Chehalis Basin LAND*

*LOCAL ACTIONS NON-DAM ALTERNATIVE

CHEHALIS BASIN STRATEGY

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DRAFT

Executive Summary 1

1. Introduction 15

2. Chehalis Basin 25

3. Building the LAND Alternative 39

4. The LAND Alternative 51

5. Implementation 85

6. Tables 93

Executive Summary

ECONOMIC **ENGINE.**
PRIME **DESTINATION.**
CULTURAL **CONNECTIONS.**

The Chehalis Basin, Washington's second-largest river drainage system, is the region's economic engine, a prime recreational destination, and home to many communities and Tribes with deep cultural connections to the land. It is also the home of important and rare species of fish and aquatic wildlife that live in its wetlands, streams, and rivers.

As residents are well aware, the Basin is prone to flooding—minor floods occur every two to five years, and major flood events happen once every ten years, on average.

BEARING THE **IMPACT.**

Intensive land use, man-made changes to river flows, and the effects of climate change have made flooding more frequent and severe. As flood events become more common and intense, local communities bear the impacts.

Following a devasting flood in 2007, the state evaluated several projects and programs to mitigate flood damage to Chehalis communities, including a potential flood retention facility.

Communities across the Basin have differing views on how to move forward and what actions should be taken to address flooding.

In July 2020 Gov. Jay Inslee directed the Chehalis Basin Board (a collaborative body formed in 2016) to develop and evaluate a Local Actions Program that considered potential actions in absence of a flood retention facility.

The LAND Alternative is the culmination of years of technical analysis, policy studies, community workshops, online surveys, and other engagement activities to solicit broad and diverse input across a wide range of issues—environmental, ecological, economic, and cultural.

A full draft of the Chehalis Basin LAND report can be accessed at: **www.chehalisBasinland.com**

A VIABLE ALTERNATIVE TO FLOOD RETENTION

The LAND Alternative is an alternative to a proposed flood retention facility on the Chehalis River near Pe Ell. It puts forward a combination of new and extended levees; Chehalis River channel modifications; and acquisition, retrofitting, and relocation of structures; as well as restoration efforts and policy changes that together will reduce flood damage.

SHARED **VALUES**

Community-based flood damage reduction must be firmly rooted in values shared across the Basin—the values that tie the Basin together as a community—and lead to solutions that address all community needs.

FAMILY, CULTURE, HERITAGE

The strength of the Chehalis Basin comes from its people and the diverse heritages, cultures, and experiences they represent.

NATURAL WONDER

We value the Chehalis Basin's unique environment, employment and recreation options, and its wide array of animal and plant life.

ECONOMIC VITALITY

We strive to support local economies, keeping Chehalis Basin businesses robust. A thriving regional economy inspires innovation.

TRUST, RESPECT, SELF DETERMINATION

The future of the Chehalis Basin must be decided by the community itself. We recognize and respect the rights of Tribal Nations and all private property owners in the Chehalis Basin.

PUBLIC SAFETY AND RESILIENCE

Safeguarding our communities from the negative impacts of flooding is fundamental. Adequate infrastructure should ensure regional resiliency.

HEALTHY ENVIRONMENT AND HEALTHY PEOPLE

We envision a solution that prioritizes the well-being of our people and our environment.

INDENTIFYING
LOCAL SOLUTIONS

The LAND development process involved determining key criteria to help identify local solutions that can be applied across the Basin.

LAND Alternative Development Process

1. Target level of protection

2. The mix of infrastructure protection, structure protection, and potential relocation

3. The extent to which the natural systems of the floodplain can be restored through environmental design

4. The number and extent of resiliency elements and programs

5. Funding, project management entity, and implementation

Targeted Flood Damage Reduction Levels

Flood events range from minor, non-life-threatening damage in localized areas to catastrophic events with deep and sustained floodwaters that have significant impacts on structures and infrastructure.

The LAND Alternative seeks to mitigate damage from flooding that is categorized at the lower end of catastrophic. This alternative is for greater than 100-year flood events.

