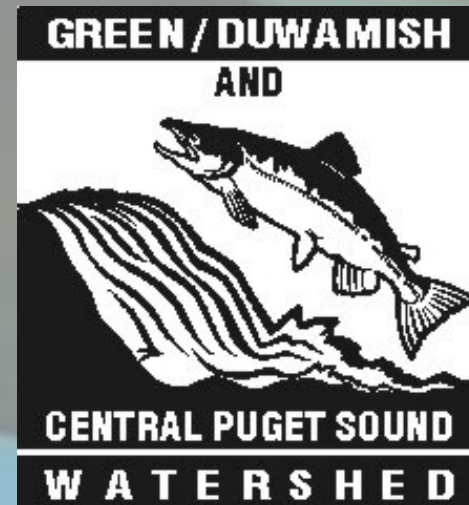


(Watershed Resource Inventory Area)

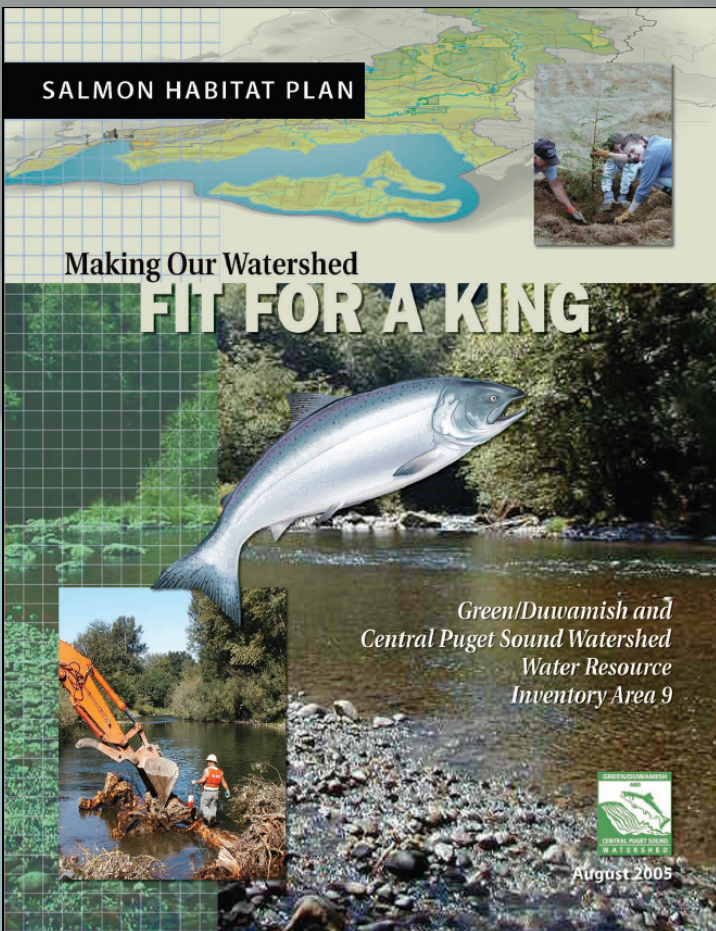
The WRIA⁹ Marine Shoreline Monitoring and Compliance Pilot Project



“This project received funding from the EPA under an agreement with WDFW. The contents do not necessarily reflect the views and policies of the EPA. Mention of trade names or commercial products does not reflect endorsement”.

Why do this Project?

- WRIA 9 Salmon Plan calls for:
 - No new shoreline armoring
 - Monitoring of shoreline condition
 - “Improve enforcement of existing land use and other regulations”
- WRIA 9—2010 Status and Trends monitoring report called for boat based surveys vs. aerial photo analysis

