Program Summary:

A citywide comprehensive, integrated framework helping the city manage flood risks, guide resilient growth, restore natural systems, and strengthen its historic relationship with water through 2050.

Program Statement:

This plan is the city's first comprehensive, integrated strategy for long-term water management and climate adaptation, and combines elements of many existing plans into a unified vision across departments and sectors. Developed in response to increasing risks from sea-level rise, tidal flooding, storm surge, rainfall, and rising groundwater, the plan establishes a coordinated framework for the city to adapt while protecting its cultural identity, ecological systems, and economic vitality.

Organized around the principles Elevation Matters, Make Space for Water, and Act Now, Adapt Over Time, the Plan directs growth toward safer high ground while preparing lower areas for adaptation, water storage, and ecological transition. Its Reserve, Adapt, Defend, and Grow framework is supported by strategies to slow, store, and drain water across interconnected watersheds, transportation corridors, neighborhoods, and public spaces.

The planning process combined flood modeling, groundwater monitoring, urban design, landscape systems analysis, and community engagement across the city's six planning areas and urban drainage basins, all defined by water. More than 100 prototypical projects and eight "feature" projects were identified, ranging from stormwater parks and restored tidal creeks to road raising, marsh migration, and integrated perimeter protection. Together, these strategies transform climate adaptation from a defensive response into an opportunity to improve public access, environmental justice, mobility, habitat, and quality of life—creating a flexible roadmap for the city to thrive through 2050 and beyond.

