



2023 COASTAL MASTER PLAN
COMMITTED TO OUR COAST

THE LOUISIANA COASTAL MASTER PLAN: LOOKING AHEAD TO 2029



SEPTEMBER 13, 2023

[COASTAL.LA.GOV/OUR-PLAN](https://coastal.la.gov/our-plan) | MASTERPLAN@LA.GOV

OVERVIEW

- **2023 Master Plan Resources**
 - *“The master plan is more than a list of projects”*
 - **Plan, Executive Summaries**
 - **Appendices; Exploratory Analysis**
 - **Fact Sheets**
 - **Outreach Videos**
 - **Data Viewer**
 - **Data Access Portal**
- **Looking forward to 2029**
 - **Feedback throughout 2023 process**
 - **Timeline**
 - **Process improvements**
 - **Technical improvements**



2023 MASTER PLAN RESOURCES

- 2023 Master Plan
- Executive Summary (English, French, Spanish, Vietnamese)
- Technical Appendices
 - Model descriptions, improvements, interpretations.
 - Exploratory Analysis
 - High Tide Flooding Report
 - Historic Storms Case Studies
 - Alternative Environmental Scenarios (forthcoming)

¿Qué está en juego?

Gran parte de la rica ecología, economía y cultura de Luisiana que depende de la costa se encuentra amenazada por la continua pérdida de tierras y el riesgo de inundaciones. Mantener una costa sana y productiva es de vital importancia. El plan maestro presenta una visión que pretende proteger, preservar y fortalecer estos tres componentes clave.

El paisaje es algo más que ganarse la vida. La pesca recreativa, la caza, la observación de aves y la navegación en la costa de Luisiana no tienen comparación. Los lugareños y las personas de todo el mundo vienen a disfrutar de los bellos y abundantes paisajes.

Estas experiencias, habilidades y placeres se han transmitido de generación en generación. La implementación del Plan Maestro Costero 2023 es fundamental para crear una costa vibrante para las generaciones venideras. Aunque el panorama pueda parecer sombrío, los residentes de estas comunidades están a tiempo de planificar el futuro.

Un viaje a la costa de Luisiana deja claro su valor. Cuenta con vastos humedales costeros repletos de cipreses cubiertos de musgo español y cientos de especies de aves y otros animales salvajes. Estos ricos ecosistemas son el hogar de diversos grupos de personas y de sus culturas únicas. Sus medios de vida están ligados a la costa de Luisiana: la pesca, la caza y el trabajo en la industria. La costa trabajadora de Luisiana domina sectores clave de la economía nacional y genera una importante actividad económica para el estado.

NUESTROS HOGARES

Más de 2.1 millones de personas que llaman hogar a esta costa podrían estar en riesgo de futuras inundaciones. El plan maestro abordó la evaluación de los daños como "un hogar es un hogar" con métricas que van más allá del valor exclusivamente económico.

Imager: Nueva Orleans (SCAPE)

DELCAMBRE NEAREST EMS STATION DRIVE TIME

Cumulative Drive Time by CLARA Centroid

- Less than 10 minutes
- 10 to 20 minutes
- Greater than 20 minutes
- No Access
- Only accessible via tracks and paths
- EMS Stations

Scale: 0 to 3 Miles / 0 to 5 Kilometers

2023 MASTER PLAN RESOURCES

- Fact Sheets

- Project

- Region

- Parish

- Community

- Community Data Sheets

- EADD / EASD

- Initial Conditions
- Yr 20 / Yr 50

- Nonstructural counts & costs

- Structures exposed to moderate and severe flooding

- Initial Conditions
- Yr 20 / 50

VERMILION PARISH

Parish Location

About the Parish
 Vermilion Parish is located in south central Louisiana and includes the communities of Abbeville (parish seat), Delcambre, Erath, Gueydan, Kaplan, and Maurice. The parish is known for its fresh seafood, bountiful agriculture, and a rich history of cultural and eco-tourism. Vermilion Parish is immediately adjacent to the Gulf of Mexico, making it ideal for the numerous companies needed to serve the region's oil and gas industry.

Population ~46K
Low to Moderate Income Percentage of Population 43%

This parish includes:

- Agricultural Communities
- Traditional Fishing Communities
- Oil and Gas Communities

Challenges for the Parish
 Vermilion Parish faces increased wetland loss over the next 50 years under the lower environmental scenario. In addition, with no further action, the southern portion of the parish faces significantly increased future storm surge-based flood risk where 100-year flood depths increase to 16 feet and above in the areas around Pecan Island and Intercoastal City over the next 50 years (under the lower environmental scenario). Additionally, flood risk increases further inland as storm surge encroaches on communities such as Abbeville and Kaplan.

Map: Land Change, Future With Action, Lower Scenario, Year 50

2023 DRAFT COASTAL MASTER PLAN

NORTH LAKE MECHANT MARSH CREATION - EAST

PROJECT ID: 286C / IMPLEMENTATION PERIOD 1

Project Location
 Terrebonne Parish

Description
 Creation of marsh in Terrebonne Parish between Lake Decade and Lake Mechant to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Benefits

Estimated Cost and Duration

	Planning, Engineering & Design	Construction	Operations, Maintenance & Monitoring	Total
Cost	\$16M - \$20M	\$200M - \$250M	\$7.2M - \$8.7M	\$230M - \$280M
Duration	3	3	44	—

Project Benefits Table

	Lower Scenario	Higher Scenario	Average
Max. Annual Benefit (Acre)	3.5K	3.7K	3.6K
Min. Annual Benefit (Acre)	0	-240	-120
Years of Pos./ Neg. Benefit	47 / 0	46 / 1	47 / 1

Project Map

2023 DRAFT COASTAL MASTER PLAN

COMMUNITY DATASHEET | COMMUNITY ID: 186 | Mandeville/Covington/Madisonville/Abita Springs-St Tammany-PO-out

