Developing a Website for the Texas General Land Office's Living Shorelines Program Final Report





A report funded by a Texas Coastal Management Program Grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190153.

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GLO Contract No. 20-282-000-C553

September 2021



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PROJECT BACKGROUND

The Texas General Land Office's (TGLO) Living Shorelines Program supports ecologically and economically sound coastal management practices by promoting the use of living shorelines as an alternative to traditional shoreline stabilization techniques for landowners and citizens as well as contractors and local officials who live and work along the Texas Coast.

Funding from the Coastal Management Program was used to work with The Meadows Center for Water and the Environment at Texas State University (the Meadows Center) to develop a website for the Living Shorelines Program for use in the program's outreach, engagement, and implementation.

The Living Shoreline Program website serves as a platform for all Texas-related living shoreline information. By having all the living shoreline information on one website that is user-friendly, TGLO hopes to further its' goal of promoting living shorelines along the Texas coast.

SUMMARY OF COMPLETED WORK

Task 1 Summary: Website Design Kick-Off

The Meadows Center hosted a kick-off meeting via Zoom on October 14, 2020 with TGLO to review program documents, evaluate needs, and understand the goals and objectives for the website.

The information gathered from this meeting provided the Meadows Center with a solid basis for the development of a project brief that was used to guide the navigational structure and design of the new website.

The project brief outlined three key goals for the website:

- 1. **Inform:** Promote living shorelines as an environmentally-friendly alternative to harder structures for the Texas coastline. Include accessible information on what living shorelines are, why they are beneficial, and how the public can implement living shorelines on their property.
- 2. **Connect:** Help streamline the living shorelines implementation process for Texans living along the coast by providing information about all implementation steps in one spot (a) outline the steps needed to design, permit, and construct a viable project, (b) compile a library of available resources, and (c) illustrate success stories through example case studies.
- **3.** Unify: Create a hub for living shoreline resources relevant to Texas audiences by bringing together all components of TGLO's Living Shorelines Program (Guidance Document, Living Shorelines Sites Database, Case Studies, Site Suitability Model).

See Appendix A to view the kick-off meeting notes and see Appendix B to view the website project brief.

Task 2 Summary: Develop Website Structure

Knowing the overall website user flow, and what pages/sub-pages will exist, is an essential early step in the web design process. After uncovering the overall objectives in Task 1, the Meadows Center's next step involved creating a site map of the website's structure.

The site map provides the foundation for any welldesigned website. It helps give web designers a clear idea of the website's information architecture and explains the relationships between the various pages and content elements.

Our focus in this task was to build a structure and page navigation that was intuitive, user-friendly, and easy to navigate. We decided to break out the information into four main top-level navigation pages, outlined below, to meet the website's goals to inform, connect, and unify:

- The **Learn** tab includes information about the basics of living shorelines, including the benefits as well as information about TGLO and the Living Shorelines Program. This section was focused on achieving the goal of informing Texans living shorelines as an environmentally-friendly alternative to harder structures.
- The **Build** tab contains all steps involved in implementing a living shoreline in Texas. This section focused on fulfilling the goal of connecting

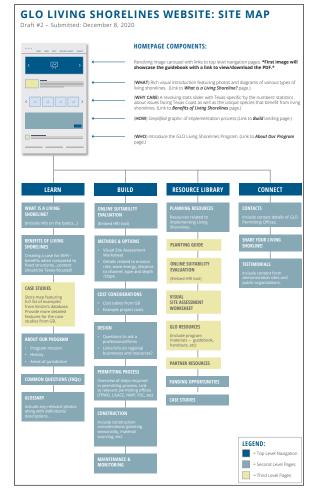


Figure 1. The final draft of TGLO's Living Shorelines website site map.

Texans to the living shorelines process by providing information about all implementation steps in one spot and outlining the steps needed to design, permit, and construct a viable project.

- The **Resources** tab includes catalog of TGLO resources related to living shorelines as well as partner and external resources relevant to Texas audience. This section focused on accomplishing the goal of unifying Texas-related living shorelines resources by bringing together all components of TGLO's Living Shorelines Program (Guidance Document, Living Shorelines Sites Database, Case Studies, Site Suitability Model) into one, central location.
- The **Connect** tab includes contact information for TGLO's permitting offices.

The Meadows Center submitted the first draft of the site map to TGLO on November 20, 2021 and a final version was approved by TGLO on December 8, 2021.

See Appendix C to view the final site map for the website.

Task 3 Summary: Content Creation

Once the site map was approved by TGLO's team, the Meadows Center began drafting the website's content. Utilizing the program's guidance documents and case studies provided by the TGLO, the Meadows Center incorporated information relevant for both the public and technical audiences.

