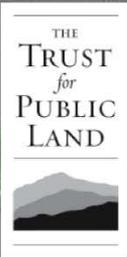
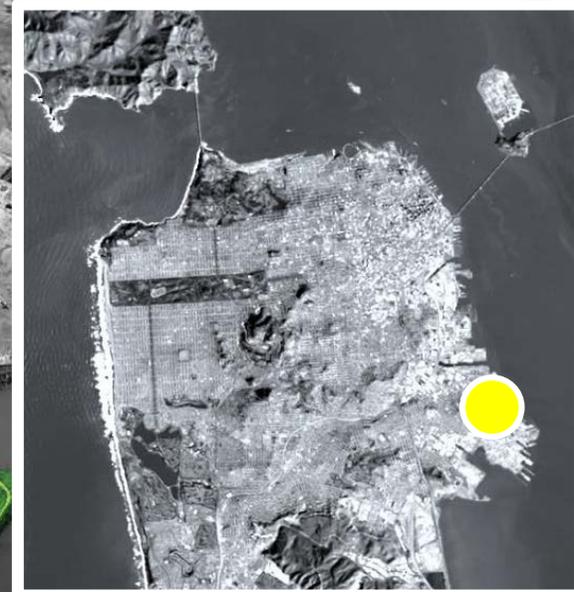




INDIA BASIN

WATERFRONT STUDY





INTRODUCTION & CONTEXT

BASIN ASSETS

PROCESS

TECHNICAL STUDIES SUMMARY & STRATEGIES

USES, AMENITIES & PROGRAM

STUDY SITES

PROPERTY OWNER ACRES

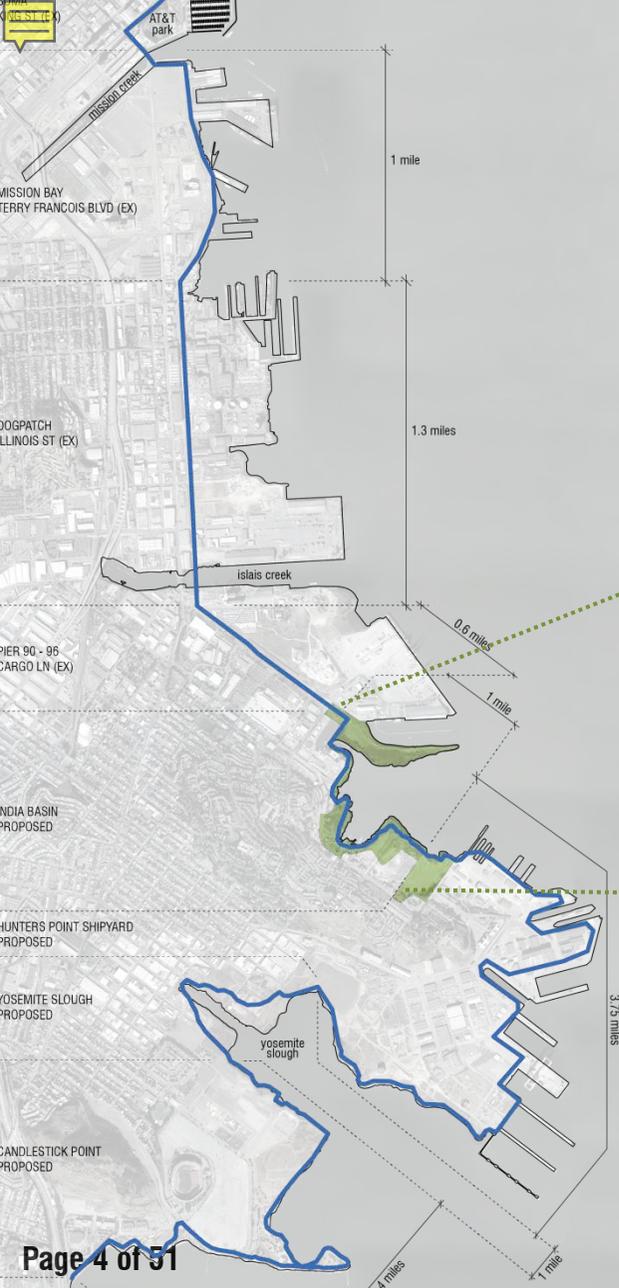
India Basin Open Space	RPD	6.15
India Basin Shoreline Park	RPD	5.6
Big Green	Build Inc	5.63
Hudson / Arelious Walker ROWs	DPW	1.62
900 Innes	RPD/CCSF	2.4
Hudson / Griffith ROWs	DPW	1.58

Heron's Head Park	SF Port	22.69
Northside Park	Lennar	13.63
Hunters Point Shoreline	PG&E	4.66
The Bay		

TOTAL AREA: 63.96 acres



FOCUS AREA
6/27/2015



BLUE GREENWAY

13 miles



1.5 mile continuous waterfront
64 acres

Waterfront Parks Vision Plan in the Blue Greenway

WATERFRONT STUDY GOALS

GOAL 1 – **Prioritize environmental cleanup** to promote public health, safety, and welfare

GOAL 2 – Develop a **common set of data, facts, and analysis** from which to base design decisions

GOAL 3 – Provide a **unified design & programmatic blueprint** for the future development of a legacy waterfront park system that is accessible and available to all

GOAL 4 – Ensure a **diverse & balanced mix** of recreational, educational, and ecological services across all seven properties

GOAL 5 – Stimulate meaningful and inclusive local, citywide, & regional **community engagement and participation**

GOAL 6 – **Coordinate** the future design of a “shared design palette” for all seven sites to ensure that signage/wayfinding, furnishings, lighting, and pathway design are coordinated for a seamless user experience

GOAL 7 – Design a landscape that is **adaptive and resilient** in the face of anticipated sea level rise

GOAL 8 – **Expand public access** to the Bay and accelerate the development of the Blue Greenway

GOAL 9 – Identify and **implement “early win” activation** and design projects



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**WHAT MAKES
INDIA BASIN UNIQUE?**



PEOPLE

Photo credit:
Anne Hamersky,
Now Hunters Point

WHAT ASSETS MAKE INDIA BASIN UNIQUE?