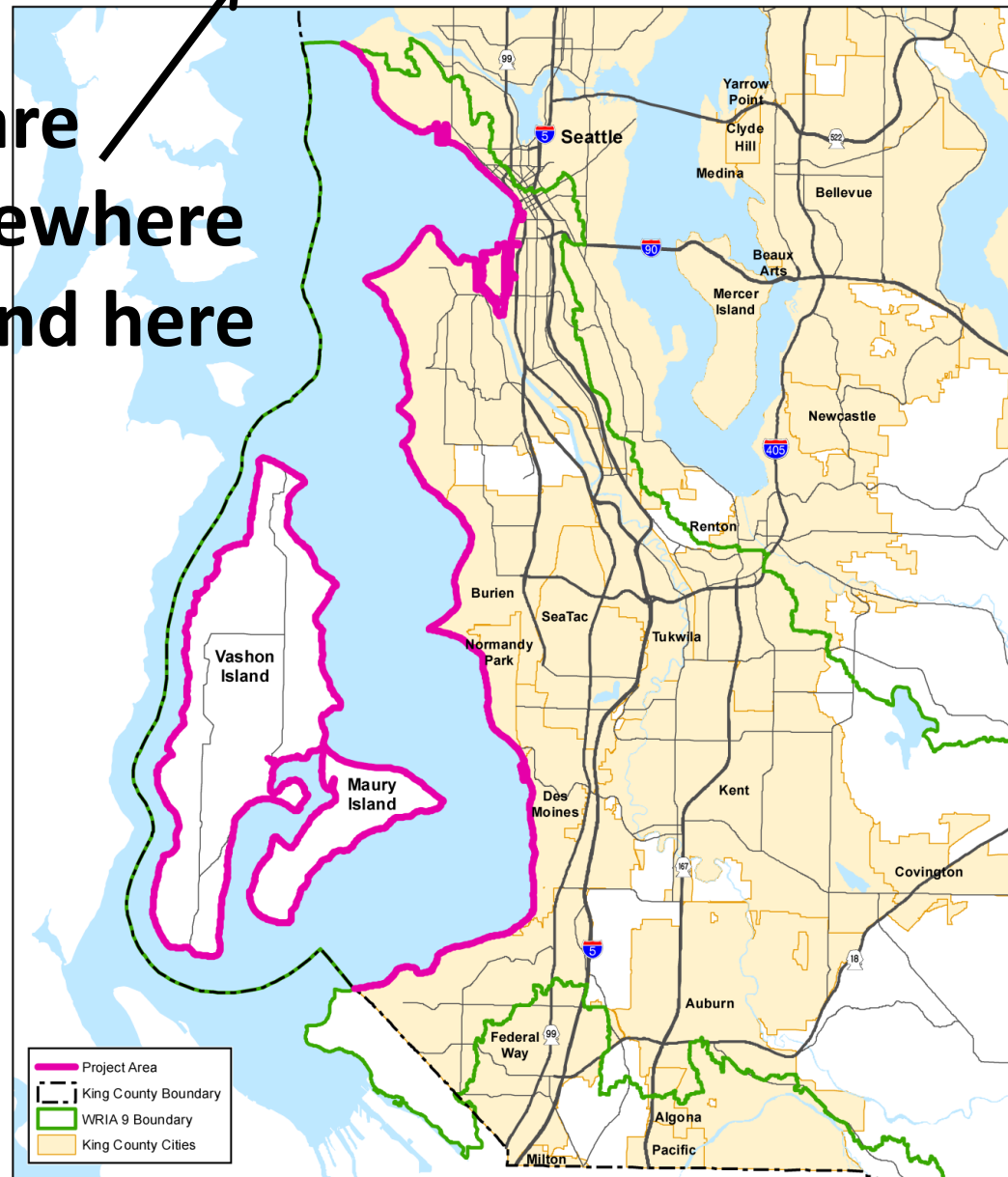
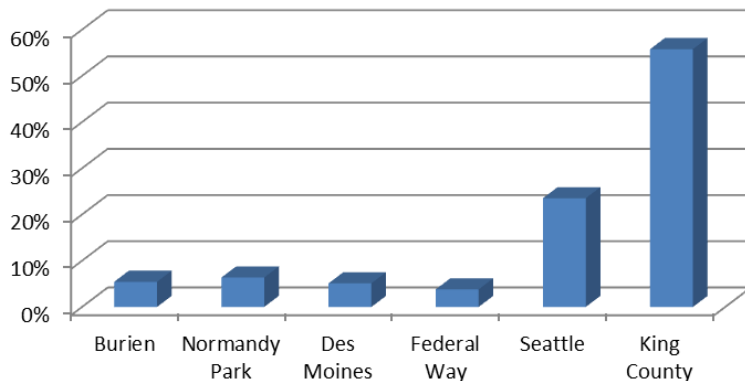


Project Area

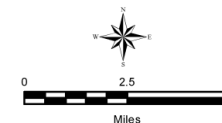
You are
somewhere
beyond here

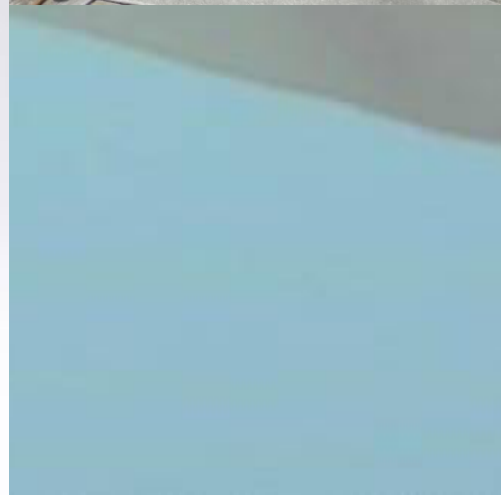
- 92 miles
 - 52 miles rural (48% armored)
 - 40 miles urban (83% armored)

% of WRIA 9 shoreline



WRIA 9 Marine Shoreline
Monitoring and
Compliance Project





Characterized changes by boat

Type of change

- Shoreline armoring
- Docks/overwater structures
- Groins
- Clearing/grading
- Structures (houses/sheds/stairs)
- Aquaculture operations
- Other changes

