Final Report for the Habitat Strategic Initiative

Advancing Sea Level Rise Adaptation in San Juan County

Friends of the San Juans

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Summary:

Individual shoreline property owners and many governments generally lack the capacity and resources to address the complex challenges associated with climate change impacts.

The goal of the Advancing Sea Level Rise Adaptation Project in San Juan County is to increase local capacity to address the impacts of rising sea levels and improve resiliency through community engagement, direct technical assistance, and facilitation of collaborative efforts that advance on-the-ground multi-objective adaptation projects. Results from engagement with property owners will be used to help support local government efforts to adopt and implement plans and policies that protect the marine nearshore and estuaries, and incorporate forecasted impacts from climate change.

With detailed mapping of sea level rise erosion and inundation risks along with nearshore priority habitats and new communication tools in place for our community of islands, there are many opportunities to increase local capacity and develop adaptation strategies that will reduce
future risks to both properties and shoreline ecosystems but attention and resources are needed to advance the technical aspects of projects as well as engage and inform managers, property owners and the public.

Specific project activities included: direct outreach with vulnerable shoreline property owners and communities through workshops and interactive surveys; increased awareness of sea level rise impacts through King Tide events and associated storm response outreach campaign and media toolkit; technical advancement of on-the-ground adaptation projects through sharing of information, site visits, feasibility analysis and conceptual designs and sharing of project results with local and regional managers.

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Project Goals
Increase interest and technical capacity for the development and implementation of habitat friendly sea level rise adaptation projects through a coordinated community engagement effort as well as site specific technical guidance to public and private waterfront owners and sharing project results with coastal managers.

Address a top shoreline stressor- shoreline armoring- in support of priority marine ecosystem components and our community’s local economy which depends on a healthy shoreline and marine environment.

Objectives
1. Expand direct outreach with vulnerable shoreline communities through workshops and interactive surveys. Complete a countywide summary report of results.
   o Update workshop materials to incorporate new information and make them community specific.
   o Host workshops and interactive surveys on San Juan, Lopez and Orcas Islands.
   o Summarize workshop and survey results into a countywide report.
2. Promote sea level rise impact awareness through King Tide events and associated storm response outreach campaign and media toolkit.
   o Partner with local conservation organizations to host king tide outreach events.
   o Develop and implement a storm response media and outreach toolkit.
3. Advance on-the-ground adaptation projects through sharing of information, site visits, feasibility analysis and conceptual designs.
   o Conduct site visits with 10-15 interested public and private landowners with potential multi benefit projects.
   o Complete expert site visits, feasibilities and/or conceptual designs.
4. Share results will local and regional managers.
   o 2 local and 1 regional presentation
   o Sharing of project reports with local and regional organizations.
Methods

1. Community workshops and surveys.
   - Updated partnerships, presentations and outreach materials.
   - Workshops hosted on three islands in summer 2017 in partnership with Friends of the San Juans, Washington Sea Grant and Coastal Geologic Services.
   - Live results survey (Turning Point software platform) conducted at all three workshops (questions adapted from an earlier pilot community SLR workshop held on a 4th island in 2015 as well as from questions posed in a survey mailed with the updated shoreline stewardship guide to all waterfront property owners in the county in early 2017).
   - Workshop presentations, materials and survey results, as well as previously completed countywide vulnerable analysis reports and maps hosted on the FSJ’s sea level rise resources webpage at: https://sanjuans.org/sealevelrise/

2. King tide and storm response community engagement
   - Annual king tide educational outreach and engagement events
   - Storm response media toolkit (press release, images, supporting materials, social media post templates etc.) developed to provide timely response to a large erosion or flood event.

3. Technical support to advance sea level rise adaptation projects.
   - Assessment, feasibility and conceptual design work completed for multiple public and private potential habitat friendly sea level rise adaptation project sites with FSJ and private consultant expertise.

4. Sharing results with local and regional managers.
   - Project results shared through one on one meetings and site visits with local managers, presentations to local organizations, and participation in regional and national climate and shoreline habitat conferences.
Results

**PROJECT OUTCOMES**

1. Community Workshops and Survey
   - 185 people (2/3 of whom were shoreline property owners) participated in community workshops held on three islands (Orcas, San Juan and Lopez).
   - 174 participated in the interactive live results survey at the events. In partnership with WA Sea Grant and Coastal Geologic Services.
   - 293 completed the survey mailed to all waterfront property owners with the updated shoreline stewardship guide in early 2017, survey included multiple SLR related questions.
   - Workshop presentations and survey results, countywide vulnerability analysis, updated shoreline stewardship guide and other SLR resources hosted at: [https://sanjuans.org/sealevelrise/](https://sanjuans.org/sealevelrise/)
   - Local online and print media (Islands Weekly, Islands Sounder, San Juan Islander, Orcas Issues and San Juan Journal) covered the workshops, including a pre event guest editorial from workshop presenter Dr. Ian Miller of WA Sea Grant and subsequent press informing the public of the community workshops. Both releases also publicized via Friends email, website and social media platforms.