The content writing involved the creation of catching headlines, writing new text, compiling the existing text, etc. It also outlined the placements for all internal and external resources identified during the website kick-off meeting. Specific tasks and information gathering conducted by the Meadows Center during the content development phase included:

- Creating and/or collecting all the visual content, such as graphics, photos, and diagrams to illustrate the different types of living shorelines options
- Compiling and creating a library of resources (including white papers, reports, trainings, websites, print materials and videos) about living shorelines
- Adapting the Living Shorelines Program's guidance documents for easy web accessibility. This task included creating two interactive story map using ArcGIS to highlight the case studies outlined in the program's guidance documents. The story maps combined text, interactive maps, and other multimedia content to create an immersive narrative for the website's visitors.
- Creating a suite of information about the permitting process for living shorelines, which included an index of information and resources about the permitting process from state and federal regulatory agencies for the different types of permits

The Meadows Center team delivered the first draft of the website's content on March 1, 2021. The Meadows Center and TGLO completed two rounds of content reviews and revisions and the final website content was approved by TGLO on April 30,2021.

View the final draft of the website content here: <u>https://adobe.ly/3uk4XHM</u>.

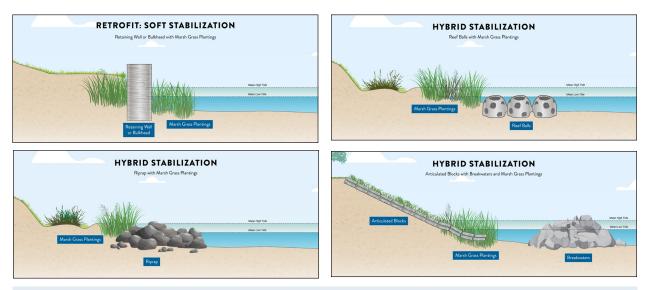


Figure 2. A sample of the diagrams developed by the Meadows Center to illustrate the different types of living shorelines for use in the website.

Task 4 Summary: Hosting Service Set-up and Website Mock-up Creation

With the site's content finalized, the next task included constructing the design preview of the website. To ensure the new website followed the agency's web and security standards, TGLO's webmaster provided the Meadows Center with a design template to use for building out the preview website on April 29, 2021. The template included basic web page elements such as the headers, navigation, content components, and page templates.

The Meadows Center purchased a website hosting account with InMotion Hosting on May 25, 2021 to house the website files and begin constructing the preview website, providing TGLO with a real-time preview of the website and bringing the design and content to life.

The Meadows Center delivered the first website preview to TGLO on May 28, 2021. Following three rounds of reviews and revisions, the final preview website was approved by TGLO on August 6, 2021. See Appendix D to view the final preview website.

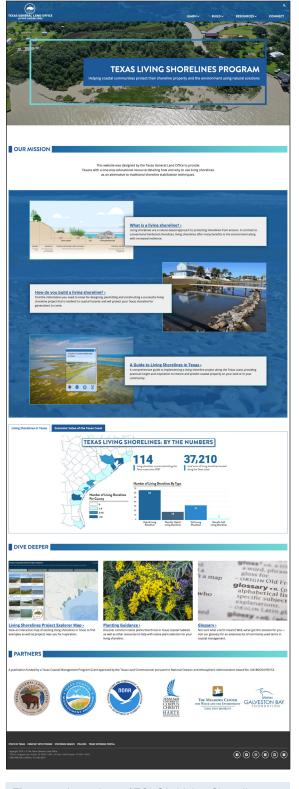


Figure 3. A preview of TGLO's Living Shorelines Program website home page design.

Task 5 Summary: Testing, Review, and Launch

After the preview website was completed, the Meadows Center developed a <u>website usability survey</u> using the online software Qualtrics to gather feedback and streamline the internal review process with TGLO and its program partners. Website usability surveys can help find what site visitors are looking for and if they are satisfied with what is presented to them.

The survey was sent to a contact listed provided by TGLO on August 2, 2021 and guided respondents through the five major sections of the website: home page, learn, build, resources, and connect. Respondents answered questions about their thoughts on the layout, content, design, and experience in each section.

The Meadows Center shared the survey results with TGLO on August 20, 2021 along with recommended changes based on the survey comments. These changes were approved by TGLO and incorporated into the preview website on August 31, 2021.

With a month left in the contract, TGLO and the Meadows Center conducted one more round of reviews and revisions and the final preview website was completed on September 17, 2021.

The Meadows Center and TGLO Living Shorelines Program staff met with the TGLO webmaster on September 22, 2021 to prepare for and discuss the website transfer process. On September 23, 2021, the Meadows Center submitted the website's code and files to the TGLO webmaster. The Meadows Center also provided TGLO Living Shorelines Program staff with a 24-page how-to guide for updating the ArcGIS story maps, so that the program can showcase additional living shorelines as they are developed.

