Documentation in Support of NNC Exclusion Request for Cedar Creek (WBID 1556A)

Purpose of Documentation

The purpose of this documentation is to support the determination of the applicability of the stream nutrient thresholds for waterbodies assessed under Chapter 62-303, Florida Administrative Code. Unless it is demonstrated that a Class III stream-like waterbody meets the criteria in either one of the exclusions for the definition of a "stream" as described in 62-302.200(36)(a) or (b), F.A.C., the stream Numeric Nutrient Criteria in Paragraph 62-302.531(2)(c), F.A.C. apply. As per Paragraph 62-302.200(36)(b), F.A.C., ditches, canals and other conveyances (or segments of conveyances) can be excluded from the stream definition if they are demonstrated to:

1. Be man-made, or predominantly channelized or predominantly physically altered,
2. Be primarily used for water management purposes, such as flood protection, stormwater management, irrigation, or water supply; and
3. Have marginal or poor stream habitat or habitat components, such as a lack of habitat or substrate that is biologically limited, because the conveyance has cross sections that are predominantly trapezoidal, has armored banks, or is maintained primarily for water conveyance.

If a waterbody meets this exclusion, the waterbody is still covered by the narrative nutrient criterion. The waterbody will be assessed for impairment using the 20 µg/L chlorophyll-a impairment threshold for streams (expressed as an annual geometric mean, not to be exceeded more than once in a three-year period), a statistically significant increasing trend in the annual geometric means in TN, TP, and chlorophyll-a over the assessment periods, and other information indicating an imbalance of flora or fauna due to nutrient enrichment (including, but not limited to, algal blooms, excessive macrophyte growth, decrease in the distribution (either in density or areal coverage) of native submerged aquatic vegetation, changes in algal species richness, and excessive diel oxygen swings shall also be considered.

Waterbody/Watershed Identification

Organization	Pinellas County Division of Environmental Management
Point of Contact	Stacey Day, Ambient Monitoring Program Manager 22211 US Hwy 19 N, Clearwater, FL 33765 sday@pinellas.gov (727) 464-4703
Waterbody(s)	Cedar Creek, WBID 1556A
Watershed(s)	Cedar Creek, Clearwater Harbor North

Description of Proposed Exclusion(s)

Map

Cedar Creek, WBID 1556A, is located in Dunedin, FL (Figure 1, below). Cedar Creek has numerous channels, with the primary channels labeled A, C, E, F (Figure 2, below).

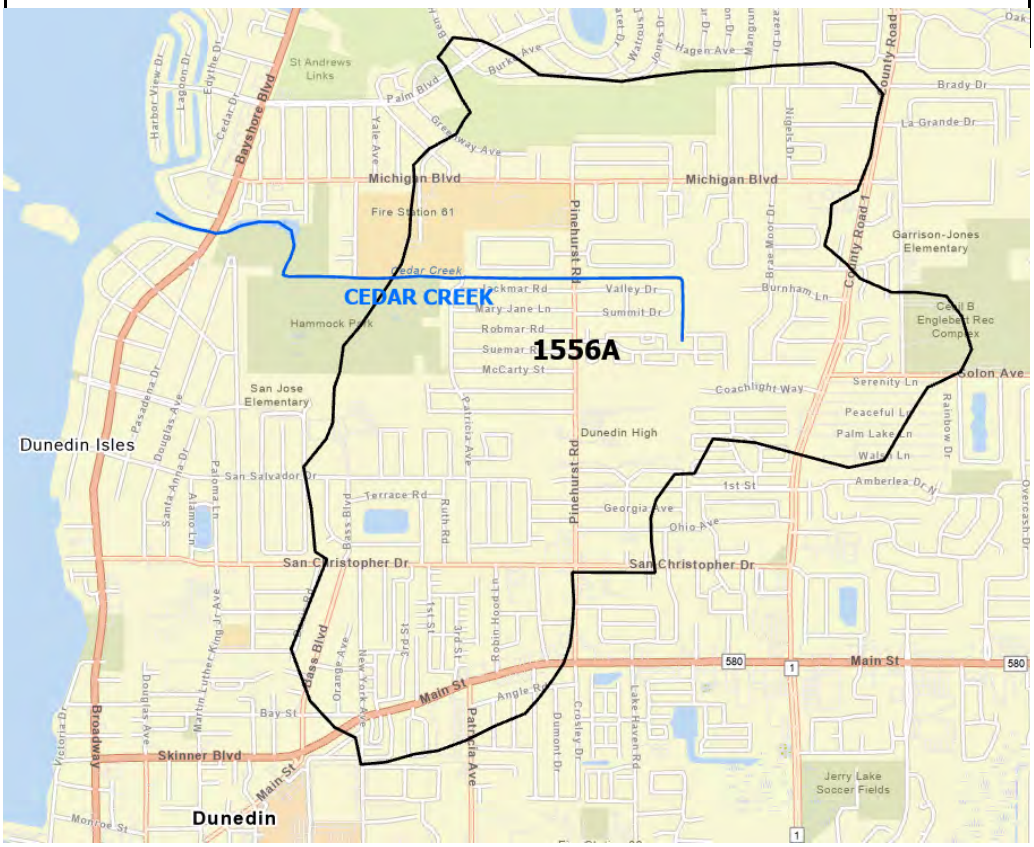


Figure 1. Cedar Creek WBID 1556A.

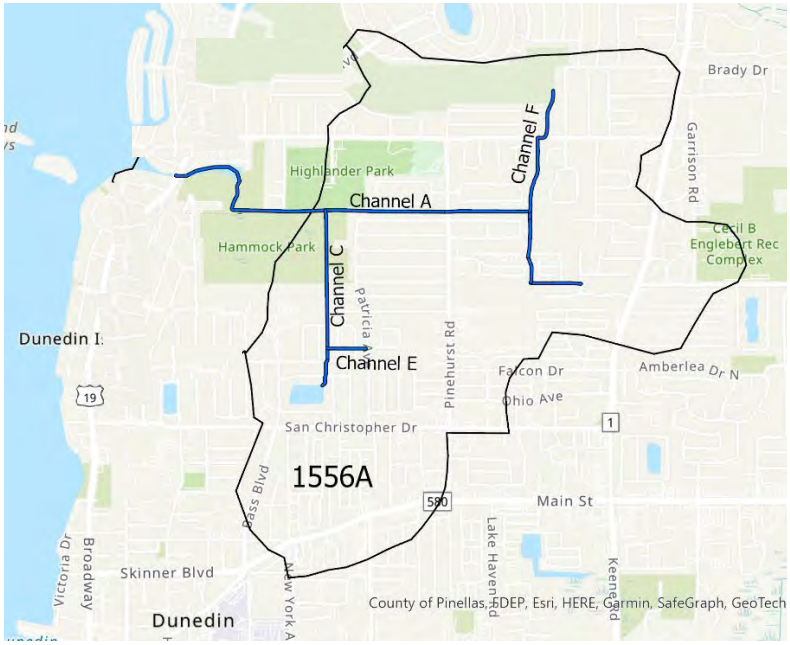


Figure 2. Major channels in Cedar Creek WBID 1556A.

Documentation for Proposed Exclusion(s)

Evidence of Channelization

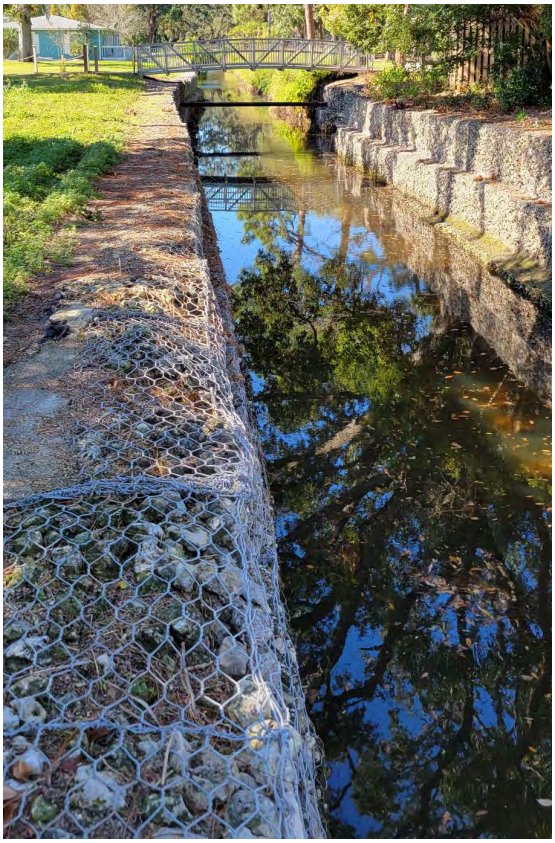
The present-day Cedar Creek watershed contains nine storm water conveyance systems and one outfall to St. Joseph Sound. The nine conveyance systems are identified as Channels A, B, C, D, E, F, G, H, and J, with major channels A, C, E, and F being photographed below. Most of the system consists of straight channels with armored banks. Some of the channels are completely through pipes and not accessible.

