



City of Longview

1525 Broadway
Longview, WA 98632
www.ci.longview.wa.us

City Council

*Mayor MaryAlice Wallis
Mayor Pro Tem Michael Wallin
Council Member Ruth Kendall
Council Member Angie Wean
Council Member Spencer Boudreau
Council Member Hillary Strobel
Council Member Christopher Ortiz*

Tuesday, July 12, 2022

6:00 PM

2nd Floor, City Hall

NOTICE IS HEREBY GIVEN, in accordance with RCW Chapter 42.30, that the City Council of the City of Longview, Washington, will conduct a regular meeting in the Longview City Hall Council Chamber, 1525 Broadway, Longview, on Tuesday, July 12th at 6:00 p.m. The topics of discussion follow.

Zoom meeting link: <https://us02web.zoom.us/j/83303273869>

Telephone options (dial any of the following numbers):

**1-253-215-8782
1-346-248-7799
1-408-638-0968
1-669-900-6833
1-301-715-8592
1-312-626-6799
1-646-876-9923**

Webinar ID: 833 0327 3869

- 1. CALL TO ORDER**
- 2. INVOCATION*/FLAG SALUTE**
22-000423 DENISE ARNOLD, GLORIA DEI LUTHERAN
- 3. ROLL CALL**
- 4. WORKSHOP**
22-000428 MOBILE LIBRARY (TIME ESTIMATE 30-45 MINUTES)
- 5. APPROVAL OF MINUTES**

22-000421 JUNE 23, 2022 REGULAR MEETING

- 6. CHANGES TO THE AGENDA**
- 7. PRESENTATIONS & AWARDS**
- 8. CONSTITUENTS' COMMENTS (Thirty Minutes)**
- 9. PUBLIC HEARINGS**
- 10. BOARD & COMMISSION RECOMMENDATIONS**

22-000427 ACCESSIBILITY ADVISORY COMMITTEE RECOMMENDATION**RECOMMENDED ACTION:**

AUTHORIZE THE REQUESTED FUNDING AMOUNT OF \$70,000 ALLOCATED FROM THE ADA CAPITAL FUND AS RECOMMENDED BY THE ACCESSIBILITY ADVISORY COMMITTEE

22-000429 PLANNING COMMISSION RECOMMENDATION: PERIODIC UPDATE TO CHAPTER 17.24 FLOOD DAMAGE PREVENTION OF THE LONGVIEW MUNICIPAL CODE.**RECOMMENDED ACTION:**

MOTION TO DIRECT THE CITY ATTORNEY TO PREPARE AN ORDINANCE TO AMEND LMC CHAPTER 17.24 FLOOD DAMAGE PREVENTION AS RECOMMENDED BY THE PLANNING COMMISSION.

11. ORDINANCES & RESOLUTIONS**22-000426 RESOLUTION 2414 - HAZARD MITIGATION PLAN ADOPTION****RECOMMENDED ACTION:**

MOTION TO APPROVE RESOLUTION 2414 TO ADOPT THE 2022 COWLITZ COUNTY HAZARD MITIGATION PLAN UPDATE

22-000431 RESOLUTION 2415 - AUTHORIZING THE CITY MANAGER TO BORROW FUNDS FROM THE GENERAL FUND FOR THE PURPOSE OF FINANCING IMPROVEMENTS UNDER LOCAL IMPROVEMENT DISTRICTS**RECOMMENDED ACTION:**

MOTION TO ADOPT RESOLUTION NO. 2415

22-000433 ORDINANCE 3462 – IMPLEMENT PHASE 1 DOWNTOWN PARKING CHANGES**RECOMMENDED ACTION:**

MOTION TO ADOPT ORDINANCE NO. 3462

12. MAYOR'S REPORT**22-000434 APPOINTMENT OF VIRGINIA COWDEN AND CAITLIN TWEEDY TO THE HISTORIC PRESERVATION COMMISSION****RECOMMENDED ACTION:**

APPOINT VIRGINIA COWDEN TO AN UNEXPIRED TERM THROUGH DECEMBER 31,

2022, AND CAITLIN TWEEDY TO AN UNEXPIRED TERM THROUGH DECEMBER 31, 2023.

13. COUNCILMEMBERS' REPORTS

22-000419 DEVELOPMENT OF HOUSING AND MIXED USE ON MUNICIPAL PROPERTY IN THE DOWNTOWN COMMERCE ZONE

RECOMMENDED ACTION:

DIRECT STAFF TO EXPLORE THE POSSIBILITY OF SELLING CITY PARKING LOTS FOR A SPECTRUM OF POTENTIAL USES, INCLUDING HOUSING AND MIXED USE. IDENTIFY WHICH LOTS COULD MEET THE COUNCIL'S DEVELOPMENT GOALS.

14. CONSENT CALENDAR

22-000420 APPROVAL OF CLAIMS

22-000422 BID REVIEW – CALIFORNIA WAY REHABILITATION PROJECT

RECOMMENDED ACTION:

MOTION TO ACCEPT THE LOW BID AND AWARD TO ADVANCED EXCAVATING SPECIALISTS, LLC, IN THE AMOUNT OF \$1,130,910.80

15. CITY MANAGER'S REPORT

16. MISCELLANEOUS

17. EXECUTIVE SESSION

18. ADJOURNMENT

* Any invocation that may be offered at the Council meeting shall be the voluntary offering of a private citizen, to and for the benefit of the Council. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Council, and the Council does not endorse the religious beliefs or views of this, or any other speaker.

NEXT REGULAR COUNCIL MEETINGS:
TUESDAY, JULY 26TH, 2022 - 6:00 P.M.
TUESDAY, AUGUST 9TH, 2022 - 6:00 P.M.

IMAGINE...

...you and your children ride your bikes to the local park,
and the library is there.



IMAGINE...

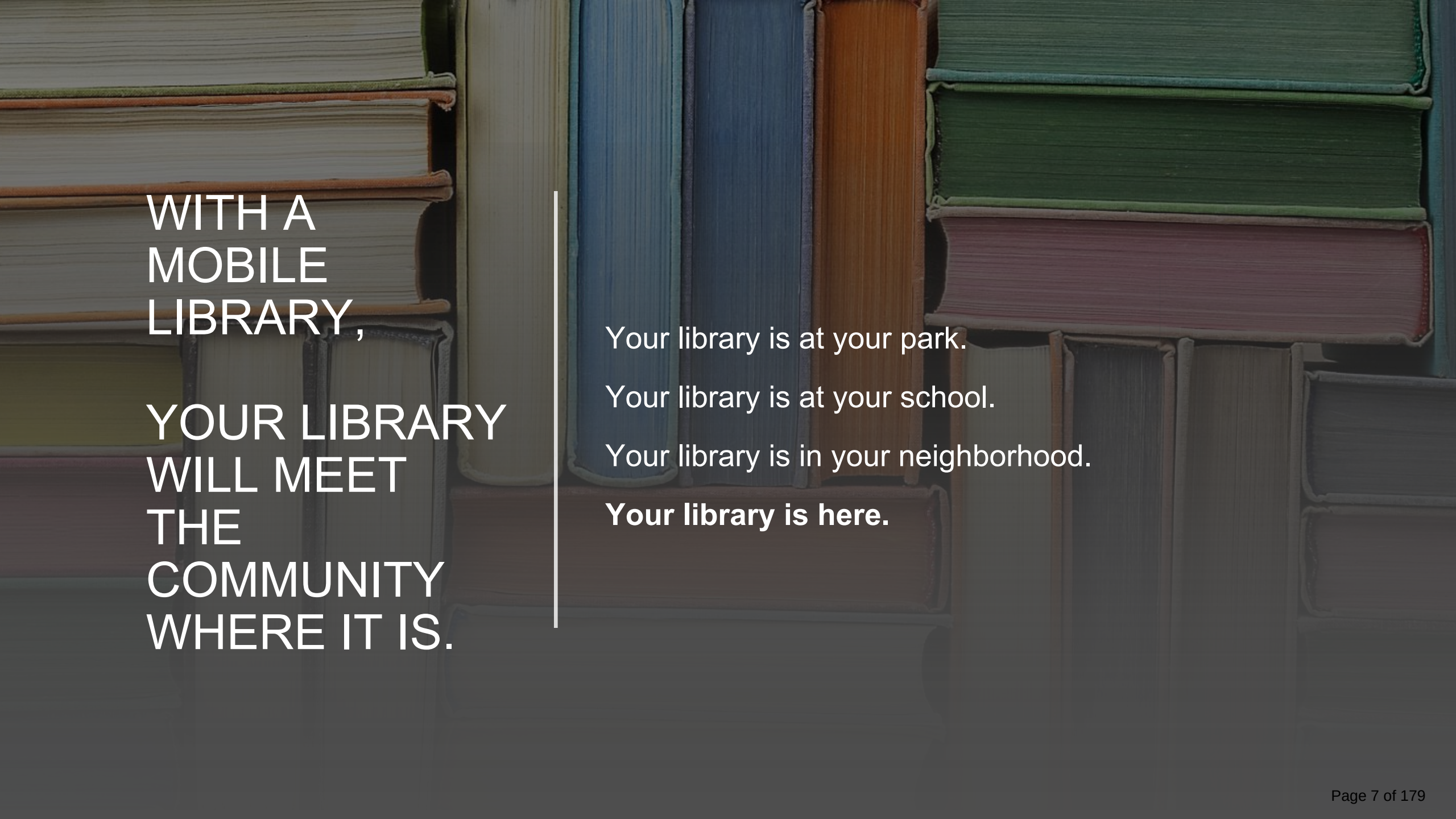
...you go to Walmart to pick up groceries and the library is there.



IMAGINE....

...you're at a community festival, and the library is there.



The background of the slide is a photograph of a library. It shows several rows of bookshelves filled with books. The books have various colored spines, including shades of blue, green, brown, and red. The lighting is soft, and the overall tone is warm and scholarly.

WITH A
MOBILE
LIBRARY,

YOUR LIBRARY
WILL MEET
THE
COMMUNITY
WHERE IT IS.

Your library is at your park.

Your library is at your school.

Your library is in your neighborhood.

Your library is here.

LONGVIEW PUBLIC
LIBRARY

MOBILE LIBRARY SERVICE PROJECT

LIBRARY MISSION

Educating minds. Empowering people. Enriching lives. Building community.

VISION STATEMENT

The Longview Public Library, a welcoming destination and gathering place, encourages people and ideas to come together. The Library nurtures a joy of reading and discovery through creative programs, resources, collections, and innovative partnerships that meet the needs and interests of our diverse community. Our well-trained and motivated staff provide open and equal access to information through excellent customer service. The Library celebrates the history of Longview while embracing the future.

LIBRARY SERVICES

Adult Services — responsible for library services to adults. Includes adult collections and programs like Homebound Outreach and Project Read.

Circulation Services — responsible for maintaining patron records and the checkout, return, and inventory of library materials.

Technical Services — responsible for the acquisition, processing, and cataloging of library materials as well as the library's technology and digital services including loanable hotspots, projectors, e-books, online databases, the online catalog, and the library website.

Youth Services — responsible for library services to youth, birth through 18, and their caregivers. Includes youth collections and programs.

LIBRARY OUTREACH

- **Homebound Delivery Service**
- **Involvement in Outside Groups** - Downtowners, Lower Columbia Review Group, FYSPRT, ReAL Teens Read
- **Participating at Events** - International Festival, Volunteer Fairs, Senior Expo, National Night Out, Cowlitz Tribal Health Walk
- **Presentations to Outside Groups** – Chamber, Lions, Rotary
- **Programs Outside of the Building** - Computer Class at the Highlands, Teen Book Club at the Highlands
- **School Visits**



LIBRARY SNAPSHOT

- Single building library, opened in 1926, addition was built in 1967-68.
- Approx. 250,000 items
- Digital resources: eBooks, downloadable audio, research databases, and more
- 7816 active card holders (Nov 2018-Nov 2021)
- Serves the City of Longview and the Cowlitz County Mini-Rural Library District, which pays the City for library service
- Service population is 54,158: 37,818 in city limits, 16,340 outside
- Service area includes the Longview School District, which serves 6,355 students, and a portion of the Kelso School District, an estimated 1,753 children.

BACKGROUND OF MOBILE LIBRARY SERVICE PROJECT

- Pre-identified need for more outreach
 - Promote and market the library services we already offer
 - Increase public awareness about library card eligibility
 - Reach underserved neighborhoods and demographics
- Foundation leadership approached library staff in 2020 seeking a large, high-impact project to fund and fundraise around
- Staff attended the Association of Bookmobiles and Outreach Services conference in October 2020
- Presented the Mobile Library idea to the Foundation in May 2021
- Formed Steering Committee in August 2021
- Public Forum in October 2021



WHAT IS MOBILE LIBRARY SERVICE?

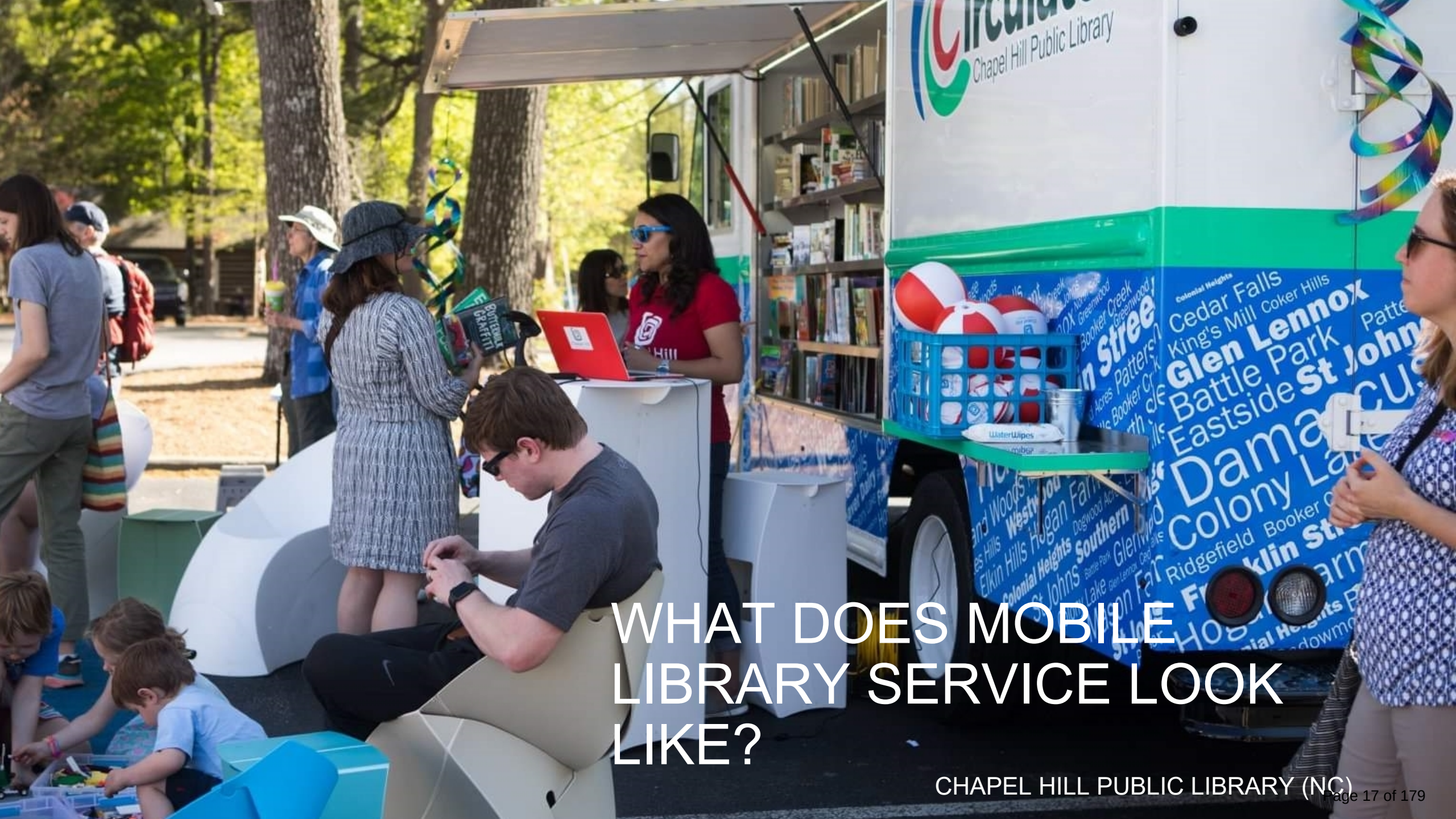
- AKA Bookmobile
- Library Services brought out of the building and into the community
 - Library card sign-up
 - Book/material check out
 - Story Times
 - Seed Library
 - Internet access
 - Technology access
 - Classes/Presentations
 - Informational & instructional assistance from library staff



IS IT JUST A BOOKMOBILE?



WHAT MAKES UP MOBILE LIBRARY SERVICE?



WHAT DOES MOBILE LIBRARY SERVICE LOOK LIKE?

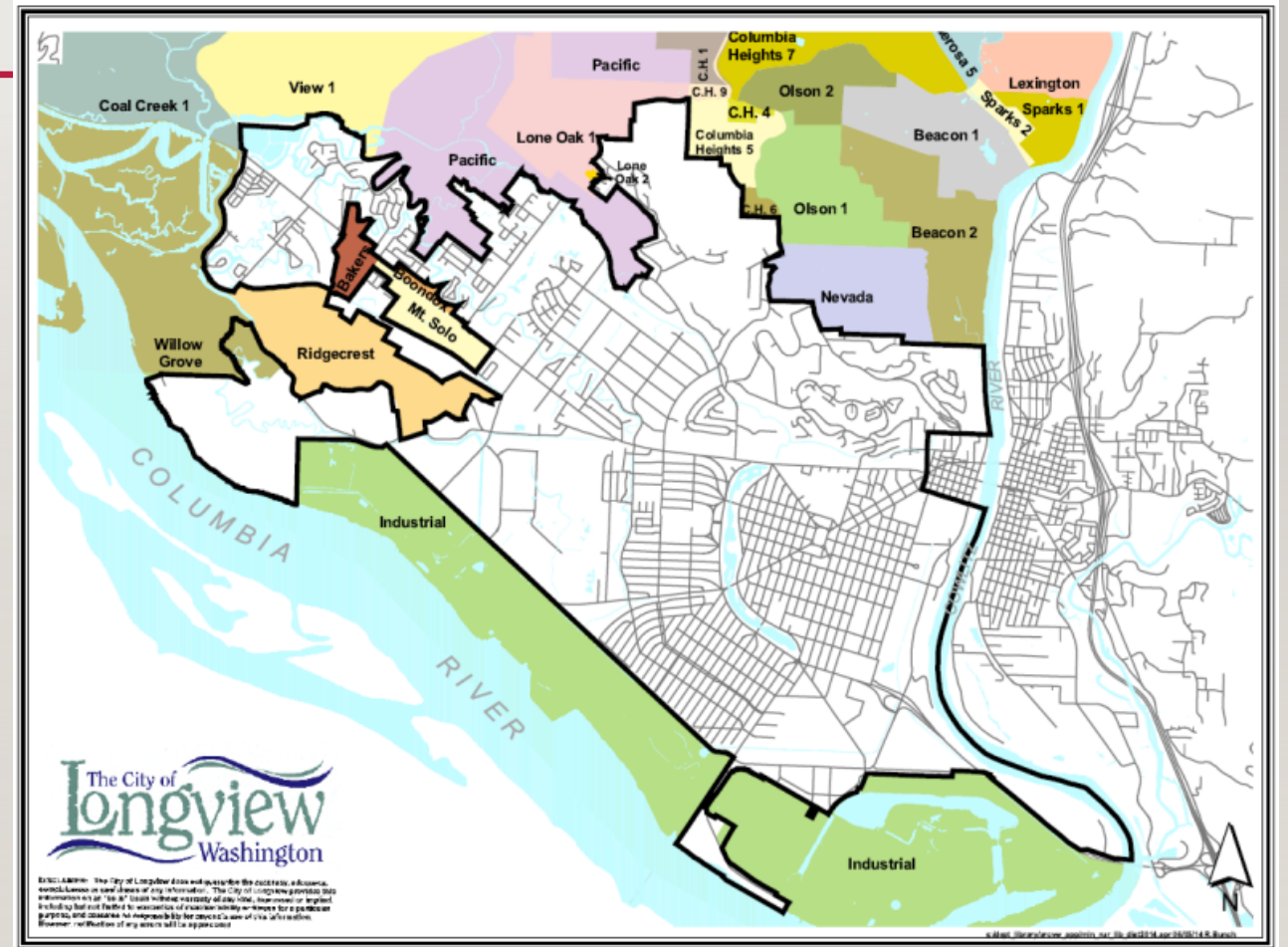
CHAPEL HILL PUBLIC LIBRARY (NC)

BENEFITS OF A MOBILE LIBRARY

- Cost effective, efficient, visible, modular extension of the library
- Expands library services out of the building
- Market & promote library services
- Reach out to underserved areas and the mini-district
- Continuity of library service
 - During potential library renovation
 - Emergency response
 - Natural Disasters

WHO WOULD THE MOBILE LIBRARY SERVE?

- City of Longview
- Rural Mini District
- Longview School District
- Parks & Community Centers
- Underserved Communities
- Current and New Library Users



WHO IS UNDERSERVED?

- Community members who don't know all the library offers
- Neighborhoods where library card use is low
- Neighborhoods that are scoring low in kindergarten readiness

WHO IS UNDERSERVED?

- Community members who don't know all the library offers

“I had no idea that some of the services listed above even existed.”

“free genealogy help”

“craft kits for kids”

“authors talking about their books”

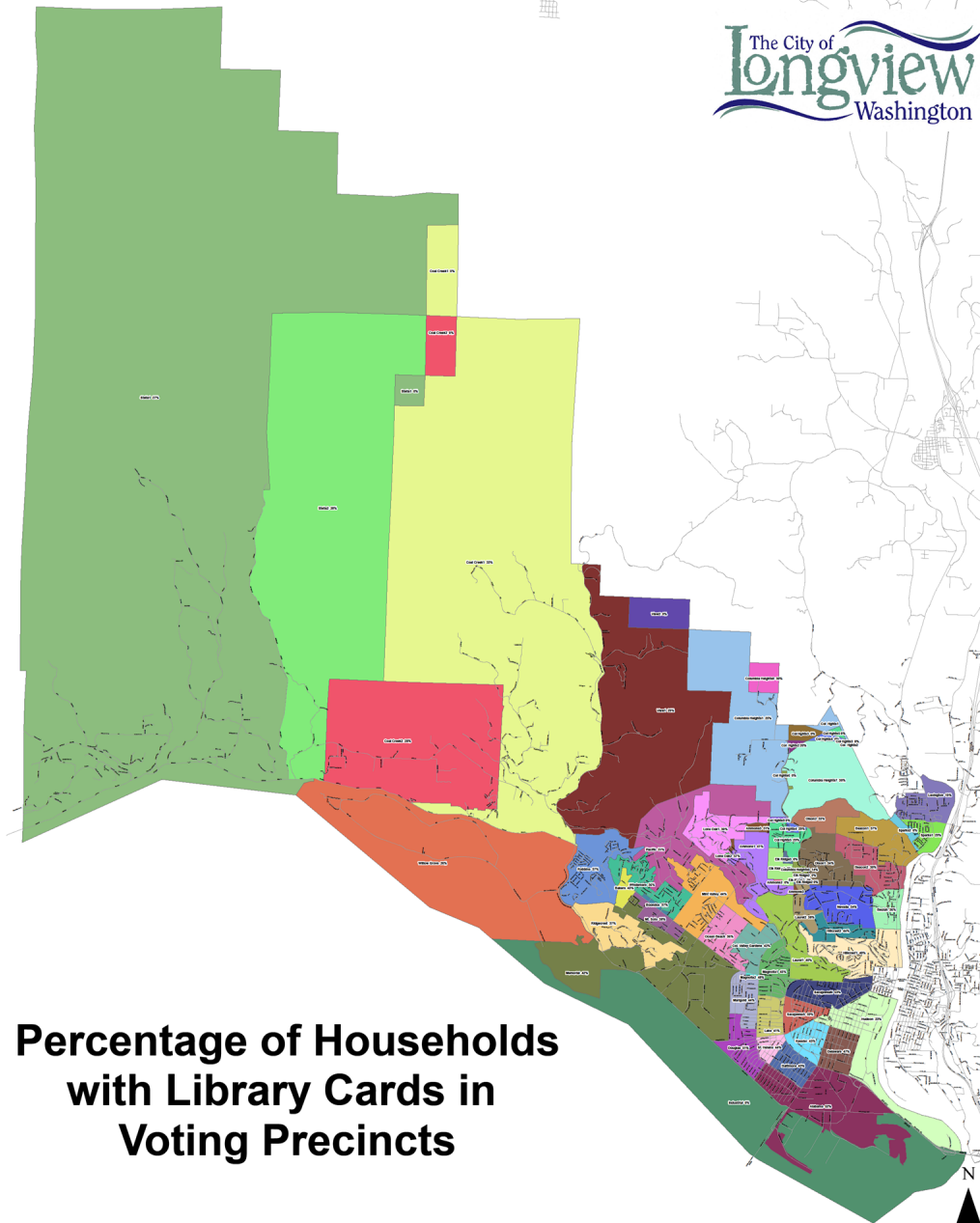
“requesting books you don't have”

“access to subscription genealogy services”

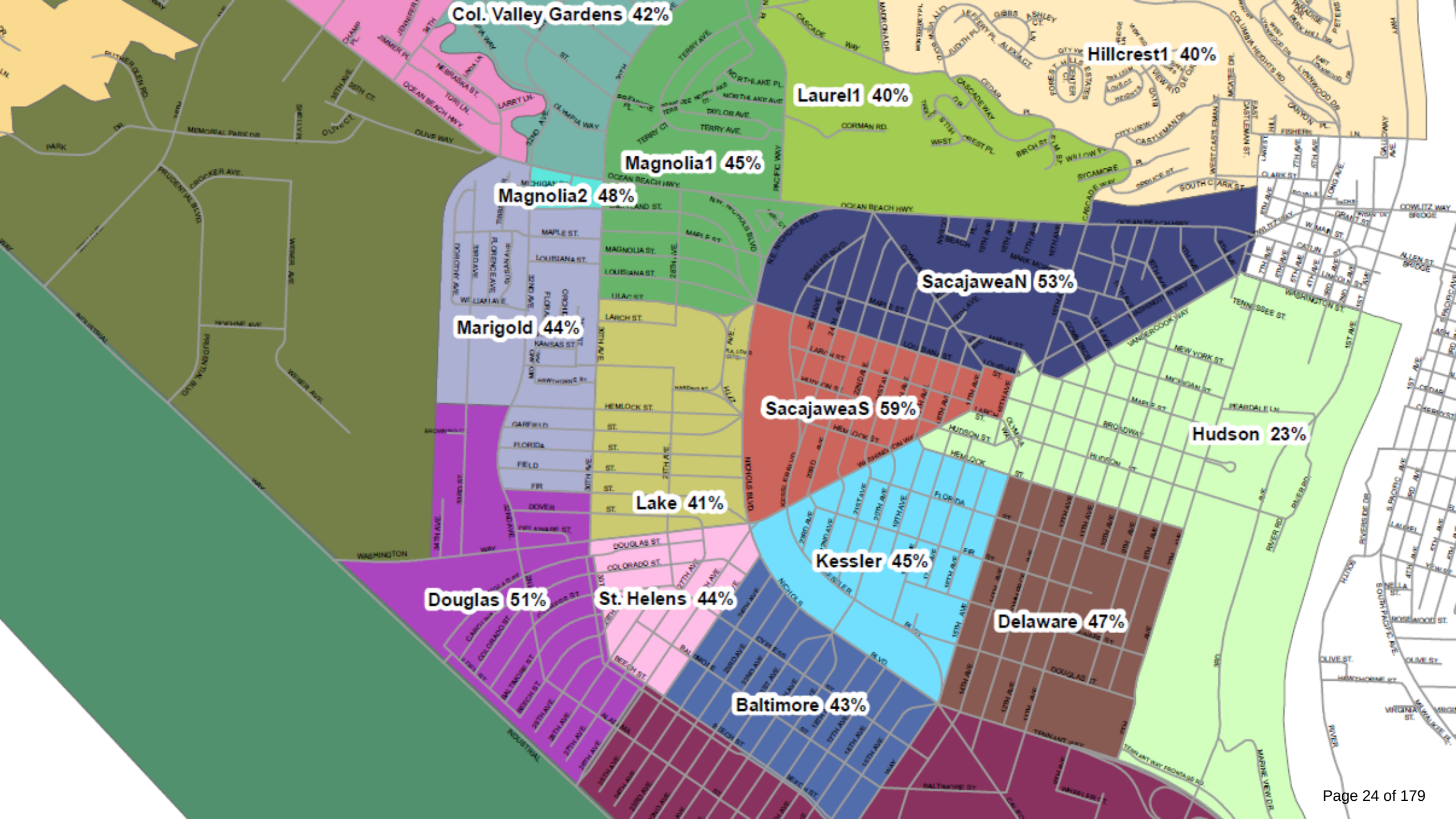
“it is sad you must live in the city limits to use the library”

WHO IS UNDERSERVED?

- Neighborhoods where library card holding is low
 - Columbia Heights
 - Beacon Hill
 - Lexington
 - Hudson
 - Coal Creek
 - Stella



**Percentage of Households
with Library Cards in
Voting Precincts**



Col. Valley Gardens 42%

Hillcrest1 40%

Laurel1 40%

Magnolia1 45%

Magnolia2 48%

Marigold 44%

SacajaweaN 53%

SacajaweaS 59%

Hudson 23%

Lake 41%

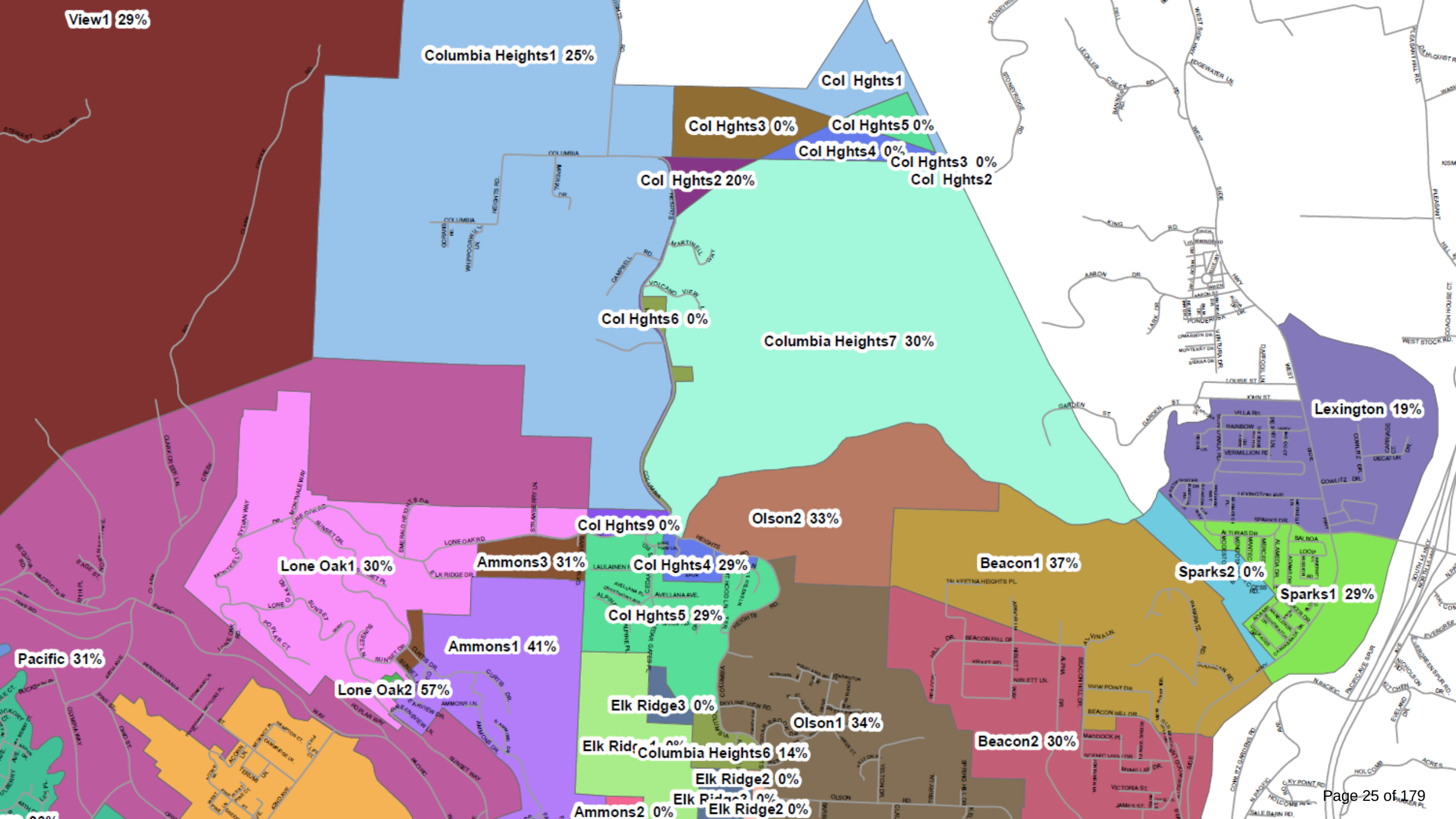
Kessler 45%

Douglas 51%

St. Helens 44%

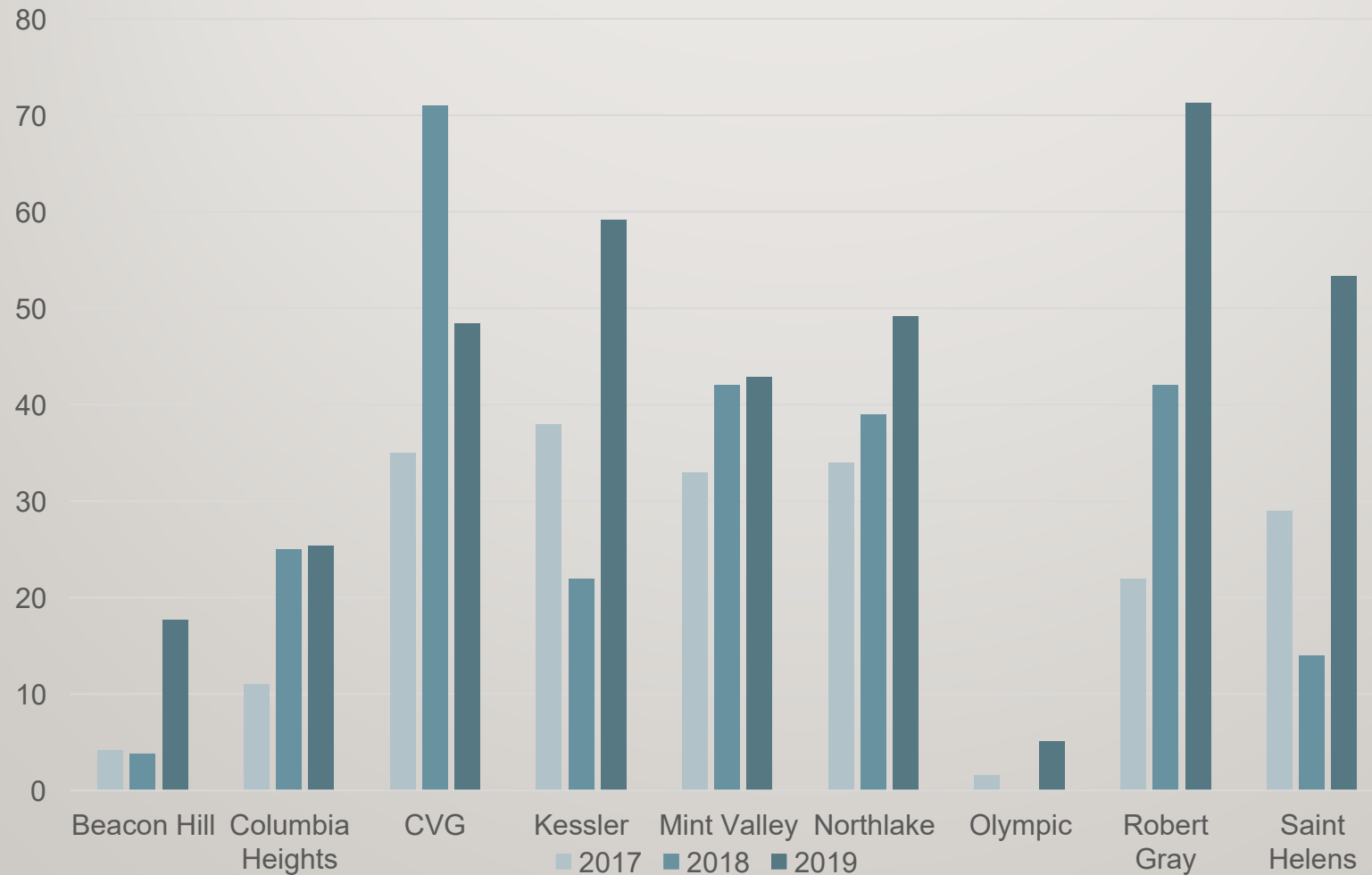
Baltimore 43%

Delaware 47%



WHO IS UNDERSERVED?