Status

- New
- Major Repair
- Minor Repair

Material

- Wood
- Rock
- Concrete

In the office

QA/QC & verification of changes
by comparing to other photos

Vertical Aerial photos

2005
2007
2009 (2 sets)
2010
2012

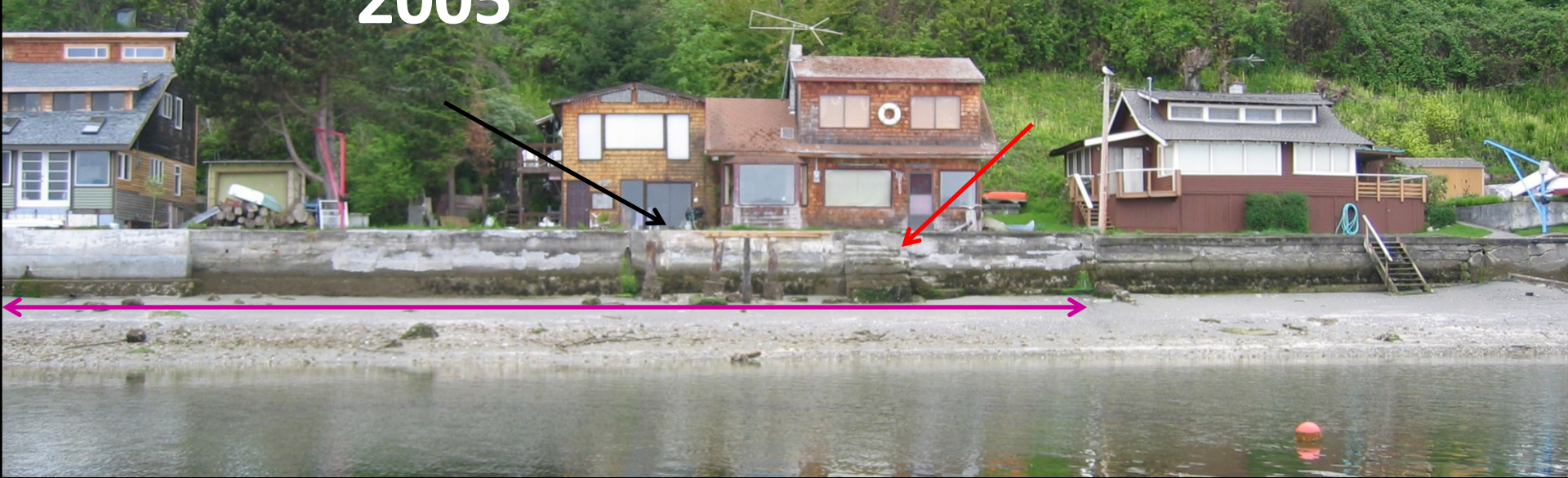
Oblique photos

2001 }
2006 } DOE
2011 King County

Field photos

2004
2006
2011 (Vashon only)