Information collected from a community organization "Friends of the Hammock" has historic information about the Cedar Creek watershed (see Appendix A for the presentation). According the information in the presentation and City of Dunedin staff, old surveys show that Cedar Creek was a distinct conveyance only in the tidal area and originated from a "wet hammock" area, which is a broad marsh with shallow, poorly defined coastal outflow. The channels that exist today are the result of mosquito ditches cut through the area in the 1930s to facilitate citrus operations.

Channel A is the primary channel and the site of previous SCI and HA assessment since this is the channel that ambient water quality data is collected from. This channel received "drainage improvements" in 1989 (see Appendix B for engineering plans), which primarily consisted of installing gabions along the channel to stabilize the banks, as shown in photos below. The eastern end of Channel A is comprised of earthen, channelized ditches with hardened gabion banks, as shown in the photos below. Large stormwater pipes are placed at each crossroads and several points in between bridges.

Channel A at Patricia Ave footbridge, facing upstream/east (28.033889, -82.775556)

Channel A at Pinehurst Rd, facing upstream/east (28.034064, -82.771592).



Same location as above, Channel A facing downstream/west.

Just upstream of the confluence of Channel C with A, where Lake Suemar is located, there is erosion and a large sediment bar.

Upstream of the junction of Channel C with Channel A looking south toward Lake Suemar.

Channel C looking downstream/north (28.031866, -82.777855).

Channel E is similarly channelized with gabion baskets and even has gabions covering the bottom of the streambed as well.

South end of Channel A, at the confluence of Channel E. Note the large pipe discharging into Cedar Creek, as well as the metal gabions on the bottom of the ditch.

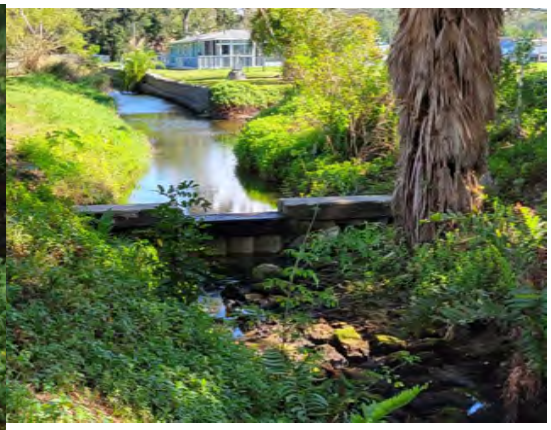
Signs at the road crossings over Channel E.

Channel F intersects Channel A at the east end and runs north and south. The north channel is connected to Channel A through a pipe (left pic below) for about 20 feet and then appears again as a very narrow, straight channel with gabion banks (right pics below) which runs about 250 feet north before becoming a pond.

Confluence of Channel A with Channel F (in pipe) looking upstream/north (28.034283, -82.767643).

Upstream north Channel F (28.034281, -82.767569).

The west end of Channel A has a salinity barrier which separates the freshwater WBID 1556A from the tidal WBID 1556, just below Lake Suemar.



Salinity barrier between WBIDs 1556A and 1556 (28.0306468, -82.7712627).

Primary Purpose

The purpose of the nine major storm water conveyance systems is to drain storm water from the area to prevent flooding. No segments of Cedar Creek are used for recreational purposes.

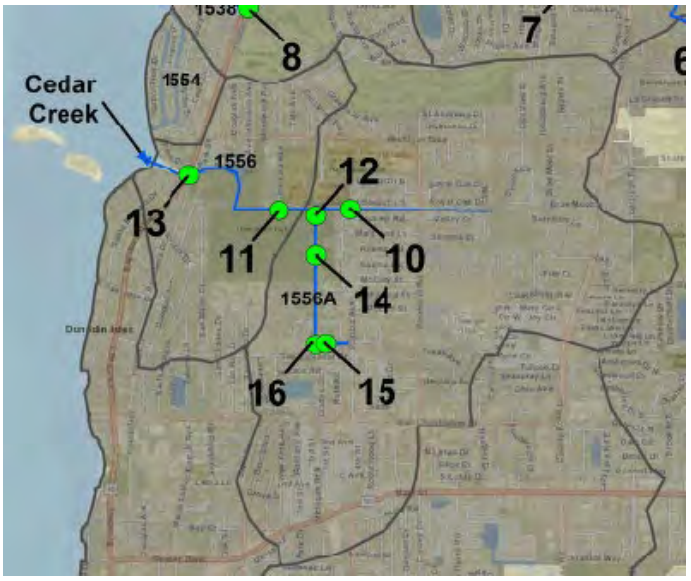
Demonstration of Maintenance

The City of Dunedin applies herbicides to treat the emergent aquatic vegetation five times a year during the months of May, June, July, August, and September. This has been an ongoing effort since 2017. See Appendix C for locations. Sites 17, 22, 23, 24, 25, 26, and 27 are in the watershed. Mowing occurs in two of the ditch channels as well.

Point Sources and Indirect Source Monitoring (Sites)

There are no point source discharges in the Cedar Creek watershed. The City of Dunedin holds a NPDES municipal separate storm sewer systems (MS4) permit (FLS000005) in partnership with Pinellas County, which covers both WBID 1556 and WBID 1556A.

Pinellas County monitors water quality at a fixed site ("11" in this map) in the tidal portion of Cedar Creek Channel A (WBID 1556) eight times a year as part of the ambient water quality monitoring program in support of the MS4 permit requirements. The City of Dunedin utilizes a contractor to collect samples monthly at five locations (10, 12, 14, 15, 16) in WBID 1556A, see map at right.



Nonpoint Sources

The spatial distribution and acreage of different land use categories were identified using the 2017 Florida Land Use Code and Classification System (FLUCCS). Land use categories within the entire Cedar Creek watershed (both tidal and fresh) were aggregated, as shown in Table 1 below. The spatial distribution of the principal land uses within the WBID boundaries is shown in Figure 2. Within both WBID boundaries, the dominant land use categories are residential (medium- and high-density).

Table 1. Primary land use types in Cedar Creek watershed, WBIDs 1556 & 1556A

TYPE	Acres	Percent Coverage
Residential High Density	551.54	39.79%
Residential Med Density	390.38	28.16%
Institutional	96.13	6.93%
Recreational	71.92	5.19%
Golf Courses	63.52	4.58%
Stream And Lake Swamps (Bottomland)	59.74	4.31%
Upland Hardwood Forests	57.37	4.14%
Commercial And Services	45.90	3.31%
Transportation	16.95	1.22%
Reservoirs	12.92	0.93%

