

Cedar River Corridor Plan

Update to the WRIA 8 Salmon Recovery Council

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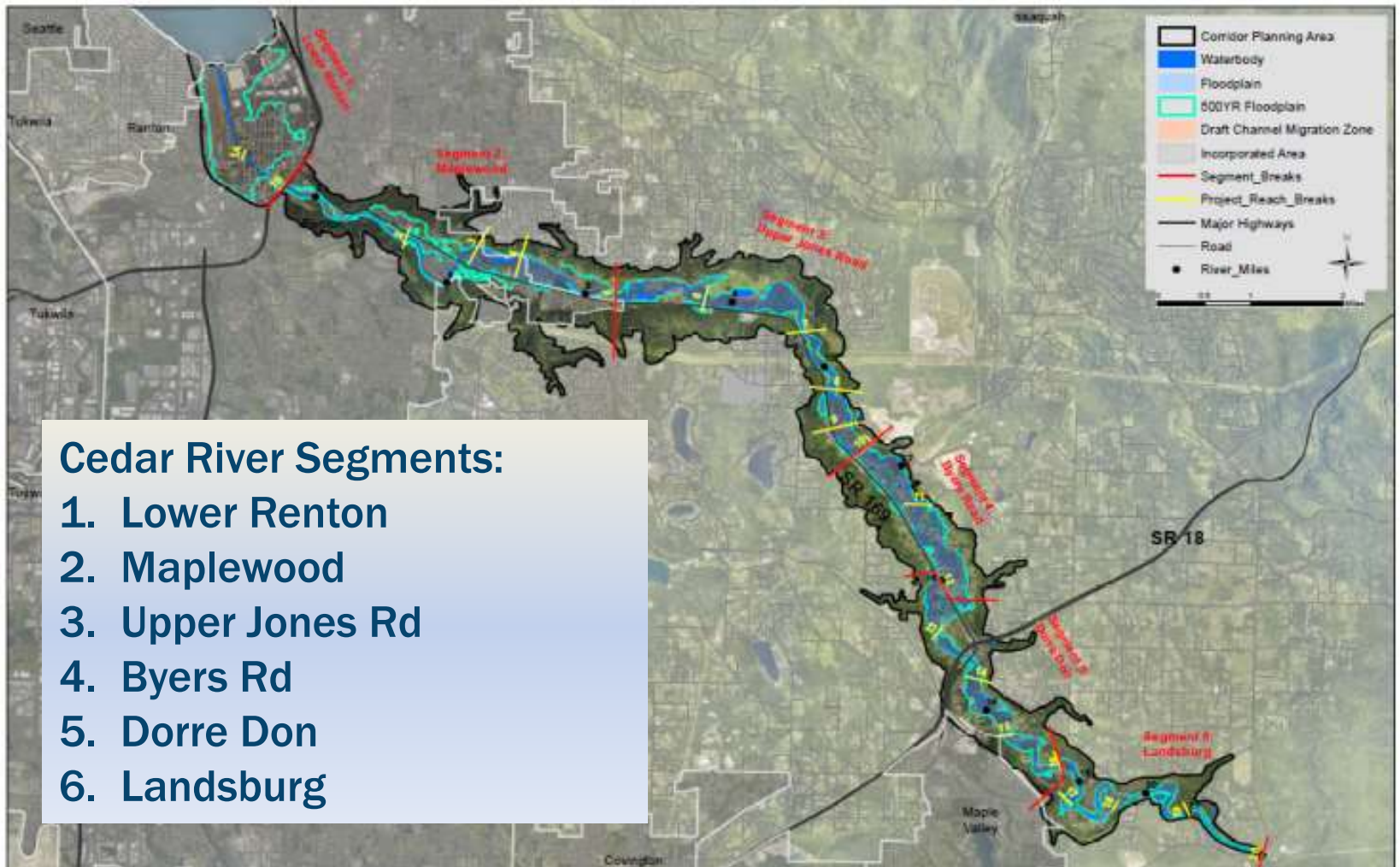
July 21, 2016

Department of Natural Resources and Parks
Water and Land Resources Division
River and Floodplain Management Section



Summary of Presentation

- **Progress to Date**
 - Risk Analysis → Problem Areas ID's
 - Technical Workshops:
 - Flood and CMZ risks
 - Habitat
 - Recreation
 - Evaluation and development of projects
- **Next Steps in Capital Investment Strategy**
- **Proposed Outreach Strategy**