2005



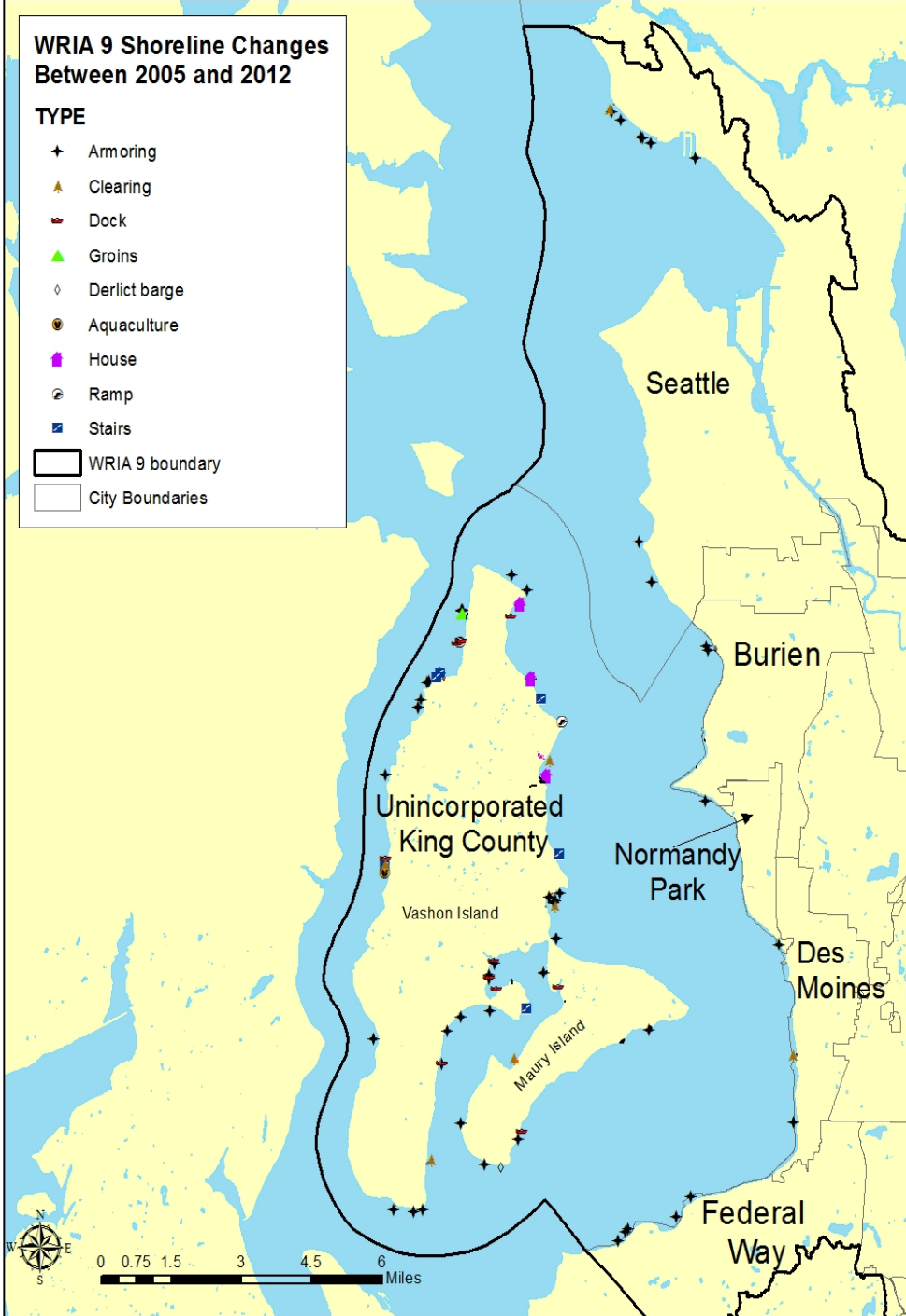
2012



WRIA 9 Shoreline Changes Between 2005 and 2012

TYPE

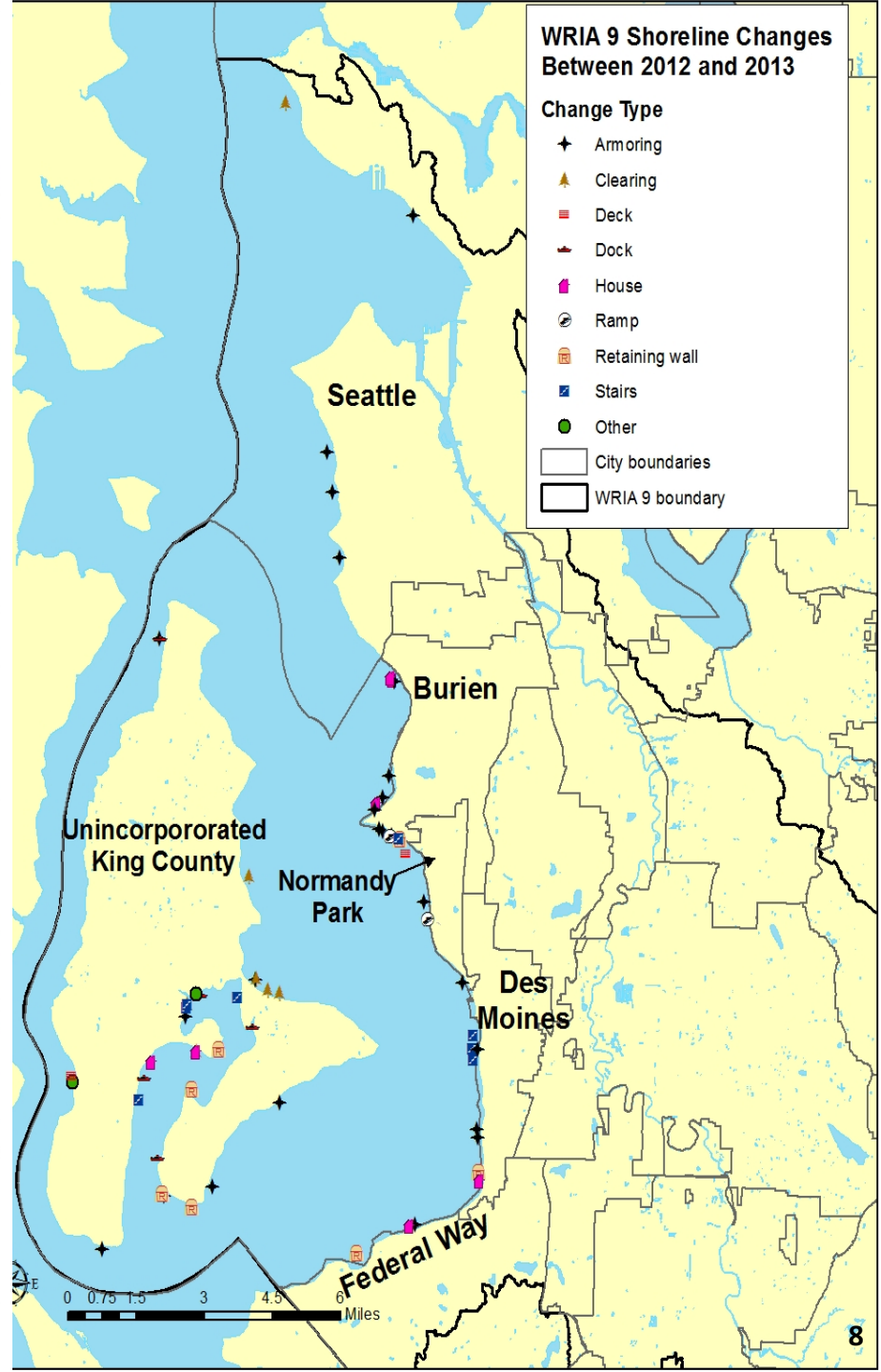
- + Armoring
- ▲ Clearing
- Dock
- ▲ Groins
- ◇ Derlict barge
- Aquaculture
- House
- Ramp
- Stairs
- WRIA 9 boundary
- City Boundaries