- Neighborhoods that are scoring low in kindergarten readiness



Kindergarten
Readiness Areas:
Social-emotional
Physical
Cognitive
Language
Literacy
Mathematics

MOBILE LIBRARY SAMPLE SCHEDULE

2024 JULY						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3 Cardboard Boat Regatta!	4	5	6 Circulation
7	8	9 Day Camp Visit 10am-12pm	10	11 Concerts at the lake 6-8pm	12 Cowlitz Tribal Health Walk 12-3pm	13 Circulation
14	15	16 Day Camp Visit 10am-12pm	17	18 Concerts at the lake 6-8pm	19	20 Circulation
21	22	23 Day Camp Visit 10am-12pm	24 Seed Library Demo @ High- lands 4-6pm	25 Concerts at the lake 6-8pm	26	27 Circulation
28	29	30 Day Camp Visit 10am-12pm	31			

www.calendar-to-print.com

Long Stop North:

9-11 AM: Lexington with Story Time
 11 AM – 12 Noon: Meal Break
 12:30 – 2:30 PM: Beacon Hill with Story Time
 3 – 4:30 PM: Columbia Heights with Story Time

Short Stop West:

9-10 AM: Creeks
 10:30-11:30 AM: Baker's Corner
 11:30 AM – 12:30 PM: Meal Break
 1-2:30 PM – Walmart Ocean Beach
 3-4:30 PM – Archie Anderson Park

MOBILE LIBRARY SAMPLE SCHEDULE

2024 OCTOBER						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 Daycare Visit 10am-12pm	2	3	4 Latinx Outreach Event 5-8pm	5 Circulation
6	7	8 Daycare Visit 10am-12pm	9	10 Genealogy and Oral History Workshop at Canterbury 2-4pm	11	12 Circulation
13	14	15 Daycare Visit 10am-12pm	16	17	18 Veteran's Event at the VFW 1-4pm	19 Circulation
20	21	22 Daycare Visit 10am-12pm	23	24 Genealogy and Oral History Workshop at Canterbury 2-4pm	25	26 Circulation
27	28	29 Daycare Visit 10am-12pm	30	31		

www.calendar-to-print.com

Short Stop North:

9-10 AM: Lexington

10:30-11:30 AM: Beacon Hill

11:30 AM – 12:30 PM: Meal Break

1-2:30 PM – Columbia Heights

3-4:30 PM – Broadway

Long Stop West:

9-11 AM: Roy Morse with Story Time

11 AM – 12 Noon: Meal Break

12:30 – 2:30 PM: Mint Valley with Story Time

3 – 4:30 PM – Archie Anderson with Story Time

MOBILE LIBRARY SERVICE ESTIMATED COSTS

One Time Cost

- Fully Customized Vehicle \$305,000-320,000

Ongoing Costs

- Insurance \$1000/year
- Vehicle Service \$800/year
- Wi-Fi Service \$720/year (\$39.99/mo + taxes and surcharges)
- Gasoline/Mileage est. 2,000 miles/year - \$2,216/year
- Vehicle Depreciation at \$305,000-\$320,000, 4% annual inflation
 - 20 years - \$33,220-34,865/year
 - 15 years - \$36,350-38,150/year
- 2 PT 20 Hr/Wk Staff Member \$32,000/year

Total: \$69,956 - 74,886/year

MOBILE LIBRARY ESTIMATED CONTRIBUTIONS



Vehicle

\$125,000 Longview Library Foundation

\$50,000 Rural Library Mini-District

\$5,000 Friends of the Library

\$140,000 – other donors and grantors

(including
\$25,000 contingency from Foundation)



Core Book Collection

\$30,000 – outside grants

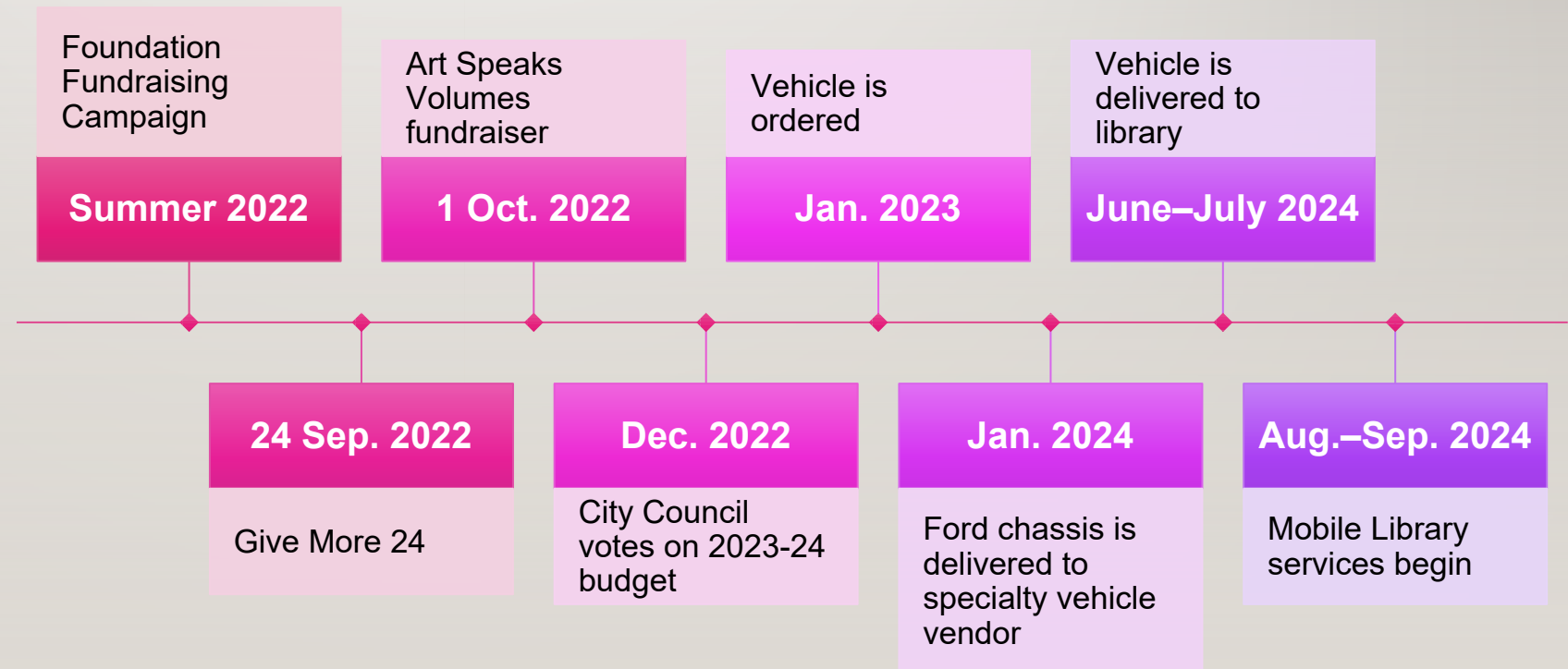


Annual Costs

\$ Budget Enhancement for the program

- 20% of library budget is paid by Rural Mini District

TIMELINE





QUESTIONS



City of Longview

1525 Broadway
Longview, WA 98632
www.ci.longview.wa.us

Minutes

City Council

*Mayor MaryAlice Wallis
Mayor Pro Tem Michael Wallin
Council Member Ruth Kendall
Council Member Angie Wean
Council Member Spencer Boudreau
Council Member Hillary Strobel
Council Member Christopher Ortiz*

Thursday, June 23, 2022

6:00 PM

2nd Floor, City Hall

NOTICE IS HEREBY GIVEN, in accordance with RCW Chapter 42.30, that the City Council of the City of Longview, Washington, will conduct a regular meeting in the Longview City Hall Council Chamber, 1525 Broadway, Longview, on Thursday, June 23rd at 6:00 p.m. The topics of discussion follow.

Zoom meeting link: <https://us02web.zoom.us/j/81568822755>

Telephone options (dial any of the following numbers):

1-253-215-8782
1-346-248-7799
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1-669-900-6833
1-301-715-8592
1-312-626-6799
1-646-876-9923

Webinar ID: 815 6882 2755

1. **CALL TO ORDER**

Mayor Wallis called the meeting to order at 6:00 p.m.

2. **INVOCATION*/FLAG SALUTE**

22-000399 JOSHUA WENZKE, NORTHLAKE CHURCH

After the invocation provided by Joshua Wenzek of Northlake Church, the flag salute was recited.

3. **ROLL CALL**

Present: Mayor Wallis, Mayor Pro Tem Wallin, Councilmember Kendall, Councilmember Wean, Councilmember Strobel, Councilmember Boudreau

Absent: Councilmember Ortiz - Excused

Staff Present: City Manager Kurt Sacha; City Attorney Jim McNamara; City Clerk Pro-tem Nancy Vandehey; Deputy City Clerk Pro-Tem Elizabeth Halili; Public Works Director Ken Hash; Community and Economic Development Director Ann Rivers; Parks & Recreation Director Jen Wills; Police Chief Robert Huhta; Police Administrative Manager Mary Chennault

4. **WORKSHOP**

22-000400 CITY OF LONGVIEW URBAN FOREST TREE CANOPY ASSESSMENT (TIME ESTIMATE - 30 MINUTES)

Parks & Recreation Director Jen Wills presented.

Jason Still of Longview provided public comment.

Shannon Gillman of Longview provided public comment

Arthur Chang, city unstated, made public comment.

Karen, last name unstated, of Longview made public comment.

Mr. Wells, city unstated, provided public comment.

5. **APPROVAL OF MINUTES**

22-000394 JUNE 9TH, 2022 REGULAR MEETING

On a motion duly made and passed, the reading of the minutes, copies of which had been submitted to the Mayor and members of the City Council, was waived and the minutes were approved as if read.

6. **CHANGES TO THE AGENDA**

7. **PRESENTATIONS & AWARDS**

22-000393 PRESENTATION ON HISTORIC PRESERVATION COMMISSION SCANNING GRANT

Arthur Chang of the Historic Preservation Commission presented.

22-000404 COWLITZ ECONOMIC DEVELOPMENT COUNCIL UPDATE, TED SPRAGUE

Ted Sprague provided an update.

8. **CONSTITUENTS' COMMENTS (Thirty Minutes)**

Karen, last name unstated, of Longview provided public comment.

Clint Hash of Longview provided public comment.

Allison Carston of Longview provided public comment.

Bob Ferranti of Longview provided public comment.

Shannon Gillman of Longview provided public comment.

Larry Crosby of Longview provided public comment.

Crystal Moldenhauer, City unstated, provided public comment.

Mike Peterson of Longview provided public comment.

Jason Still of Longview provided public comment.

9. **PUBLIC HEARINGS**

10. BOARD & COMMISSION RECOMMENDATIONS**11. ORDINANCES & RESOLUTIONS****22-000395 RESOLUTION NO. 2412 – ADOPTION OF THE LONGVIEW BICYCLE AND PEDESTRIAN MASTER PLAN****RECOMMENDED ACTION:****MOTION TO APPROVE RESOLUTION 2412 TO ADOPT THE LONGVIEW BICYCLE AND PEDESTRIAN MASTER PLAN**

Shannon Gillman of Longview provided public comment.

An individual, name and city unstated, provided public comment.

George Winn of Longview provided public comment.

Crystal Moldenhauer, city unstated, provided public comment.

Larry Crosby of Longview provided public comment.

An individual, name and city unstated, provided public comment.

Clint Hash of Longview provided public comment.

Jason Still of Longview provided public comment.

An individual, name and city unstated, made public comment.

A motion was made by Councilmember Kendall, seconded by Councilmember Wean, to Approve Resolution 2412 to Adopt the Longview Bicycle and Pedestrian Master Plan.

The motion carried by the following vote:

Ayes: Councilmember Strobel, Councilmember Wean, Mayor Wallis, Councilmember Boudreau, Councilmember Kendall

Nays: Councilmember Wallin

The Mayor announced a recess at 7:45 p.m. The meeting resumed at 7:53 p.m.

22-000396 RESOLUTION NO. 2413 - A RESOLUTION AUTHORIZING THE CITY MANAGER TO RENEW THE INTERLOCAL AGREEMENT WITH THE CITY OF KELSO, COWLITZ COUNTY AND THE CONSOLIDATED DIKING IMPROVEMENT DISTRICT NO. 1 REGARDING REGIONAL COOPERATION ON STORMWATER PUBLIC EDUCATION AND OUTREACH**RECOMMENDED ACTION:****MOTION TO APPROVE RESOLUTION NO. 2413.**

Jason Still of Longview provided public comment.

An individual, name, and city unstated, provided public comment.

A motion was made by Councilmember Strobel, seconded by Councilmember Wean, to Adopt Resolution 2413. The motion carried unanimously.

12. MAYOR'S REPORT**13. COUNCILMEMBERS' REPORTS**

Councilmember Wallin provided a verbal report.

Councilmember Boudreau provided a verbal report.

Councilmember Kendall provided a verbal report.

14. CONSENT CALENDAR

22-000401 APPROVAL OF CLAIMS**22-000391 ADOPT 2022 COUNCIL COMMITTEE ASSIGNMENTS**

RECOMMENDED ACTION: Motion to adopt the Longview City Council 2022 committee assignments.

Jason Still of Longview provided public comment.

A motion was duly made and passed approving the items on the Consent Calendar as though acted on individually.

15. CITY MANAGER'S REPORT**22-000398 RECOMMENDED PHASE 1 CHANGES TO IMPROVE THE DOWNTOWN PARKING ENFORCEMENT PROGRAM**

RECOMMENDED ACTION: MOTION TO DIRECT THE CITY ATTORNEY TO PREPARE AN ORDINANCE TO REMOVE WARNINGS FOR OVERTIME PARKING VIOLATIONS AND CHANGE ON-STREET PARKING TIME LIMITS FROM 3 HOURS TO 2 HOURS, IN THE DOWNTOWN PARKING ENFORCEMENT ZONE.

Planning Manager Adam Trimble presented.

Crystal Moldenhauer, city unstated, provided public comment.

Jason Still of Longview provided public comment.

Shannon Gillman of Longview provided public comment.

A motion was made by Councilmember Kendall, seconded by Councilmember Strobel, to direct the City Attorney to prepare an Ordinance to remove warnings for overtime parking violations and change on-street parking time limits from 3 hours to 2 hours, in the Downtown Parking Enforcement Zone. The motion carried unanimously.

22-000397 POLICE DEPARTMENT 2021 ANNUAL REPORT

RECOMMENDED ACTION: FOR INFORMATION ONLY

Chief of Police Robert Huhta presented.

Larry Crosby of Longview provided public comment.

Jason Still of Longview provided public comment.

Shannon Gillman of Longview provided public comment.

City Manager Kurt Sacha provided a verbal report.

16. MISCELLANEOUS

Jason Still of Longview provided public comment.

17. **EXECUTIVE SESSION**

18. **ADJOURNMENT**

The meeting was adjourned at 9:44 p.m.

*Nancy Vandehey
City Clerk Pro-tem*

Approved: _____
Mayor

*** Any invocation that may be offered at the Council meeting shall be the voluntary offering of a private citizen, to and for the benefit of the Council. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Council, and the Council does not endorse the religious beliefs or views of this, or any other speaker.**

**NEXT REGULAR COUNCIL MEETINGS:
TUESDAY, JULY 12TH, 2022 - 6:00 P.M.
TUESDAY, JULY 26TH, 2022 - 6:00 P.M.**



City of Longview

Agenda Summary

ACCESSIBILITY ADVISORY COMMITTEE RECOMMENDATION

RECOMMENDED ACTION:

AUTHORIZE THE REQUESTED FUNDING AMOUNT OF \$70,000 ALLOCATED FROM THE ADA CAPITAL FUND AS RECOMMENDED BY THE ACCESSIBILITY ADVISORY COMMITTEE

COUNCIL INITIATIVE ADDRESSED:

Address Quality of Place Issues

CITY ATTORNEY REVIEW: N/A

SUMMARY STATEMENT:

The purpose of this agenda item is to obtain city council approval of recommended ADA capital projects from the Accessibility Advisory Committee. The projects were brought forward by Public Works and Parks providing for an additional barrier elimination project under the City ADA Transition Plan.

Projects to be included:

- Construction of ADA ramps at Louisiana and 18th.
- Restriping of the ADA parking spaces at the City park parking lots and the downtown parking lots
- Construction of electric ADA door openers at the Archie Anderson Park Building

RECOMMENDED ACTION:

Authorize the requested funding amount of \$70,000 allocated from the ADA Capital Fund as recommended by the Accessibility Advisory Committee.

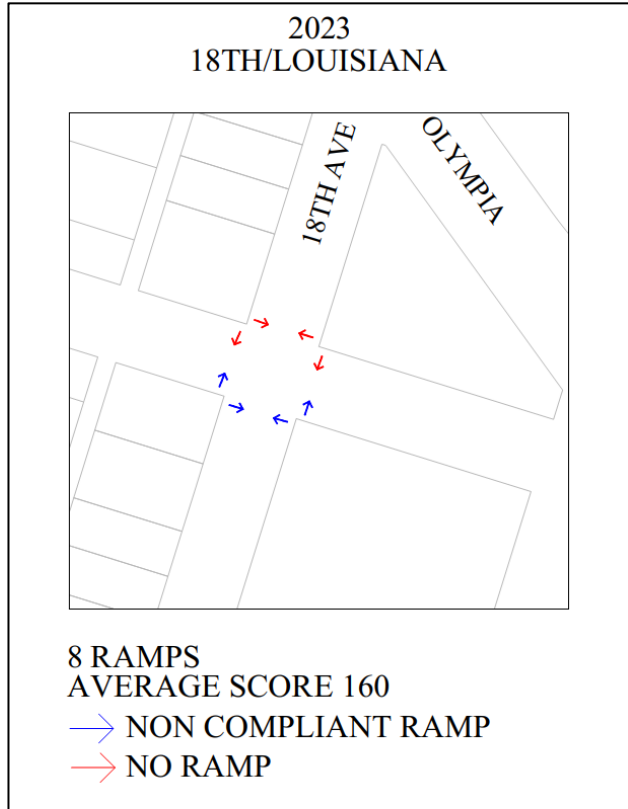
STAFF CONTACT:

Ken Hash, Public Works Director

Attachments:

1. ADA Committee Recommendation

ADA Committee Recommendation



ADA Ramps
18th & Louisiana
\$50,000

ADA door openers
Archie Anderson building
\$6,000



Restripe ADA Parking spots
City Parking lots
\$14,000

Total \$70,000



City of Longview

Agenda Summary

PLANNING COMMISSION RECOMMENDATION: PERIODIC UPDATE TO CHAPTER 17.24 FLOOD DAMAGE PREVENTION OF THE LONGVIEW MUNICIPAL CODE.

RECOMMENDED ACTION:

MOTION TO DIRECT THE CITY ATTORNEY TO PREPARE AN ORDINANCE TO AMEND LMC CHAPTER 17.24 FLOOD DAMAGE PREVENTION AS RECOMMENDED BY THE PLANNING COMMISSION.

COUNCIL INITIATIVE ADDRESSED:

Preserve and enhance neighborhoods

CITY ATTORNEY REVIEW: REQUIRED

SUMMARY STATEMENT:

To participate in and maintain eligibility for flood insurance through the National Flood Insurance Rate Program and disaster relief, Longview must meet the requirements of Washington laws Chapter 86.16 RCW and Chapter 173-158 WAC. These laws change and update over time, requiring regular updates to local ordinances including LMC 17.24 Flood Damage Prevention. This periodic update will incorporate new definitions, remove outdated references and add provisions to be consistent with national and state floodplain laws.

The Washington Department of Ecology, working as partner with the Federal Emergency Management Agency (FEMA), has provided the city with planning assistance to review and produce a periodic update to Longview Municipal Code Chapter 17.24 Flood Damage Prevention. 'Frequently flooded areas' are regulated as one of the Longview Critical Areas Ordinances. Floodplain maps and federal and state flood damage prevention laws are regularly updated. As a result, local jurisdictions are required to examine and update their flood hazard development codes. The last major update of the Longview Municipal Code Chapter 17.24 Flood Damage Prevention was in the year 2015.

State Department of Ecology Floodplain Management staff have compared the City's code with the FEMA Region X Flood Damage Prevention Washington Model Ordinance and consulted with city staff. The Longview Planning Commission held a public hearing on the proposed updates June 1, 2022. Written comments received from Consolidated Diking Improvement District #1 (CDID#1) were considered and incorporated into the proposal. A recommendation that the City Council adopt the proposed changes was made and passed unanimously.

The draft code amendments are attached with a strike through and underline format to show where changes are proposed. Comments from the Department of Ecology staff review are also shown in the right margin. A presentation is attached which summarizes the proposed updates and amendments.

FINANCIAL SUMMARY:

None.

STAFF CONTACT:

Adam Trimble, Planning Manager

Attachments:

1. 2022 Flood Hazard Prevention Ordinance update CC presentation
2. Ch.17.24 LMC_Flood_Damage_Prevention_ord_amendments7-1-22
3. 2022 Flood Hazard Prevention Ordinance update CC presentation

FLOOD DAMAGE PREVENTION

A Periodic Update to Longview Municipal Code 17.24

1

- Longview regulates flood zones under:

Title 17 ENVIRONMENT	
Chapters:	
17.02	General Provisions
17.10	Critical Areas
17.12	Standards for Preparing Critical Areas Reports and Mitigation Plans
17.20	Environmental Protection – Enactment
17.24	Flood Damage Prevention
17.60	Shorelines Master Program
17.80	Stormwater Management
17.90	Stormwater Illicit Discharge Prevention
17.100	Water Supply Protection

- Changes to state and federal laws require periodic updates to LMC chapter 17.24, Flood Damage Prevention.
- The current ordinance was last updated in 2015.

ADOPTING LOCAL UPDATES TO MATCH THE
WASHINGTON MODEL FLOODPLAIN
MANAGEMENT ORDINANCE

2



DEPARTMENT OF
ECOLOGY
State of Washington



US Army Corps of Engineers



WA Emergency Management Division



FEMA

► “To help local communities across Washington, we provide technical assistance and grants to help reduce flood risks, protect lives, homes, and property within floodplains, and improve habitat and the essential environmental functions that floodplains offer. We provide technical assistance and training, planning and regulatory guidance, flood ordinance reviews, and community assistance visits to communities.”
(<https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Hazards/Floods-floodplain-planning>)

FLOODS & FLOODPLAIN PLANNING

AGENCIES WORKING TO PROTECT LIVES AND PROPERTY

3

► To participate in and maintain eligibility for flood insurance and disaster relief, Longview must meet the requirements of Chapter 86.16 RCW and Chapter 173-158 WAC

► FEMA's database shows that 206 Longview property owners hold flood insurance policies with nearly \$70 million dollars of insurance in force



4

- ▶ Technical assistance was provided by the state department of ecology.
- ▶ Minor updates will add:
 - ▶ New definitions to assist with interpretation and implementation
 - ▶ Remove outdated references
 - ▶ Reference modern standards for design and construction
 - ▶ Incorporate changes in state and federal laws

UPDATES TO MATCH CHANGES IN STATE AND FEDERAL LAWS

5

- ▶ MOTION TO DIRECT THE CITY ATTORNEY TO PREPARE AN ORDINANCE TO AMEND LMC CHAPTER 17.24 FLOOD DAMAGE PREVENTION AS RECOMMENDED BY THE PLANNING COMMISSION.

RECOMMENDED ACTION

6

Chapter 17.24
FLOOD DAMAGE
PREVENTION

This is a draft of the proposed amendments to the Flood Damage Prevention ordinance. ~~Strikethrough~~ text is to be removed; Underline text is to be added.

Sections:

- 17.24.010 Findings of fact.
- 17.24.020 Statement of purpose.
- 17.24.030 Methods of reducing flood losses.
- 17.24.040 Definitions.
- 17.24.050 General provisions – Lands to which this chapter applies.
- 17.24.060 General provisions – Basis for establishing the areas of special flood hazard.
- 17.24.070 General provisions – Compliance.
- 17.24.080 General provisions – Abrogation and greater restrictions.
- 17.24.090 General provisions – Interpretation.
- 17.24.100 General provisions – Warning and disclaimer of liability.
- 17.24.110 Administration – Establishment of development permit.
- 17.24.120 Administration – Designation of community development director.
- 17.24.130 Administration – Duties and responsibilities of community development director.
- 17.24.140 Administration – Variance procedure.
- 17.24.145 Appeals.
- 17.24.150 Provisions for flood hazard protection – General standards.
- 17.24.160 Provisions for flood hazard protection – Specific standards.
- 17.24.170 Provisions for flood hazard protection – Floodways.
- 17.24.180 Critical facility.
- 17.24.190 Manufactured homes.
- 17.24.200 Recreational vehicles.

17.24.010 Findings of fact.

(1) The flood hazard areas of the city are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

(2) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities and, when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.020 Statement of purpose.

It is the purpose of this chapter to promote the public health, safety and general welfare; reduce the annual cost of flood insurance; and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- (1) To protect human life and health;
- (2) To minimize expenditure of public money and costly flood-control projects;
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) To minimize prolonged business interruptions;
- (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;

- (6) To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- (7) To ensure that potential buyers are notified that property is in an area of special flood hazard;
- (8) To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions; and
- (9) To implement the Washington State Flood Control Zone Permit Program, participate in and maintain eligibility for flood insurance and disaster relief pursuant to the requirements of Chapter 86.16 RCW and Chapter 173-158 WAC. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.030 Methods of reducing flood losses.

In order to accomplish its purposes this chapter includes methods and provisions for:

- (1) Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- (2) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- (4) Controlling filling, grading, dredging and other development which may increase flood damage; and
- (5) Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.040 Definitions.

Unless specifically defined below in this section, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application:

- (1) Alteration of watercourse: Any action that will change the location of the channel occupied by water within the banks of any portion of a riverine waterbody.
 - a. “Area of shallow flooding” means a designated AO or AH zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. Such flooding is characterized by ponding or sheet flow. Also referred to as the sheet flow area.
 - b. “Area of special flood hazard” means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. “Special flood hazard area” is synonymous in meaning with the phrase “area of special flood hazard”.
- (2) ASCE 24: The most recently published version of ASCE 24, Flood Resistant Design and Construction, published by the American Society of Civil Engineers.
- (3) Base flood: The flood having a 1% chance of being equaled or exceeded in any given year (also referred to as the “100-year flood”).
- (4) Base Flood Elevation (BFE): The elevation to which floodwater is anticipated to rise during the base flood.
- (5) ~~(3)~~ “Basement” means any area of the building having its floor sub-grade (below ground level) on all sides.
- (6) ~~(4)~~ “Critical facility” means a facility to which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use or store hazardous materials or hazardous waste.

Commented [GM(1): Discussion Item:

The WA Model Ordinance states:

“Participate in and maintain eligibility for flood insurance and disaster relief.”

Ecology would recommend adjusting this language. There is no “Washington State Flood Control Zone Permit Program.”

Commented [GM(2): Recommended addition.

- (7) (5) “Development” means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.
- (8) Elevated Building: For insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.
- (9) Elevation Certificate: An administrative tool of the National Flood Insurance Program (NFIP) that can be used to provide elevation information, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).
- (10) Essential Facility: This term has the same meaning as “Essential Facility” defined in ASCE 24. Table 1-1 in ASCE 24-14 further identifies building occupancies that are essential facilities.
- (11) Existing Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by the community.
- (12) Expansion to an Existing Manufactured Home Park or Subdivision: The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).
- (13)(6) “Flood” or “flooding” means
- a. A general and temporary condition of partial or complete inundation of normally dry land areas from:
- i. The overflow of inland or tidal waters;
- ii. The unusual and rapid accumulation of runoff of surface waters from any source; and/or
- iii. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- b. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a) of this definition.
- (14) Flood elevation study: An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards. Also known as a Flood Insurance Study (FIS).
- (15)(7) “Flood Insurance Rate Map (FIRM)” means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).
- (16) Floodplain or flood prone area: Any land area susceptible to being inundated by water from any source. See “Flood or flooding.”
- (17) Floodplain administrator: The community official designated by title to administer and enforce the floodplain management regulations.
- (18) Flood proofing: Any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate risk of flood damage to real estate or improved real property, water

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and sanitary facilities, structures, and their contents. Flood proofed structures are those that have the structural integrity and design to be impervious to floodwater below the Base Flood Elevation.

~~(19)~~(9) “Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Also referred to as “Regulatory Floodway.”

~~(20)~~ Functionally dependent use: A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, and does not include long term storage or related manufacturing facilities.

~~(21)~~ Highest adjacent grade: The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

~~(22)~~ Historic structure: Any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
- d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - i. By an approved state program as determined by the Secretary of the Interior, or
 - ii. Directly by the Secretary of the Interior in states without approved programs.

~~(23)~~(4) “Lowest floor” means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building’s lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of this chapter found at LMC 17.24.160(2).

~~(24)~~(4) “Manufactured home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes the term “manufactured home” does not include park trailers, travel trailers, and other similar vehicles.

~~(25)~~(4) “Manufactured home park or subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

~~(26)~~ Mean Sea Level: For purposes of the National Flood Insurance Program, the vertical datum to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

~~(27)~~(4) “New construction” means structures for which the “start of construction” commenced on or after the effective date of the ordinance codified in this section.

~~(28)~~ New Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading

Deleted: (8) “Flood Insurance Study” means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood.¶

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or the pouring of concrete pads) is completed on or after the effective date of adopted floodplain management regulations adopted by the community.

(29) Reasonably Safe from Flooding: Development that is designed and built to be safe from flooding based on consideration of current flood elevation studies, historical data, high water marks and other reliable data known to the community. In unnumbered A zones where flood elevation information is not available and cannot be obtained by practicable means, reasonably safe from flooding means that the lowest floor is at least two feet above the Highest Adjacent Grade.

(30) Recreational Vehicle: A vehicle,

- a. Built on a single chassis;
- b. 400 square feet or less when measured at the largest horizontal projection;
- c. Designed to be self-propelled or permanently towable by a light duty truck; and
- d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

(31)(44) "Start of construction" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The "actual start" means either the first placement of permanent construction of a structure on a site, such as the pouring of a slab or footings, the installation of piles, the construction of columns, or any work beyond the state of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundation or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For substantial improvement, the "actual start of construction" means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

(32)(45) "Structure" means a walled or roofed building including a gas or liquid storage tank and a manufactured home that is principally above ground.

(33)(46) "Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

(34)(47) "Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed.

The term does not, however, include either:

- a. Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions; or
- b. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

(35)(48) "Variance" means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

The Longview Municipal Code is current through Ordinance 3453, passed November 18, 2021.

Deleted: means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:¶

(a) Before the improvement or repair is started; or

Deleted: (a) Before the improvement or repair is started; or

Deleted: (b) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.¶

17.24.050 General provisions – Lands to which this chapter applies.

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Longview. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.060 General provisions – Basis for establishing the areas of special flood hazard.

(1) Frequently Flooded Areas. Frequently flooded areas may include lands outside of Federal Emergency Management Agency defined floodplains and shall include:

(a) Areas Identified on the Flood Insurance Map(s). Those areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled “The Flood Insurance Study (FIS) for Cowlitz County and Incorporated Areas,” dated December 16, 2015, with accompanying Flood Insurance Rate Maps (FIRM) and any revisions thereto. The Flood Insurance Study and accompanying map(s) are hereby adopted by reference, declared part of this chapter, and are available for public review at the county.

(b) Use of Additional Information. The director may use additional flood information, such as provided by the Army Corps of Engineers, that is more restrictive or detailed than that provided in the Flood Insurance Study conducted by the Federal Emergency Management Agency to designate frequently flooded areas. The flood insurance maps are to be used as a guide for the county, project applicants and/or property owners, and the public and should be considered a minimum designation of frequently flooded areas. As flood insurance maps may be continuously updated as areas are reexamined or new areas are identified, newer and more accurate information for flood hazard area identification shall be the basis for regulation, including photographs of past flooding, location of restrictive floodways, maps showing future build-out conditions, maps that show riparian habitat areas, or similar information. (Ord. 3307 § 1, 2015; Ord. 2817 § 1, 2001; Ord. 2786 § 1, 2000).

17.24.070 General provisions – Compliance.

All development within special flood hazard areas is subject to the terms of this ordinance and other applicable regulations. No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the terms of this chapter and other applicable regulations. Violations of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall, upon conviction thereof, be fined or imprisoned in accordance with Chapter 1.33 LMC. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

Commented [GM(9)]: This sentence is required per “WA State Model ordinance section 3.3.”

17.24.080 General provisions – Abrogation and greater restrictions.

This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions.

However, where this chapter and another chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.090 General provisions – Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.100 General provisions – Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.110 Administration – Establishment of development permit.

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in LMC 17.24.060. This permit shall be for all structures including manufactured homes, as set forth in the definitions (LMC 17.24.040), and for all other development including fill and other activities, also as set forth in the definitions. Application for a development permit shall be made on forms furnished by the community development director, and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:

- (1) Elevation in relation to mean sea level of the lowest floor (including basement) of all structures recorded on a current elevation certificate (FF 81-31) with Section B completed by the local official;
- (2) Elevation in relation to mean sea level to which any structure has been floodproofed;
- (3) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in LMC 17.24.160(2); and
- (4) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

[\(5\) Where development is proposed in a floodway, an engineering analysis indicating no rise of the Base Flood Elevation, and](#)

[\(6\) Any other such information that may be reasonably required by the Floodplain Administrator in order to review the application.](#)

17.24.120 Administration – Designation of community development director.

The community development director is appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.130 Administration – Duties and responsibilities of community development director.

Duties of the community development director shall include, but not be limited to:

(1) Permit Review.

- (a) Review all development permits to determine that the permit requirements of this chapter have been satisfied;
- (b) Review all development permits to determine that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required;
- (c) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of LMC 17.24.170(1) are met.

[\(d\) Review all development permits to ensure the site is reasonably safe from flooding.](#)

[\(e\) Notify FEMA when annexations occur in the Special Flood Hazard Area.](#)

(2) Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with LMC 17.24.060, the community development director shall obtain, review and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer LMC 17.24.160, specific standards, and LMC 17.24.170, floodways.

(3) Information to Be Obtained and Maintained.

- (a) Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in subsection (2) of this section, obtain and record the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the

structure contains a basement. Recorded on a current elevation certificate (FF 81-31) with Section B completed by the local official;

(b) For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in subsection (2) of this section:

(i) Obtain and record the elevation (in relation to mean sea level) to which the structure was floodproofed, and

(ii) Maintain the floodproofing certifications required in LMC 17.24.110(3);

(c) Maintain for public inspection all records pertaining to the provisions of this chapter including all records of floodplain hazards, certificates of floodproofing, [floodway encroachment certifications](#), [variance actions including justification for their issuance](#), [improvement and damage calculations](#), and flood elevation data.

Commented [GM(10)]: These additions reflect required language from the WA Model ordinance section 4.3-3. I worked the language in to follow the existing format. Each piece can be broken out at the City's discretion.

(4) Alteration of Watercourses.

(a) Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of watercourse, and submit evidence of such notification to the Federal Insurance Administration;

(b) Require that maintenance is provided within the altered or relocated portion of the watercourse so that the flood-carrying capacity is not diminished.

(5) Interpretation of FIRM Boundaries. Make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in LMC 17.24.140. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.140 Administration – Variance procedure.

(1) The appeal board of adjustment may consider applications for variances from the requirements of this chapter, subject to the provisions of this section.

(2) Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use; provided, that (a) the criteria of subsections (3), (4), and (5) of this section are met; (b) the structure or other development is protected by measures that minimize flood damages during the regulatory flood; and (c) the development will create no additional threats to public safety.

(3) Variances shall only be granted upon:

(a) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

(b) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, or conflict with Chapter 86.16 RCW or other laws, regulations, or ordinances.