Cedar River Corridor Planning Area and Study Segments

Cedar River Basin Context

- **Basin Geomorphology**
 - Area - 188 sq. miles
 - River 45 miles – headwaters to Lake Washington; 22 miles Landsburg to Lake Washington
 - 1916 – Cedar R. diverted into Lake Washington
- **Basin Users:**
 - 8596 People living in Corridor; 7000 in Renton
 - 19,124 Employment in Renton [Inc. Boeing]
 - Sockeye introduced in 1939
 - Chinook listed 1999
 - Passive and active recreation on trail, in parks, and in the river
- **Existing Flood Protection:**
 - 100 year flood = 12,000 cfs
 - Masonry Dam built 1914 [Incidental flood control]
 - Lower Renton > 100 year with levees and floodwalls
 - Rural areas < 20 to 50 year
- **Channel Migration Hazards significant**

Communication and Outreach

- **Advisory Committee – 4 meetings**
- **Flood Technical Workshop**
- **Habitat Technical Workshop**
- **NPS Public Recreation Workshop**
- **Neighborhood Meetings**
- **Public Meetings**

Advisory Committee

BUSINESS & INDUSTRY

Renton Chamber of Commerce
Boeing
Master Builders

COUNTY-CITY ENTITY

City of Seattle
City of Renton

RESIDENTS

At-Large, Resident
At-Large, Resident

PARTNER AGENCY

Water Resources Inventory Area 8
Cedar River Council
Greater Maple Valley
UAC/Community Service Area
Community Service Areas Program

STATE AGENCIES

Washington
Department of
Fish and Wildlife

INTEREST GROUPS

River Safety Council
American Whitewater
Forterra (or FOCRW)

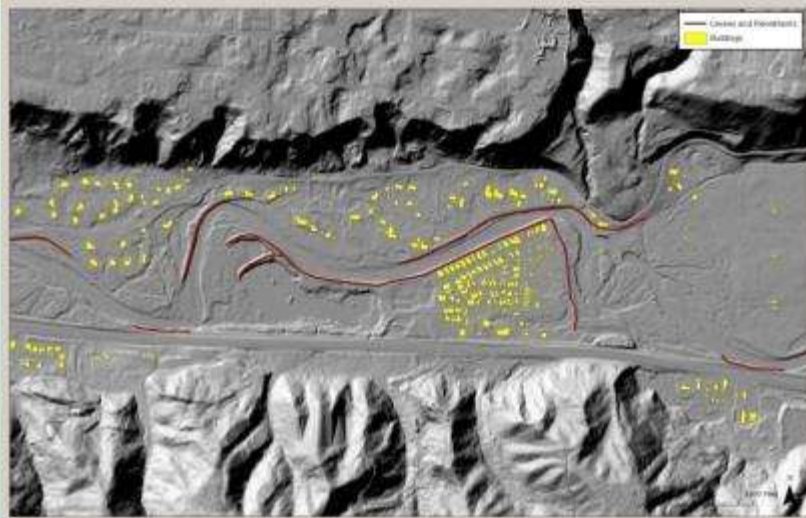
FEDERAL AGENCIES

NOAA-Fisheries
National Park Service

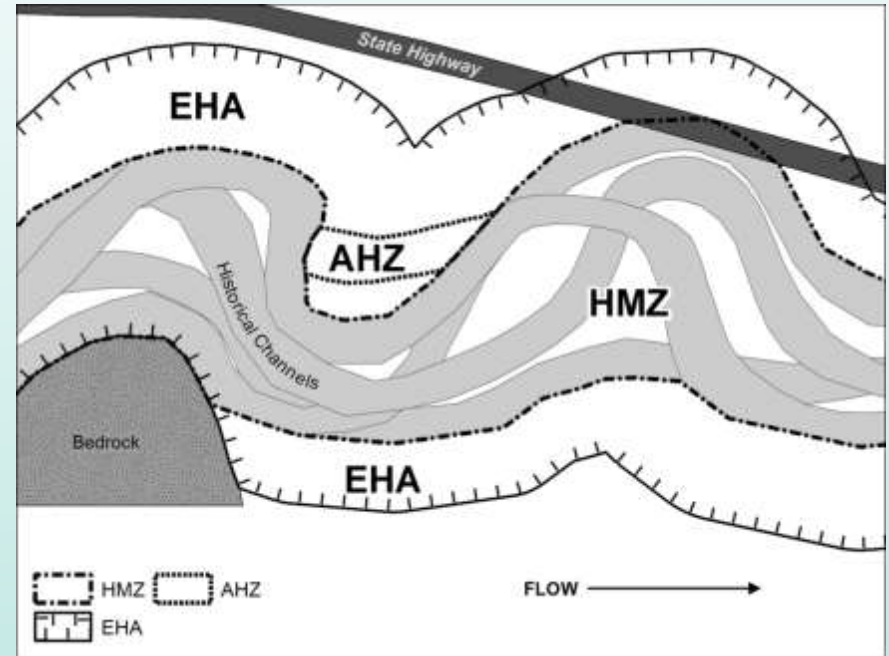
Examples of data used in Flood Hazard Analysis