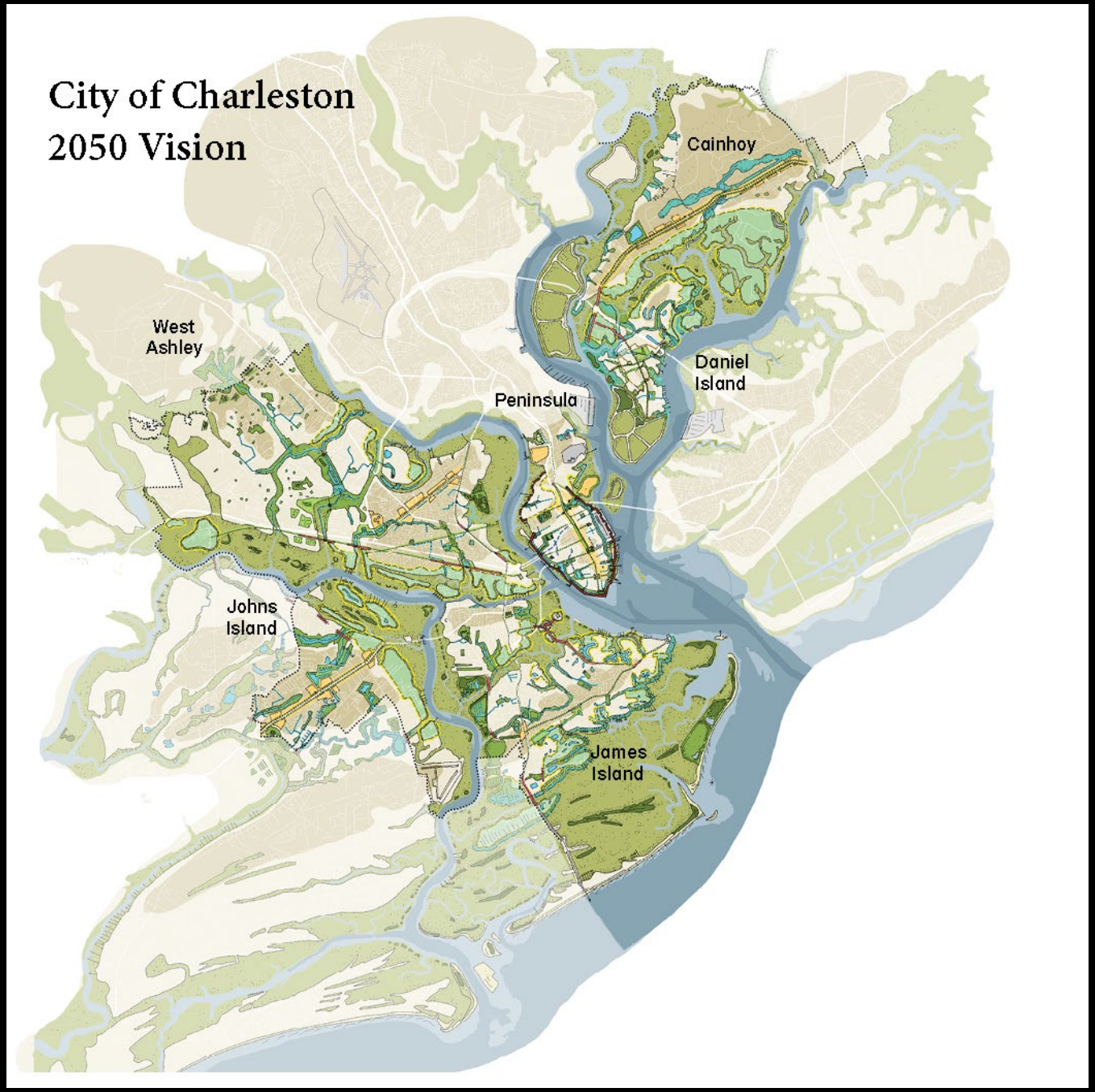
MP200.01

Planning Area: (sq miles)
135.5 sq miles

Cost per Square Foot:
N/A

Construction Cost
N/A

Date of Completion:
August 2024



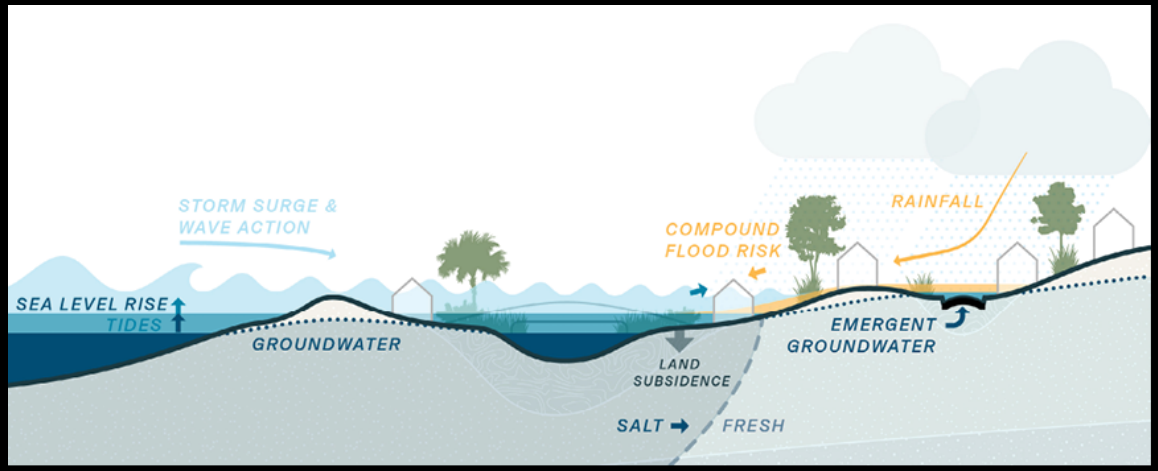
MP200.02

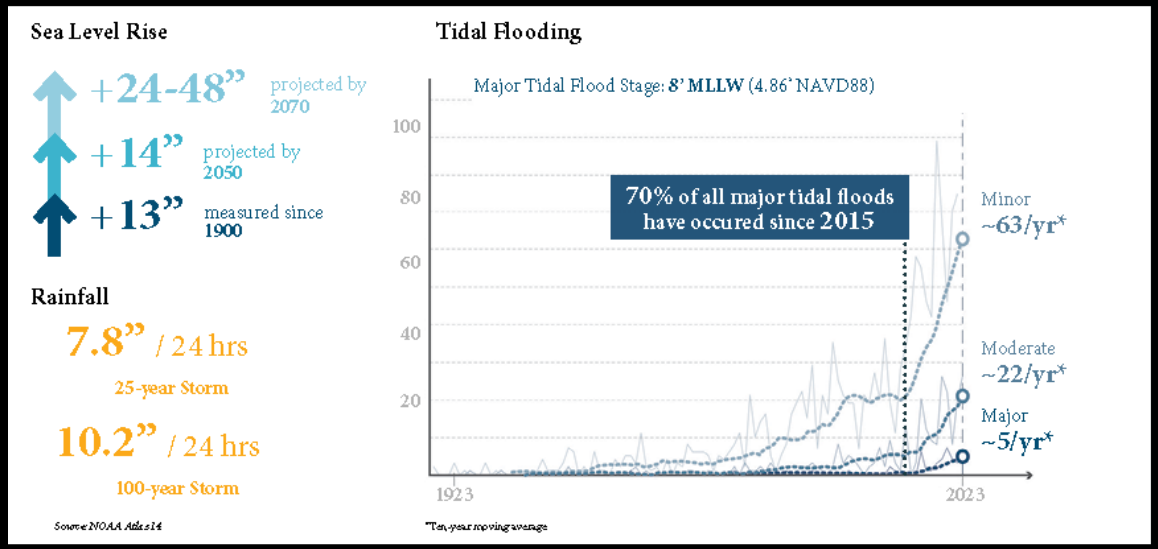
A City Shaped by Water

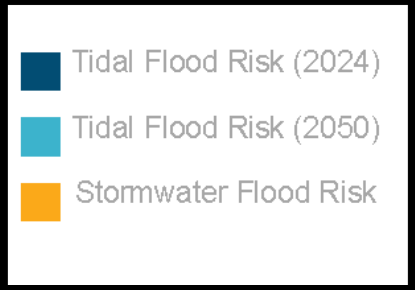
Charleston's identity was built on its rivers, harbor, creeks, marshes, and tidal landscapes. That relationship has always brought both value and risk.

Historic development filled portions of low wetlands and creek systems. Today, those former water places reappear during high water and heavy rain events.

The Plan begins with this history. Rather than treating water as an external threat, it recognizes water as a defining civic condition. Planning for Charleston's future means protecting what is historic and loved while changing where and how the city grows.







