



# North Shore Levee Community Meeting September 20, 2016

# Project Team

- City of Aberdeen
  - Rick Sangder, Public Works Director
  - Kris Koski, City Engineer
- City of Hoquiam
  - Brian Shay, City Administrator
- KPFF – Project Management/Engineering Design
  - Mark Steepy, Lead Engineer
- Maul Foster & Alongi, Inc – Facilitation
  - Mike Stringer, Planner
  - Lauren Wirtis, Planner



# Agenda

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1. Introductions
2. Purpose and Need for North Shore Levee
3. Steps to Implementation
4. Causes of Flooding
5. Considerations for Levee Design
6. Discussion (Questions and Answers)
7. Next Steps



# Community Meeting

- **Purpose:** Provide information to community about design criteria and alignment options and listen to community ideas and concerns
- Community input will inform the design. Cities will need to balance different interests in selecting preferred alignment and design
- Today – Explore Options
- Next Meeting – Review Preferred Option



# North Shore Levee

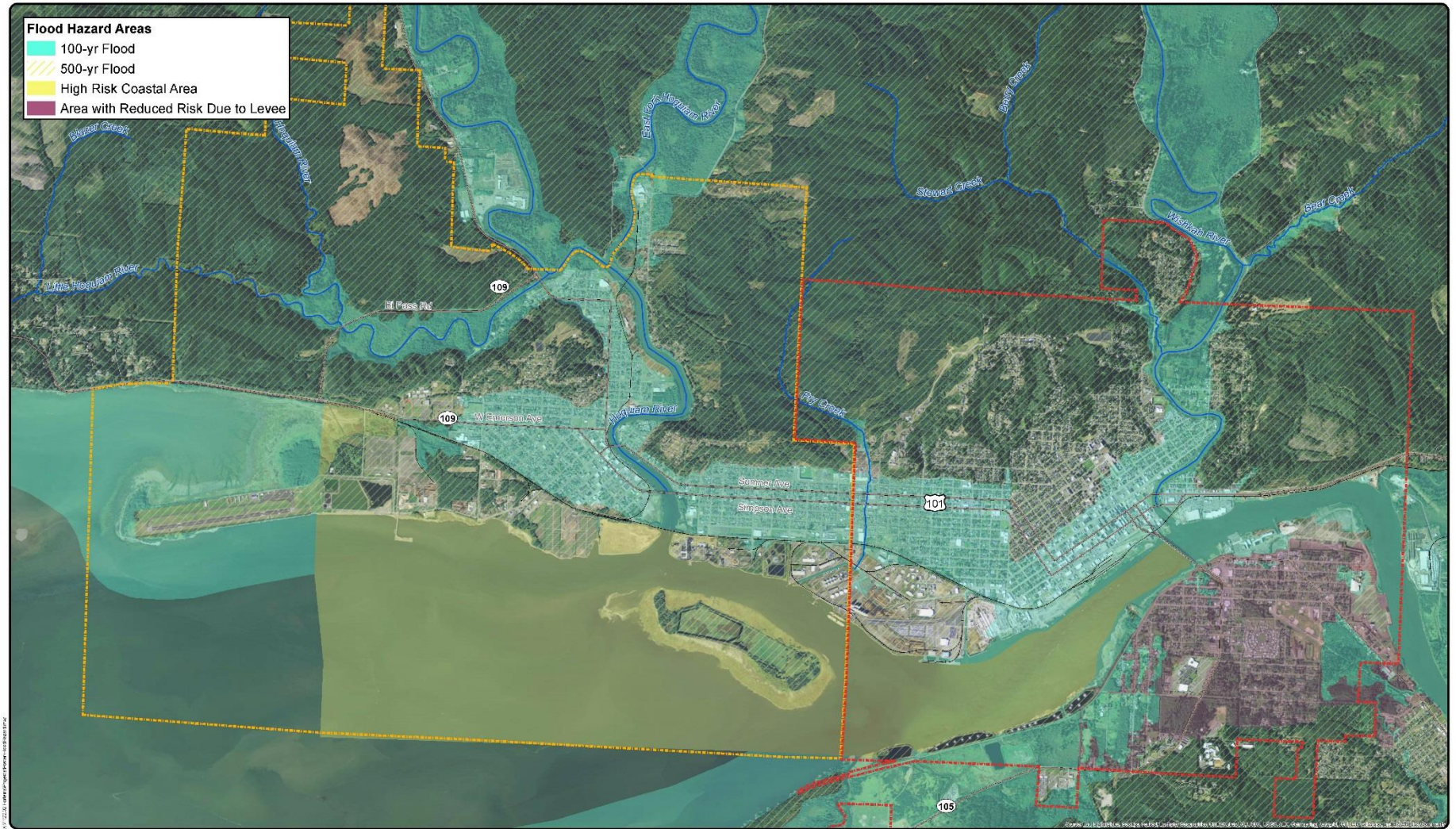
- **Purpose:** Provide flood protection and flood insurance relief to portions of Aberdeen and Hoquiam
- **Work Product of Current Effort:** 60% Design and Application to FEMA for approval of Conditional Letter of Map Revision (CLOMR)
- **Levee Outcomes:**
  - Long-term protection from coastal flooding
  - Change Flood Insurance Rate Map
  - Remove requirement for flood insurance





