



ArcGIS Mapping of Beach Eligibility for State of Florida Local Government Funding Requests (LGFR)

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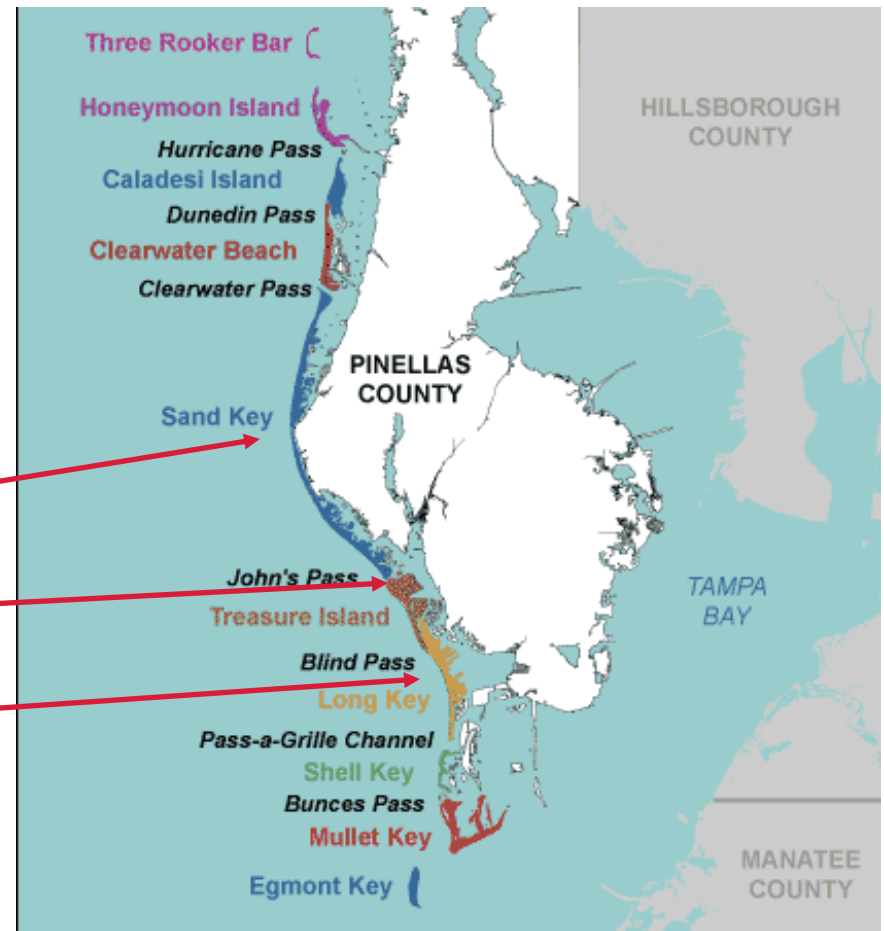
FSBPA September 14-17, 2014

Outline

- Background
- Overview of Rule 62B-36
- Map Development
- Important Strategies
- Results of creating the maps
- Summary

Project Area

- Non-Federally Authorized projects
 - Honeymoon Island
- Federally Authorized projects
 - Sand Key
 - Treasure Island
 - Long Key
 - Upham Beach
 - Pass-A-Grille Beach



When you have 5 separate project areas to submit maps for simplifying the process is a necessity

Goals

- Create maps that are simple, accurate and clearly aligned with 62B-36
- Make maps that can easily be reproduced and updated
- Maximize our state reimbursement

Overview of 62B-36



Eligibility Units

- Parking
- Bus Stops
- Bike Racks

Beach Access Points

- Primary
- Secondary

Land Use

- Recreation
- Commercial
- Other

Overview of 62B-36

- Base Unit = 52.8 ft which is 5280 ft/100 units (parking spaces)
 - Or **100** units per mile
 - Bus Stop 52.8 ft each, 4 per access or **211.2** ft
 - Bike Rack spots 13.2 ft each, total of **211.2** ft or 16 bike spots per access
- Primary Access
 - **100** units within $\frac{1}{4}$ mile and a public restroom
 - Units can be used with $\frac{1}{2}$ mile of beach length
- Secondary Access
 - **< 100** units within $\frac{1}{4}$ mile
 - Units can be used with $\frac{1}{4}$ mile of beach length