(4) The following requirements and guidelines apply to the granting of variances:

(a) Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this section.

(b) Variances shall not be issued within a floodway if any increase in flood levels during the base flood discharge would result.

(c) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(d) Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, or economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

(e) Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined there is low damage potential, and it complies with all other variance criteria.

(f) Any applicant to whom a variance from the lowest floor elevation standards is granted shall be given written notice that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

(5) Criteria. When acting on a variance request, the appeal board of adjustment shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:

(a) The danger to life and property due to flooding, erosion damage, or materials swept onto other lands during flood events;

(b) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

(c) The importance of the services provided by the proposed use to the community;

(d) The necessity to the proposed use of a waterfront location, where applicable, and the availability of alternative locations for the proposed use that are not subject to flooding or erosion damage;

(e) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

(f) The safety or access to the property in times of flood for ordinary and emergency vehicles;

(g) The expected height, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;

(h) The cost of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems and streets and bridges.

(6) Conditions. The appeal board of adjustment may attach such reasonable conditions to the granting of the variance as may be appropriate to further the purposes of this code. Such conditions may include a requirement that the applicant record a document reciting the granting of the variance and providing notice of flood hazards.

(7) Reporting. The director shall report any variances to the Federal Insurance Director of the Federal Emergency Management Agency and the Department of Ecology upon request.

(8) The procedure for considering a variance application is the same as provided in LMC 17.24.145 as applicable. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.145 Appeals.

(1) A person aggrieved by the issuance or denial of a permit may appeal such action to the appeal board of adjustment, appointed pursuant to LMC 19.12.010. Any such appeal shall be filed in writing with the community development department within 20 calendar days of the issuance of the community development director's decision, with the first day being the day after the decision is issued. The appeal shall specify the reasons therefor. The director shall provide the appeal board of adjustment with the findings and documentation relating to the decision being appealed. The appeal board of adjustment, following a de novo hearing, shall affirm, modify or reverse the director's decision. The appellant carries the burden of proof on appeal.

(2) Upon the filing of an appeal with appropriate fee, the community development director shall set the public hearing before the appeal board of adjustment. If the appeal is filed 20 calendar days or more before the appeal board of adjustment's regularly scheduled monthly meeting, the board shall hear the appeal at that meeting as set by the director. For appeals filed within 19 calendar days of the regularly scheduled monthly meeting, the appeal board of adjustment shall hear the appeal in the subsequent month.

(3) Notice of the time, date and place of the hearing shall be sent to the appellant and the permittee by first class mail prior to the public hearing. Legal notice of the hearing shall be published in a newspaper of general circulation and the subject property shall be posted with said notice not less than 10 calendar days prior to the public hearing.

(4) Within 10 calendar days after the public hearing, the appeal board of adjustment shall issue a written decision, including findings of fact on which its decision is based. Such written decision shall be available to the appellant and the public upon request. Appeals of appeal board of adjustment decisions shall be to a court of competent jurisdiction, pursuant to the Land Use Petition Act, Chapter 347, Washington Laws, 1995. (Ord. 3307 § 1, 2015).

17.24.150 Provisions for flood hazard protection – General standards.

In all areas of special flood hazards the following standards are required:

(1) Anchoring.

(a) All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.

(b) All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (reference FEMA's "Manufactured Home Installation and Flood Hazard Areas" guidebook for additional techniques).

(2) Construction Materials and Methods.

(a) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(b) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

(c) Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Locating such equipment below the base flood elevation may cause annual flood insurance premiums to be increased.

(3) Utilities.

(a) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system. Water wells shall be located on high ground that is not in the floodway;

(b) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters; and

(c) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during the flooding.

(4) Subdivision Proposals.

(a) All subdivision proposals shall be consistent with the need to minimize flood damage;

(b) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

(c) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

(d) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or five acres (whichever is less).

(5) Review of Building Permits. Where elevation data is not available through the Flood Insurance Study, FIRM, or from another authoritative source (LMC 17.24.130(2)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.160 Provisions for flood hazard protection – Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided as set forth in LMC 17.24.060 or 17.24.130(2) the following provisions are required. (Additional standards were clarified in FEMA Technical Bulletin 11-01 to allow crawlspace construction for buildings located in the special flood hazard areas; however, adopting this provision can result in a 20 percent increase in flood insurance premiums.)

(1) Residential Construction. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above the level of the base flood elevation (BFE). Mechanical equipment and utilities shall be waterproofed or elevated least one foot above the BFE.

Deleted: (1)

New construction and substantial improvement of any residential structure in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade.

Commented [GM(11)]: City of Longview has unnumbered A zones and must include this provision from the WA Model ordinance (section 5.2-1).

(2) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(a) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;

(b) The bottom of all openings shall be no higher than one foot above grade;

(c) Openings may be equipped with screens, louvers, or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters;

(d) A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters; and

(3) Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more above the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

(a) Be floodproofed so that below one foot above the base flood level the structure is watertight with walls substantially impermeable to the passage of water or dry flood proofed to the elevation required by ASCE 24, whichever is greater;

(b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

(c) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in LMC 17.24.130(3);

(d) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as is described in subsection (1) of this section;

(e) Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g., a building floodproofed to one foot above the base flood level will be rated as at the base flood level). (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.170 Provisions for flood hazard protection – Floodways.

Located within areas of special flood hazard established in LMC 17.24.060 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge;

(2) Construction or reconstruction of residential structures is prohibited within designated floodways, except for (a) repairs, reconstruction, or improvements to a structure which do not increase the ground floor area; and (b) repairs, construction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either (i) before the repair, reconstruction, or repair is started; or (ii) if the structure has been damaged, and is being restored before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or the structures identified as historic places, may be excluded in the 50 percent;

(3) If subsection (1) of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of LMC 17.24.150 through 17.24.190. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.xxx AE and A1-30 Zones with Base Flood Elevations but No Floodways

In areas with BFEs (but a regulatory floodway has not been designated), no new construction, substantial improvements, or other development (including fill) shall be permitted within zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Commented [GM(12): Required to be included in the ordinance. Location can be at City's discretion.

17.24.180 Critical facility.

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated to three feet or more above the level of the base flood elevation at the site or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood plain shall be provided to all critical facilities to the extent possible. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.190 Manufactured homes.

All manufactured homes to be placed or substantially improved within zones A1-30, AH, and AE on the community's FIRM shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is one foot or more above the base flood elevation, and be securely anchored to an adequately anchored foundation system in accordance with the provisions of LMC 17.24.150. (Ord. 3307 § 1, 2015; Ord. 2786 § 1, 2000).

17.24.200 Recreational vehicles.

Recreational vehicles placed on sites within a special flood hazard area are required to either:

- (1) Be on the site for fewer than 180 consecutive days; or
- (2) Be fully licensed and ready for highway use, on wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or
- (3) Meet the requirements of LMC 17.24.190 and the elevation and anchoring requirements for manufactured homes. (Ord. 3307 § 1, 2015).

17.24.xxx **Severability**

This ordinance and the various parts thereof are hereby declared to be severable. Should any Section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the Section so declared to be unconstitutional or invalid.

Commented [GM(13): The severability section is mandatory from the WA model ordinance. It can be included anywhere within the ordinance at the City's discretion. Including in this location following the flow of the WA model ordinance.

FLOOD DAMAGE PREVENTION

A Periodic Update to Longview Municipal Code 17.24

- ▶ Longview regulates flood zones under:

**Title 17
ENVIRONMENT**

Chapters:

- 17.02 General Provisions**
- 17.10 Critical Areas**
- 17.12 Standards for Preparing Critical Areas Reports and Mitigation Plans**
- 17.20 Environmental Protection – Enactment**
- 17.24 Flood Damage Prevention**
- 17.60 Shorelines Master Program**
- 17.80 Stormwater Management**
- 17.90 Stormwater Illicit Discharge Prevention**
- 17.100 Water Supply Protection**

- ▶ Changes to state and federal laws require periodic updates to LMC chapter 17.24, Flood Damage Prevention.
- ▶ The current ordinance was last updated in 2015.

ADOPTING LOCAL UPDATES TO MATCH THE WASHINGTON MODEL FLOODPLAIN MANAGEMENT ORDINANCE



DEPARTMENT OF
ECOLOGY
State of Washington



US Army Corps of Engineers



WA Emergency Management Division



FEMA

- “To help local communities across Washington, we provide technical assistance and grants to help reduce flood risks, protect lives, homes, and property within floodplains, and improve habitat and the essential environmental functions that floodplains offer. We provide technical assistance and training, planning and regulatory guidance, flood ordinance reviews, and community assistance visits to communities.”

(<https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Hazards/Floods-floodplain-planning>)

FLOODS & FLOODPLAIN PLANNING

AGENCIES WORKING TO PROTECT LIVES AND PROPERTY

- ▶ To participate in and maintain eligibility for flood insurance and disaster relief, Longview must meet the requirements of Chapter 86.16 RCW and Chapter 173-158 WAC
- ▶ FEMA's database shows that 206 Longview property owners hold flood insurance policies with nearly \$70 million dollars of insurance in force



- ▶ Technical assistance was provided by the state department of ecology.

- ▶ Minor updates will add:
 - ▶ New definitions to assist with interpretation and implementation
 - ▶ Remove outdated references
 - ▶ Reference modern standards for design and construction
 - ▶ Incorporate changes in state and federal laws

UPDATES TO MATCH CHANGES IN STATE AND FEDERAL LAWS

- ▶ MOTION TO DIRECT THE CITY ATTORNEY TO PREPARE AN ORDINANCE TO AMEND LMC CHAPTER 17.24 FLOOD DAMAGE PREVENTION AS RECOMMENDED BY THE PLANNING COMMISSION.

RECOMMENDED ACTION



City of Longview

Agenda Summary

RESOLUTION 2414 - HAZARD MITIGATION PLAN ADOPTION

RECOMMENDED ACTION:

MOTION TO APPROVE RESOLUTION 2414 TO ADOPT THE 2022 COWLITZ COUNTY HAZARD MITIGATION PLAN UPDATE

COUNCIL INITIATIVE ADDRESSED:

Enhance Public Safety & Emergency Response

CITY ATTORNEY REVIEW: N/A

SUMMARY STATEMENT:

The City Council should consider adopting the 2022 Cowlitz County Hazard Mitigation Plan Update. Adopting the Plan update will give the City the opportunity to request FEMA funding for mitigation efforts/projects such as seismic retrofitting and securing, erosion control and slope stabilization, flood mitigation such as storm water drainage, maintenance of culverts and flood control devices, protection of powerlines and utilities infrastructure, generators, defensible space creation & fuel management, etc.

But in order to qualify for such funding the City must have formally adopted the Cowlitz County Hazard Mitigation Plan during a Council meeting. For your information, the County Board of Commissioners has already adopted the Plan and their Proclamation is attached.

A copy of the 2022 Cowlitz County Hazard Mitigation Plan Update can be viewed or download from the City's website at: <https://www.mylongview.com/322/Public-Works>

STAFF CONTACT:

Ken Hash, Public Works Director

Attachments:

1. Res 2414 - Adopt Hazard Mitigation Plan
2. County Proclamation
3. FEMA Approval
4. Excerpts from Hazard mitigation plan

RESOLUTION NO. 2414

A RESOLUTION ADOPTING THE 2022 COWLITZ COUNTY HAZARD MITIGATION PLAN UPDATE.

WHEREAS, the City of Longview, with the assistance from Emergency Management, has participated in the preparation of the County's 2022 Hazard Mitigation Plan, and

WHEREAS, the 2022 Hazard Mitigation Plan has been prepared in accordance with the Disaster Mitigation Act of 2000, and

WHEREAS, the City of Longview has afforded the citizens an opportunity to comment and provide input in the Plan and actions in the Plan, and

WHEREAS, the City of Longview has reviewed the Plan and affirms that the Plan will be updated no less than every five years, and

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Longview adopts the 2022 Cowlitz County Hazard Mitigation Plan as the City's Natural Hazard Mitigation Plan and resolves to execute the actions in the Plan.

PASSED by City Council of the City of Longview, Washington, and approved by its Mayor at a regular meeting of said Council held on the 12th day of July 2022.

M A Y O R

ATTEST:

City Clerk



PROCLAMATION

BEFORE THE BOARD OF COMMISSIONERS OF COWLITZ COUNTY, WA

Cowlitz County Hazard Mitigation Plan)

Resolution No. 22-059

WHEREAS, Cowlitz County (hereinafter County), with the assistance from Cowlitz County Department of Emergency Management, has gathered information and prepared the Hazard Mitigation Plan update; and

WHEREAS, the County Hazard Mitigation Plan update has been prepared in accordance with FEMA requirements at 44 C.R.R. 201; and

WHEREAS, in the course of drafting the Hazard Mitigation Plan update, County reviewed its stated goals, policies and objectives adopted in the Comprehensive Plan, the Water and Wastewater Emergency Plan and other relevant and appropriate plans, regulations and development standards when conducting the planning process for this effort; and

WHEREAS, County participated in a public outreach effort that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, the Plan identifies potential natural hazards within county limits and Cowlitz County, assesses the risk to life and property associated with the potential natural hazards, includes an action plan for reducing risks that requires integration into other planning mechanisms; and

WHEREAS, on May 25, 2022, FEMA provided a letter stating its pre-adoption review found the Plan successfully contains the required criteria for hazard mitigation plans, subject to receiving documentation of local adoption; and

WHEREAS, upon adoption of this resolution, the County remains eligible for funding under FEMA's Unified Hazard Mitigation Assistance Grant Programs; and

WHEREAS, County has reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW, THEREFORE, BE IT RESOLVED by its Commissioners that Cowlitz County adopts the Cowlitz County Hazard Mitigation Plan, as this jurisdiction's Multi-Hazard Mitigation Plan, and Cowlitz County resolves to execute the actions in the Plan.

DATED this 14th day of June, 2022.



ATTEST:

Tiffany Ostreim
Tiffany Ostreim, Clerk of the Board

**BOARD OF COUNTY COMMISSIONERS
OF COWLITZ COUNTY, WASHINGTON**

Dennis P. Weber
Dennis P. Weber, Chairman

Arne Mortensen
Arne Mortensen, Commissioner

John Jabusch
John Jabusch, Commissioner



FEMA

May 25, 2022

Mr. Tim Cook
State Hazard Mitigation Officer
Washington State Emergency Management Division
Building 20, MS TA-20
Camp Murray, Washington 98430-5122

Dear Mr. Cook:

The Federal Emergency Management Agency (FEMA) Region 10 completed a pre-adoption review of the draft Cowlitz County Hazard Mitigation Plan. The attached Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by participating jurisdictions.

Formal adoption documentation must be submitted to FEMA Region 10 by at least one jurisdiction within one calendar year of the date of this letter, or the entire plan must be updated and resubmitted for review. Once FEMA approves the plan, the jurisdictions are eligible to apply for FEMA Hazard Mitigation Assistance grants.

Please contact Kyle McCormick, *acting* Regional Mitigation Planning Program Manager, at 202-856-2030 or kyle.mccormick@fema.dhs.gov with any questions.

Sincerely,

**WENDY L
SHAW**

Wendy Shaw, P.E.
Acting Risk Analysis Branch Chief
Mitigation Division

Digitally signed by WENDY L
SHAW
Date: 2022.05.25 15:30:55
-07'00'

Enclosures

JM:ws

Cowlitz County Hazard Mitigation Plan Update

2022

Excerpts

Chapter 1: Introduction

Chapter 2: Cowlitz County Community Profile

Chapter 3: Hazard Definition, Context and Risk Assessment

Chapter 4: Mitigation Goals and Initiatives

Chapter 8: Longview

Appendix A: Planning Process

CHAPTER 1: INTRODUCTION

PREAMBLE

The Cowlitz County Hazard Mitigation Plan (HMP) is a multi-jurisdictional plan that addresses the natural hazards that threaten Cowlitz County and its communities. The primary function of this plan is to demonstrate a deep, local understanding of the natural hazards the region is exposed to, explain what the County and Jurisdictions are currently doing to mitigate exposed risks and identify proposed activities, funded and unfunded, that would improve mitigation to natural hazard exposures in Cowlitz County.

Cowlitz County frequently endures natural hazard events such as earthquakes, landslides, winter storms, and floods, and also sometimes experiences severe volcanic eruptions. When natural hazard events take place in undeveloped and unpopulated areas, no disaster occurs. Natural disaster occurs when people, property and infrastructure are vulnerable or directly exposed to the destructive effects of natural hazards. Therefore, this HMP focuses on hazards and mitigation activities directed at disaster risk reduction.

Since 1962, Cowlitz County has received 22 Federal Disaster Declarations; every one of them attributed to natural hazards that are inherent to the Pacific Northwest.

This latest revision of the Hazard Mitigation Plan has been to meet State and Federal approval while ensuring all involved County Jurisdictional parties adopt the Plan. In order to achieve this, the focus has been on reducing duplication and redundant content. The previous HMP has been reworked into a new, streamlined structure with an emphasis on achieving complete adoption by the County's Jurisdictions while meeting the requirements of the FEMA HMP Audit program.

HAZARDS IN THE PACIFIC NORTHWEST

Cowlitz County is located in the southwest portion of Washington State. It is in a region known as the Lower Columbia, meaning that the Columbia River forms the western border in the south of the county and the southern border in the middle of the county. The county is mountainous with the Cascades on the eastern flank of the county and coastal mountains throughout the county. This terrain provides vast recreational opportunities but comes with a price. Cowlitz County is located in a region that is disposed to recurrent natural hazards.

Washington State is one of the most geologically active regions of North America. The state sits directly above the Cascadia Subduction Zone, a major boundary of colliding tectonic plates and source of earthquake activity. There are multiple major fault lines throughout the state. The region has experienced major earthquakes in 1949, 1965, and 2001.

The state's pronounced mountainous terrain and its immediacy to the vast Pacific Ocean strongly influences the dynamics of the region's weather and hydraulic cycle. The Pacific Northwest frequently experiences intense seasonal precipitation events that result in major lowland flooding, mudslides and landslides in heavily developed and populated areas. In addition, high speed windstorms frequently hit Washington resulting in region-wide power outages, structural damage and tons of debris.

Federal Declarations for Cowlitz County 1956-2009		
Maj/DR- Presidential Major Disaster Declaration (all eligible assistance programs)		
Emerg/EM- Presidential Emergency Declaration (assistance limited to specific emergency need)		
FS- Federal Fire Suppression (assistance limited to state agency fire suppression costs)		
FM- Federal Fire Management (replaced Fire Suppression – for state and local governments)		
Date	Incident	Other Counties/Recipients
October 1962	Maj. #137 – Columbus Day Windstorm	Clark, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum, Whatcom
December 1964	Maj. #185 – Heavy rains/flooding	Asotin, Benton, Clark, Columbia, Garfield, Grays Harbor, King, Kittitas, Klickitat, Lewis, Mason, Pacific, Pierce, Skamania, Snohomish, Wahkiakum, Walla Walla, Whitman, Yakima
January 1972	Maj. #322 – Severe storms/flooding	Asotin, Grays Harbor, Lewis, Pacific, Skamania, Thurston, Whatcom, Whitman
December 1975	Maj. #492 – Severe storms/flooding	Benton, Grays Harbor, King, Kittitas, Lewis, Mason, Pierce, Skagit, Snohomish, Thurston, Whatcom, Yakima
December 1977	Maj. #545 – Severe storms/mudslides/flooding	Benton, Clark, Garfield, Grays Harbor, King, Kittitas, Klickitat, Lewis, Pacific, Pierce, Snohomish, Thurston, Wahkiakum, Whitman, Yakima
May 1980	Maj. #623 – Mount St. Helen's eruption	All 39 counties
August 1982	Emerg. #3086 – Threat of Spirit Lake flooding	Skamania, US Army Corp of Engineers, National Weather Service, USGS
February 1986	Maj. #762 – Heavy rain/slides/flooding	
November 1986	Maj. #784 – Severe storms/flooding	King, Lewis, Pacific, Snohomish, Wahkiakum
November 1995	Major #1079 – Flooding and Wind (Nov – Dec 95) Declared January 3, 1996	Chelan, Clallam, Clark, Grays Harbor, Island, Jefferson, King, Kittitas, Lewis, Mason, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum, Whatcom, Yakima
February 1996	Major #1100 – Flooding Declared February 9, 1996	Adams, Asotin, Benton, Clark, Columbia, Garfield, Grays Harbor, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Pierce, Skagit, Skamania, Snohomish, Spokane, Thurston, Wahkiakum, Walla Walla, Whitman, Yakima, and Yakima Indian Reservation
December 1996	Major #1159 – Winter Storm (Ice, snow, flooding) Declared January 17, 1997	Adams, Asotin, Benton, Chelan, Clallam, Clark, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Klickitat, Lewis, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Whatcom, Yakima
August 1998	FS 2237 – Ballpark Fire	

Federal Declarations for Cowlitz County 1956-2009		
Maj/DR- Presidential Major Disaster Declaration (all eligible assistance programs)		
Emerg/EM- Presidential Emergency Declaration (assistance limited to specific emergency need)		
FS- Federal Fire Suppression (assistance limited to state agency fire suppression costs)		
FM- Federal Fire Management (replaced Fire Suppression – for state and local governments)		
Date	Incident	Other Counties/Recipients
October 1998	Major 1255 – Landslide Slide occurred Mar-Nov, 1998	
February 2001	Major DR-1361 – Nisqually Earthquake Declared March 1, 2001	Benton, Chelan, Clallam, Clark, Douglas, Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Lewis, Mason, Pacific, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, Walla Walla, Whatcom, Yakima
September 2005	EM – 3227 Hurricane Katrina evacuees	All counties
November 2006	DR-1671 Severe storms, flooding, landslides, and mudslides	Chelan, Clark, Cowlitz, Grays Harbor, Jefferson, King, Lewis, Pacific, Pierce, Skagit, Skamania, Snohomish, Wahkiakum
December 2006	Major DR – 1671 Severe storms/floods/landslides/ mudslides Nov 2 – 11, 2006	Chelan, Clark, Grays Harbor, Jefferson, King, Lewis, Pacific, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum
December 2008	DR – 1825 – Severe winter storm and record and near record snow	Adams, Clallam, Clark, Columbia, Cowlitz, Ferry, Garfield, Grays Harbor Island, Jefferson, King, Klickitat, Lewis, Lincoln, Mason, Pacific, Pend Oreille, Skagit, Skamania, Snohomish, Spokane, Stevens, Thurston, Wahkiakum, Walla Walla, Whatcom, Whitman
January 2009	Major DR – 1817 Severe winter storm, landslides, mudslides, and flooding; Jan 6-16, 2009	IA: Benton, Clallam, Grays Harbor, King, Kittitas, Lewis, Mason, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum, Whatcom PA: Chelan, Clallam, Columbia, Cowlitz, Garfield, Grays Harbor, Jefferson, King, Kittitas, Klickitat, Lewis, Lincoln, Mason, Pacific, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, Whatcom, Yakima
March 2009	Major DR – 1825 – Severe winter storm, record and near-record snow Dec 12, 2008 – Jan 5, 2009	33 Counties – PA Only Severe Winter Storm/Snow Clallam, Columbia, Grays Harbor, Jefferson, King, Klickitat, Lewis, Mason, Pacific, Skagit, Skamania, Snohomish, Spokane, Thurston, Wahkiakum, Walla Walla, Whatcom
December 2015	DR – 4253 – Severe Winter Storm, Straight-Line Winds, Flooding, Landslides, Mudslides, and a Tornado	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Wahkiakum

FEDERAL DISASTER DECLARATIONS

Since October 1962, Cowlitz County has been declared a Federal Disaster Area 22 times. Cowlitz County has received four Federal Disaster Declarations since the adoption of the *Cowlitz County Hazard Mitigation Plan in February 2005*. The table below summarizes the Federal Disaster Declarations since 1956 that have included Cowlitz County, by type. The number of Federal Disaster Declarations affecting the county provides some idea of the risk that natural hazards pose to the region.

Summary of Federal Declarations for Cowlitz County 1956 – 2009 by Type		
Major Disaster Declarations:	1	11 Floods 1 Windstorm 1 Earthquake 1 Volcano 1 Wildfire 5 Landslides 11 Severe Storms
Emergency Declarations:	2	1 Threat of Spirit Lake Flooding 1 Hurricane Evacuees
Fire Suppression Declarations:	1	Ballpark Fire

PLAN ADOPTION, IMPLEMENTATION, MONITORING, AND MAINTENANCE

Plan Stewardship

A multi-jurisdictional plan requires coordination and collaboration among its partners. Cowlitz County has a committed and energized Local Emergency Planning Committee (LEPC) supported by the Cowlitz County Department of Emergency Management (DEM). It is both appropriate and valuable that the LEPC takes stewardship of the Plan with secretariat support from DEM. Together, they will assume the lead role for maintaining the plan's viability and promoting its relevancy among the plan stakeholders.

Adoption by County Jurisdictions

Each jurisdiction must have its governing body adopt the entire plan and their local Jurisdiction Chapter. Each jurisdiction/entity will ensure that proper process is followed according to the laws or rules of their organization including adequate public notice and public hearings.

Adoption by the local governing body demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in the general plan and in their Jurisdiction Chapters. Adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. The Adoption Signatures Page is at the back of the Plan showing which Jurisdictions have formally adopted the Plan.

Implementation

Each governmental entity will be responsible for implementation of their individual mitigation initiatives based on funding availability, availability of resources, and entity priorities. Because the *Hazard Mitigation Plan for Cowlitz County* is a multi-jurisdictional plan, the mechanism for implementation through existing programs will vary between jurisdictions and also between special purpose districts. This

section is intended to give an overview of the mechanisms available in Cowlitz County and the municipalities for plan implementation.

In addition to plans, programs, and regulations, the entities may also incorporate the mitigation measures into their capital facilities plans (CFP's). The CFP's identify major infrastructure developments or facilities which have been identified in a six, ten or twenty year time frame. This identifies those major infrastructure developments or facilities which the entity has identified as needing in a six, ten, or twenty year plan.

Only some of the jurisdictions have comprehensive emergency management plans (CEMP). When the CEMP are updated, they should include relevant parts of this plan, if appropriate, or be linked back to this document by reference.

PLAN MONITORING AND MAINTENANCE

Plan maintenance should be an ongoing task. If done properly, it is executed throughout the plan's five year cycle. Plan maintenance ensures that information is current and accurate. Furthermore, by revising the plan on a periodic basis to reflect current conditions, the five year plan update process is simplified for all involved in a routine maintenance cycle.

Changes to the mitigation plan are initiated based on outcomes that are realized as part of annual plan monitoring, events after a major disaster, or on an as needed basis to suit the needs of individual jurisdictions. Changes are also made when new planning partners join the HMP Jurisdictions and adopt their plans. Each individual jurisdiction is responsible for maintaining its Jurisdiction Chapters once they adopt their plan. DEM assumes responsibility for executing all revisions to the County-wide Chapters (all sections except for local Jurisdiction Chapters).

Minor Revisions

Corrections regarding spelling and sentence structure that are minor in nature will be handled by DEM.

Technical Revisions

Requests for changes that would alter the technical content of the general plan such as additions or deletions of data or alterations to the hazard profiles and the risk assessments will be the responsibility of Emergency Management staff. Any changes of this type would require a review by the DEM and the LEPC, or if applicable, the affected jurisdiction/entity.

Substantive Revisions

If the State or FEMA request significant changes or analysis to the general plan, it will require a meeting of the LEPC. Substantive changes to the jurisdiction/entity specific mitigation initiatives would require review of the changes by the entity's approving body and may possibly require re-adoption of the mitigation initiative depending on the complexity and scope of the change.

Distribution of Revisions

DEM staff will be responsible for maintaining a master copy of the plan and distributing relevant updates to all adopted plan holders. For any revisions made to the general plan, copies or any correspondence

from the State or FEMA, along with supporting analysis and revised plan pages, will be sent to all of the entities and holders of the plans. Conversely, any local agency that makes changes to the contents of its local Jurisdiction Chapters should provide DEM with a copy of its revised Jurisdiction Chapter and documentation of the process that was used to revise its Chapter.

When at all possible, plan updates will be distributed electronically via email or some other form of electronic media. Printed copies can be requested by contacting DEM.

Annual Natural Hazards Mitigation Assessment

The plan will be monitored at least once a year as part of the DEM's regular work program (the schedule may be revised to accommodate exceptional circumstances). The LEPC will include a special agenda item dedicated to a region wide assessment of the plan. The LEPC, through DEM, will invite all plan partners to attend a work session to assess the following:

1. Progress towards the plan's goals and objectives
2. Progress towards county wide and jurisdiction specific mitigation initiatives
3. Implementation problems such as technical, legal, or coordination issues among local agencies, the State, or FEMA
4. Financing the multi-jurisdiction plan update
5. Public involvement activities
6. General information sharing (best practices) related to mitigation planning among the plan partners

Additionally, Cowlitz County's Director of Emergency Management will coordinate with other department heads and their adopted plans when performing capital project planning and budgeting, especially the Director of Maintenance and the adopted Facilities Needs Analysis. Because completing many of the initiatives rely on grant fund availability, DEM staff will monitor this plan in relation with various grant programs identified in the previous chapter, notify local jurisdictions, submit for funding when eligible, and report annually on which initiatives are actively being pursued.

Goals and objectives from this plan will be referenced when the County and partnering jurisdictions participate in projects or training required to maintain good standing in specific programs such as FEMA's ongoing update of the Flood Insurance Study and Digital Flood Insurance Rate Map (DFIRM). Maintaining good standing with the National Flood Insurance Program (NFIP) is identified as a priority for the partners and so participating in mapping, trainings and educational outreach processes to maintain that eligibility is vital.

Review after a Significant Disaster Event

It is routine practice for DEM to conduct an after-action review within 60-80 days following a Federal Disaster Declaration or a significant emergency event that occurred with the County. As part of this, a specific agenda item will be added to the after-action review process to capture any lessons learned for the purpose of enhancing the usability of the hazard mitigation plan (see objective 1D). DEM will assess:

- The characteristics and severity of the hazard to determine if the region's risks have changed
- Direct and indirect damage as well as any response and recovery costs
- The type and extent of the damages to determine any new mitigation initiatives that should be incorporated into the plan to avoid similar losses due to future hazard events

The results of the assessment will be provided to the LEPC for their review. This information can be used for evaluating (if applicable) modifications to existing initiatives or new initiatives following the disaster event or during the next plan update cycle.

Revisions to Assessment after a Significant Disaster Event

The meeting time period was extended up to 80 days to allow emergency management more time to effectively recover from disaster events. The new process creates a specific agenda item and provides specific, but simple assessment criteria for the DEM and after action review participants to consider.

Future Plan Updates

If a major plan update is deemed necessary, the DEM will be responsible for establishing a work program, budget, and time frame for updating the plan. At that time, the DEM will also announce that the plan is under review and identify and carry out appropriate public process. New planning partners will be encouraged to participate in the plan update process to develop and adopt their own plans. Without any intervening circumstances, the natural hazards mitigation plan is to be updated at a minimum every five years.

Continued Public Involvement

The Department of Emergency Management, as well as all of the entities that participated in this plan, are committed to continued public involvement and education. It will be important that natural hazards mitigation becomes integrated into existing programs and becomes part of the way jurisdictions make decisions about land use and facilities planning. The Department of Emergency Management will also need to encourage its governmental entities to combine the natural hazards plan elements into existing emergency preparedness activities and information in order to continue to educate the public on the importance of managing the risk for natural hazards. If there are efforts to re-write emergency preparedness public information pieces, such as brochures, integration of natural hazards mitigation information will be considered. Jurisdictions that have existing Comprehensive Emergency Management Plans will work to integrate natural hazards mitigation planning into that document and associated public education efforts.

Copies of the Hazard Mitigation Plan will be maintained in the Department of Emergency Management Library.

Plan Development and Review History

The first *Cowlitz County Hazard Mitigation Plan* established multi-jurisdictional hazards mitigation planning for the region's communities in 2005.

In July 2009, the Department of Emergency Management of Cowlitz County invited local government entities in Cowlitz County to participate in the update to the Hazard Mitigation Plan. A total of 27 jurisdictions actively participated in the plan update process.

Further reviews were conducted in 2009 through 2011 when substantial changes were made throughout the document to improve its usefulness and fulfill the plan's compliance with current federal planning requirements. Changes were made to both content and format, but the plan outline remains much the same. Some jurisdictions that participated in the 2005 plan chose not to participate in the 2010 update due to budget shortfalls and lack of available staff.

In 2013 a further review was conducted based on feedback from the Federal Emergency Management Agency regarding necessary revision to fulfill the federal regulations. A planning process was developed to document participation, reconsider a range of initiative for nine jurisdictions, demonstrate the initiatives integration into other planning mechanisms, and demonstrate progress from the 2005 plan. Staff coordinated with each jurisdiction regarding the necessary revisions through questionnaire, telephone calls and meetings to ensure the plan represented their unique entity, while fulfilling the federal standards. The results of the coordination efforts with each jurisdiction have been incorporated into the Hazard Mitigation Plan.

All previous Versions have to varying degrees informed planning and decisions of the County and many jurisdictions. The previous version was adopted by 12 Jurisdictions being:

- Beacon Hill Water & Sewer
- Cowlitz 2 Fire and Rescue
- Consolidated Diking Improvement District #1
- Fire District #1
- City of Kalama
- Port of Longview
- Public Utility District #1
- Woodland School District
- Castle Rock School District
- City of Kelso
- Cowlitz County
- Fire District #5

2019/2020(1) Revision

This latest Revision has focused on the simplification of the Plan to ensure as much Jurisdictional participation and adoption as possible while ensuring it meets the existing as well as new FEMA requirements. The process was to review the County-wide section to address all information common to all Jurisdictions. Then, the existing content of all the previous Jurisdictions' Annexes was examined, and each Jurisdiction was subsequently provided with a workable template for review, edit and update into a new format as a Chapter.

Key changes include:

- Removing much duplication and extraneous information such as extensive and duplicated Hazard definitions
- A stronger emphasis on the regional context of the natural hazards
- Inclusion of near-miss and minor hazard historical occurrences as possible/likely indicators of possible future major hazard incidents
- Incorporation of the Jurisdictions' sections into the body Plan (removal of Annexes)
- Review of hazard categorization to better reflect hazards in the Cowlitz region. For example, the term Wildland fire has been changed to Wildfire to reflect that wildfires happen in areas other than wildlands, such as urban interface areas. Also, extreme weather events have been collectively grouped under Severe Weather.
- Public and stakeholder consultation was driven from each Jurisdiction to ensure relevant entities, such as local and impacted industries, were given ample opportunity to engage with the planning process that most involves them. This enable focus both geographically as well as by relevance e.g. diking to potential flood impacts, shipping to Ports, etc.
- Addition of addressing the FEMA Capability Assessment requirements (new to most jurisdictions)
- Transferring stewardship of the HMP to the Local Emergency Planning Committee (LEPC)

Public Participation and Consultation

In recognition of both the FEMA requirement as well as the acknowledgement that members of the community are responsible for their personal safety, the safety of their families, and the protection of their assets from natural disaster events, extensive outreach has been conducted during the development as well as reviews of the Plan. A variety of outreach methods and information sharing were utilized to increase peoples' awareness of the process, and attempt to solicit their input for the plan's development. Over the course of the Plan's development and in all reviews, project teams have issued press releases to local area newspapers, maintained information on agency websites, distributed brochures, hosted open house meetings, and attended community events. Additionally, many meetings have been conducted with key stakeholders, such as local industry and other out-of-scope entities to keep them involved and engaged in planning the HMP process. This was also done through the Local Emergency Planning Committee (LEPC). Additionally, outside of Cowlitz County, neighboring county's Emergency Management and emergency response agencies, LEPCs, and the State of Oregon via Columbia County, which is located along the border included in the Columbia River, were included in the process communication.

Attempts to solicit responses outside of grammatical corrections were not received outside of work completed directly involving agency representatives during the HMP process.

COUNTY ACCOMPLISHMENTS

The following table shows jurisdictional accomplishments since the 2005 plan adoption. These accomplishments reflect progress in local mitigation effort.

