

South Florida Resilient Redesign

Key West



- Alison Higgins, City of Key West
- Jason Bird, AECOM
- Thaddeus Cohen, City of Key West
- Terry Justice, City of Key West
- Michael Roberts, Monroe County
- Bert Bender, Bender & Associates Architects
- Jim Murley, SFRPC/Miami Dade County
- Colin Polsky, FAU Center for Env. Studies
- Francis Lyn, FAU School of Architecture
- Helena Solo-Gabriele, UM
- Andy Hayes, Hayes/Cumming Architects

Site Overview:



- Land Area: 5.59 sq.miles
- 4.7' avg above sea level
- Residents: ~25,000
- Daily Tourists: ~33,000
- Economic drivers: Tourism & US Navy
- Per Capita income in past 12 months: \$31,700
- Median value of owner occupied housing: \$427K



Key Community Features



Problems/Challenges

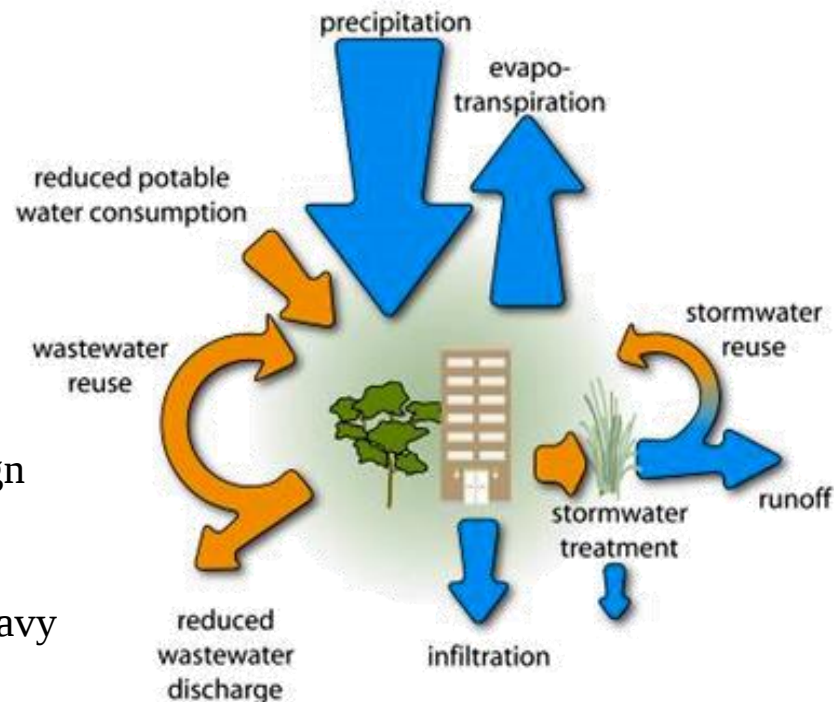


Process...

Two-Fer Approach: Only consider solutions that meet multiple goals

Concepts Considered:

- **Maintain / Expand Affordable Housing**
 - Expand Housing Inventory & Density
 - Incentivize Raising Homes
 - Reduce Storm Damage and FEMA Claims
- **Resilience thru Self-Reliance**
(Energy / Waste / Transportation)
 - Day to Day Usage
 - Hazard Preparedness
- **Balanced Water Use/Re-use**
 - Rainwater catchment
 - Stormwater Management thru Low Impact Design
 - Tidal displacement / diversion
- **Enhance Economic Development:** Tourism & US Navy



Issue #1: Natural Assets

Problems:

- Limited protection of AIA
- Constant cost of beach renourishment and seaweed removal
- No natural outflows or access to Saltponds from oceanside
- Storm surge results in erosion blowouts

Concepts:

- Move AIA inland
- Increase mangroves and dune systems
- Increase flow and recreational access to salt ponds.
- Increase tourist beach