TGLO webmaster anticipates the new Living Shorelines website to be uploaded and live online before the end of 2021.

See Appendix D to view the survey response report.

APPENDIX A

Living Shorelines Kick-off Meeting Notes

10.14.2020

MEETING NOTES

Living Shorelines Website Design Kick-Off Meeting

AGENDA

Link to view: https://adobe.ly/3oEkyi5

ATTENDEES

Jessica Chappell (GLO), Kristin Hames (GLO), Sam Massey (Meadows Center), Anna Huff (Meadows Center)

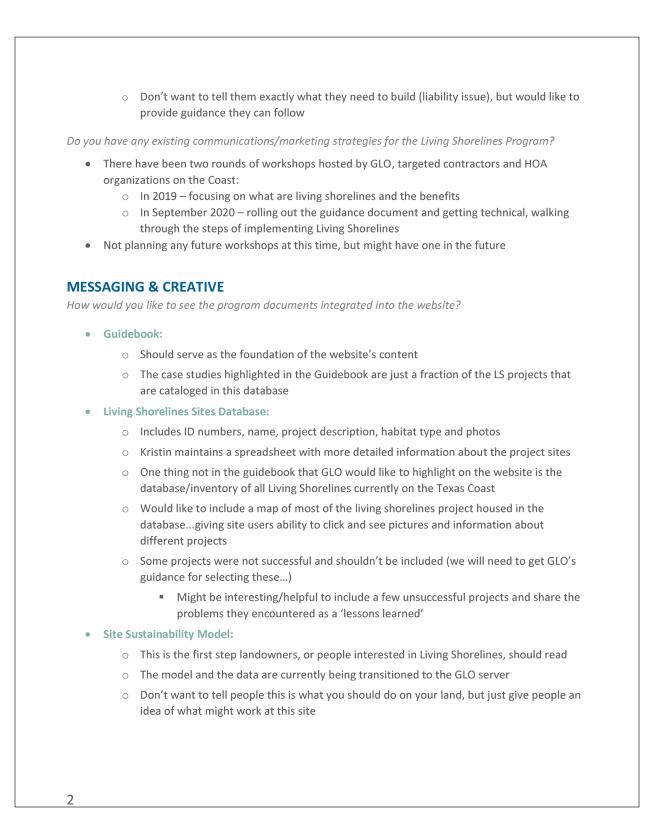
LIVING SHORELINES PROGRAM OVERVIEW & WEBSITE NEEDS

Please share some background information about your program goals for the website.

- Program goal is to promote living shorelines as an alternative to harder structures along the Texas coastline website will help get people connected and informed
- Website should help people streamline living shorelines implementation process, which can be tricky
- The website will be another way that people can easily access the information on what living shorelines are, why are living shorelines beneficial and how the public can put one on their property along the Texas coast
 - \circ streamline living shorelines implementation process, which can be tricky
 - Trying to make that application process as smooth as possible by providing the information all in one spot
- The website should bring together the other components of the Living Shorelines Program:
 - \circ $\;$ The guidance document includes descriptions of site design and permitting
 - Inventory of living shorelines sites that are currently on the Texas Coast
 - Kristin is a Biologist in Corpus Christi office and has been working on this program on and off for the past 5 years – so she has lots of resources that will be helpful when putting this site together

Target audience?

- Main focus is the public...trying to get the public interested and involved because they are going to be the landowners implementing the living shorelines on their property
- But there is still that technical side because unfortunately, a lot of contractors and engineering firms are not overly familiar with living shorelines.



STRUCTURE & CONTENT

- Envisioning three separate sections: (1) why care/why implement Living Shorelines; (2) step by step overview of the implementation process; (3) resource library with guidance and helpful information
- Use bright colors (match guidance document color scheme) and sunny/colorful photos
- GLO has a photo library in Box that Meadows can use to get images for the website get link from Kirstin
- Does not want to include any programmatic information, except for GLO and its mission (not individuals per say) as well as contact information for the Permit Service Center
- Need to delineate/include information about GLO jurisdiction direct site visitors to the Permit Service Center to figure out if their property is on GLO jurisdiction

How will this site be incorporated into the GLO website?