Inundation depths based on Lidar and HEC-RAS model



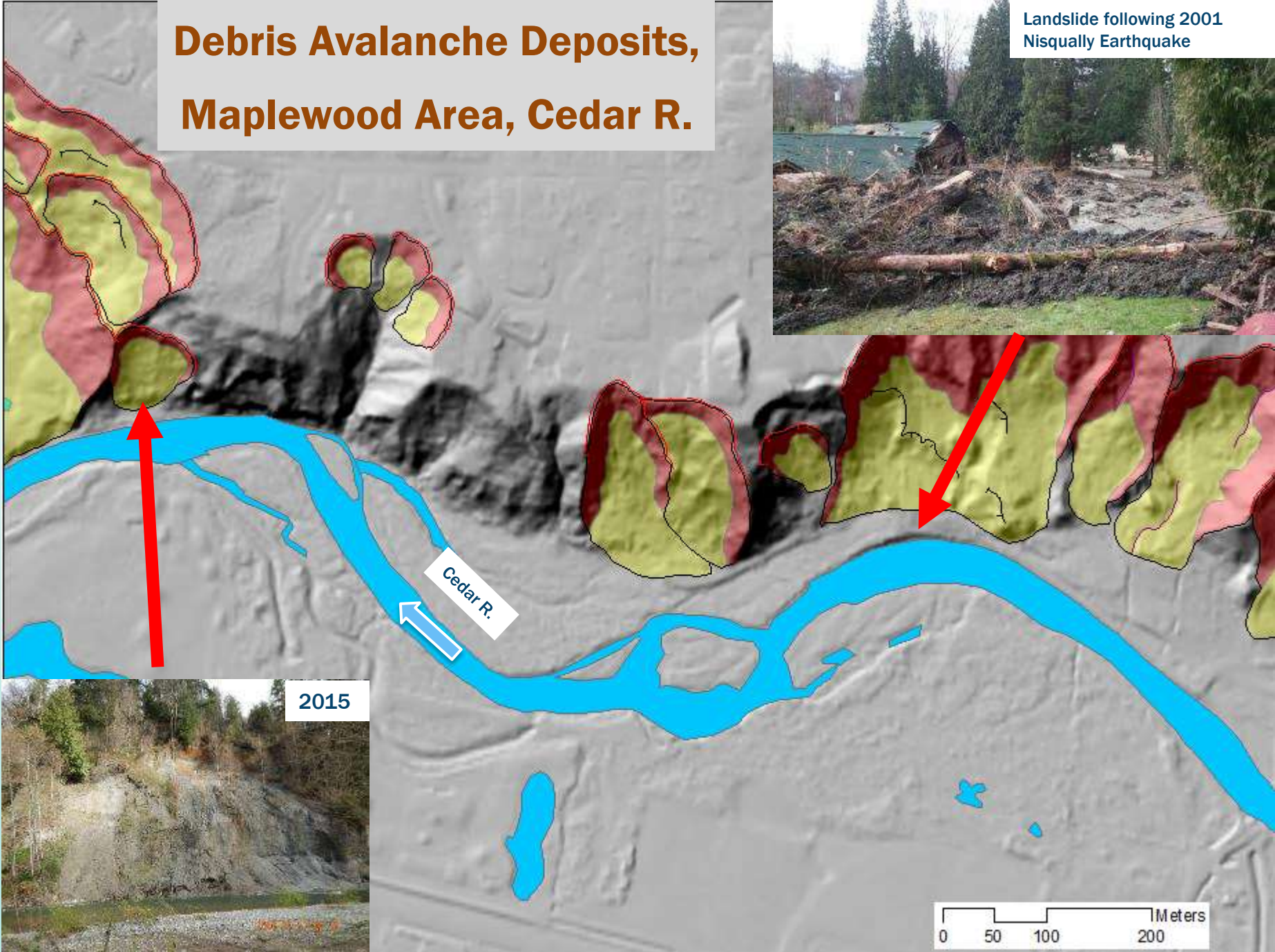
Channel Migration Mapping – under development



LIDAR Data showing detailed topography

Debris Avalanche Deposits, Maplewood Area, Cedar R.

