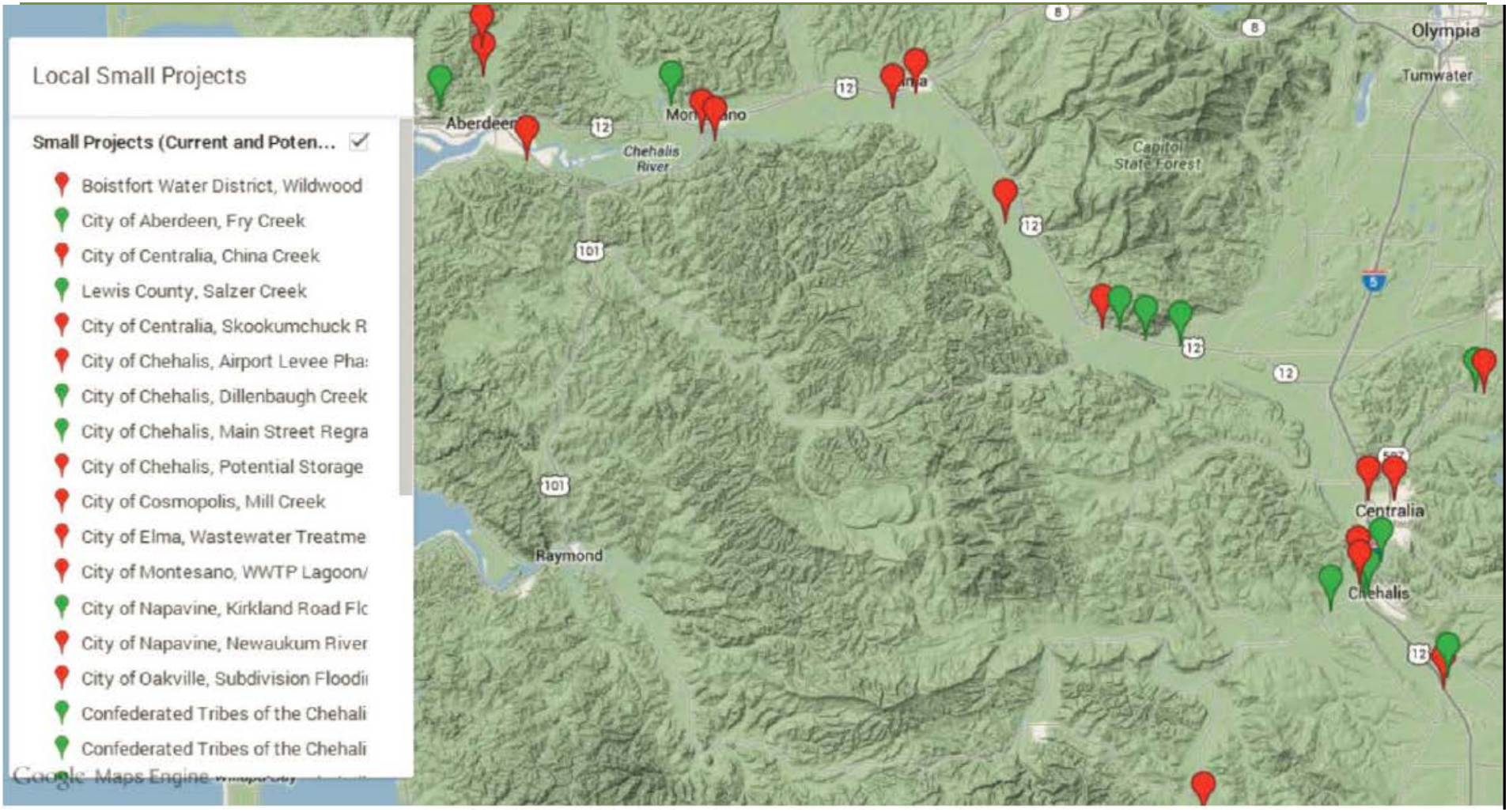
Criteria Used

- Primary
  - Ability to affect a broader area of the mainstem Chehalis River
  - Estimated flood damage reduction benefits
  - Size of human population at risk
- Secondary
  - Ability to permit and implement the project
  - The need and complexity the project will have for continued costs (O&M)
  - Ability to provide environmental benefits
  - Adaptability to provide benefits under climate change and in combination with other projects

