

JACKSONVILLE DISTRICT

RIO PUERTO NUEVO FLOOD DAMAGE REDUCTION PROJECT

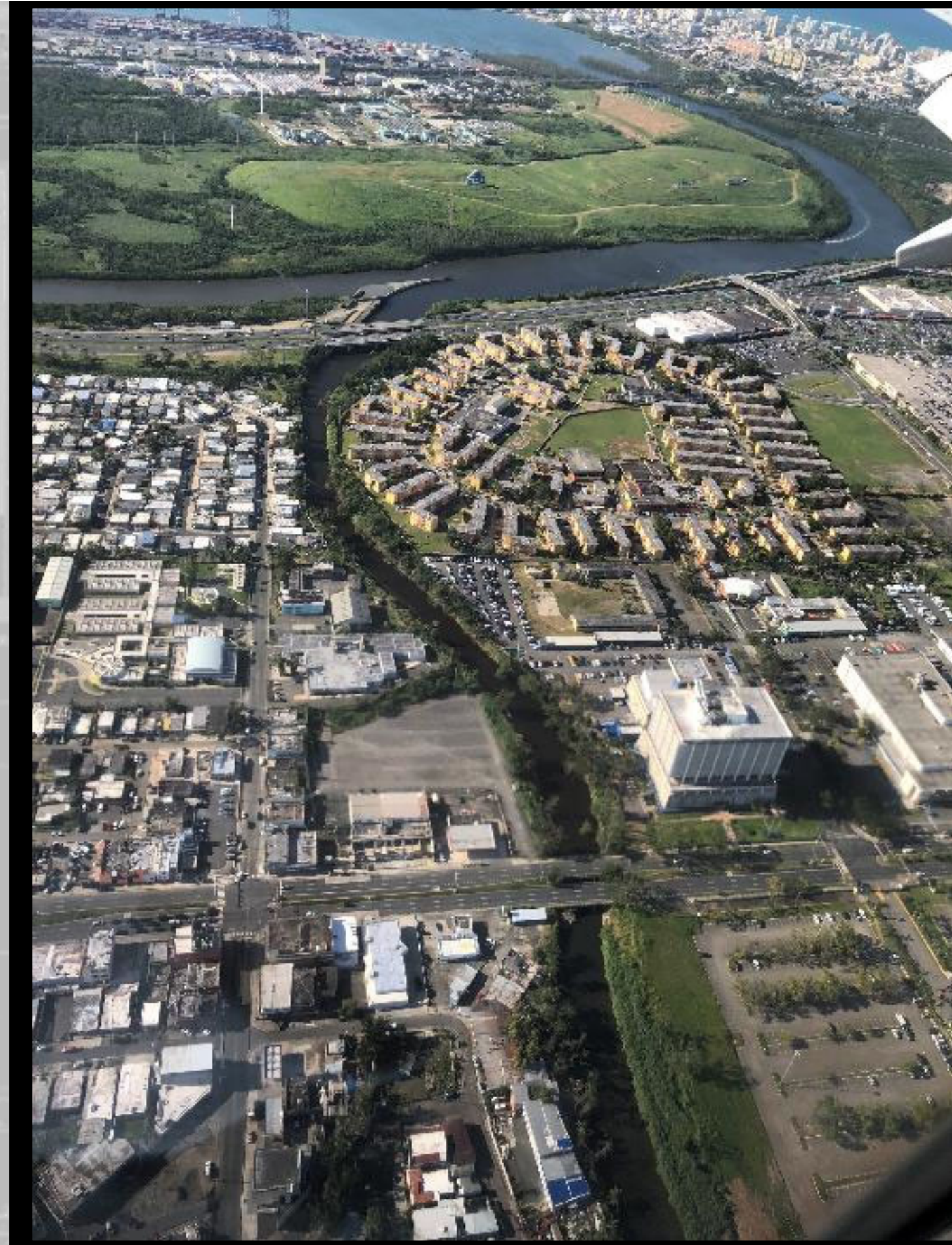
Environmental (NEPA)
Presentation to DNER, Alianza
por la Cuenca del Rio Piedras

4 May 2022

Working Today to Build a Better Tomorrow



US Army Corps
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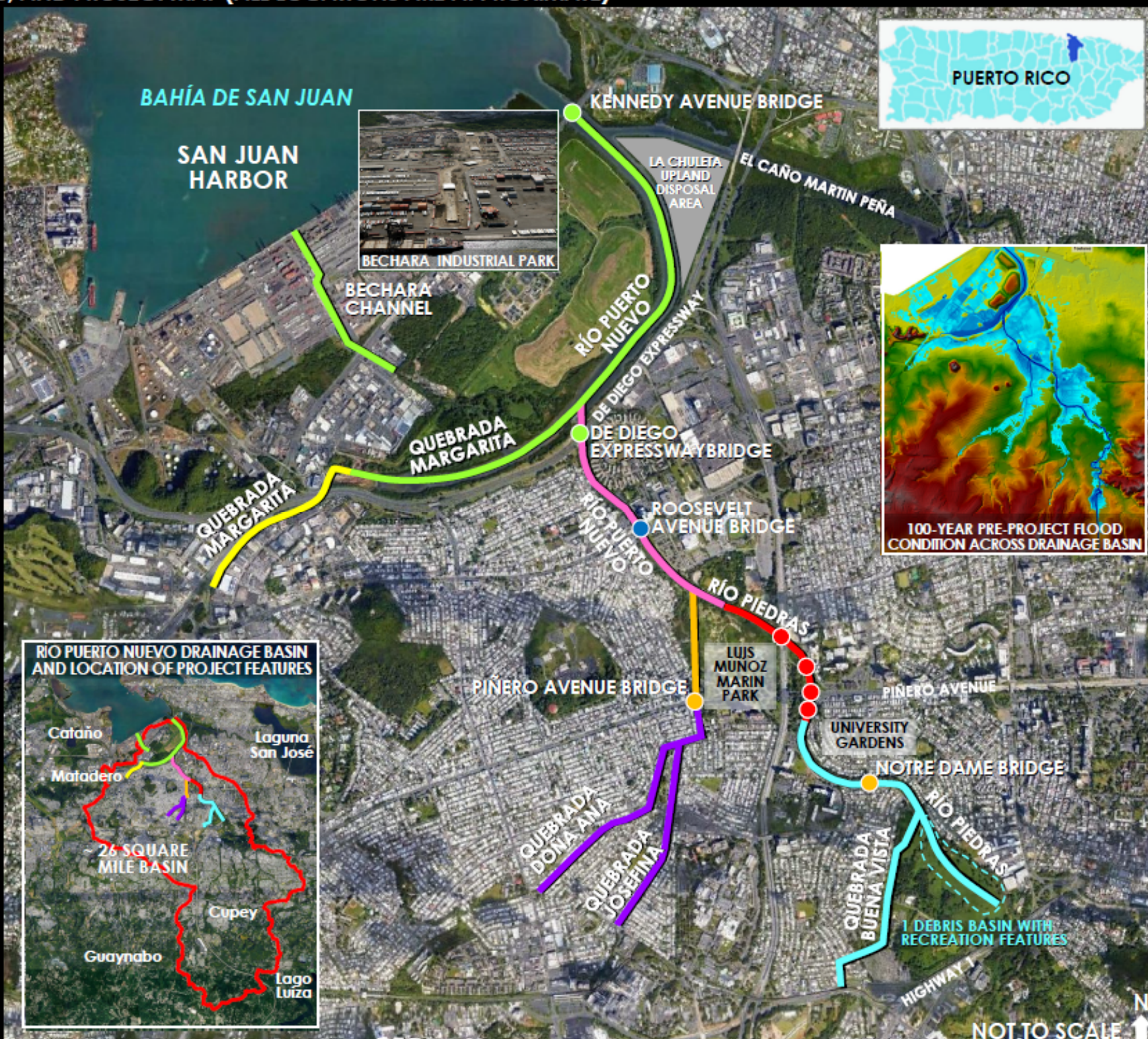
RIO PUERTO NUEVO – PROJECT OVERVIEW