EXPECTED ANNUAL DOLLAR DAMAGE (EADD) - LOWER SCENARIO

Asset Type	InitCond	InitCond+NS	FWOA Yr20	FWOA+NS Yr20	FWMP Yr20	FWMP+NS Yr20	FWOA Yr50	FWOA+NS Yr50	FWMP Yr50	FWMP+NS Yr50
Small Residential (single-family; manufactured homes; duplex)	\$174,172,000	\$27,793,000	\$243,136,000	\$45,192,000	\$118,544,000	\$17,516,000	\$417,236,000	\$124,382,000	\$261,526,000	\$48,662,000
Other Multi-family Residential	\$7,459,000	\$6,263,000	\$10,230,000	\$9,139,000	\$4,821,000	\$3,841,000	\$19,257,000	\$18,392,000	\$9,548,000	\$8,719,000
Commercial; Industrial; Agricultural	\$28,722,000	\$28,722,000	\$33,515,000	\$33,515,000	\$23,476,000	\$23,476,000	\$46,439,000	\$46,439,000	\$34,394,000	\$34,394,000
Other Structural (public; education; religion)	\$12,038,000	\$12,038,000	\$15,594,000	\$15,594,000	\$7,548,000	\$7,548,000	\$27,424,000	\$27,424,000	\$16,803,000	\$16,803,000
Non-structural Assets (crops; vehicles; roads)	\$7,448,000	\$7,448,000	\$10,066,000	\$10,066,000	\$6,595,000	\$6,595,000	\$16,190,000	\$16,190,000	\$11,787,000	\$11,787,000
Total	\$229,840,000	\$82,265,000	\$312,541,000	\$113,506,000	\$160,984,000	\$58,975,000	\$526,546,000	\$232,827,000	\$334,058,000	\$120,365,000

EXPECTED ANNUAL STRUCTURAL DAMAGE (EASD) - LOWER SCENARIO

Asset Type	InitCond	InitCond+NS	FWOA Yr20	FWOA+NS Yr20	FWMP Yr20	FWMP+NS Yr20	FWOA Yr50	FWOA+NS Yr50	FWMP Yr50	FWMP+NS Yr50
Small Residential (single-family; manufactured homes; duplex)	152.08	25.42	219.58	41.97	107.06	16.03	384.55	113.08	244.49	45.84
Other Multi-family Residential	2.22	1.96	2.85	2.63	1.3	1.09	4.54	4.36	2.46	2.29
Commercial; Industrial; Agricultural	5.24	5.24	6.81	6.81	4.51	4.51	10.31	10.31	7.43	7.43
Other Structural (public; education; religion)	2.53	2.53	3.95	3.95	1.86	1.86	7.72	7.72	4.81	4.81
Non-structural Assets (crops; vehicles; roads)	0	0	0	0	0	0	0	0	0	0
Total	162.07	35.16	233.19	55.35	114.74	23.5	407.12	135.47	259.18	60.37

InitCond Storm surge based flood risk under initial conditions
InitCond+NS Residual storm-surge based flood risk under initial conditions plus full non-structural implementation assuming 100% participation
FWOA Yr # Storm-surge based flood risk at year # under a future without action
FWOA+NS Residual storm-surge based flood risk at year # under a future without action plus full non-structural implementation assuming 100% participation
FWMP Residual storm-surge based flood risk at year # under a future with master plan structural risk reduction projects
FWMP+NS Residual storm-surge based flood risk at year # under a future with master plan structural risk reduction projects plus full non-structural implementation assuming 100% participation

This community datasheet was automatically generated from the 2023 Master Plan Project Development Database. Contact masterplan@le.gov with any questions or clarifications.

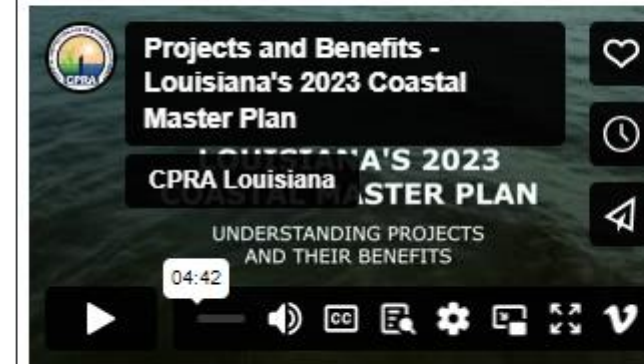
2023 MASTER PLAN RESOURCES

- Outreach Videos

<https://coastal.la.gov/our-plan/2023-coastal-master-plan/outreach/>

Outreach

OUTREACH VIDEOS



Projects and Benefits



Planning with Uncertainty



2023 MASTER PLAN RESOURCES

- Master Plan Data Viewer

LOUISIANA'S 2023 COASTAL MASTER PLAN

GUIDED TOUR EXPLORE Search by address, project, or region

LAND CHANGE VEGETATION TYPE **FLOOD DEPTH** DAMAGE PROJECTS

Future flood risk will change into the future. To estimate future flooding potential, we modeled a range of storm intensities, sizes, and landfall locations across the coast. This information, along with the relative likelihood of each storm occurring, allow us to project potential flood depths into the future.

This map allows you to adjust parameters to explore the flood depth for a storm of a given annual exceedance probability (% AEP) if experienced at a

YEAR: 50
 ENVIRONMENTAL SCENARIO: LOWER HIGHER
 ANNUAL EXCEEDANCE PROBABILITY: 10.0 2.0 1.0 0.2

FLOOD DEPTH

- 1 to < 4 feet
- 4 to < 7 feet
- 7 to < 10 feet
- 10 to < 13 feet
- 13 to < 16 feet
- 16 to < 21 feet
- 21+ feet

MORGAN CITY

TERREBONNE PARISH: CHAUVIN - UNIT 1

Expected Annual Structural Damage: Lower Scenario

Without Plan With Plan

Year	Without Plan (Structure Equivalents)	With Plan (Structure Equivalents)
0	100	100
10	120	50
20	150	70
30	200	100
40	250	130
50	280	150