Existing Assets & Potential Opportunities



A

B

C

D

E

F

G

H

I

J

LIVING SHORELINES



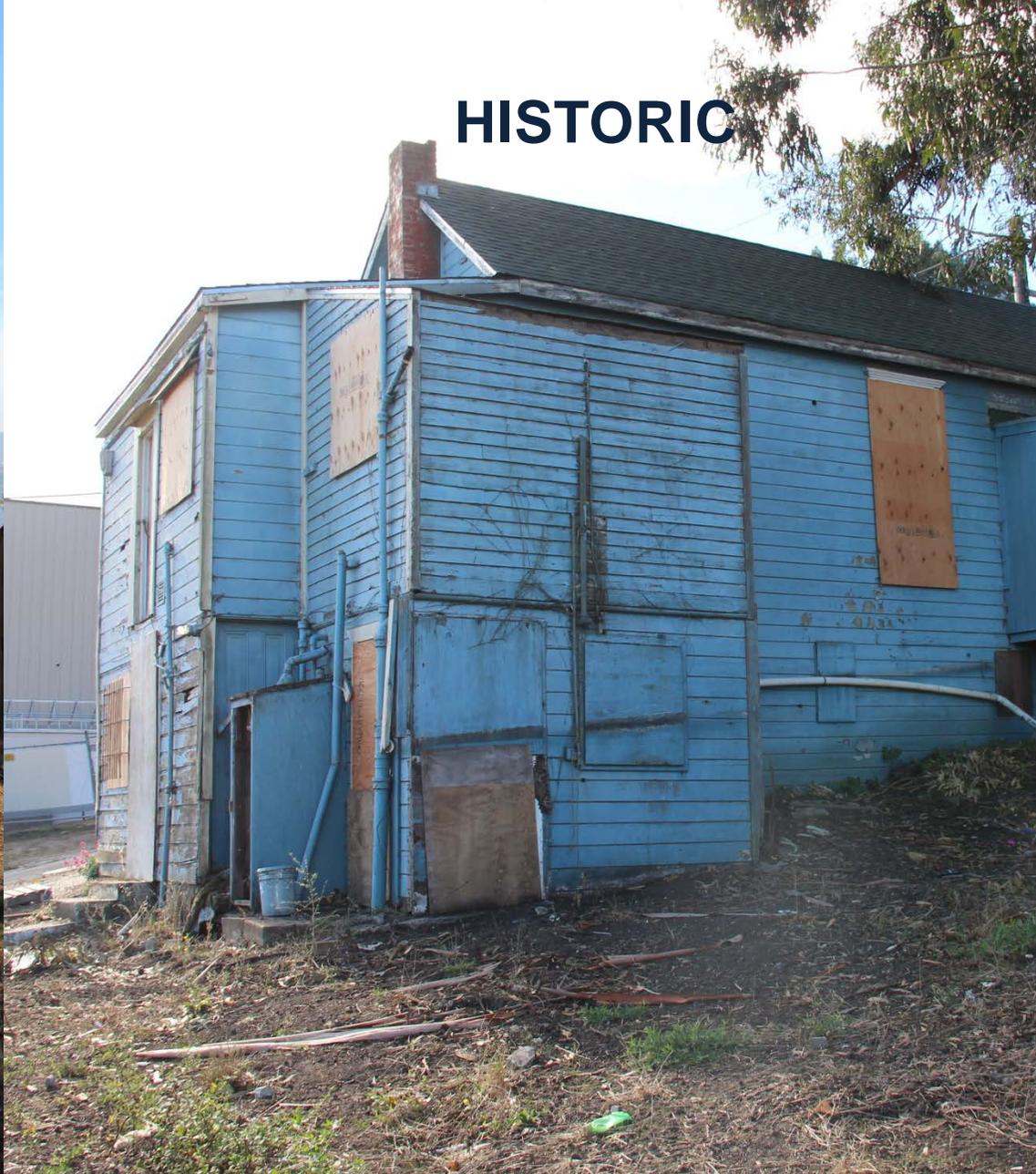
NATURALLY FORMING HABITAT



WATERFRONT GATEWAY



HISTORIC





VIEWS



INDUSTRIAL HERITAGE

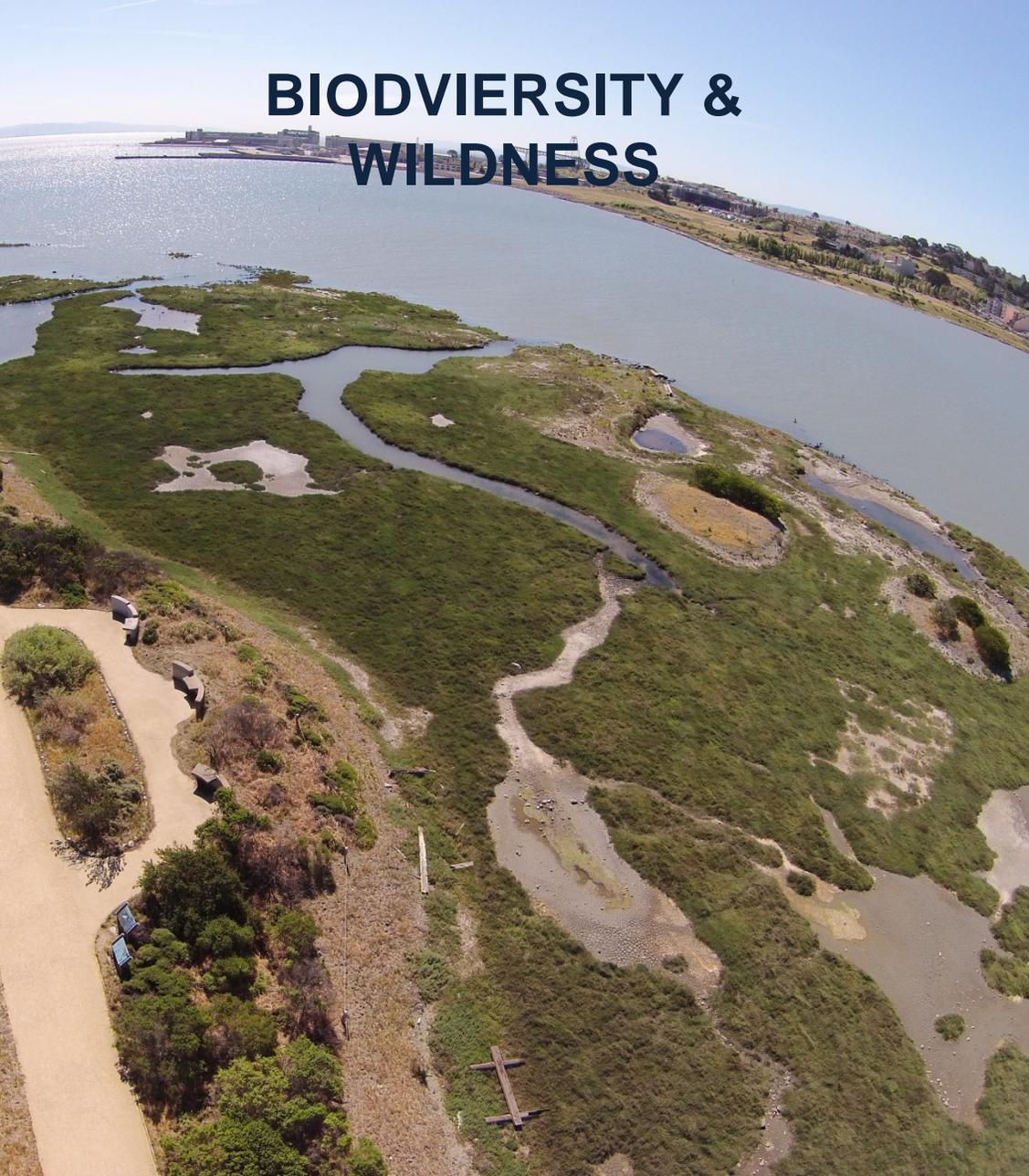
ICONIC



DESTINATION



BIODIVERSITY & WILDNESS



RESILIENCY



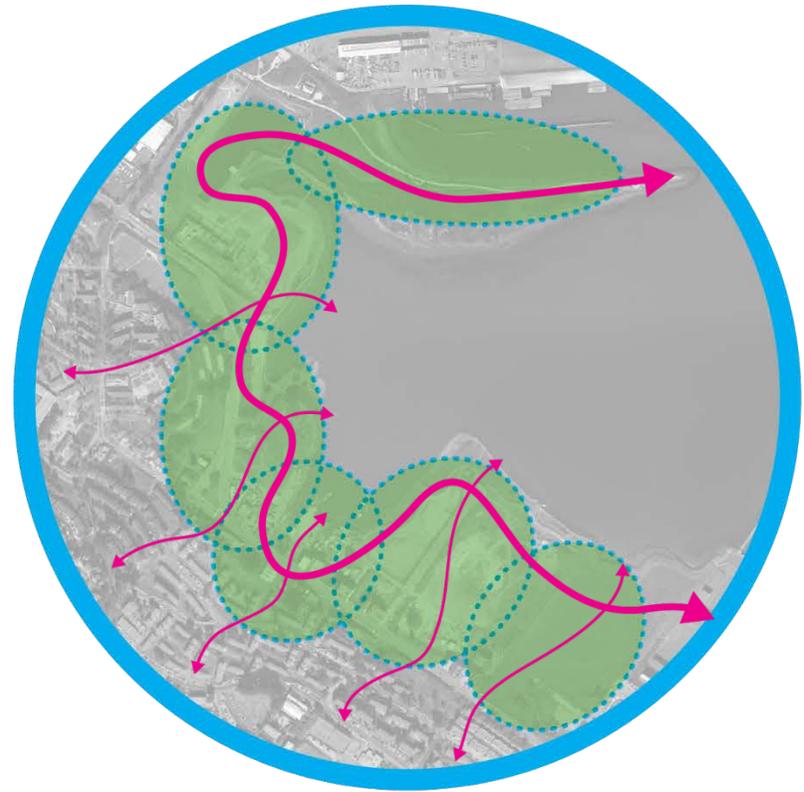


**NEIGHBORHOOD
PARK**

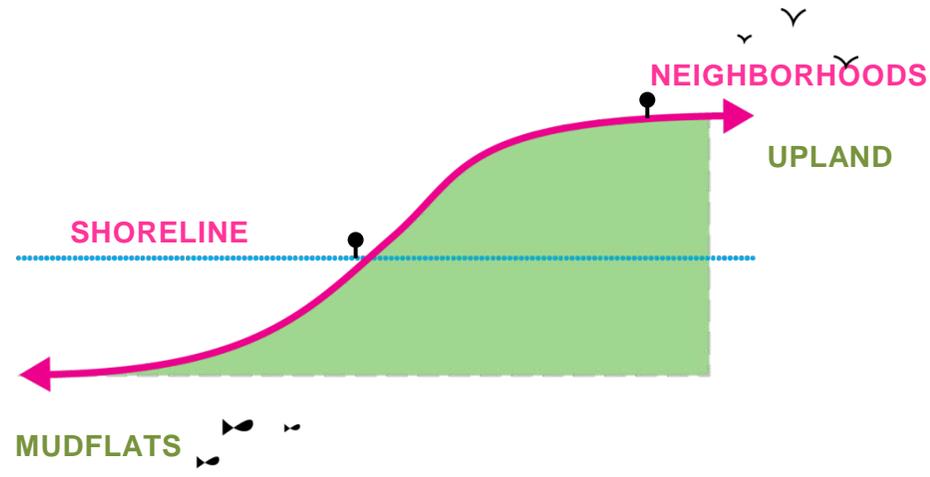


**REGIONAL
PARK**

HORIZONTAL



VERTICAL



> 1.5 MILE CONTINUOUS SHORELINE





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EXISTING & UNDERWAY PROGRAM

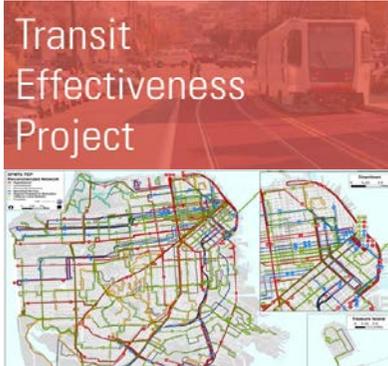
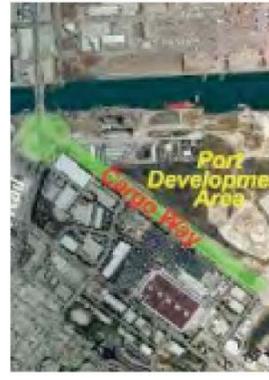
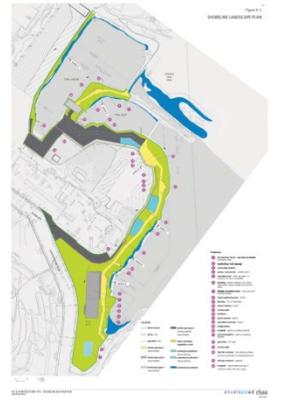
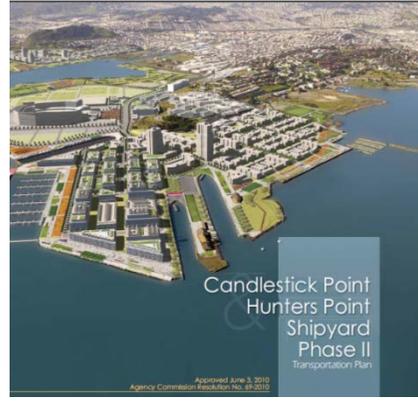
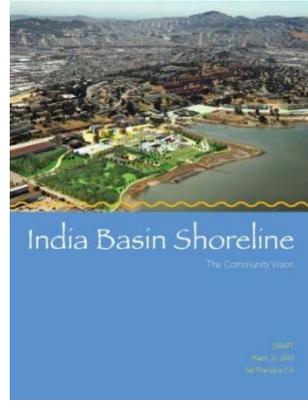
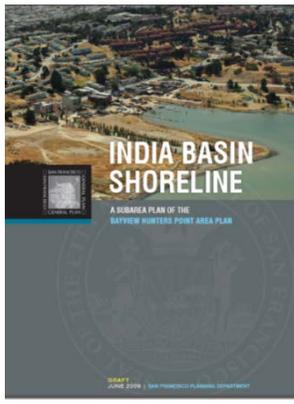
● Existing / ● Underway



CATEGORIES

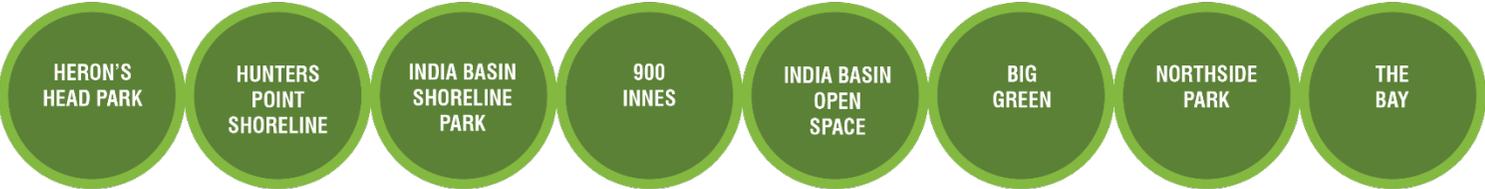
	HERON'S HEAD PARK	HUNTERS POINT SHORELINE	INDIA BASIN SHORELINE PARK	900 INNES	INDIA BASIN OPEN SPACE	BIG GREEN	NORTHSIDE PARK	THE BAY
CIRCULATION								
Bay Trail / Blue Greenway	●	● ●	●		●			
Class I Commuter Bike & Ped Path								
Waterfront Access	●		●		●			●
Car & Bike Share Facilities								
Vehicular Parking	●		●					