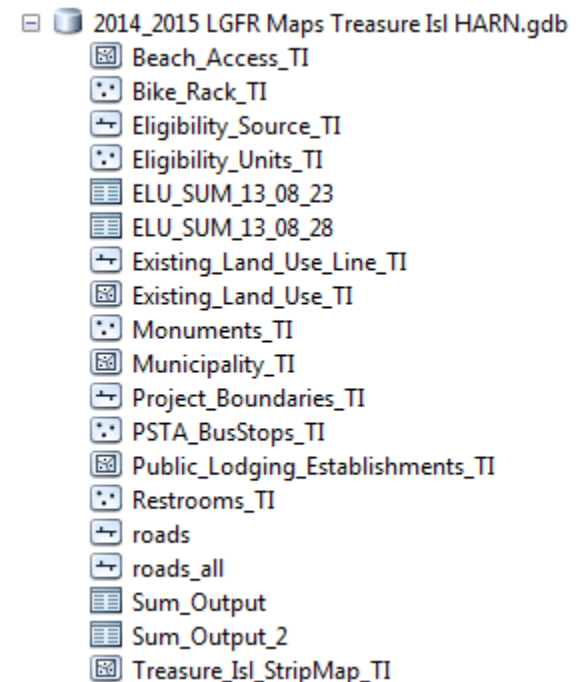
Overview of 62B-36

- Public lodging establishments= 6 or more units to rent.
 - Hotel , Motel, Vacation rental condo
 - Each unit is worth 52.8 ft per rentable room up to the width of the beach frontage of the hotel
- Off beach public lodging establishments
 - Each unit is worth 52.8 ft up to the width of the street frontage of the hotel

These rules form the parameters to guide the **Map Development**.

Map Development

- A File Geodatabase was used to store the features
 - Self contained
 - Calculates length automatically
 - Smaller file size
 - Faster



Map Development

Data Layers

- Strip Map Index
- Eligibility Units
(Parking, Bus Stops, Bike Racks, primary vs. secondary access)
- Beach Access
- Land Use
- Eligibility Shoreline
- Land use Shoreline
- Polygon
- Point
- Polygon
- Polygon
- Line
- line