2



CONTRACT IMPLEMENTATION, FEATURES, AND PROJECT MAP (ALL LOCATIONS ARE APPROXIMATE)

COMPLETED
<p>CONTRACTS 1, 1A, 2A/AR, 2AA, 2C1</p> <p>STATUS: 2C1, last completed, was August 2020</p> <p>AMOUNT: \$450M</p> <p>CONSTRUCTION:</p> <ul style="list-style-type: none"> First 1.3 miles of channel improvements Kennedy Bridge seismic retrofit; 36-inch water line Quebrada Margarita channel excavation and confluence wall; lower Puerto Nuevo channel dredging Bechara Channel secant pile wall box culvert; 90-inch sewer line modification; open channel work De Diego Expressway Bridge abutments; east and west pier drill shaft reinforcement
ONGOING
<p>CONTRACT 2D: RÍO PUERTO NUEVO CHANNEL WALLS</p> <p>STATUS: March 2022 anticipated completion</p> <p>AMOUNT: \$21.5M</p> <p>CONTRACT AWARD: February 2017</p> <p>CONSTRUCTION:</p> <ul style="list-style-type: none"> 350-foot left channel wall 750-foot right channel wall
REMAINING
<p>SUPPLEMENTAL CONTRACT 1 CONSTRUCTION</p> <ul style="list-style-type: none"> Sewer line relocation Construction of .63 miles of channel improvements at Upper Quebrada Margarita <p>SUPPLEMENTAL CONTRACT 2 CONSTRUCTION</p> <ul style="list-style-type: none"> Roosevelt Avenue Bridge replacement <p>SUPPLEMENTAL CONTRACT 3 CONSTRUCTION</p> <ul style="list-style-type: none"> Channel walls 1.1 miles of Main Channel improvements <p>SUPPLEMENTAL CONTRACT 4 CONSTRUCTION</p> <ul style="list-style-type: none"> Stilling Basin and Bridge Replacements 4A-1: Las Americas Expressway Bridge 4A-2: Piñero Avenue Bridge East 4A-3: Northeast Access Ramp Bridge 4A-4: Southeast Access Ramp Bridge <p>SUPPLEMENTAL CONTRACT 5 CONSTRUCTION</p> <ul style="list-style-type: none"> 5A: Notre Dame Bridge replacement 5B: Piñero Avenue Bridge West replacement; Quebrada Josefina gap downstream to Río Piedras <p>SUPPLEMENTAL CONTRACT 6 CONSTRUCTION</p> <ul style="list-style-type: none"> 1.75 miles of Río Piedras channel improvements 4 bridges (2 new; 2 replacements) .80 miles channel diversion at Quebrada Buena Vista Construction of 1 debris basin <p>SUPPLEMENTAL CONTRACT 7 CONSTRUCTION</p> <ul style="list-style-type: none"> 10 bridge replacements 5000 linear feet of Quebrada Josefina Channel improvements 4400 linear feet of Quebrada Doña Channel improvements <p>SUPPLEMENTAL CONTRACT LA CHULETA</p> <ul style="list-style-type: none"> Upland Disposal Area (future capacity of ~500,000 cubic yards of material)



RESILIENCE | QUALITY OF LIFE

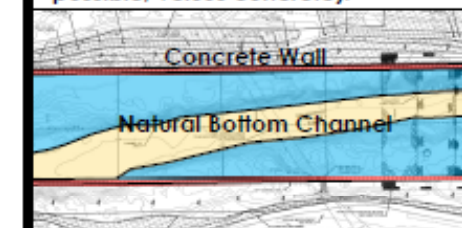
FLOOD RISK MANAGEMENT

- 100-year storm event
- More than 250,000 people residing in the highly urbanized and densely developed basin
- Over \$125 million average annual economic benefits



UPDATED INFORMATION/DESIGN

- Stakeholder engagement and updated data/analyses facilitating design modifications such as natural channel bottoms where possible, versus concrete).



ENVIRONMENTAL SUCCESSES

- 25+ acres of planted mangroves resulting in wildlife, such as the Antillean Manatee, returning to completed sections of the project.
- Improved sanitary sewer infrastructure reducing discharges into waterbody.



PEDESTRIAN CORRIDORS

- Planned linear parks, bike paths, and pedestrian bridges to increase connectivity across pedestrian corridors.





PURPOSE AND FEATURES

3



Flooding at Upper Reach of Quebrada Josefina

Purpose: To reduce flooding impacts in the Rio Puerto Nuevo basin

- Project approved in 1986 by Congress
- 100 year design life
- Will provide improvements to 11.2 miles of Rio Puerto Nuevo and its tributaries