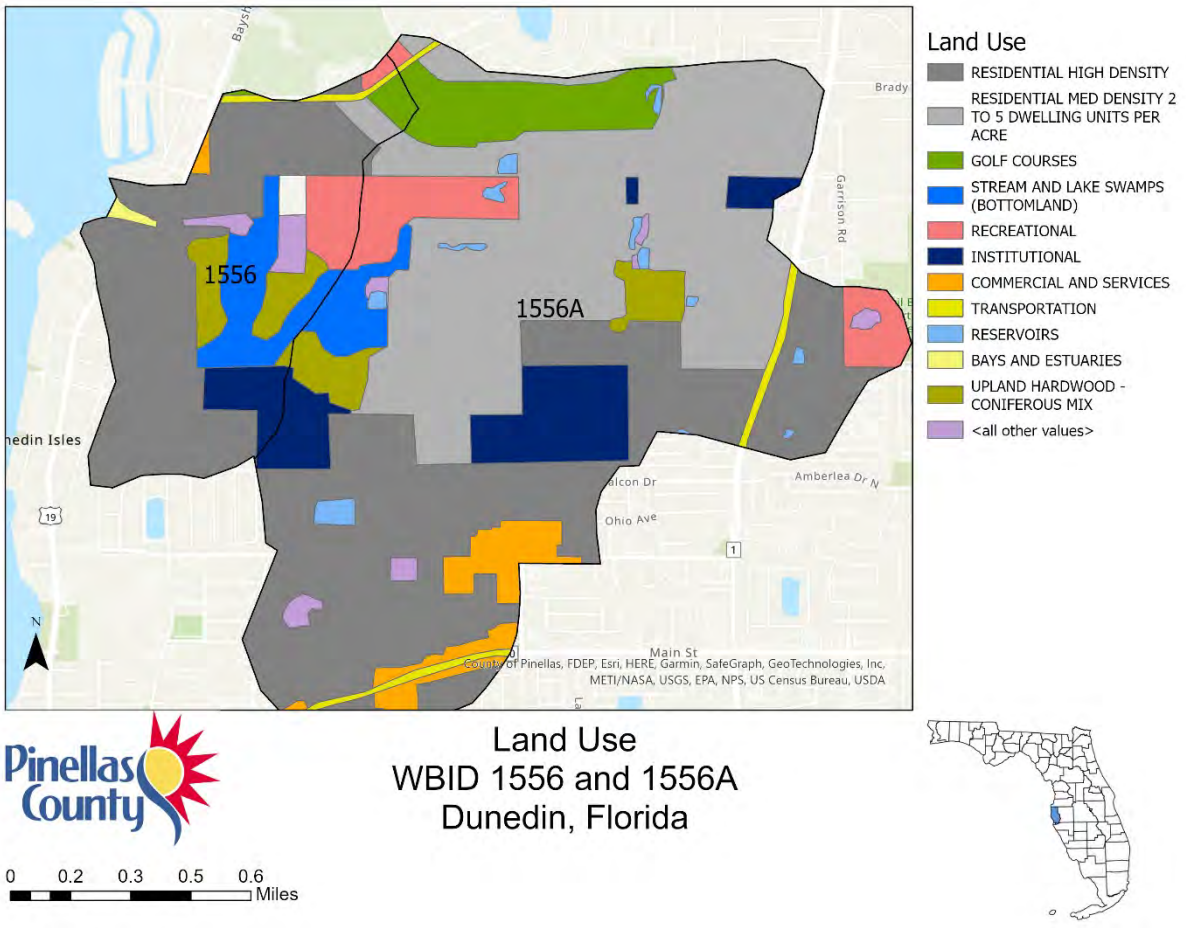


Figure 2. Cedar Creek 2017 land use.

Habitat Assessment	Pinellas County staff performed a habitat assessment (in accordance with DEP SOP FT 3000) in March 2021 in Channel A at Jackmar Rd. The resulting score was 38 out of a possible score of 160. This indicates poor habitat. Additional habitat assessments were performed on Channels C, E, and F (south side) on 4/10/2023. Channel C scored 64, Channel E scored 35, and Channel F scored 62 (marginal category for Channels C and F, poor for Channel E). Scanned copies of all the field sheets are attached as Appendix D along with corresponding photos of the channels.
Current Restoration Conditions	This waterbody is not proposed for exclusions in a Total Maximum Daily Load (TMDL) or a Basin Management Action Plan (BMAP). WBID 1556 has a 4e plan since the City of Dunedin is implementing a Bacteria Pollution Control Plan to address the Enterococci impairment.
Downstream Protection Considerations	Cedar Creek flows into WBID 1556, the tidal portion of Cedar Creek. WBID 1556 then flows to Clearwater Harbor North (WBID 1528C). Cedar Creek WBIDs 1556 and 1556A have fecal coliform TMDLs (FDEP 2012). Cedar Creek WBID 1556A is not impaired for any parameters currently but is in category 4e for *E.coli* and 4d for total phosphorus. Cedar Creek WBID 1556 is currently verified impaired for nutrients (chlorophyll-a) and dissolved oxygen (% sat). It is also category 4e for Enterococci. Clearwater Harbor North WBID 1528C is currently impaired for nutrients (TN).

APPENDIX A

PRESENTATION BY FRIENDS OF THE HAMMOCK
DUNEDIN, FL

"EVOLUTION OF HAMMOCK PARK"