Eligibility Units

- Parking Spaces
- Bike Racks
- Bus Stops
- Yellow polygon is a beach access

Parking Spaces



Bus Stop



Bike Racks



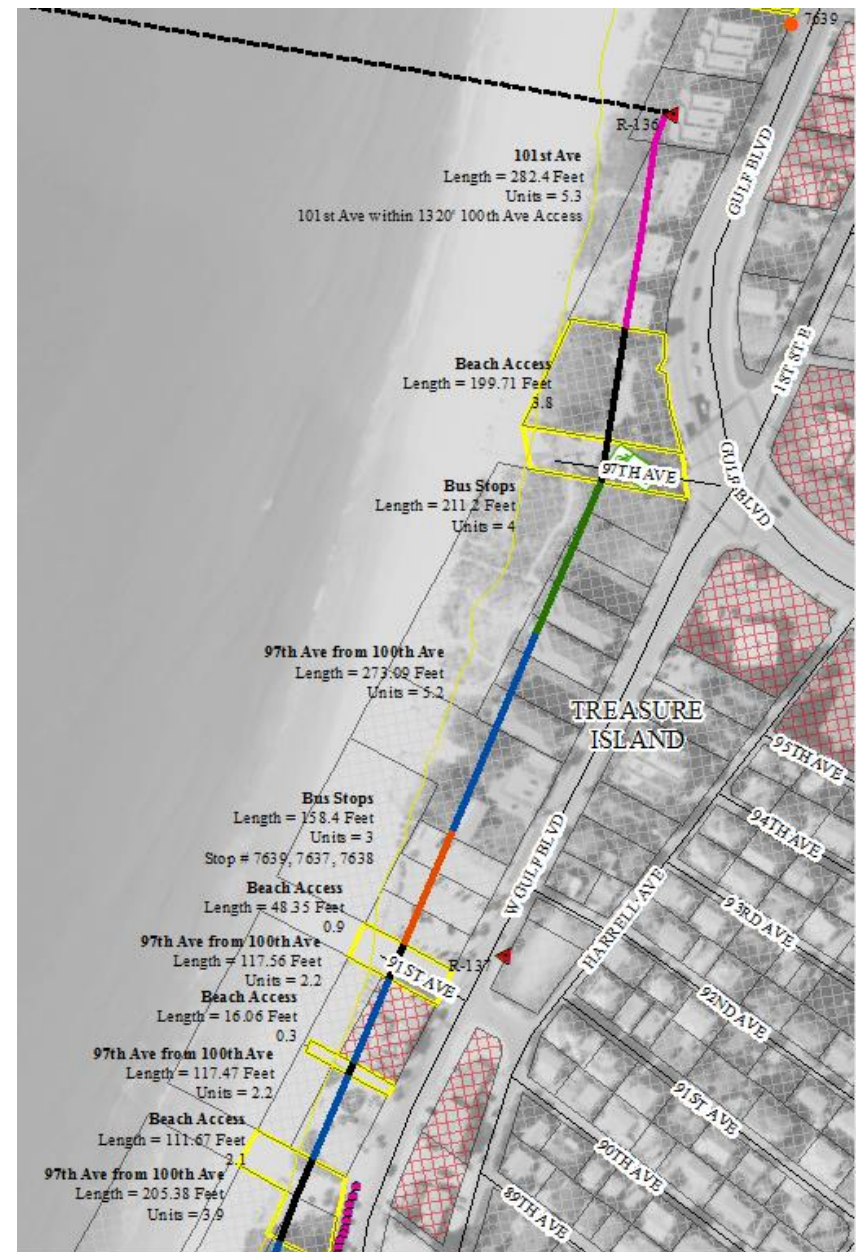
Shoreline Position

- Considerations

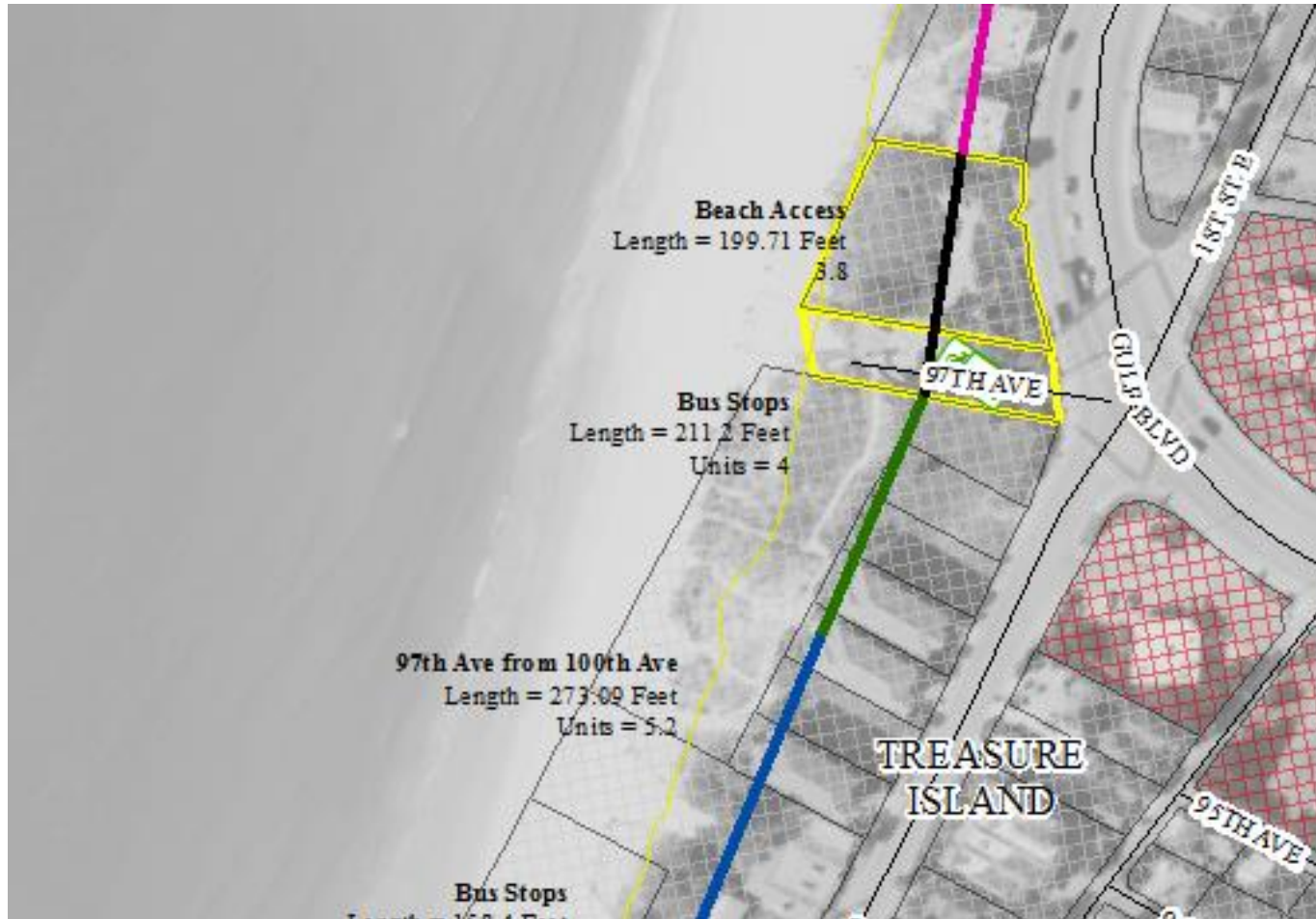
- Land use / Parcel lines
- Vegetation line/dune line
- R-monuments
- Shoreline trend