Concept #1 - Natural Assets



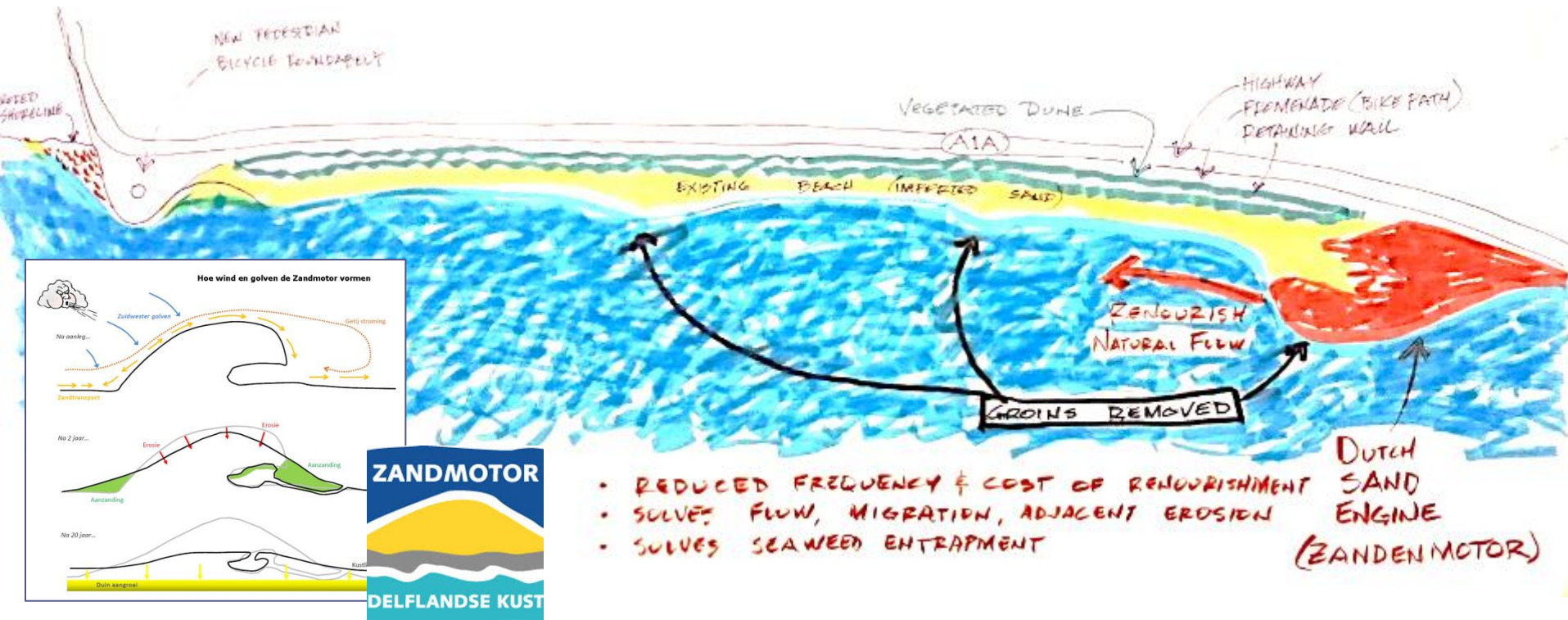
Pros:

- Increased extent and effectiveness of natural buffers
- Increased protection of inland built environment

Cons:

- Capital Costs
- Timing / Phasing
- Increased inner island traffic

Concept #1 - Natural Assets



Pros:

- Reduce operational / Renourishment efforts
- Reduce habitat impacts
- Work with the forces of nature
- Eliminate seaweed entrapment

Cons:

- Capital Costs
- Coordination with outside agencies

Concept #1 - Natural Assets



Pros:

- Increased plant and animal diversity
- Protection of emergency response access

Cons:

- Coordination with outside agencies
- Timing / Phasing
- Increased inner island traffic

Issue #2: Infrastructure



Problems:

- High water events on taxiways
- 2' affects 94% of airport
- Cost of raising everything
- Only one "short" runway

Solutions:

- Raise Everything (Runways, Shoulders, Catchbasins)
- Increase mechanized drainage
- Or... Relocate?