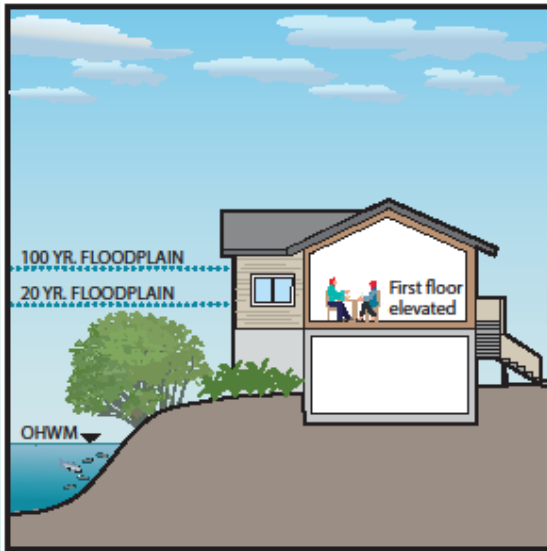
Landslide following 2001
Nisqually Earthquake



2015



Risk Analysis Approach



Neighborhood Risk Factors

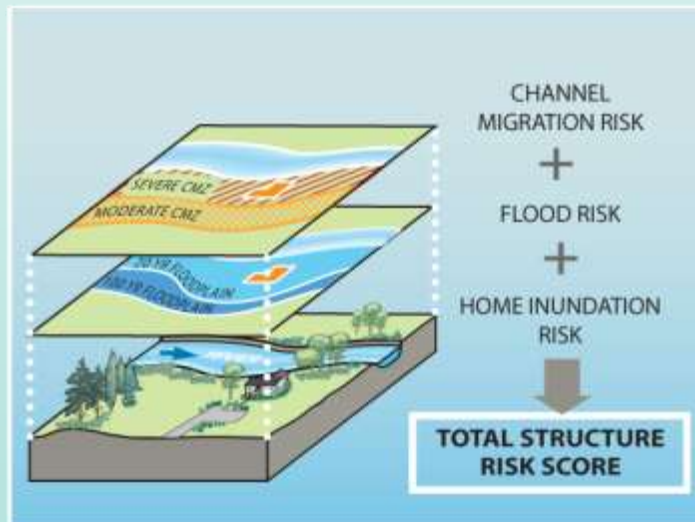
- 20, 100 and 500 year floods
- 1st Floor Inundation depth
- Isolation – roads inundated
- Channel Migration Hazards:
 - Severe and Moderate CMZ

Regional Infrastructure

- Erosion risks CR Trail, Hwy 169, Fiber Optic line
- Road Flooding: Hwy 169, Cedar Grove Rd.

Downtown Renton:

- Population density and diversity
- Economic Hub (Boeing, airport)