- Segmentation of line

- Use Editor to split
 - Eligibility units
 - Hotels
 - Gaps in Eligibility

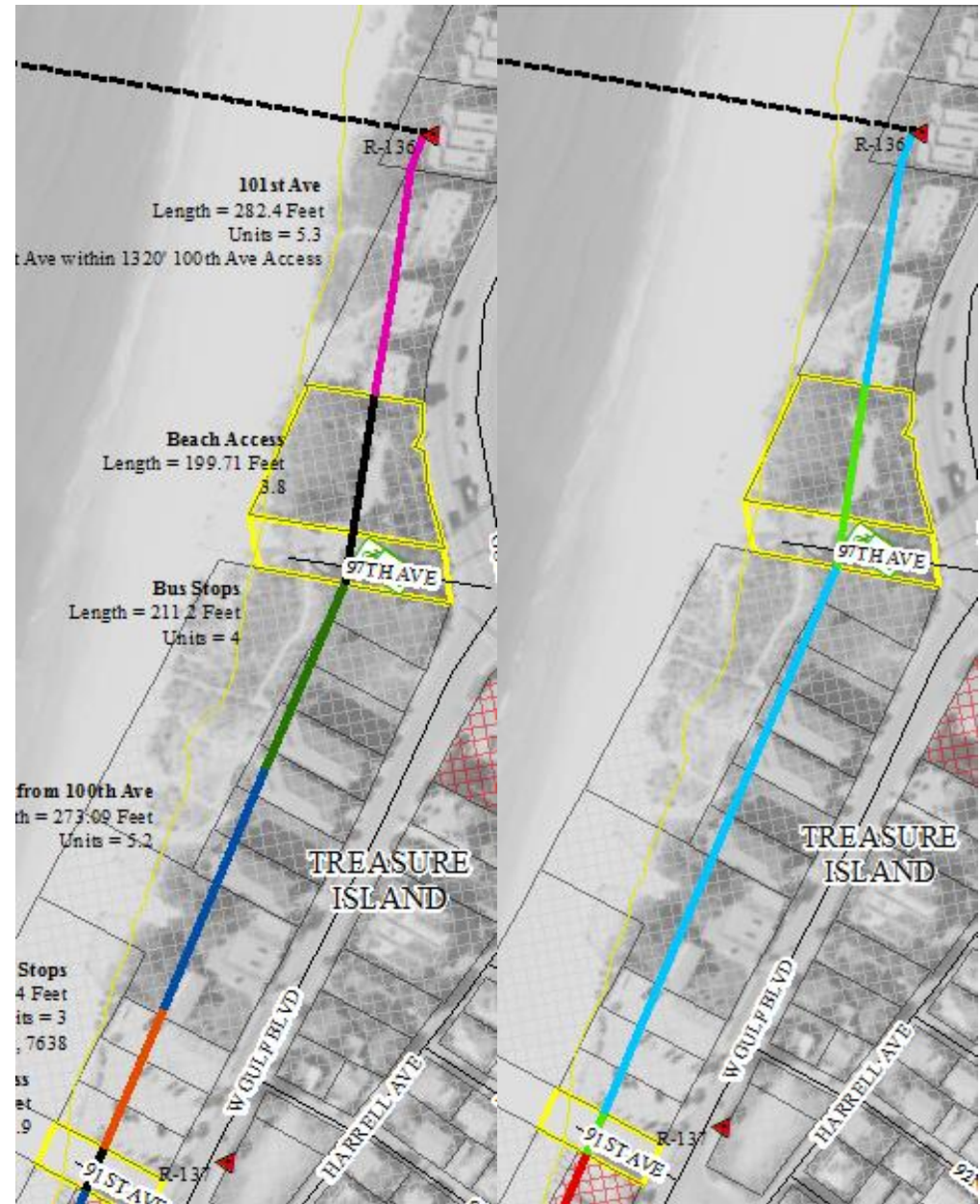


Shoreline Position



Land Use

- Re-segment Line
 - Public Lodging Establishments
 - Commercial
 - Recreational
 - Other
- Used the snapping toolbar to split at parcel lines



Map Book

- **Data Driven Pages**
- **Strip map index features (tool)**
 - Creates a strip of rectangular polygons along a line with which to index the maps
 - It was modified by adding columns for **scale**, **order** and **label** and a rectangle that encompassed the project area
 - Enter the correct scale 1:2,400 (1"=200 ft) for the maps and use a scale of 1:24,000 for the index
 - Integers were used to express the order of the pages in the order field and created labels in the label field (Ex. 2 of 6)



Shape_Length	Shape_Area	scale	order_	label
6520	2416799.999994	2400	5	4 of 6
6520	2416800.00001	2400	6	5 of 6
6520	2416799.999999	2400	7	6 of 6
6520	2416800.000006	2400	2	1 of 6
6520	2416800.000009	2400	4	3 of 6
65200	241680000.00007	24000	1	Index
6520	2416800.000021	2400	3	2 of 6