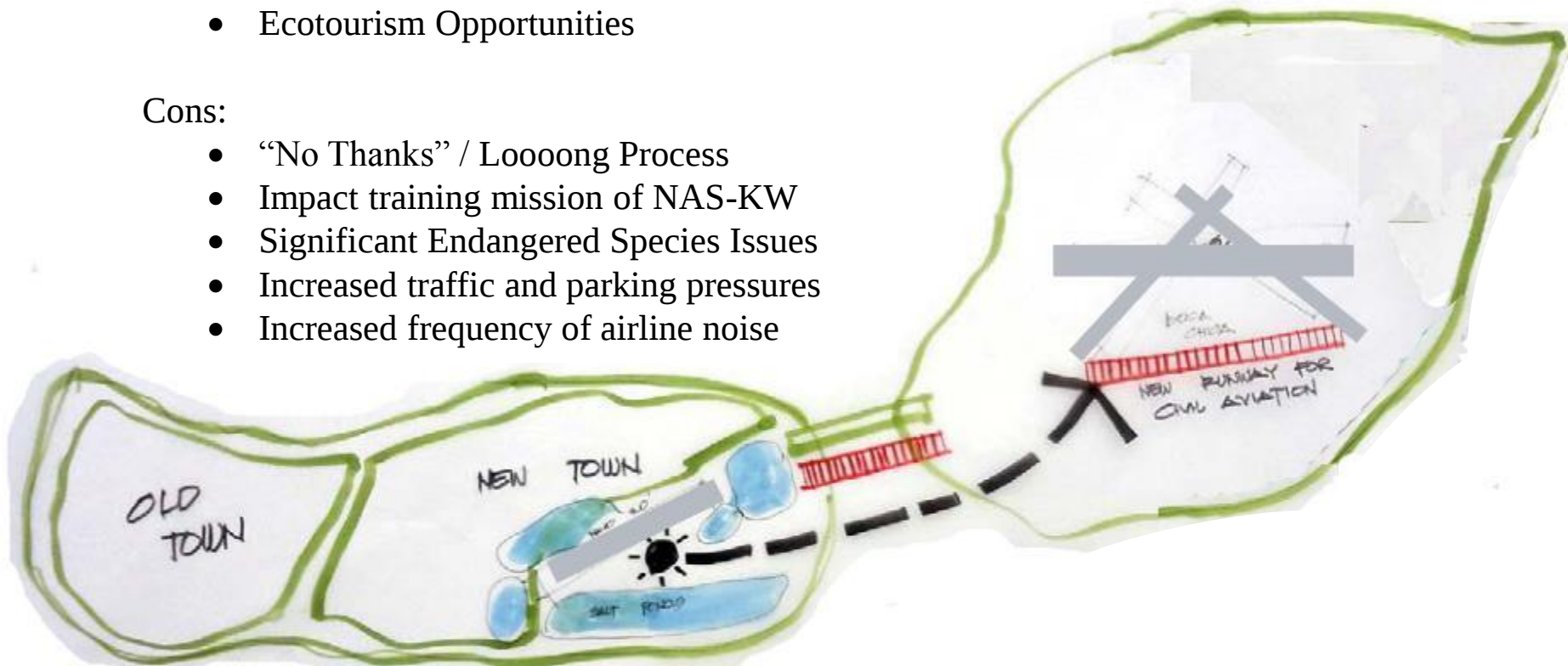
Concept #2: Infrastructure

Pros:

- Shared operational costs
- Examples of joint use nationwide
- Grants for planning / implementing
- Reduced noise impacts in residential areas
- Improved aircraft / airline operations
- Remediation of Natural Assets
- Ecotourism Opportunities

Cons:

- “No Thanks” / Loooong Process
- Impact training mission of NAS-KW
- Significant Endangered Species Issues
- Increased traffic and parking pressures
- Increased frequency of airline noise