ENVIRONMENTAL SCENARIO: LOWER HIGHER

DAMAGE METRIC: DOLLARS STRUCTURES

CLARA COMMUNITY: 63

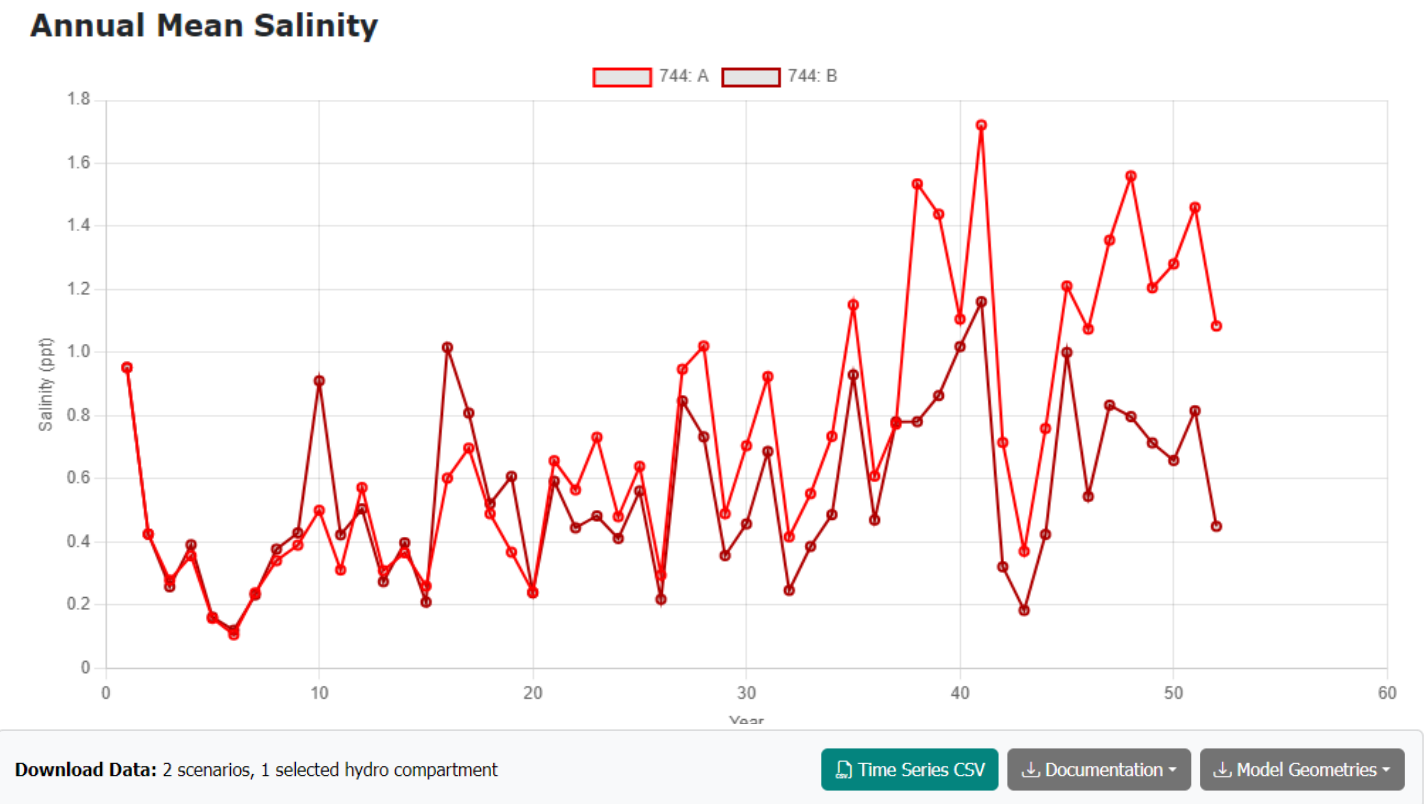
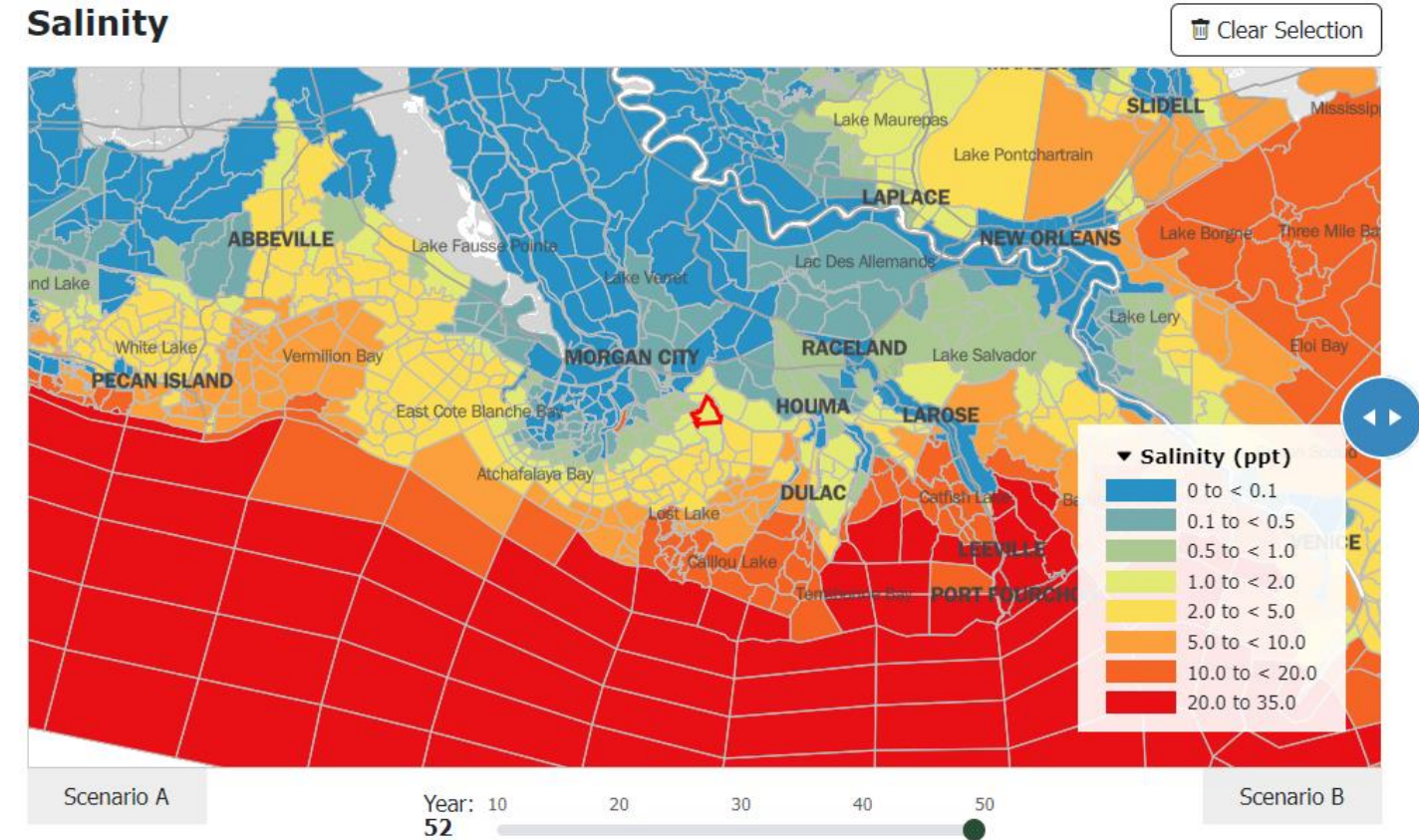
Community Datasheet (PDF)