Index page

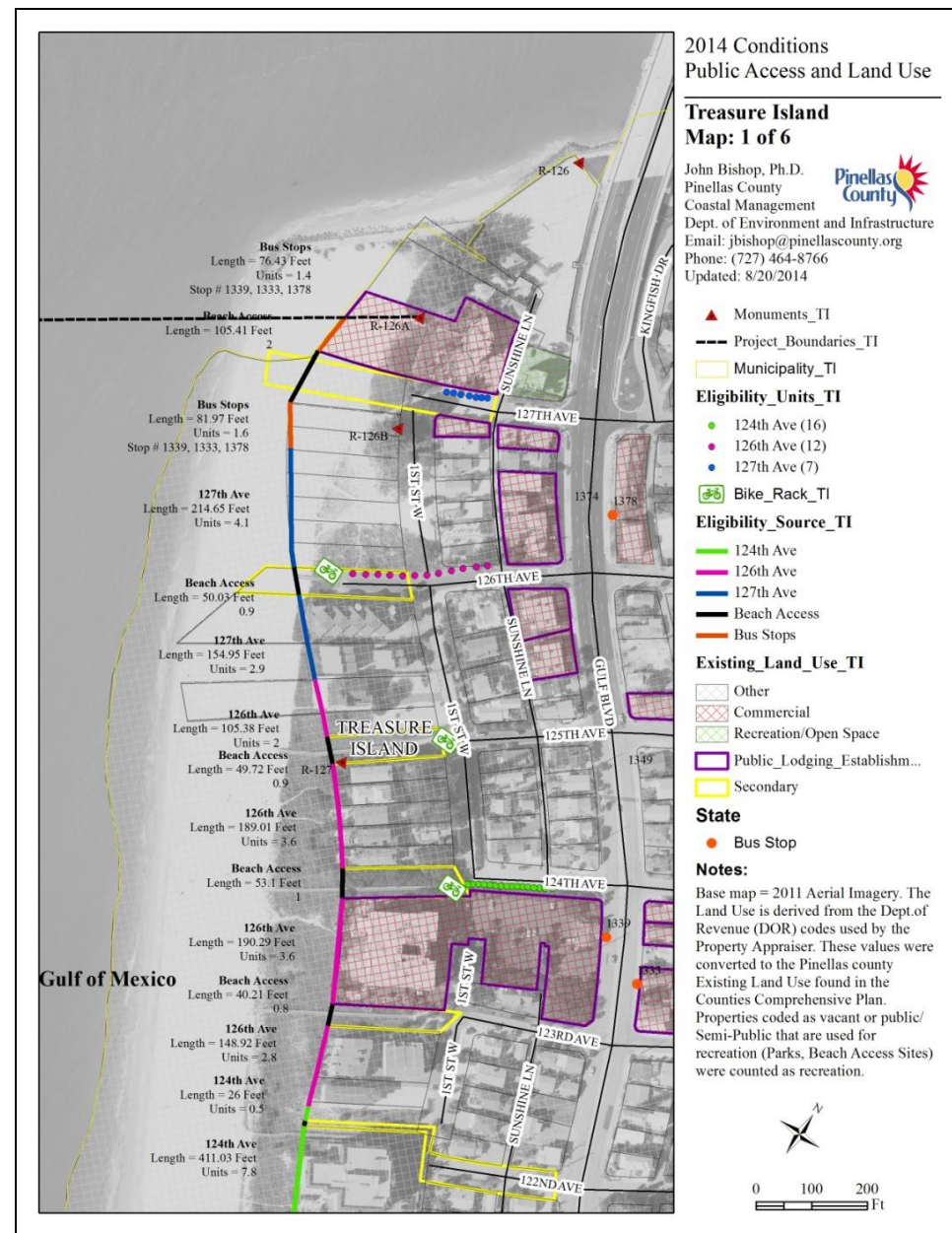
- **Layout**

- A vertical layout was used
- Black and White imagery allows the colors of important features to stand out
- Setting the transparency to 50% lightens and softens the imagery
- The Strip map was set to white and transparent so that imagery below would peak through