Risk Analysis Results

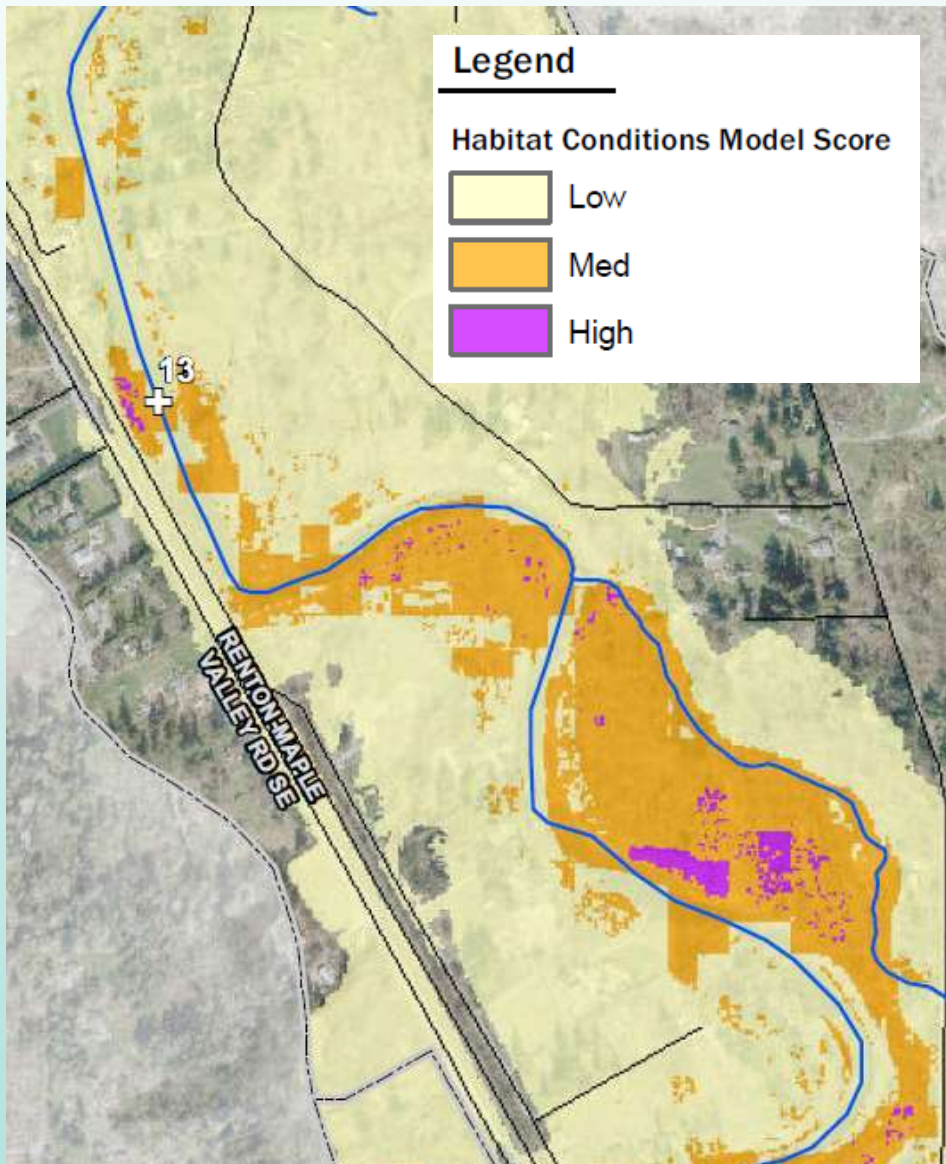
- Identified **14 Neighborhood Problem Areas**
- **13 Vulnerable bank erosion locations**
- **Neighborhood Risk Evaluation based on:**
 - Focus on 20-yr flood – much of the floodplain is activated
 - Focus on 100-yr flood event for consistency with FEMA
- **Technical analysis built on flood modeling, direct observations, and input from workshops, Advisory Committee, and public meetings**
- **City of Renton – built 2D model to evaluate level of protection from existing levees and floodwalls.**

Downtown Renton 2D Model Results 200 year Flood

- Levee and floodwall provide 100-year protection
- CMZ risk is low
- 2D model developed to evaluate levee overtopping and flooding
- Evaluation of flooding impacts for 200 & 500 year Floods



Habitat Characterization for Reference



Focused on juvenile Chinook salmon (greatest need)

Key ecological attributes representing their habitat quality and quantity:

- Floodplain-channel interactions (e.g., floodplain wetlands, side channels)
- Riparian conditions (e.g., tree canopy, bank armoring, noxious weeds)
- Large wood presence

Protect existing high quality habitat – mitigate impacts

Coordinate flood projects with Muckleshoot Tribe and WRIA 8 Interests

Recreational Considerations – NPS

Coordinated Workshop



Recreation Workshop - June 2015

Current Uses:

- Swimming, floating, boating,
- Fishing
- Trail use – biking, walking, running
- Passive recreation in open space areas
- Active fields and facilities

Interests or concerns:

- Improving parks and trails
- Access and amenities
- Litter and respect for private property
- Safety for river users

Available Floodplain Management Tools

Levees and Revetments

- Raise or reconstruct levees and revetments in their current location
- Levee setbacks – improve channel capacity to convey floodwaters

Bridge or Road Modification

- Reduce neighborhood isolation

Gravel Removal

- Renton channel maintenance

Property Acquisition or Home Elevation

Side Channel Creation or Reconnection

Flow Deflectors for Bank Stabilization and Instream Structures

Next Steps – Capital Investment Strategy

- Develop options for potential risk reduction projects w/ planning level cost estimates
- Brief FCD staff on projects and outreach strategy
- Build Draft Capital Investment Strategy – Near Term, 6-year CIP, and long term needs → input to 2017 Budget
- Continue outreach with key stakeholders, agencies, cities, technical staff and public.
- Complete Plan by end of year.

Questions?



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