EVOLUTION OF HAMMOCK PARK

A HUNDRED YEARS IN THE MAKING

WELCOME AND AGENDA

Call to order – Kerri O'Brien, President

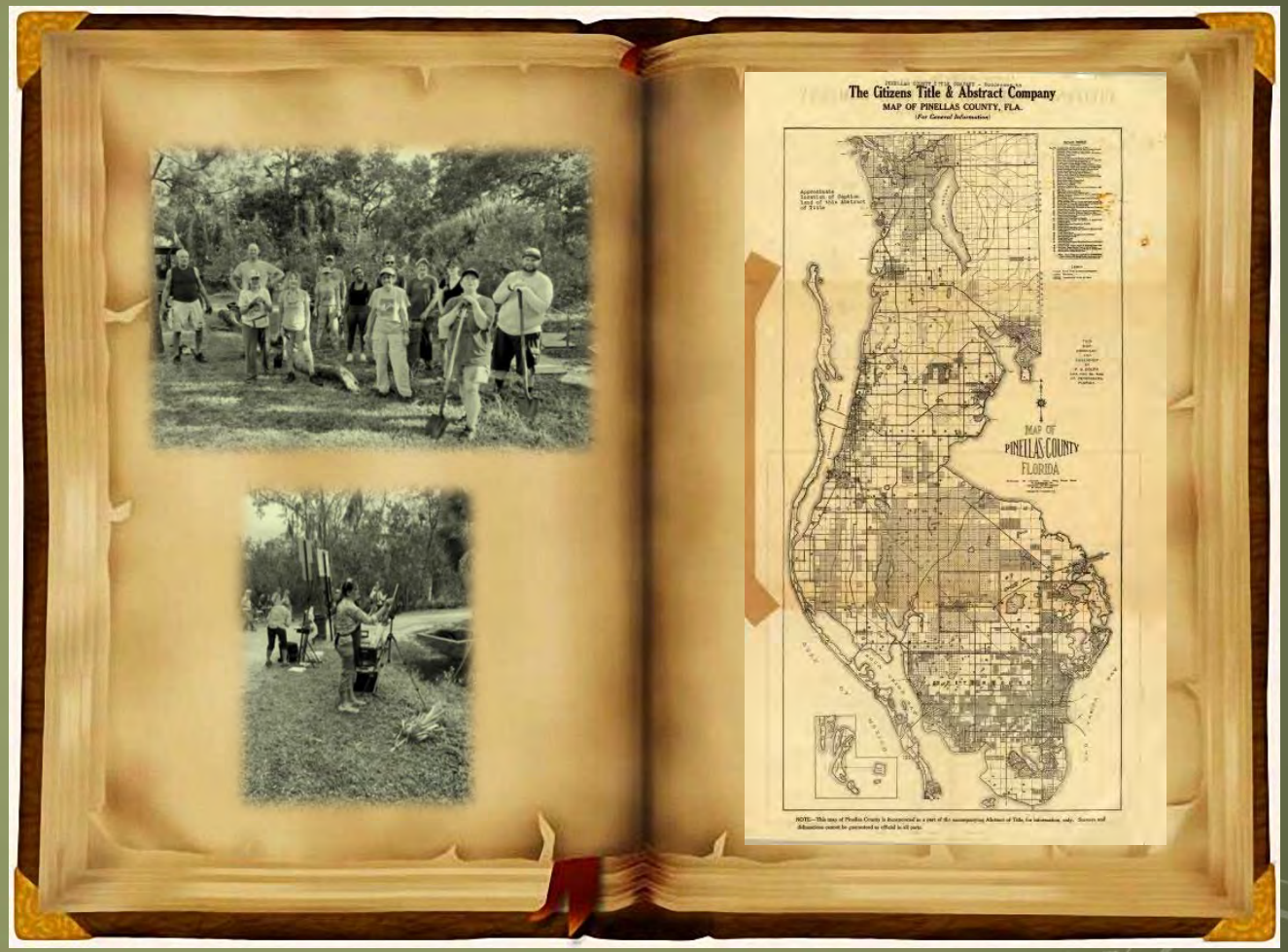
Approve 2022 Annual Meeting Minutes

Treasurer's Report

Present and Vote on New Board Members

Present and Vote on New Board Officers

Annual Meeting Presentation: Information



AGENDA

President's Report

2022 Highlights

2nd Saturday Education Events

3rd Saturday Clean-up Events

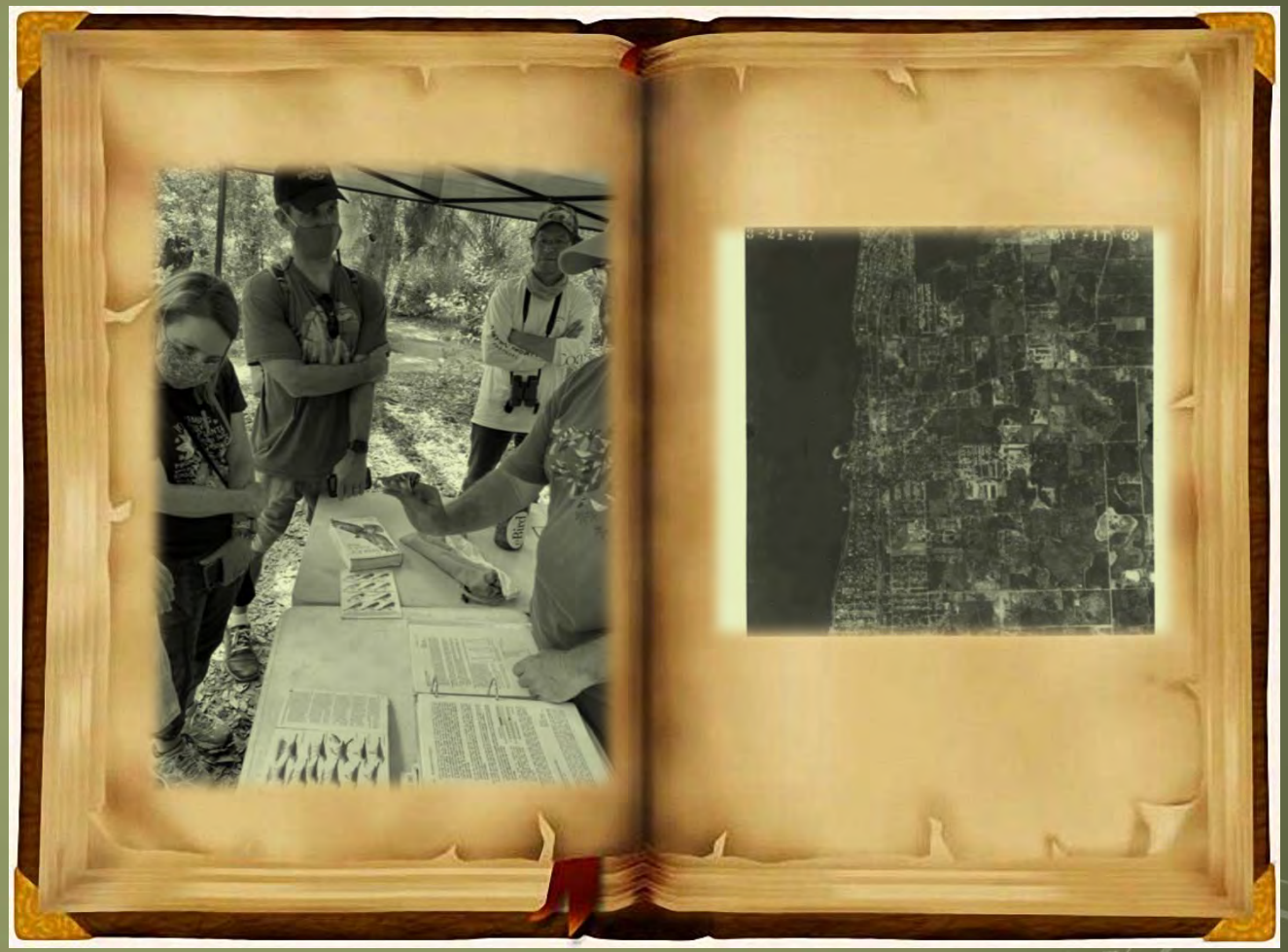
Butterfly Garden

Total Volunteer Hours

Education and Beautification Campaign Success!

AGENDA

Approve 2022 Annual Meeting Minutes



AGENDA

Treasurer's Report

AGENDA

Present and Vote on New Board Members

Present and Vote on New Board Officers

INTRODUCING OUR SPEAKERS

Bruce Wirth, P.E., Sr. Engineer, City of Dunedin Public Works

- 40+ Years Public and Private Sector Civil Engineering
  - •Southwest Florida Water Management District
  - •Cardno Engineering
  - •Pinellas County
  - •City of Dunedin
  - •Florida Registered Professional Engineer

Chris McLaughlin, P.S.M., Professional Surveyor & Mapper & Certified Utility Contractor

- Business owner, specializing in sovereign/tidal lands, title research, & utilities.
- Dunedin resident (2013-present)
- Florida Board of Professional Surveyors & Mappers (2016-present)
- Dunedin Hammock Advisory Committee (2016-present)
- Dunedin Stormwater Advisory Committee (2018-present)

HISTORY – 1800-1899

The lands comprising Hammock Park were first identified as a "wet hammock" by Sam Reid, Deputy Surveyor for the General Land Office in May, 1846 when establishing the "1/2 mile post" along the east line of Section 22, Township 28 South, Range 15 East (at the south end of present-day Harvard Avenue).

March 3, 1845
Florida becomes the 27th State.

May, 1846
Subdivision of sections around present-day Dunedin

February 2, 1852
Richard L. Garrison receives 80 ac grant south of present-day Brady Drive

July, 1854
Wm. M. Garrison (Richard's cousin) purchases the 40ac "heart" of the Hammock

1882
Douglas & Somerville name post office "Dunedin"

January - May, 1888
Orange Belt Railroad constructed between Tarpon & St. Pete (Cedar Creek RR bridge)

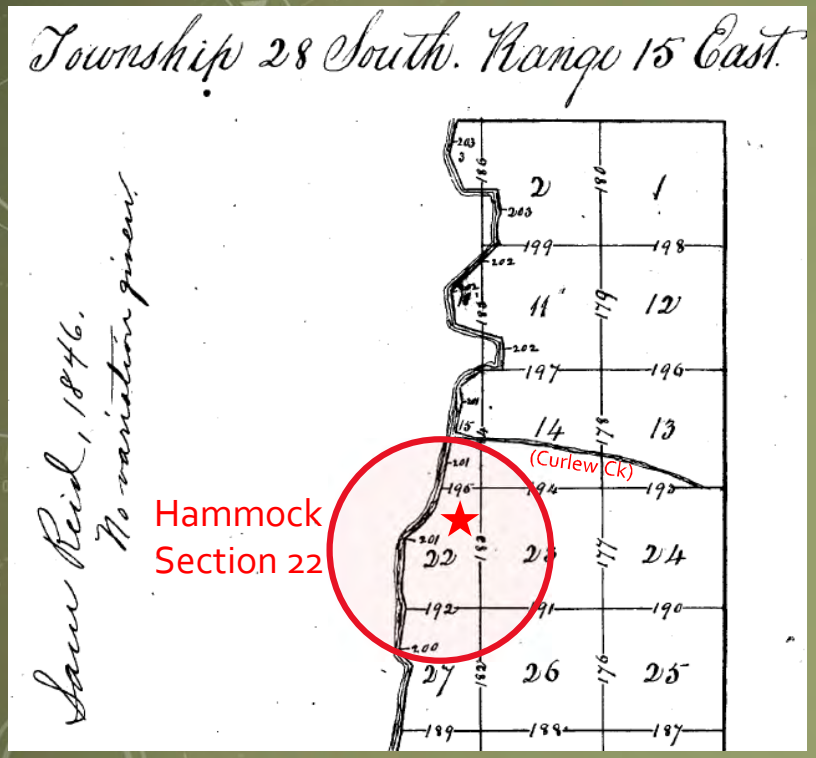
June, 1899
Dunedin was incorporated as a town.

HISTORY – 1900-1965

With Dunedin now incorporated and with the Orange Belt Railroad connecting it to the civilized world, Dunedin was open for business! It wasn't until the "Land Boom" of the 1920s that documentation of the lands comprising present-day Hammock Park would begin.

- Early 1924 Bayshore Blvd bridge built over Cedar Creek
- November 1925 Elysian Fields Subdivision filed, shows Cedar Creek shoreline, replatted in 1927 as Dunedin Isles Unit 1
- Spring 1926 First aerial image of Dunedin, Bayshore Blvd to Ozona opens, Dunedin Golf Club announced.
- May 6, 1926 Dunedin becomes a city.
- 1931 W.S. Blatchley publishes *My Nature Nook,* based on the Hammock
- December 1933-February 1934 30 WPA workers cut mosquito ditches in the Hammock
- March 15, 1965 Kenneth & Marguerite Kerr deed the main ~80 ac of the Hammock to the City of Dunedin for $175,000, thus creating Hammock Park