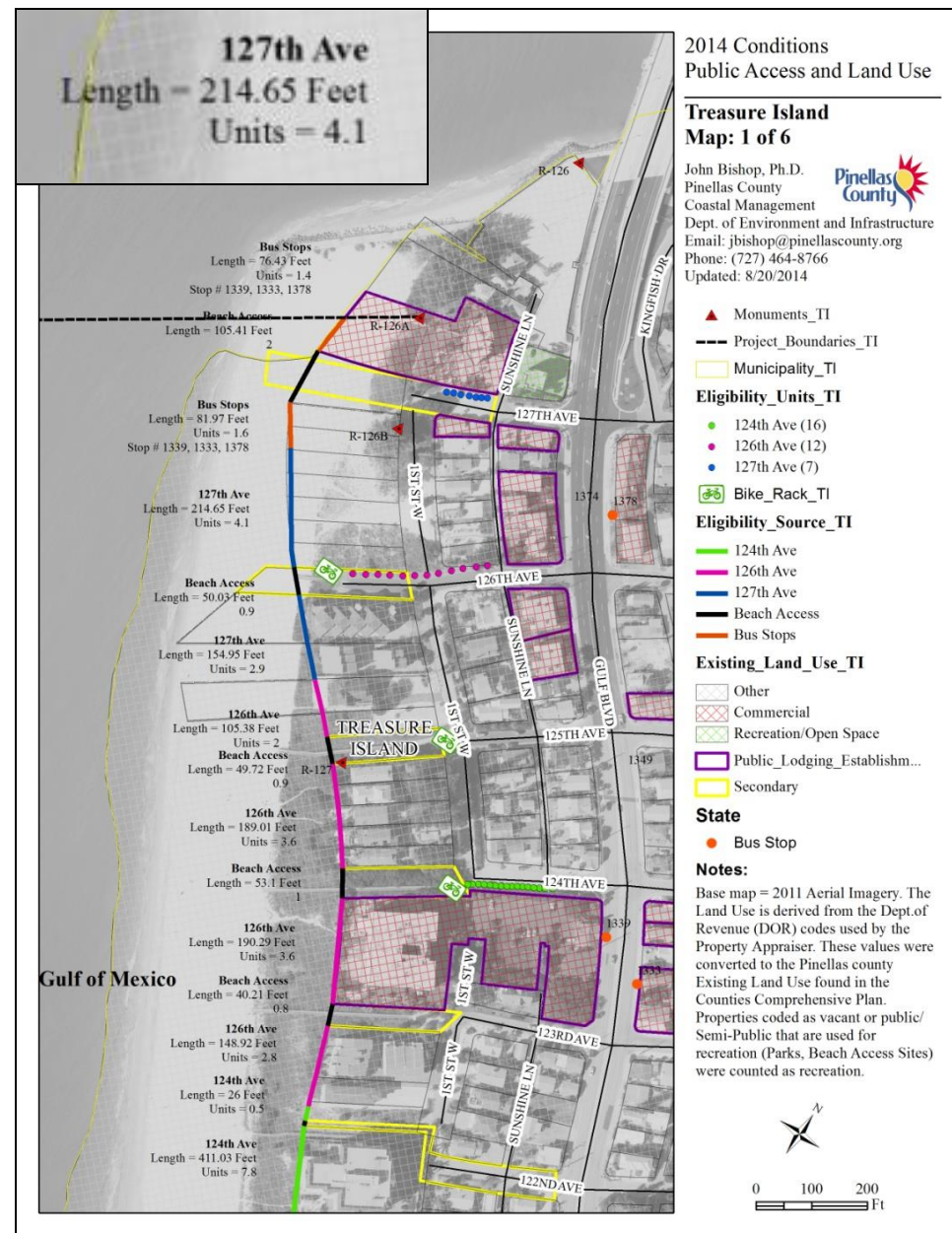
Map Books: Page 1

- Eligibility units are denoted by points.
- The shoreline has been segmented by eligibility units and color coded.



Map Books: Labeling

- An expression was used in label manager to auto label the map.
 - Function FindLabel ([Label] , [Length] , [Units], [FT] , [U] , [L], [UA])
 - FindLabel = "<BOL>" & [Label] & "</BOL>" & vbnewline & [L] & [Length] & [FT] & vbnewline & [U] & [Units] & vbnewline & [UA]
 - End Function
 - Example:
 - Label = Bus Stops
 - Length = 76.43
 - Units = 1.45
 - FT = " Feet"
 - U= "Units = "
 - L = "Length = "
 - UA = Stop # 1339, 1333, 1378



Strategies and things to watch out for

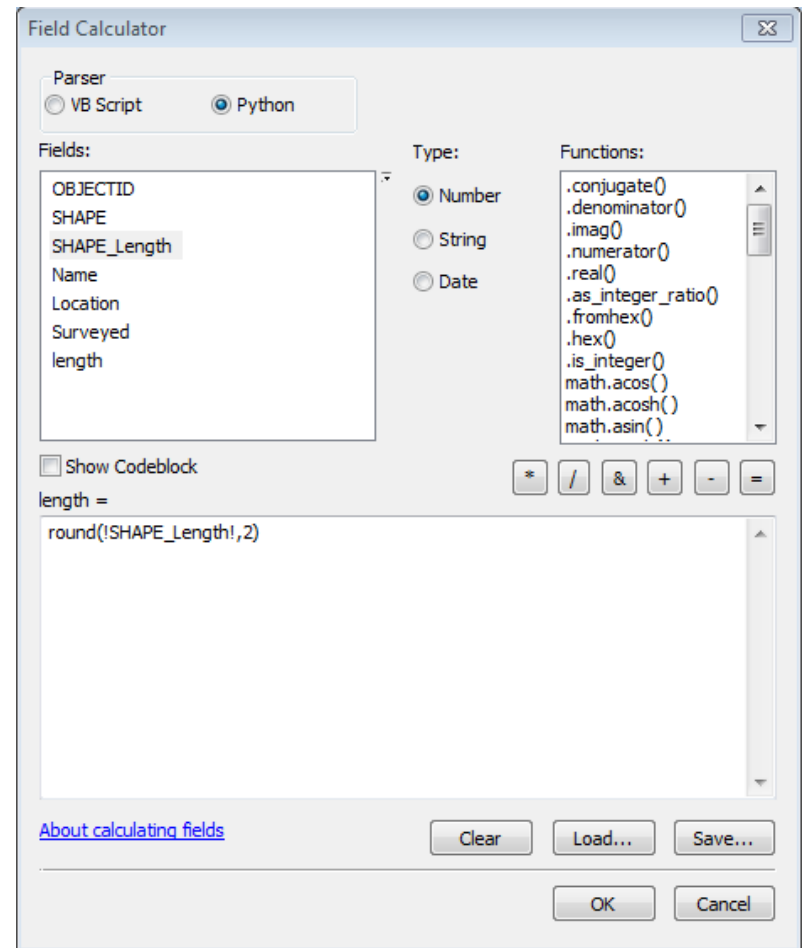
Field Verify

- Field verify
- Not all spaces viewed from aerials are open to the general public



Rounding

- If you round to 1 decimal your project length can change by several tenths depending on how it is segmented.
 - Project length changes when you resegment for land use
 - Project length changes when you make changes for changes in parking
- In Field Calculator use Python function
`>>> round([attribute], 2)`
- Round the attributes table two decimals and then round the table for the LGFR to 1 decimal.
- So when you resegment for commercial the total length may not be equal. This keeps any variation at the 100th place vs. the tenths.