NEPA Features

- 1 EIS, 2 EA'S
- Wetland mitigation
- 3 MFR's
- ESA Section 7 consultations

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RIO PUERTO NUEVO

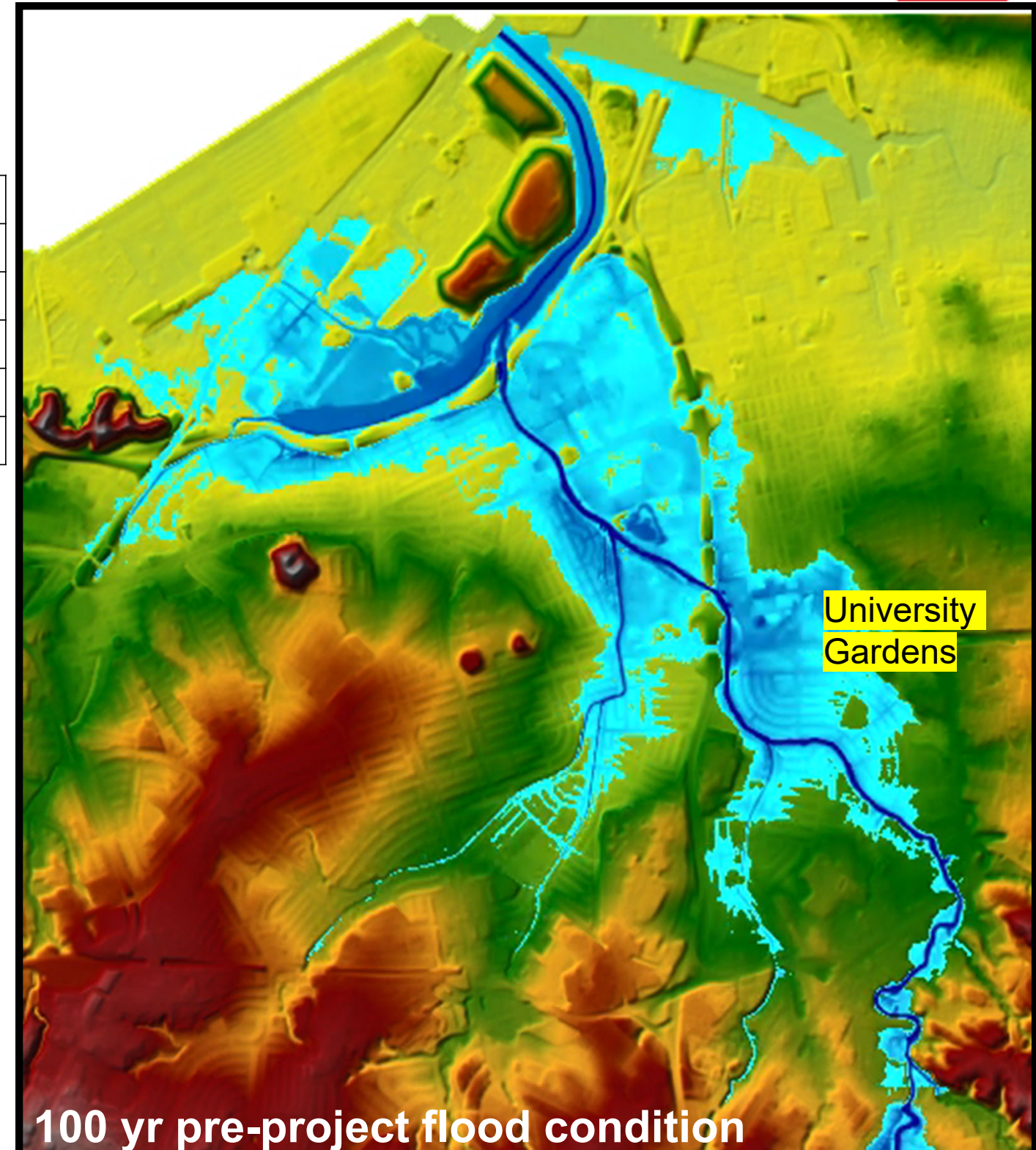
PRE PROJECT CONDITIONS

4



- 26 square miles of highly urbanized, densely populated flood basin
- Existing channel overflows above 2-year storm event (bank full)
- Bank full refers to the water level stage that just begins to spill out of the channel into the floodplain.
- Bank full flows tend to occur frequently, on the average every two years, its how the river forms its channel; natural river process.

	Low lying areas
	High lying areas (above flood area)
	Higher elevated area
	Highest elevation in basin
	Shallow flooding area
	Heavier flooding area





RECENT FLOODING IN RIO PIEDRAS

5



< 1-year storm event



13 Oct 2021 Notre Dame Bridge during flood waters from Rio Piedras. This is less than a 1-year storm event.

5-10-year storm event



Note: Video taken on property immediately south of Notre Dame Bridge showing flooding of Rio Piedras during a 5 to 10-yr storm event from Hurricane Lenny on November 15-19, 2009.

Credit: <https://www.youtube.com/watch?v=LWmPh9Bm1UA>

What will a 100-yr storm event look like in Rio Piedras?

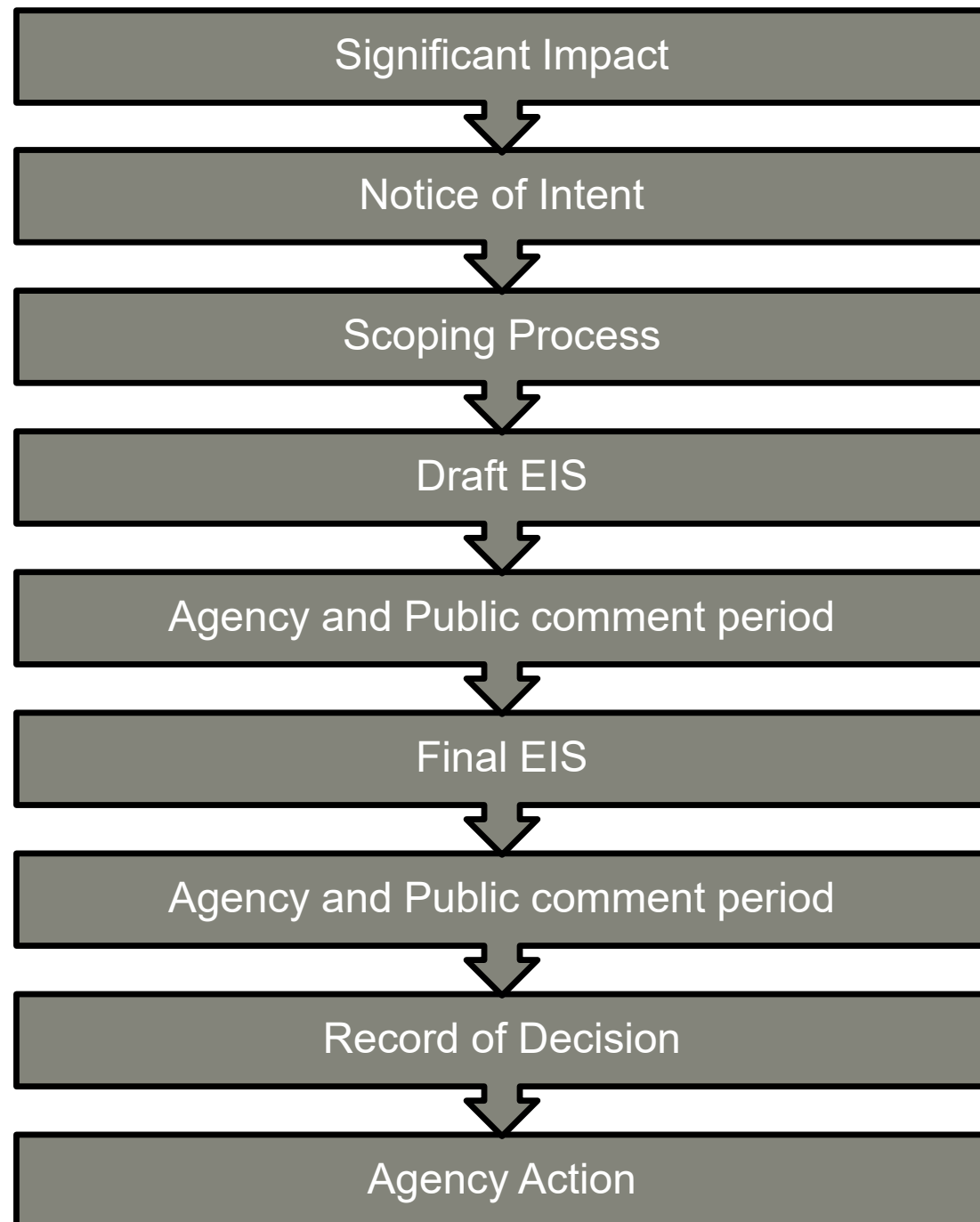
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NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Federal law requiring Federal agencies to consider the environmental impacts of a proposed project that are:

- ▶ Major Federal actions that may have a significant affect on the quality of the human environment
- ▶ Requires Federal agencies to consider environmental consequences before making final decisions
- ▶ Solicit and consider Tribal, State, local government and public views on proposals
- ▶ Considers species listed under ESA, Migratory Bird Protection Act and Marine Mammal Protection Act

EIS PROCESS



NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

3 Levels of NEPA Documents

Environmental Impact Statement (EIS)

Environmental Assessment (EA)

Categorical Exclusion (CatEx)