DAMAGE: EASD

- 0 to 49
- 50 to 99
- 100 to 249
- 250 to 499
- 500 to 999
- 1,000 to 4,999
- 5,000 or more

2023 MASTER PLAN RESOURCES

- **Master Plan Data Access Portal**
 - **Explore and download model outputs**
 - Land Change
 - Vegetation Type (FFIBS)
 - Vegetation Type (VCT)
 - Flood Depth
 - Estimated Annual Damages, Dollars
 - Estimated Annual Structural Damage
 - Salinity
 - Water Level
 - Total Suspended Solids
 - **Bulk download inputs and reference files**
 - Model geometries
 - Subsidence
 - Historic Marsh edge erosion
 - Initial conditions vegetation, land/water, FFIBS



MASTER PLAN RESOURCES

Model Source Code

- Publicly available on GitHub
- All ICM is open source and currently posted
- Additional post-processors available
- www.github.com/CPRA-MP

The screenshot shows the GitHub organization page for the LA CPRA Master Plan Team. The organization is located in Baton Rouge, LA, and has a website at <http://coastal.la.gov/our-plan>. The page displays a list of popular repositories, including ICM, ICM_Hydro, ICM_HSI, ICM_LAVegMod, ICM_BIDEM, and ICM_Morph. The ICM repository is highlighted as the Master Plan 2023 ICM repo. The page also shows a search bar for repositories, filters for Type, Language, and Sort, and a 'New' button. On the right side, there are sections for 'View as: Public', 'Discussions', 'People', and 'Top languages'.

A scenic view of a coastal waterway. In the foreground, a white boat with a green canopy and a motor is moving through the water, leaving a wake. The water is a deep blue. To the left, there is a large clump of tall, golden-brown reeds. In the background, there is a line of green trees and a body of water under a blue sky with light clouds. A dark green banner with white text is overlaid on the middle of the image.

THE 2029 MASTER PLAN

WHAT IS THE COASTAL MASTER PLAN?

SCIENCE-BASED, STAKEHOLDER INFORMED

- Prioritization effort
 - How can the state spend its money most cost-effectively to reduce storm surge-based flood risk and restore and maintain coastal wetlands?
- Developed through a process that ensures adaptive management
- Built on world class science and engineering
- Advances a comprehensive and integrated approach to restoration and risk reduction
- Incorporates extensive public input and review
- Illustrates how people and communities will experience a changing coast to allow preparation and adaptation into the future.

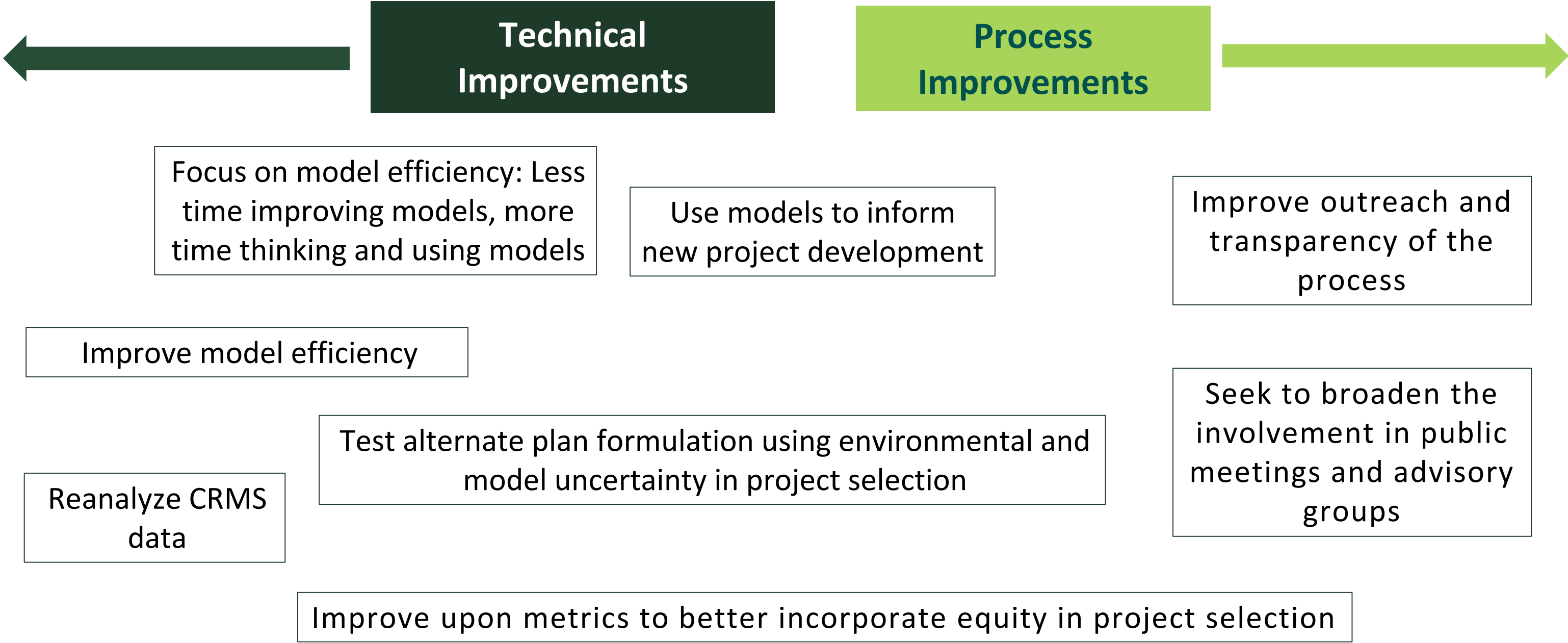


INCORPORATING FEEDBACK

- Community Conversations
- Public hearings and open houses
- Public Comments
- Individual meetings with community groups, NGOs, stakeholder groups, civic organizations.
- Advisory Groups (Coastal Advisory Team, Regional Workgroups, Community Engagement Workgroups, Predictive Modeling Technical Advisory Groups, Etc)
- Internal and partner feedback



INCORPORATING FEEDBACK



INCORPORATING FEEDBACK

How does this fit in with the goals, objectives and principles of the plan.