MP200.03

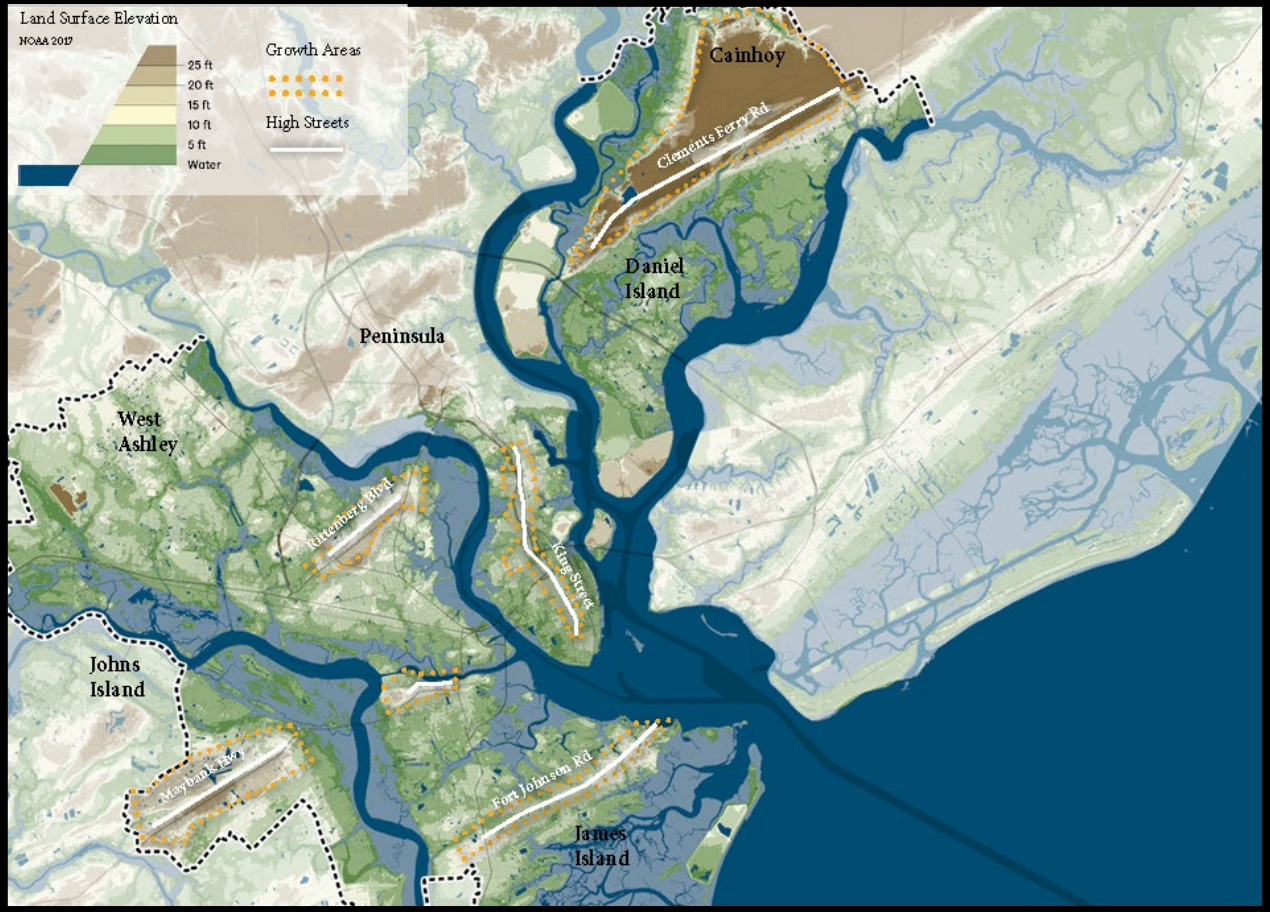
Forces of Water

Flooding in Charleston is multifaceted. Sea-level rise raises the baseline for tides, slows drainage upstream, pushes groundwater closer to the surface, and amplifies the impact of rainfall and storm surge.

The plan frames these forces as one connected system. Charleston has already measured approximately 13 inches of sea-level rise since 1900, with another 14 inches projected by 2050.

As water levels rise, everyday drainage decisions, road elevations, development patterns, and ecological migration all become part of the same resilience challenge.

We modeled risks to understand impact. Flood modeling was used to evaluate current and future risks from stormwater, tidal, and compound flooding and to identify where impacts are likely to be greatest.