# Flood Hazard Map

Timberworks: Resiliency and Restoration Plan  
Cities of Aberdeen and Hoquiam



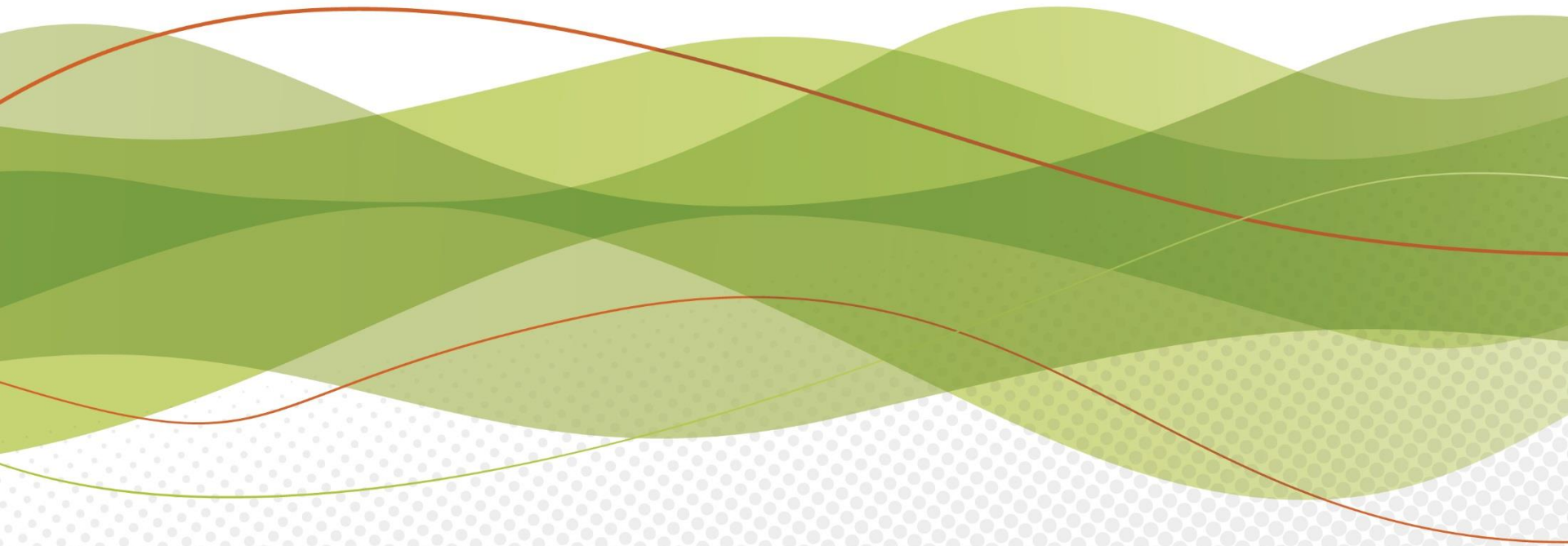


# Steps to Levee Construction

- **Preliminary Design (2016-2017)**
- **FEMA Review and Conditional Letter of Map Revision (Spring - Summer 2017)**
- **Final Design and Permitting (Summer 2017 - 2018)**
- **Construction (2018 - 2020)**
- **Certification and FEMA Accreditation of Levee (following construction)**