- Site will somehow be nested into GLO website, not as a standalone website
- Will always be permanently linked to the Permit Service Center office's website/section in the GLO website there are two GLO leasing offices that handle the entire Texas Coast, one in Corpus Christi and another La Porte

NEXT STEPS

- Scheduled our next check-in meeting on November 18 at 10:00 a.m. to review the Meadows Center's project brief for the website
- Meadows Center will be sending a Content Checklist/inventory of resources from GLO that can be included in the website
- Need to give GLO Webmaster, Bob Michaels, a heads up about upcoming need for template in February –
 - Follow up: Jessica reached out to Bob Michaels on Oct. 23 based on his current workload, he said he will likely not be able to start on that until the new year

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APPENDIX B

Living Shorelines Project Brief

CREATIVE BRIEF

for the GLO Living Shorelines Program Website

Project Summary

The Texas General Land Office's (GLO) Living Shorelines Program supports ecologically and economically sound coastal management practices by promoting the use of living shorelines as an alternative to traditional shoreline stabilization techniques for landowners and citizens as well as contractors and local officials who live and work along the Texas coast. Currently, the Living Shorelines Program does not have a website.

The program's website will serve as a platform for all Texas-related living shoreline information. By having all information in one website that is user-friendly, the GLO hopes to achieve its goal of promoting living shorelines along the Texas coast.

Website Goals

INFORM

- Promote living shorelines as an environmentally-friendly alternative to harder structures for the Texas coastline
- Include accessible information on what living shorelines are, why they are beneficial, and how the public can implement living shorelines on their property

CONNECT

- Help streamline living shorelines implementation process for Texans living along the Coast (and within the GLO jurisdiction)
- Provide information on implementation process all in one spot (a) outline the steps needed to design, permit, and construct a viable project, (b) compile a library of available resources, and (c) illustrate success stories through example case studies

UNIFY

- Bring together all components of the Living Shorelines Program (Guidance Document, Living Shorelines Sites Database, Case Studies, Site Suitability Model)
- Create a hub for living shoreline resources relevant to Texas audiences

Target Audiences

- 1. Public individuals with interest in, or responsibility for, property in the Texas Gulf Coast region
- 2. Contractors/Engineering Firms the folks implementing the living shoreline designs who might not be familiar with the process and steps required
- 3. Local Officials town, city, and county staff, including planners and city administrators as well as policy makers, that are looking to gain more in-depth knowledge about the design, permitting, and benefits of living shorelines

Key Features & Functionality

- Responsive for mobile
- Simple and intuitive navigation
- Content: Awesome and useful. Accessible and appropriate for non-technical site visitors.
- Interactive Maps
- Resource library
- Cohesive branding
- Colorful, bright images and videos incorporated throughout website

Key Messages

The Texas coast provides invaluable environmental and economic benefits; however, many coastal environments and ecosystems are increasingly at risk due to rising sea levels and increased storm intensities.

- Texas coastal waters sustain freshwater, marine, and estuarine habitats that support an array of fish and wildlife, tourism, and recreation.
- Texas coast is eroding at an average rate of 4.1 feet per year. Negative effects of coastal erosion include:
 - Loss in coastal land and natural buffers can make homes and businesses more vulnerable to flooding and damages
 - Ports, roads and industrial infrastructure are at risk
 - Tourism suffers and local economies feel the impact
 - Farming and fishing industries are impacted
 - Property values decrease and homes and businesses are lost
- FEMA estimates that every dollar spent on erosion control and mitigation to preserve wetlands and other natural ecosystems, will provide a return on average of four dollars in cost-savings for the future.

Living shorelines are a form of shoreline protection that integrates natural features to provide stabilization while simultaneously preserving ecosystem functions.

- Natural alternative to hard, fixed stabilization techniques
- Allow natural process to take place in the ecosystem
- Long lifespan and greater resiliency to coastal habitat threats
- Can be designed in a variety of sizes, configurations and dimensions
- Four broad categories of living shorelines commonly used along the Texas coast include Soft Stabilization (Marsh Grass Plantings), Hybrid Stabilization (Breakwaters, Submerged Oyster Shell Beds, Reef Balls, Articulated Blocks or Mats, and Riprap), Retrofit: Soft Stabilization, and Retrofit: Hybrid Stabilization

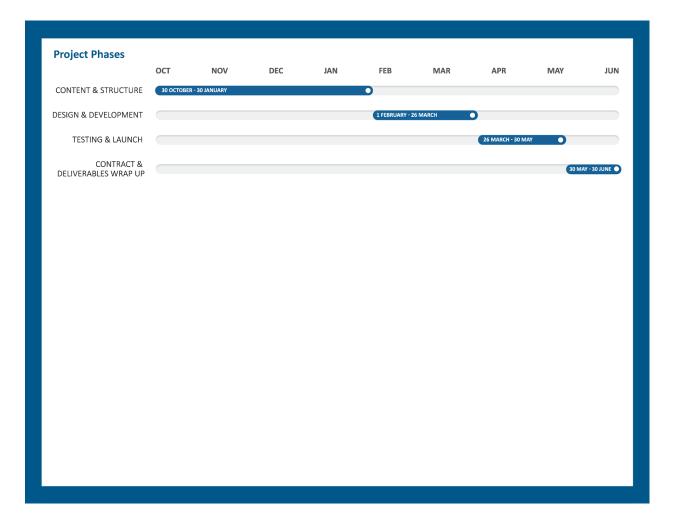
"Hard" shoreline stabilization techniques that have traditionally been used throughout the Texas coast can have unintended negative consequences to nearby shoreline properties as well as the environment.