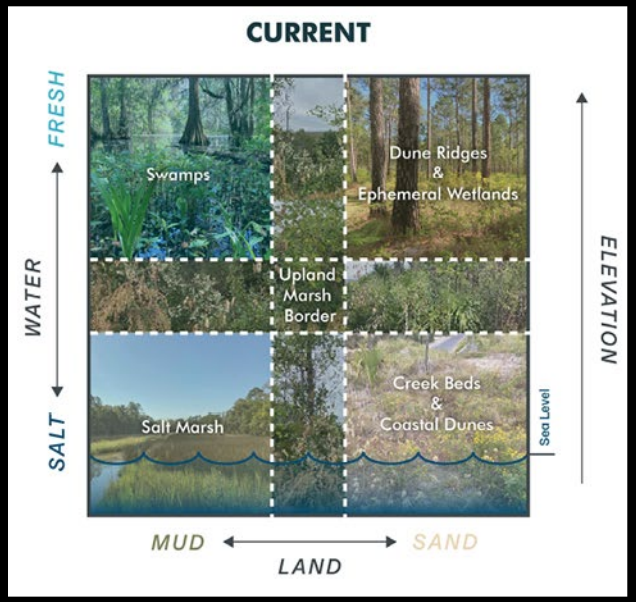
MP200.04

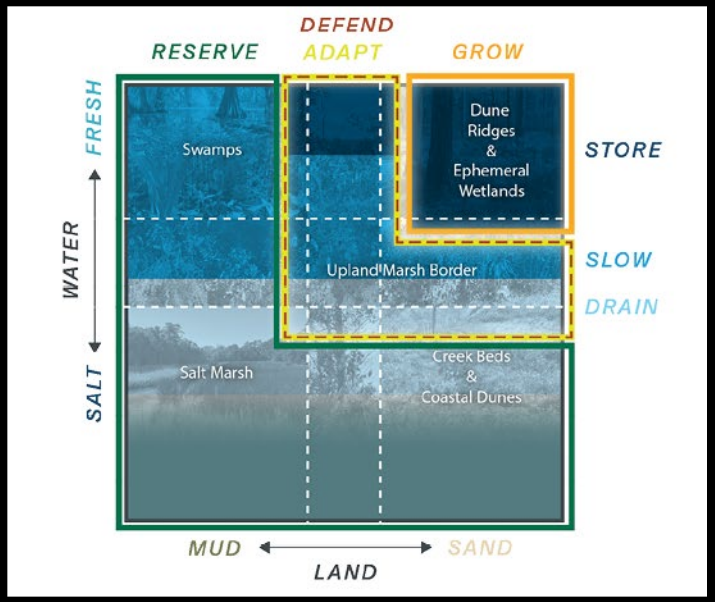
Elevation Matters

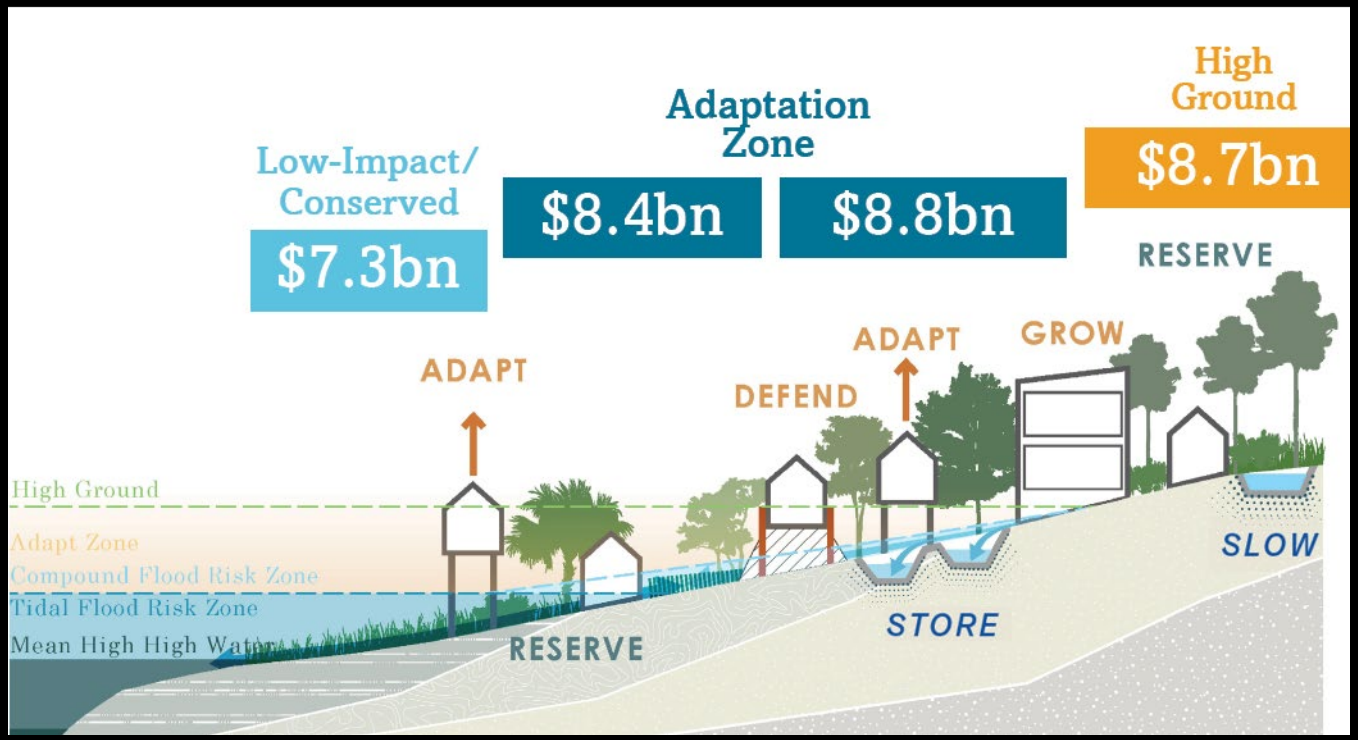
Elevation became the plan's organizing lens and a link to historic High Streets, a British colonial pattern, that still connect the region along coastal ridges. High ground should be prepared for context-sensitive growth and redevelopment; low ground should be supported for adaptation, water storage, and ecological function.

This framework helps the City direct people and value away from escalating flood risk without abandoning vulnerable places.

It turns the city's topography into a long-term guide for infrastructure, zoning, public space, and community adaptation.