Do we need to adapt these?

PLAN GOALS

LAND LOSS REDUCTION

Candidate projects are evaluated based upon how much land they create and maintain over 50 years, as compared to the projected landscape without the projects.

STORM SURGE RISK REDUCTION

Candidate projects are evaluated based on how well they reduce expected annual damage in dollars and in terms of structure damages, from storm surge-based flooding as compared to the projected damage without the projects.

PLAN OBJECTIVES

FLOOD PROTECTION

Reduce economic losses from storm surge-based flooding to residential, public, industrial, and commercial infrastructure.

NATURAL PROCESSES

Promote a sustainable coastal ecosystem by harnessing the natural processes of the system.

COASTAL HABITATS

Provide habitats suitable to support an array of commercial and recreational activities coastwide.

CULTURAL HERITAGE

Sustain the unique cultural heritage of coastal Louisiana by protecting historic properties and traditional living cultures and their ties and relationships to the natural environment.

WORKING COAST

Promote a viable working coast to support regionally and nationally important businesses and industries.

PRINCIPLES

Urgent Need to Take Action. In order to have the best future outcomes, we must plan, design, and implement projects now to address increasing land loss and storm surge-based flood risk in the future.

A Systems Approach. The master plan was developed using a systems approach to risk reduction and restoration, whereby projects that are effective under a range of future conditions were selected.

Planning for the Future. The master plan is charged with providing a sustainable long-term solution for coastal protection and restoration. Projects were evaluated and prioritized based on their effects over the next 50 years. Beyond 50 years, uncertainties about environmental conditions such as sea level rise, project costs, and other factors become too great for the evaluation results to be reliable.

Clear Expectations. We cannot recreate the coast of the 20th century or even retain the coast of today. Instead, we must plan to help shape a new landscape that will continue to support viable natural and human communities into the future.

Acknowledging Residual Risk. Risk reduction measures and restored coastal habitats cannot eliminate all storm surge-based flooding risks. Some degree of residual risk is inevitable.

Collective Responsibility. The state, through the master plan and with its partners, develops the common vision for our coast. Achieving a sustainable coast, however, is a collective endeavor that requires stakeholder input and feedback, and coordinated action from our state, federal, and local government partners, and various other stakeholders including non-governmental organizations (NGOs), business, industry, and academic and research institutions.

Providing for Transitions. Louisiana's coastal crisis has and is displacing people, infrastructure, businesses, and entire communities. Sensitivity and fairness must be shown to those whose homes, lands, livelihoods, and ways of life may be affected by master plan projects or by continued land loss and flooding.

Participatory Process. The master plan was developed with the participation of the many diverse interests that live, work, play, and own property in coastal Louisiana, along with national interests that have a stake in coastal Louisiana's landscape.

Accounting for Uncertainties. Planning for the next 50 years means acknowledging a certain level of financial, environmental, and scientific uncertainty. We do know, however, that land loss and increased flood risk will continue, and the risk of doing nothing is far greater than the risk of acting with incomplete knowledge.

Adapting to Changing Circumstances. The master plan is updated every six years with model and process improvements, including the integration of newly available data, to respond to changing economic, social, environmental, and climatic conditions in Louisiana's dynamic coastal communities.

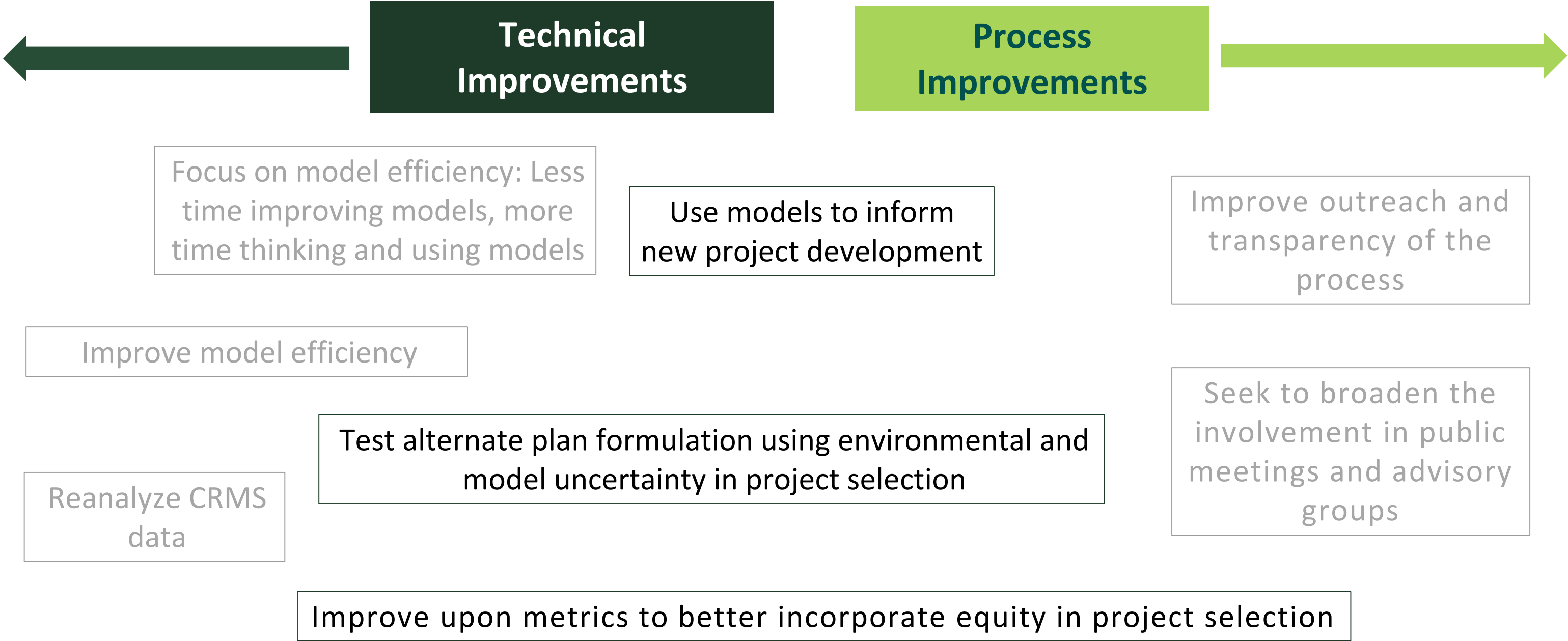
Efficient Use of Resources. The master plan was developed in a way that acknowledges the need for efficient use of resources, such as funding and sediment. The plan's analysis seeks to capitalize on synergies among projects, resolve overlaps and conflicts, and promote sound management of resources.