1846 GLO SURVEYOR NOTES



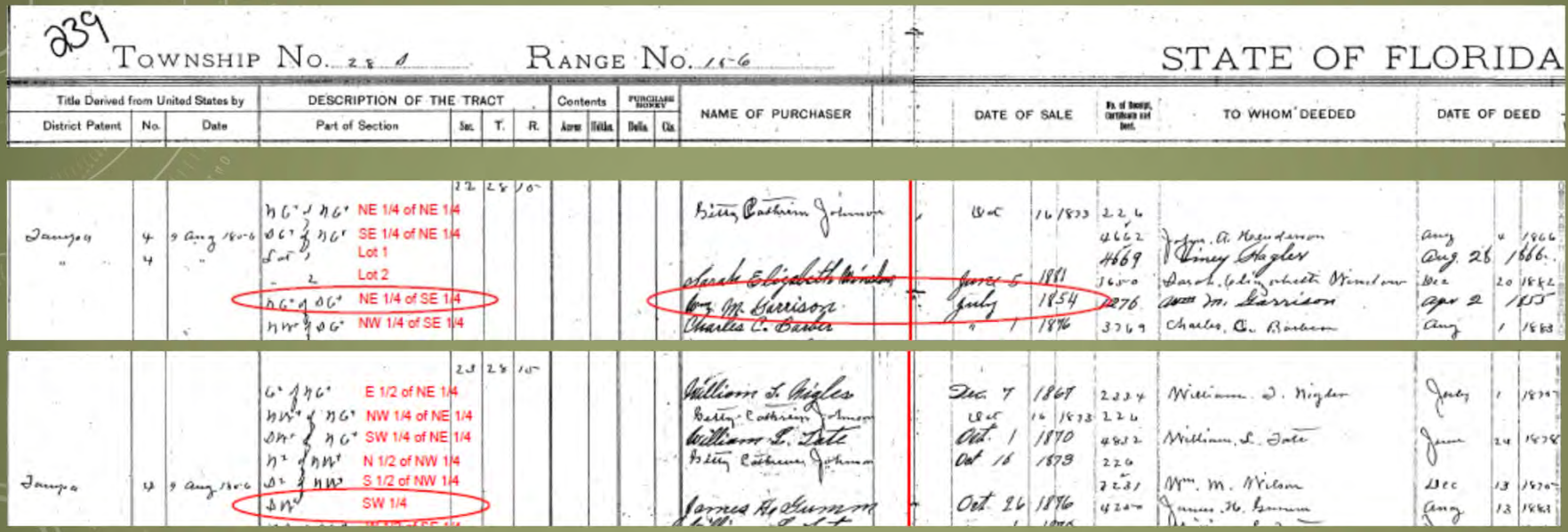
Running North between Sections 22.23. Township 28 South Range 15 East starting from Post at Corner of Sections 22.23.26.27 ran North

Course	Distance	
	24 00	Came to wet Hammock
	40 00	Set ¼ mile post in Hammock
		S 31 W 100 N. Oak
		N 62 E 150 water Oak
	50 00	Out Hammock into pine woods
S	54 00	into small round Hammock
	63 00	Out Hammock into pine woods
	80 00	Set temporary lightwood post
		3° rate for pine land and wet Hammock

"Came to wet Hammock"

"Set ½ mile post in Hammock"

STATE OF FLORIDA LAND GRANTS & SALES IN SECTIONS 22 & 23



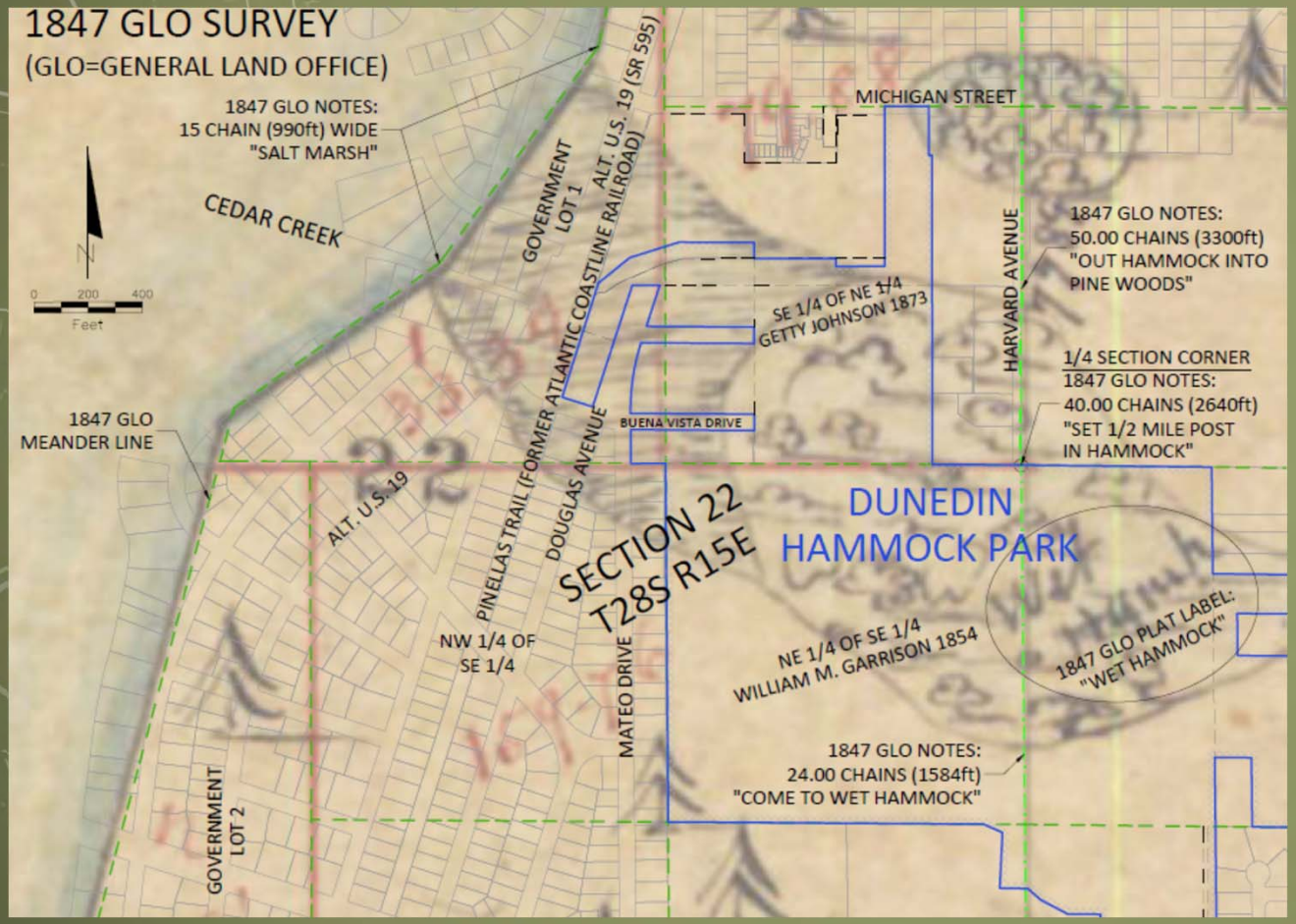
239

TOWNSHIP No. 28 S RANGE No. 16 E STATE OF FLORIDA

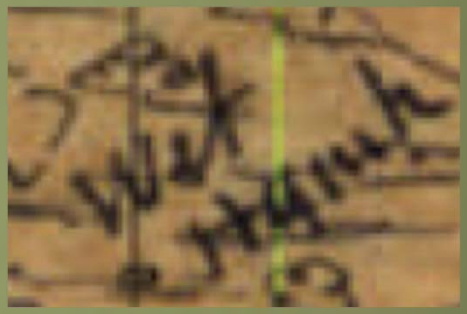
Title Derived from United States by			DESCRIPTION OF THE TRACT				Contents		PURCHASE MONEY		NAME OF PURCHASER	DATE OF SALE	No. of Deed, Certificate or Int.	TO WHOM DEEDED	DATE OF DEED
District Patent	No.	Date	Part of Section	Sec.	T.	R.	Acres	Hdths.	Dolls.	Cts.					
Tampa	4	9 Aug 1806	NE 1/4 of NE 1/4	22	28	16					Betty Cathrine Johnson	Dec 16 1873	2226		
"	4	"	SE 1/4 of NE 1/4										4662	John A. Henderson	Aug 4 1866
			Lot 1										4669	Viney Hagler	Aug 26 1866
			Lot 2								Sarah Elizabeth Winslow	June 5 1891	16500	Sarah Elizabeth Winslow	Dec 20 1892
			NE 1/4 of SE 1/4								Wm M. Garrison	July 1854	1276	Wm M. Garrison	Apr 2 1855
			NW 1/4 of SE 1/4								Charles C. Barber	" " 1876	3769	Charles C. Barber	Aug 1 1883
Tampa	4	9 Aug 1806	E 1/2 of NE 1/4	23	28	16					William T. Eagles	Dec 7 1869	2234	William D. Wigley	July 1 1879
			NW 1/4 of NE 1/4								Betty Cathrine Johnson	Dec 16 1873	2226		
			SW 1/4 of NE 1/4								William L. Tate	Oct 1 1870	4832	William L. Tate	June 24 1874
			N 1/2 of NW 1/4								Betty Cathrine Johnson	Oct 16 1873	2226		
			S 1/2 of NW 1/4										2231	Wm. M. Wilson	Dec 13 1870
			SW 1/4								James H. Gumm	Oct 26 1876	4200	James H. Gumm	Aug 13 1883

Setting history straight: In FoTH's 2012 *A Brief History*, it is reported that L.B. Skinner bought the Hammock from the state around 1890. The official record of state grants & sales to the private domain shows William M. Garrison (1854), Getty Johnson (1873), and James Gumm (1876) originally acquired the lands comprising the 1965 configuration of the Hammock. It is more likely Skinner acquired title around 1890 via private deed or possibly a tax deed. Skinner then sold to Kerr sometime between 1933 and 1957.