WRIA 9 Shoreline Changes Between 2012 and 2013

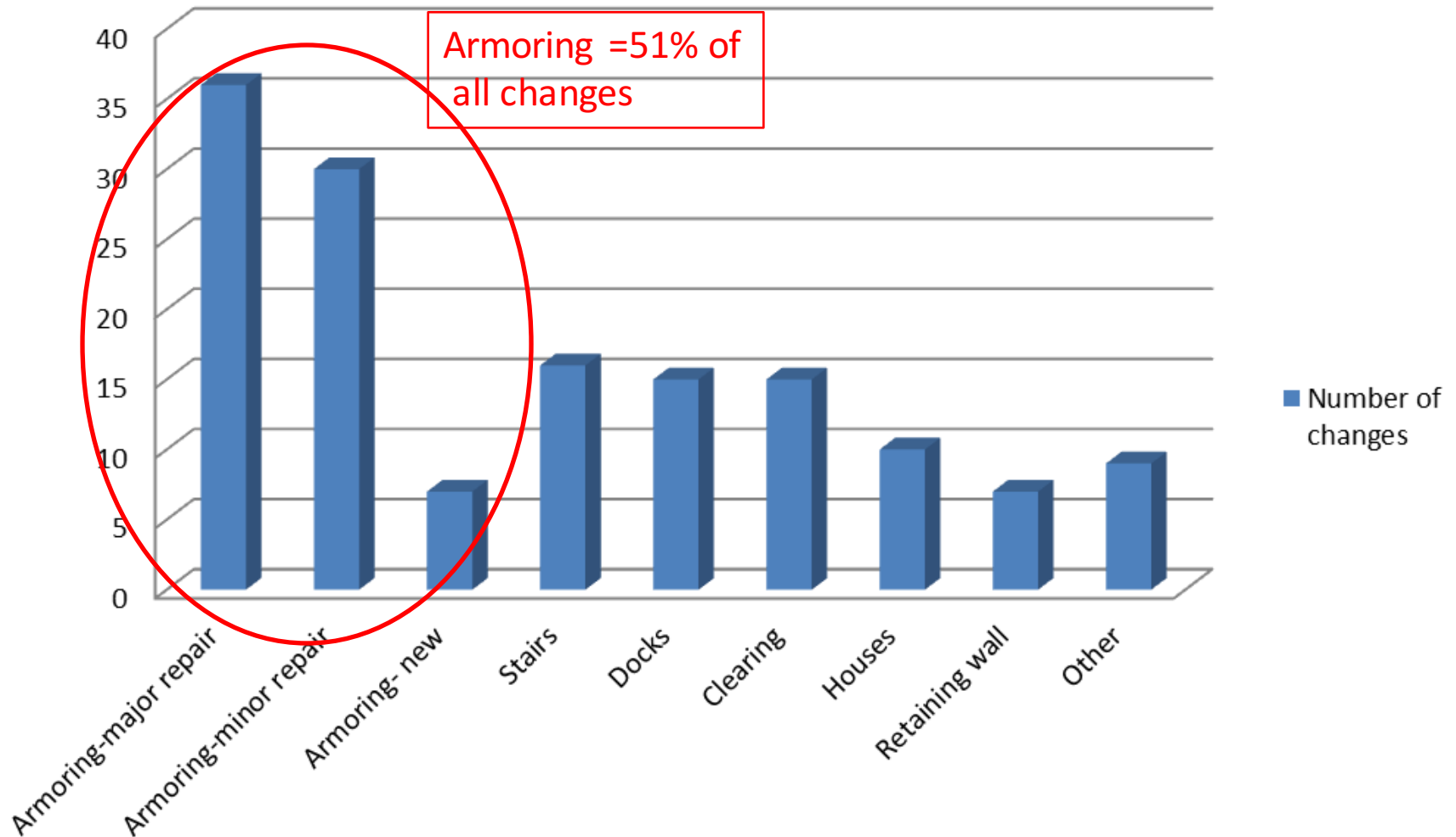
Change Type

- + Armoring
- ▲ Clearing
- Deck
- Dock
- House
- Ramp
- Retaining wall
- Stairs
- Other
- City boundaries
- WRIA 9 boundary



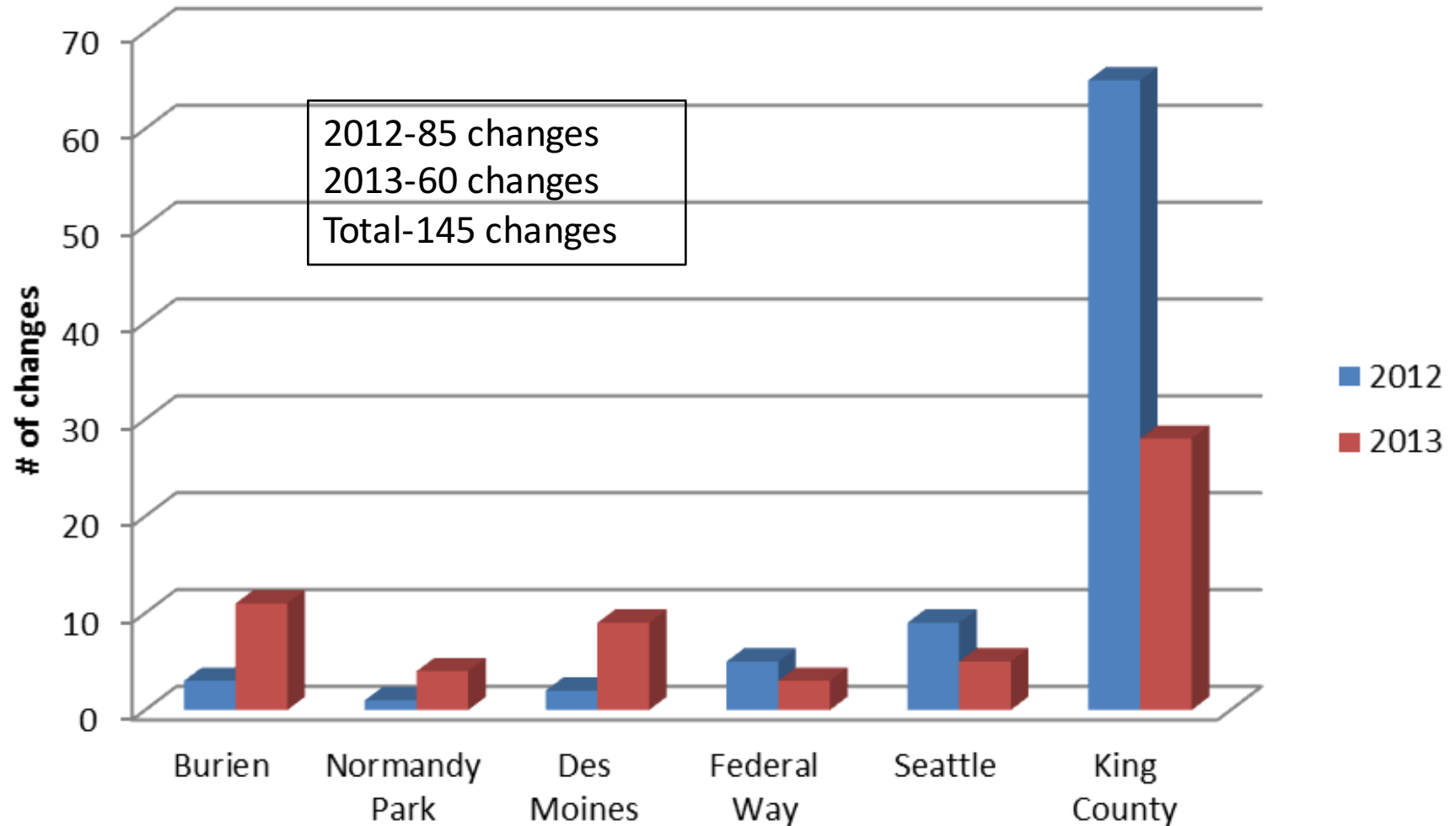
What type of changes were seen?