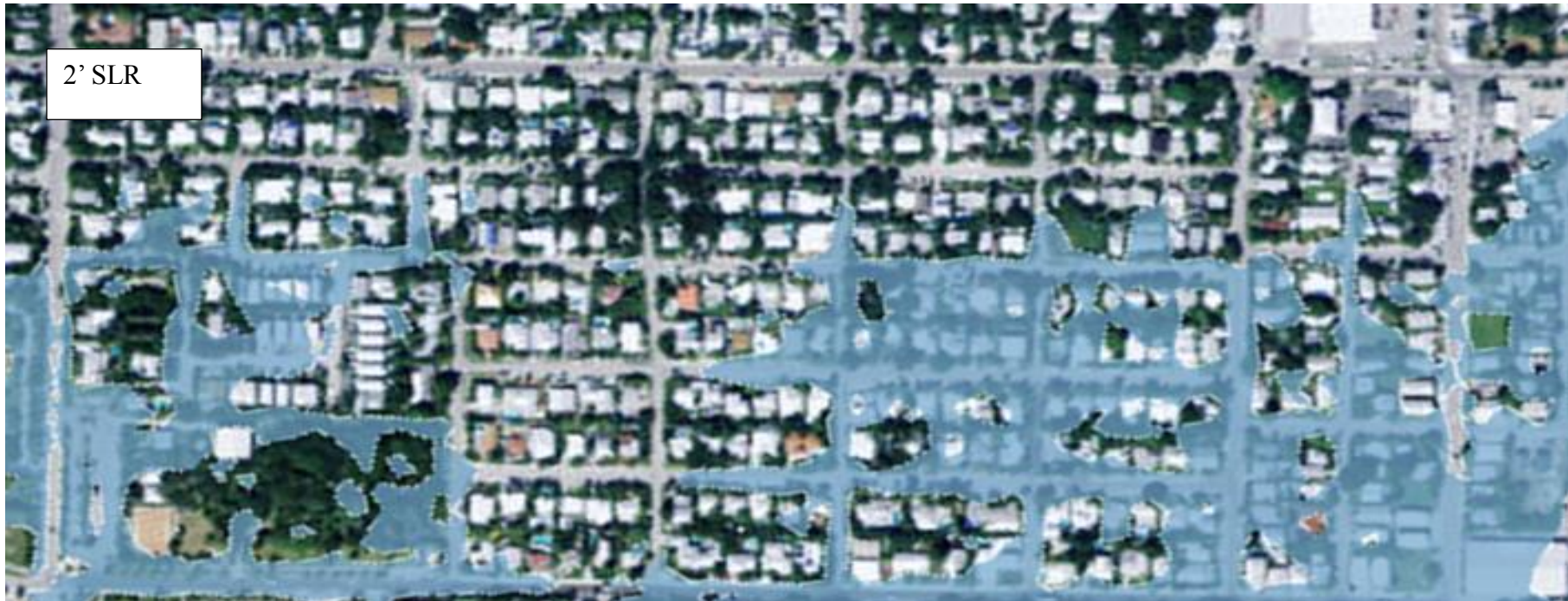
Issue #3: Housing

Problems:

- Highest concentration of repetitive loss
- Lots of roads underwater
- Old CBS housing on grade below BFE
- Multiple Barriers to Redevelop
- Suburban Character / Lack of Connectivity
- Dependency on mainland resources