1847 GLO TOWNSHIP PLAT

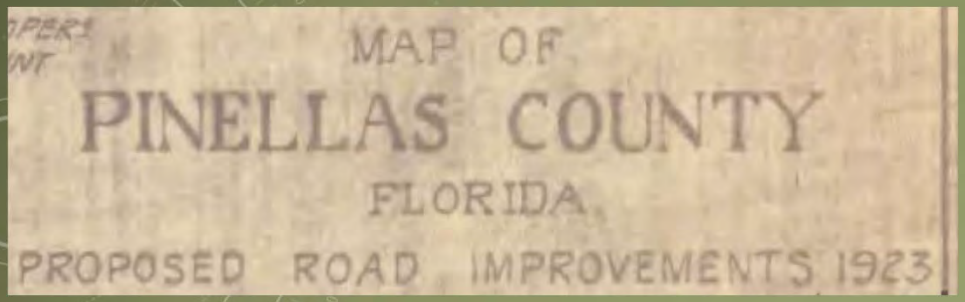


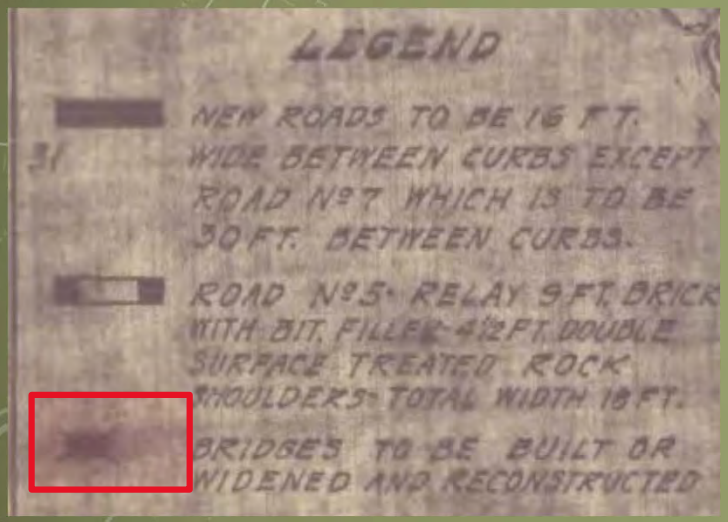
1847 Township plat of T28S, R15E
"Wet Hammk [sic]", not "Wet Swamp"



Setting history straight: In FoTH's 2012 *A Brief History*, HAC's 1981 *A Brief Chronological History…*, and Dunedin Historical Society's 1976 *The City of Dunedin's Hammock Forest*, it is repeated that the original survey map identified land in the Hammock as a "wet swamp".

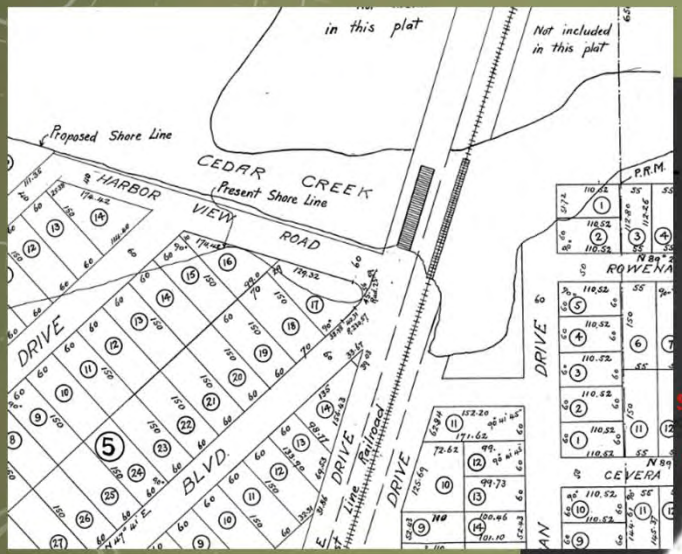
1923 PROPOSED ROAD IMPROVEMENTS MAP

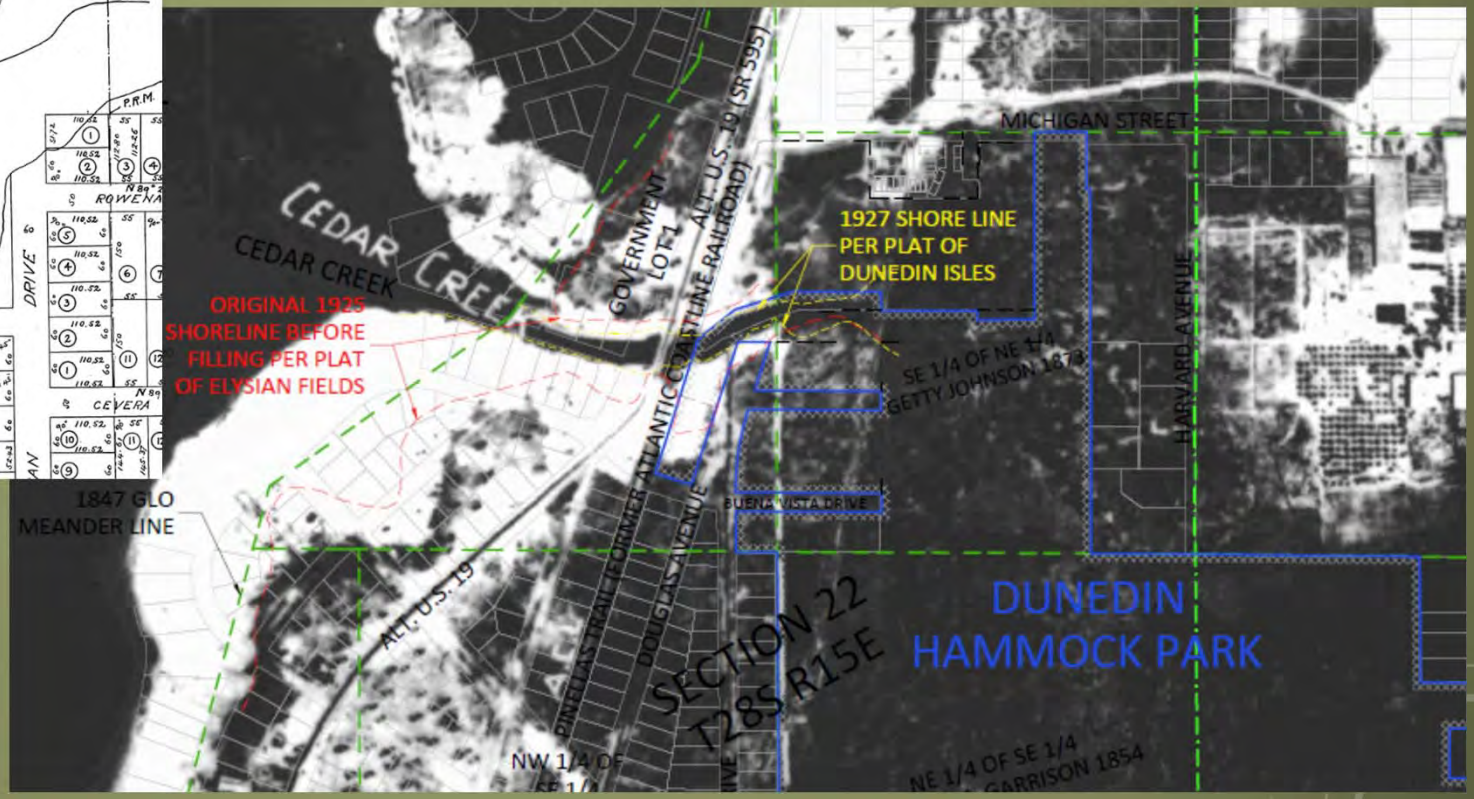




SPRING 1926 AERIAL IMAGE BUSY YEAR!

Only aerial image prior to 1933 WPA ditch excavations.
Note the recent filling of Dunedin Isles submerged lands.
Note Michigan Street not yet constructed.
Bayshore Boulevard improvements completed same year.
Dunedin Golf Club also under construction further north.