Number of different shoreline changes



Where were they seen?

Number of & where changes occurred



The 2012 survey looked at changes between 2004 and September of 2012 (~8 years)

The 2013 survey looked at changes between Sept 2012 and June of 2013 (less than a year)

2012-85 changes

2013-60 changes

Why so many changes in both surveys?

2013 survey

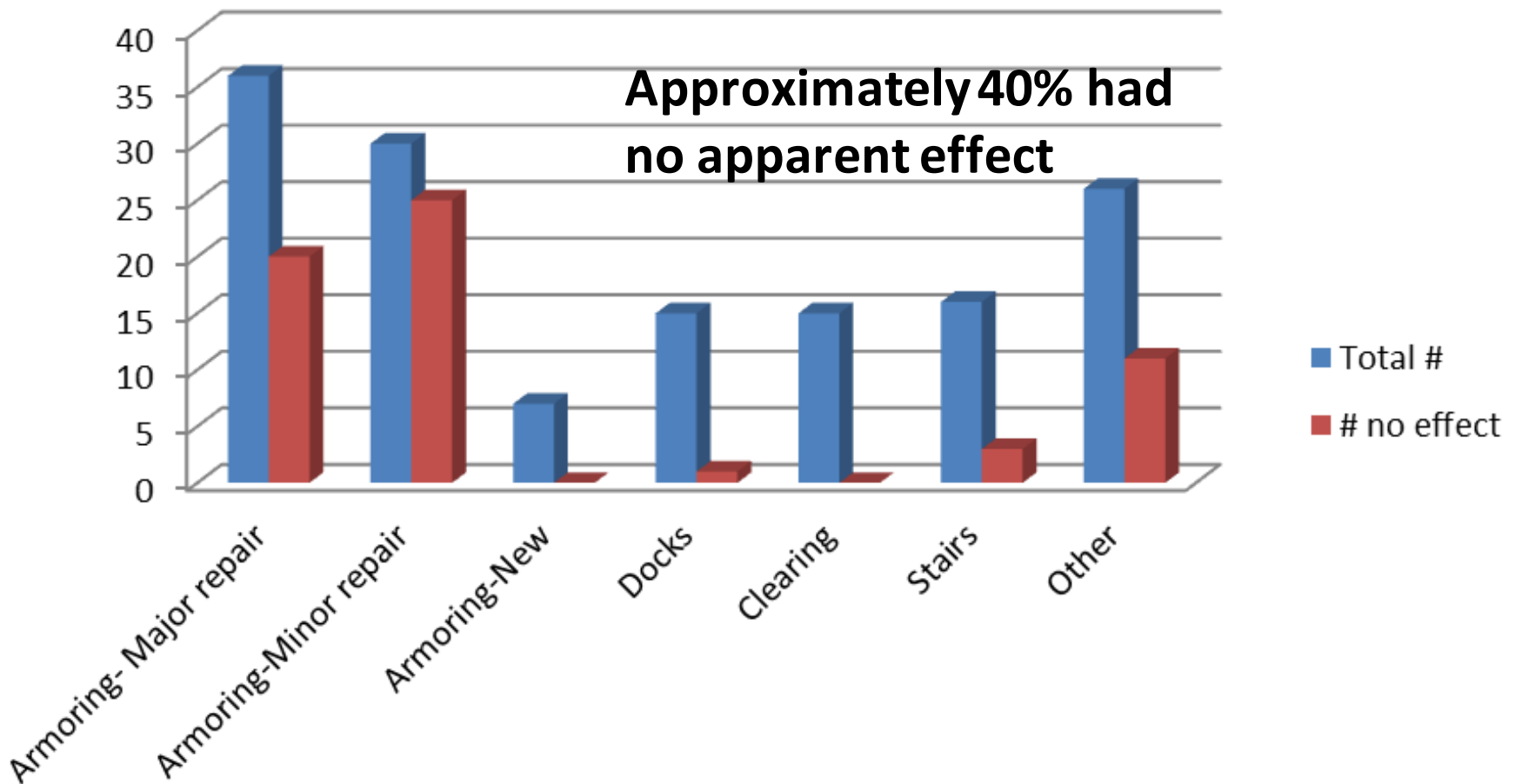
- ~10% were older, missed in the 2012 survey
- Highest tide on record between surveys
- Very wet fall/winter
- Changes easier to pick out due to newness

Evaluated impacts to ecological & physical processes

- Sediment delivery to beach
- Sediment transport along the beach
- Light energy (day & night)
- Organic material accumulation (input & storage)
- Wave energy
- Water Quality
- Forage fish spawning habitat displacement
- Hazards to public safety