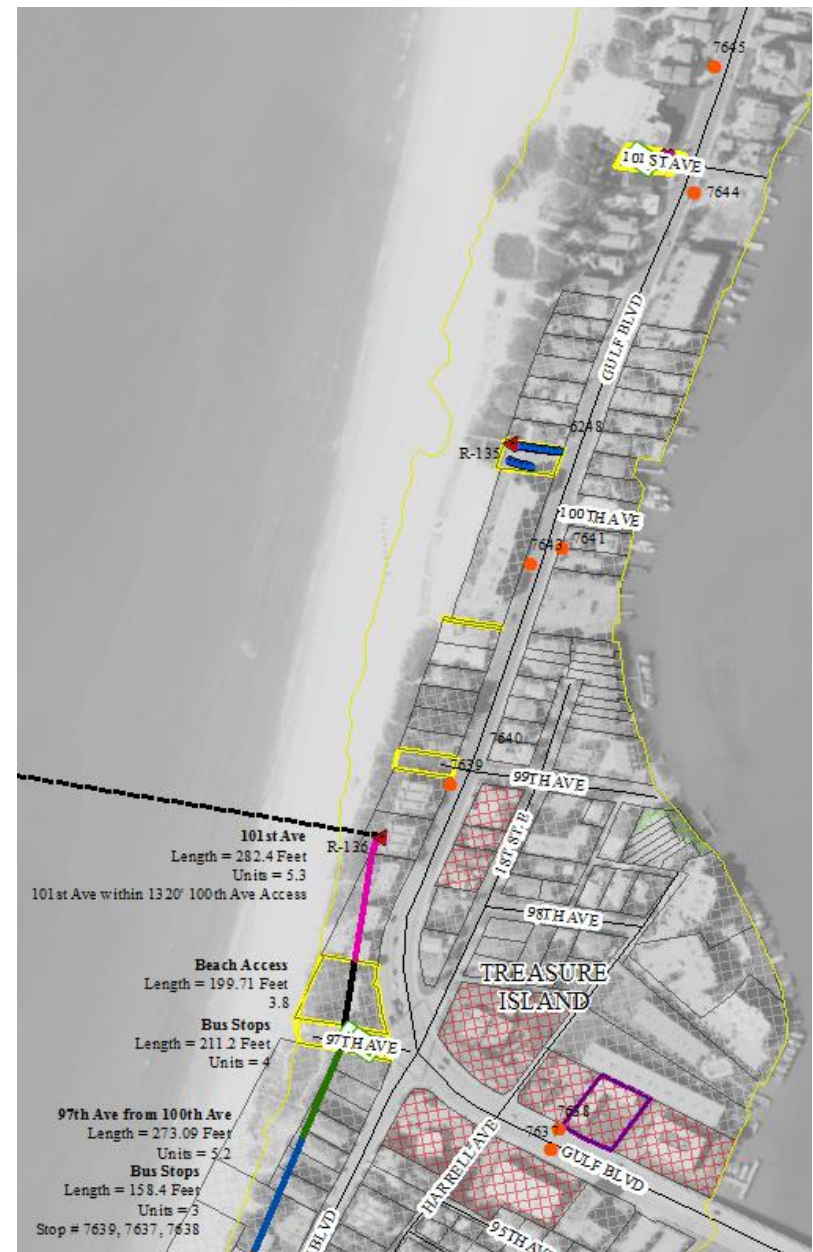
Primary Access

- Parking within 1/4 mile can be used to reach 100 units needed for a primary access
- Four lots and one restroom are combined to reach the 100 unit minimum for primary access