AN EQUITY
FRAMEWORK

The LAND development process uses an equity framework in how it considers potential impacts on all individuals, property owners, and land uses most affected by flooding.

PROVIDE
low or no-cost mitigation for property owners.

OFFER
fair compensation for property owners and tenants.

GUIDE
site selection by local codes, design standards, and community input.

ALLOW
flood protection measures to be locally led and based on reasonable cost/benefit assumptions.

IMPLEMENT
solutions at the discretion of property owners as feasible.

PRIORITIZE
actions by timeframe.

MINIMIZE
impacts on aquatic and semi-aquatic species.

USE
current peer-reviewed ecological and biological science.

SUPPORT
economic vitality.

Options Considered

The development process considered three potential options before identifying the preferred alternative. These options ranged from non-structural floodplain restoration and management to the construction of 22.1 miles of new and expanded levees.

After extensive technical analysis and review at community briefings, the consensus recommendation was to implement all options presented, as described in the LAND Alternative.

PROJECTS · PROGRAMS · POLICIES

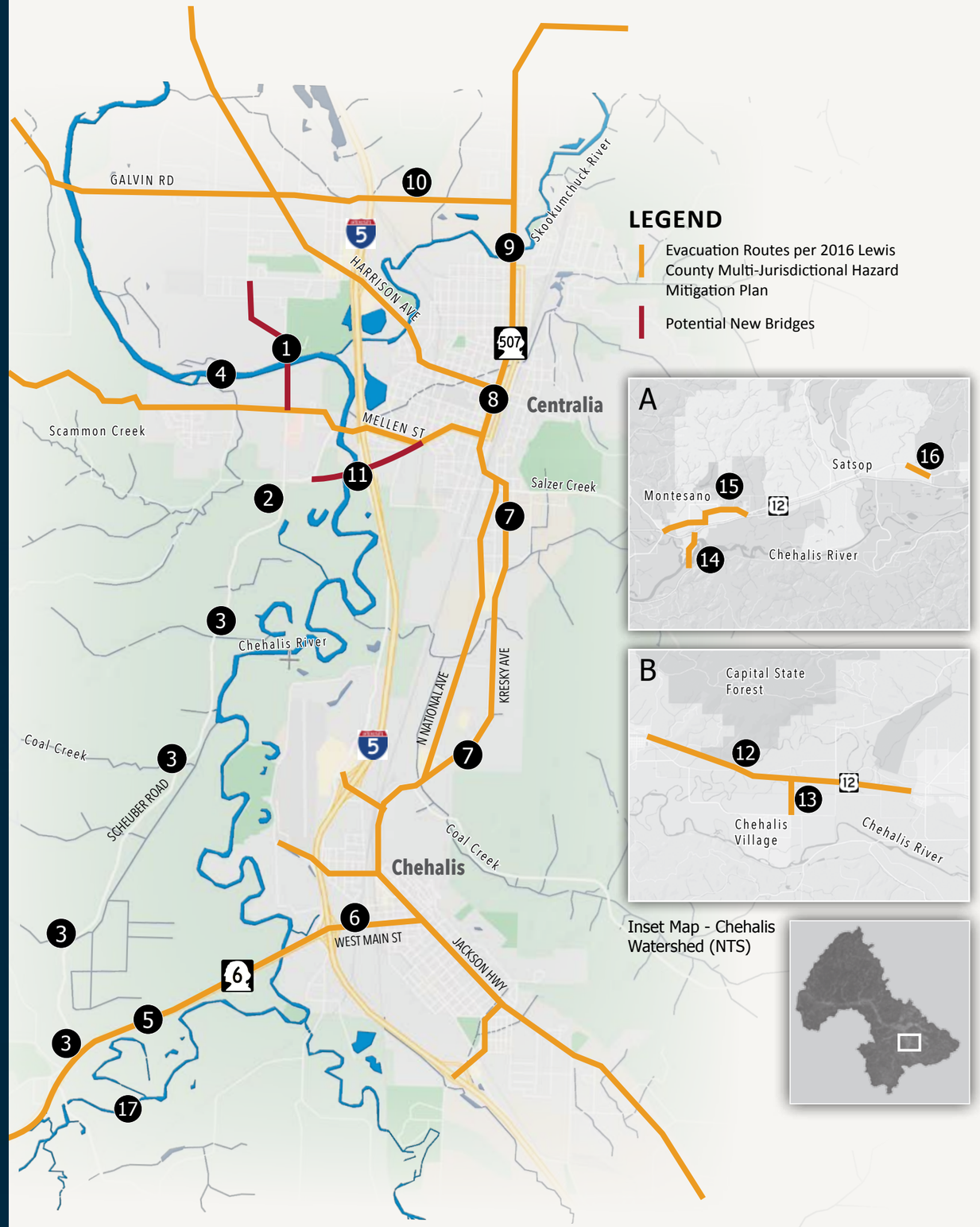
The LAND Alternative is a set of projects, programs and policies that are proposed as an alternative to the proposed flood retention facility on the Chehalis River near Pe Ell. The proposed projects, programs, and policies are designed to generate equitable outcomes for individuals and businesses living and working in all communities throughout the Chehalis Basin.