Sediment for Restoration. At present, limited supplies of, or access to, renewable sediment resources constrain the restoration efforts we can undertake. We consider both natural processes and dredging options to meet our needs, and focus on introducing sediment from outside the system.

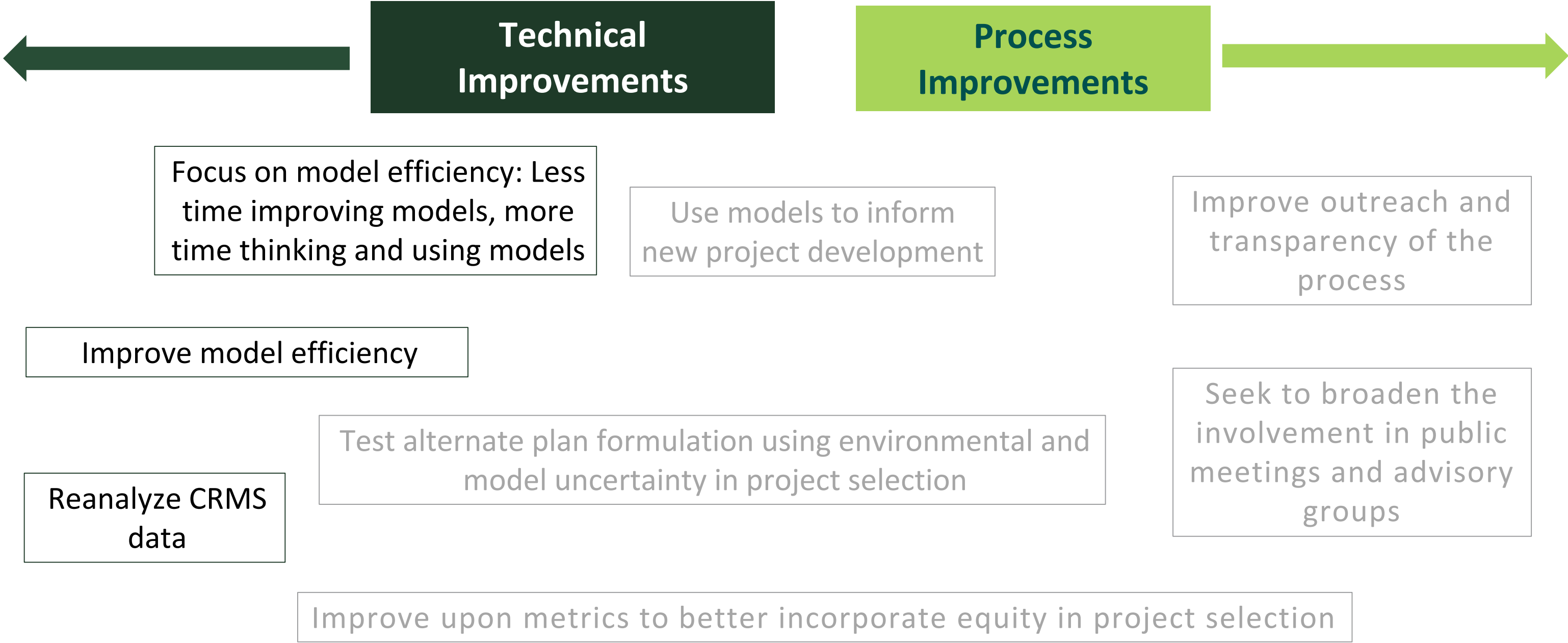
Regulatory Effects. Revisions to some laws and regulations may be needed to help the state's coastal program better achieve its goals, and cooperation is needed from local, state, and federal partners.

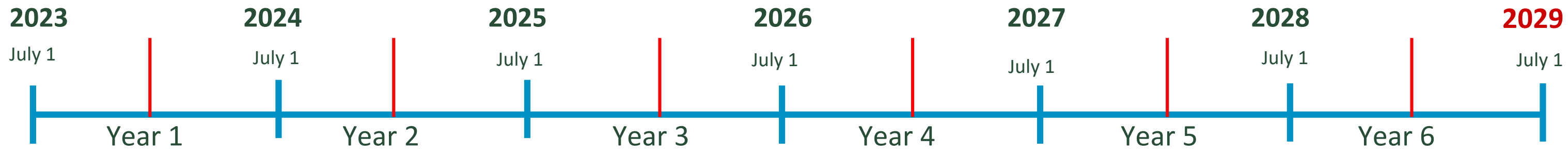
Role of Private Landowners, Business, and Industry. Close working relationships with private landowners are essential, not only for their support, but to gain knowledge about private coastal lands. Since Louisiana is also a working coast, partnerships with businesses and industries are also important for the success of the coastal program.

