



SEA-LEVEL RISE IN THE CLASSROOM CAPSTONE PROJECT

WHAT TO EXPECT:

The Capstone Project is to be completed by students using the Sea-Level Rise in the Classroom curriculum to expand their understanding of community resilience. There are notes throughout this document with suggestions for scaffolding the project to fit your classroom needs. The project can be given as in-class work or as independent research and shortened or lengthened depending on the school calendar.

The capstone walk-through videos introduce the different layers and elements of the town maps. Review these with your students to orient them to the digital tool.

Waterside Village walkthrough: <https://vimeo.com/583124304>

Sunrise Bayou walkthrough: <https://vimeo.com/583124192>

The case study videos provide examples for how to identify, understand, and address sea-level rise impacts in each of the capstone towns.

Waterside Village case study: <https://vimeo.com/583124213>

Sunrise Bayou case study: <https://vimeo.com/583124132>

SET-UP:

There are two towns developed for this project: Sunrise Bayou and Waterside Village. Sunrise Bayou is a small coastal bayou town surrounded by marsh and rivers. Waterside Village is a larger coastal port city protected by barrier islands. These towns are representative of real locations along the Gulf Coast. Information about the town is provided through the town maps: population, income, social vulnerability, storm surge inundation from a category 3 hurricane, and 3-foot sea-level rise projections.

Students will work in groups of 3 to 5 to develop a resilience strategy for their assigned town.

Waterside Village: <https://arcg.is/0j5eyC>

Sunrise Bayou: <https://arcg.is/1K8KCq>

if the links do not work, copy and paste them into your browser

STUDENT INTRODUCTION:

Your team has been selected to head the Resilience Coalition for your town [Sunrise Bayou or Waterside Village]. You have grown up in this town and have a deep understanding of its history. Using your knowledge of the range of resilience strategies employed in other cities across the Gulf and around the world you must develop a strategy to help your city become more resilient to sea-level rise impacts. Your resilience strategy must help your community prepare for, absorb, recover from, and more successfully adapt to impacts of rising sea levels. Use information provided in the town map to identify the area of concern and resilience actions.

In addition to detailing your resilience strategy you must also include the process used to enact the strategy – how will you get input from the community? As your group prepares a resilience strategy keep in mind: What is the ethical thing to do? Are all members of the community being considered? What is the best action for the overall town? What resources are required and where will they come from?

Teacher note: One way to accomplish this is to have students create a pros and cons list for their strategy after they've developed a draft of their plan. This will help them identify who is left out, what facilities are not being helped or still vulnerable, etc. and give them a clear direction on how to make improvements to their plan.

Your capstone project will include a written response, and a corresponding presentation (Powerpoint, Sway, Prezi, video, website, etc.). As a group you will choose your target audience; are you presenting your plan to decision makers or are you presenting to educate local citizens?

RESILIENCE CONCERNS:

As your team works to develop your resilience plan, think about the following questions. Select a minimum of [X] to address with your resilience plan.

Teacher Note: scaffold the number of resilience concerns that each group needs to address to fit your class needs.

How does your resilience plan...

- protect critical facilities under current and future conditions? (Module 1)
- communicate future and current flood risk from multiple sources? (Module 1)
- protect natural resources? (Module 2)
- prepare and adapt for shoreline changes? (Module 2)
- ensure clean drinking water under current and future conditions? (Module 3)
- use ordinances and policies (Module 3)
- protect critical facilities under current and future conditions? (Module 3)

The list continues on the next page

- protect culturally significant locations under current and future conditions? (Module 4)
- protect residences under current and future conditions? (Module 4)
- prepare for resident evacuation and reentry? (Module 4)
- communicate early flood warning to residents? (Module 4)
- support first responders? (Module 4)

WRITTEN RESPONSE:

Teacher note: the length of the plan can be customized to your class but recommend ~2 pages per team member including one non-text component per student.

Introduction – your team should **prioritize** the issues for your town and then begin the document with a compelling argument you believe will engage your community. As you learned in the Kingstown exercise, everything cannot be a priority. Using the lessons from the modules, you must make decisions based on economic, environmental and social considerations for these towns. The introduction should also provide an overview of what the town is already doing to combat SLR and flooding issues. At the end of this section readers should understand what the plan is trying to accomplish and why.

The Plan – your team must convey your plan for the town in a written format. Your team must also determine the most effective means to present your plan considering the use of tables, infographics, flow charts and other alternatives to large blocks of text to make the plan more accessible to your reader.

Teacher note: Help your students focus on SLR and flooding issues. In classroom testing, many students wanted to focus on hurricane/storm surge plans. Remind students that storm surge issues due to SLR are only one of the issues their community may face.

Office and Google applications include many templates for tables and charts. You may choose to utilize free online tools like Canva or Piktochart to create graphics.