- Require more long-term maintenance
- Disrupt natural processes
- Can degrade adjacent shoreline property, harming important habitats and ecosystems
- · Potential to increase erosion and flooding for downstream properties
- Susceptible to failing; average lifespan of only 15-20 years
- Expensive!

In contrast to hard structures, living shorelines provide a number of benefits to not only limit erosion but also preserve and protect the environment.

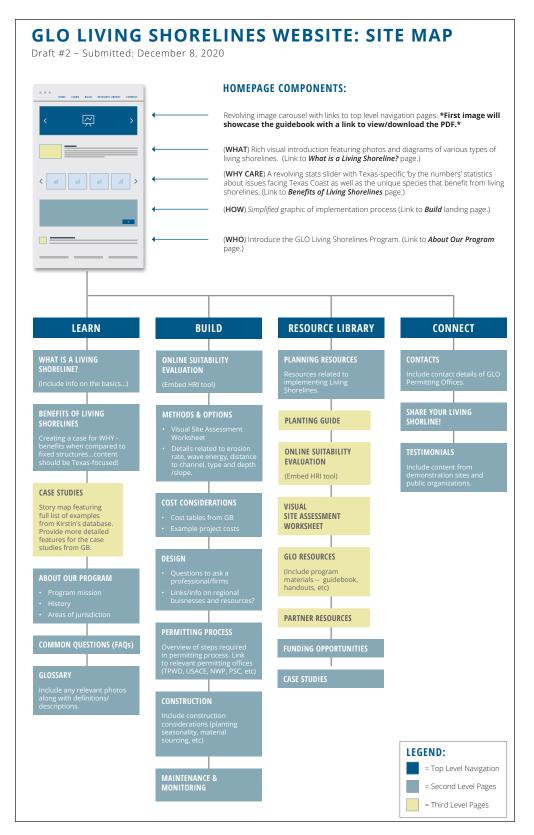
- Highly sustainable, requires minimal long-term maintenance
- · Provides effective property protection from hurricanes and storm surges
- Enhances biodiversity
- Naturally restores land by trapping sediments
- Improves water quality; filters pollutants from stormwater runoff
- Absorbs the energy of waves before it reaches higher lands
- More attractive and can help sustain property values (by making shorefronts more aesthetically pleasing and stable)

*In all content developed for the website, we will emphasize that GLO does not want to tell exactly what should be built (liability issue), but instead provide guidance that the program's audiences can follow.