Projects

PJ1. Transportation System and Accessibility

Roadway closures have a dramatic effect on emergency services and transportation—and hinder community recovery efforts after an event. The following projects build from existing evacuation routing, with additional projects that address emergency access, connecting the hospital, and other emergency services during a catastrophic event.

1. South Scheuber Road Bridge (Bridge)
2. South Scheuber Road–Graf Road Military Road (Raised Roadway)
3. South Scheuber Road–West Connection (Raised Roadway)
4. Cooks Hills Road (Raised Roadway)
5. State Route 6 (Bridge; Raised Roadway)
6. West Main Street (Raised Roadway; Levee)
7. National to Kresky Avenue (Raised Roadway; Levee)
8. State Route 507 (Levee)
9. Pearl Street and Pearl Street Bridge (Bridge; Raised Roadway)
10. Reynolds Road (Raised Roadway; Levee)
11. New Mellen Street Bridge–South (Bridge)
12. State Route 12 (Raised Roadway)
13. Anderson Road (Raised Roadway)
14. State Route 107
15. Montesano Bypass
16. Monte Elma Road
17. Old Highway 603



PJ2. New and Expanded Setback Levees and Floodwalls

Levees would be needed to protect urbanized areas where it is unlikely that enough structures could be protected, raised, or relocated from the floodplain.

1. Adna High School (Levee)
2. Newaukum River (Levee)
3. Skookumchuck River (Levee)
4. Fort Borst Park (Levee)
5. China Creek (Levee)
6. Salzer Creek (Levee)
7. Chehalis-Centralia Airport (Levee)

PJ3. Improved Channel Conveyance

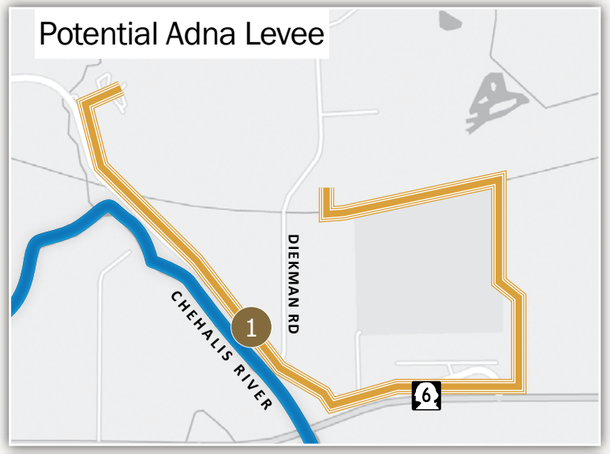
PJ3 Improved conveyance will remove pinch points on the Chehalis River.