NEPA PROCESS EVALUATES EFFECTS ON

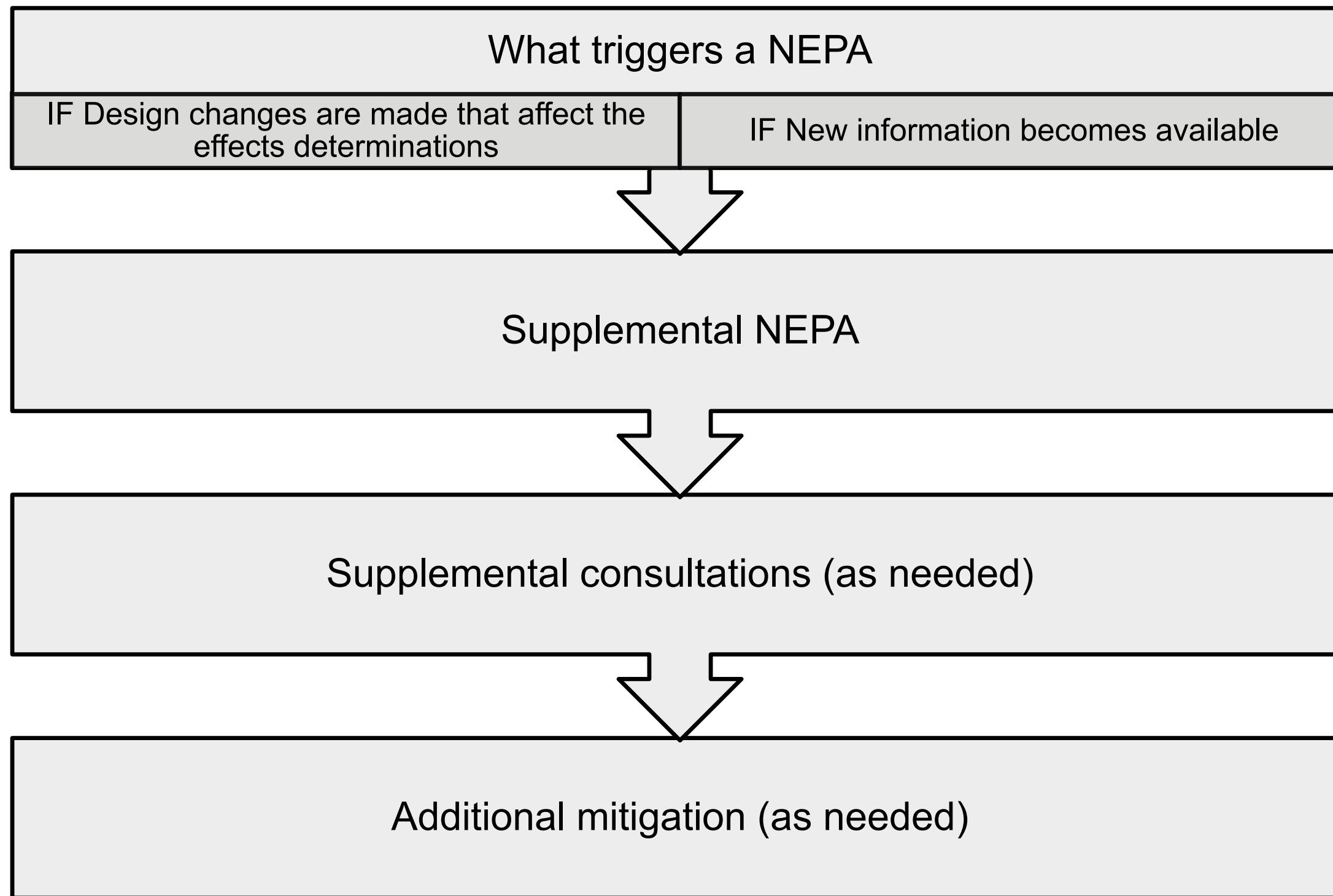
- Land use
- Cultural resources
- Fish and Wildlife Resources
- Endangered Species
- Wetlands
- Socioeconomic settings
- Infrastructure
- Hydrology
- Aesthetic Resources
- Water Quality
- Air Quality
- Noise
- Hazardous, Toxic and/or Radioactive waste
- Environmental consequences
- Compliance with environmental laws and regulations

USACE NEPA document's for Puerto Rico can be found here: <https://www.saj.usace.army.mil/About/Divisions-Offices/Planning/Environmental-Branch/Environmental-Documents/>

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WHAT REQUIRES A NEW NEPA?



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EXAMPLES

Contract 3 changes

Concrete channel bottom



Same construct footprint

Natural channel bottom



NO Impact changes



NO NEPA necessary

Major design changes to
Bechara Industrial area (2002)