Wayfinding	●	●						
ACTIVE								
Playground			●					
Athletic Field / Large Lawn			●					
Recreation Center								
Basketball Courts			●					
Tennis Courts								
Fitness								
Dog Areas with Water Access								
Off-Leash Dog Area	●							
Trails	●	● ●	●		●			
PASSIVE								
Picnic Area	●		●					
BBQ	●		●					
Restrooms	●							
Performance								
Plaza / Promenade	●		●					
Art / Sculpture			●					
Bird Watching	●	●			●			●
WATER								
Beach								
Fishing	●							
Boating / Kayaking / Boat Building			●					
Sail Boating								
HABITAT								
Wetlands	●		●		●			●
Native Plantings	●	●						
Orchards / Nursery								
Living Shoreline Pilot Project								
BUSINESS / CULTURAL / AMENITY								
Café / Restaurant								
Job Center	●	●						
Historic / Cultural Activity		●						

PREVIOUS PLANNING EFFORTS



PREVIOUSLY PROPOSED PROGRAM

- Existing
- Previously Proposed



CATEGORIES

	HERON'S HEAD PARK	HUNTERS POINT SHORELINE	INDIA BASIN SHORELINE PARK	900 INNES	INDIA BASIN OPEN SPACE	BIG GREEN	NORTHSIDE PARK	THE BAY
CIRCULATION								
Bay Trail / Blue Greenway	●	● ●	●	●	●	●	●	●
Class I Commuter Bike & Ped Path				●		●		
Waterfront Access	●		●	●	●	●		●
Car & Bike Share Facilities				●		●		
Vehicular Parking	●		●	●		●		