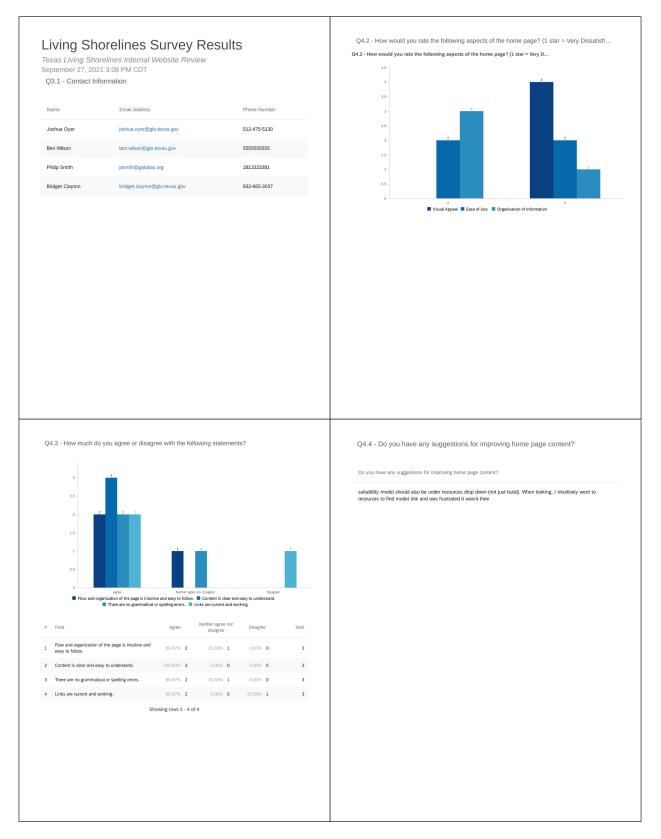
APPENDIX C

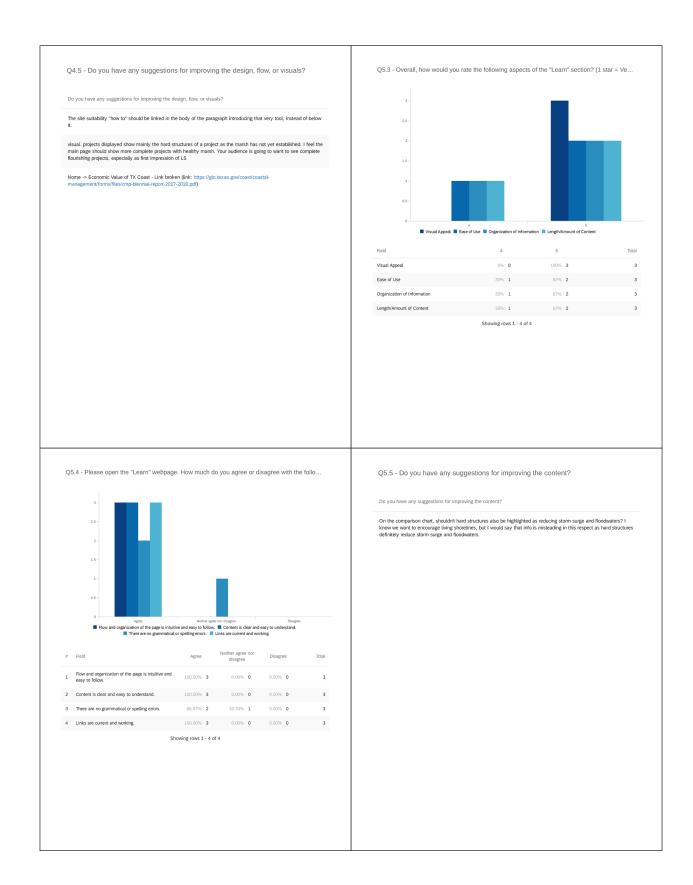
Living Shorelines Website Site Map



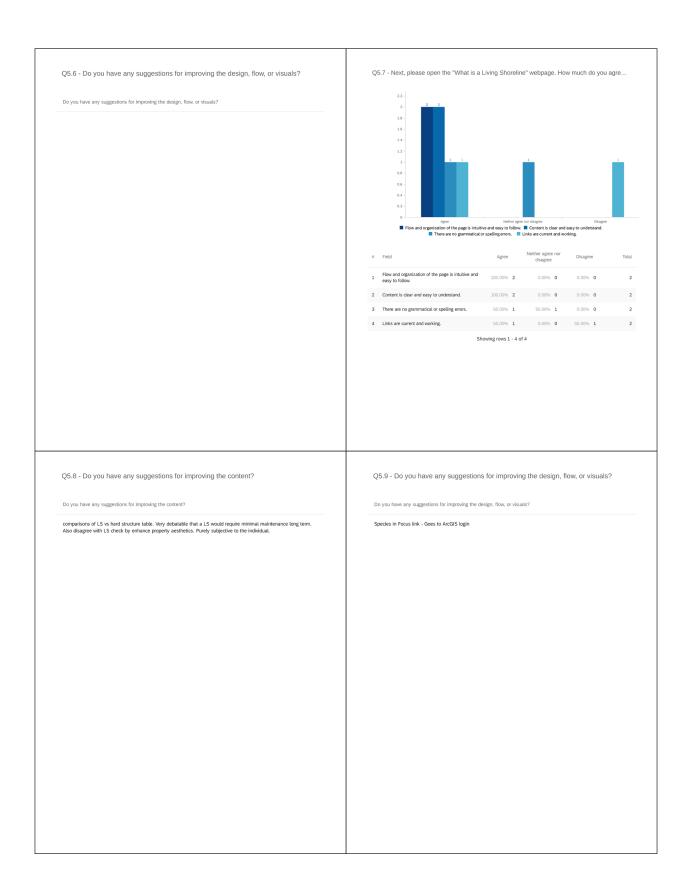
APPENDIX D

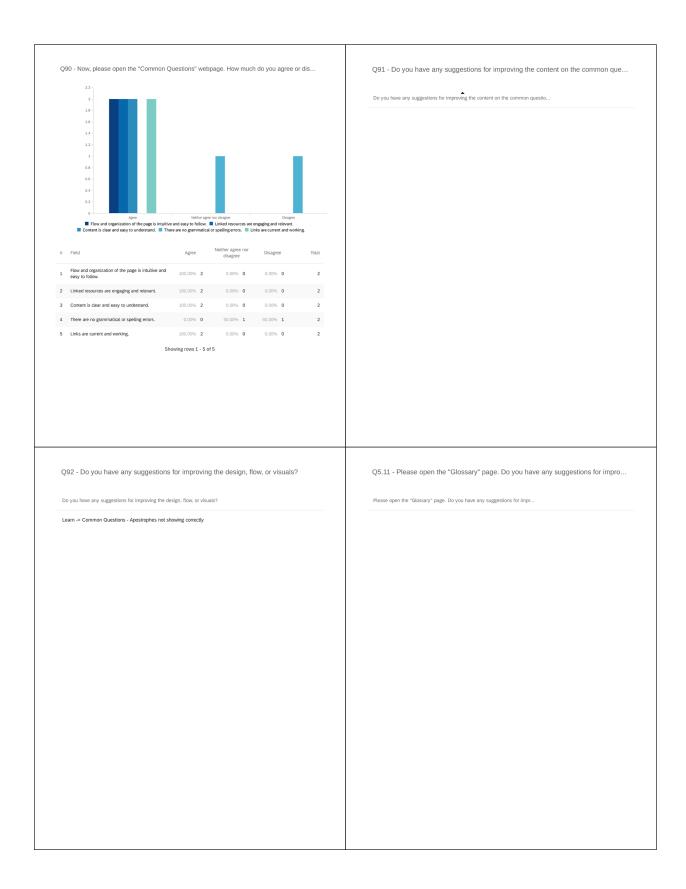