# Economic and Community Impacts of Flooding





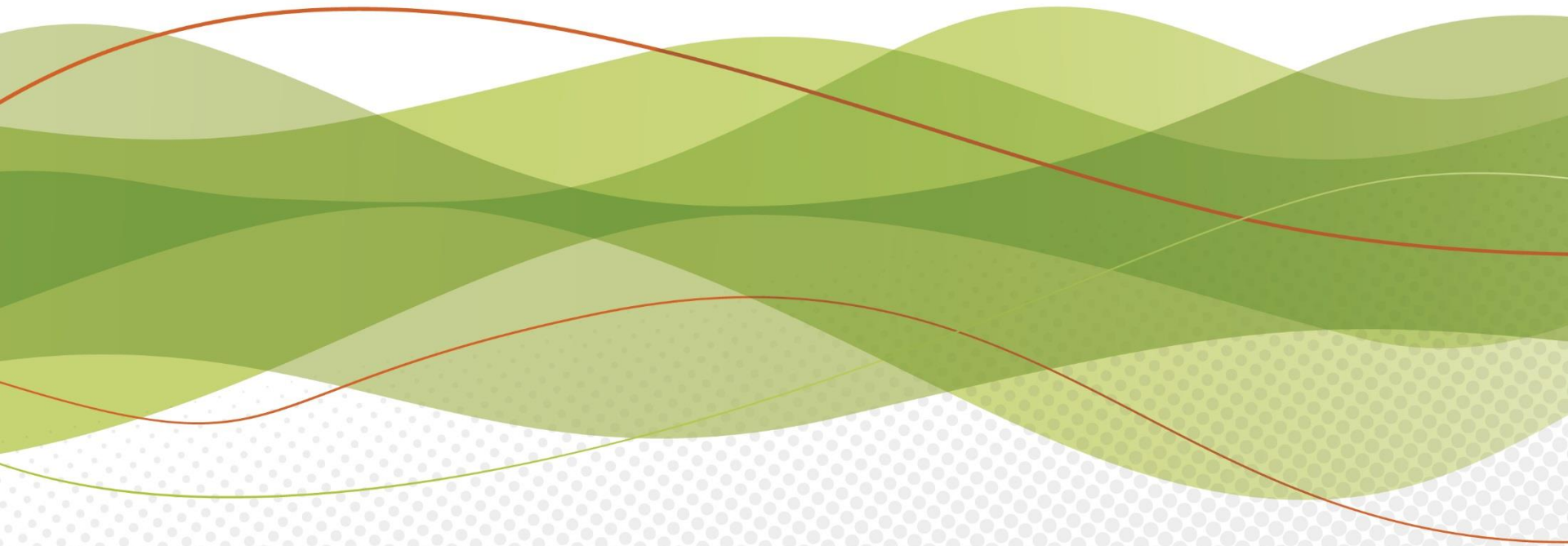
# Economic Impacts of Flood Insurance

## National Flood Insurance Program

- Aberdeen in program since 1984
- Hoquiam in program since 1979
- 2014 annual premiums: \$2.3 M
- Paid losses since inception: \$5.1 M
- Paid losses prior to Jan 2015 Storm: \$0.9 M
- Total # of Policies: 2,086 (2014)
- Buildings in Special Flood Hazard Area
  - 32% (Aberdeen)
  - 83% (Hoquiam)
- Source: FEMA – Aberdeen and Hoquiam Claims Records Request