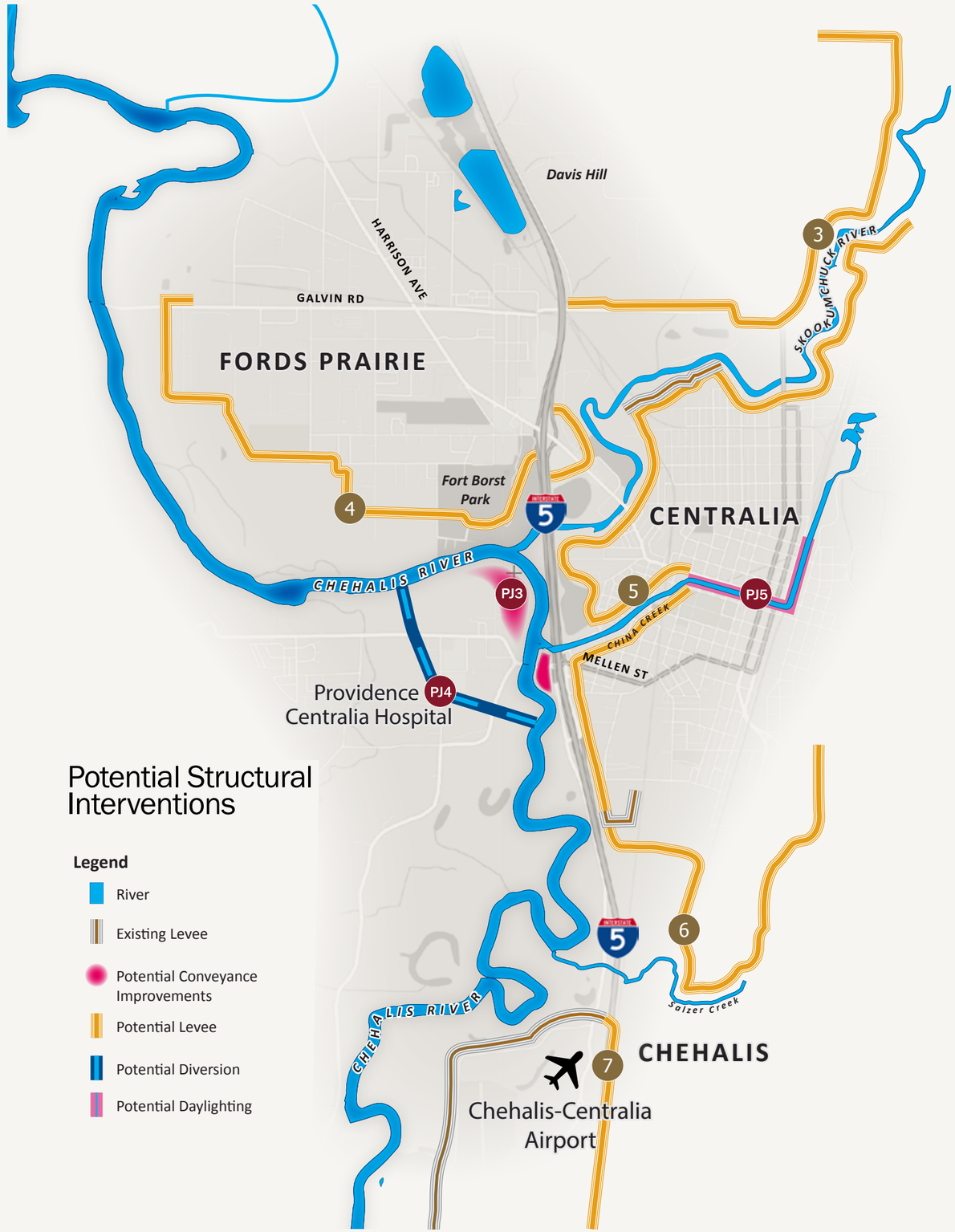
PJ4. Channel Diversion

PJ4 The Chehalis River Diversion intervention would reduce peak flood elevations by providing another path for flood waters.