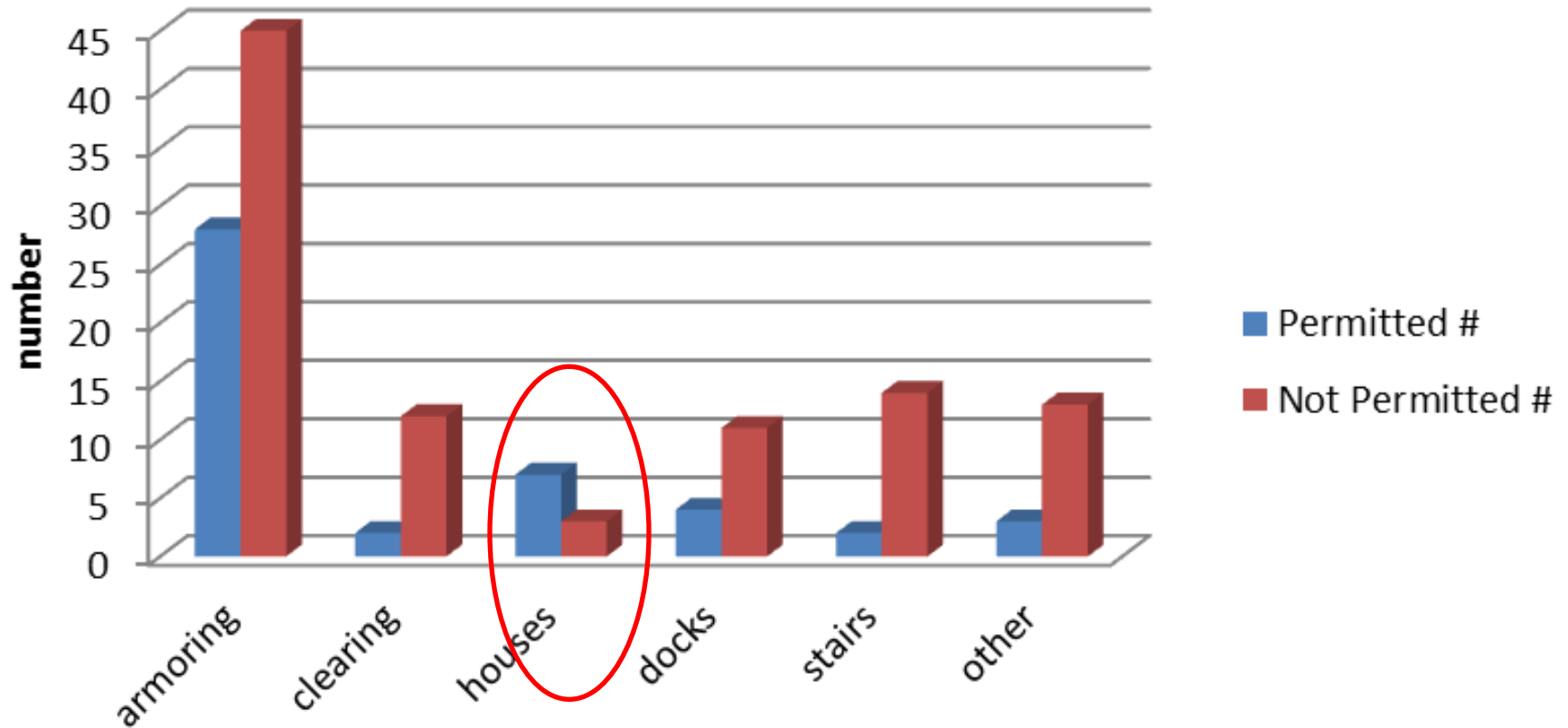
How many and what type had no apparent effect?

of changes with no apparent effect



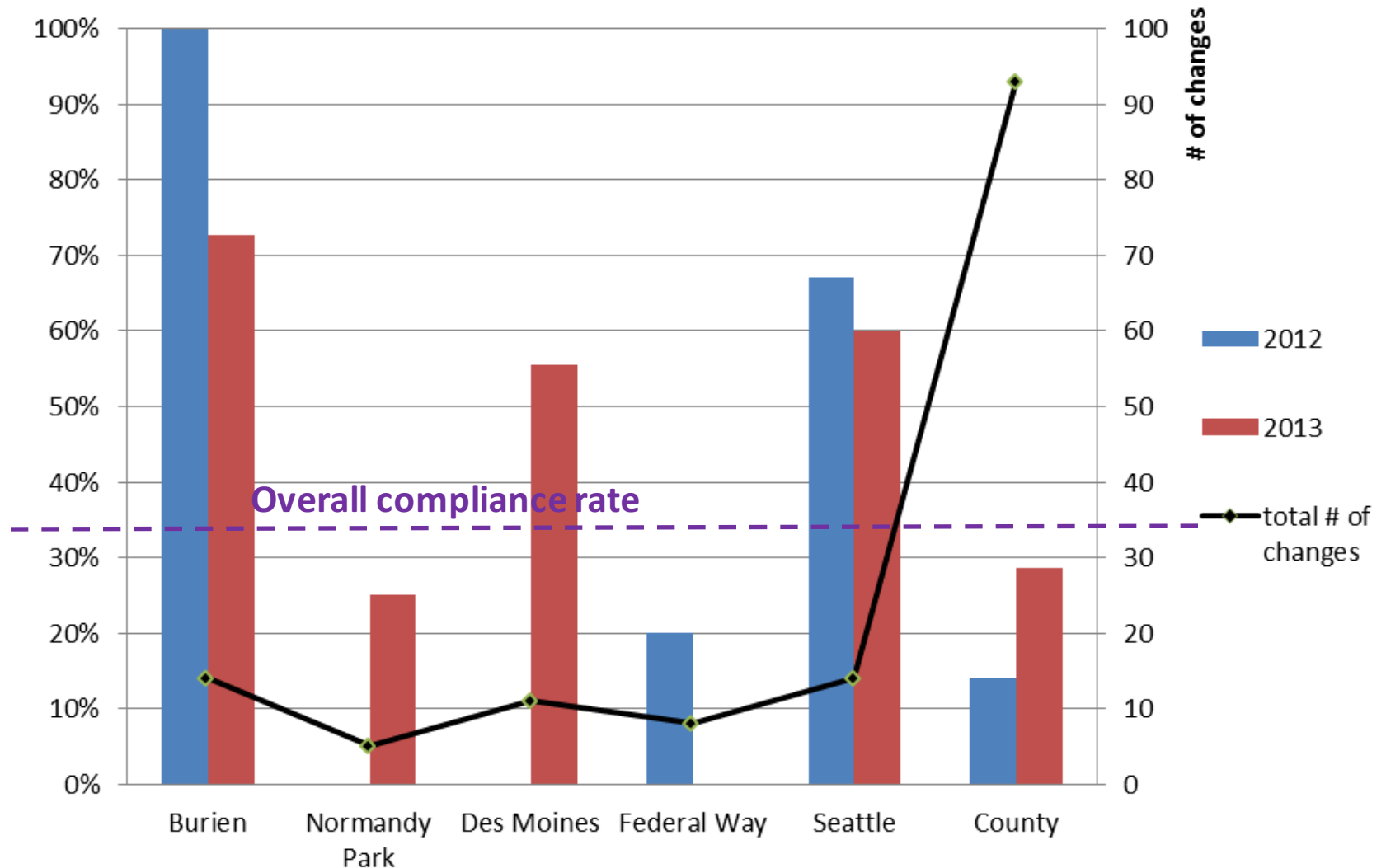
Evaluated if changes in condition had a City or County permit for the change