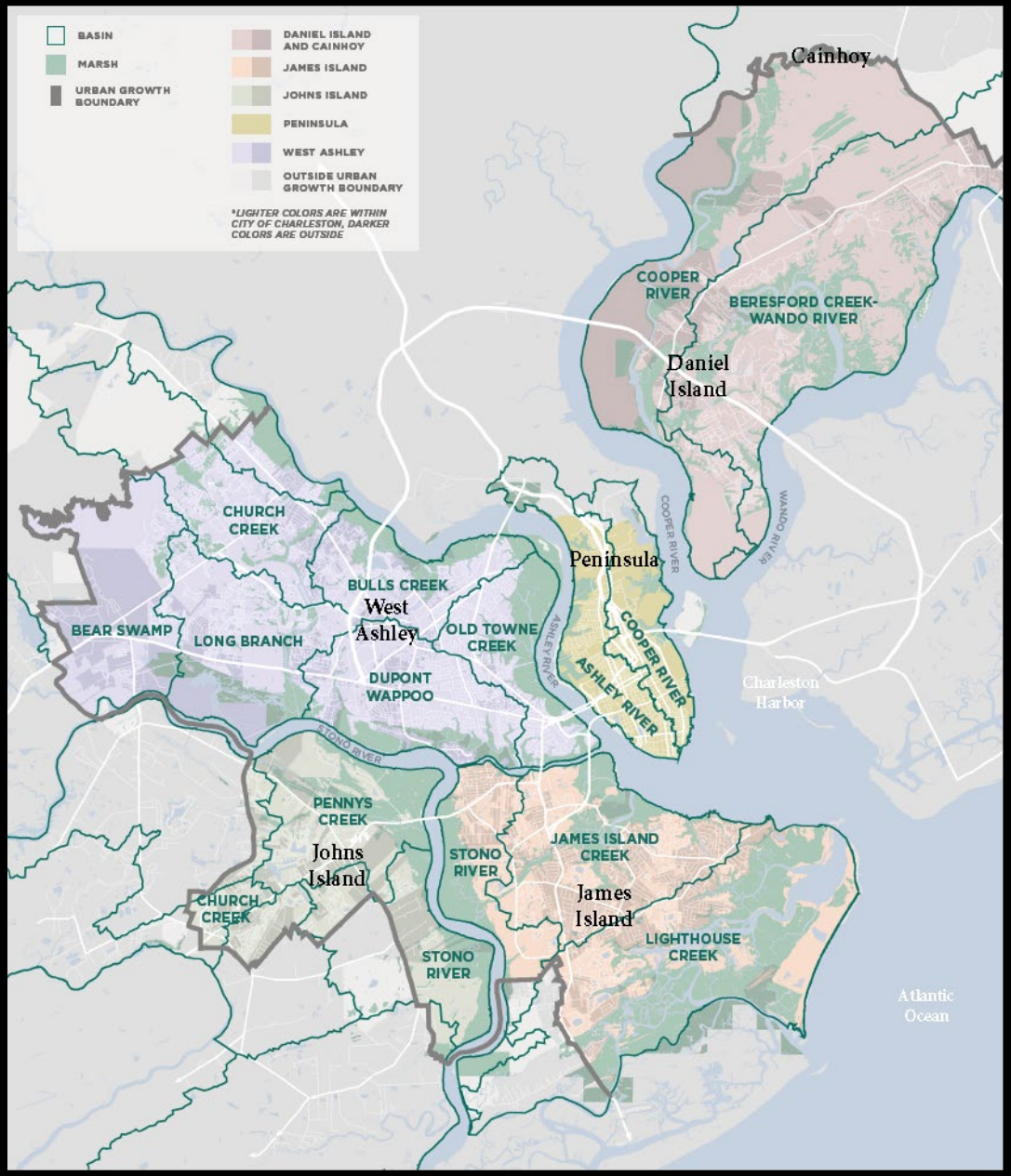
MP200.05

Making Space for Water

The Plan organizes adaptation around four foundational land strategies: Reserve, Adapt, Defend, and Grow. Each responds to elevation, land use, water levels, and flood-risk drivers.

Reserve protects natural systems and room for marsh migration. Adapt retrofits vulnerable places. Defend protects regional assets where engineered measures are necessary. Grow directs development toward safer ground.

Together with Slow, Store, and Drain, the framework turns a citywide vision into practical guidance for projects, policies, capital planning, and design decisions, laying the groundwork for action tied to fundamental characteristics of the landscape.



MP200.06

Integrating Systems & Scales

The Plan aligns with Charleston's six planning areas defined by rivers, and further subdivides neighborhoods by drainage basin, primarily informed by natural systems of creeks and marshes.

Each basin has its own hydrologic conditions and a distinct combination of tidal flooding, rainfall, storm surge, groundwater, and maintenance challenges.

By working across multiple scales, the Plan connects citywide policy with watershed planning, neighborhood adaptation, transportation corridors, public spaces, and site-specific project opportunities. The City is now using these basins to organize capital improvement projects and better align infrastructure investments with community priorities.


Cainhoy Engagement Meeting


James Island Engagement Meeting


Johns Island Engagement Meeting


Peninsula & Rosemont Workshop

MP200.07

Community Co-Development

From March 2023 forward, the team engaged communities in every major watershed, led listening sessions and tours in the field, and convened City departmental leadership to align local knowledge with technical analysis.

Workshops surfaced how flood risk overlaps with access, mobility, environmental justice, maintenance, and neighborhood identity.

The resulting plan does more than map hazards. It gives the City, residents, and partner agencies a common language for prioritizing investment, communicating risk, and shaping adaptation projects around shared water interests.

Project Definition

Feature Projects (8)

"More-than-the-sum-of-their-parts" high-impact & incremental.

Rough Order-of-Magnitude Cost Estimates

$	<$10 million
$$	$10-25 million
$$$	$25-50 million
$$$$	$50-100 million
$$$$$	>$100 million

Prototypical Projects (100+)

Identified from conceptual modeling for areas of potential flooding.

- (Re)development Opportunities
- Critical Connections
- Green Infrastructure
- Stormwater Storage / Parks
- Drainage Improvements
- Defend / Elevate
- Reserve (incl. marsh migration & terracing)
- Community Adaptation Areas

Project Prioritization Criteria

Safety First:
Protect & Connect

Work from the Ground Up:
Build with Nature

Change for Good:
Provide Resources & Access

Work Together:
Coordinate & Communicate

Build Value:
Invest & Adapt

MP200.08

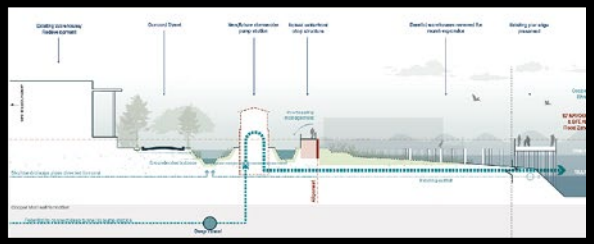
Seeing Solutions

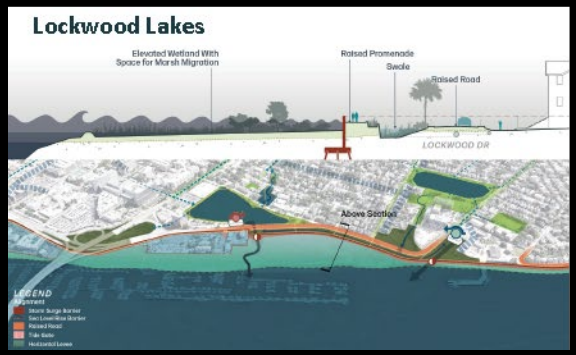
The Plan moves from analysis to action through two project types. More than 100 prototypical projects identify concept-level water-management solutions across the city.