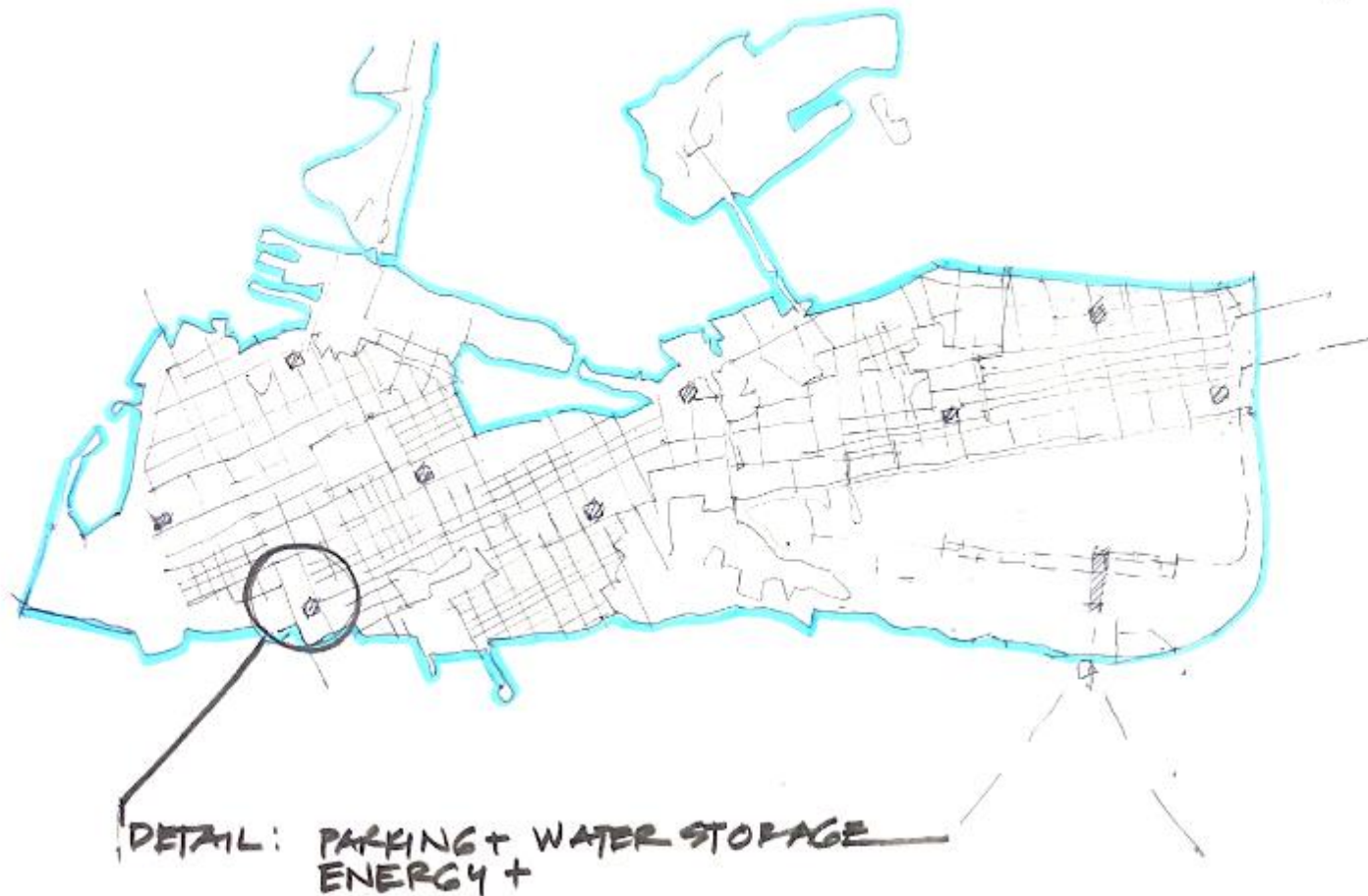
Concepts

- Incentivize Raising Homes / Increase density
- Right of Way Repurposing:
- Encourage Mixed Use
- Connect School Infrastructure with Neighborhood and Salt Ponds
- Two-Fer thinking: Multipurpose Structures