Living Shorelines Website Usability Survey Results





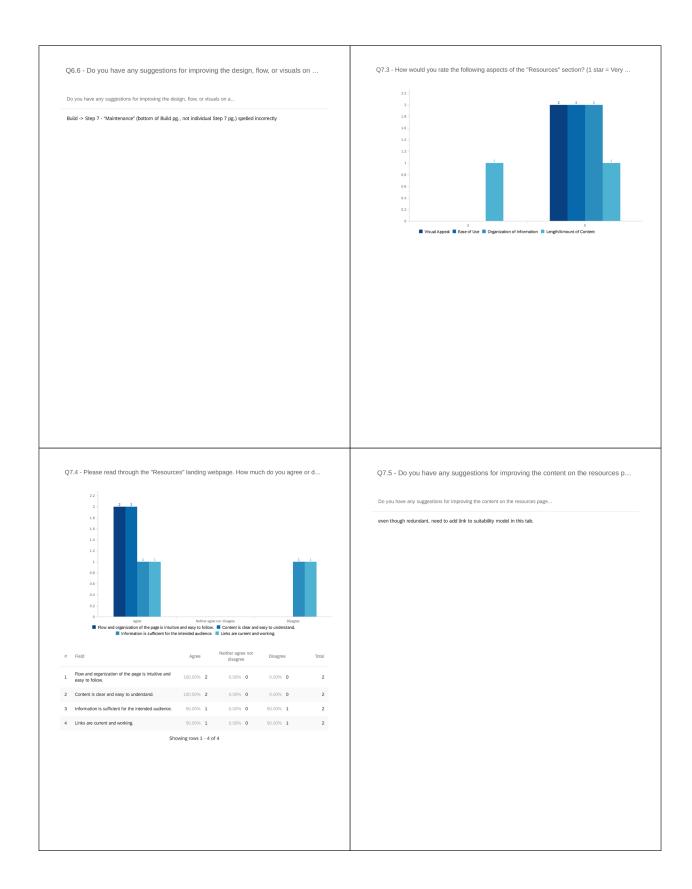
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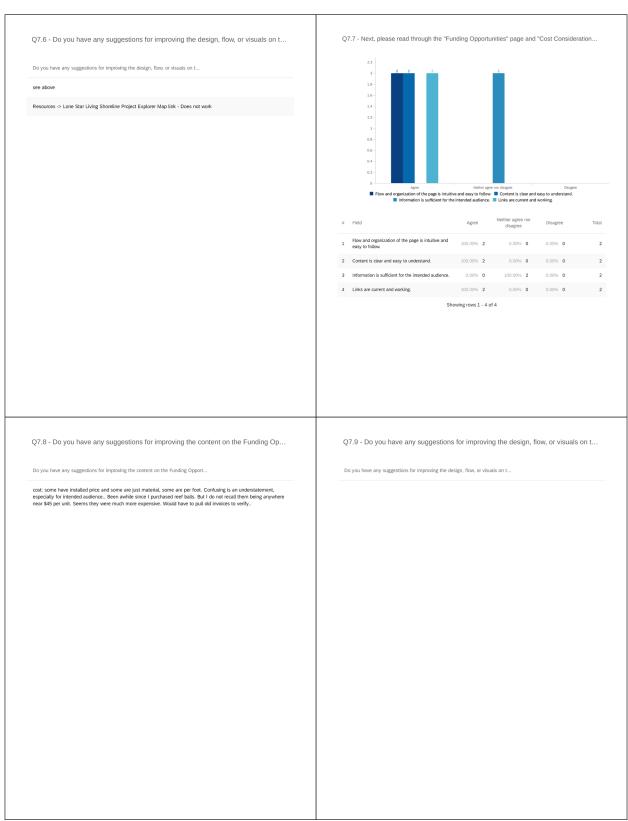