Accomplishments Since 2010			
Initiative #	Accomplished?	Mitigation Initiative	Status Explanation
Unincorporated Cowlitz County			
1	No	Administrative Building Earthquake Retrofit	Structural assessment completed in 2010. Pursuing grant funding opportunities. Insufficient funding
2	No	Elevate generators	Insufficient funding
3	Yes	Kalama River Gage	Completed
4	No	Generator for LCARA	Insufficient funding
5	Yes	Admin/Annex Building Generator	Completed
6	No	Hall of Justice – Glass Panels	Insufficient funding
7	No	Toutle Valley Warning System	Initialized discussion with USGS
8	No	Health Department/Human Services Install Generator	Insufficient funding

CHAPTER 2: COWLITZ COUNTY COMMUNITY PROFILE

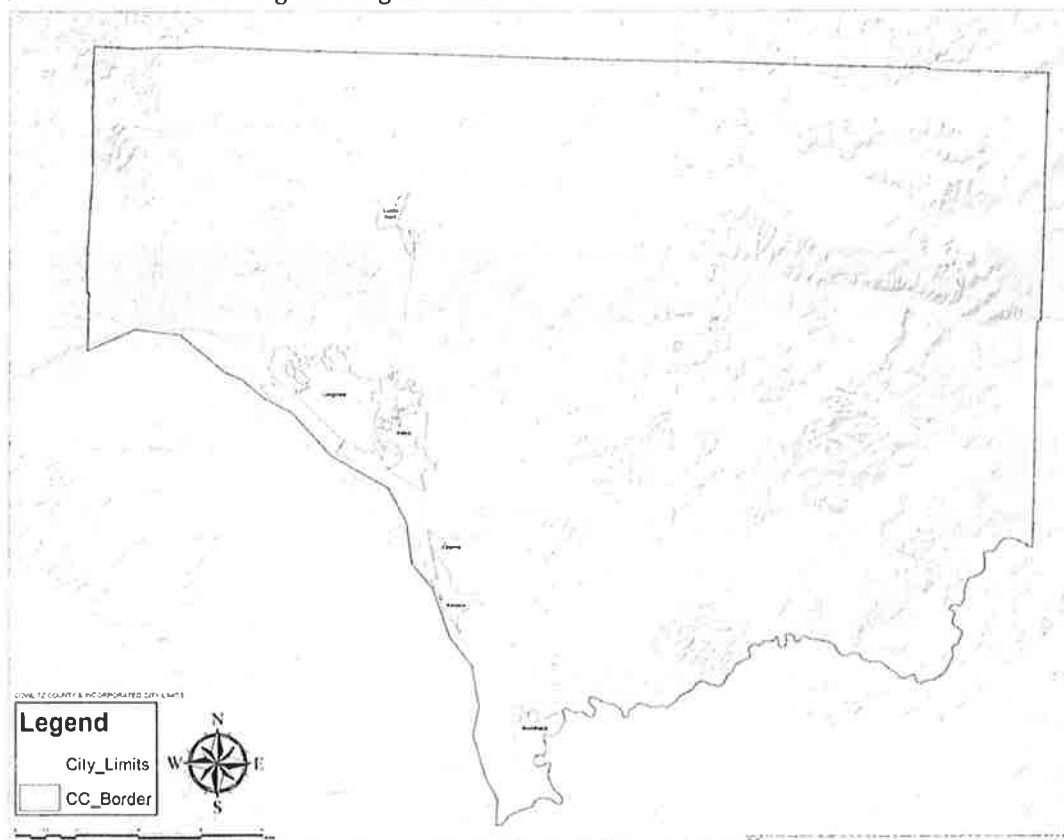
INTRODUCTION

It is important that local governments, Washington State, and the Federal Government understand the unique characteristics of Cowlitz County. The composition of the region's population, employment, land uses, infrastructure, and government services provide a context for natural hazards mitigation planning. This chapter includes general information about the region's natural setting, its demographics, growth trends, and public and private resources.

As Cowlitz County continues to grow and become more urban, the risk associated with natural hazards could increase as more people move to areas affected by natural hazards. The importance of developing strategies, coordinating resources, and increasing public awareness to reduce risk and prevent loss from future natural hazard events is becoming increasingly urgent.

GEOGRAPHY AND TOPOGRAPHY

Geographically, Cowlitz County is situated in southwest Washington. To the north is Lewis County and to the east, Skamania County. Southeast of Cowlitz County, the Lewis River forms a boundary with Clark County. On the south and southwest border of Cowlitz County, respectively, is the Columbia River with Oregon on the other side. Cowlitz County constitutes a geographic area of 1,166 square miles. As such, it ranks 28th in size among Washington counties.



The county is part of the Puget Sound-Willamette Depression. The depression is a geologic formation extending south from Puget Sound to the Willamette Valley in Oregon.

Despite nestling up against the Cascade Range, the region is not exceptionally elevated. Those parts of Cowlitz County that abut the Cascades rise to around 4,000 feet above sea level; the highest is Elk Mountain (4,538 feet). Mount St. Helens (8,365 feet) is just to the east of the Cowlitz-Skamania County border. Most of Cowlitz County, though, is rather hilly, reaching elevations of around 1,000 feet above sea level.

As might be expected, a number of tributaries flow through the county from sources originating in the Cascades. In Cowlitz County, the major rivers include the Columbia, Cowlitz, Toutle, Coweeman, Kalama and Lewis which has been dammed at three points (referred to as “Projects” by PacifiCorp, within Cowlitz County at Yale Project, Merwin Project, and Swift Project), resulting in Yale Lake and Merwin Lake.

POPULATION TRENDS

Cowlitz County is the 12th most populous county in Washington State. The population of Cowlitz County has increased over sixty percent in the fifty years between 1960 and 2019. The 2010 United States Decennial Census data has not been released, so this report utilizes the Washington State Office of Financial Management (OFM) population estimates. On the first of every April, OFM forecasts are issued and are often used for revenue distribution and program administration for local governments. According to the OFM, the 2010 population estimate of Cowlitz County was 100,000. From 2000 to 2010, the population increased 7.05% as retirees and commuters moved to Cowlitz County to take advantage of low housing costs, accessibility to nearby cities (Portland, Vancouver, Olympia, and Seattle/Tacoma), abundant recreation opportunities, and charming communities. Most people in Cowlitz County (58%) live in one of the incorporated cities of Longview, Kelso, Castle Rock, Kalama, or Woodland, while approximately 42% live in unincorporated Cowlitz County. The population in these unincorporated areas is increasing nearly 50% faster than in incorporated cities. This is likely to impact disaster response to these more remote populations.

Cowlitz County Population Growth, 1960-2017							
	1960	1970	1980	1990	2000	2010*	2017
Total	57,801	68,616	79,548	82,119	92,948	100,000	106,910
Change		10,815	10,932	2,571	10,829	7,052	6,910
Percent Change		18.71%	15.93%	3.23%	13.19%	7.05%	15.02%

Population of Cities and County				
	2000	2010	2017	Change 2000-2017
Cowlitz	92,948	100,000	106,910	15.02%
Unincorporated	38792	42295	46119	18.89%
Incorporated	54156	57705	60791	12.25%
Castle Rock	2130	2150	2234	4.88%
Kalama	1783	2510	2687	50.70%
Kelso	11895	11780	12130	1.98%
Longview	34660	36100	37602	8.49%
Woodland (part)	3688	5165	6138	66.43%

URBAN DEVELOPMENT TRENDS

FEMA defines 'Development' as "Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials".

The County, like all urban/rural interface regions, continues to develop with some development leaving residents exposed to some hazards, particularly wildfire in the interface areas. The County and Cities continue to monitor and regulate development in these areas to limit exposure to residents and industry.

SPECIAL NEEDS POPULATIONS

It is important to consider members of populations with special needs and attempt to identify where they reside in relation to potentially hazardous areas. For the purposes of this plan 'special need' populations are members of a demographic group that will likely have special needs in times of a natural disaster, including populations that have functional needs in the following areas:

- Maintaining independence
- Communication
- Transportation
- Supervision
- Medical Care
- Persons with disabilities who are:
- Living in institutionalized settings
- Elderly
- Children
- From diverse cultures
- Limited English proficiency or are non-English speaking
- Transportation disadvantaged.

A functional need refers to a restriction or limited ability to perform activities normally considered routine.

Cowlitz County continues to expand the scope of emergency response planning to address emerging issues for responding to persons with special needs before, during and following a disaster. Cowlitz County will continue to monitor the locations of special needs populations in relation to potentially hazardous

areas and provide decision makers a range of policy options intended to minimize risk of the elderly population's exposure to natural hazard dangers.

The following special needs groups have been considered in Hazard Mitigation Planning and extensive ongoing consultation is conducted in broader emergency planning.

Aging Population

In its 2006 Washington Senior Housing Profile, the Washington Center for Real Estate Research attributed an increase in the elderly population in Cowlitz County to the trend for young people to migrate to jobs in urban areas while parents and grandparents stay in place. Additionally, Cowlitz County has recently experienced an influx of older families without children. The report discusses the following challenges:

- Seven percent of the elderly population was living below the poverty line in 2005;
- According to Census Bureau definitions, 21% of the population between ages 65 and 74 and 27% of the population over age 75 are disabled;
- By 2025, 17.3% of the population is forecasted to be over age 65;
- One-third of householders living alone are elderly.

These challenges have been considered in Hazard Mitigation Planning. The report concludes that "an unfortunate side effect of aging is the physical deterioration of the body, which can lead to increased health problems including physical and mental disabilities. Many elderly persons will eventually find they require some type of assisted living arrangement. In light of these issues, information about the senior population will be crucial in making policy decisions regarding the elderly population".

Cowlitz DEM will continue to work with various long-term care facility's staff to prevent, prepare and respond to natural hazard events in accordance with Washington State Department of Social & Health Services guidelines provided online at <http://www.aasa.dshs.wa.gov/professional/EmergencyPlanning/>.

Group Quarters

According to the OFM, on April 1, 2010 there were 1,267 persons living in group quarters in Cowlitz County. A group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories.

Residential Treatment Centers for Adults

Residential facilities that provide treatment on-site in a highly structured live-in environment for the treatment of drug/alcohol abuse, mental illness, and emotional/behavioral disorders. They are staffed 24-hours a day. The focus of a residential treatment center is on the treatment program.

Residential treatment centers do not include facilities operated by or for correctional authorities.

Group Homes Intended for Adults

Group homes are community-based group living arrangements in residential settings that are able to accommodate three or more clients of a service provider. The group home provides room and board and services, including behavioral, psychological, or social programs. Generally, clients are not related to the care giver or to each other. Group homes do not include residential treatment centers or facilities operated by or for correctional authorities.

Emergency and Transitional Shelters (with Sleeping Facilities) for People Experiencing Homelessness and Facilities where people experiencing homelessness stay overnight include:

- shelters that operate on a first-come, first-serve basis where people must leave in the morning and have no guaranteed bed for the next night;
- shelters where people know that they have a bed for a specified period of time (even if they leave the building every day); and
- shelters that provide temporary shelter during extremely cold weather (such as churches). This category does not include shelters that operate only in the event of a natural disaster. Examples are emergency and transitional shelters; missions; hotels and motels used to shelter people experiencing homelessness; shelters for children who are runaways, neglected or experiencing homelessness; and similar places known to have people experiencing homelessness.

English as a Second Language

Cowlitz County is much less ethnically diverse than the state as a whole. In Cowlitz, approximately 92 percent of the population is white. When looking at the state population as a whole, the white percentage falls to 85 percent. Hispanics are the only other ethnic group which has significant representation in the county. In Cowlitz they comprise 4.6 percent of the population and 7.8 percent at the state level. Like the rest of the state, certain Cowlitz non-white populations have grown much faster than the white population during the 1990s. The white segment of Cowlitz grew at 8 percent, but the African American population expanded by 67 percent and Hispanics by 153 percent.

Poverty

According to the US Census Bureau, in 2008 14.8% of the Cowlitz County population lived below the poverty level, as compared to 11.3% in Washington State. People living in poverty are considered a special needs population because they will likely need assistance preparing for and responding to a natural hazard event. Specifically, members of this population will likely need assistance evacuating, if necessary.

COUNTY CAPABILITY ASSESSMENT

Legal and Regulatory Capability

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Chapter 16.05 Building Code	N	N	Y	
Zonings	Title 18 Land Use & Development				

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Subdivisions	Title 18 Land Use & Development				
Stormwater Management	Chapter 16.20 AND 16.22 Stormwater Management			N	
Post Disaster Recovery	Cowlitz County Comprehensive Plan – Update 2017			N	
Real Estate Disclosure	County Assessor and GIS			N	
Growth Management	Chapter 18 Land Use & Development			N	
Site Plan Review	Chapter 16.05 Building Code			N	
Special Purpose (flood management, critical areas)	Chapter 16.26 Floodplain Management Chapter 19.15 Critical Areas				
Planning Documents					
General or Comprehensive Plan	Cowlitz County Comprehensive Plan – Update 2017				
Floodplain or Basin Plan	Chapter 16.25 Floodplain Management				
Stormwater Plan	Chapter 16.20 & 22 Stormwater Management				
Capital Improvement Plan	Cowlitz County Strategic Plan 2016-2020				
Habitat Conservation Plan	Cowlitz County Stewardship Program Title 6 Animals and Agriculture			Y	
Economic Development Plan	Cowlitz County Strategic Plan 2016-2020				
Emergency Response Plan	Cowlitz Co. Comprehensive Emergency Management Plan 2019		Y	Y	
Shoreline Management Plan	Title 19 Chapter 19.20 Shoreline Management			Y	
Post Disaster Recovery Plan	Cowlitz Co. Comprehensive Emergency Management Plan 2019			N	

	Local Authority	State or Federal Prohibitions Other	Other Jurisdictional Authority	State Mandated	Comments
Salmon Recovery Plan	Cowlitz County Final Shoreline Restoration Plan			N	

Administrative and Technical Capability

Staff/Personnel	Resources Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Building and Planning Director and Staff; Public Works Director and Staff; Diking Districts Staff
Engineers or professionals trained in building or infrastructure construction practices	Y	Public Works Director and Staff; Diking Districts Staff
Planners or engineers with an understanding of natural hazards	Y	Building and Planning Director and Staff; Public Works Director and Staff; Diking Districts Staff
Staff with training in benefit/cost analysis	Y	Building and Planning Director and Staff; Public Works Director and Staff; Finance Director and Staff
Floodplain manager		Public Works Director and Staff; Diking Districts Staff
Surveyors	N	Building and Planning Director and Staff; Public Works Director and Staff; GIS Staff
Personnel skilled or trained in GIS applications	Y	
Scientist familiar with natural hazards and Climate Change in local area	N	
Emergency manager	Y	Emergency Mgt. Director and Staff for County and five cities
Grant writers	Y	Many County departments have staff with grant writing skills

Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes

Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Partner with neighboring jurisdictions or Tribe to utilize Floodplains by Design grant programs	Yes

CHAPTER 3: HAZARD DEFINITION, CONTEXT AND RISK ASSESSMENT

This Chapter identifies and defines the natural hazards most likely to impact the Cowlitz County Region. Definitions have been taken from FEMA sources and links to further information have been included.

County-wide risk assessments are included while subsequent Jurisdiction Chapter will provide specific risk assessment based on both historical, as well as anticipated risk due to changing factors such as development or climate change.

Hazards identified and addressed are:

- Earthquake
- Severe Weather
- Flood
- Landslide
- Wildfire
- Volcano

RISK ASSESSMENT INTRODUCTION, DEFINITION AND APPROACH

Risk, for the purpose of hazard mitigation planning, is the potential for damage, loss or other impacts created by the interaction of natural hazards with community assets, as defined by FEMA.

As part of ongoing hazard identification and analysis, Cowlitz County's Department of Emergency Management (DEM) constantly reviews and updates the County's Hazards Identification and Vulnerability Analysis (HIVA) and has started work on the more refined Threat & Hazard Identification & Risk Assessment (THIRA). This important work informs the County-wide risk analysis. Additionally, the County's jurisdictions conduct their own risk monitoring and analysis. Where appropriate, FEMA's HAZUS tool was used to better understand risks as well as incorporating local knowledge of emerging hazards. Comprehensive risk assessment of the major natural hazards that threaten the region are continuously reviewed, particularly in the light of variance factors such as climate change.

This entire chapter serves to provide Jurisdictions with the factual basis to develop effective mitigation strategies.

For the purpose of scaling risk for this HMP, a simple formula of Vulnerability and Probability combine to give us Risk as illustrated by the standard Risk matrix below.

Vulnerability	Probability		
	Low	Moderate	High
High	Moderate	High	High
Moderate	Low	Moderate	High
Low	Low	Low	Moderate

HAZARD RISK ASSESSMENTS INCLUDED IN THIS HMP

The 2005 Cowlitz County Hazard Mitigation Plan profiled the most destructive and frequently occurring natural hazards that affect the region: earthquake, flood, storm, and landslide. Budget resources and time constrained a full analysis of every potential hazard identified during the 2005 planning process. The update of this plan includes two additional hazard profiles, volcanic hazards (ash fall and lahar) and wildfire hazard. Every hazard profile was reevaluated and updated with this plan update. Every hazard that is profiled in this plan meets one or all of the following criteria:

1. High probability of the natural hazard occurring in Cowlitz County within the next 25 years; and/or
2. Potential for significant damage to impacted buildings and infrastructure; and/or
3. Potential for loss of life.

The following natural hazards meet one or more of the above criteria and are profiled in this plan:

County-Wide Assessment of Natural Hazards			
Hazard	Probability of Occurrence	Vulnerability	Risk
Earthquake	High	High	High
Severe Weather	High	High	High
Flood	High	High	High
Landslide	Moderate	Low	Moderate
Wildfire	High	Moderate	High
Volcanic Event	Moderate	High	Moderate

Earthquake

Definition

An earthquake is a sudden release of energy that creates a movement in the earth's crust. Most earthquake-related property damage and deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the extent and duration of the shaking. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (in mountain regions and along hillsides), and liquefaction.



The Richter Scale value is calculated by measuring the maximum recorded amplitude of a wave. This measurement quantifies the ground motion and the energy released at the source of an earthquake, which is referred to as its magnitude.

Richter scale examples:

Magnitude	Earthquake Effects
5.5 to 6.0	Slight damage to buildings and other structures
6.1 to 6.9	May cause a lot of damage in very populated areas.
7.0 to 7.9	Major earthquake. Serious damage.
8.0 or greater	Great earthquake. Can totally destroy communities near the epicenter.

The S-waves, which mark the onset of the most energetic seismic waves, travel at a speed of **about 3.5km/s**, and P-waves, which carry the first information about the earthquake, travel at a speed of about 6.5 km/s.

The duration of most earthquakes is generally only seconds. Strong ground shaking during a moderate to large earthquake typically lasts about **10 to 30 seconds**. Readjustments in the earth cause more earthquakes (aftershocks) that can occur intermittently for weeks or months.

More Information

<https://earthquake.usgs.gov/earthquakes/>

<https://www.ready.gov/earthquakes>

Regional Context

Of all the natural hazards that affect the region, earthquakes cause the most widespread infrastructural damage and disruption of services and essential operations across all sectors of society. Washington State experiences more than 1,000 earthquakes a year, but the majority of these events pass without notice. Cowlitz County incurred significant damage from the effects of the 2001 Nisqually earthquake. Statewide, this magnitude 6.8 earthquake caused nearly 700 injuries. A precise damage figure for this earthquake is unknown, but estimates have been reported as high as \$4 billion.

The earthquakes of 1949, 1965, and 2001 are a clear indication that earthquakes of this magnitude are likely to reoccur within the 25 year planning horizon, a high probability of occurrence. Each of these events caused significant widespread damage. The 2001 earthquake revealed that the region remains highly vulnerable, therefore the region has a high risk rating for earthquakes.

Although tsunamis are known to impact the coast of Washington, the Cowlitz Region is unlikely to be impacted by this hazard. Should the Washington coast be struck, the entire region could be indirectly affected by evacuating populations. Local governments in Cowlitz County could likely be challenged with response and recovery support assistance to affected populations and communities.

Communities Most Vulnerable to Earthquake

Liquefaction is a phenomenon that occurs when the strength of a saturated soil is reduced by earthquake shaking or other rapid loading. Nearly half of the county's population (55,000 of 110,000) is located in areas designated a "Moderate to High" risk to be adversely affected by a liquefaction event, including the populations of all the incorporated cities and the unincorporated Census Designated Areas of Ryderwood and Lexington.

The elderly is another special needs population that may be potentially vulnerable to a liquefaction event. Almost all elderly care facilities in Cowlitz County are located in areas designated a "Moderate to High" risk for a liquefaction event.

Critical Facilities and Infrastructure in Hazard Area

Based on historical earthquake community impacts, it is clear that earthquakes can destroy or damage facilities that may be critical for responding to the disaster and for maintaining a safe environment and public order. Among these are communications installations; electrical generation and transmission facilities; water storage, purification, and pumping facilities; sewage treatment facilities; hospitals; and

police and fire stations. In addition, earthquakes can seriously disrupt the transportation network; bridges can be knocked out, and roads and highways damaged or blocked by debris, further isolating resources. In a major earthquake, almost all surface means of transportation within a community may be disrupted, particularly in the initial stages of the hazard event.

The Cowlitz County Facilities Maintenance Department has begun to conduct a vulnerability analysis to identify weaknesses in the system that may be exposed or significantly impacted by a natural disaster. In winter 2010, a draft document titled *Disaster Mitigation for Government Buildings in Cowlitz County* was produced with the objective of establishing priorities for either retrofitting, repairing or relocating facilities. The document is included as Appendix A. The findings, conclusions and recommendations of that report are incorporated into this planning effort and the authors are active members of our Workgroup.

The *Disaster Mitigation for Government Buildings in Cowlitz County* report analysis focuses on the ability of Cowlitz County Facilities to withstand the three most common natural disasters, (earthquake, flood and wind) that we could experience in the next 5-to-50 years. The analysis evaluated the potential impacts on government buildings during an earthquake above 7.5 on the Richter scale with an epicenter within twenty miles of Longview, Kelso.

Expectations for government buildings during and after a hazard event are different than those for most buildings because these buildings house emergency response centers such as 911 and the Departments of Emergency Management and evacuation centers. Our buildings must be well thought-out, well built, and well maintained to meet the demands placed on the government during times of social crisis.

Cowlitz County Critical Facilities in Relation to Potential Earthquake Hazard Areas				
Building	Liquefaction Zone	Building Value (\$)	Content Value (\$)	Total Value (\$)
Abernathy Radio Relay Station	None	98,992	113,214	212,206
Administration Building	Moderate to High	26,581,900	2,724,900	29,306,800
Annex Building	None	6,448,100	410,800	6,857,900
Camelot Drive Reservoir	None	20,800	1,000	21,800
Carrolls Road Radio Tower	None	13,758	12,399	26,157
Central Shop	Moderate to High	450,500	144,700	595,200
Columbia Heights Radio Tower	None	85,519	113,214	198,733
Coroner	Moderate to High	15,471	8,045	23,516
Davis Peek Radio Relay Station	None	126,731	0	126,731
Hall of Justice	Moderate to High	37,630,200	6,127,800	43,758,000
Health Dept/Human Services	Moderate to High	1,495,068	242,081	1,737,149
Juvenile Center	Moderate to High	10,038,000	703,900	10,741,900
Motor Pool	Moderate to High	17,770	12,747	30,517
Public Works Building	Moderate to High	1,594,200	458,500	2,052,700
Ryderwood Water Reservoir	None	1,040,000	0	1,040,000
Ryderwood Water Treatment Plant	Moderate to High	407,500	1,235,000	1,642,500
Ryderwood Sewage Treatment Plant	None	104,000	5,000	109,000
South Silver Lake Water Reservoir	None	520,000	0	520,000
Tower Road Reservoir	None	208,000	0	208,000
Toutle Sewer Treatment Plant	Moderate to High	182,400	475,000	657,400
Toutle Water Reservoir	Low to Moderate	1,040,000	0	1,040,000

*Please note the draft Disaster Mitigation for Government Buildings in Cowlitz County report evaluates potential impacts of natural hazard events on *all* county owned buildings. This planning effort attempts to evaluate potential impacts of *critical* facilities. Because of the different objectives of the two studies the total amounts will be different. Staff suggests the critical facilities totals be identified separately when the draft report is finalized.

Issues

The following issues were identified during studies on the potential impact of an earthquake above 7.5, on the Richter Scale, with the epicenter within 20 miles of Kelso/Longview:

- The Hall of Justice, Jail, Health Department and Public Works Office have major damage but remain operational.
- Juvenile Center may not remain in service due to lack of electrical and no natural gas for heating and the emergency generator.
- Conference Center, Maintenance Building and Administration Annex have significant damage and need repair before restoring operations.
- Administration Building is significantly damaged and/or collapsed. If the building does survive, electrical power, water supply and sewer are out of service for weeks if not months.
- The Allen Street & Sparks Drive Bridges are the only remaining operational bridges.
- Department of Emergency Management, 911 call center, Sheriffs' Office, Courts, Prosecuting Attorney Office, Offender Services remain operational, but lack water and sanitary sewer services.
- All other County services are not operational for weeks or months.
- The majority of the telephone system and intranet services are not operational for days, if not weeks.
- Natural Gas mains are closed. No Heating in the Jail and Juvenile Building. Juvenile emergency generator is not operational.

Cost-Benefit of Improving County Buildings		
Action	Benefit	Cost
Seismically retrofit the Administration & Annex Buildings or build new.	Reduces the risk of significant employee injury and /or death. Additionally, provides for the continuance of government "Based on 1991 seismic study"	Retrofit estimate is \$27,750,000., and one and a half years to complete. New building estimate is \$23,775,000 plus 1-1/2 years to complete. During retrofit of existing facilities, rental/lease office space for 1-1/2 years, depending upon availability of open office space locally. Possible rental/lease of office portables—hook up to electrical, water, and sewer services for 1-1/2 years. Moving costs. Cost est. = \$1,000,000 + retro/new construction \$\$.
Seismically retrofit the Hall of Justice.	Minimizes injury and allows emergency services to continue operation. "Based on 1991 seismic study"	Estimated cost = \$3,737,000

Cost-Benefit of Improving County Buildings		
Seismically retrofit the Health Department and install an emergency generator	Reduces the chance of injury and the continuance of services.	Estimate \$550,000.00
Seismically retrofit the Morgue or build new and install an emergency generator.	Allows for the coordination of the deceased during and after a disaster.	Retrofit and generator estimate is = \$250,000 New building estimate = \$1,600,000
Hall of Justice: Build mezzanine under existing north end, third floor to stabilize lateral movement of existing structural columns with relocation of electrical, emergency generators and HVAC equipment.	Keeps building operational.	Estimated cost = \$3,737,000

*Please note the draft *Disaster Mitigation for Government Buildings in Cowlitz County* report evaluates potential impacts of natural hazard events on *all* county owned buildings. This planning effort attempts to evaluate potential impacts of *critical* facilities. Because of the different objectives of the two studies the total amounts will be different. Staff suggests the critical facilities totals be identified separately when the draft report is finalized.

Potential Vulnerability of County Facilities During a 7.5 Seismic Event			
Vulnerability	Before the Actions are Implemented	After the Actions are Implemented	Difference
Number of people affected by the hazard	495	64	431
Area affected sq feet by the hazard	394,000	140,000	254,000
Property damage amount (\$)	\$32,000,000	\$2,700,000	\$29,300,000
Loss of use (number of properties lost in number of days)	2,980-days	850-days	2,130-days
Loss of life (number of people)	77	5	72
Injury (number of people)	50	10	40

Summary Assessment

History suggests a high probability of occurrence of another damaging earthquake sometime in the next 25 years. With the 2001 Nisqually earthquake still fresh in the region's memory, it is important to note that it was not the largest earthquake event possible in the region. It is conceivable that a similar magnitude earthquake could emanate from a shallow crustal fault which would result in much greater damages. Damage from the 1949, 1965, and 2001 earthquakes indicate that an earthquake of a greater magnitude would have a catastrophic impact on Cowlitz County. Considering that a large population lives and works in higher risk earthquake hazard areas, the entire region has a high vulnerability rating. Accordingly, a high risk rating is assigned.

Severe Weather

Definition

Severe weather can include hazardous conditions produced by thunderstorms, including damaging winds, tornadoes, large hail, flooding and flash flooding, and winter storms associated with freezing rain, sleet, snow and strong winds.

More Information

<https://www.ready.gov/severe-weather>

Regional Context

Severe weather events are the most frequent source of natural disasters for Cowlitz County and its communities. Between 1962 and 2009, 13 of 23 Presidential Disaster Declarations for Cowlitz County were attributed to damage resulting from the effects of winter storms (principally damage from floods). Storms cause injury and sometimes death, but also cause significant property damage and disrupt daily life. The high reoccurrence rate of Pacific Northwest storms, the record of historical damage, and the repetitive response and recovery costs associated with these destructive events make the region highly vulnerable to storm events. Thus, the overall risk rating for severe storms in the region is high.

The most destructive storms in western Washington occur from October through April delivering sustained high speed directional winds and higher than normal levels of precipitation. These storms cause significant property damage, power loss, and disruption of services across all sectors of local communities. Winter storms are deadly because sustained sub-freezing temperatures pose significant operational problems for transportation. They also greatly increase the risk of hypothermia for elderly, low income and homeless populations or much larger populations when electrical power is disrupted. Thunderstorms also occur in Cowlitz County. These storms deliver hail, lightning and tornados to the region, but thunderstorm events are much less common, shorter lasting and the impacts and damages are much more isolated than winter storms.

High winds, heavy rain, heavy snow, freezing rain, tornados, hail and lightning all impact the region. Each element poses a threat and merits inclusion in this hazard profile. Winter storms that impact Cowlitz County usually pack more than one hazardous element at a time or deliver stand-alone elements in consecutive blows such as a snow followed by heavy rain followed by a windstorm. This section defines each element, its severity, its impacts, and its probability of occurrence.

Heavy rain and snow can cause flooding and landslides. Floods and landslides frequently result from heavy rain and/or melting snow in Cowlitz County. These hazards are treated independently in this plan. Refer to the flood and landslide hazard profiles for more information.

High Winds/Windstorms

The coastal mountains afford Cowlitz County some protection from severe southerly and westerly winds. The coastal mountain range acts as a buffer and shields the region from extreme winds in excess of 80 mph. Cowlitz County does not encounter the 100 mph or greater winds that sometimes wreak havoc on Washington's Pacific coast communities. Nevertheless, the entire region is directly or indirectly susceptible to the effects of high



winds. Neighborhoods with stands of tall conifer trees are the most vulnerable to property damage. All communities can suffer power outages and be left in the cold and dark for extended periods.

Heavy Rain

Prolonged heavy rains typically occur from November through February. The entire region is directly or indirectly affected by heavy rainfall. Properties are at greater risk if they are located in flood plains, areas with high ground water, areas with stormwater drainage problems, or are on or closely adjacent to steep slopes. The region overall is moderately vulnerable to flood.



Freezing Rain

The entire county is susceptible to the effects of an ice storm of the magnitude experienced on December 26, 1996. This storm resulted in ice accumulations of one-quarter to three-quarter inch thick. The December 2008 winter storm delivered freezing rain, but accumulations of ice were less than 1 to 3 mm. Ice can accumulate on nearly every surface including tree branches, power lines, roof tops, motor vehicles, streets, sidewalks and traffic signals and signs. Transportation networks are especially vulnerable to freezing rain as it coats nearly every exposed paved surface.

Heavy Snow

Heavy snowfall affects all of Cowlitz County. Snowfall in the Puget Sound lowlands typically occurs from mid-November through early March, with most accumulations occurring from December through February. Light snow, less than four inches deep, can temporarily disrupt normal traffic operations on roads and streets until public works departments clear priority routes. In general, snow hazards and road clearing abilities become more problematic with decreasing temperatures, increasing snow depth and increasing length of time that snow remains on the ground. Even when priority routes are clear, numerous neighborhood streets and local collector streets can remain impassable for many motorists when snow depths exceed one foot.

Tornado

In 2014, a tornado swept through Longview ripping the roof off a commercial building, damaging homes, knocking down trees and pelting vehicles with windblown debris. No one was hurt. Apart from this rare event, no tornadoes have adversely affected densely populated areas of Cowlitz County and historic damage was isolated to small areas. Storm records suggest that a tornado could potentially touch down anywhere in the lowlands of the county but would not likely exceed a Fujita scale 1 (F1).

No deaths or serious injuries resulting from tornadoes have occurred in the county. Although tornadoes are rare in Cowlitz County, disastrous tornadoes have occurred elsewhere in western Washington. On June 29, 1989 near La Center, WA a tornado touched down during the afternoon of the 29th of June, moving through northern Clark County. This tornado caused uprooting of trees and minor property damage. On April 5, 1972, an F3 tornado (wind speed 158-206 mph) touched down in Portland, Oregon and created a nine mile path of destruction north to Vancouver. In Vancouver, the tornado ripped through a grocery store, a bowling alley, a shopping mall and an elementary school. It caused six deaths, 300 injuries, and nearly \$50 million in damages.

Hail

Most hailstorms in Cowlitz County produce small non-destructive hail. The records of damaging hailstorms are scant and suggest that damage from these events is limited and only small geographical areas are

likely to be affected. Although it is possible that a hailstorm could unleash destructive hail to any portion of the county, the extent of the damage would likely be limited.

Lightning

Lightning storms in Cowlitz County are short lived and events generally only affect a small area. However, the entire county is potentially vulnerable to lightning strikes. Lightning has not caused widespread damage and historically it has not posed a serious threat to the region. Historic records indicate that lightning storms in Cowlitz County are most likely to occur from April through September. This time period coincides with the dry season so it is conceivable that a larger than normal wildfire could result from lightning strikes over Cowlitz County forest lands.

Critical Facilities and Infrastructure in Hazard Area

Based on the community impacts which historical occurrences of natural hazards caused, it is clear that natural hazards can destroy or damage facilities that may be critical for responding to the disaster and for maintaining a safe environment and public order. Among these are communications installations; electrical generating and transmission facilities; water storage, purification, and pumping facilities; sewage treatment facilities; hospitals; and police stations. In addition, natural hazards can seriously disrupt the transportation network; bridges can be knocked out, and roads and highways damaged or blocked by debris, further isolating resources. In a major disaster, almost all surface means of transportation within a community may be disrupted, particularly in the initial stages of the hazard event.

All critical facilities in Cowlitz County are located within the storm hazard area. Specific information on the location of critical facilities and infrastructure is housed with the Cowlitz County Department of Emergency Management.

Summary Assessment

The probability of each storm element's occurrence varies, but winter storms frequently pack several hazardous elements across a period of consecutive days or weeks, therefore the overall probability of winter storm occurrence is high. The overall impacts described in both the hazard profile and the brief record of historical occurrences demonstrate that the region's vulnerability is also high. Therefore, the overall risk rating for severe winter storms is high.

Thunderstorms do occur in Cowlitz County, but the probability of occurrence of the storm elements is low. Even thunderstorms that produce a combination of the listed elements rarely cause destruction beyond isolated areas. Therefore, the overall probability of occurrence, the vulnerability rating and the overall risk for thunderstorms are all low.

Flood

Definition

A flood is the partial or complete inundation of normally dry land. The various types of flooding include riverine flooding, coastal flooding, and shallow flooding. Common impacts of flooding include damage to personal property, buildings, and infrastructure; bridge and road closures; service disruptions; and injuries or even fatalities.



More Information

<https://www.ready.gov/floods>

Introduction

Of all natural hazards that affect Cowlitz County, floods are the most prevalent. Between 1962 and 2020, Cowlitz County has received 13 Federal Disaster Declarations and four locally declared flood events. On average, the region experiences a major river flood event about every two and one-third years. On an annual average basis floods are also the costliest natural disaster in the region. Statewide, the Federal Emergency Management Agency (FEMA) has provided over \$72 million in aid to flood victims, businesses and local governments for the December 2007 floods and over \$12.8 million in assistance as of April 2009 for the January 2009 floods.

Future floods are inevitable, and more research is required to understand fundamentals such as the extent of flood plains and areas that are vulnerable to groundwater flooding. The hydrodynamics of riverine and groundwater flooding in Cowlitz County are complex and not completely understood. Each flood event is unique. Numerical hydrological models are needed to provide data to better inform land use decisions that will serve to protect environmentally critical areas and protect the public's health. Model forecasts and simulations will enhance Cowlitz County's understanding of the timing, frequency, duration, and location of riverine and high groundwater flooding.

Comprehensive flood hazard management must address an entire watershed because rivers and their flood plains span multiple administrative boundaries. Activities outside of Cowlitz County's border such as forestry, development and stormwater management practices can adversely influence the local flood severity for communities downstream within Cowlitz County. There are multiple affected stakeholders and a variety of interests must be considered. Flood hazard management is a complex process that must balance resource protection, environmental enhancement, flood damage protection, and land use development. The region is just beginning to address flood management with such an approach for the Cowlitz River Basin.

Two types of flooding occur in Cowlitz County and are addressed individually in this hazard profile: riverine flooding and groundwater flooding.