Concept: Housing / Connectivity

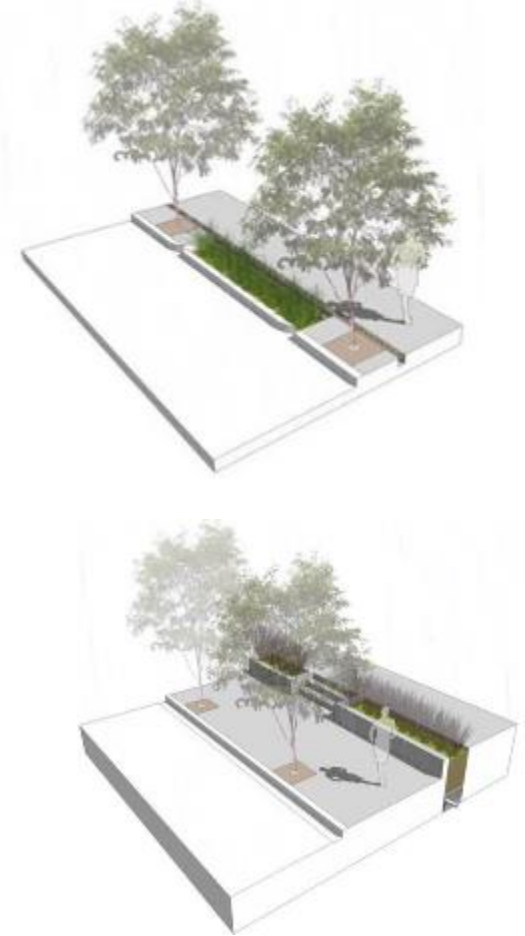
A NEW INDEPENDENT ENERGY INFRASTRUCTURE



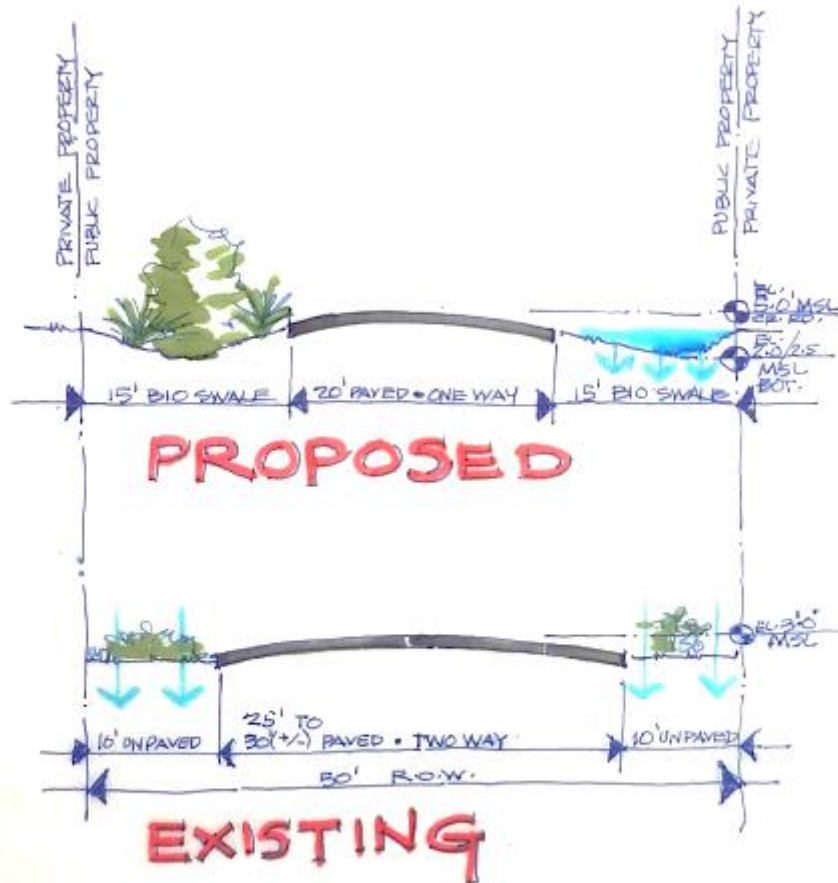
Concept: Housing / Connectivity



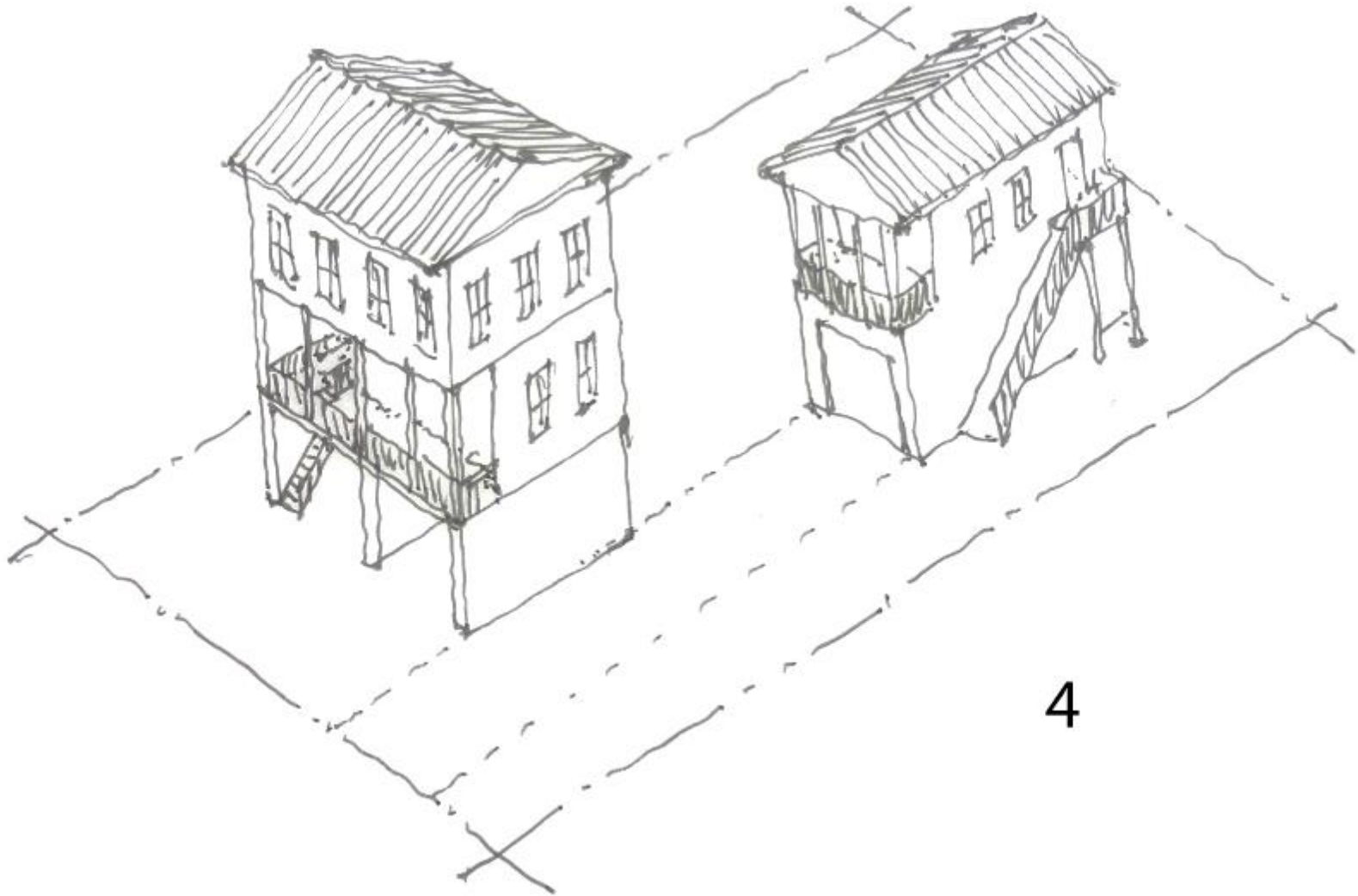
Concept: Housing / Connectivity



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Concept: Housing / Connectivity



Concept: Housing / Connectivity



Pros

- Extended viability of neighborhoods
- Increased property values
- Ability to raise housing in place
- Decreased roadway maintenance / Increased stormwater management
- Improved neighborhood aesthetics

Cons

- Lots of Policy changes
- Still the lowest lying neighborhood
- Increasing density in AE zones
- Precedent of raising roads
- No guaranteed ROI

Big Picture: 2060



Implementation Plan:

- Salt Ponds Adaptation Action Area
 - Engage DEO (Area of Critical State Concern)
 - Stakeholder Working Groups
 - Airport Master Plan
 - Comprehensive Plan
 - Capital Improvement Plan
 - Land Development Regulations
 - FEMA / FDOT / etc....

Summary

- Resilience thru Self-Reliance
- Increase Affordable Housing & Density
- Balanced Water Use/Re-Use
- Enhance Economic Development