Wayfinding	●	●		●	●	●	●	●
ACTIVE								
Playground			●	●		●	●	
Athletic Field / Large Lawn			●			●	●	
Recreation Center						●		
Basketball Courts			●				●	
Tennis Courts						●	●	
Fitness				●		●	●	
Dog Areas with Water Access				●		●	●	●
Off-Leash Dog Area	●			●		●		
Trails	●	● ●	●	●	●	●	●	
PASSIVE								
Picnic Area	●	●	●	●	●	●	●	
BBQ	●		●			●	●	
Restrooms	●			●		●	●	
Performance				●		●	●	
Plaza / Promenade	●	●		●	●	●	●	
Art / Sculpture		●	●	●	●	●	●	
Bird Watching	●	●		●	●	●		●
WATER								
Beach								●
Fishing	●			●	●	●		●
Boating / Kayaking / Boat Building			●	●	●	●		●
Sail Boating				●				●
HABITAT								
Wetlands	●		●	●	●	●		●
Native Plantings	●	●		●		●	●	
Orchards / Nursery				●			●	
Living Shoreline Pilot Project				●	●	●	●	
BUSINESS / CULTURAL / AMENITY								
Café / Restaurant				●	●	●		●
Job Center	●	●		●		●		
Historic / Cultural Activity		●		●		●		

SUNDAY STREETS





India Basin Waterfront Parks & Trails ...what's your Vision?

OTHER OUTREACH



BLACK LOVE FESTIVAL

India Basin Waterfront Parks & Trails...what's your Vision?

It would be great if...
Access by Public Transit
Sports fields
Picnic/BBQ spots
Play Structures for families

people + places + experiences

India Basin Waterfront Parks & Trails...what's your Vision?