Be sure to consider the questions you selected from the list above as you create the resilience plan for your community.

Also consider the financial viability of your choices. As you learned in several modules, solutions have a wide range of associated cost. While you're not expected to know actual costs of implementing your plan, you should be mindful of presenting solutions that would be economically viable. Assume your community cannot implement every higher cost idea you've learned about in the modules.

At the end of this section readers should understand what action(s) the plan is recommending and what the outcome of those actions will be.

Stakeholder Engagement – Using the tools from Module 4, your team needs to include a plan for soliciting feedback from your community. In this section, provide details of how you will reach your community. At the end of this section readers should understand how best they or other members of your community can weigh in on and contribute to the actions described in the previous section.

PRESENTATION:

Teachers note: Students will prepare a 10-minute presentation for either a (a) decision maker meeting or (b) community education format. Teachers may alter the length of these presentations to better fit their classroom schedule. Teachers may elect to have students all complete one type of presentation or give the groups the option to choose their format.

These presentations offer an opportunity for students to role play as decision makers or community members and evaluate their peers. This is also an excellent opportunity to invite other teachers/administrators or guests from the community to participate as audience members.

Your presentation should include highlights from your written document. Your written document will inherently be more comprehensive than what you can accomplish in a short presentation. Therefore, a large part of your task is determining the most important information to communicate to the audience to which you're presenting. To know what information is important, you need to know who your audience is and what is important to them. The following section outlines some of the broad goals of two common types of meeting formats Resilience Coalitions must conduct.

Decision maker meeting format goals:

- Identify what risks the plan is intended to address
- Explain how this will benefit the community in terms that are meaningful for those decision-makers
 - This can include things like reduced damage to public and private property, reduced risk of loss of life, financial savings, or strong businesses
 - Identify specific sections/neighborhoods of the community this will benefit
- Communicate how much and/or what kind of effort and resources are required to accomplish what is in the plan
- Identify how the community will be engaged
- You want to leave decision-makers feeling confident in what the plan is and how the plan will help them and/or their community

Community education format goals:

- Introduce the risk(s) the plan is intended to address in a captivating way
- Identify how implementing the plan will address those risks
- Identify any additional ways it could benefit the community members in attendance
- Identify how they can get involved
- Do not overwhelm with too much information – these interactions are typically very brief
- Ensure you do not use too much jargon and present the plan at a level everyone can understand
- You want to leave the community members feeling confident in the plan and their ability to affect change
- DO NOT leave community members feeling hopeless or overwhelmed by the risks or the solutions

Presenting tips: your presentation should not feel like you are just reading your document to the audience. The infographics, flow charts, etc. that you have used in your document will be an important component of your presentation. You should avoid large blocks of text and consider the use of things like bulleted lists to present text when necessary.

RECOMMENDED CURRICULUM CITATION:

Vedral, Sonia, Collini, Renee C., Miller-Way, Tina, Rellinger, Alison N., Sempier, Tracie T., Smallegan, Stephanie M., Sparks, Eric. (2021). Sea-Level Rise in the Classroom. MASGP-21-056

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EVALUATION RUBRIC

Overall Project	Low Quality (1)	Average Quality (3)	High Quality (5)	Score
Effort is consistent	Lack of evidence to demonstrate the amount of effort put forth and/or that the project wasn't started early and/or effort was not consistent.	Evidence demonstrates that the project was started with a somewhat consistent effort.	Evidence demonstrates that the project was started early and/or consistent effort has been made.	
SLR Resilience Strategy Clearly Described	The project lacks a sea-level rise resilience strategy and/or the strategies are not explained in detail.	The sea-level rise resilience strategy is somewhat described and explained.	The sea-level rise resilience strategies are clearly described and explained in detail.	
Depth of Background Research	Lacks the use/definition of important scientific terminology. Did not supply good sea-level rise solutions.	Uses and defines most important scientific terminology. Provides/explains legitimate solutions for this issue, including what people are already doing.	Uses and defines important scientific terminology. Explains in detail legitimate solutions for this issue, including what people are already doing.	
Clarity and Comprehension	Posture and speaking clearly were areas of weakness at several points. Student is unable to accurately answer questions posed by classmates.	Has good posture and voice clarity for most of the presentation. Student is able to accurately answer most questions posed by classmates.	Faces the class, speaks clearly, stands up straight throughout the presentation. Student is able to accurately answer all reasonable questions posed by classmates about the topic.	
Defense (Triple Points)	The project lacks a meaningful defense for your decision	The project explains a somewhat defense for the decision made.	The project explains a strong defense for the decision made.	
Time Used (Double Points)	Student not using their time appropriately in class.	Student was somewhat utilizing the time given in class.	Student was focused and utilized their time extremely well in class.	
Comments				