INCORPORATING FEEDBACK

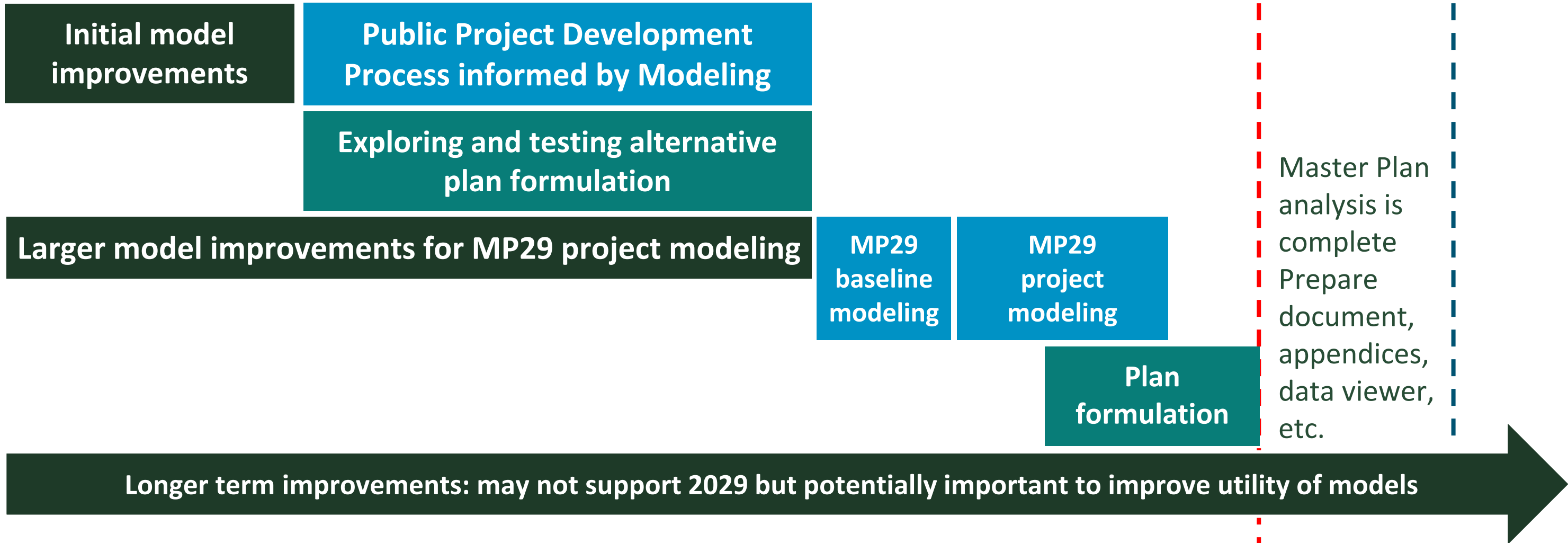


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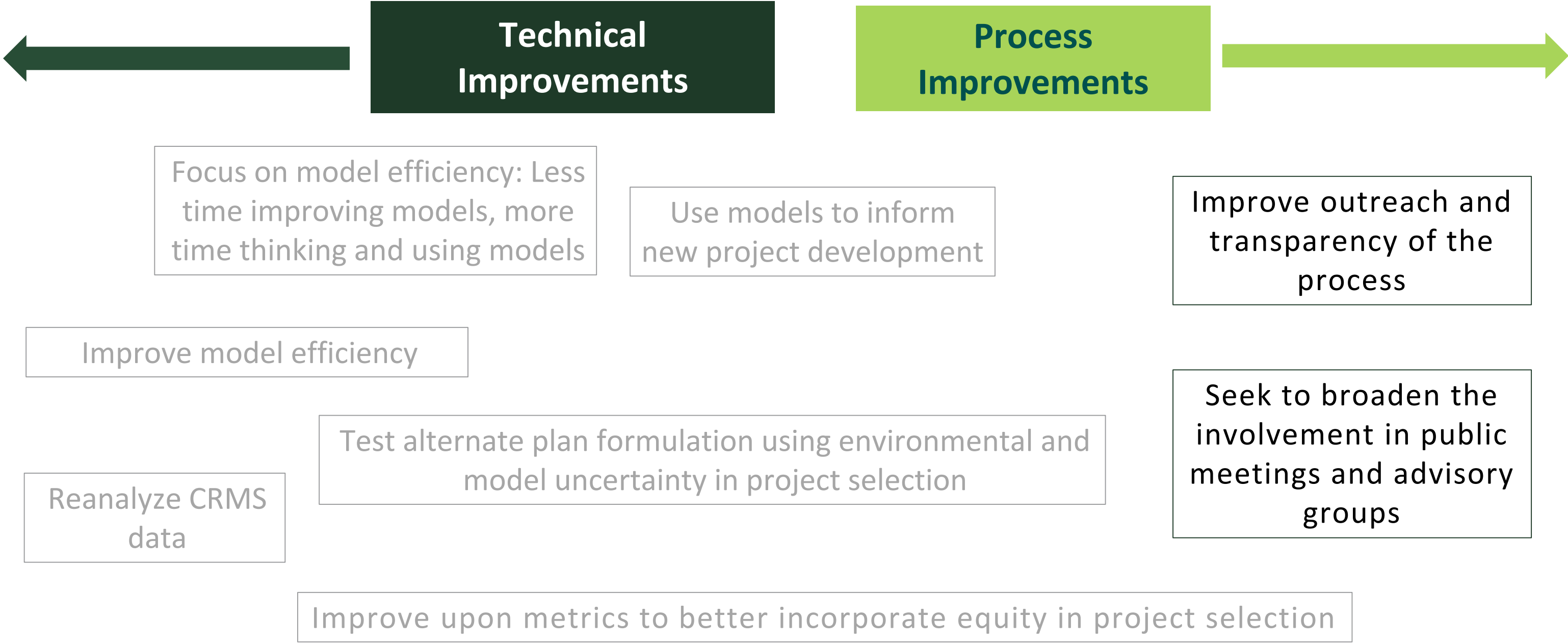