# Causes and Drivers of Flooding





12:14 PM





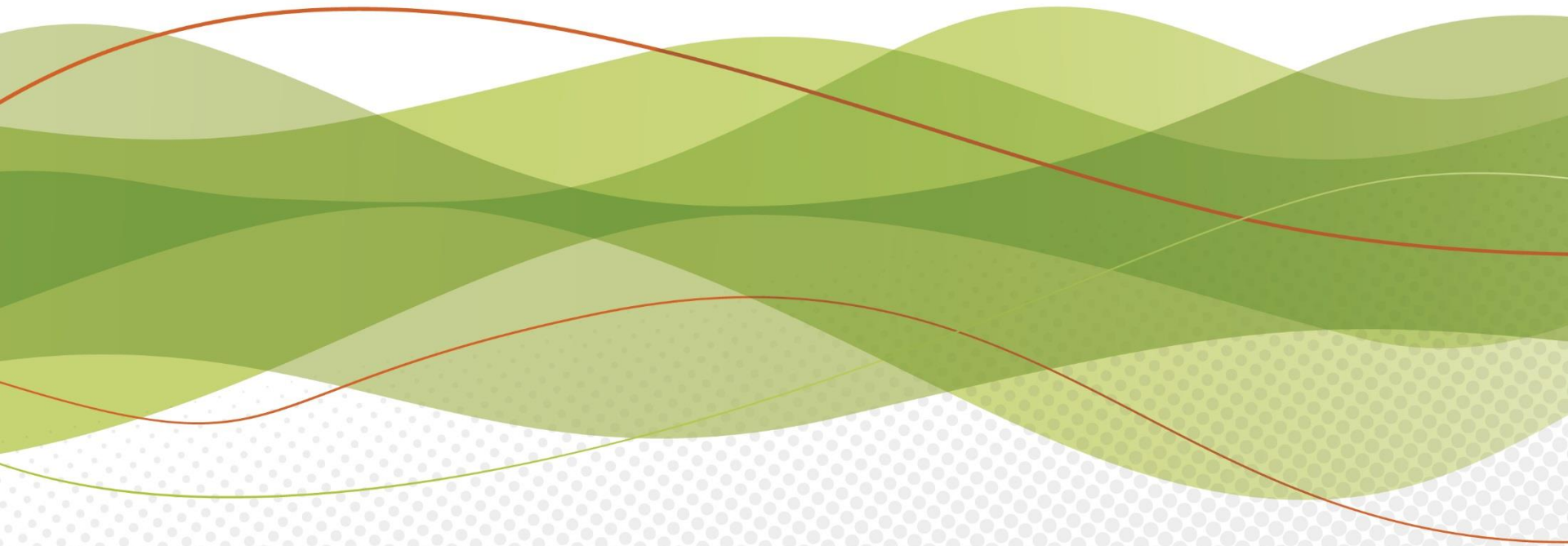
# Drivers of Flooding

- **Coastal:** Extreme high tides, low pressure, and wind driven
  - December 2015
- **Local:** Intense rain events, topography, high groundwater, stormwater system capacity
  - January 2015; combined with high tides

*Animation*



# Considerations for Alignment and Design of Levee



# Considerations

1. **Location of Ordinary High Water Mark/Existing Elevations**
2. **Permitting (Likelihood & Duration)**
3. **Cost (Initial Capital & Long Term Maintenance)**
4. **Access to Levee**
5. **Access to Private Properties**
6. **Existing Structures (Homes, Buildings, Docks, & Ramps, etc.)**
7. **Maintenance & Operations**
8. **Internal Drainage Improvements**
9. **Aesthetics**
10. **Constructability**



# Discussion





# Next Steps

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- Gather and Review Comments
- Review Alignment Alternatives
- Select Preferred Alignment
- Community Meeting – *November*