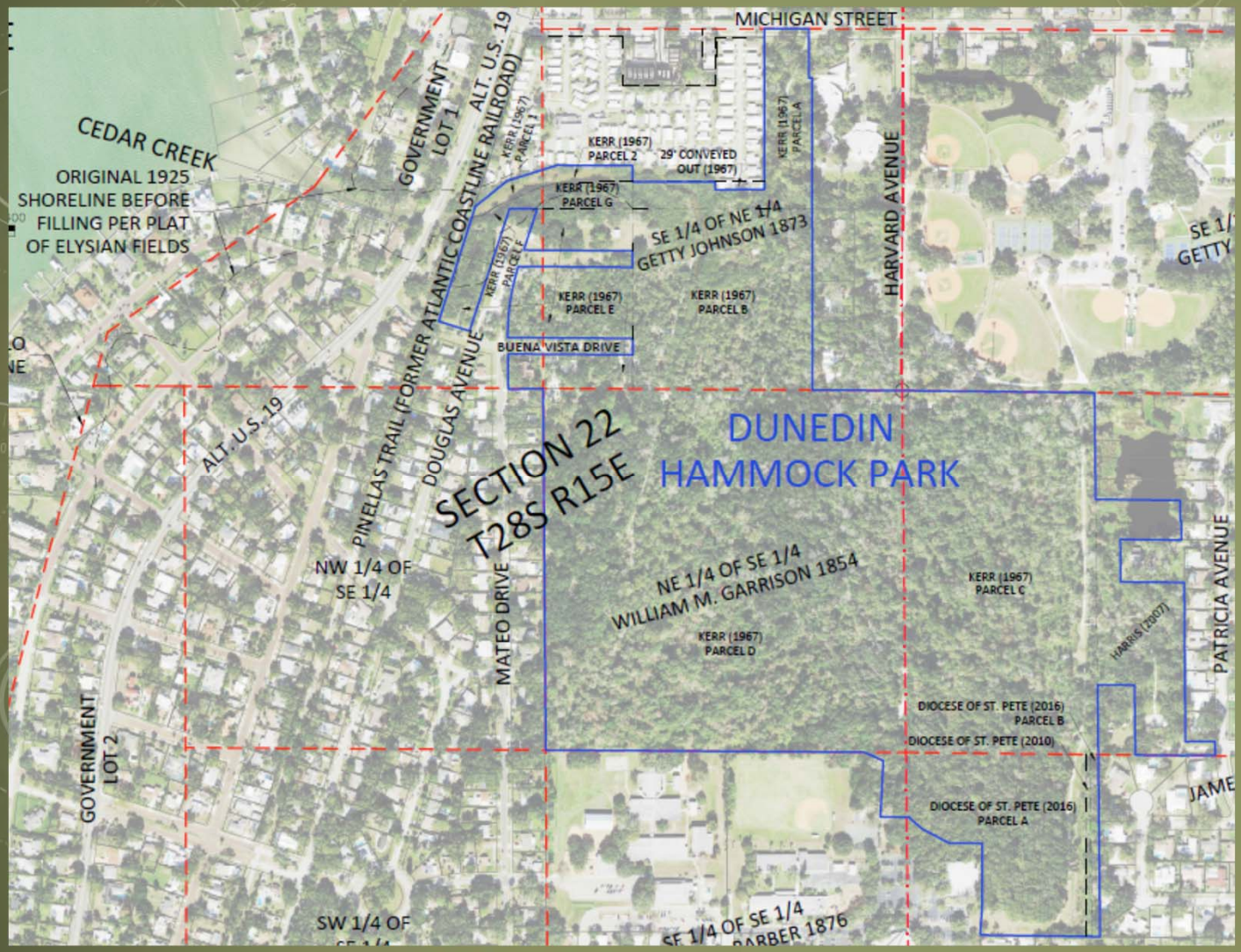


1942 AERIAL IMAGE

Scant evidence of development within Hammock.
Cedar Creek channel still appears natural east of RR.
1933 WPA ditch impacts visible.

1967 AERIAL IMAGE (LAND ACQUIRED)

Trail cut along today's Sugarberry Trail.



2020 AERIAL IMAGE (MOST RECENT)

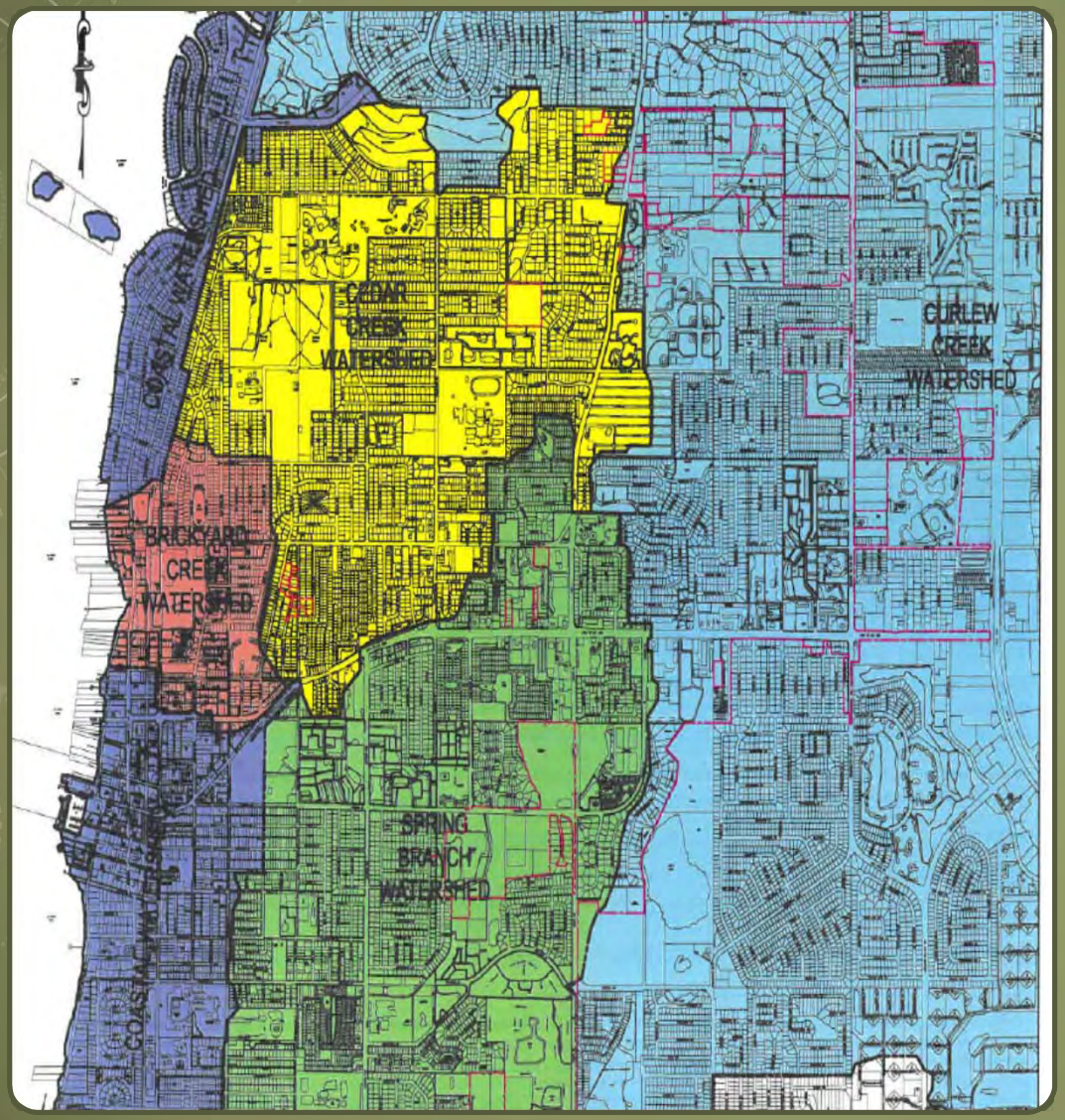
Land transactions making up Park

1. 1965 +82.4 Kerr acquisition
2. 1967 +0.8ac Kerr Cedar Creek parcels
3. 1967 -0.1ac Conveyance out to Gram
4. 2007 +5.3ac Harris Tract addition
5. 2010 +0.3ac OLOR "Ditch Gap" add'n
6. 2016 +8.7ac OLOR addition

Hammock Park today ~97.4 acres

Notes:

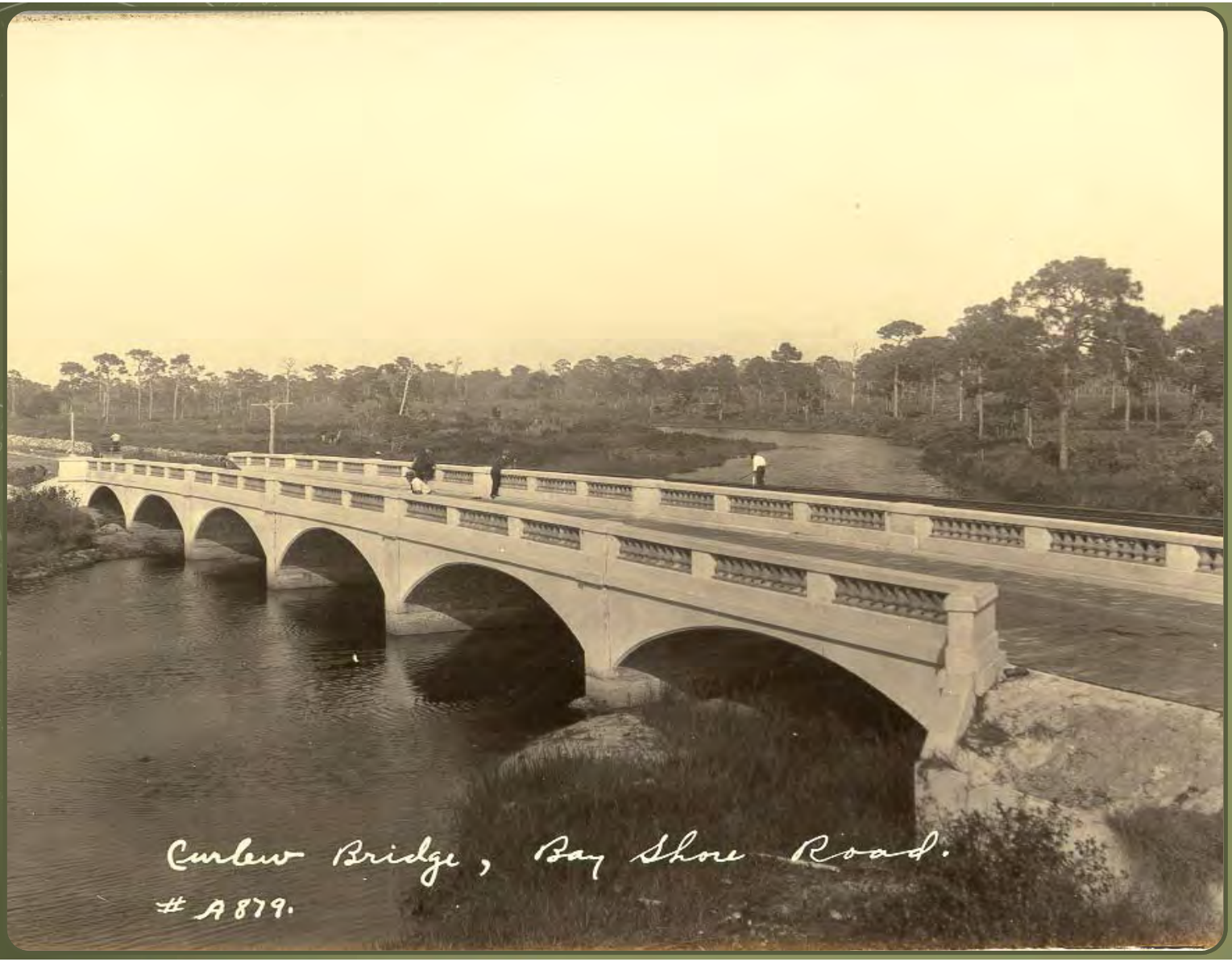
- Acreage includes land in Michigan Boulevard right-of-way and submerged lands in Cedar Creek.
- Lake Sue-Mar is a drainage easement within private lots.
- Dunedin Isles roadways are not included in area calculation.


CEDAR CREEK WATERSHED
CURLEW CREEK WATERSHED
BRICKYARD CREEK WATERSHED
SPRING BRANCH WATERSHED

WATERSHEDS

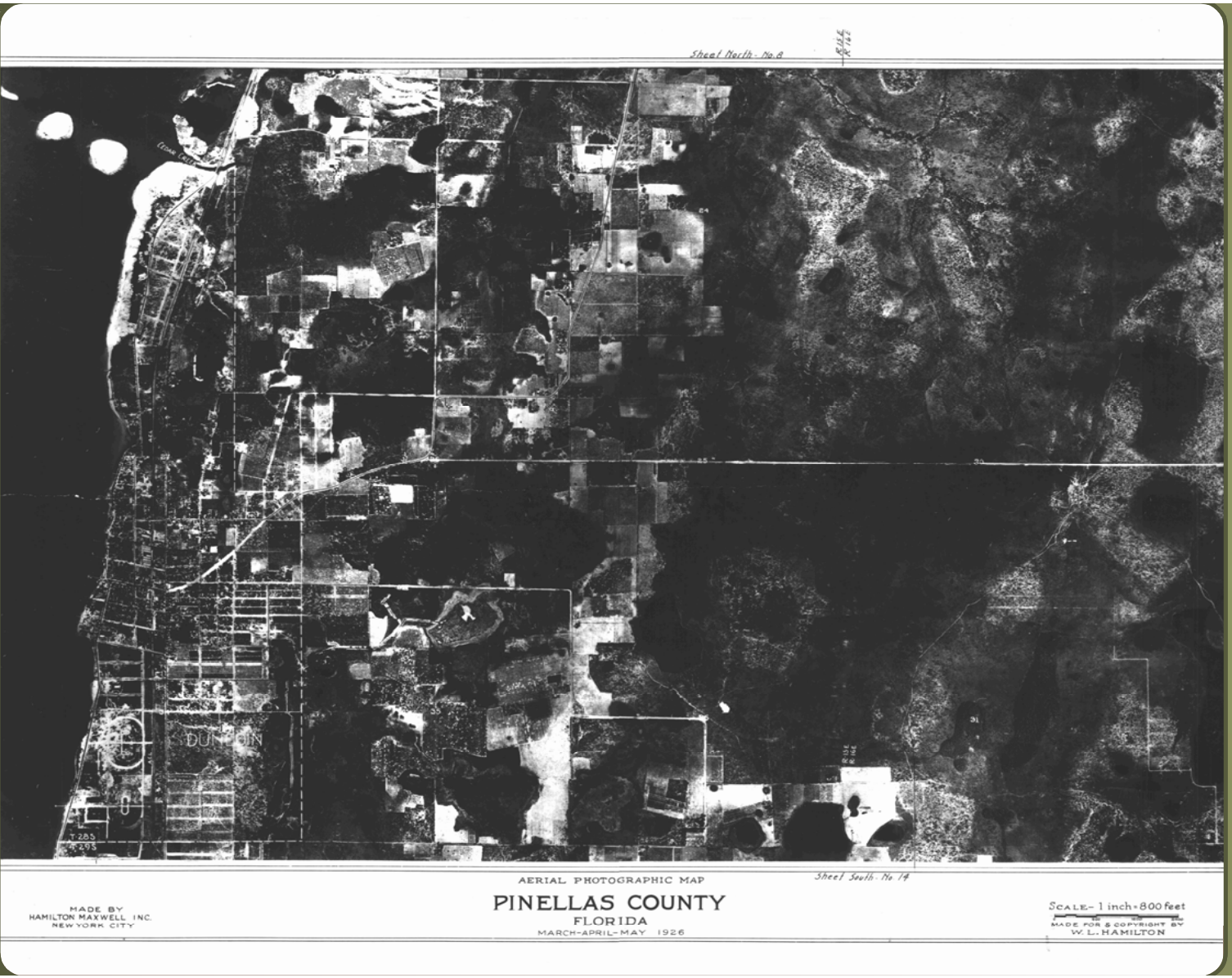
CONTOUR ELEVATIONS

BAY SHORE DRIVE



BAY SHORE DRIVE

BAY SHORE


Sheet North - No. 8
DUNEDIN
T 28 S
R 15 E
R 16 E
Sheet South - No. 14
AERIAL PHOTOGRAPHIC MAP
PINELLAS COUNTY
FLORIDA
MARCH-APRIL-MAY 1926
MADE BY
HAMILTON MAXWELL INC.
NEW YORK CITY
SCALE - 1 inch = 800 feet
MADE FOR & COPYRIGHT BY
W. L. HAMILTON

1926

1942

1957

PINELLAS COUNTY, FLORIDA

SCALE 1"= 400'

1967

2023 THE CONTINUED EVOLUTION OF HAMMOCK PARK

FOTH expansion to GDP

One friends group for education and beautification of both parks

Opportunity to combine volunteers and expand education

We want the membership feedback on this important decision:

[Contact — Friends of the Hammock, Inc. (hammockpark.org)]

Thank you for joining us tonight for our Annual Meeting.

The Friends of the Hammock are truly grateful for your support through membership, volunteering, donating and using a true treasure of Dunedin…Hammock Park.

Special Thanks to the City of Dunedin
Special Thanks to Lanie Sheets and all the Dunedin City Staff
www.hammockpark.org