New construction footprint



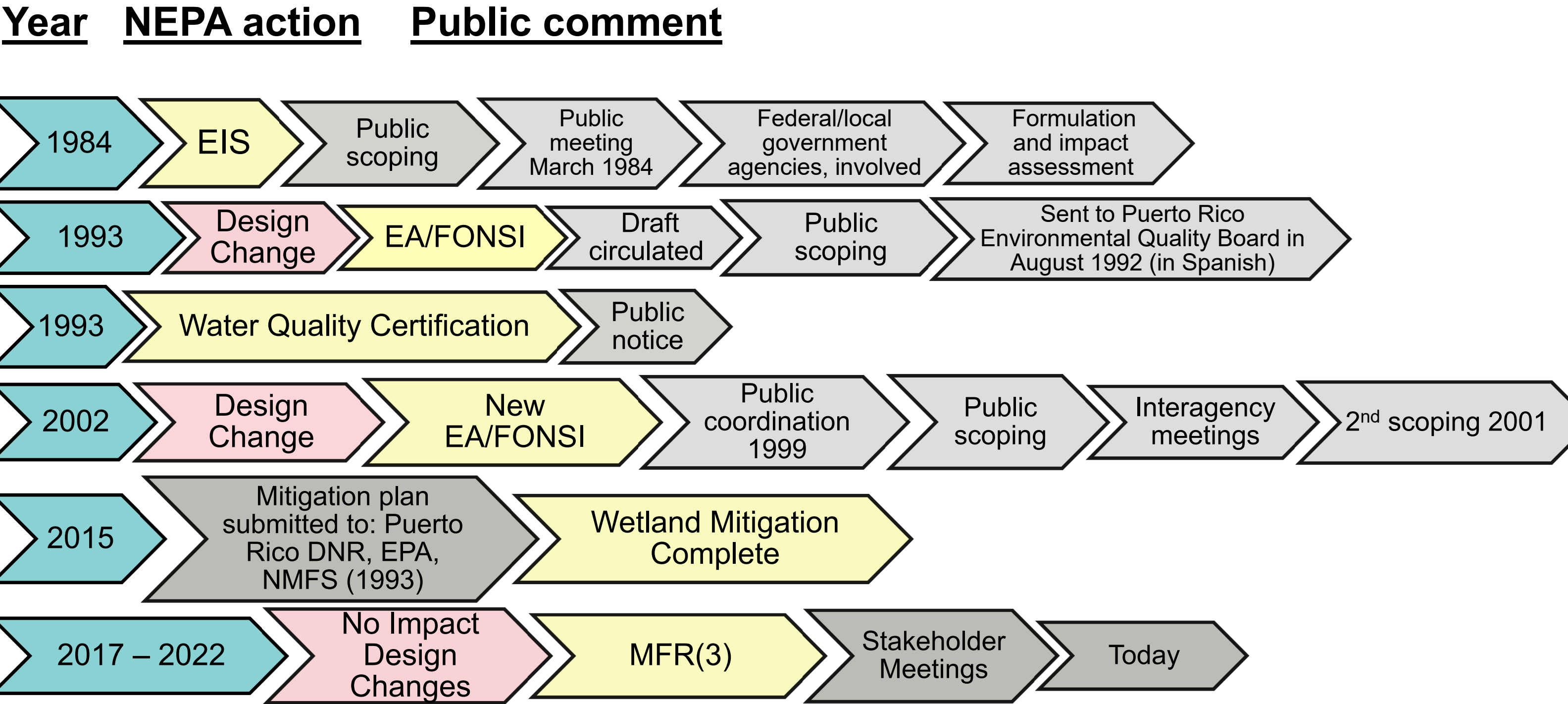
New NEPA Required



New EA/FONSI



NEPA TIMELINE

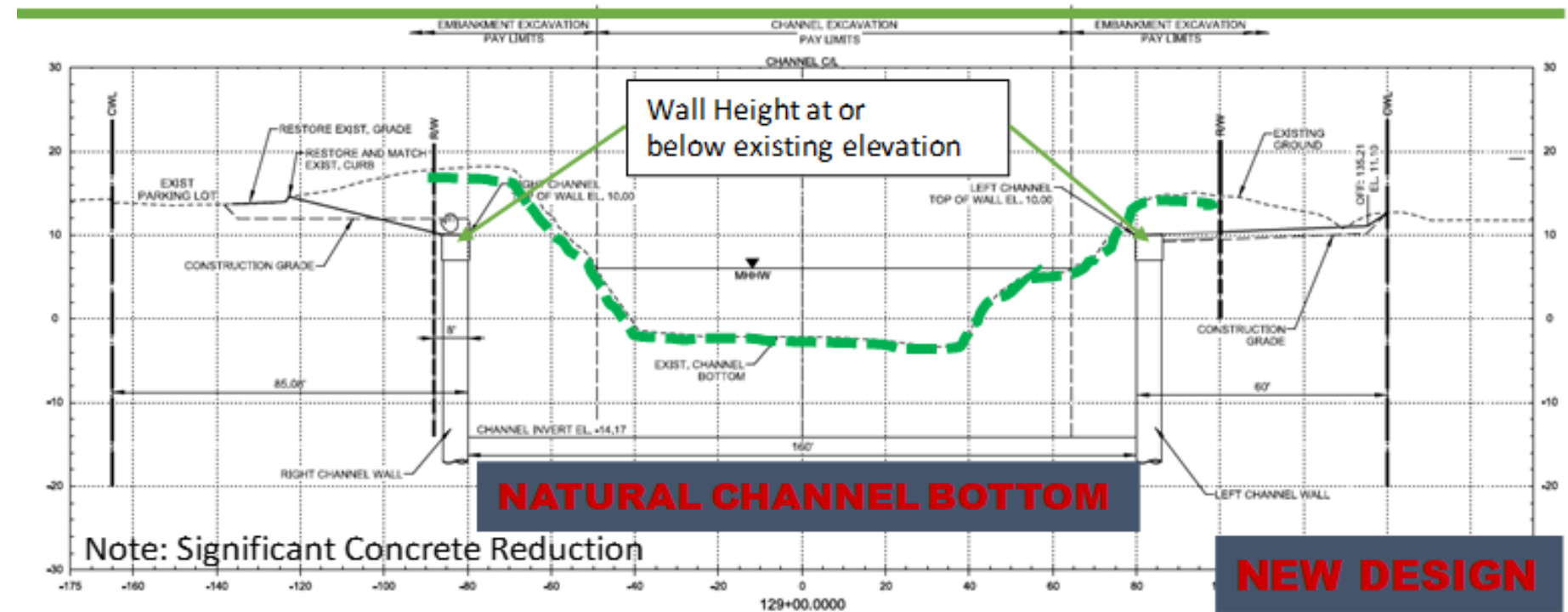




RIO PIEDRAS CHANNEL

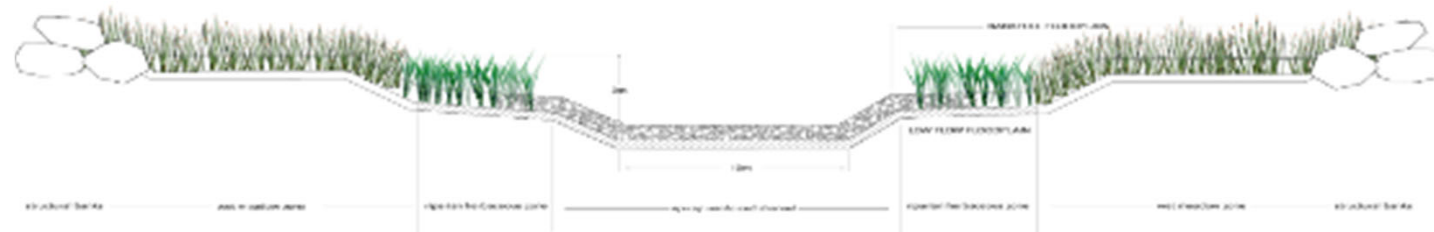
USACE Rio Piedras Design:

- U shaped Channels with bottoms that are either natural or ACBM
- No longer concrete bottoms
- Bottom Width 95 foot minimum
- Supercritical/subcritical flow for all storms (less rapid flow)
- Less socioeconomic impact
- Research shows that other channel types not effective in an area such as this
- **Replanting mature native tree species**
 - Commitment by USACE
 - Not involved with NEPA



Natural Channel Design Features:

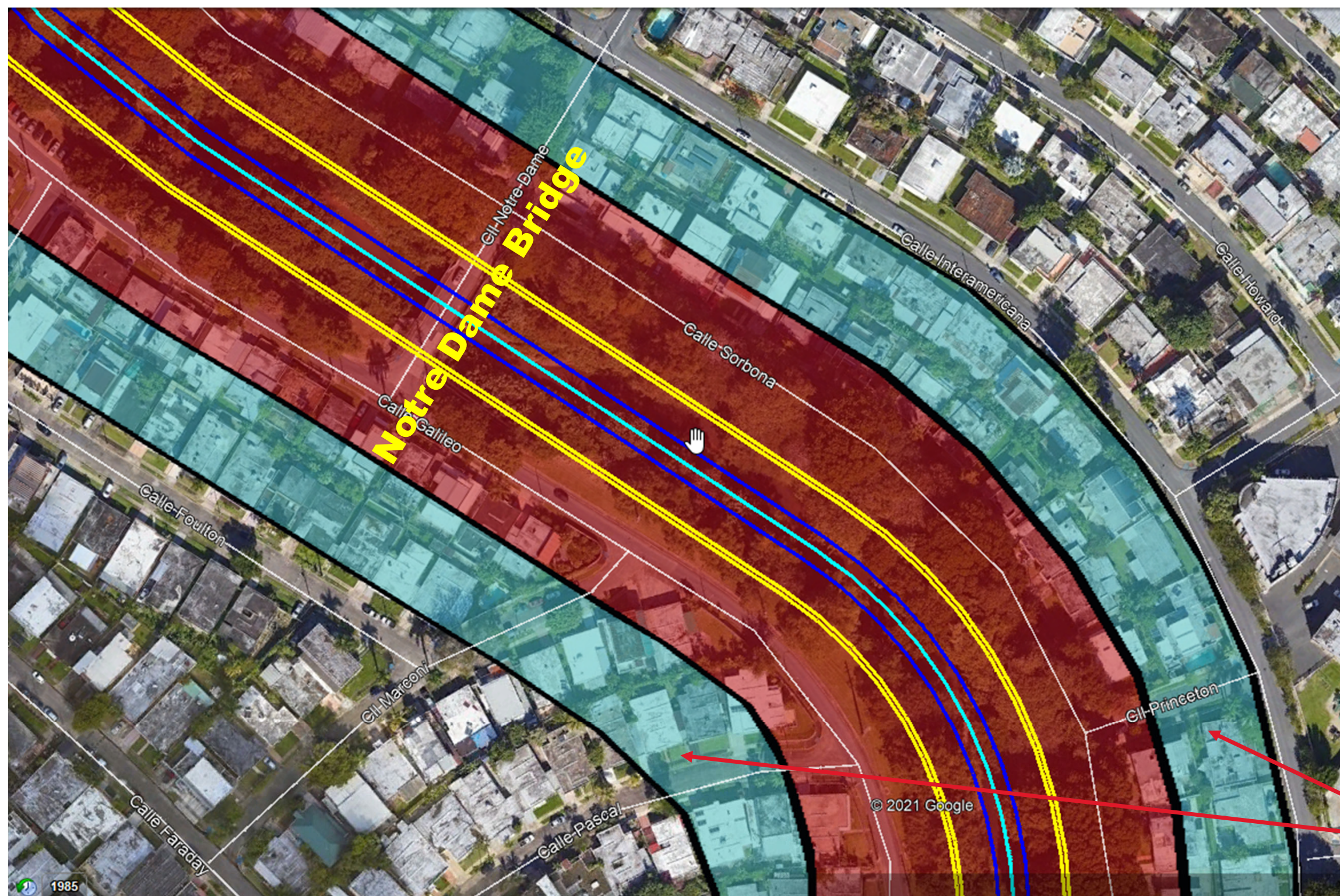
- Much Larger Channel required to pass the total volume of water
- Same removal of trees and an increase in the removal of homes
- Greater Real Estate Acquisition
- USACE preference is always to go with natural channel when possible