It would be great if...
African-American
freedom trail...
signs + connections
tours & education

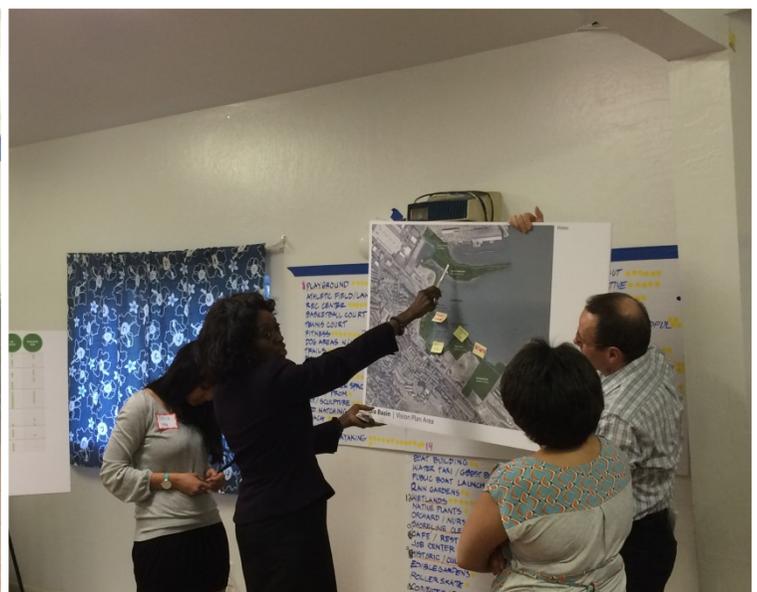
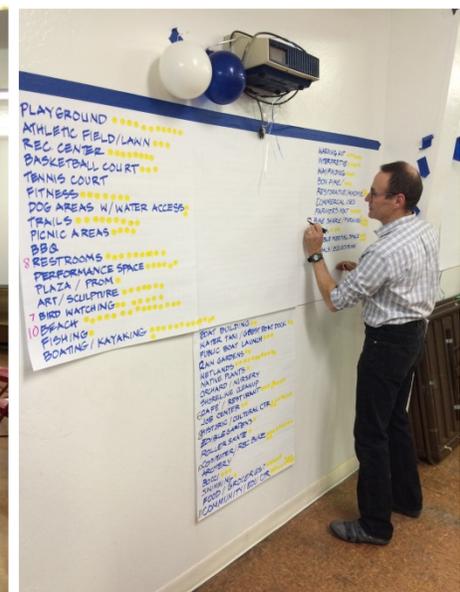
people + places + ex



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TASK FORCE MEETING #1



QUESTIONS/COMMENTS

- ☑ WATER TAX/SERVICE?
 - BY DRY DOCKS, PARCEL "C"?
 - NO OPERATOR YET = 10 YRS
- ☑ INDIA BASIN IS VERY SHALLOW
 - NEED MORE DATA ON DEPTHS
 - PENDING BATHYMETRY
- ☑ CONSIDER BAY TRAIL CONNECTIONS
- ☑ SEDIMENT TESTING? NOT SAMPLED YET
 - PG+E AREA SEDIMENTS NOT PAD
 - RELATIVELY CLEAN FILL
- ☑ NOT MUCH NEW NET SEDIMENT DEPOSIT
- ☑ 100% SEA LEVEL RISE ESTIMATE
SEE HATCH ON PLAN
- + DON'T FORGET THE PEOPLE HERE
NOW, NOT ONLY FUTURE RES + VISITORS
- + HUNTER'S POINT PROJECT AREA PLAN
COMMUNITY-WIDE VISION

HAVE WE MISSED ANY STUDIES?

- + INDIABASIN SUB-AREA PLAN
 - OPEN SPACE
 - COMMUNITY CTR
 - MAINTENANCE USES
 - STAIRS/ACCESS TO HILLSIDE AREAS
- + IBNA COMMUNITY VISION
 - BLUE GREENWAY
 - DOGS,
 - CULTURAL CTR
 - SIGNATURE PARK
 - CHILDREN'S SERVICES
- + BLUE GREENWAY
 - H₂O FRONT OPEN SPACE
 - SIGNAGE/WAYFINDING
 - STANDARDS/DESIGN
- + IBTCAP
 - BUS/BIKES/DOGS/PED/TRUCKS/CARS
 - HOW TO ACCOMMODATE?
 - VISION FOR PUBLIC REALM
- + PROJECT-SPECIFIC PLANS
 - LENNAR DDA + TRANSPORTATION
 - CONNECT + COORDINATE

* ECONOMIC SUCCESS!!
- HEALTHY FOOD
- SERVICES + AMENITIES
- JOBS

- + BICYCLE STRATEGIC VISION
"VISION ZERO"
DEPT OF PUBLIC HEALTH
SAFE, COORD. STREETS/CIRCULATION
- + COMMUNITY HEALTH ASSESSMENT
- + "COMMUNITY COMMONS" MAP OVERLAYS
HEALTH / SOCIAL
- + PUBLIC SPACE/PUBLIC LIFE SURVEY
(GEHL STUDIO) ONLINE TRACKING
FOR WHOLE CORRIDOR

NEXT TIME...

☑ PRESERVE NATURAL IDENTITY + HABITAT

- ☑ RESILIENCY ... ADAPTATION
- ☑ PUBLIC-PRIVATE PARTNERSHIPS
- ☑ DEMOGRAPHICS, SOCIO-ECONOMIC ISSUES? SNA
- ☑ SFUSD - IMPORTANT TO ATTEND

TASK FORCE MEETING #1

- PLAYGROUND 11
- ATHLETIC FIELD/LAWN
- REC. CENTER 8
- BASKETBALL COURT
- TENNIS COURT
- FITNESS 7
- DOG AREAS W/WATER ACCESS
- TRAILS 9
- PICNIC AREAS
- BBQ
- RESTROOMS 10
- PERFORMANCE SPACE
- PLAZA / PROM
- ART/SCULPTURE
- BIRD WATCHING
- BEACH 15
- FISHING
- BOATING / KAYAKING

- BOAT BUILDING
- WATER TAXI / GUEST BOAT DOCK
- PUBLIC BOAT LAUNCH
- RAIN GARDENS
- WETLANDS
- NATIVE PLANTS
- ORCHARD / NURSERY
- SHORELINE CLEANUP
- CAFE / RESTURANT
- JOB CENTER
- HISTORIC / CULTURAL CTR
- EDIBLE GARDENS
- ROLLER SKATE
- COMPUTER / REC BIKE
- ARCHERY
- BOCC /
- SWIMMING
- FOOD / GROCERIES?
- COMMUNITY / EDU CTR