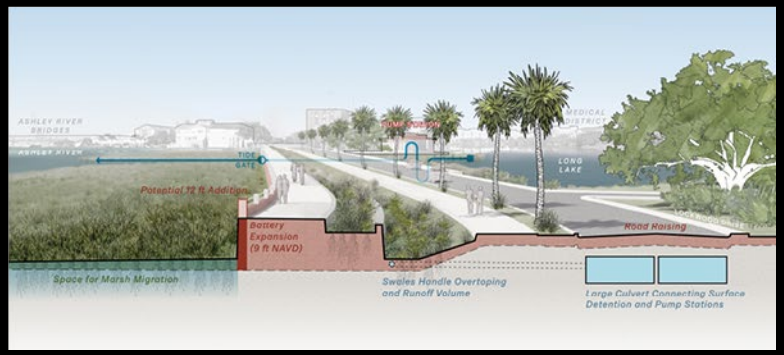
Eight feature projects combine those prototypes into larger concepts that can be implemented incrementally and adapted over time, generating benefits and value greater than the sum of their parts.

Projects are prioritized using criteria that align with the Plan's guiding principles defined in concert with communities across the city.

The work is intentionally scalable: a stormwater park, road raising, creek restoration, canal, greenway, or marsh migration project can each become part of a larger citywide water system that reinforces the culture and people of the Lowcountry.







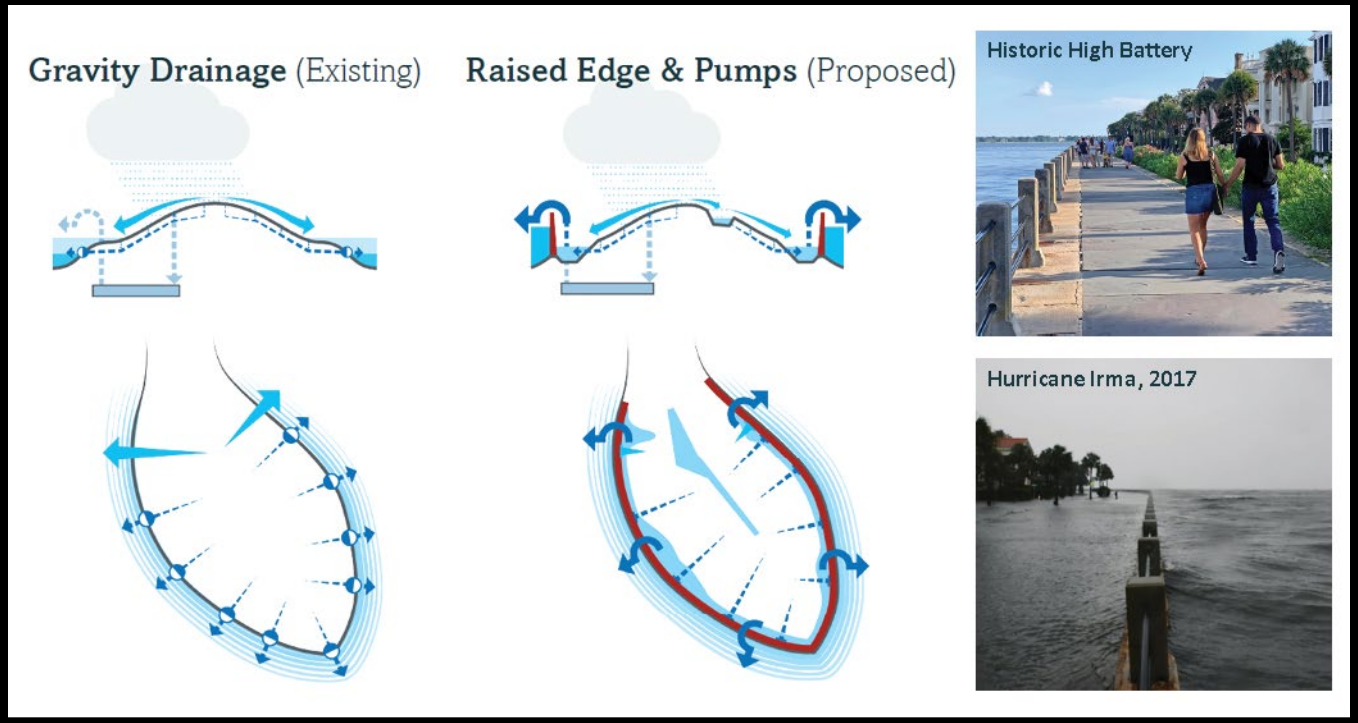
MP200.09

Protecting the Historic Peninsula

The Peninsula is the economic, cultural, political, and academic hub of the region, and one of the oldest European settlements in North America, but many of its core assets face Charleston's most acute flood risks.

The Plan builds on the historic High and Low Batteries, proposing an 8-mile raised perimeter that functions like a polder: a protective edge that serves as a linear park paired with interior water management.

The strategy treats protection as civic design. Future edges, pumps, canals, parks, and wetland buffers must safeguard the historic city while expanding public space and managing rainfall inside the defended area.



MP200.10

Internal Water Management

As sea levels rise, parts of the Peninsula will become lower than daily high tide. Gravity drainage alone will no longer be enough.

The Plan identifies monitoring, surface water features, stormwater parks, and pump forebays as opportunities to store, move, and manage runoff within defended areas.

These systems improve redundancy, reduce dependence on single-purpose infrastructure, and turn stormwater management into public landscapes that reinforce Charleston's identity around water.