RIO PUERTO NUEVO – NATURAL CHANNEL IMPACT

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NATURAL CHANNEL ISSUES:

- Larger Channel pass the total volume of water
- More Real Estate Acquisition would significantly increase
- USACE preference is always to go with natural channel when possible

Construction and Maintenance Easements

NEPA Compliance Requirement	Purpose	Actions taken	Project Status
Endangered Species Act (ESA)	Conserve and protect endangered and threatened species and their habitats	USFWS informal consultation 1991 and 2013, Formal consultation and letter of concurrence 1992; NMFS Concurrence received 1992, 2010, 2013, 2014	Complete
Clean Water Act, Section 401 (Water Quality Certification-WQC)	Requires Federal agencies to obtain a water quality certification for any activity resulting in discharge	Water Quality Permit received 1993, 2001	Complete
Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat – EFH)	Biological and economic sustainability of marine fisheries	NMFS EFH conservation comments were received 2015	Complete
Fish and Wildlife Coordination Act	Evaluates impacts to fish and wildlife from proposed water resource development projects	Coordination act report October 2001, Concurrence received 2013	Complete
National Historic Preservation Act Section 106	Consider prehistoric and historic resources	Completed 2001	Updating (ongoing)
Coastal Zone Management Act	Preservation, protection, development, restoration, and enhancement of coastal zone resources	Determination of consistency of the project with Puerto Rico Coastal Management Program in 1985, 1993 and 15 March 2001 from PRPB	Complete
Clean Water Act, Section 404	Regulates discharge of dredged material, requires a permit	404(b)1 appendix in EIS and EAs; Finding of Compliance and No significant adaptations of the guidelines	Complete
Environmental Justice E.O.	Focus environmental and human health effects on minority and low-income populations. Goal to achieve environmental protection for all communities.	EJ evaluation incorporated into report	E.O. requirement met
Marine Protection, Resources, and Sanctuaries Act (Section 103)	Prohibits dumping material into the ocean that would degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities	Material ineligible for offshore disposal will be deposited in the La Chuleta upland placement and rehandling area	Complete

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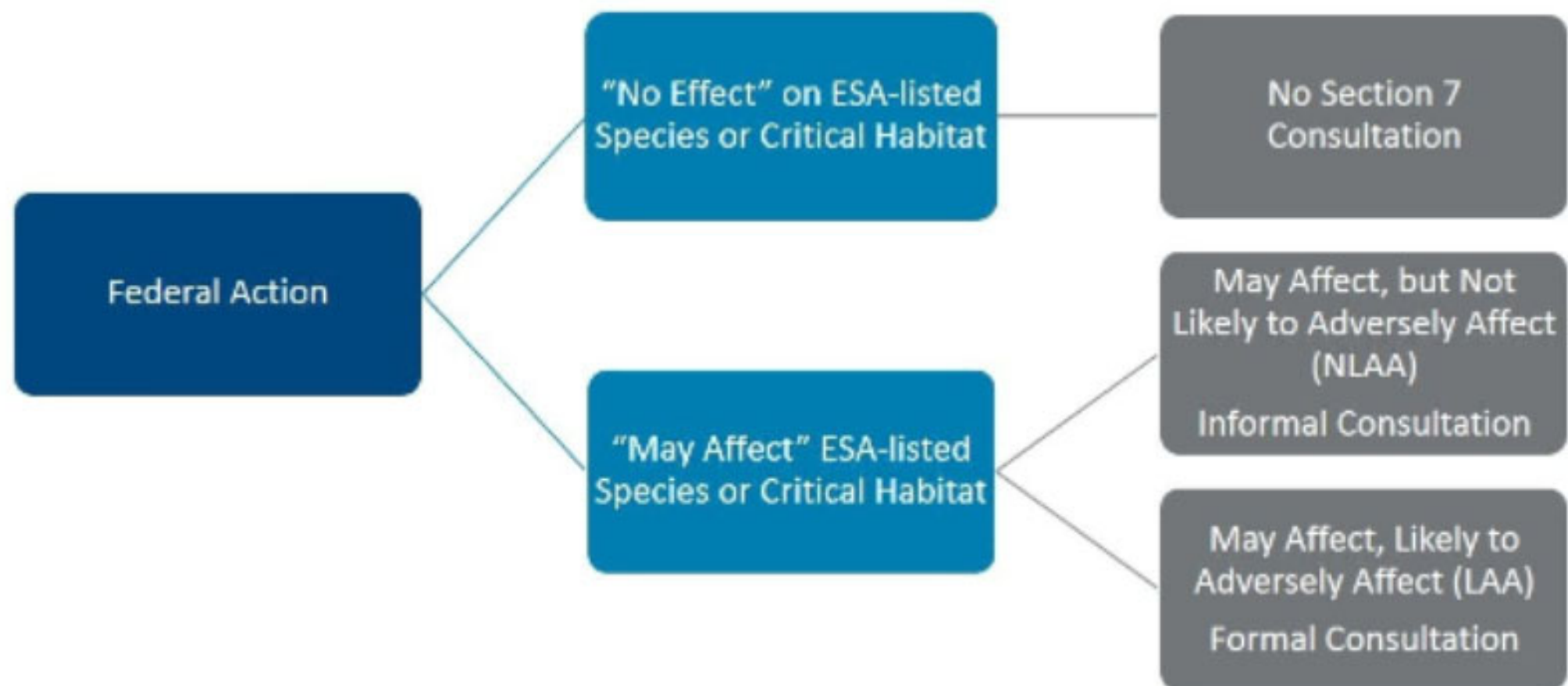
ENDANGERED SPECIES ACT (ESA) CONSULTATION

Section 7 Consultation Process

NE = No Effect

NLAA = May Affect, but Not likely to adversely affect

LAA = May Affect, Likely to Adversely Affect





ESA SECTION 7 CONSULTATIONS



Species	Coordinating agency	Consultation type	Consultation Date	USACE Effect Determination
Yellow shouldered blackbird	USFWS	Formal	1991, 2013	NE
Brown Pelican	USFWS	Formal	1991	NE
Sea Turtles (Green, Hawksbill and Leatherback)	USFWS & NMFS	Informal	1992, 2013, 2002, 2010, 2014	NLAA
Whales (Humpback, blue, finback, Sei, Sperm)	USFWS & NMFS	Informal	2010, 2014, 2013	NLAA
Puerto Rican Boa	USFWS	Informal	2013	NLAA
Corals	NMFS	Informal	2010, 2014	NLAA
Antillean Manatee	USFWS	Informal	2013	NLAA

NE = No Effect

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COMMON SPECIES IN CARIBBEAN RIVERS

Common species recently documented in the Río Piedras (Lugo et al 2011; Perez-Reyes 2015), but **these are common species in Caribbean rivers (Global Biodiversity Information Facility)**

- *Palaemon pandaliformis* (newly recorded shrimp species)
 - Distribution throughout the Caribbean; West Indies and East coast of American continent from Guatemala to South Brazil
- *Spongila alba* (newly recorded freshwater sponge species)
 - Distribution Brazil, Venezuela, Curacao, El Salvador, Florida, Louisiana, South Carolina, Madagascar



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CLEAN WATER ACT – SECTION 401



Water Quality Certification (WQC)

- Issued by the Puerto Rico Environmental Quality Board
- In conformity with section 401(a)(1) of the CWA
- Permit will not violate applicable water quality standards
- Certified on 11 June 1993

WQC Special Conditions

1. The Environmental Quality Board (EQB), on issuance of this Water Quality Certificate (WQC), does not relieve the applicant, the Department of Natural Resources, of its responsibility for obtaining additional permits and/or authorizations from EQB, as may be required by law. The issuance of the WQC may not be considered as an authorization to carry out any activity that is not specifically covered in the WQC.
2. The Department of Natural Resources must implement the proposed Mitigation Plan.
3. The Department of Natural Resources must comply with the above Special Condition. If it does not, the WQC issued by EQB shall be immediately nullified.