- WARMING HUT
- INTERPRETIVE
- WAY FINDING
- BON FIRE!
- RESTORATIVE / MINDFUL
- COMMERCIAL USES
- FARMERS MKT
- BIKE SHARE / PARKING
- SCHOOL
- FLEXIBLE MEETING SPACE
- ANIMALS / EQUESTRIAN



India Basin | Vision Plan Area

PLAYGROUNDS NATURAL PLAY
 CHILDREN, FAMILIES, COMMUNITY
 SAFE
 RESTROOM EDUCATION
 EASY ACCESS ART
 CREATIVITY

WETLANDS
 CLIMATE ADAPTATION, MITIGATION
 ENV. EDUCATION
 RARE OPPORTUNITY (SO BUILT!)

COMMUTER + REC. BIKE ROUTES
 ALT. TO PUBLIC TRANSIT
 SAFE, LOW COST
 SPEED/EFFICIENCY
 COORD. IMPROVEMENTS
 FUTURE!! PREF'D MODE

2-WAY CLASS I

BEACH
 WARM-FAMILY-FR
 NATURAL
 LONG + SHORT-TERM PLANNING "FIT"
 WHERE? ... OPP'S + CONSTRAINTS

BOATING / KAYAKING
 EXISTING
 COMM FITNESS/HEALTH
 YOUTH + NON-PROFIT WATER ACCESS
 AQUATICS PROGRAM
 IDEAL FOR BEGINNERS
 PROTECTED "BNA YRLY EVENT"
 CALM
 OTHER LAUNCH POINTS ARE OFF PIERS (BEACH LAUNCH EASIER)
 UNIQUE PERSPECTIVE!!

COMMUNITY CENTER (LOCAL!)
 BRING COMMUNITY TO THE WATER FRONT
 MULTIPLE LOCATIONS

CULTURE / HISTORY
 PRESERVE / MAINTAIN PAST / HISTORY
 REGIONAL ATTRACTION
 HIGHLINE STYLE "GLIMPSES"
 INTO THE PAST (CRANE COVE EX.)
 SHIPWRIGHTS COTTAGE

BIRD WATCHING
 "LIFE-CHANGING!"
 BIRDS OF HERON'S HEAD BOOK
 "EASY WIN" / DESTINATION

CAFE / WARMING HUT
 FOOD + MULTIPLE OFFERINGS
 HISTORIC
 CONCESSION STYLE 'ROTATION'
 NEAR TRANSP. HUB

CONCERNS WE HEARD:

- **Impacts on wetlands and habitat: dogs, kayaking/boating, trails (consider potential seasonal closures)**
- **Range of contamination throughout the basin**
- **Loss of wetlands & habitats with sea level rise**
- **What else?**



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USES, AMENITIES & PROGRAM

TECHNICAL STUDIES CONDUCTED

BASIN WIDE STUDIES

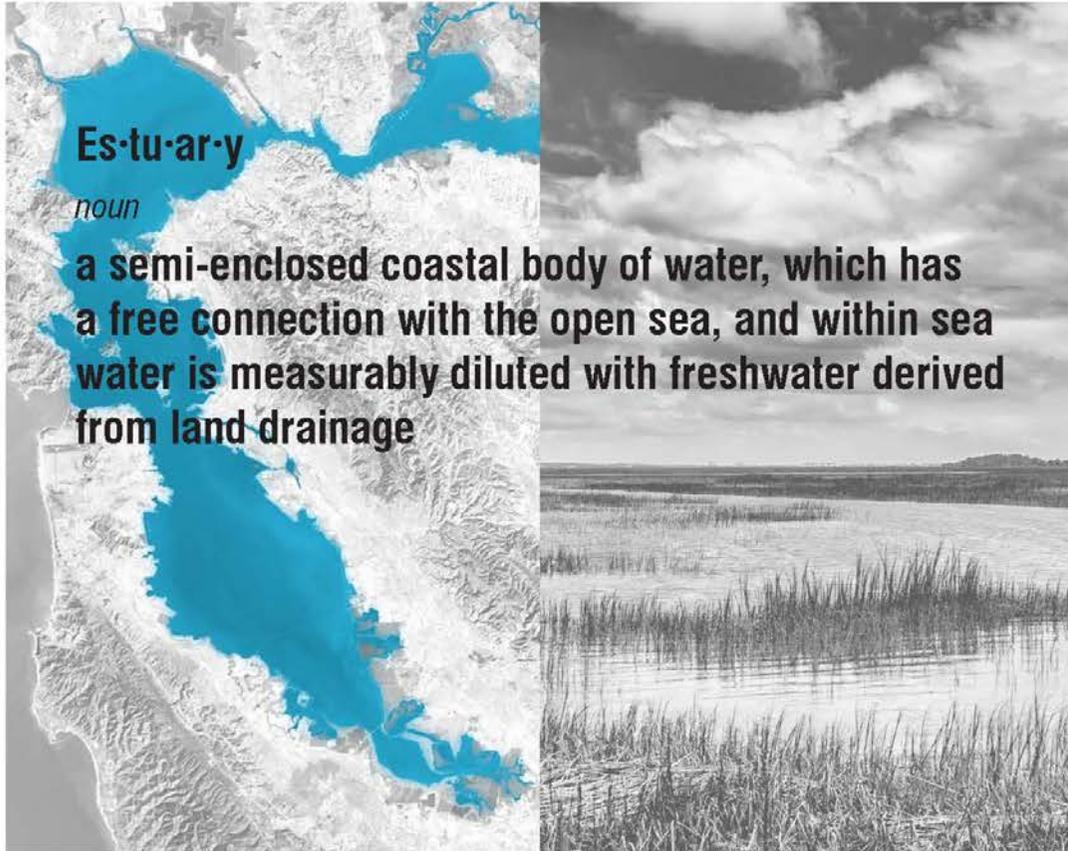
- Bathymetry & Topographic Surveys
- Coastal Processes Study
- Sea Level Rise – Opportunities & Constraints
- India Basin Transportation Action Plan

FOCUS AREA

- Biological Resources Assessment
- Wetlands Delineation
- Delineation of Jurisdictional Waters
- Preliminary Geotechnical Report
- Sediment Analysis
- Historic Report