Riverine Flooding

Riverine or river and stream flooding is the effect of excess flow and volume of water exceeding a river channel's normal capacity to contain the water. As a consequence, excess water crests over a river's bank and inundates areas within the river's floodway, flood plain and other low lying areas (may be outside FEMA's mapped floodplains but are in the river's natural floodplain). An extended period of intense precipitation is the most common cause of riverine floods in Cowlitz County. Historically, Cowlitz County must experience two or three days of rainfall averaging 2-5 inches per day for river and stream flooding to occur. These precipitation events are commonly delivered by storms containing warm moisture laden air originating from the tropics and subtropics of the Pacific Ocean. A low-pressure storm system originating from the Pacific Ocean, north of the Hawaiian Islands, is commonly referred to as a "Pineapple Express" (see storm hazard profile). This storm phenomenon considerably raises surface air temperatures into the upper 50 degrees F and sometimes mid-60 degrees F. It also raises the freezing level above 6,000 feet. All Cowlitz County rivers are affected by this rapid warming effect and the intense precipitation that falls as storm fronts cross western Washington. The warm rain and air rapidly melt shallow lowland snow accumulation and causes local streams and creeks to crest their banks in a relatively short period of time.

Flood Terminology Used in this Plan
There is often confusion about flood terms and flood frequency. The following terms are used in this risk assessment:
Flood Plain: A strip of relatively smooth land bordering a stream, built of sediment carried by the stream and dropped in the slack water beyond the influence of the swiftest current.
100-Year Floodplain: Lands which are subject to a one percent chance of flooding in any year. These areas are mapped as the "A" zone on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency.
500-Year Floodplain: Lands which are subject to a 0.2 percent chance of flooding in any year. These areas are mapped as the "B" zone on the FIRM of the Federal Emergency Management Agency.
Flood Stage: The stage at which overflow of the natural stream banks begins to cause damage in the reach in which the elevation is measured. Flood stages for each USGS gauging station are usually provided by the National Weather Service.
Floodway: The portion of the floodplain adjoining and including the river channel which discharges the flood water and flow of the river. It does not include portions of the floodplain where water is just standing. These areas are mapped as "Floodway" on both the Floodway and the FIRM of the Federal Emergency Management Agency.

Cowlitz County Rivers

There are six major river systems in Cowlitz County that experience episodic flooding: the Columbia, Cowlitz, Coweeman, Lewis, Kalama, and the Toutle. The Federal Emergency Management Agency has mapped the Special Flood Hazard Areas (SFHA) for each of these rivers.

Mayfield and Mossyrock reservoirs on Cowlitz River in Lewis County are required by their Federal Power Commission license to be operated so as to regulate flows at Castle Rock, Washington to 70,000 cubic feet per second (CFS) or less. No flood regulation is provided by the three power projects located on Lewis River. They are operated exclusively for power generation. Levee projects have been constructed at various locations along Lewis, Kalama, Cowlitz, and Coweeman rivers. Some additional levee work, such as levee repair, realignment, and strengthening has been authorized.

The Northwest River Forecast Center, Portland, Oregon, is responsible for the flood warning and river forecasting service in Cowlitz County. Of the streams investigated, forecasts are available during flood seasons for the Lewis, Cowlitz and Columbia rivers. Specific forecasts are available to the areas of Kelso, Longview, and Kalama. Only general warnings are available for the smaller communities in Kalama, and Coweeman river basins.

The Columbia River

Columbia River at mile 52.0 drains an area of approximately 256,000 square miles on the west slope of the Continental Divide in the northwestern part of the United States and southwestern Canada. Major parts of the states of Washington, Idaho, and Oregon, and small parts of Montana, Wyoming, Utah, and Nevada, in addition to southeastern British Columbia, are within the Columbia River drainage basin. The area above the upstream limit of the study reach, mile 87.0, is approximately 251,000 square miles. The basin terrain varies from flat or gently rolling farmland to high, rugged, wooded mountains. A large portion of the area is devoted to agricultural or related uses. The watershed boundaries throughout the basin are a series of rugged mountains.

The highest elevation in the basin is 13,766 feet and the average elevation of the basin is approximately 1,200 feet. The total fall in Columbia River from the Canadian border, mile 750, to the mouth is 1,300 feet, or an average fall of 1.75 feet per mile. In the 35-mile study reach, Columbia River has an average fall of 0.3 foot per mile at flood stage. At low water, tides reverse the slope of the river during a 2-hour period.

The most significant tributaries of Columbia River within the study reach in a downstream order are Lewis, Kalama, and Cowlitz rivers.

Columbia River flow is affected materially by upstream existing storage projects located on the Columbia River and its tributaries. Additional control will be provided on completion of all storage projects presently under construction. Further protection is provided by numerous bank protection and levee projects in the Longview-Kelso area, including the lower reaches of Cowlitz River affected by Columbia River backwater, and other susceptible flooding areas. Some of the levees were constructed entirely by local interests. Others were either constructed or improved with Federal funds in cooperation with local interests.

River forecasts are issued daily year round for the Columbia River at Vancouver, Washington. Forecasts, especially during high water, are given widespread dissemination by the local press, radio, and television stations.

The flood elevation can be determined from the profile for any location along the river. Major urban developments directly affected by Columbia River are Longview and Kelso. Besides a few scattered developments elsewhere, most of the remaining flood plain is agricultural land.

Great Northern-Northern Pacific and Union Pacific railroads¹ and Interstate Highway No. 5 lie within or adjacent to the flood plain from the upstream limit of the study reach to mile 68 at the Kelso-Longview area.

The Coweeman River

Coweeman River, with a drainage area of 127 square miles at its mouth, joins Cowlitz River at mile 1.3. The stream flows west from its source on the northwest slopes of Elk Mountain. All of the drainage area lies in Cowlitz County. The upper limit of the study is at mile 6.8 and the drainage area at that point is approximately 118 square miles.

At the mouth of Coweeman River, the lower end of the study reach, the drainage area is 127 square miles. The watershed is kidney-shaped, 25 miles long and 8 to 10 miles wide. Only a small portion of the area is devoted to agricultural or related uses.

The topography of the watershed is mountainous and rugged. The highest elevation in the basin is 4,538 feet, and the average elevation is 1,230 feet.

The total fall of Coweeman River from its headwater to its junction with Cowlitz River is 4,538 feet with an average gradient of 125 feet per mile. In the lower 6.8 miles studied, Coweeman River has an average gradient of 3 feet per mile.

The headwater section of the drainage basin is mountainous and the streams flow through canyons with steep and rugged sides. High benches of comparatively level land exist in the middle and lower sections of the basin. The width of the valley through the study reach averages 1 mile.

The widest flood plain is in the vicinity of Kelso, Washington. Coweeman River is the eastern city limit of Kelso.

The Cowlitz River

Cowlitz River, with a drainage area of 2,180 square miles at its mouth, flows into Columbia River at river mile 68.0. Principal tributaries that flow into Cowlitz River within the study reach are Toutle River at mile 20.0, and Coweeman River at 1.3. At Cowlitz-Lewis county line, upper limit of the study reach, the drainage area is 1,700 square miles. About 70% of Cowlitz River basin area is in Cowlitz County. Cowlitz, Toutle, and Coweeman rivers all have their headwaters in the Cascade Range. Toutle and Coweeman rivers have drainage areas of 512 and 127 square miles, respectively.

The main axis of the 1,700-square-mile area above the study reach lies east and west; the area is trapezoidal in shape, 65 miles long, 10 miles wide at the lower end, and 27 miles wide at the upper end. Of the total drainage area, approximately 75% is mountainous terrain. The remainder of the area is bottom land and rolling foothills. Large areas of the bottom land are being used for agricultural purposes.

The topography of the watershed is rugged and timber covered. The highest point in the basin is Mount Rainier, elevation 14,408 feet. The average elevation of the basin is approximately 3,400 feet, and the lowest elevation is less than 50 feet.

The fall in Cowlitz River from mile 134.0 to the mouth is 1,340 feet. This is an average gradient of 10 feet per mile, which varies from several hundred feet per mile in the upper reach to less than 2 feet per mile in the lower reach. In the 26.1-mile reach investigated in Cowlitz County, the fall is 60 feet for an average gradient of 2-3 feet per mile.

The two significant tributaries to Cowlitz River within Cowlitz County are the Coweeman and Toutle rivers. Those streams are discussed separately in following sections of this report. The valley in Cowlitz County has an average width of about 3 miles and is widest between Castle Rock and the Kelso-Longview area. After 1968, flooding has been infrequent along lower Cowlitz River below Mayfield Dam because floods the magnitude of flood stage or lesser magnitude, will be regulated to bank full stage at Castle Rock.

Besides the four industrial, commercial and business enterprises in the three largest urban centers, the remaining valley area is primarily agricultural. Most of the bottom land area is cropland, consisting largely of grain and forage for livestock, with small acreages of sweet corn and other more intensively cultivated crops. About 10% of the cropland is irrigated.

The main line of Great Northern-Northern Pacific and Union Pacific Railroad from Seattle to Portland traverses the entire length of the valley. Columbia and Cowlitz Railroad, a logging railroad, connects the Kelso-Longview area to the foothills at the confluence of North and South Fork Toutle Rivers. It crosses Cowlitz River at mile 7.1.

Interstate 5 parallels the valley to the east. State Highway 411 provides access along the valley to the west. Secondary roads make up the balance of the transportation network. Five highway and three railroad bridges cross Cowlitz River in the lower 27 miles. The bridges do not seriously obstruct streamflow. Head losses at each bridge during major floods are less than 1 foot.

The Lewis River

Lewis River, with a drainage area of 1,046 square miles at its mouth, flows into Columbia River at mile 87.0. About one-fourth of the total drainage area lies in Columbia National Forest, and one-tenth of the total drainage area lies in Cowlitz County. The stream flows southwest from its source on the northwest slopes of Mount Adams and is joined by East Fork Lewis River at mile 3.5 about 3 miles south-southwest of Woodland, Washington. The upper limit of this study is at mile 14.5. Drainage area above the upper limit of study is approximately 800 square miles.

The Lewis River watershed is boot-shaped, 40 miles long, 30 miles wide at the downstream end, and 15 miles wide at the upstream end. A small portion of the basin is used for agricultural or related purposes.

Topography of the basin is mountainous, and the watershed divides consist of rugged and well-defined ridges. The highest elevation in the basin is 12,307 feet, whereas the average elevation is 2,360 feet. High benches of comparatively level land lie in the middle and lower sections of the basin. The valley width through the study reach averages one mile. The widest flood plain in the study reach is in the vicinity of Woodland, Washington.

Total fall of Lewis River from its headwater to its junction with Columbia River is 7,900 feet, an average of 112 feet per mile. In the lower 14.5-mile study reach, Lewis River has an average fall of 2 feet per mile.

The most significant tributary of Lewis River within the reach investigated is East Fork Lewis River which contains little more than one-fifth of the total basin area. Great Northern-Northern Pacific and Union Pacific railroads serve the area. Interstate 5 passes through Woodland, and State Highway 503 provides access along Lewis River to the east.

The Kalama River

Kalama River, with a drainage area of 205 square miles at its mouth, joins Columbia River at mile 73.1. The watershed is rectangular in shape, 30 miles long and 6 miles wide. Nearly all of the drainage area lies in Cowlitz County. The stream flows westerly from its source on the southwest slope of Mount St. Helens and joins the Columbia River about 2 miles north of Kalama, Washington. The upper limit of the study reach is mile 6.6. The drainage area at that point is about 190 square miles.

Topography of the watershed is mountainous. Ridges are well defined, rugged, and forested. The highest elevation in the basin is 8,365 feet, and the average elevation of the basin is 1,880 feet. The total fall of Kalama River from its headwater to its Junction with Columbia River is 9,677 feet, an average of 215 feet per mile. In the 6.6-mile study reach, Kalama River has an average fall of 8.5 feet per mile.

The most significant tributary of Kalama River within the study reach is Hatchery Creek which has a drainage area of approximately 6 square miles. Canyons in the headwaters are steep and rugged. High benches of comparatively level land exist in the middle and lower sections. The valley width through the study reach averages less than 1 mile. The widest flood plain in the study reach is near the mouth.

A double-track system serving Great Northern-Northern Pacific and Union Pacific railroads traverses the flood plain near the mouth. Nearly paralleling the railroad a few hundred feet upstream is a major highway, Interstate 5. Several secondary roads provide adequate access locally.

One railroad and four highway bridges cross Kalama River in the reach included in this study. Except for the possibility that debris from logged and forested areas might float downstream during large floods and pile up against bridge piers, none of the bridges across Kalama River are serious obstructions to streamflow. The lowest members of the bridges are above the water surface elevation of the base flood elevation.

The Toutle River

Toutle River, with a drainage area of 512 square miles, joins Cowlitz River at mile 20.0. Toutle River is formed by the junction of North Fork Toutle River with South Fork Toutle River at mile 17.2. Both forks have their headwaters in Gifford Pinchot National Forest on the northwestern slope of Mount St. Helens. This investigation covers the lower 8.1 miles of the North Fork, lower 5.5 miles of the South Fork, and the entire 17.2 miles of Toutle River.

The streams flow in a general westward direction. Toutle River Basin is long and narrow, about 37 miles long and up to 18 miles wide. About 80% of the basin lies in Cowlitz County. Elevations in the basin range from a maximum of 8,365 feet, on Mount St. Helens to 40 feet at the mouth of Toutle River. Within the reaches investigated, slope of the rivers averages 26 feet per mile on North Fork Toutle River, 30 feet per mile on South Fork Toutle River, and about 25 feet per mile on Toutle River. The river valleys on the tributaries are narrow at the upper ends of the reaches of the tributaries studied but begin to broaden considerably near the junction with Toutle River. The valley width of Toutle River averages about 1 mile.

Levee System

The May 18, 1980 eruption of Mount St. Helens in Washington in 1980 resulted in approximately 3.8 billion cubic yards of earth materials being released in a massive landslide. The resulting debris avalanche deposit has continued to erode and introduce sediment materials into the Toutle-Cowlitz-Columbia river system. These sediment materials continue to filter down the river basin and ultimately settle on the riverbed along the way. Increasing sediment on the riverbed results in a rise of the water levels, over time.

The region is protected by levees on four rivers: The Cowlitz, Coweeman, Columbia and Lewis rivers. The levee systems protect a majority of the urbanized area from being inundated by rising flood waters.

The U.S. Army Corps of Engineers (USACE) was directed by Congress to maintain an authorized level of flood protection (LOP) in four communities along the Cowlitz River that is not less than described in the *Mount St. Helens, Washington, Decision Document (USACE 1985)*. As shown in the figure below, the Cowlitz River levee reaches include the Castle Rock levee [River Mile (RM) 15.91 to 17.66], Lexington levee (RM 7.12 to 9.53), Kelso levee (RM 1.59 to 7.3), and the Longview levee (RM 1.59 to 5.57).

Courtesy of US Army Corps of Engineers:

In the 1980's and early 1990's, the levels of protection for Castle Rock, Lexington, Longview, and Kelso were determined using a deterministic approach in which median values of flood stages were compared to levee safe water levels (SWL). The SWL was evaluated as the highest flood level for which reasonable assurance could be made that the levee would not fail and was restricted to no less than 3 ft below the levee top in order to provide freeboard for uncertainties. The SWL was often dictated by encroachments to the levees. The level of protection was evaluated as the highest average-return-period-event whose median-value flood profile was no higher than the SWL at all points along the levee.

Current Level of Flood Protection

Before the level of protection investigation was completed in the Flood Damage Reduction Analysis (FDA), the compiled hydraulic model results were compared to the levee assessments at various locations.

Several governments, entities and federal agencies are charged with the maintenance and upgrades of these critical infrastructures. Certification of these facilities is paramount to continued protection from flood waters.

Levee Certification

In 2003, Congress passed a bill requiring levees to be certified to maintain the 100 year flood protection designation for the areas protected by the levee. Without certification, the developed properties protected by the levees, would be required to purchase flood insurance if they have a federally backed mortgage. Upon notification of this certification requirement, in June 2007, the diking, drainage, and flood control zone districts executed agreements with the USACE (April 2008) to provide the certification work on a reimbursable basis. The current cost for the USACE to do the work is estimated to be in the \$210,000 to \$250,000 range as compared to \$400,000 to \$2,100,000 for a private company to complete the certification. In May 2008, the USACE notified the districts that they were prohibited from doing the work unless a minimum of 5% of the cost of the work was paid for with federal funds. Over the next two years the county and districts worked with federal funding agencies to acquire the ability to utilize federal funds for the certification work. In September 2010, three of the districts were successful in receiving federal funds. The county is continuing to look for other federal funding sources for certification of the levees in the remaining three districts.

Likely Severity

Many factors influence the severity of riverine flooding such as the pre-existing condition of the ground (saturated from previous rain, covered with snow, or frozen), the topography and size of the watershed, freezing level, and the influence of human activity on the landscape (development and logging practices).

Cowlitz County has three levels of flood severity:

1. Minor Flooding: A river exceeds bank-full conditions at one or more locations, generally flooding fields and forests. Some roads may be covered but passable. There may be enhanced erosion of some riverbanks.
2. Moderate Flooding: Individual residential structures are threatened, and evacuation is recommended for selected properties. Some roads may be closed. Moderate damage may be experienced.



3. Major Flooding: Neighborhoods and communities are threatened, and evacuation is recommended for residents living on specified streets, in specified communities or neighborhoods, or along specified stretches of river. Major thoroughfares may be closed and major damage is expected.

Impacts

River floods kill people in the United States every year. People caught unprepared and isolated by swift moving or flash flood waters can die from drowning, hypothermia, or trauma. The February 1996 flood caused nine deaths in the Pacific Northwest. Fortunately, advances in weather forecasting technology and hydrologic modeling are producing more accurate flood forecasts that can serve to provide communities with advance warnings. Radio broadcasts, television, and other tools can provide residents of flood prone properties critical information to take necessary precautions to safeguard some belongings and evacuate to safer ground.

Fast rising flood waters can also eliminate opportunity to provide for the safety of domestic animals. Floods kill livestock and pets causing both economic and emotional hardship. Carcasses can become a public health problem if not disposed of quickly and adequately.

Major and moderate flooding frequently inundates low lying roads around Cowlitz County resulting in area-wide transportation disruptions. Major state routes such as State Routes 411, 503, 504 and Interstate 5 have both closed multiple times due to floods. As flood waters recede, woody debris and other objects left behind can pose hazards to bridge structures and culverts. Electric, gas, water, and communication utilities are also subject to damage and disruption.

Groundwater Flooding

Groundwater flooding occurs whenever there is a high water table and persistent heavy rains. The situation is caused in areas where an upper, thin layer of permeable soils overlays an impermeable layer of hard pan. As the ground absorbs more and more rainwater, the groundwater table raises from beneath the ground surface which results in standing water in areas where the land surface is below the water table.

Modes of Groundwater Flooding in Cowlitz County

Two types of groundwater flooding trigger events have been identified by Cowlitz County using the County's own data, as well as historical data provided by the National Oceanic and Atmospheric Administration. These events are occurring in two scenarios. They are discussed in further detail below.

1. Short Duration Storms That Occur In Succession

These storms are characterized by a weather phenomenon locally called the "Pineapple Express". This is a pattern that draws tropical moisture from an area near Hawaii in the Pacific Ocean and conveys it directly to Western Washington and Oregon. These winter patterns, once established, tend to usher a wet winter pattern that usually results in warm temperatures and heavy rainfall for a period of up to a week at a time. These systems rapidly melt any snow that may have accumulated as well as produce rainfall that generally exceeds six inches in a 24-hour period. Normal high groundwater levels occur in mid to late March so if a large storm coincides with this normal peak in groundwater, the capacity of the system is exceeded, and groundwater flooding will likely occur in susceptible areas.

It should be noted that this storm pattern has been increasing in frequency over the past decade and it appears that the overall intensity of the events is also increasing based on the collected data. It should also be noted that these types of events are the driving factors of pronounced groundwater flooding.

2. Persistent Low-Intensity Precipitation Pattern

This type of weather pattern is less common; however, it produces similar flooding results as the short duration storms. It is characterized by weeks of low intensity rainfall in which there is some measurable rainfall every day for several weeks. These events gradually overwhelm the groundwater system by saturating the soil column. In most cases, this weather pattern causes more widespread flooding throughout the County, both in areas that routinely flood and in areas that are generally not susceptible to groundwater flooding.

National Flood Insurance Program

Repetitive Loss Properties

Communities that regulate new development in their floodplains are able to join the National Flood Insurance Program (NFIP). In return, the NFIP provides federally backed flood insurance for properties in participating communities.

The NFIP's Dwelling Form offers coverage for:

1. Building property up to \$250,000; and
2. Personal property (Contents), up to \$100,000. The NFIP encourages people to purchase both types of coverage.

Cowlitz County participates in the NFIP and enforces floodplain management through its Floodplain Management Ordinance codified in Cowlitz County Code (CCC) Chapter 16.25 and its Critical Areas Ordinance, CCC 19.15. One of its stated purposes of CCC 16.25 is "To fully implement floodplain management requirements of the Federal Emergency Management Agency to qualify existing and proposed homes and businesses for participation in the regular national flood insurance program." To that end, Cowlitz County's regulations include:

- 1) Identifying the Director of the Department of Building and Planning as the administrator of the Floodplain Management Ordinance.
- 2) Designating frequently flooded areas using the Flood Insurance Rate Maps (FIRM) and also areas identified by the director. The FIRM maps were adopted in 1980 and Cowlitz County is currently working with FEMA to update the maps. The scheduled DFIRM effective date is November 28, 2013.
- 3) Implementing the Washington State Flood Control Zone Permit Program pursuant to the requirements of RCW 86.16.080 and Chapter 508-60 WAC.
- 4) Guiding development to areas with lower risk of flood hazard and minimizing exposure to flood-related damage.
- 5) Determining whether proposed development activities are located in flood hazard areas.



- 6) Reviewing development proposals to ensure compliance with the requirements of applicable floodplain management regulations and building codes including regulating new construction in Special Flood Hazard Areas (SFHAs);
- 7) Requiring that new subdivisions and development proposals with more than 50 lots or larger than five acres include BFEs.
- 8) Issuing or denying permits for floodplain development.
- 9) Inspecting all development in flood hazard areas to ensure compliance.
- 10) Maintaining records of issued permits, elevation data, inspections, and enforcement actions and mapping and identifying Floodplains through the County GIS office.
- 11) Assisting in the preparation and revision of floodplain maps; and
- 12) Helping residents obtain information on flood hazards, floodplain map data, and compliant construction measures.

National Flood Insurance Program Participants				
Community	Number of Policies	Amount of Coverage	Total Losses	Floodplain Management Ordinance
Castle Rock	45	\$11,385,500	29	Chapter 15.24 FLOOD DAMAGE PREVENTION
Kalama	4	\$1,052,700	3	Chapter 14.16 Floodplain Management
Kelso	222	\$45,961,100	45	Chapter 18.12 FLOODPLAIN MANAGEMENT
Longview	380	\$99,145,900	39	Chapter 17.24 FLOOD DAMAGE PREVENTION
Woodland	428	\$89,144,200	69	Chapter 14.40 FLOOD DAMAGE PREVENTION
Cowlitz County, Unincorporated	785	\$187,933,700	225	Chapter 16.25 FLOODPLAIN MANAGEMENT
County Total	1,864	\$434,623,100	410	

The Federal Emergency Management Agency (FEMA) defines a repetitive loss property as, "... those [properties] for which two or more losses of at least \$1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978." A property is defined as a "severe repetitive loss property" when it meets one of these conditions:

1. Four or more separate flood claim payments have been made and each claim payment exceeds \$5,000; or
2. At least two flood claim payments have been made and the cumulative payments exceed the value of the property.

According to FEMA, Cowlitz County has 49 repetitive loss properties.

Repetitive Loss Properties by Jurisdiction							
	Jurisdiction	Single Family	Other Residential	Other Non-Residential	Business Non-Residential	Jurisdiction Location Total	Total Amount Paid
1	Castle Rock	16		1	2	19	\$1,951,000
2	Kalama	13		2		15	\$1,533,000
3	Kelso	14	3	3	1	21	\$2,254,000
4	Longview	4				4	\$247,000
5	Woodland	2				2	\$20,000
Totals		49	3	6	3	61	\$6,004,000

Flood Prone Property Purchases

After the 1980 eruption of Mount St. Helens many properties were purchased that lay in and adjacent to the floodplains of the Cowlitz and Toutle rivers. These properties were purchased by the State of Washington for dredge spoil disposal sites, by FEMA for buyout of insured properties and to reduce damage claims and by Cowlitz County to consolidate the state and FEMA purchased properties.

The approximately 100 properties that were purchased by the state and later deeded to the county, City of Castle Rock, and other public agencies are required to be held for public use and future dredge spoil disposal sites.

Approximately 20 properties were purchased with FEMA funds that are required to be held for flood control purposes and public use, with buildings limited to restrooms and other minor structures. Two properties were purchased by the county and are being held for public use and open space. These properties total about 650 acres.

Cowlitz County will continue to work on funding opportunities for the purchase of private property(s) located in the floodway and floodplain.

Delineation of Flood Hazard Area

The flood hazard area consists of those parcels in the county in 100- and 500-year floodplains. No new flood inundation data is available. Areas delineated on the map shown to be located within a floodplain may be protected by a levee system. FEMA data does not account for the existing levees and the protection from flooding for which they serve.

Issues Related to Critical Facilities

The following issues were identified in the draft *Disaster Mitigation for Government Buildings in Cowlitz County* report for a 500 Year flood that breaches the Kelso/Longview levee system:

- At the Hall of Justice building, the 911 center and DEM are flooded. The Sherriff's Office, Records, Parole, District Court, Superior Court, Training Center and Maintenance departments are without power and utilities and possibly off for weeks and/or months. The emergency generators are underwater and there is significant damage to the basement electrical infrastructure. All items currently stored in the basement are waterlogged.

- The jail is without electrical power and natural gas and utilities are down for weeks, if not months. The building is not habitable. The emergency generator is significantly damaged along with all primary electrical switch gear. Complete destruction of all security and telephone equipment and components in the security equipment vaults behind maintenance room may likely occur.
- The office of Public Defense is flooded and without electrical power and utilities for weeks. All paper files are wet and will mildew.
- The Juvenile jail is without electrical power, natural gas and other utilities for weeks, if not months. The emergency generator is significantly damaged, and the building is not habitable. The Juvenile jail will be without emergency power or heat until natural gas and electricity are restored.
- The Conference Center and Expo, Morgue and WSU are without electrical power and utilities for weeks, if not months. The Conference Center is not habitable until services can be restored.
- The Health and Human Service building is without power and utilities until primary service is restored.
- All computers and phones and 911 terminals are damaged beyond repair.
- All major highways into Longview/Kelso are not passable until the water recedes.
- All paper files located in the flood- affected buildings will be wet and will mildew.

Cowlitz County Critical Facilities in Relation to Potential Flood Hazard Areas				
Building	FEMA FIRM Zone	Building Value (\$)	Content Value (\$)	Total Value (\$)
Central Shop	X	450,500	144,700	595,200
Conference Center	X	2,951,648	56,252	3,007,900
Coroner	X	15,471	8,045	23,516
Hall of Justice	X	37,630,200	6,127,800	43,758,000
Health Dept/Human Services	X	1,495,068	242,081	1,737,149
Industrial Way Pump Station	X	208,000	0	208,000
Jail	X	15,256,100	1,413,800	16,669,900
Juvenile Center	X	10,038,000	703,900	10,741,900
Maintenance Main Shop	X	342,499	53,575	396,074
Motor Pool	X	448,200	196,000	644,200
Office of Public Defense	X	553,311	0	553,311
Zone X = 500 year flood				
Zone AE = 100 year flood with base flood elevation determined				

Cost-Benefit of Initiatives		
Action	Benefit	Cost
At the Hall of Justice, relocate all primary electrical switch gear, emergency generators and primary HVAC equipment housed below the floodplain to a mezzanine below the north end of the old jail.	Building can remain fully operational.	\$3,437,000
At the Hall of Justice relocate 911 communications, DEM, Sheriff evidence, District & Superior Court documents storage currently in the basement (floodplain) to a remodeled 3 rd floor at the Hall of Justice.	911- Communications, Department of Emergency Management remain fully operational, Sheriff evidence, District and Superior Court Records are secure.	\$1,083,000

Cost-Benefit of Initiatives		
Action	Benefit	Cost
At the Jail Annex, relocate all electrical switch gear, security equipment and generator to the roof level.	Even though the jail would flood, it could be operational in 3-6 months instead of a year or more.	\$1,875,000
At the Juvenile Center, relocate all electrical switch gear, security equipment and generator to the roof level.	Even though the jail would flood, it could be operational in 3-6 months instead of a year or more.	\$1,875,000
At the Morgue, determine best location out of the floodplain and construct a new building.	Morgue remains fully operational during disaster.	\$1,600,000
At the Maintenance Shop, determine best location out of the floodplain and construct a new building.	Maintenance remains fully functional during disaster.	\$496,000
At Health and Human Services, relocate all electrical switch gear and install a generator to the roof level.	Even though the building would flood, it could be operational in 3-6 months instead of a year or more.	\$1,680,000
At the Administration and Administration Annex Buildings, install an emergency generator to power both buildings.	The Staff from the Health & Human Service, Jail, and Juvenile will house in these two buildings, until their buildings are restored.	\$200,000
Hire an Engineering firm to conduct an analysis of the options to prevent loss of County Government functioning during a 500 year flood event.	Utilize existing historical data, previous facility survey and seismic study to propose the best low cost solution.	\$100,000
Add river gauges to Coweeman and Lewis County Rivers.	Additional means of warning for potential flooding event.	\$25,000
Design and improve a State Highway 4 detour route.	Alternative emergency evacuation route.	Unknown

*Please note the draft *Disaster Mitigation for Government Buildings in Cowlitz County* report evaluates potential impacts of natural hazard events on *all* county owned buildings. This planning effort attempts to evaluate potential impacts of *critical* facilities. Because of the different objectives of the two studies the total amounts will be different. Staff suggests the critical facilities totals be identified separately when the draft report is finalized.

Potential Vulnerability of County Facilities During a 500 Year Flood Event			
Vulnerability	Before the Actions are Implemented	After the Actions are Implemented	Difference
Number of people affected by the hazard	418	183	235
Area affected sq feet by the hazard	301,800	133,000	168,000
Property damage amount (\$)	\$17,000,000	\$6,000,000	\$11,000,000
Loss of use (number of properties lost in number of days)	2,555-days	1,806-days	1,469-days
Loss of life (number of people)	Variable depending on intensity	Variable depending on intensity	Variable depending on intensity
Injury (number of people)	Variable depending on intensity	Variable depending on intensity	Variable depending on intensity

Summary Assessment

The history of major flooding within Cowlitz County clearly demonstrates a high probability of future occurrence. The December 2006 and January 2009 floods suggest that the region remains vulnerable to floods. Several flood events have occurred on Cowlitz County rivers which have exceeded the 100 year flood event. Because of the relative land area and population affected, the county is exposed to a major flood every 4 years, based on the history of the last 41 years (1968 to 2009). Overall, this data clearly indicates that the probability of occurrence of major flood events in the region is high. Therefore, flooding in our region is assigned an overall high risk ranking.

Landslide

Definition

The movement of a mass of rock, debris, or earth down a slope by force of gravity is considered a landslide. Landslides occur when the slope or soil stability changes from stable to unstable, which may be caused by earthquakes, storms, volcanic eruptions, erosion, fire, or additional human-induced activities. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high. Potential impacts include environmental disturbance, property and infrastructure damage, and injuries or fatalities.



More Information

<https://www.ready.gov/landslides-debris-flow>

Regional Context

The views of local rivers, Mount St. Helens, and the Cascade Mountains attract people to build their homes on the hillsides of Cowlitz County to capture the Pacific Northwest through living room windows. Living on a sloping shoreline or a hillside does present risks. The landscape of western Washington provides ample evidence that the surface of the earth is indeed constantly being rearranged by geomorphic and climatic processes. The forces of nature that create the beauty also pose hazards to people and communities when homes, utilities, and roads fall victim to the effects of natural hazards such as landslides.

Impacts

The impacts of landslide hazards in Cowlitz County are numerous. Landslides can injure or kill people caught in the path of rapid moving earth. No deaths have occurred from a landslide in Cowlitz County. In January 1997 a family of four on Bainbridge Island was buried and killed by 2,000 cubic feet of earth. The fast moving landslide slammed into the back of their home in the early morning hours while the family was still in bed. Past landslides highlight the fact that many homeowners lack insurance covering landslide hazards. Many Cowlitz County residents have lost their homes due to the damaging effects of landslides. Landslide damage can render the property unstable and permanently uninhabitable. Rebuilding onsite is often not an option, so the financial loss for some homeowners is immense. People can suffer great emotional stress and anguish from losing both their home and their property. Small business owners also face similar financial losses and stress.

Probability of Occurrence

A review of local newspaper media, internet sources, Department of Natural Resources landslide data, and Federal Disaster Declarations for Cowlitz County suggest that the incidences of landslides are concurrent with winter storms, flooding, and earthquakes. The majority of landslides in the region are triggered by heavy precipitation in the winter months. The 1998 Aldercrest-Banyon Landslide represents a large scale, but infrequent event for the region. Many smaller landslides regularly block roads with debris or washout transportation facilities and rupture utility pipes. Landslides are a continued concern for Cowlitz County residents, due to the vast majority of mountainous terrain and heavy rainfall. Therefore, landslides have a high probability of occurrence and are certain to reoccur within a 25 year period.

Summary Assessment

The history of landslides within Cowlitz County clearly demonstrates a moderate probability of future occurrence. Although the region is mountainous, our probability of occurrence is mitigated through the adoption of Critical Area's Ordinances (CAO). CAO adopted by the cities and county provide a mechanism for limiting development near steep slopes. Because of the relative land area and population affected, the county is exposed to a major landslide periodically, based on the history of the last 41 years (1968 to 2009). Overall, this data clearly indicates that the vulnerability of major landslide events in the region is low. The region's overall risk ranking of landslide remains moderate.

Wildfire

Definition

A wildfire is any outdoor fire that is not controlled, supervised, or arranged. Wildfire probability depends on local weather conditions; outdoor activities such as camping, debris burning, and construction; and the degree of public cooperation with fire prevention measures. Wildfires can result in widespread damage to property and loss of life.

More Information

<https://www.ready.gov/wildfires>



Regional Context

The region has been spared the destructive force of a major wildfire, but numerous wildfires occur annually throughout the entire region. Areas of human development interface with extensive forest lands, prairies, and other open space areas throughout the county. As the region's population grows and the potential for drought from warmer, drier, and longer lasting summers (due to the effects of climate change), the risk for hazardous wildfires is likely to increase. Under the right conditions, it is conceivable that a large wildfire could consume more forest, grasslands, homes, and other public and private owned assets within the Region than previously documented. Due to the high probability of occurrence, the number of urban interface communities that are moderately vulnerable, the overall wildfire risk rating for the region is moderate.

The documented record of wildfires in Cowlitz County suggests that approximately 97 percent of future fires will be five acres or less. The region can expect at least one fire exceeding 100 acres over the next 25 years. A warmer and drier future climate may create more suitable conditions for more frequent or larger fires.

Summary Assessment

The history of wildfires within Cowlitz County clearly demonstrates a low probability of future occurrence, due to the high amount of precipitation west of the Cascade Mountain Range. Because of the relatively large undeveloped land area and population affected, the county is exposed to minor wildfires periodically during dry summer months. Adoption of the International Building Code and International Fire Code by Cowlitz County helps to curtail wildfires from expansive damage by limiting the flammable materials on remote homes and property. This indicates that the vulnerability of major wildfire events in the region is moderate. The region's overall risk ranking of wildfires is moderate.

Volcano

Definition

A volcano is an opening in the Earth's crust that allows molten rock, gases, and debris to escape to the surface. Volcanic ash can travel 100's of miles and cause severe health problems. Volcanos can contaminate water supplies, damage machinery, and reduce visibility and create smog and harmful gases that threaten low-lying areas, make it hard to breathe, and irritate the skin, eyes, nose and throat.



More Information

<https://www.ready.gov/volcanoes>

Regional Context

There are five major Cascade volcanoes in Washington State: Mount Baker, Glacier Peak, Mount Rainier, Mount St. Helens, and Mount Adams. In the last 4,000 years, 11 Cascade volcanoes have erupted an estimated 100 times; a rate of two events per century.