COMPLETED WETLAND MITIGATION

22



1985 Environmental Impact Statement (EIS)

Total impact of 20 acres

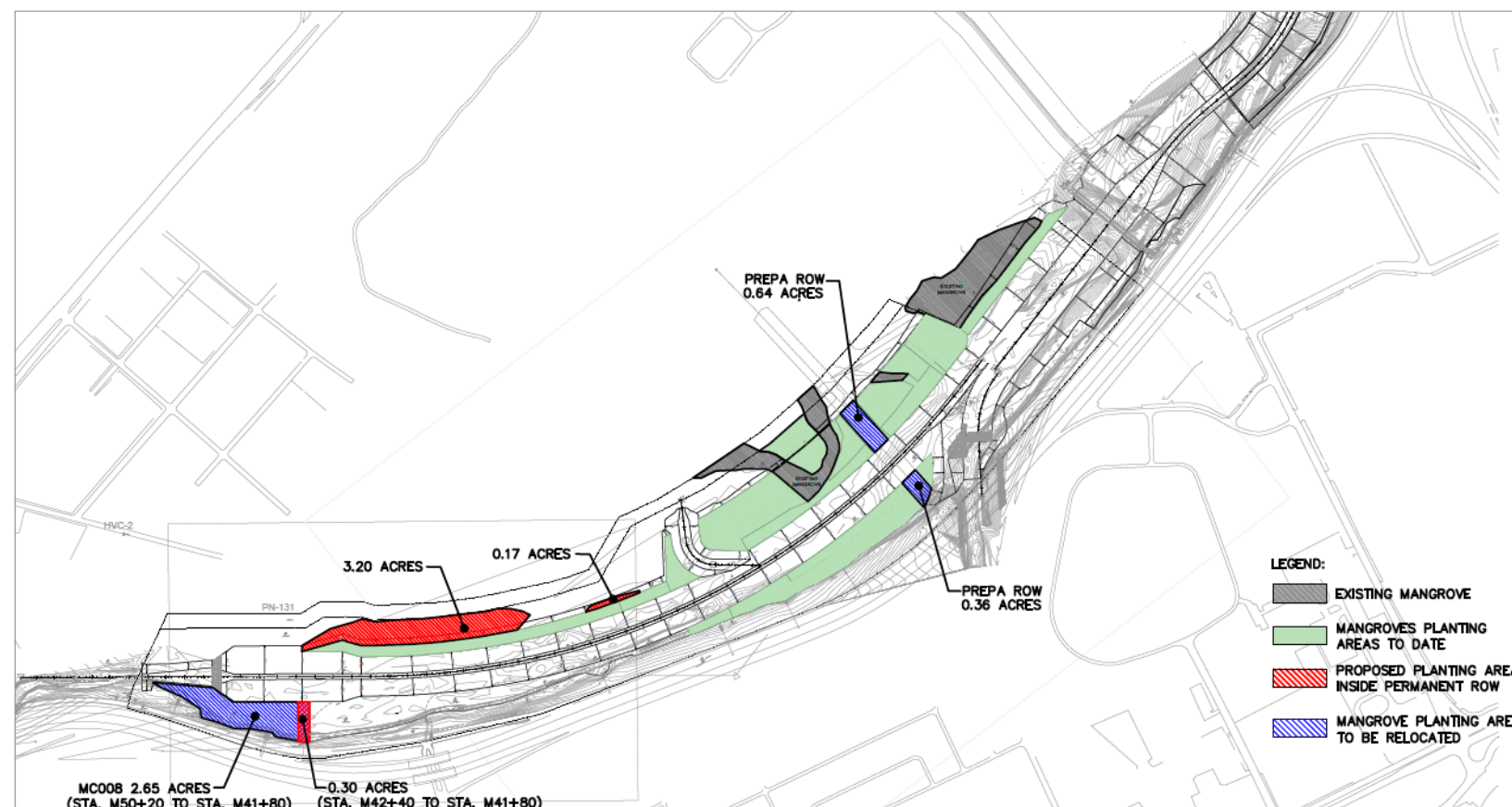
28 acres for mitigation

Within project right-of-way (ROW)

Mix of white, black and red mangroves

Planting April 22, 2013 – May 16, 2014

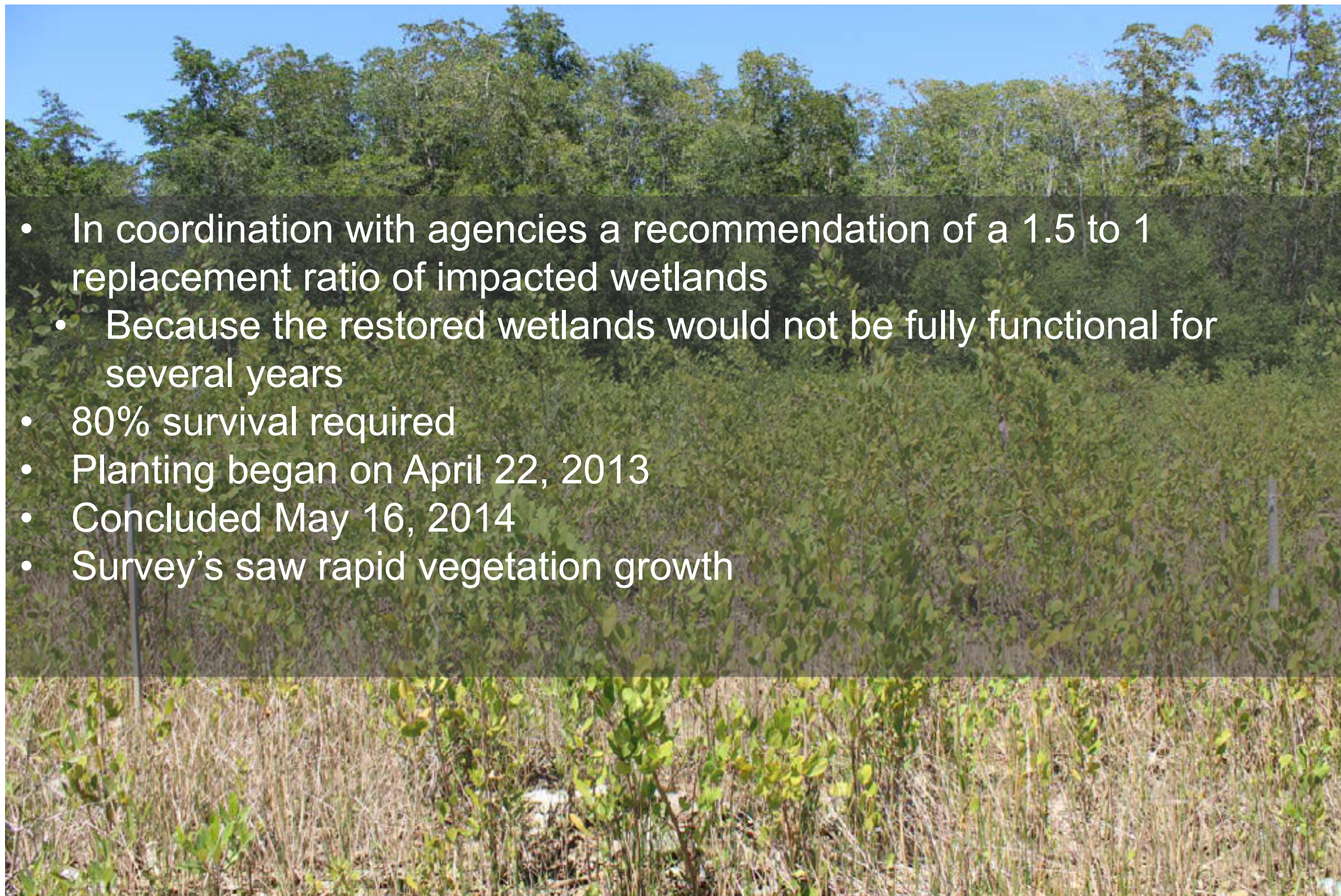
Successful Establishment April 2015





COMPLETED WETLAND MITIGATION

- In coordination with agencies a recommendation of a 1.5 to 1 replacement ratio of impacted wetlands
 - Because the restored wetlands would not be fully functional for several years
- 80% survival required
- Planting began on April 22, 2013
- Concluded May 16, 2014
- Survey's saw rapid vegetation growth