PJ5. Daylight China Creek (Daylighting)

PJ5 Opening up the underground culvert where China Creek is buried—resurfacing the creek—would expand flood capacity of the creek and add a community amenity.





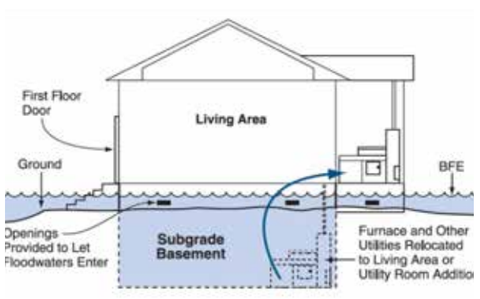
Programs

PG1. Safe Structures

The Safe Structures Program would offer flood damage protection for valuable structures (residences, schools, businesses, etc.) that might remain in danger of flooding. The program would utilize a risk assessment analysis to determine the most effective mitigation approach from one of the following five levels:

LEVEL 1: INSURANCE

LEVEL 2: RELOCATE UTILITIES



LEVEL 3: FLOODPROOF

LEVEL 4: RAISE

LEVEL 5: RELOCATE

PG2. Community Resiliency

Educating Basin residents about flood risks and projected floodplain boundaries, emergency escape routes, refuge areas, and resources such as resilience hubs is crucial for each family to prepare and execute an emergency plan.

Resilience hubs are neighborhood centers equipped to support residents, coordinate communication, and distribute resources before, during, and after a crisis. Importantly, these hubs are established and managed by community members, often in partnership with local governments, and typically housed in an existing facility such as a community center, school, or place of worship.

PG3. Alignment with Aquatic Species Restoration Plan

The Aquatic Species Restoration Plan is a science-informed restoration roadmap for habitat and ecosystems along the rivers and streams of the Chehalis Basin, aiming to honor the social, economic, and cultural values of the region and maintain working lands.

The Quinault Indian Nation, the Confederated Tribes of the Chehalis Reservation and the Washington Department of Fish and Wildlife worked together with landowners, farmers, foresters, conservationists, and agencies to develop the plan.

PG4. Equity Set-Aside

An Equity Set-Aside program would provide resources to assist low-income households that are affected by flooding. Resources could take the form of funding assistance, low-interest loans, and technical assistance to assist households to better understand their options for coping with flood risk.

PG5. Floodplain Restoration

A critical component of the LAND Alternative is restoring floodplans, which provide improved hydrologic conveyance, reduce water velocitiess, filter debris, absorb flood waters, increase flood storage, raise groundwater tables, and create critical habitats for salmon and other terrestrial and aquatic species.

Policies to Reduce the Impact of Future Flooding

PL1. Economic Development, Land Use, and Growth Management
Updates to local Comprehensive Plans can establish the foundation for more resilient communities and prevent development in flood-prone areas in the future.

PL2. Building and Development Codes
Cities and counties will need to implement regulations such as zoning and development code revisions that establish new land use designations and additional flood protection.

PL3. Capital Facilities
Cities and counties should update Capital Facilities Plans, prioritizing facilities to serve receiving area development and emergency access projects, as applicable.

PL4. Funding
Estimated costs for the LAND Alternative range from a low of $1.25 billion to a high of $1.9 billion. Cities and counties could consider identifying existing or new funding sources for LAND projects and programs, including excise taxes, general obligation bonds, impact fees, local improvement districts, connection fees, and state and federal grants.

IDENTIFY **THE SOLUTION**
REDUCE **THE IMPACT**
PREPARE FOR **THE FUTURE**


Rendering of Existing: Looking North toward the hospital


Rendering of Proposed Diversion with New Mellen Street Bridge, Open Space and Recreation Amenities

Rendering of Proposed Diversion During a Flood


Chehalis Levee Bridge View Sketch


Borst Park Levee