2. King Tide and Storm Event Engagement
   - Annual local print, online and social media and FSJ membership email list, website and social media platform campaigns to educate about king tides and engage local citizens and managers in documenting coastal events and change. Approximately 25 individuals and five local managers participated in taking and submitting king tide photos.
   - Media response materials developed for timely publication following a storm event, the time period where demand for new hard armor peaks.

3. Advancing Habitat Friendly Adaptation
   - Flood and erosion hazard risk and nearshore habitat and adaptation information provided to waterfront property owners during 45 shoreline site visits.
   - Site assessments and information sharing with FSJ nearshore habitat biologist, engineering coastal geologist Jim Johannessen of Coastal Geologic Services and coastal engineers from Confluence Environmental to multiple public and private potential multi-benefit adaptation project sites.
   - Feasibility and early design work completed for multiple public and private potential habitat friendly adaptation sites including 2 private road relocations on Lopez, a private homestead on Waldron, as well as two public sites: a high use county park with valuable
shoreline, wetland and cultural resources on San Juan and tide gates in a region of potential public road relocation/wetland and beach restoration on south Lopez. Public projects filled key data gaps in support of current, ongoing larger efforts (SJC Park master plan update and south Lopez road realignment process).

- Shoreline management was improved, demand for armor was reduced and potential habitat and coastal process restoration and protection projects were identified through site specific technical guidance (site visits, compilation of existing data and site visit memos and early design work).

4. Share results with local and regional managers

Local managers:
- Site visits to potential sea level rise adaptation project sites completed with County staff from the following departments: Parks, Land Bank, Public Works, Salmon Recovery, Environmental Resources as well as San Juan Preservation Trust staff.
- Presentations/discussions on habitat friendly adaptation, locally relevant technical resources and community workshop results provided to the San Juan County Local Integrating Organization, the San Juan County Marine Resources Committee and the San Juan Preservation Trust staff. King tide and storm event photo monitoring methods shared with SJC Land Bank, Parks, and Preservation Trust staff in support of long term change monitoring.
- One-on-one communication with multiple managers from the above mentioned public and private entities throughout the grant time period.
- Participated in a county comprehensive plan update work group for the Eastsound Subarea. Provided adaptation information to the Eastsound Planning Review Committee and the public at multiple points in this process. Results included comprehensive plan goals and community survey questions on potential road relocations and adaptation projects.

Regional Managers:
- Community survey results shared throughout Washington State in a blog via the coastal hazards network and links provided to the Puget Sound Partnership’s nearshore habitat and forage fish work groups.
SUCCESS OF ACHIEVING PERFORMANCE MEASURES

| 100 to 150 workshop participants are more aware and engaged in the topic of SLR adaptation | 185 participated in workshops, 174 completed workshop surveys. 293 mailed in completed surveys. |
| Citizens are more aware of impacts of rising seas and adaptation/ resiliency due to king tide outreach | Multiple organizations and individuals participate in king tide photo activities and seek additional resources on the topic (website, site visit, etc). |
| Multiple on-the-ground adaptation demonstration projects are advanced towards implementation | Three private and two public multi-benefit project sites have early design work completed by technical experts, along with landowner engagement. |
| Demand for armor to protect property from SLR is reduced and alternatives used instead | Reduction in demand for new armor is a direct result of multiple expert site visits and an indirect result of community workshops, king tide events and adaptation project design work (approx. 10 sites). Interest in habitat friendly adaptation is increased by managers and waterfront property owners (approx. 6 sites). |

Conclusions

LESSONS LEARNED
While workshops are an excellent methods for communicating broader ideas and generating interest, the ability to offer site specific expert technical assessment is key to impacting on the ground actions and behavior change.

Examples of past local adaptation and/or multi benefit projects are important for offering private property owners and public managers real examples of successful solutions.

RECOMMENDATIONS FOR FUTURE WORK
Additional, adaptation specific funding streams and technical and policy support is needed to help communities develop and implement potential multi-benefit projects. Significant opportunities exist to restore coastal processes and habitats while also addressing vulnerable infrastructure but traditional infrastructure and restoration funding mechanisms are often not flexible enough to allow projects with co-benefits to advance through traditional ranking criteria, schedules etc. Case studies of structure relocations and pilot nature based or multi-benefit adaptation projects are needed to demonstrate potential and support improved learning and success via adaptive management and monitoring.