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LA CHULETA DISPOSAL SITE

25



67 acre site,
36 acres useable
for stockpiles

Surrounded by
protected
mangrove swamp

Former solid-waste
landfill and
estimated capacity
of 540,000 cy

Crossed by
multiple 115 kV
Transmission Lines

No existing power
or other utilities

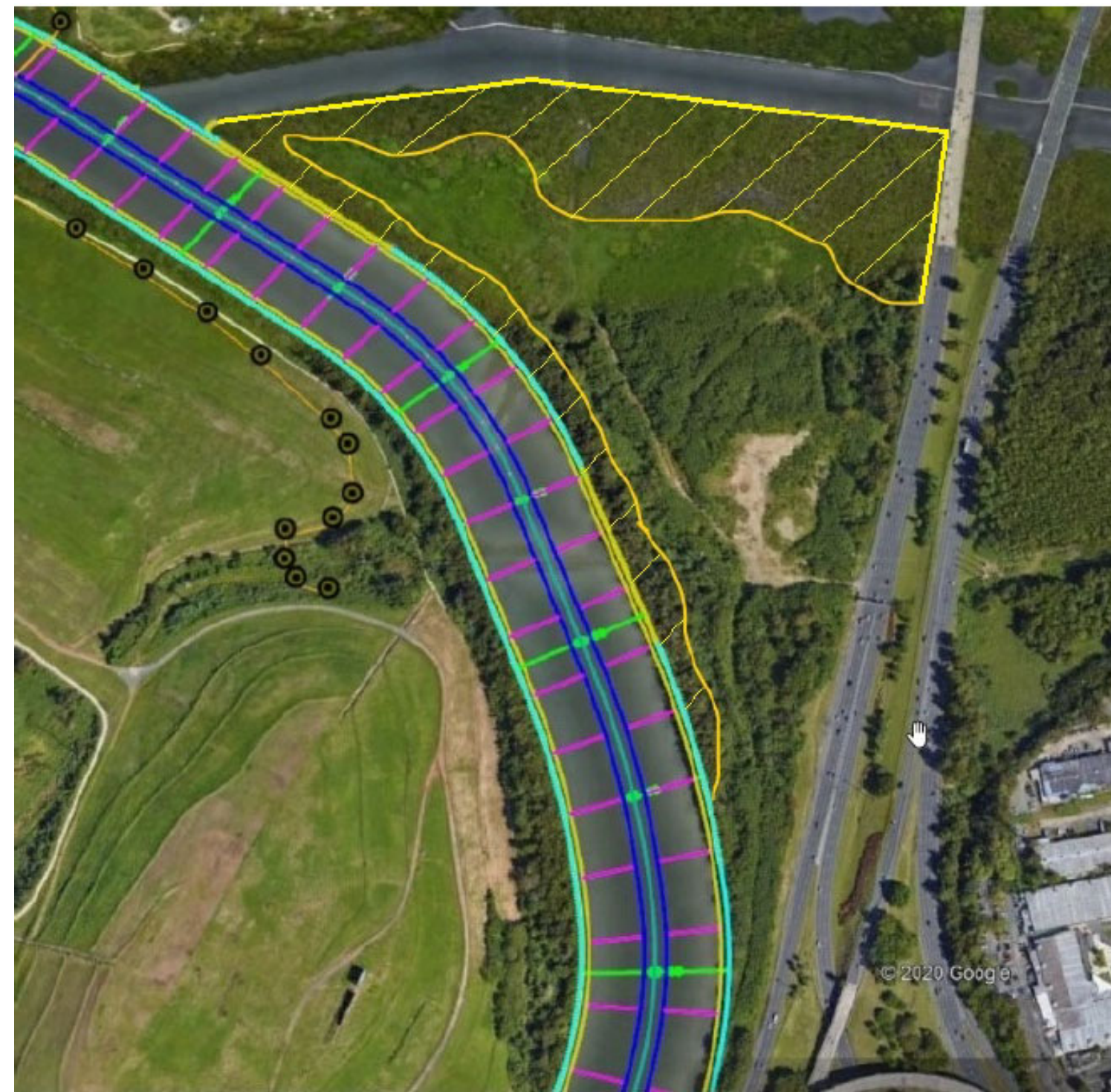


Figure 1-2 La Chuleta Site with Mangrove Protected Zone Outlined



ENVIRONMENTAL COMMITMENTS



1986 EIS

- Survey for and recover culturally significant materials
- Recreational features, including a bike path and linear park,
- Wetlands mitigation plan
- Environmental testing of dredged materials
- Compliance with Marine Protection Research and Sanctuaries Act (MPRSA)
- Verify absence of toxic or hazardous materials in areas subject to excavation or dredging
- Obtain a Water Quality Certificate from the Commonwealth Environmental Quality Board

1993 EA

- Avoid any potential impact to marine turtles at offshore disposal site.
- Dredging personnel post a lookout on vessels near or on the offshore disposal Area to aid in locating sea turtles.
- No known recent observations to suggest that yellow shouldered blackbirds presently use the mangroves in the vicinity. (Survey in winter 91-92')
- Detailed archaeological survey and data recovery operations (parking lot area of the water filtration plant site).
- Mangrove mitigation plan

2002 EA

- Updated mitigation plan
- Diesel fuel station and above ground storage tanks under project footprint will be removed and disposed Bechara for Industrial area



RECREATIONAL FEATURES

LINEAR PARK/BICYCLE PATH:

- Plans for a linear park and bike path that runs from University of Puerto Rico through the Jardines Metropolitano/University Gardens area, crossing over at Notre Dame Bridge over a dedicated pedestrian bridge and running through to Luis Munoz Marin Park.
- Replanting of mature native vegetation and trees equal in number to the ones removed (native species)
- One pedestrian bridge at north end of Luis Munoz Marin Park
- One Service Bridge connecting both sides of park at the southern end of Luis Munoz Marin Park





WILL WE HAVE NEW NEPA?

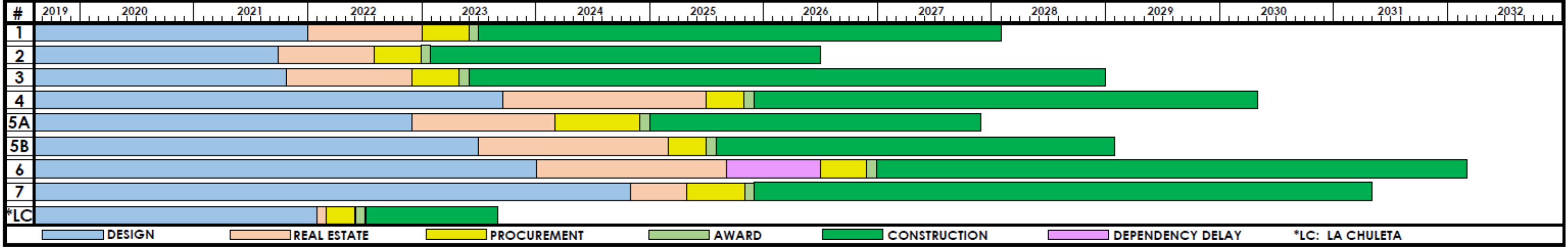
CONTRACTS 4-7?

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SCHEDULE

SUPPLEMENTAL CONTRACT IMPLEMENTATION SCHEDULE



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THANK YOU

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