Two of the most active and hazardous volcanoes in the United States, Mount Rainier, and Mount St. Helens, threaten Cowlitz County, as well as Mount Adams and Mount Hood. The proximity of these mountains to Cowlitz County communities increases the region's risk for disasters initiated from a volcanic event. The region has a low risk for ash fall, but a moderate risk for a large volcanic mudflow known as a lahar. The May 18, 1980 eruption of Mount St. Helens reminds Washington residents that dormant Cascade volcanoes can reawaken with destructive forces and severely impact surrounding communities causing loss of life. The 1980 eruption killed 57 people and caused damage that exceeded one billion dollars.

Mount Rainier or Mount St. Helens erupt, the direct devastation from these types of events would likely be limited to the area within the boundary of Mount Rainier National Park or the Mount St. Helens National Monument.

Mount St. Helens remains a potentially active and dangerous volcano, even though it is now (1995) quiescent. In the last 515 years, it is known to have produced four major explosive eruptions (each with at least 1 km of eruption deposits) and dozens of lesser eruptions. Two of the major eruptions were separated by only 2 years. One of those, in 1480 A.D., was about 5 times larger than the May 18, 1980 eruption, and even larger eruptions are known to have occurred during Mount St. Helens' brief but very

active 50,000 year lifetime. Following the most recent major eruption, on May 18, 1980, there were 5 smaller explosive eruptions over a period of 5 months. Thereafter, a series of 16 dome-building eruptions through October 1986 constructed the new, 270 m (880 ft) high, lava dome in the crater formed by the May 18, 1980 eruption. Volcanoes commonly repeat their past behavior. Thus, it is likely that the types, frequencies and magnitudes of past activity will be repeated in the future. Among the possibilities for renewed eruptive activity at Mount St. Helens are resumption of dome growth, eruption of basaltic or andesitic tephra and lava flows, or explosive eruptions of dacitic tephra and pyroclastic flows in volumes that could be as large as, or even larger than, the volume erupted in 1980. Lahars (sediment-rich floods in volcanic terrain) generated by snowmelt are likely to accompany any eruptive activity. Lahars may also be generated without an eruption by intense storm runoff over erodible sediment, landslides, or by failure of the Castle Lake impoundment as a consequence of an earthquake or heavy rains. Neither a large debris avalanche nor a major lateral blast like May 18, 1980, is likely now that a deep, open crater has formed.

Tephra Hazard

Tephra is the term for volcanic dust and rock fragments blasted into the air from an explosive volcanic eruption. It can produce a hazardous plume or column of debris that subsequently falls to the ground in the direction of prevailing winds. Tephra plumes can travel for hundreds of miles and deposit ash along its path. Airborne particle suspension diminishes as tephra columns increase in elevation and distance from the volcano. Both the thickness of the deposition and the size of the particles also decrease with increasing distance from the site of eruption. The following terms are used to describe the various sizes of tephra:

- Ash: dust particles less than 2mm diameter
- Lapilli: small rock fragments from 2mm to 64mm
- Blocks or Bombs: tephra greater than 64 mm

Severity

Mount St Helen's peak is within Skamania County, however a large portion of the mountain resides in Cowlitz County. With the right winds, the entire County could be blanketed with ash. The severity of the hazard would depend on the thickness of the ash deposition. The 1980 eruption of Mount St. Helens blew an ash column 15 miles into the atmosphere above the crater. Over the course of the day of the eruption, nearly 540 million tons of ash was blown by winds to the east. Fallout from the ash created complete darkness in Spokane, nearly 250 miles away; dropping one half inch of ash only a few hours after the start of the eruption.

Impacts

Ash fall of a quarter inch or more will reduce motorists' visibility and disrupt nearly every mode of transportation. Wet ash could create hazardous driving conditions and result in traffic injuries or fatalities. Aircraft is especially vulnerable as ash may disable engines and completely obscure pilots' visibility. Air transportation would be grounded in the affected area as long as conditions pose a hazard. Inhalation of ash particles could cause respiratory irritation and pose more serious problems for people with asthma or other respiratory diseases, but this could be mitigated by simply avoiding exposure. Ash can destroy agricultural crops, contaminate surface water sources, clog drainage and sewer systems, and inhibit or destroy mechanical systems such as outdoor heating, ventilation, and air conditioning systems. Ash fall of just a few inches in depth could exceed the load capacity of some building rooftops and lead to structural failure. Failure could occur with lower depths if ash absorbed subsequent precipitation. Wet ash has been known to cause power lines to short out. Clean up and recovery would likely be the greatest cost to both the public and private sector. The 1980 eruption of Mount St. Helens posed a major nuisance for communities in Eastern Washington. In Yakima, ash removal took ten weeks and cost \$2.2 million.

Lahar Hazard

United States Geological Service (USGS) defines a lahar as follows:

A lahar is a flowing mixture of water-saturated debris that moves downslope under the force of gravity. Debris flows consist of material varying in size from clay to blocks several tens of meters in maximum dimension. When moving, they resemble masses of wet concrete and tend to flow downslope along channels or stream valleys. Debris flows are formed when loose masses of unconsolidated wet debris become unstable. Water may be supplied by rainfall or by melting of snow or ice. Debris flows may be formed directly if lava or pyroclastic flows are erupted onto snow and ice. Debris flows may be either hot or cold, depending on their manner of origin and temperature of their constituent debris.

The scientific literature for Cascade lahars identifies several size and origin classifications. Lahars can be both large and small.

If a large lahar were to occur at Mount St. Helens within the next few decades, the mechanism most likely to be responsible would be rapid melting of snow and ice in the crater or a sudden outbreak of Castle Lake. Either mechanism would produce a lahar only in the North Fork Toutle River (and downstream). Rainfall is seldom intense enough to directly produce lahars in the Cascades, and the flows produced by this mechanism tend to be fairly small. Likewise, any landslides occurring on the flanks of Mount St. Helens are likely to be relatively small, especially now that the volcano's height has been lowered by the 1980 eruption.

Snow and Ice at Mount St. Helens

A large volume of snow and ice is presently accumulating in the Mount St. Helens crater, protected by the shade of the high, steep crater walls. This accumulation provides a growing potential water source for lahars in the North Fork Toutle River valley. It is already mixed with rock debris eroded from the crater walls and this debris would augment the formation of a lahar. It is possible that a large eruption could melt most or all of this snow and ice in a matter of tens of minutes. A very small eruption in 1982 rapidly melted enough snow and ice in the crater to trigger a 4 million m³ (5.2 million yd³) flood that transformed into a lahar and flowed all the way to the Cowlitz River.

Permanent and seasonal snow and ice also blanket the outer flanks of Mount St. Helens. A sufficient volume exists there in winter or spring to produce flank lahars similar in magnitude to those of May 18, 1980, if another large eruption were to occur. Lahars formed on the outer flanks can be expected to be substantially smaller than flows generated in the crater.

Impacts

A number of natural and human-made lakes exist close to the volcano in the North Fork Toutle and Lewis River valleys. The uppermost lake in the Lewis River valley, Swift Reservoir, receives drainage from the volcano via Swift Creek, Pine Creek, and Muddy River. In 1980, lahars descending these streams dumped about 14 million m³ (18 million yd³) of sediment and water into the lake, abruptly raising the lake level 0.85 m (2.8 ft). Because the operators of the reservoir, Pacific Power and Light, lowered the lake level about 18 m (23 ft) below normal in anticipation of possible lahars, the small lake-level rise and the 0.4 m (1.3 ft) accompanying wave posed no threat to the dam. It is assumed that (1) future lahars reaching Swift Reservoir would not be appreciably larger than those of May 18, 1980, and (2) dam operators would again take precautionary steps to lower lake level if Mount St. Helens were to show signs of imminent eruption. Therefore, Swift Reservoir and the downstream lakes (Yale Lake and Lake Merwin) are not considered to be at risk from lahars. Three natural lakes in the North Fork Toutle River, formed by natural debris dams

during the 1980 eruption, have required modifications to their outlets in order to prevent catastrophic outbreaks.

Effect of the SRS Sediment Dam on Downvalley Lahar Hazard

The U.S. Army Corps of Engineers constructed a sediment dam, called the Sediment Retention Structure (SRS), in the North Fork Toutle River to trap the large volumes of sediment washing down the river from the fresh volcanic deposits near Mount St. Helens. The SRS is located just upstream of the Green River confluence and was completed in 1989. The 56 m (184 ft) high dam has already lost more than half of its original freeboard due to infilling by sediment and is expected to be completely full (to the spillway crest) in the near future. The remaining capacity and the dam's ability to trap a lahar decrease every year. The reinforced spillway was designed to safely pass a flood discharge of 6,460 m³/s (228,000 cfs).

The numerical modeling by MacArthur and others, indicates that a range of lahar magnitudes is possible, depending on assumptions made about the level of Castle Lake, the mode of breaching of the debris dam, the amount of sediment picked up by the flood to form a lahar (bulking factor), and the level of sediment fill behind the SRS. Given that Castle Lake is now fixed at its "full" level, flow through the SRS spillway could vary from 1,350 m³/s (47,600 cfs) to 6,710 m³/s (237,000 cfs), depending on whether the reservoir was partly full of sediment (1990 existing condition) or completely full and depending on whether lahar volume increased 2.5, 3.3, or 4.5 times due to incorporation of eroded sediment. At the SRS-outflow discharge considered most likely by the Corps of Engineers (2,980 m³/s [105,200 cfs]), the lahar reaching the Cowlitz River would be equivalent to a 100-year flood. Such a lahar would be fully contained within the channel at both Kelso-Longview and Castle Rock. At the high end of the range, flooding would occur all along the Cowlitz River both downstream and slightly upstream of the Toutle River confluence. The modeled lahar chosen to define the Zone 3 hazard boundaries (bulking factor 3.3); SRS "full" would be contained within the channel at Kelso-Longview but not at Castle Rock nor in parts of the Toutle River valley between the SRS and the Cowlitz River.

Probability of Occurrence

Lahars are the effect of volcanic eruption. Since lahars are the result of volcanic eruptions, the probability of occurrence is the same for these two natural hazards. A large eruption of Mount St. Helens can be expected to inject tephra to altitudes of 20–30 km (12–20 mi) and to deposit tephra over an area of 100,000 km² (40,000 mi²) or more. Wind direction and velocity, along with the vigor and duration of the eruption, control the location, size, and shape of the area affected by tephra fall. Wind direction and velocity vary with both time and altitude, making it impossible to predict the velocity and direction of tephra transport more than a few hours in advance. Westerly winds prevail; thus, significant tephra accumulation from a single eruption is more likely east than west of Mount St. Helens. The calculated probability that ten or more centimeters (four or more inches) of tephra from a large eruption will fall as far as 60 km (40 mi) directly east of Mount St. Helens is 20%; the probability that such an eruption would deposit ten or more centimeters (four or more inches) 60 km (40 mi) directly west of Mount St. Helens is less, between 1% and 2%. Mount St. Helens has repeatedly produced voluminous tephra and has erupted much more frequently in recent geologic time than any other volcano in the Cascade Range. Thus, its influence dominates the annual-probability distribution in Washington and Oregon of ten or more centimeters (four or more inches) of tephra accumulation from eruptions throughout the Cascade Range.

Population in the Hazard Area

The Potential Lahar Hazard Area is defined as being within the river channel or floodway, which are areas not habitable for people. Those structures built in close proximity to a riverbank are potentially susceptible to a lahar event.

Critical Facilities and Infrastructure in Hazard Area

Cowlitz County Critical Facilities in Relation to Potential Lahar Hazard Areas			
Building	Building Value (\$)	Content Value (\$)	Total Value (\$)
Camelot Drive Reservoir	20,800	1,000	21,800
South Silver Lake Water Reservoir	520,000	0	520,000
Toutle Sewer Treatment Plant	182,400	475,000	657,400
Toutle Water Reservoir	1,040,000	0	1,040,000
Toutle River Well House	52,000	1,000	53,000

Summary Assessment

The eruption of Mount St. Helens was catastrophic for the region. While the majority of ash and debris landed east of the mountain, Cowlitz County suffered numerous damages. Economic tolls devastated the county's resource economy in timber losses. The county's waterways continue to be dredged of debris from the eruption, to this day. Since the eruption, our county has been defined by the event in May of 1980 and continues to rebuild from this disaster.

The Hazard Mitigation Plan for Cowlitz County aims to compare and contrast the vulnerability our region faces from multiple hazards. This means that storms are evaluated with volcanic eruptions. While storms occur much more frequently than eruptions, eruptions cause a plethora of damages compared to storms. Volcanic eruptions are devastating when they occur. However, they occur very rarely. Mount St. Helens continues to record volcanic activity. That said, Cowlitz County has been assigned a moderate probability of occurrence, yet its vulnerability is high. The overall risk ranking for volcanic activity in Cowlitz County is moderate, due to rarity of a major volcanic eruption.

CHAPTER 4: MITIGATION GOALS AND INITIATIVES

INTRODUCTION

This chapter describes the framework that comprises the region’s mitigation strategy. The mitigation strategy serves as the long-term blueprint for reducing potential losses that are described in the risk assessment. The mitigation strategy consists of goals, objectives, and prioritized mitigation initiatives.

The goals and objectives identify what the region’s hazard mitigation planning partners intend to achieve in order to reduce the impacts of natural hazards on people and property and reduce potential losses. The goals and objectives also guide the development of mitigation actions or initiatives. Mitigation initiatives are the action items in the Hazards Mitigation Plan for Cowlitz County. The term “mitigation initiative” refers to an action designed to reduce or eliminate losses resulting from natural hazards. Local governments formulate their mitigation strategies by proposing actions and identifying who will be responsible for implementing them; estimating costs and potential funding sources; projecting timeline for implementation; and selecting a process for monitoring and evaluating the outcomes. It is through the implementation of these initiatives that the communities within Cowlitz County can truly become more disaster resistant.

Although this chapter describes how mitigation initiatives were identified and prepared, it only includes a list of county wide mitigation initiatives that are common and beneficial to all of the region’s planning partners. Initiatives that are specific to each jurisdiction are located in their respective annex.

Federal hazard mitigation planning requirements specify that a plan must identify goals that reduce communities’ vulnerabilities to the hazards that are identified in the plan’s risk assessment.

GOALS AND OBJECTIVES

In 2003, the region’s hazard mitigation planning partners identified goals and objectives to guide hazard mitigation planning to the year 2025. Since the plan’s adoption, the region has made noteworthy progress towards accomplishing several objectives. Considerably more work is required, by individual jurisdictions and collectively as regional partners, to create more disaster resilient communities.

The original plan’s goals remain valid and are unchanged except for very minor modifications (the changes are documented at the end of the next section). Each goal statement has objectives that provide a more specific framework for actions to be taken by the planning partners. The goals and objectives in this plan also serve to build consistency in hazard mitigation planning efforts between the communities of Cowlitz County and the State of Washington.

COWLITZ COUNTY HAZARDS MITIGATION GOALS AND OBJECTIVES

The goals and objectives are adopted by all of the region’s hazards mitigation planning partners. The objectives define actions or results that can be placed into measurable terms and translated into specific assignments for implementation. Each objective fulfills an important role and is integral to the creation of more disaster resilient communities. The goals and objectives listed below are not prioritized in terms of

their significance or the order in which they will be fulfilled. Their numbers serve as a reference link between the mitigation initiatives and the goals and objectives they support.

The following are the goals and objectives for mitigating natural disasters in the Region:

1. All sectors of the community work together to create a disaster resistant community.
 - a. State, tribal and local governmental entities and community organizations choose to participate in the planning process.
 - b. Promote hazards mitigation planning between local government, the business community, and volunteer organizations.
 - c. Update the natural hazards mitigation plan on a regular basis, and as needed after a disaster event.
 - d. Develop a process to share “lessons learned” after each significant disaster event in the region.
 - e. Alert the community to the next update cycle of the natural hazard mitigation plan, and how they might become involved in that planning process.
2. Local and state government entities have the capabilities to develop, implement, and maintain effective natural hazards mitigation programs in the region.
 - a. Maintain existing data as well as gather new data and information needed to define hazards, risk areas, and vulnerabilities in the region.
 - b. Undertake an evaluation by 2015 (during the third plan development cycle) to determine the effectiveness of mitigation initiatives implemented in the region.
 - c. Ensure that employees in the region have the necessary technical skills for mitigation planning and programming.
3. Collectively the communities in the region have the capacity to initiate and sustain emergency operations during and after a disaster.
 - a. Ensure that local emergency services have the capability to detect emergency situations and promptly initiate emergency response operations.
 - b. Ensure that local emergency services facilities can withstand the impacts of disasters. Retrofit or relocate these facilities, as needed.
 - c. Ensure that utility and communications systems supporting emergency services operations can withstand the impacts of disasters. Retrofit or relocate these facilities, as needed.
 - d. Designate and modify evacuation routes before, during and after a disaster event.
 - e. Designate suitable evacuation shelters before, during and after a disaster event.
 - f. Ensure that structures for vehicles and equipment needed for emergency services operation can withstand disaster impacts. Retrofit or relocate these facilities, as needed.
 - g. Prioritize the reopening of vehicle access routes to evacuation shelters and key health care facilities after a disaster.
 - h. The County maintains a robust Type 3 Incident Management Team
4. Local government operations are not significantly disrupted by disasters from natural hazards.
 - a. Prepare community specific redevelopment plans to guide recovery after a disaster.
 - b. Protect important local government records from the impacts of disasters.
 - c. Retrofit or relocate buildings and facilities used for routine operations of government so they can withstand the impacts of disasters.
 - d. Have available (e.g. purchase and stockpile) redundant equipment, facilities, and supplies to reestablish local government operations after a disaster.

- e. Adopt a plan and identify resources for how local government operations will be reestablished after a disaster.
 - f. County and City departments have a maintain Continuity of Operations (COOP) and Continuity of Government (COG) Plans.
- 5. Reduce the vulnerability to natural hazards in order to protect the life, health, safety and welfare of the community's residents and visitors.
 - a. Provide the highest degree of natural hazards protection at the least cost by working with natural systems and using prevention as a first priority.
 - b. Ensure there are adequate systems in place to provide emergency instructions during a disaster.
 - c. Remove or relocate residential structures from 100 year floodplains and identified landslide hazard areas, as state or federal monies are available.
 - d. Elevate residential structures above the 100 year floodplain as state or federal monies are available, when removal or relocation is not feasible.
 - e. Rely upon a combination of state, or federal grants and locally generated funds (for the required match) to implement most mitigation initiatives.
- 6. Local governments will support natural hazards mitigation planning and implement the mitigation initiatives for their jurisdiction.
 - a. Integrate the mitigation initiatives from the natural hazards mitigation plan into local government's comprehensive plans, development regulations, and capital facilities plans (CFPs).
 - b. Adopt Critical Area Ordinance (CAO) regulations which prohibit the location of inappropriate land uses within areas of high risk and require mitigation measures when structures or facilities are allowed in areas of less risk.
 - c. Adopt and enforce the most recent version of the International Building Code (IBC) along with its chapters as a way to address landslide and earthquake hazards.
 - d. Adopt land use designations, comprehensive plan policies, and development regulations which minimize new development within high hazard areas.
 - e. Enroll in the Community Rating System (CRS) as a part of the National Flood Insurance Program.
 - f. Locate new facilities outside of areas vulnerable to the impacts of natural hazards. Where this is not feasible, design these facilities so they can withstand the impacts of a disaster.
 - g. Minimize the vulnerability of libraries, museums, and other institutions important to the daily lives of the community.
- 7. The local infrastructure of communities in the region is not significantly affected by a disaster from a natural hazard.
 - a. Design and retrofit essential transportation facilities and systems to minimize the potential for disruption during a disaster.
 - b. Design and retrofit essential water and sewer services to minimize the potential for disruption during a disaster.
 - c. Encourage private sector hazards mitigation planning for the design and retrofit of energy and telecommunication infrastructure to minimize the potential for disruption during a disaster.
 - d. Support key employers in the community to implement mitigation measures for their facilities and systems.

8. Residents understand the natural hazards of the region and are aware of ways to reduce their personal vulnerability to those hazards.
 - a. Develop and implement education programs which explain the vulnerabilities and risks of natural hazards in the region, and ways to reduce their personal vulnerability to those hazards.
 - b. Develop and implement education programs which explain the mitigation initiatives to be undertaken by various communities in the region.
 - c. Develop and implement education programs for appropriate local government employees that explain the mitigation initiatives to be undertaken in the region.
 - d. The County Department of Emergency Management has developed and maintains and excellent outreach/public education program.

REVISIONS TO GOALS AND OBJECTIVES

The goals and objectives were reviewed by both the Hazards Mitigation Plan Workgroup and the Emergency Management Council. Despite the issuance of six Federal Disaster Declarations since the first plan's adoption, the region's planning partners consented that the region's goals and objectives remain valid. Only three changes were made:

1. Objective 2B was changed from "Undertake an evaluation by 2008 (during the second planned update cycle) ..." to "Undertake an evaluation by 2015 (during the third plan development cycle) ..."
2. For goal number 5, the word "life" was added to emphasize the scope of protection.
3. Objective 6C was changed from "Uniform Building Code" to "International Building Code."

PROGRESS TOWARDS GOALS AND OBJECTIVES

The region's planning partners have made steady progress towards fulfilling this plan's goals and objectives. Although the original plan set a goal fulfillment date of the year 2025, most of the plan objectives will require continuous effort and must be maintained in perpetuity to protect life and property throughout the county. The progress made on goals 1 and 2 in the last five years can be successfully measured in the contents of this plan update. However, hazards mitigation planning is a process that requires multiple stakeholders to continuously monitor, evaluate, and revise the plan as appropriate. Planning partnerships must be maintained and communities must continue to invest in their capabilities to perform successful hazards mitigation planning.

The successful outcome of many of the plan objectives will be measured by progress made in the locally adopted mitigation initiatives. Some will take considerable time and resources to complete, but evidence of progress is apparent for several jurisdictions in fulfilling the region's objectives. The following accomplishments have made communities in Cowlitz County more disaster resilient:

- Cowlitz County continues to improve its capabilities to develop, implement, and maintain effective natural hazards mitigation programs in the region. It has played a lead role in the update to the Hazards Mitigation Plan for Cowlitz County and it continues to be actively involved in flood mitigation activities. These efforts fully support all of the objectives of Goals 1 and 2.

IDENTIFICATION AND PREPARATION OF MITIGATION INITIATIVES

Identification

The process to identify mitigation initiatives for the original plan and this plan update were prepared in a similar manner. Each participating jurisdiction represented their entity and was responsible for gathering and coordinating the following information required for their initiatives.

- The original mitigation initiatives from the last plan
- The updated Regional Risk Assessment
- Jurisdiction-specific hazard maps for each of the profiled hazards that affect their jurisdiction where held
- Hazard exposure tables including jurisdiction-specific critical infrastructure and public owned assets
- Benefit cost review worksheets and instructions
- Local mitigation initiative template with instructions
- FEMA State and Local Mitigation Planning How to Guide Series 386-1 to 386-8
- FEMA "Mitigation Ideas"

The process for evaluating vulnerabilities and identifying a range of alternative mitigation actions to reduce actual and potential hazard exposures varied among jurisdictions depending upon their capabilities and resources. In general, workgroup members collaborated with staff and/or committees within their jurisdictions that were most familiar with their infrastructural systems, facilities, assets, services, or the geographic area being addressed. Local planning partners referenced a variety of materials such as their risk assessment, comprehensive plans, strategic plans, emergency management plans, capital facility plans, after action review debriefings, and other planning documents.

The planning partners' identification processes considered existing initiatives from the original hazard mitigation plan, new and original initiatives identified in this plan update process, and initiatives that have already been identified or documented in a different planning process such as a stormwater utility capital facilities plan.

Benefit Cost Review

FEMA requires local governments to analyze the benefits and costs of range of mitigation actions that can reduce the effects of each hazard within their community. A hazard mitigation plan must demonstrate that a process was employed that emphasized a review of benefits and costs when prioritizing the mitigation actions. The benefit-cost review must be comprehensive to the extent that it can evaluate the monetary as well as the non-monetary benefits and costs associated with each action. The benefit-cost review should at least consider the following questions:

- How many people will benefit from the action?
- How large an area is impacted?
- How critical are the facilities that benefit from the action (which is more beneficial to protect, the fire station or the administrative building)?
- Environmentally, does it make sense to do this project for the overall community?

The severity of hazards and their impacts vary among the region's jurisdictions due to their geography, but more so because of the varying range of resources and services that they are responsible for providing their customers. For example, the mission of a rural fire district varies greatly from that of a general purpose municipality. As such, their range of mitigation actions for the same hazard will differ substantially. Each plan partner has to consider their jurisdiction's exposure, their capabilities, their resources, and select an appropriate process to evaluate the benefits and costs of various mitigation actions.

Catalogs of Mitigation Alternatives

Based on information garnered by staff, catalogs of mitigation alternatives were created that list initiatives that could manipulate the hazard, reduce exposure to the hazard, reduce vulnerability to the hazard, and increase the ability to respond to or be prepared for a hazard. These catalogs are separated by responsibility for implementation (in other words, who would most likely implement the initiative: personal property owners, private sector business, or government). The hazards addressed by the catalogs were deemed to be those to which the planning area is most vulnerable based on the risk assessment.

The catalogs are not meant to be exhaustive or site-specific but rather to inspire thought and provide each participating jurisdiction a baseline of initiatives backed by a planning process, consistent with the goals and objectives of the planning area, and within the capabilities of the Partners. The Partners are not bound to these alternatives in preparing their own Jurisdiction Chapters for this hazard plan. Initiatives from the catalogs that were not selected by the Partners in their jurisdictional Jurisdiction Chapters were rejected based on the following:

- Initiative is currently outside the scope of capabilities (funding),
- The jurisdiction is not vulnerable to the hazard, or
- Initiative is already being implemented.

Catalog of Risk Reduction Measures - Earthquake			
	Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard	None	None	None
Reduce Exposure	Locate outside of hazard area (off soft soils)	Locate or relocate mission-critical functions outside hazard area where possible	Locate critical facilities or functions outside hazard area where possible
Reduce Vulnerability	1. Retrofit structure (anchor house structure to foundation)	1. Build redundancy for critical functions and facilities 2. Retrofit critical buildings and areas	1. Harden infrastructure 2. Provide redundancy for critical functions 3. Higher regulatory standards

Catalog of Risk Reduction Measures - Earthquake			
	Personal Scale	Corporate Scale	Government Scale
	2. Secure household items that can cause injury or damage (such as water heaters, bookcases, and other appliances) 3. Build to higher design	housing mission-critical functions	4. Adopt the International Building Code.
Increase Capability	1. Practice “drop, cover, and hold” 2. Develop household mitigation plan, such as creating a retrofit savings account, communication capability with outside, 72-hour self-sufficiency during an event 3. Increase capability by having cash reserves for reconstruction 4. Become informed on the hazard and risk reduction alternatives available. 5. Develop a post-disaster action plan for your household	1. Adopt higher standard for new construction; consider “performance-based design” when building new structures 2. Increase capability by having cash reserves for reconstruction 3. Inform your employees on the possible impacts of earthquake and how to deal with them at your work facility. 4. Develop a COOP	1. Provide better hazard maps 2. Provide technical information and guidance 3. Enact tools to help manage development in hazard areas (e.g., tax incentives, information) 4. Include retrofitting and replacement of critical system elements in capital improvement plan (CIP) 5. Develop strategy to take advantage of post disaster opportunities 6. Warehouse critical infrastructure components such as pipe, power line, and road repair materials 7. Develop and adopt a Continuity of Operations Plan (COOP) 8. Initiate triggers guiding improvements (such as < 50% substantial damage or improvements) 9. Further enhance seismic risk assessment to target high hazard buildings for mitigation opportunities. 10. Develop a post disaster action plan that includes a grant funding and debris removal components.

Catalog of Risk Reduction Measures – Severe Weather			
	Personal Scale	Corporate Scale	Government Scale

Catalog of Risk Reduction Measures – Severe Weather			
Manipulate Hazard	None	None	None
Reduce Exposure	None	None	None
Reduce Vulnerability	1. Insulate house 2. Provide redundant heat and power 3. Insulate structure 4. Plant appropriate trees near home and power lines (“Right tree, right place” National Arbor Day Foundation Program)	1. Relocate critical infrastructure (such as power lines) underground 2. Reinforce or relocate critical infrastructure such as power lines to meet performance expectations 3. Install tree wire	1. Harden infrastructure such as locating utilities underground 2. Trim trees back from power lines 3. Designate snow routes and strengthen critical road sections and bridges
Increase Capability	1. Trim or remove trees that could affect power lines 2. Promote 72-hour self-sufficiency 3. Obtain a NOAA weather radio. 4. Obtain an emergency generator.	1. Trim or remove trees that could affect power lines 2. Create redundancy 3. Equip your facilities with a NOAA weather radio 4. Equip vital facilities with emergency power sources.	1. Support programs such as “Tree Watch” that proactively manage problem areas through use of selective removal of hazardous trees, tree replacement, etc. 2. Establish and enforce building codes that require all roofs to withstand snow loads 3. Increase communication alternatives 4. Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors. 5. Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines 6. Provide NOAA weather radios to the public

Catalog of Risk Reduction Measures - Flood			
	Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard	1. Clear stormwater	1. Clear stormwater	1. Drainage system maintenance 2. Institute low-impact development techniques on property

Catalog of Risk Reduction Measures - Flood			
	Personal Scale	Corporate Scale	Government Scale
	drains and culverts 2. Institute low-impact development techniques on property	drains and culverts 2. Institute low-impact development techniques on property	3. Dredging, levee certification, and providing regional retention areas 4. Structural flood control, levees, channelization, or revetments. 5. Stormwater management regulations and master planning 6. Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff
Reduce Exposure	1. Locate outside of hazard area 2. Elevate utilities above base flood elevation (BFE) 3. Institute low-impact development techniques on property	1. Locate business critical facilities or functions outside hazard area 2. Institute low-impact development techniques on property	1. Locate or relocate critical facilities outside of hazard area 2. Acquire or relocate identified repetitive loss properties 3. Promote open space uses in identified high hazard areas via techniques such as: easements, setbacks, greenways, sensitive area tracks. 4. Adopt land development criteria, density transfers, clustering 5. Institute low-impact development techniques on property 6. Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff
Reduce Vulnerability	1. Retrofit structures (elevate structures above BFE) 2. Elevate items within house above BFE 3. Build new homes above BFE 4. Flood-proof existing structures	1. Build redundancy for critical functions or retrofit critical buildings 2. Provide floodproofing measures when new critical infrastructure must be located in floodplains	1. Harden infrastructure, (bridge replacement program) 2. Provide redundancy for critical functions and infrastructure 3. Adopt appropriate regulatory standards, such as: increased freeboard standards, cumulative substantial improvement or damage, lower substantial damage threshold; compensatory storage, non-conversion deed restrictions. 4. Stormwater management regulations and master planning. 5. Adopt "no-adverse impact" floodplain management policies that strive to not increase the flood risk on down-stream communities.

Catalog of Risk Reduction Measures - Flood			
	Personal Scale	Corporate Scale	Government Scale
Increase Capability	1. Enforce National Flood Insurance Program (NFIP) 2. Buy flood Insurance 3. Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72 hr self-sufficiency during and after an event	1. Increase capability by having cash reserves for reconstruction 2. Support and implement hazard disclosure for the sale/re-sale of property in identified risk zones. 3. Solicit 'cost sharing" through partnerships with private sector stake holders on projects with multiple benefits.	1. Produce better hazard maps 2. Provide technical information and guidance 3. Enact tools to help manage development in hazard areas (stronger controls, tax incentives, and information) 4. Incorporate retrofitting or replacement of critical system elements in CIP 5. Develop strategy to take advantage of post-disaster opportunities 6. Warehouse critical infrastructure components 7. Develop and adopt a COOP 8. Participate in the Community Rating System (CRS) Classification 9. Maintain existing data as well as gather new data needed to define risks and vulnerability 10. Train emergency responders 11. Create a building and elevation inventory of structures in the floodplain 12. Develop and implement a public information strategy 13. Charge a hazard mitigation fee 14. Integrate floodplain management policies into other planning mechanisms within the planning area.

Catalog of Risk Reduction Measures-Landslide			
	Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard	1. Stabilize slope (dewater, armor toe). 2. Reduce weight on top of slope. 3. Minimize vegetation removal	1. Stabilize slope (dewater, armor toe). 2. Reduce weight on top of slope.	1. Stabilize slope (dewater, armor toe). 2. Reduce weight on top of slope.

Catalog of Risk Reduction Measures-Landslide			
	Personal Scale	Corporate Scale	Government Scale
	and the addition of impervious surfaces.		
Reduce Exposure	Locate structures outside of hazard area (off unstable land and away from slide-run out area).	Locate structures outside of hazard area (off unstable land and away from slide-run out area).	1. Acquire properties located in high risk landslide areas. 2. Adopt land use policies that prohibit the placement of habitable structures in high risk landslide areas.
Reduce Vulnerability	Retrofit home.	Retrofit at-risk facilities.	1. Adopt higher regulatory standards for new development within unstable slope areas. 2. Armor/retrofit critical infrastructure from the impact of landslides.
Increase Capability	1. Institute warning system and develop evacuation plan. 2. Increase capability by having cash reserves for reconstruction. 3. Educate yourself on risk reduction techniques for landslide hazards.	1. Institute warning system and develop evacuation plan. 2. Increase capability by having cash reserves for reconstruction. 3. Develop a COOP. 4. Educate your employees on the potential exposure to landslide hazards and your emergency response protocol.	1. Produce better hazard maps. 2. Provide technical information and guidance. 3. Enact tools to help manage development in hazard areas: better land controls, tax incentives, information. 4. Develop strategy to take advantage of post disaster opportunities. 5. Warehouse critical infrastructure components. 6. Develop and adopt a Continuity of Operations Plan (COOP). 7. Educate the public on the landslide hazard and appropriate risk reduction alternatives. 8. Obtain and maintain numerical hydrological models are to better inform land use decisions and enhance understanding of timing, frequency, duration, and location of flood events

Catalog of Risk Reduction Measures-Wildfire			
	Personal Scale	Corporate Scale	Government Scale
Manipulate Hazard	Clear potential fuels on property such as dry overgrown underbrush and diseased trees.	Clear potential fuels on property such as dry underbrush and diseased trees	1. Clear potential fuels on property such as dry underbrush and diseased trees. 2. Implement best management practices on public lands.
Reduce Exposure	1. Create and maintain defensible space around structures. 2. Locate outside of hazard area. 3. Mow regularly	1. Create and maintain defensible space around structures and infrastructure. 2. Locate outside of hazard area	1. Create and maintain defensible space around structures and infrastructure. 2. Locate outside of hazard area. 3. Enhance building code to include use of fire resistant materials in high hazard area.
Reduce Vulnerability	1. Create and maintain defensible space around structures and provide water on site. 2. Use fire-retardant building materials. 3. Create defensible spaces around home.	1. Create and maintain defensible space around structures and infrastructure and provide water on site. 2. Use fire-retardant building materials	1. Create and maintain defensible space around structures and infrastructure. 2. Use fire-retardant building materials. 3. Consider higher regulatory standards (such as class A roofing). 4. Biomass Reclamation initiatives
Increase Capability	1. Employ Firewise techniques to safeguard home. 2. Identify alternative water supplies for firefighting. 3. Install/replace roofing material with noncombustible roofing materials.	1. Support Firewise community initiatives. 2. Create /establish stored water supplies to be utilized for firefighting.	1. More public outreach and education efforts, including an active Firewise program. 2. Possible weapons of mass destruction funds available to enhance fire capability in high-risk areas. 3. Identify fire response and alternative evacuation routes. 4. Seek alternative water supplies. 5. Become a Firewise community. 6. Utilize academia to study impacts/solutions to wildfire risk. 7. Establish/maintain mutual aid agreements between Fire Service Agencies.

Catalog of Risk Reduction Measures-Wildfire			
	Personal Scale	Corporate Scale	Government Scale
8. Create/implement fire plans			

OPERATIONAL AREA-WIDE ACTION PLAN PRIORITIZATION

The priority of each operational area-wide initiative, using the same parameters used by each of the participating jurisdictions in selecting their initiatives has been identified below. A qualitative benefit-cost review was performed for each of these initiatives. The priorities are defined as follows:

- **High Priority**—A project that meets multiple objectives (i.e., multiple hazards), has benefits that exceed cost, has funding secured or is an ongoing project and meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM). High priority projects can be completed in the short term (1 to 5 years).
- **Medium Priority**—A project that meets goals and objectives, that has benefits that exceed costs, and for which funding has not been secured but project is grant eligible under HMGP, PDM or other grant programs. Project can be completed in the short term once funding is secured. Medium priority projects will become high priority projects once funding is secured.
- **Low Priority**—A project that will mitigate the risk of a hazard, that has benefits that do not exceed the costs or are difficult to quantify, for which funding has not been secured, that is not eligible for HMGP or PDM grant funding, and for which the time line for completion is long term (1 to 10 years). Low priority projects may be eligible for other sources of grant funding from other programs.