HABITATS & WETLANDS

BASIN ESTUARY



PACIFIC COAST FLYWAY



Habitat

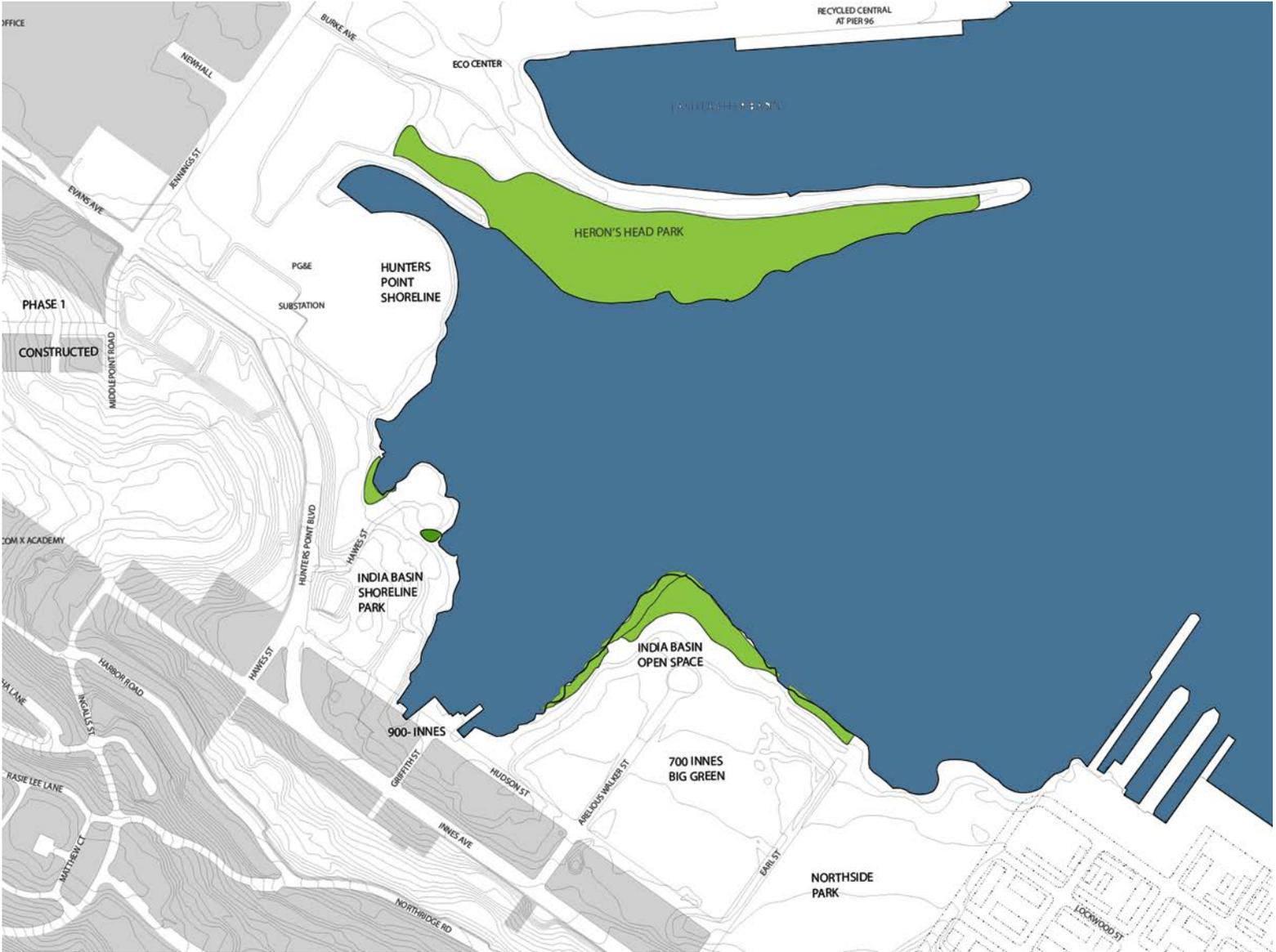
Biodiversity

Biological Resource Assessment conducted by WRA found the following species in India Basin:

- | | |
|---------------------------|------------------------|
| Snowy Egret | Saltgrass |
| Great Egret | Longbeak Stork's Bill |
| Great Blue Heron | Redstem Stork's Bill |
| Whimbrel | Blue Gum |
| Willet | Rattail Fescue |
| American Avocet | Red Fescue |
| Black-Necked Stilt | Fennel |
| Brown Pelican | Woodland Strawberry |
| Canada Goose | Alkali Heath |
| American Coot | French Broom |
| Western Grebe | Outleaf Geranium |
| American Wigeon | Woodland Geranium |
| Ruddy Duck | Corndaisy |
| Bufflehead | Oregon Gumweed |
| Western Gull | Bristly Ox-Tongue |
| Anna's Hummingbird | Toyon |
| Northern Mockingbird | Telegraph Weed |
| House Finch | Mediterranean Barley |
| Rock Pigeon | Foxtail |
| Eurasian Collared Dove | Douglas' Iris |
| Brewer's Blackbird | Marsh Jaunitea |
| American Crow | Rush |
| Common Raven | Lily (Not in Bloom) |
| European Starling | Sealovender |
| California Towhee | Weist Mudwort |
| White-Crowned Sparrow | Bird's-Foot Trefoil |
| Botta's Pocket Gopher | Silver Bush Lupine |
| Raccoon | Yellow Bush Lupine |
| Sierran Tree Frog | Cheeseweed Mallow |
| Western Tiger Swallowtail | Bur Medic |
| Purple Shoreline Crab | Sticky Monkey |
| Silver Wattle | Bermuda Buttercup |
| Common Yarrow | Tropical Pckeweed |
| California Buckeye | Buckhorn Plantain |
| Annual Agoseris | English Plantain |
| Coast Sagebrush | Fremont Cottonwood |
| Slender Oat | Narrowleaf Firethorn |
| Wild Oat | Coast Live Oak |
| Coyote Brush | Wild Radish |
| Chilean Brome | Himalayan Blackberry |
| Ripgut Brome | Curly Dock |
| Soft Chess | Pickleweed |
| Foxtail Chess | Arroyo Willow |
| European Saarocket | Milk Thistle |
| Water Starwort | Shamrock Clover |
| Sea Fig | Pubescent Common Vetch |
| Isoplat | |
| Red Valerian | |
| Pampas Grass | |