Compliance by type of change



Evaluated if changes in condition had a local permit, *continued*

Compliance by jurisdiction





Take Aways

- **Between 2005 and June 2013**
 - ~1500 feet of shoreline armoring was removed via restoration projects
 - ~1570 feet of new shoreline armoring was constructed
- *Over the last 2 years KC/WRIA have removed another 2,000 or so feet of armoring (Seahurst & Dockton Heights), but don't know how much new has happened*

Take Aways



Between 2005 and June of 2013

- Even with Critical Area Ordinances (CAO) that protect marine riparian areas, more trees and shrubs are being cleared than are being replanted/restored or naturally re-establishing

Take Aways

- Most of the changes involved repairs to existing infrastructure



- Did not attempt to answer why people are or aren't getting permits

32% is a lower compliance rate compared to other areas of Puget Sound

- Bainbridge (80%)
&
- San Juan (50%)



09.10.2012

Enforcement

- Original intent was to track enforcement outcomes of unpermitted changes
- Time constraints did not allow a thorough evaluation of enforcement activities
- Of the 96 total unpermitted changes in shoreline condition, eight of them were already in enforcement process when they were encountered during the surveys



07.30.2015

King County's Response to Study

- * Dept. of Permitting and Environmental Review (Permitting) and Dept. of Natural Resources and Parks (DNRP) coordinated response; outside of formal code enforcement and permitting process.
- * Initial analysis of study results by Permitting staff found approximately 70 sites with observed shoreline alterations had no record of permits.

Replacement Vinyl Bulkhead



Initial Letter

- * Letter to shoreline property owners from both Dept. Directors - May 30, 2014
- * Explained the study, provided web link, and DNRP contact for more information on shoreline protection
- * “Staff identified potential modifications to the shoreline on your property that may have required an application for a permit”, and provided Permitting contact
- * Link to upcoming King Conservation District workshop for shoreline and bluff owners on natural resource management

Replacement Boards on Bulkhead



Initial Property Owner Response

- * 48 property owners called or emailed Permitting in response to the first letter to discuss their specific shoreline alterations
- * Most of those granted permission for Permitting staff to visit their property
- * A few denied any alteration and refused site access

Shoreline Stabilization with Logs



Working with Property Owners

- * Calls and emails with property owners to explain the observed shoreline alterations
- * Many individual site meetings
- * Additional research into historic permits, aerial photos to verify alterations
- * Follow-up letters or emails explaining the permit process and associated fees and timelines
- * Shoreline exemptions, clearing or grading permits, SEPA, flood elevation certification

New Float



Second Letter

- * March 2, 2015, DPER Assistant Director letter to 18 property owners:
 - * Property ownership changed hands
 - * Initial letter sent to wrong property owner
 - * No response to first letter
- * Warning that without response, formal Code Enforcement action would be initiated
- * Generated 9 additional responses

Overwater Structure



09.12.2012

Summary of Results to date

- * 8 were previously permitted
- * 15 minor alterations did not require a permit, such as exterior staining or replacement railings that looked new from a distance
- * 9 new permit applications have been received
- * 27 are still in process
- * 4 refused DPER access to property
- * 3 have never responded to the letters

Aquaculture



09.12.2012

Next Steps

- * Follow up with property owners who said they would apply for permits but have not yet done so
- * Contact those who said they would remove shoreline alterations but have not provided documentation
- * Initiate formal Code Enforcement process for those who never responded or denied Permitting staff access to their properties.

View Clearing



Observations

- * Many property owners believe they have a right to maintain views despite Code prohibition of clearing steep slopes; view corridor allowed with permit
- * Stairs to the beach are commonly replaced or reconfigured
- * Minor bulkhead repairs such as replacing a few boards or rocks are common
- * Complaints over high permit fees and long processing timelines for minor alterations
- * Some citizen confusion over multiple agencies with same jurisdiction (County, WDFW, USCOE)