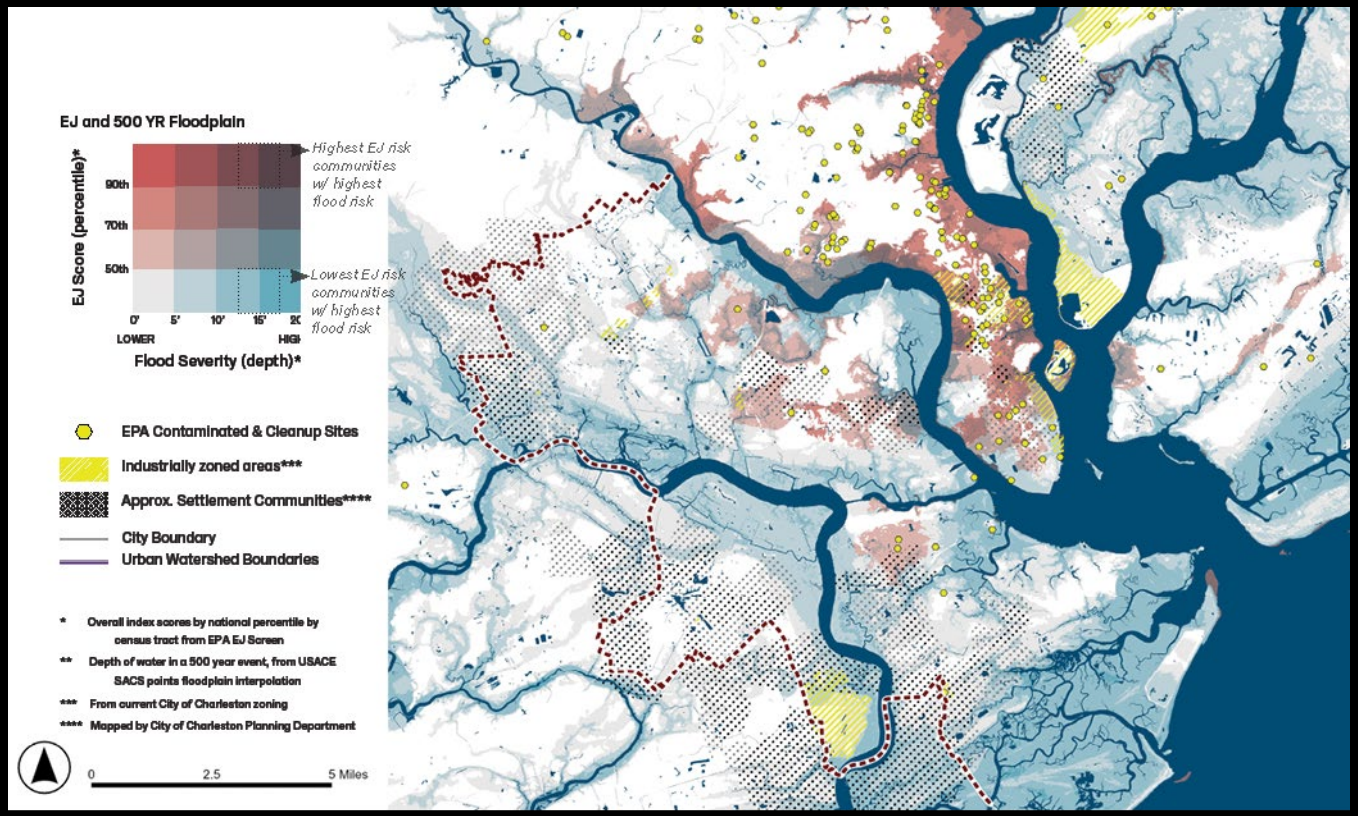
MP200.11

West Ashley: An Emerging Sea Island

West Ashley is a suburban expanse crisscrossed with transportation corridors and creeks. Its future will be shaped by the Ashley and Stono Rivers, expanding creeks, higher tides, and heavier storms. The Water Plan directs growth toward the Sam Rittenberg ridge while helping lower neighborhoods adapt through road raising, stormwater storage, marsh migration, and layered flood protection.

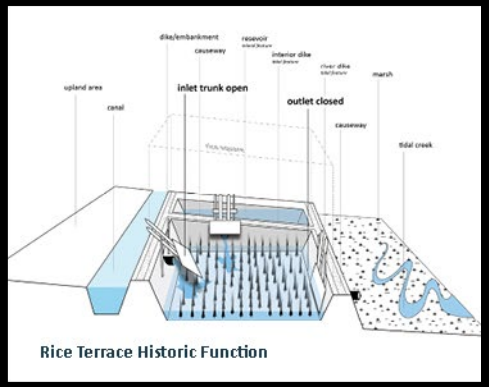
At the center of this strategy, the Blue Crescent connects tributaries, parks, neighborhoods, and the West Ashley Greenway. This emerging blue-green network creates room for water while expanding trails, public access, and restored riparian landscapes—forming a contemporary Lowcountry “Emerald Necklace” that reduces compound flooding and supports community life.

Long Branch Creek Commons proposes a continuous public landscape designed to accommodate marsh migration. Adapted rice dikes, wetland edges, trails, and water access create shared space for people and water while improving flood protection, habitat, and water quality.