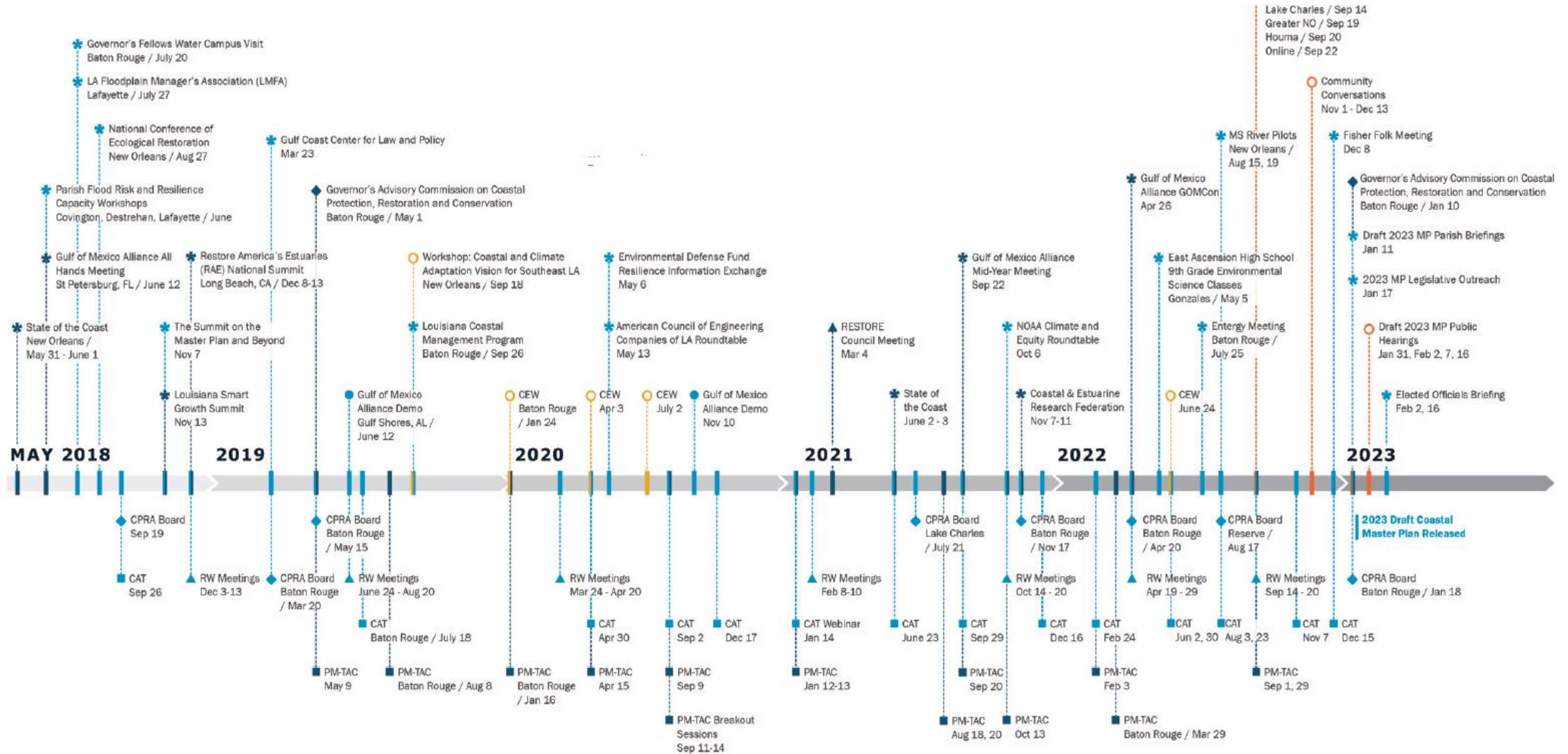
Focus on model efficiency: Less time improving models, more time thinking and using models

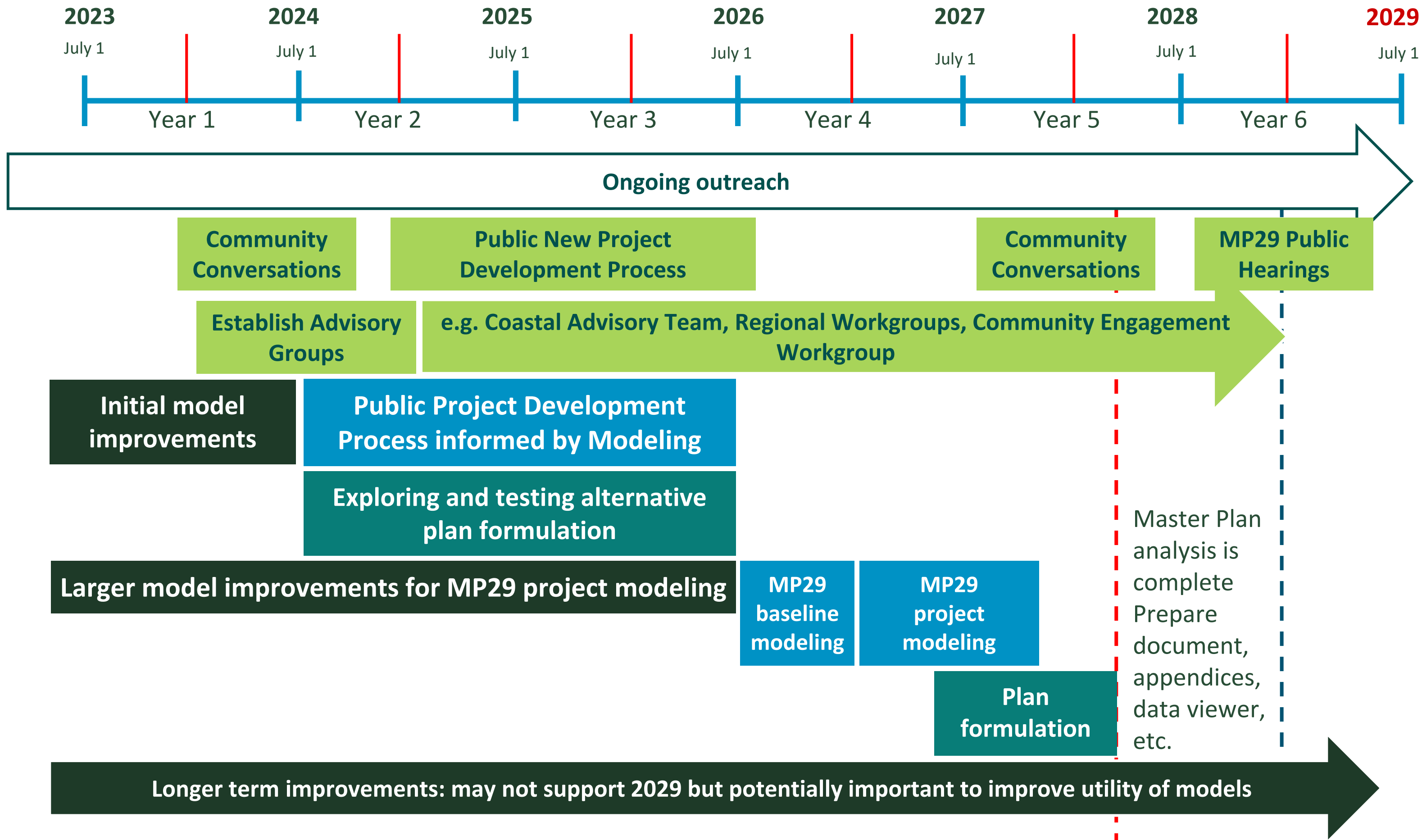


INCORPORATING FEEDBACK



2023 PLAN OUTREACH





2029 Coastal Master Plan – Framework for Analysis and Decision Making

A scenic landscape featuring a body of water in the foreground with a white boat equipped with a fishing rig. The boat is moving across the water, leaving a wake. The background consists of a marshy area with tall grasses and a line of trees under a blue sky with scattered clouds. A dark green horizontal bar is overlaid across the middle of the image, containing the text 'THANK YOU' in white, bold, uppercase letters.

THANK YOU