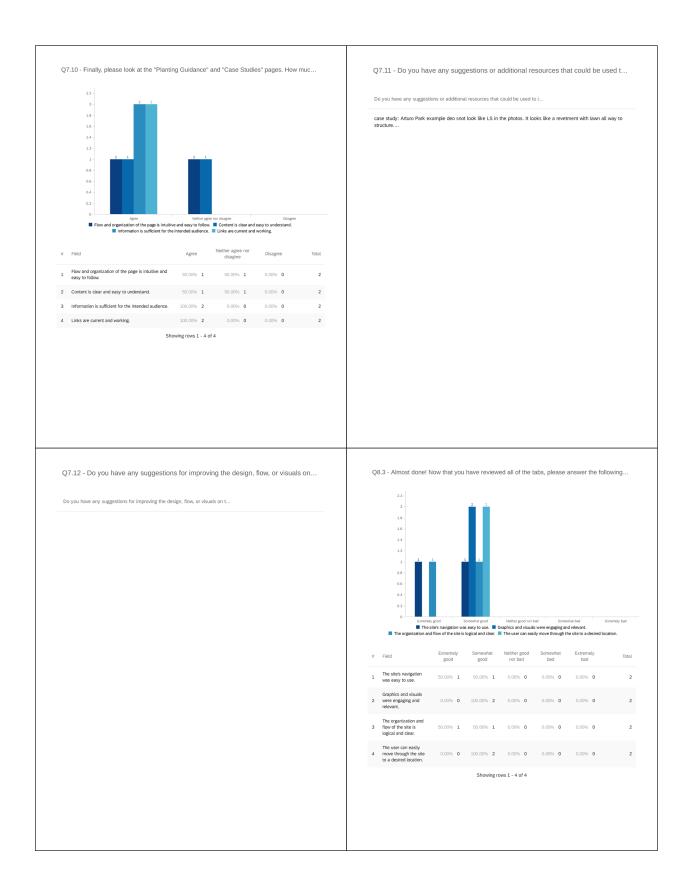
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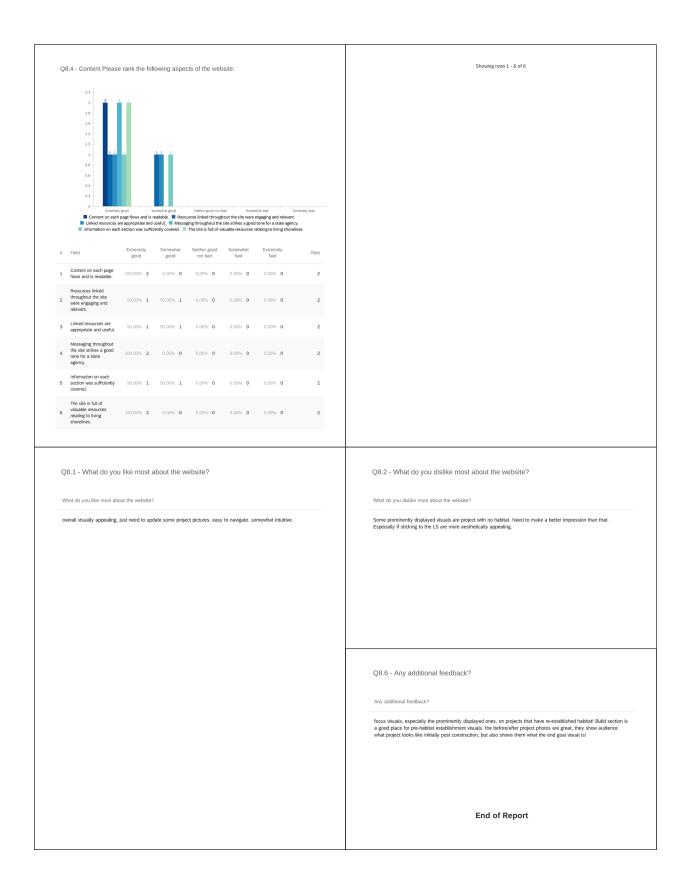


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