Former Rice Field


Rice Trunk, West Ashley Park



Rice Terrace Historic Function

MP200.12

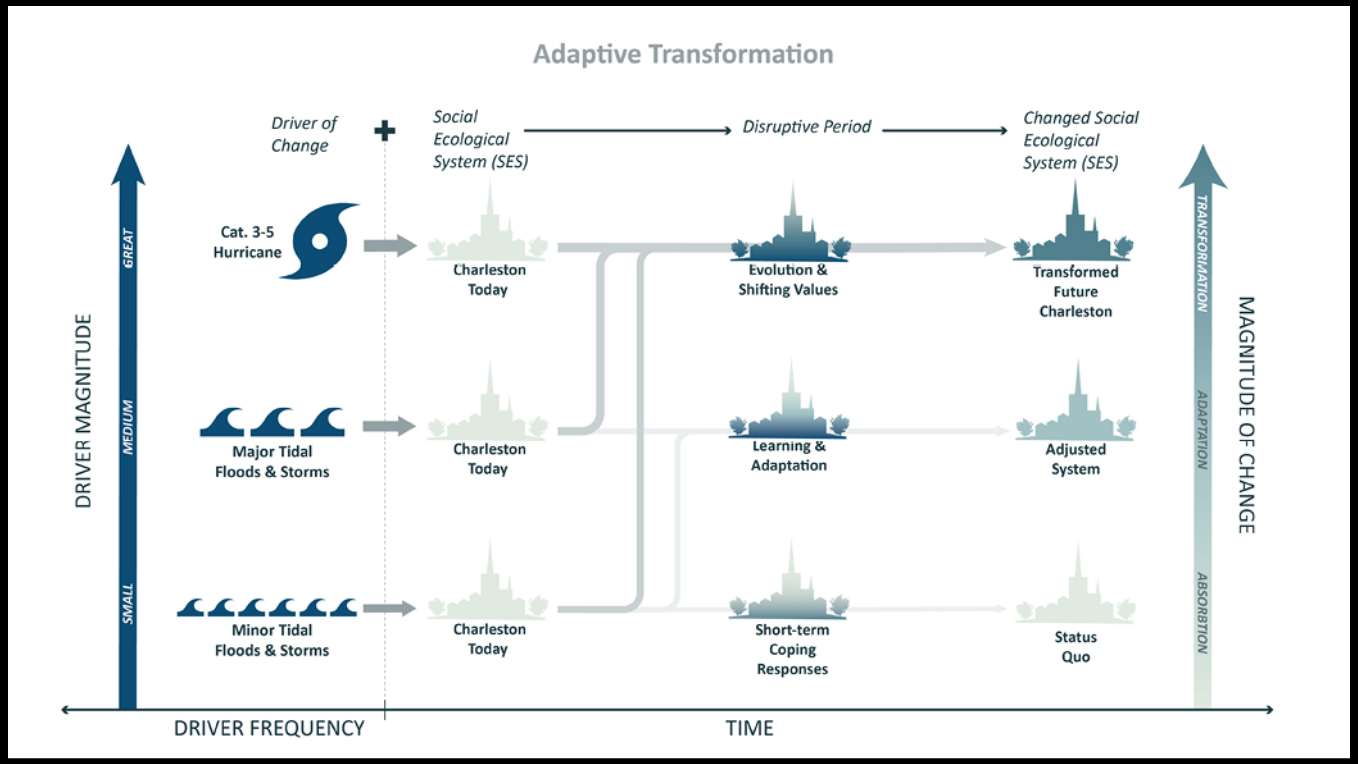
Change for Good

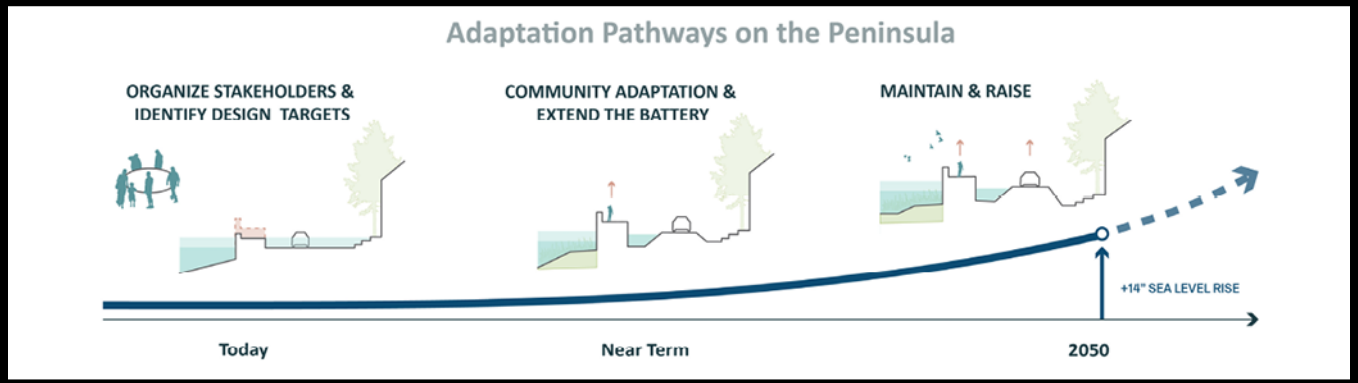
Flood risk amplifies challenges faced by historically disadvantaged communities. The Plan maps environmental justice burdens together with flood exposure to help prioritize resources where risk is layered, including near industry and within Settlement Communities recognized as locations founded by free people of color.

The resulting framework links adaptation to equity: access to information, public investment, infrastructure maintenance, water access, and long-term environmental justice are part of the same design problem.

Legacy infrastructure from rice cultivation, built and maintained by enslaved populations and still present in the landscape today can be reinterpreted for water management benefits.

By making intersecting vulnerabilities visible, the plan gives the City a stronger basis for grants, capital planning, community adaptation, and more equitable implementation.





MP200.13

Act Now, Adapt Over Time

The Plan is a tool for aligning immediate and near-term actions with long-term safety, resilience, and value.

For the City, it supports capital improvement planning, policy guidelines, funding strategies, operations, and maintenance. For communities, it offers a starting point for understanding risks, opportunities, advocacy, and basin-scale adaptation planning. To increase accessibility, the Water Plan is available online as an interactive Storymap integrated with public-facing programs on the City's website.

Its greatest contribution is adaptive capacity: the ability to act now, learn from new data, track progress, and adjust as water levels, groundwater, development, and community priorities continue to change.