Projects Selected for Additional Analysis Now

- City of Napavine, Kirkland Road Flooding
- WSDOT/Lewis County, SR 6 Overflow
- City of Chehalis, Dillenbaugh Creek Realignment
- City of Chehalis, Main Street Regrade
- Lewis County, Salzer Creek
- Town of Bucoda, Main Street Regrade
- Chehalis Tribe, Black River Bridge
- Chehalis Tribe, Roundtree Creek
- Grays Harbor County, Wynoochee Valley Road Regrade
- City of Aberdeen, Fry Creek
- Floodproofing all structures in floodplain

Project Locations



Floodproofing - Structure Survey Results

9,087 Structures Evaluated

Type of Structure	Lewis County	Thurston County	Grays Harbor County	Totals
Mobile Homes	363	98	0	461
Residential Structures	5,348	201	405	5,954
Commercial	1,567	34	470	2,071
Agricultural	10	161	430	601
Totals	7,288	494	1,305	9,087

5,512 “of significant value” structures; 3,575 others not assigned a value

Total Assessed Value $607 Million of the 5,512 structures

Floodproofing - Structures Affected

Summary of Structures At Risk of Flooding in Chehalis River Floodplain								
Number of Structures	Baseline					With Dam and Airport Levee		
	Dec 07	500-Year	100-Year	20-Year	10-Year	Dec 07	500-Year	100-Year
	Plan 5	Plan 7	Plan 8	Plan 9	Plan 10	Plan 15	Plan 17	Plan 18
Flooded	2040	3645	1384	372	175	753	2031	821
>1.0 feet	1368	2743	829	167	83	432	1306	459
>2.0 feet	820	1926	489	76	28	241	762	241
>3.0 feet	470	1159	293	22	7	139	471	117
>4.0 feet	263	657	155	6	2	65	300	54
>5.0 feet	159	385	76	1	0	28	158	25
Assessed Value of Improvements Inundated ($Million)	$238	$411	$137	$30	$13	$64	$206	$73
Cost to Floodproof all Inundated Structures ($Million)	$138	$256	$82	$17	$7	$42	$133	$44

Floodproofing – with Climate Change

Summary of Structures At Risk of Flooding in Chehalis River Floodplain							
Number of Structures	Baseline					100-Year w Climate Change	
	Dec 07	500-Year	100-Year	20-Year	10-Year	100-Year	Change vs Base
	Plan 5	Plan 7	Plan 8	Plan 9	Plan 10	Plan 80	Percent Increase
Flooded	2040	3645	1384	372	175	2202	59%
>1.0 feet	1368	2743	829	167	83	1462	76%
>2.0 feet	820	1926	489	76	28	830	70%
>3.0 feet	470	1159	293	22	7	481	64%
>4.0 feet	263	657	155	6	2	301	94%
>5.0 feet	159	385	76	1	0	161	112%
Assessed Value of Improvements Inundated ($Million)	$238	$411	$137	$30	$13	$255	86%
Cost to Floodproof all Inundated Structures ($Million)	$138	$256	$82	$17	$7	$145	77%

Floodproofing

- No environmental impacts from this alternative
- Cost is preliminarily estimated to be $82 million – $138 million (100-year to 2007 event)
- Costs rise by 77% when climate change is accounted for (from $82 million to $145 million for 100-year event)

Next Steps

- Develop conceptual level designs for projects that don't already have this
- Assess the flood reduction benefit of a suite of potentially significant projects
  - With and without the water retention structure
  - With and without the I-5 alternatives
- Preliminary Estimate of Costs
- Reporting

Questions

- More information on projects is at:
- https://www.ezview.wa.gov/Portals/_1492/images/Local%20Projects%20Update%2004162014(1).pdf