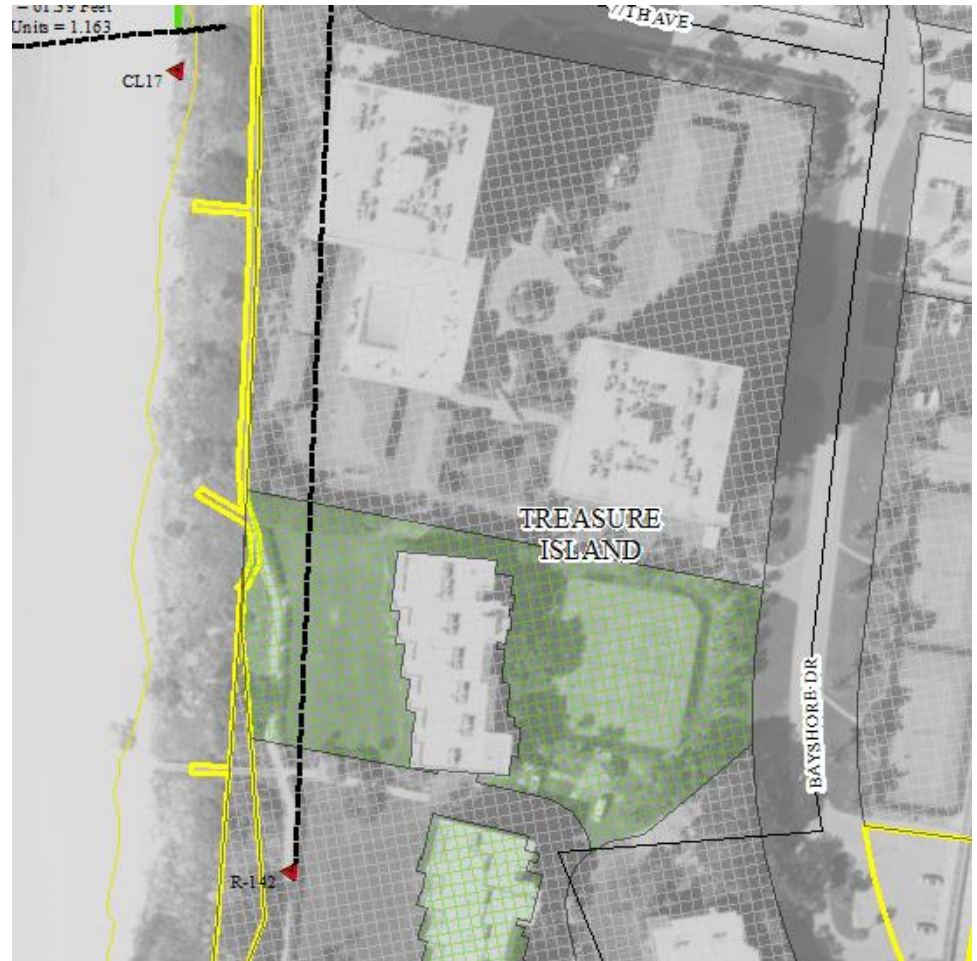
Leap Frog Parking

- Parking at access A isn't needed
- Parking is needed at access B
- If access A's spaces are within 1/4 mile of access B they can be used at access B
- 101st Ave is used at 100th Ave
- 100th Ave is used at 97th Ave



Land Use

- PAO Parcel and land use data.
 - Condos are difficult because they are stacked features
 - 25 Residential parcels
 - 1 Recreation/open space (Condo green space)
 - Map shows recreation but its residential
 - Categories
 - Commercial
 - Recreational
 - Other



Strategies

- Start from the ends of the project area
 - To maintain best possible eligibility at the interior of the project area.
- Use furthest eligibility units first
- Group parking together
 - For ease of use and to create primary public access



Results

•Project Length

–Sum of segment lengths

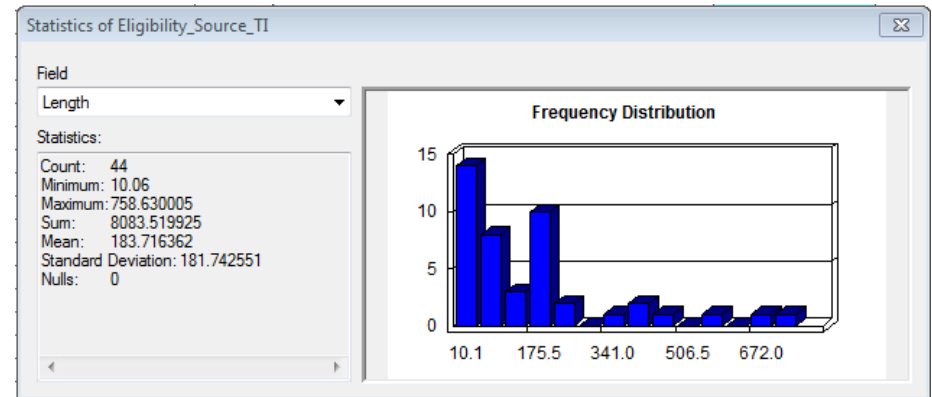
- Calculated using statistics tool

- Summarize tool

–% of recreation (select existing land use line first)

- Calculated using Summarize tool

–Summary statistics sum shape length



The 'Summarize' dialog box is configured as follows:

- 1. Select a field to summarize: Existing_Land_Use
- 2. Choose one or more summary statistics to be included in the output table:
 - ☐ Last
 - ☒ Eligibility_Source
 - ☒ Eligibility_Type
 - ☒ Shape_Length
 - ☐ Minimum
 - ☐ Maximum
 - ☐ Average
 - ☒ Sum
 - ☐ Standard Deviation
 - ☐ Variance
- 3. Specify output table: S:\Divisions\WMS\GIS\Projects\CoastalMgmt\Coastal_D [Folder Icon]
- ☐ Summarize on the selected records only

Buttons: [About summarizing data](#), OK, Cancel

	OBJECTID *	Existing_Land_Use	Count_Existing_Land_Use	Sum_Shape_Length
▶	1	Commercial	3	280.972333
	2	Other	21	5583.657023
	3	Public Lodging Establishment	2	600.371207
	4	Recreation/Open Space	15	1618.530094

Summary

- GIS Helps to organize the Eligibility process
- Keeping the Eligibility line within the parcels allows it to be easily converted to land use
- Map books keep large project areas well organized
- Group parking together to increase the segment lengths
- Rounding segment lengths helps to prevent changing project lengths

Questions?

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