POTENTIAL FUNDING SOURCES FOR COMPLETING INITIATIVES

Funding for many of the initiatives is contingent upon the ability to procure funds. Included are potential funding sources for completing the initiatives, denoted per the list item enumeration below. Many of the funding sources are competitive processes that are only available after a major disaster declaration and so the funding availability is uncertain. This list is not meant to be exhaustive but is indicative of how programs will be identified to help fund initiatives.

1. The **Hazard Mitigation Grant Program (HMGP)** provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.
2. **Flood Mitigation Assistance Program (FMA)** program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). The Federal Emergency Management Agency (FEMA) provides FMA funds to assist States and

communities implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program.

3. **Economic Development Administration (EDA) National Disaster Recovery Framework (NDRF)** EDA's role in disaster recovery is to facilitate delivery of Federal economic development assistance to local governments for long-term community economic recovery planning, reconstruction, redevelopment and resiliency. Following a disaster, EDA responds by first coordinating with its sister bureaus and other agencies engaged in disaster recovery efforts to share information and data on the ramifications of the disaster. In addition, EDA reaches out to its economic development practitioner network (particularly its network of Economic Development Districts (EDD) District Organizations) to collect on-the-ground information on the economic impacts of the disaster event.
4. **US Dept. of Agriculture (USDA) Community Facilities Loans and Grants Programs** provide loans, grants and loan guarantees for essential community facilities in rural areas. Priority is given to health care, education and public safety projects. Typical projects are hospitals, health clinics, schools, fire houses, community centers and many other community based initiatives.
5. **Nonprofit Grant Fund Opportunities (NPO)** such as the Lower Columbia Fish Recovery Board's **Salmon Recovery Funding Board (SRFB)** provide funds for salmon protection and restoration that may also minimize potential impact of flooding.
6. **Local Capital Facilities Funds** It is assumed that a combination of local capital facilities funds and in-kind contributions, determined on a case by case basis, will be leveraged when grant funds require a match.

Operational Area-Wide Mitigation Initiatives/Action Plan				
Mitigation Initiative	Hazards Initiative Addresses	Possible Funding Sources or Resources	Objectives	Responsible Department
Cowlitz County Initiatives				
CC1. Generator at the Administration and Annex Building. Complete infrastructure work to allow for backup EOC and 9-1-1 in the General Meeting Room.	All	1,2,3,4,6	3B, 3C, 4C	DEM & Maintenance
CC2. Add river gauges to the Coweeman and Kalama Rivers.	Flooding	1,2,5,6	2A, 3A, 3C, 5A, 7B	DEM & Public Works
CC3. Improve a State Hwy #4 detour route.	All	1,2,3,4,6	3D, 7A	DEM & Public Works

Operational Area-Wide Mitigation Initiatives/Action Plan				
Mitigation Initiative	Hazards Initiative Addresses	Possible Funding Sources or Resources	Objectives	Responsible Department
CC4. Conduct an engineering analysis to investigate hazard mitigation options identified in the list for the most efficient design and efficient use of taxpayer dollars.	All	1,3,6	1B, 1C, 1D, 4E, 5A, 5B	DEM, Maintenance & Public Works
CC5. Relocate 9-1-1 communications, DEM, Sheriff evidence, District & Superior Court document storage to the 3 rd floor of the Hall of Justice.	All	1,2,3,4,6	3B, 3C,4C	DEM & Maintenance
CC6. Relocate Morgue above the floodplain.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance
CC7. Relocate Maintenance Shop above the floodplain.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance
CC8. At the Hall of Justice relocate the primary electrical switch gear, generators and primary HVAC equipment above the floodplain by building a mezzanine below the north end of the 3 rd floor.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance
CC9. At the Jail Annex, relocate electrical switch gear, security equipment and emergency generator above the floodplain.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance
CC10. At the Juvenile Center relocate electrical switch gear, security equipment and emergency generator above floodplain.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance

Operational Area-Wide Mitigation Initiatives/Action Plan				
Mitigation Initiative	Hazards Initiative Addresses	Possible Funding Sources or Resources	Objectives	Responsible Department
CC11. At Health Department relocate electrical switch gear and install an emergency generator above floodplain.	Flooding, Severe Winter Storm	1,2,3,4,6	4C, 6G	Maintenance

Explanation of Benefits

- High: Project will have an immediate impact on the reduction of risk exposure to life and property.
- Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- Low: Long term benefits of the project are difficult to quantify in the short term.

Explanation of Costs

- High: Would require an increase in revenue via an alternative source (i.e. bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
- Medium: Could budget for under existing work-plan but would require a reapportionment of the budget or a budget amendment, or the costs of the project would have to be spread over multiple years.
- Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

Explanation of Priorities

- High Priority: A project that meets multiple plan objectives, benefits exceeds cost, has funding secured under existing programs or authorizations, or is grant eligible, and can be completed in 1 to 5 years (i.e., short term project) once project is funded.
- Medium Priority: A project that meets at least 1 plan objective, benefits exceeds cost, funding has not been secured and would require a special funding authorization under existing programs, grant eligibility is questionable, and can be completed in 1 to 5 years once project is funded.
- Low Priority: Any project that will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and timeline for completion is considered long term (5 to 10 years).

CHAPTER 8: CITY OF LONGVIEW

HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Ken Hash P.O. Box 128 Longview, WA 98632 360.442.5202 Ken.hash@ci.longview.wa.us	Jim Kambeitz P.O. Box 128 Longview, WA 98632 360.442.5501 Jim.kambeitz@ci.longview.wa.us

JURISDICTION PROFILE

- The City of Longview was founded in 1923 along the banks of the Cowlitz and Columbia Rivers.
- Longview was incorporated in 1924 and a municipal government was established. Longview is located one mile West of Interstate 5, at the confluence of the Cowlitz and Columbia Rivers. Longview is approximately 49 miles north of Portland, 126 miles south of Seattle, and 60 miles east of the Pacific Ocean. Longview is the largest city in Cowlitz County, with a population of approximately 36,100 people residing in 15,152 households, and covering an area of 14.6 square miles.
- The City of Longview is a First Class Code City, operating under the Council/Manager form of government. The City Council meets twice a month and is made up of seven members elected to staggered four-year terms. The city council is responsible for adoption of this plan, while the city manager is responsible for implementation of the plan and the daily operations of the City and its 286 full-time employees and a variety of part-time employees making up another 17 full-time equivalent employees.
- The City provides general governmental services such as police, fire, streets, traffic signals, street lighting, stormwater management, library, prosecution, parks and recreation, community development and building inspections, engineering for public facilities, and various support functions. The City also provides water and sewer services for its residents and businesses and for customers in the urbanized unincorporated area adjacent to the city, providing water service to 12,422 customers inside the city and 1,528 customers outside the city; and providing sewer service to 12,112 customers inside the city and 714 customers outside the city. The City's water service area covers 28.4 square miles and the sewer service area covers 18.9 square miles.
- The City's general governmental services are funded primarily by property taxes, business and occupation taxes, and sales taxes, with other revenue coming from permit and user fees, grants, other taxes, and fines. Utility user fees fund the City's water, sewer, and storm water utilities. In 2010, the total assessed value of property within Longview as determined by the Cowlitz County Assessor was \$2,736,916,514.
- The City of Longview owns approximately 674 acres of land (not including public rights of way). These parcels include numerous operations buildings; parks; water and sewer treatment plants; water, sewer, and stormwater pump stations; water reservoirs; and other land and facilities. All City facilities are located in a natural hazard risk zone.
- As part of its water utility system, the City has partnered with the Beacon Hill Water and Sewer District (BHWSD) to own and operate the Regional Water Treatment Plant on the Cowlitz River. Longview is the lead agency for all operations and capital improvements at the treatment plant.

Longview

Buildings/Facilities – All are in a natural hazard risk zone

59 Buildings/Facilities

Total replacement value estimated at \$41.5 million

Critical Facilities (included above)

City Hall

Fire Stations 81 & 82

Police Station

City Shop

Utilities Operations Center

Parks and Recreation Office/Shop

Mint Valley Golf Maintenance Shop

Total replacement value of critical buildings estimated at \$18.1 million

Water Utility Facilities – All are critical facilities

6 Water Pump Stations

8 Pressure Reducing Stations

12 Water Reservoirs

213 Miles of Water Pipe

Total replacement value estimated at \$48 million

Sewer Utility Facilities – All are critical facilities

45 Sewer Pump Stations

152 Miles of Sewer Pipe

West Longview Lagoons Treatment Plant

Total replacement value estimated at \$86 million

Stormwater Utility Facilities – All are critical facilities

5 Drainage Pump Stations

30 Miles of Drainage Pipe

Total replacement value estimated at \$10.6 million

Roads – All are critical facilities

178 Miles of Roadway

18 Miles of Improved Alleyway

74 Traffic Signals

2,496 Street Lights

Total replacement value estimated at \$70 million

Equipment – All are critical equipment

131 Vehicles

9 Emergency Generators

15 Backhoes, Excavators, Graders

Total replacement value estimated at \$10.7 million.

Three Rivers Regional Wastewater Authority

The TRRWA owns approximately 29.4 acres of property housing the wastewater treatment plant and interceptor pump stations.

Longview

Buildings/Facilities – All are critical facilities

Wastewater Treatment Plant

Kelso Pump Station

East Industrial Way Pump Station (Main Pump Station)

West Industrial Way Pump Station

Mains and Pipes – All are critical facilities

7.7 Miles of Sewer Main

Equipment – All are critical facilities 19 vehicles/tractors/forklifts/etc.

The replacement value of all TRRWA facilities/equipment is estimated at \$95.7 million.

Regional Water Treatment Plant

Buildings/Facilities/Equipment – All are critical facilities except rental house

Water Treatment Plant

Water Treatment Plant Intake

Rental House

Pickup Truck

The replacement value of all Regional Water Treatment Plant facilities and equipment is estimated at \$49 million. The value of the new Mint Farm Regional Water Supply facilities when completed in December 2012 is estimated to be \$38 million.

APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies, or plans are applicable to this hazard mitigation plan:

- Natural Hazard Mitigation Plan
- Cowlitz County Hazard Identification and Vulnerability Analysis (HIVA)
- Longview Municipal Code (LMC)
- The Disaster Mitigation Act of 2000 (DMA2000)
- Preliminary Damage Assessment

PLANNING PROCESS

Due to the duration of time of this project, personnel changes and COVID-19, the historical notes detailing the invited partners do not exist. It has been verbalized to DEM that the participants listed in Appendix A were the active members of the City of Longview. In some cases, such as small cities, individuals may have been the only contributing member(s) to the document and many inputs were via discussion with their partner organizations and/or departments.

The historical notes/documents regarding public comments are not available or do not exist for the same reasons listed above.

HAZARD IDENTIFICATION & RISK ASSESSMENT

Natural Hazard Event History

Date	Type of Event	FEMA Disaster #	Preliminary Damage Assessment
4/13/1949	Olympia Earthquake		\$25 million
10/12/1962	Windstorm		\$750 million timber; \$235 million
4/29/1965	Seattle Tacoma Earthquake	196	\$12.5 million
May 1980	Mount St. Helen's eruption	Major 623	
11/13-15/1981	Windstorm		
Feb 1986	Heavy rain/slides/ flooding	Major 762	
2/1-8/1989	Snow storm		
12/12/1995	Windstorm	1079	
Dec/Jan 1996/97	Ice, Wind, Snow, Landslides, and Flooding	1159	
2/28/2001	Nisqually Earthquake	1361	\$1.5 billion - \$4 billion
11/2-11/2006	Severe Winter Storm, Flooding, Landslides & Mudslides	1671	\$300,000
12/12-27/2008	Severe Winter Storm	1825	
1/6-16/2009	Severe Winter Storm	1817	\$600,000
Feb 2014	Snow Event – County Wide		
10/23/2014	Tornado (F-1) Longview only		
Dec 2015	Severe Winter Storm, Windstorm, Flooding Derecho (straight line winds) in Longview only	4253	
Oct 2016	Windstorm		
Dec 2016/Jan 2017	Snow event (duration 15+ days)		
May 2017	Severe Thunderstorm		
Feb 2019	Flooding		
Feb 2020	Flooding, Mudslides		
March 2020	COVID-19	3427	
Sep 2020	Severe Winter Storm, Flooding, Thunderstorm		
2020	COVID-19 Pandemic	4481	

Hazard Risk Vulnerability Ranking

For the chart below, under “Probability of Occurrence”, High is defined as overdue, equal to, or near 100 percent chance of occurring within the life of this plan, or occurs annually. Moderate is defined as greater than 50 percent chance of occurring within the next year. Low is defined as less than 50 percent chance of occurring within the next year.

		Probability	Vulnerability		
1	Severe Weather	High	High	High	The Washington State Natural Hazard Mitigation Plan identified Cowlitz County as susceptible to high winds. Between 1960 and 2007, 79 windstorms have occurred in western Washington that caused at least \$50,000 or more in damage area wide. At least 18 notable Pacific Northwest cyclones have impacted the region in the last 25 years.
1	Landslide	Moderate	Moderate	Moderate	The majority of landslides in the region are triggered by heavy precipitation in the winter months. The 1998 Aldercrest-Banyon Landslide represents a large scale, but infrequent event for the region. Landslides have a high probability of occurrence and are certain to reoccur within a 25-year period.
2	Flood	Moderate	High	Moderate	The two significant tributaries to Cowlitz River within Cowlitz County are the Coweeman and Toutle rivers. Besides the four industrial, commercial and business enterprises in the three largest urban centers, the remaining valley area is primarily agricultural. The city is protected by levees on two rivers: The Cowlitz, and Coweeman rivers.

Rank	Hazard Type	Risk Rating Score			Description of Risk
		Probability	Vulnerability		
2	Earthquake	Moderate	High	Moderate	Crustal Earthquake - A magnitude 6.5 or greater earthquake is estimated to occur once about every 333 years in the Puget Sound Lowlands Subduction Zone Earthquake - A magnitude 9.0 earthquake is estimated to recur every 350 to 500 years. Deep Earthquakes - Five magnitude 6 or greater earthquakes have occurred in the Puget Sound basin since 1900. Since 2001, the Cowlitz region has been rocked by three deep earthquakes; spaced 16 and 36 years apart since 1949 and 1965 respectively (about every 26 years). It is estimated that a magnitude 7.1 earthquake (1949 type event) will occur every 110 years.
3	Wildland Fire	Moderate	Moderate	Moderate	The documented record of wildland fires in Kelso suggests that approximately 97 percent of future fires will be five acres or less. The region can expect at least one fire exceeding 100 acres over the next 25 years.
4	Volcano/Ash	Low	Low	Low	Known as the "Gateway to Mount St. Helen's", Kelso is heavily influenced by the volcano's activity. The probability of occurrence for Lahars and volcanic eruptions is the same.
0	Lahar	Low	Low	Low	Known as the "Gateway to Mount St. Helen's", Kelso is heavily influenced by the volcano's activity. The probability of occurrence for Lahars and volcanic eruptions is the same.

The Richter Scale value is calculated by measuring the maximum recorded amplitude of a wave. This measurement quantifies the ground motion and the energy released at the source of an earthquake, which is referred to as its magnitude.

The duration of most earthquakes is generally only seconds. Strong ground shaking during a moderate to large earthquake typically lasts about **10 to 30 seconds**. Readjustments in the earth cause more earthquakes (aftershocks) that can occur intermittently for weeks or months.

For greater detail, please refer to Chapter 3 of this document; under the "HAZARD RISK ASSESSMENTS INCLUDED IN THIS HMP", subcategory EARTHQUAKE Definition.

Repetitive Loss

A Repetitive Loss property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978.

Longview Repetitive Loss Properties						
Time Period	Single Family	Other Residential	Other Non-Residential	Business Non-Residential	Jurisdiction Location Total	Total Amount Paid
Pre-2000	2				2	\$102,000
2000-2009						\$0
2010-2020	2				2	\$145,000
TOTAL	4				4	\$247,000

MITIGATION STRATEGY

Mitigation Strategy Priority Schedule

Initiatives by priority.

Initiative #	# of Objectives Met	Benefits / Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project Be Funded Under Existing Programs /Budgets?
1	Replace Existing Water Treatment Plant with Mint Farm Regional Water Supply and Treatment Plant	High / High	Yes	No	No
2	Water Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Medium / High	Yes	No	No
3	Sewer Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Medium / High	Yes	No	No

Initiative #	# of Objectives Met	Benefits / Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant Eligible?	Can Project Be Funded Under Existing Programs /Budgets?
4	Drainage Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Medium / Medium	Yes	No	No
5	Fire Station 82 Emergency Generator	Medium / Medium	Yes	Yes	No
6	Water System Emergency Generators. Phased implementation to provide fixed or portable generators at all sites.	Medium / Medium	Yes	Yes	No
7	Sewer System Emergency Generators. Phased implementation to provide fixed or portable generators at all sites.	Medium / Medium	Yes	Yes	No
8	Replace City Hall Emergency Generator	Medium / Medium	Yes	Yes	No
9	Emergency Generator at City Shop	Medium / Medium	Yes	Yes	No
10	Install Vactor Dumping and Drying Beds Facility	Medium / Low	Yes	No	Yes

PLAN REVIEW, EVALUATION & IMPLEMENTATION

Status of Previous Plan Initiatives

Initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Initiative #	Accomplished?	Mitigation Initiative	Status Explanation
1	Yes	Fire Station 81 Auxiliary Generator	Completed
2	No	Fire Station 82 Auxiliary Generator	Insufficient funding
3	No	Perimeter Security Cameras	Water treatment plant replacement at new site was evaluated; new water source and treatment plant now under construction.
4	In Progress	Fencing & Security to Reservoirs and Other Facilities	Numerous facilities; some upgrades completed.
5	In Progress	System Telemetry – SCADA (Water)	SCADA system design in progress.
6	In Progress	Emergency Power (Sewer)	Numerous facilities; emergency power is being provided as pump stations are rehabilitated.
7	No	Emergency Power (Water)	Insufficient funding; treatment plant replacement is priority for utility system funding.
8	In Progress	Regional Water Treatment Plant Rehabilitation	New water source and treatment plant now under construction.
9	In Progress	System Telemetry – SCADA (Sewer)	SCADA system design in progress.

Analysis of Current & Future Mitigation Initiatives

During the life of the 2013 Cowlitz County Hazard Mitigation Plan, the City of Longview integrated the overall county Hazard Mitigation Plan and the specific Longview section, into other applicable planning mechanisms through discussion, evaluation of current and desired outcomes, prioritization, comparison and other methods.

Hazard Mitigation Action Plan Matrix

Mitigation initiatives by hazard of concern and the six mitigation types.

Initiative #	Mitigation Initiative	Included in a Capital Facilities Plan?	Applies to New or Existing Assets	Hazard(s) Mitigated	Lead Agency	Estimated Cost	Sources of Funding	Time-line
1	Replace Existing Water Treatment Plant with Mint Farm Regional Water Supply and Treatment Plant	Yes	Existing	Earthquake, Storm, Flood, Volcanic Event	City of Longview	\$38 million	Federal & State Grants Loans; Utility Rates; BHWSO	2 years
2	Water Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$1 million	Utility Rates	3 years
3	Sewer Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$2 million	Utility Rates	5 years
4	Drainage Utility Control System Telemetry – SCADA. Phased implementation to complete all sites.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$500,000	Utility Rates	3 years
5	Fire Station 82 Emergency Generator	No	Existing	Earthquake, Storm, Flood	City of Longview	\$100,000	Local	3 years
6	Water System Emergency Generators. Phased implementation to provide fixed or portable generators at all sites.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$800,000	Utility Rates	8 years

Initiative #	Mitigation Initiative	Included in a Capital Facilities Plan?	Applies to New or Existing Assets	Hazard(s) Mitigated	Lead Agency	Estimated Cost	Sources of Funding	Time-line
7	Sewer System Emergency Generators. Phased implementation to provide fixed or portable generators at all sites.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$800,000	Utility Rates	10 years
8	Replace City Hall Emergency Generator.	Yes	Existing	Earthquake, Storm, Flood	City of Longview	\$300,000	Local	3 years
9	Emergency Generator at City Shop	No	Existing	Earthquake, Storm, Flood	City of Longview	\$300,000	Local; CTA	5 years

The City of Longview will, with the exception of extreme cases, ensure any changes to existing or new policies or procedures for the jurisdiction will consider the information in this Hazard Mitigation Plan including a current cost benefit review.

The City of Longview may also develop an annual Action Plan to prioritize the implementation and administration of projects within this plan based on financial, resource, and community importance.

By adopting this plan, jurisdictions agree to a spirit of cooperation and collaboration during annual review of their respective section along with review of the overall county plan, and how this may positively impact the individual planning processes. The intent of doing so is to challenge a more global approach to projects, which may produce a greater impact to a more significant section of the county.

Timeline: It is estimated that the listed action shall be acted upon within the cycle of this document or within the next five (5) years, depending on funding, resources, and jurisdictional importance.

APPENDIX A: PLANNING PROCESS

The planning process is as important as the plan itself. Leadership, staffing, and in-house knowledge in local government and the Cowlitz County community will fluctuate over the time of this document. During the time of this document, several critical historically experienced community members and leaders either have, or are scheduled to, move on to new chapters in their lives.

The introduction of obstacles produced by the historic Coronavirus 19 Pandemic, whether directed by health care organizations or government officials, as well as the abundance of local caution, no doubt interrupted the timing of this document's fluidity, ownership, and completion.

We were fortunate to have been able to introduce the process, gather feedback, and solicit follow up from the majority of stakeholders, leaders, and communities prior to societal shut down, leaving the majority of the heavy lifting to assembly of the final product for review.

From the onset of this project, In-Person meetings took place at fire stations, churches, government buildings, and various other locations throughout the county. The following pages are examples of identified partnerships and of meetings held to educate, discuss, and solicit feedback from our communities and stakeholders.

Due to the duration of time of this project, personnel changes and COVID, the historical notes detailing the invited partners do not exist. It has been verbalized to DEM that the participants listed in Appendix A, were the active members of the organization or community. In some cases, such as small cities, individuals may have been the only contributing member to the document and many inputs were via discussion with their partner organizations and/or departments.

As stated above, the historical notes/documents regarding public comment are not available for the same reasons listed above.

Agency	Last Name	First Name	Position	Email	Chapter Sent	1st Draft	Final draft
IN SCOPE PARTNERS							
Beacon Hill Water & Sewer District	Hillger	Dell	General Manager	dhillger@bhwsd.org	23-Jul	19-Aug	24-Sep
Castle Rock School District	Keatley	Bryan	Superintendent	BKeatley@crschools.org	23-Jul	23-Aug	8-Oct
City of Castle Rock	Vorse	David	Director, Public Works	crowd@ci.castle-rock.wa.us	23-Jul	23-Aug	30-Sep
City of Kalama	Smee	Adam	City Manager	asmee@kalama.com	23-Jul	21-Aug	20-Sep
City of Kalama	Herrera	Ralph	Police Chief	rherrera@kalamapolice.com	23-Jul	21-Aug	20-Sep
City of Kelso	Butterfield	Brian	Acting City Manager	butterfield@kelso.gov	23-Jul	22-Aug	10-Oct
City of Kelso	Bronstein	Jessica	Executive Secretary	lbronstein@kelso.gov	23-Jul	22-Aug	10-Oct
City of Kelso	Kirk	Darr	Police Chief	kddk@kelso.gov	23-Jul	22-Aug	10-Oct
City of Kelso	Johnson	Randy	Supt, Public Works	rjohnson@kelso.gov	23-Jul	22-Aug	10-Oct
City of Kelso	Kardas	Michael	City Engineer	mkardas@kelso.gov	23-Jul	22-Aug	10-Oct
City of Longview	Sacha	Kurt	City Manager	kurt.sacha@mylongview.com	23-Jul	19-Aug	15-Nov
City of Longview	Kambeltz	Jim	Fire Chief	jim.kambeltz@ci.longview.wa.us	23-Jul	19-Aug	15-Nov
City of Longview-Fire	Thompson	Jeff	Battalion Chief	jeff.thompson@ci.longview.wa.us	23-Jul	19-Aug	15-Nov
City of Longview-Fire	Tomlinson	Blake	Battalion Chief	blake.tomlinson@mylongview.com	23-Jul	19-Aug	15-Nov
City of Woodland	Finn	Will	Mayor	FinnW@ci.woodland.wa.us	23-Jul	22-Aug	3-Dec
City of Woodland	Coleman	Tracy	Public Works Director	colemant@ci.woodland.wa.us	23-Jul	22-Aug	3-Dec
City of Woodland	Boyce	Peter	City Administrator	boyce@ci.woodland.wa.us	23-Jul	22-Aug	3-Dec
City of Woodland	Kelly	Jim	Chief of Police	kelly@woodlandpd.org	23-Jul	22-Aug	3-Dec
Consolidated Diking Improvement District 1	Blain	Amy	District Manager	amy.blain@cd1d1.org	23-Jul	20-Aug	10-Sep
Consolidated Diking Improvement District 2	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Consolidated Diking Improvement District 3	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Cowlitz 2 Fire and Rescue	LaFave	Dave	Fire Chief	dave.lafave@c2fr.org	23-Jul	21-Aug	15-Oct
Cowlitz County Fire District 1	Dehning	Eric	Fire Chief	e.dehning@cowlitz1.com	23-Jul	21-Aug	31-Oct
Cowlitz County Fire Protection District 5	Leatzow	Vic	Fire Chief	vleatzow@cowlitzfd5.org	23-Jul	22-Aug	13-Nov
Cowlitz County Fire Protection District 5	Sharp	DeAnne	Administrator	dsharp@cowlitzfd5.org	23-Jul	22-Aug	13-Nov
Cowlitz PUD aka Public Utilities District 1	Kalal	Casey	Director of Operations	stomasli@cowlitz.pud.org	23-Jul	19-Aug	26-Nov
Cowlitz PUD aka Public Utilities District 1	Larwick	Lance	Operations Manager	Larwick@cowlitzpud.org	23-Jul	19-Aug	26-Nov
Cowlitz PUD aka Public Utilities District 1	Froberg	Amanda	Environm Compl Mgr	afroberg@cowlitzpud.org	23-Jul	19-Aug	26-Nov
Cowlitz PUD aka Public Utilities District 1	Dietz	Alice		adietz@cowlitzpud.org	23-Jul	19-Aug	26-Nov
Diking Improvement District 15	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Drainage Improvement District 1	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Lexington Flood Control Zone District	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Longview School District	Zorn	Dr. Dan	Superintendent	dzorn@longview.k12.wa.us	23-Jul	19-Aug	12-Dec
Longview School District	Lecker	Rick	Safety Officer/ Transportation Manager	rlacker@longview.k12.wa.us	23-Jul	19-Aug	12-Dec
Longview School District	Lomax	Troy	Facilities Manager	tlomax@longview.k12.wa.us	23-Jul	19-Aug	12-Dec
Port of Longview	Hendriksen	Lisa	Director, Planning & Environmental	lhendriksen@portoflongview.com	23-Jul	23-Aug	20-Nov
Silver Lake Flood Control District	Harblson	Patrick	Utilities Manager	HarblsonP@co.cowlitz.wa.us	23-Jul	20-Aug	26-Sep
Unincorporated Cowlitz County	Schnabler	Ernie	Director, EM	SchnablerE@co.cowlitz.wa.us	23-Jul	16-Aug	30-Oct
Woodland School District	Landrigan	Scott	Director, Facilities & Safety	landrias@woodlandschools.org	23-Jul	22-Aug	23-Oct
OUT OF SCOPE PARTNERS							
Cowlitz 911 (Public Authority)-new entity	Jurmo	Phil	Executive Director	ljurmo@co.cowlitz.wa.us			
Cowlitz County Fire District 6	LeTonda	Bill	Fire Chief	chief@cowlitz6fire.org			
Cowlitz County Fire District 6	Asadan	Randy	Assistant Fire Chief	asadan@cowlitz6fire.org			
Cowlitz Indian Tribe	Churchill	Lorraine	PEM	lchurchill@cowlitz.org			
Cowlitz Transit Authority	Blanca						
Cowlitz-Skamania Fire District 7	Stuart	Gary	Fire Chief	csfd7@rds.net			
Kalama School District							
Kelso School District	Schimmel	Gary	Superintendent, Facilities	gary.schimmel@kelso.k12.wa.us			
Kelso School District	Westlund	Scott	Executive Director	scott.westlund@kelso.k12.wa.us			
Lower Columbia College	Skreen	Janel	Director, Environmental Health & Safety	jskreen@lcc.ctc.edu	23-Jul	20-Aug	6-Dec
Port of Kalama							
Port of Woodland							
Southwest Washington Regional Airport	Pasolini	Chris	Airport Manager	cpasolini@sepio.gov			
Fourth Fire & Rescue, Cowlitz County Fire District 3							
Tupia Lake School District							

Cowlitz County
Local Emergency Planning Committee [LEPC] Meeting
Tuesday, May 14th, 2019 – 3:00pm
AGENDA

LOCATION:
Lower Columbia College
Room 119, "Main" Building
1600 Maple Street
Longview WA
 Campus map: <http://lcc.ctc.edu/maps/>

Chair: Fran Erickson Vice Chair: Tim Hislop

- Call to Order and Introductions
- Approval of 2019 February Minutes
- HAZMAT Partner Incidents Report: February-April January 2019
- Ongoing Business
 - Training & Exercise Updates
 - Ammonia After Action Workshop
 - LEPC Member Forms Update
 - Round-Robin
- New Business
 - DEM Year In Review
 - Hazard Mitigation Program Update Project – The LEPC Connection
 - LCPIC DeRosier Memorial Activation
- Good of the Order/Adjourn
 - Pizza Party! Hang out, chat more, learn more-
 RSVP to LChurchill@cowlitz.org please

COWLITZ LEPC SCHEDULE * *please advise Lorraine [LChurchill@cowlitz.org] if you can host a meeting! *

MEETING	DATE / 3pm	LOCATION	PROPOSED AGENDA ITEMS	NOTES/MISC
COWLITZ LEPC	February 12, 2019	Lower Columbia College	*USFS Spirit Lake Project Presentation	Social post-meeting Mill City Grill 1260 Commerce Avenue Longview WA
COWLITZ LEPC	May 14, 2019	Lower Columbia College	*DEM Year In Review *Hazard Mitigation Introduction	
COWLITZ LEPC	August 19, 2019	TBA		
COWLITZ LEPC	November 12, 2019	TBA		Annual Meeting
COWLITZ LEPC	February 11, 2020	TBA		

For scheduling: Ecology-Contingency Plan Update
 Homeland Security CEATS Program
 Health & Human Services' Push Partner Program
 WEMD Business Continuity Program

14 May 2019 - CLEP Meeting

Name

Lorraine Churchill
 Michael Bender
 Brian Fike
 Amy Eagon
 Susan Forsythe
 Jim Kambeitz
 Emil Schnabler
 Brian Gimes
 Tim Hislop
 Nolan Wheeler
 Janel Skreen
 JEFF THOMPSON
 Lynsey Hweuh
 Neil Agren
 Chris Hill
 Joe Winters
 Jason Sanders
 Scott Dahlquist
 RALPH HERRERA
 JASON CUTHBERT
 WILL FIHN
 Lance Larwick
 Rebecca Hoffman
 Mark Kautsch
 Clark Hislop
 Michael McCoy
 Sean Kelly
 LEE RAUMOND

Cowlitz Indian Tribe
 Portland General Electric
 10th HRF
 OCHHS
 WA STATE FMD
 Longview Fire Dept.
 Cowlitz DEM
 GRACE TRIPLE FERTILIZER / KLMA
 Emerald Kilann Chemical
 Lower Columbia College
 " " "
 LONGVIEW FIRE
 LNI
 C2FR
 Foster Farms
 Foster Farms
 C2FR
 AMD
 KALAMA PD
 WSP
 WSP
 Cowlitz PUD
 US Forest Service
 Cowlitz County Dept. of Public Works
 PNE, CCS
 Pure Pregel Haulch & Kehab
 Port of Longview
 PACIFIC COAST FERTILIZER



Michelle King CSFS
Adam J. Jee City of Kalama
Peter Rekers Crisis Ready

**Cowlitz County
Local Emergency Planning Committee [LEPC] Meeting
AUGUST 20, 2019 – 3:00pm**

AGENDA

**LOCATION:
Lower Columbia College
Student Center
Longview WA**

Campus map: <http://lcc.ctc.edu/maps/> [map appended end of agenda]

Chair: Fran Erickson Vice Chair: Tim Hislop

- Call to Order and Introductions
- Approval of February and May 2019 Minutes
- HAZMAT Partner Incidents Report: February-April 2019
- Ongoing Business
 - DEM Update on Grants, Planning, Training, Exercises/Drills (Ernie schnabler)
 - Partner Exercises?
 - Emergency Management Coordinator recruitment (Ernie Schnabler)
 - Partner Round-Robin
 - Hazard Mitigation Plan Update (Peter Rekers)
 - LCPIC [Lower Columbia Public Information Coalition] update, (Lorraine churchill)
- New Business
 - Push Partner Registry Presentation, Amy Eagon
 - Columbia County-Cowlitz County LEPCs Communication, (Steve Pegram & Ernie Schnabler)
 - Future Presentations- please see below
- Good of the Order/Adjourn

COWLITZ LEPC SCHEDULE

MEETING	DATE / 3pm	LOCATION	PROPOSED AGENDA ITEMS	NOTES/MISC
COWLITZLEPC	February 12, 2019	Lower Columbia College	USFS Spirit Lake Project Presentation	Social post-meeting: Mill City Grill 1260 Commerce Avenue Longview WA
COWLITZLEPC	May 14, 2019	Lower Columbia College	DEM: Year in Review Hazard Mitigation Plan Update Project Introduction	Pizza Social end of meeting
COWLITZLEPC	August 20, 2019	Lower Columbia College	Push Partner Registry Bylaws Review	
COWLITZLEPC	November 12, 2019	TBA	LEPC Elections	ANNUAL MEETING
COWLITZLEPC	February 11, 2020			

FOR SCHEDULING: Ecology-Contingency Plan Update
Homeland Security CFATS Program
WEMO Business Continuity Program



By First Name	eMail	Initial Attendance
Aaron Workman	aaronw@cowlitz.org	
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Bill Fashing	bfashing@cwco.org	B7
Bill Lemonds	blemonds@cowlitz6fire.org	
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Keith Johanson	keith.johanson@westrock.com	
Kevin Adair	kevin.adair@ge.com	

LEPC Membership Roster

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William Bundrock	william.bundrock@westrock.com	
William Finn	william.finn@wsp.wa.gov	

LEPC Membership Roster

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SCOTT CHARPENTIER	SDC@TCFERTILIZER.COM	CHARPENTIER
Riley Kutynski	Kutynski.R@Gmail.com	Kutynski

Ernie Schumbler

Schumbler@co.cowlitz.wa.us

360.577.3130

**Cowlitz County
Local Emergency Planning Committee [LEPC] Meeting**

NOVEMBER 12, 2019 – 3:00pm

AGENDA

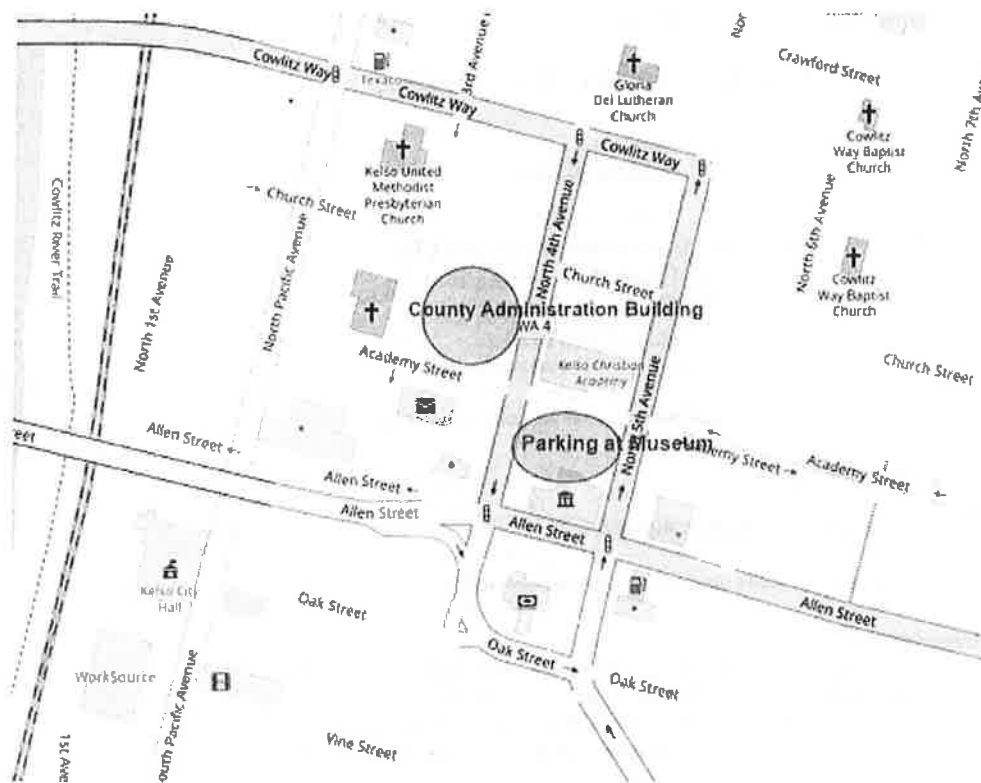
LOCATION:

**Cowlitz Co. Administration Building
3rd Floor “General Meeting Room”
207 North 4th Avenue
Kelso, WA 98626
(map attached here below)**

Chair: Fran Erickson Vice Chair: Tim Hislop

- Call to Order and Introductions
- Approval of the Minutes from 20 August 2019
- HAZMAT Partner Incidents Report: August - November 2019
- Ongoing Business
 - DEM Update on Grants, Planning, Training, Exercises/Drills (Ernie Schnabler)
 - Partner Round-Robin - Events, Trainings, Exercises, etc. (All)
 - Requests for training courses and funding sources (Ernie Schnabler)
 - Hazard Mitigation Plan Update Status/Annex-Approvals (Lorraine Churchill)
 - LEPC Membership Forms (Ernie Schnabler)
- New Business
 - Report from Bylaws Subcommittee - need to officially sign the Bylaws (Lorraine Churchill)
 - Re-affirmation vote for Vice Chair (Chair Fran Erickson)
 - Election of new CCLEPC Chair (Vice Chair Tim Hislop)
 - Presentation - Video “DIVVY - Emergency Water System” (Ernie Schnabler)
 - Desired future presentations (All)
- Good of the Order/Adjourn

MEETING	DATE / TIME	LOCATION	KEY AGENDA ITEMS	NOTES/MISC.
Cowlitz LEPC	11 FEB 2020 - 3pm	St. John Med. Center		
Cowlitz LEPC	12 MAY 2020 - 3pm	TBA		
Cowlitz LEPC	11 AUG 2020 - 3pm	TBA		
Cowlitz LEPC	10 NOV 2020 - 3pm	TBA		



LEPC Membership Roster

Updated 01 OCT 2019					
Last Name	First Name	eMail		MbrF	Attendance
Adair	Kevin	kevin.adair@ge.com	GE		
Agren	Neil	neil.agren@c2fr.org	C2FR	Y	<i>AK</i>
Ahner	Nancy	nancy.ahner@westrock.com	Westrock		
Arnold	Brent	barnold@cowlitzoud.org	PUD		
Arnold	Tracy	Traci@swcleanair.org	SW Clean Air		
Arrowsmith	Jason	jarrowsmith@lcc.ctc.edu	Tribe		
Artiga	Roberto	roberto.artiga@westrock.com	Westrock		
Barry		barry109@hotmail.com	?		
Beasley	James	jwbeasley@bpa.gov	BPA		
Bender	Michael	Michael.Bender@pgn.com	KB Pipeline	Y	<i>MBB</i>
Bissett	Jeff	jeffery.bissett@amr.net	AMR		
Blain	Amy	amy.blain@cdid1.org	CDID1		
Boyce	Peter	boycep@ci.woodland.wa.us	City of WL		
Branch	Eric	ericbranch@hasapool.com	Hasa	Y	<i>YES</i>
Brooks	Nannette	nbro461@ECY.WA.GOV	Ecology		
Bundrock	William	william.bundrock@westrock.com	Westrock		
Bussell	Greg	Greg.Bussell@norpacpaper.com	Norpac		
Butterfield	Rick	Rick.Butterfield@lvnp.com	PNP		
Byers	Ray	news@klog.com	KLOG		
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Candella	Mike	mike.candella@patriotrail.com	Patriot Mail		
Canfield	Rebekah	canfield@pdxmex.com	Merchant Exch		
Carpenter	Greg	Greg@woodlandcarecenter.com	WL Care Ctr		
Chapman	Mike	Mike.Chapman@wsp.wa.gov	WSP		
Charpentier	Mary Ann	mac@sfsfgc.com	Saturn Ferro		
Charpentier	Scott	sdcc@pcfertilizer.com	PCF		
Churchill	Lorraine	lchurchill@cowlitz.org	Tibe	Y	
Coard	Jasmine	jasmine.coard@empres.com	Empres		
Cornell	Ben	bcorn461@ecy.wa.gov	Ecology		
Cuthbert	Jason	Jason.Cuthbert@wsp.wa.gov	WSP		
Dahlquist	Scott	scott@advancedmessaging.us	KB Pipeline	Y	<i>yes</i>
Davidson	Sadie	sadie.smith@williams.com	Williams		
Davies	Kathy	kathy.davies@pgn.com	KB Pipeline	Y	<i>ked</i>
Eagon	Amy	EagonA@co.cowlitz.wa.us	DHHS	Y	
Echols	Anthony	anthony.g.echols@uscg.mil	USCG		
Eller	Bryan	bryan.eller@tuckerservices.com	KB Pipeline		
Erickson	Frances E.	Frances.Erickson@westrock.com	Westrock	Y	<i>yes</i>
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LEPC Membership Roster

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Graham	James	james.graham@c2fr.org	C2FR		
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Harksen	James	james.harksen@hq.dhs.gov	DHS		
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Herrera	Rafael	rherrera@kalamapolice.com	Kalama PD	Y	
Hill	Chris	chris.hill@fosterfarms.com	Foster Farms	Y	
Hislop	Clark	clarkh@ccs-pneco.com	PNE CCS	Y	Yes
Hislop	Tim	tim.hislop@emeraldmaterials.com	Emerald	Y	
Hoffman	Rebecca	rebecca.hoffman@usda.gov	USFS	Y	
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King	Michelle	michelle.d.king@usda.gov	USFS	Y	
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Kuschel	Sean	sean.kuschel@useg.mil	USCG		
Kutz	Steve	skutz.health@cowlitz.org	Tribe		
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Langer	Scott	langers@wsdot.wa.gov	WSDOT		
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Lemons	Bill	blemonds@cowlitzfire.org	CFD6	Y	
Lindmark	Tom	Tom.Lindmark@pgn.com	PGN		
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Martin	Phil	philip.martin@fosterfarms.com	Foster Farms		
Maryott	Mike	mmaryott@linealogistics.com	Lineage		

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Stanley	Cindy	Cindy.Stanley@clark.wa.gov	Clark DEM		
Stich	Kurt	kurt.stich@c2fr.org	C2FR		
Tanner	Ryan	Ryan.Tanner@wsp.wa.gov	WSP		

LEPC Membership Roster

Last Name	First Name	eMail		MbrF	Attendance
Teig	Randy	Rteig@portofkalama.com	Port of Kalama		
Thayer	Bert	bert.thayer@c2fr.org	C2FR		
Thompson	Jeff	jeff.thompson@cl.longview.wa.us	LFD	Y	
Thurman	Brad	ThurmanB@co.cowlitz.wa.us	CC Sheriff		
Traci	Traci	Traci@swcleanair.org	SW Clean Air		
Unruh	Lindsey	unrm235@nl.wa.gov	L&I	Y	
Vaughan	Logan	logan.vaughan@westrock.com	Westrock		
Vigna	Chris	vignac@wsdot.wa.gov	WSDOT	Y	
Wagoner	Kelly	KellyW@lowercolumbiacap.org	Cowlitz CAP		
Wallace	Carey	cwallace2@peacehealth.org	SJMC		
Weber	Dennis	WeberD@co.cowlitz.wa.us	BOCC		
Wheeler	Nolan K.	nwheeler@lowercolumbia.edu	LCC	Y	
White	Kimberly	Kimberly.White@hq.dhs.gov	DHS		
Wicklund	Patrick	patrick.wicklund@mil.wa.gov	WA EMD		
Wood	Brian	brian.wood@NipponDynawave.com	Nippon		
Workman	Aaron	aaronw@cowlitz.org	Tribe	Y	
Wright	Joe	joe.wright@fosterfarms.com	Foster Farms	Y	
Wrobel	Chris	chris.wrobel@EmeraldMaterials.com	Emerald		
Yakovich	E.	eyakovich@portofkalama.com	Port of Kalama		
Merritt	Annie	annie.merritt@gmail.com	EMD	N	AL
KARNOSKI	Tim	TKARNOSKI@portoflongview.com	Port of Longview		
STREBIG	CHRIS	CHRIS.STREBIG@USDA.GOV	USFS		
DARVAL	STEVE	STEVE.DARVAL@qm.dynobel.com	Dyno Nobel	Y	

**Cowlitz County
Local Emergency Planning Committee [LEPC] Meeting**

February 09, 2020 – 3:00pm

AGENDA

LOCATION:

Conference Call – “GoTo Meeting” (see below)

Chair: Tim Hislop Vice Chair: Marisa Hutcheson

- Call to Order - Introductions
- Review and Approval of the Minutes from November 10, 2020
- HAZMAT Partner Incidents Report: November 2020 - January 2021
- Presentation – “Malden Fire Response from a local perspective” – Peter Hartmann, Washington Emergency Management Division
- Ongoing Business
 - Partner Round-Robin (Events, Trainings, Exercises, etc.)
 - Hazard Mitigation Plan going to State EMD for final review
- New Business
 - DEM Update on COVID-19 Response In Cowlitz County (Ernie Schnabler)
- Good of the Order/Adjourn

LEPC Meeting 02/09/2021
Tue, Feb 9, 2021 3:00 PM - 4:30 PM (PST)

Please join my meeting from your computer, tablet or smartphone.

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In Attendance 2/9/2021 LEPC Virtual GoToMeeting:

Tim Hislop, Ernie Schnabler, Larry Hembree, Annie Merritt, Cindy Stanley, Ben Cornell, Mark Francis, Nolan Wheeler, Allison Mooney, Bill LeMonds, Andy Ogden, Brian Loos, Greg Hendricks, Janel Skreen, Marisa Hutcheson, Michael Bender, Mitchell Fargher, Morgan Thompson, Arne Mortensen, Nancy Ahner, Neil Agren, Pete Harmann, Dustin Mills, Pete Boyce, Travis Walling, James Beasley, Brian Gomes, Elena Cangelosi, Peter Rekers, Randy Greeley,

Cowlitz County

Local Emergency Planning Committee [LEPC] Meeting

February 9, 2021 – 3:00pm

Minutes

LOCATION:

Conference Call – “GoTo Meeting” (see below)

Chair: Tim Hislop Vice Chair: Marisa Hutcheson

➤ **Call to Order – Introductions: 1500 hours**

Attendance - 32: Tim Hislop, Ernie Schnabler, Larry Hembree, Annie Merritt, Cindy Stanley, Ben Cornell, Mark Francis, Nolan Wheeler, Allison Mooney, Bill LeMonds, Andy Ogden, Brian Loos, Greg Hendricks, Janel Skreen, Marisa Hutcheson, Michael Bender, Mitchell Fargher, Morgan Thompson, Arne Mortensen, Nancy Ahner, Neil Agren, Pete Harmann, Dustin Mills, Pete Boyce, Travis Walling, James Beasley, Brian Gomes, Elena Cangelosi, Peter Rekers, Randy Greeley,

➤ **Review and Approval of the Minutes from November 10, 2020 will come out with minutes from this meeting and we will ask for approval at this time. Brian Gomes – Motion to approve. Michael Bender 2nd, approved w/o comment**

➤ **HAZMAT Partner Incidents Report: November 2020 – January 2021 No questions or comments..**

➤ **Ongoing Business**

Pete Hartmann with WA EM: HazMat Planning Program Mgr: presentation on Malden, WA Wildfire/HazMat event; public assistance program overview. PPT presentation will be sent to Annie and Ernie.

Peter Rickers is on the call, Cowlitz County Hazard Mitigation Plan? Peter – HMP handed off to Ernie. Have gone through the first review process with Washington Emergency Management and made a couple of tweaks based on that and then passed it on to Ernie. Ernie explained we received the document back around the end of November/first part of December. Of course there have been delays related to COVID. Final review has been done here with a few adjustments, Ernie and Larry will do a final review and then pass on our final version of the plan to the State for final review and then it will be passed on to FEMA. Thank you Peter for your work

➤ New Business

DEM Update: (Ernie Schnabler)

COVID update from Ernie: Explained request for Type I team and vaccine availability. Larry and Morgan Thompson CCHHS LERC provided updates on the fixed vaccination PODs and mobile vaccine delivery. Bottom line, as prepared as we may be, neither can be implemented until vaccines are received.

Weather coming in with possible snow/ice. We have an additional conference call with NWS tomorrow at 1:00, and plan to have an updated post on the DEM Facebook page around 2:00 tomorrow.

- Good of the Order/Adjourn ~1600 hours



City of Longview

Agenda Summary

RESOLUTION 2415 - AUTHORIZING THE CITY MANAGER TO BORROW FUNDS FROM THE GENERAL FUND FOR THE PURPOSE OF FINANCING IMPROVEMENTS UNDER LOCAL IMPROVEMENT DISTRICTS

RECOMMENDED ACTION:

MOTION TO ADOPT RESOLUTION NO. 2415

COUNCIL STRATEGIC INITIATIVE ADDRESSED:

Council Initiative: Improve streets and roads
Continue effective financial management
Improve transportation systems

CITY ATTORNEY REVIEW: N/A

SUMMARY STATEMENT:

The cost of improvements within a LID District must be paid by the City until construction thereof has been completed, at which time Local Improvement District bonds are sold and the proceeds from the bond sale used to reimburse the City for such costs. In the past, LID construction costs were paid via a loan from the Firemen's Pension Fund. Authorizing LID construction costs to be paid by the General Fund provides an additional vehicle for financing improvements under Local Improvement Districts until such time as LID bonds are sold.

RECOMMENDED ACTION:

Motion to adopt Resolution No. 2415

STAFF CONTACT: Kurt Sacha, City Manager

Attachments:

1. Resolution No. 2415 -Interfund Loan- Funding LID's

RESOLUTION NO. 2415

A Resolution authorizing the City Manager of the City of Longview to borrow funds from the General Fund for the purpose of financing improvements under Local Improvement Districts of the City of Longview until the sale of Local Improvement District bonds or payment of all assessments.

WHEREAS, the cost of improvements within the Local Improvement Districts must be paid by the City until the completion thereof, at which time Local Improvement District bonds are sold and the proceeds used to reimburse the City for such costs; and

WHEREAS, it is necessary to borrow such construction funds in order to pay such costs; and

WHEREAS, the General Fund contains sufficient funds to be loaned to the City for such purposes, and such loans are proper investments of the General Fund; and

WHEREAS, it has been the past practice of the City to borrow funds from the Firemen's Pension Fund, and as such, it is reasonable to grant the City Manager the authority to effect such loans from the General Fund without individual approval from the City Council, subject to the terms hereof;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Longview, Washington, as follows:

SECTION 1. That the City Manager shall be authorized to borrow from the General Funds those amounts necessary and available from such fund to pay the cost of improvements within Local Improvement Districts of the City, and the amount of all such loans, along with interest as provided in Section 2, shall be paid to the General Fund upon the sale of Local Improvement District bonds within each respective district, or other payment of the assessments levied by such Local Improvement District, whichever occurs first.

SECTION 2. The rate of interest to be paid upon such loans shall be equal to the rate being earned by investments of the General Fund of the City on the date that such loans are created.

SECTION 3. During the month of January of each year, the City Manager shall report to the City Council the status of all such loans, setting forth the amounts of such loans during the previous calendar year, the interest rate and the amounts owed as of December 31.

This Resolution shall be deemed effective immediately and shall continue until repealed or modified by the City Council.

Passed by the City Council this ____ day of _____, 2022.

Approved by the Mayor this ____ day of _____, 2022.

MAYOR

ATTEST:

City Clerk



City of Longview

Agenda Summary

ORDINANCE 3462 – IMPLEMENT PHASE 1 DOWNTOWN PARKING CHANGES

RECOMMENDED ACTION:

MOTION TO ADOPT ORDINANCE NO. 3462

COUNCIL INITIATIVE ADDRESSED:

Strengthen economic conditions & create new opportunities
Continue effective financial management

CITY ATTORNEY REVIEW: REQUIRED

At the June 23, 2022 City Council meeting direction was given to the City Attorney to prepare an ordinance making changes to LMC 11.50 On-Street Parking Regulations, to implement recommended phase 1 changes to downtown parking. Changes to LMC 11.62 Off-Street Parking Regulations, are also necessitated by the Phase 1 recommended changes.

Phase 1 recommendation:

1. Remove warnings- Direct the City Attorney to prepare an ordinance to eliminate warnings for over-time parking violations downtown. In 2021, 1,369 warnings were issued vs. 943 tickets, representing significant time and effort by enforcement staff.
2. Change all 3-hour on-street parking spaces downtown to 2-hour parking spaces. Direct the City Attorney to prepare an ordinance to modify the parking time limits downtown for 3-hour on-street parking spaces to 2-hour. Returning to the pre-2011 2-hour parking time limits on-street should affect behaviors of employees and residents and improve availability of on-street spaces for shoppers.
3. Change LMC 11.62.030 Off-Street Parking Regulations and Penalties, to remove warnings for overtime parking in parking lots.
4. Change LMC 11.62.130, Off-Street Parking Permits, to refer to the City of Longview instead of the Longview Police Department, for selling and distributing off-street parking permits. The change ensures that innovations and efficiency improvements to purchasing permits can be implemented.

Staff notes that the Phase 1 changes will not increase revenue enough to cover parking enforcement expenses and are intended as a sound first step. Staff anticipates Phase 2 will begin in 6 months, after implementation of Phase 1.

FINANCIAL SUMMARY: \$9,000 for on-street parking sign changes.

STAFF CONTACT:

Adam Trimble, Planning Manager

Attachments:

1. Ordinance 3462 Downtown Parking Changes (Final) (003)

ORDINANCE NO. 3462

AN ORDINANCE AMENDING SECTIONS 11.50.040, 11.50.070, 11.50.090, 11.62.030 AND 11.62.130 OF THE LONGVIEW MUNICIPAL CODE, RELATING TO THE BASIC TIME LIMITATION FOR ON STREET PARKING WITHIN THE DOWNTOWN COMMERCIAL AREA OF LONGVIEW, THE IMPOSITION OF MONETARY PENALTIES FOR OVERTIME PARKING, AND THE ISSUANCE OF OFF STREET PARKING PERMITS.

WHEREAS, At the April 26, 2022 special meeting of the Downtown Advisory Committee, a recommendation to City Council was approved to consider options for addressing the needs of the city's parking enforcement program, city owned parking lots and parking needs of the downtown area; and

WHEREAS, at the June 23, 2022 City Council meeting a phased approach to improving parking rules for downtown was presented and direction was given to implement the first phase of changes to downtown parking; and

NOW THEREFORE, The City Council of the City of Longview do ordain as follows:

Section 1. That Chapter 11.50.040 of the Longview Municipal Code shall be, and is hereby, amended to read as follows:

11.50.040 Basic time limitations applicable to on street parking.

Motor vehicles may be parked on the public streets of the city without charge; provided, however, that between the hours of 8:00 a.m. and 6:00 p.m. on all days except Sunday and legal holidays, except as provided in LMC 11. 50.045, and except as provided in Chapter 11.65 LMC, no person shall park a motor vehicle for more than ~~three~~ two hours in any of the parking spaces in the area of the city bounded by the following description:

1. Commencing at the intersection of the southerly side of Florida Street to its intersection with the westerly side of 16th Avenue; thence northerly along the westerly side of 16th Avenue to it's intersection with the southeasterly side of Washington Way; thence northeasterly along the southeasterly side of Washington Way to its intersection with the easterly side of 11th Avenue; thence southerly along the easterly side of 11th Avenue to its intersection with the southerly side of Michigan Street; thence westerly along the southerly side of Michigan Street to its intersection with the easterly side of 12th Avenue; thence southerly along the easterly side of 12th Avenue to its intersection with the northerly side of Broadway; thence easterly along the northerly side of Broadway to its intersection with the easterly side of 11th Avenue; thence southerly along the easterly side of 11th Avenue to its intersection with the southerly side of Hudson Street; thence westerly along the southerly side of Hudson Street to its intersection with the easterly side of 12th Avenue; thence southerly along the easterly side of 12th Avenue to its intersection with the

southerly side of Florida Street; thence westerly along the easterly projection of the southerly side of Florida Street to the centerline of 12th Avenue and the point of beginning of this description, all of which are situated within Plats of Longview number 2, 10,11, Cowlitz County, Washington.

2. Block 76 westerly of 12th Avenue to its intersection with Fir street and the northerly end and Delaware Street on the southerly end.

Notwithstanding the provisions set forth above in this section, the parking time limits described below shall be applicable to the following specified parking spaces located within said area:

- (1) Fifteen minutes in the following parking spaces:
 - (a) Block 52, space 1;
 - (b) Block 69, space 21;
 - (c) Block 81, space 16;
 - (d) Block 82, spaces 9 and 10;
 - (e) Block 85, space 37;
 - (f) Block 86, space 42;
 - (g) Block 87, spaces 5 through 9, and space 49;
 - (h) Block 96, space 10;
 - (i) Block 98, space 5;
 - (j) Block 113, spaces 14 and 18.
- (2) Thirty minutes in the following parking spaces:
 - (a) Block 66, space 2;
 - (b) Block 69, spaces 11 and 12;
 - (c) Block 82, spaces 5 through 8;
 - (d) Block 87, spaces 21 through 24;
 - (e) Block 97, spaces 1 through 3.
- (3) One hour in the following parking spaces:
 - (a) Block 54, space 2;
 - (b) Block 78, spaces 10 and 11;
 - (c) Block 79, spaces 53 through 55;
 - (d) Block 81, spaces 13 through 15, and 31 through 33;
 - (e) Block 82, spaces 35 through 38;
 - (f) Block 85, spaces 3 through 7, 16 through 19, 38 and 39;
 - (g) Block 87, spaces 50 through 56;
 - (h) Block 88, spaces 4, 5, and 15 through 18;
 - (i) Block 99, spaces 6, 7, and 8;
 - (j) Block 113, space 16.
- (4) Four hours in the following parking spaces:
 - (a) Block 112, spaces 16 through 25.
- (5) Ten hours in the following parking spaces:
 - (a) Block 69, spaces 22 through 28;
 - (b) Block 78, spaces 12 through 24, and space 29;
 - (c) Block 79, spaces 32 through 52;
 - (d) Block 81, spaces 17 through 30;
 - (e) Block 82, spaces 15 through 34 and 39 through 42;
 - (f) Block 83, spaces 13 through 16;

- (g) Block 84, spaces 1 and 12 through 17;
- (h) Block 85, spaces 12 through 15;
- (i) Block 88, spaces 6 through 14;
- (j) Block 95, spaces 15 through 19;
- (k) Block 98, spaces 1 through 4, and 12 through 15;
- (l) Block 99, spaces 1 through 5;
- (m) Block 125, spaces 1 through 6;
- (n) Block 68, spaces 19 through 22;
- (o) Block 89, all spaces;
- (p) Block 66, spaces 16 through 22;
- (q) Block 67, spaces 14 through 18;
- (r) Block 65, spaces 1 and 2;
- (s) Block 83, spaces 1 and 2;
- (t) Block 77, all spaces;
- (u) Block 70, spaces 14 and 15;
- (v) Block 96, spaces 16, 17, 18 and 19.

- (6) Parking prohibited except for business conducted at Longview police department:
 - (a) Block 87, spaces 10 through 16.

Section 2. That Section 11.50.070 of the Longview Municipal Code is hereby amended to read as follows:

11.50.070 Overtime parking – Civil infraction -- Penalty

The parking of a motor vehicle in an on-street parking space in excess of the time limits set forth in this chapter as applicable to such parking space is a parking infraction. The penalty for parking a motor vehicle for a period of time in excess of the time permitted in this chapter, during any calendar quarter period of time, is \$30.00 for the first violation, \$50.00 for the second violation, \$75.00 for the third violation and \$100 for the fourth and all subsequent violations; ~~provided, however, that there shall be no monetary penalty imposed for the first occurrence of overtime parking by a motor vehicle during any calendar quarter:~~

~~(1) If the parking violation occurs during the first six months of any calendar year and the vehicle in violation of such time limits has not been the subject of a parking infraction under the provisions of LMC 11.62.030(1) or (3)(b) during such six-month period of time; or~~

~~(2) If the parking violation occurs during the second six months of any calendar year and the vehicle in violation of such time limits has not been the subject of a parking infraction under the provisions of LMC 11.62.030(1) or (3)(b) during such six-month period of time. (Ord. 3180 § 1, 2011; Ord. 2930 § 1, 2005; Ord. 2819 § 3, 2001; Ord. 2782 § 3, 2000; Ord. 2688 § 1, 1998; Ord. 2508 § 15, 1993).~~

Section 3. That Chapter 11.50.090 of the Longview Municipal Code is hereby amended to read as follows:

11.50.090 Chain parking.

When a motor vehicle is moved out of one parking space anywhere in the 1100, 1200, 1300 or 1400 blocks of Commerce Avenue, or anywhere in the 1200 or 1300 blocks of Broadway, the 1400 block of 15th Avenue or the 900 block of 12th Avenue, and into another parking space on either side of the street within the same block, on the same calendar day, the two or more continuous parkings of such motor vehicle shall be considered as one continuous parking. For purposes of this section, “block” means that portion of a street including both sides thereof, lying between two intersections. It is the intent of this section to limit the parking of a motor vehicle to a maximum of ~~three~~ two hours parking time in any one block. The time begins when the motor vehicle is first parked in the block; thereafter, the motor vehicle has a total time of two hours in which it may be parked in the block, regardless of how many times the motor vehicle may leave the block during the maximum two hour period of time.

Section 4. That Chapter 11.62.030 of the Longview Municipal Code is hereby amended to read as follows:

11.62.030 Off street parking regulations and penalties.

(1) Class A Off-Street Parking Facilities. Between the hours of 8:00 a.m. and 6:00 p.m., except for Sunday and legal holidays, it is a parking infraction to park a motor vehicle in a parking space in a Class A parking facility for a total of more than three hours unless such motor vehicle displays a current parking permit issued by the City of Longview police department of the city. The penalty for violation of such time limits is \$30.00 for the first violation, \$50.00 for the second violation, \$75.00 for the third violation and \$100.00 for the fourth and all subsequent violations during any calendar quarter; ~~provided, however, that there shall be no monetary penalty imposed for the first occurrence of overtime parking by a motor vehicle during any calendar quarter.~~

~~(a) If the parking violation occurs during a calendar quarter of any calendar year and the vehicle in violation of such time limits has not been the subject of a parking infraction under the provisions of LMC 11.50.070 during such calendar quarter period of time (a warning notice shall be substituted for a notice of parking infraction~~

(2) Class B Off-Street Parking Facilities. Except for Saturdays, Sundays and legal holidays, it is a parking infraction to park a motor vehicle in a Class B off street parking facility of the city unless the motor vehicle so parked displays a current parking permit issued by the City of Longview police department of the city. If the permit specifies a designated parking space, it is a parking infraction to park such vehicle in any other parking space within such off street parking facility unless the assigned parking space is occupied by another vehicle. The penalty for violation of this section is \$30.00 for the first violation, \$50.00 for the second violation, \$75 for the third violation and \$100 for the fourth and subsequent violations during a calendar quarter. In addition, a motor vehicle parked in violation of this section is subject to impoundment.

(3) Class A/B Off-Street Parking Facilities.

(a) A vehicle may park for up to 72 hours in a Class A/B parking facility except in parking spaces with signage that specifies a lesser time limit which shall be the time limit for that signed space. The penalty for violation \$30.00 for the first violation, \$50.00 for the second violation, \$75.00 for the third violation and \$100.00 for the fourth and subsequent violations in a calendar quarter. In addition, a motor vehicle parked in violation of this section is subject to impoundment.

~~(b) If the parking violation occurs during a calendar quarter of any calendar year and the vehicle in violation of such time limits has not been the subject of a parking infraction under the provisions of LMC 11.50.070 during such calendar quarter period of time, a warning notice shall be substituted for a notice of parking infraction.~~

(4) Class C Off-Street Parking Facilities. It is a parking infraction to park a motor vehicle in a Class C off-street parking facility of the city during the times when the building which is adjacent to such parking facility is open for public use, and for the two hours immediately preceding the time at which such building is scheduled to open, unless the operator of such motor vehicle is inside or otherwise using the building to which such off-street parking facility is adjacent or nearby. The penalty for violation of this section is the sum of \$25.00. Furthermore, any motor vehicle parked in violation of this section is subject to impoundment.

(5) Class D Off-Street Parking Facilities. It is a parking infraction to park a motor vehicle in a Class D off-street parking facility of the city in violation of LMC 11.62.010(5) or to park a motor vehicle in places other than those spaces that are marked for the parking of such motor vehicles. The penalty for violation of this section is the sum of \$20.00. Furthermore, any motor vehicle parked in violation of this section is subject to impoundment.

(6) Class E Off-Street Parking Facilities. It is a parking infraction to park a motor vehicle in a Class E off-street parking facility of the city in violation of LMC 11.62.010(6). The penalty for violation of this section is the sum of \$5.00. Furthermore, any motor vehicle parked in violation of this section is subject to impoundment.

(7) All Classes of Off-Street Parking Facilities. It is a parking infraction to park a motor vehicle in any class of off-street parking facility of the city between the hours of 2:00 a.m. and 6:00 a.m. on those days when such parking is prohibited as stated in signs posted in accordance with LMC 11.62.020. The penalty for such violation of this section is the sum of \$20.00, and any motor vehicle so parked is subject to impoundment.

Section 5. That Chapter 11.62.130 of the Longview Municipal Code is hereby amended to read as follows:

11.62.130 Off-street parking permits.

Off-street parking permits may be sold and issued to the owners and operators of motor vehicles for the parking of motor vehicles in Class A and Class B off street parking facilities of the city. The number of permits applicable to each parking facility, the duration of such permits, and the amount to be charged for such permits shall be determined by the city manager subject to the recommendations of the Longview downtown advisory committee. All such permits shall be sold and distributed by the City of Longview Longview police department, and shall be designed to be affixed to motor vehicles in a manner and in a location that enables effective enforcement of this chapter. Permits issued pursuant to this chapter shall not be transferable, resold or duplicated. The amount paid for a permit issued pursuant to this chapter shall not be refundable. All such permits must be displayed hanging from the rear view mirror of the vehicle to which such permit is issued, or at such other place as is designated by the City of Longview. Such parking permits shall be applicable only to a specific off street parking facility and to no others.

Section 6. If any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 7. This ordinance shall be in full force and effect from and after thirty (30) days from the date of its passage and publication as provided by law.

Passed by the City Council this _____ day of _____, 2022.

Approved by the Mayor this _____ day of _____, 2022.

MAYOR

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk

Date of Publication: _____



City of Longview

Agenda Summary

APPOINTMENT OF VIRGINIA COWDEN AND CAITLIN TWEEDY TO THE HISTORIC PRESERVATION COMMISSION

RECOMMENDED ACTION:

APPOINT VIRGINIA COWDEN TO AN UNEXPIRED TERM THROUGH DECEMBER 31, 2022, AND CAITLIN TWEEDY TO AN UNEXPIRED TERM THROUGH DECEMBER 31, 2023.

CITY ATTORNEY REVIEW: N/A

SUMMARY STATEMENT:

Due to resignations, there are two vacancies on the Historic Preservation Commission. This is a city council appointment. The council appointments committee (consisting of Mayor MaryAlice Wallis, and councilors Hillary Strobel, and Ruth Kendall) reviewed applications and recommend the appointment of Virginia Cowden to an unexpired term through December 31, 2022 and Catlin Tweedy to an unexpired term through December 31, 2023.

STAFF CONTACT:

MaryAlice Wallis, Mayor
Hillary Strobel, Councilwoman
Ruth Kendall, Councilwoman

Attachments: None



City of Longview

Agenda Summary

DEVELOPMENT OF HOUSING AND MIXED USE ON MUNICIPAL PROPERTY IN THE DOWNTOWN COMMERCE ZONE

RECOMMENDED ACTION:

DIRECT STAFF TO EXPLORE THE POSSIBILITY OF SELLING CITY PARKING LOTS FOR A SPECTRUM OF POTENTIAL USES, INCLUDING HOUSING AND MIXED USE. IDENTIFY WHICH LOTS COULD MEET THE COUNCIL'S DEVELOPMENT GOALS.

INTRODUCED BY:

Spencer Boudreau

SUPPORTED BY:

Hillary Strobel

COUNCIL INITIATIVE ADDRESSED:

Strengthen Economic Conditions & Create New Opportunities

Address Quality of Place Issues

SUMMARY STATEMENT:

Whereas Longview is experiencing a shortage of housing and a surplus of parking lots in the Downtown Commerce zone, it would be beneficial to explore options to encourage housing developments in this area. The 2021 economic impact study done on downtown housing should guide decision making.

STAFF CONTACT:

Ann Rivers, Community Development Director

Attachments:

1. Original Agenda Summary



City of Longview Agenda Summary Sheet

1525 Broadway
Longview, WA 98632
www.mylongview.com

Introduced by:

Spencer Boudreau

Date: June 9, 2022

Supported by:

Hillary Strobel

For Agenda of: July 12, 2022

SUBJECT TITLE:

Development of housing and mixed use on municipal property in the Downtown Commerce Zone

COUNCIL STRATEGIC INITIATIVE ADDRESSED:

Strengthen Economic Conditions & Create New Opportunities
Address Quality of Place Issues

SUMMARY STATEMENT:

Whereas Longview is experiencing a shortage of housing and a surplus of parking lots in the Downtown Commerce zone, it would be beneficial to explore options to encourage housing developments in this area. The 2021 economic impact study done on downtown housing should guide decision making.

RECOMMENDED ACTION:

Direct staff to explore the possibility of selling city parking lots for a spectrum of potential uses, including housing and mixed use. Identify which lots could meet the council's development goals.

STAFF CONTACT:

Ann Rivers, Community Development Director



City of Longview

Agenda Summary

APPROVAL OF CLAIMS

Based upon the authentication and certification of claims and demands against the city, prepared and signed by the City's auditing officer, and in full reliance thereon, it is moved and seconded as shown in the minutes of this meeting that the following vouchers/warrants are approved for payment:

SECOND HALF JUNE 2022 ACCOUNTS PAYABLE: \$1,944,248.00.

Check numbered 36892 - 37218.

SECOND HALF JUNE 2022 PAYROLL:

\$374,022.99, checks no. 1334-1358

\$905,120.61, direct deposits

\$892,909.83, wire transfers

\$2,172,053.43 Total

STAFF CONTACT:

John Baldwin, Accountant

Dana Beck, Payroll Specialist

Attachments: None



City of Longview

Agenda Summary

BID REVIEW – CALIFORNIA WAY REHABILITATION PROJECT

RECOMMENDED ACTION:

MOTION TO ACCEPT THE LOW BID AND AWARD TO ADVANCED EXCAVATING SPECIALISTS, LLC, IN THE AMOUNT OF \$1,130,910.80

COUNCIL STRATEGIC INITIATIVE ADDRESSED:

Improve transportation systems

Improve streets and roads

SUMMARY STATEMENT:

The project includes planning the existing asphalt pavement and paving new HMA on California Way between Baltimore Street and BNSF Railroad. The project also includes pedestrian improvements to access ramps and pedestrian signals, pavement markings, and waterline replacement.

On June 29, 2022, one bid was received as follows:

\$1,130,910.80 – Advanced Excavating Specialists, LLC, Kelso, WA

\$990,000.00 - Engineer's Estimate

The bid received was determined to be regular and responsive.

FINANCIAL SUMMARY:

This project is funded through the Transportation Benefit District Fund and the Water Construction Fund.

STAFF CONTACT:

Will Hoskins, Project Engineer

Attachments: None