EXISTING WETLANDS



STRATEGY 1

HERON'S HEAD PARK

- Identify opportunities to enhance or create wetlands and a range of habitats

HERON'S HEAD PARK

- Respect existing habitats and species in the design and construction process

INDIA BASIN OPEN SPACE

INDIA BASIN SHORELINE PARK

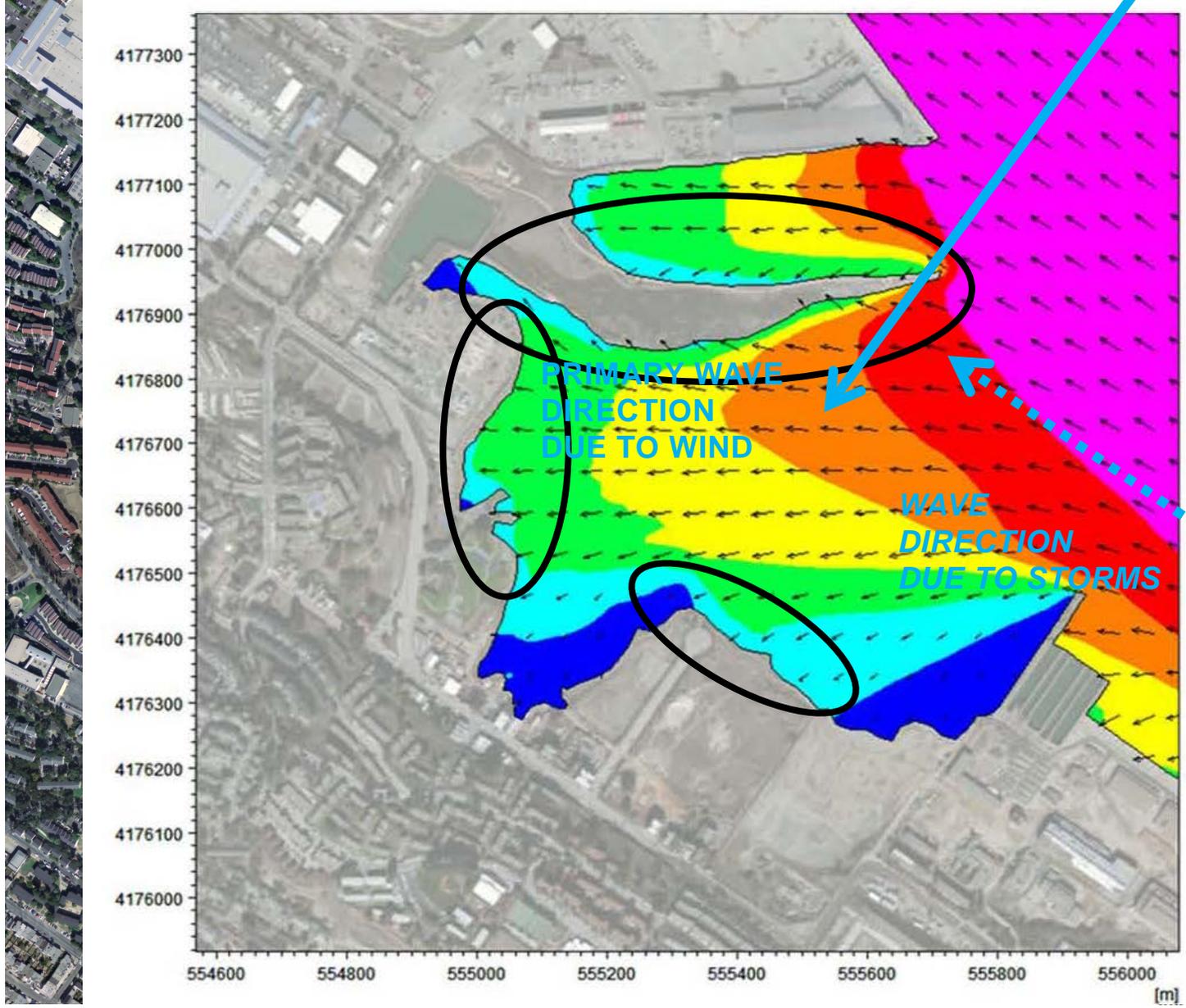
BAY PROCESSES & CHARACTERISTICS

WAVE ENERGY & EROSION

○ areas impacted by wave energy

Sign. Wave Height (feet)

█ Above 6
█ 5-6
█ 4-5
█ 3-4
█ 2-3
█ 1-2
█ Below 1
█ Undefined value



Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study

STRATEGY 2

Use **living shoreline projects** to test strategies for:

- erosion control
- wave attenuation
- habitat improvement / creation

TYPES OF LIVING SHORELINES:

- Tidal Marsh & Brackish Marsh
- Floating Wetlands
- Eel Grass Beds
- Oyster Reefs
- Engineered Dune
- Artificial Reef & Tide pools





LIVING SHORELINES

FLOATING WETLANDS



TIDAL MARSH

USGS



EELGRASS



OYSTER BEDS

BATHYMETRY

DEFINITION

BATHYMETRY:

(n) underwater topography depths

HIGHEST TIDE +9.42'

LOWEST TIDE -2.80'



Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study; Sea Level Rise Opportunities & Constraints, WRA

STRATEGY 3

DEFINITION

BATHYMETRY:

(n) underwater topography depths

 Potential Human-powered Boat Launch

HIGHEST TIDE +9.42'

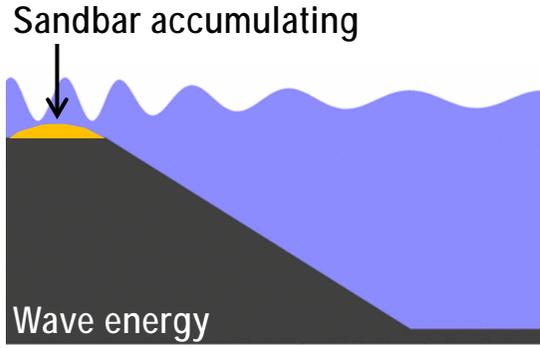
LOWEST TIDE -2.80'

Locate multiple **human-powered boat launches** throughout the basin where the **lowest tide line** is closest to the shoreline



Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study; Sea Level Rise Opportunities & Constraints, WRA

SHOALING



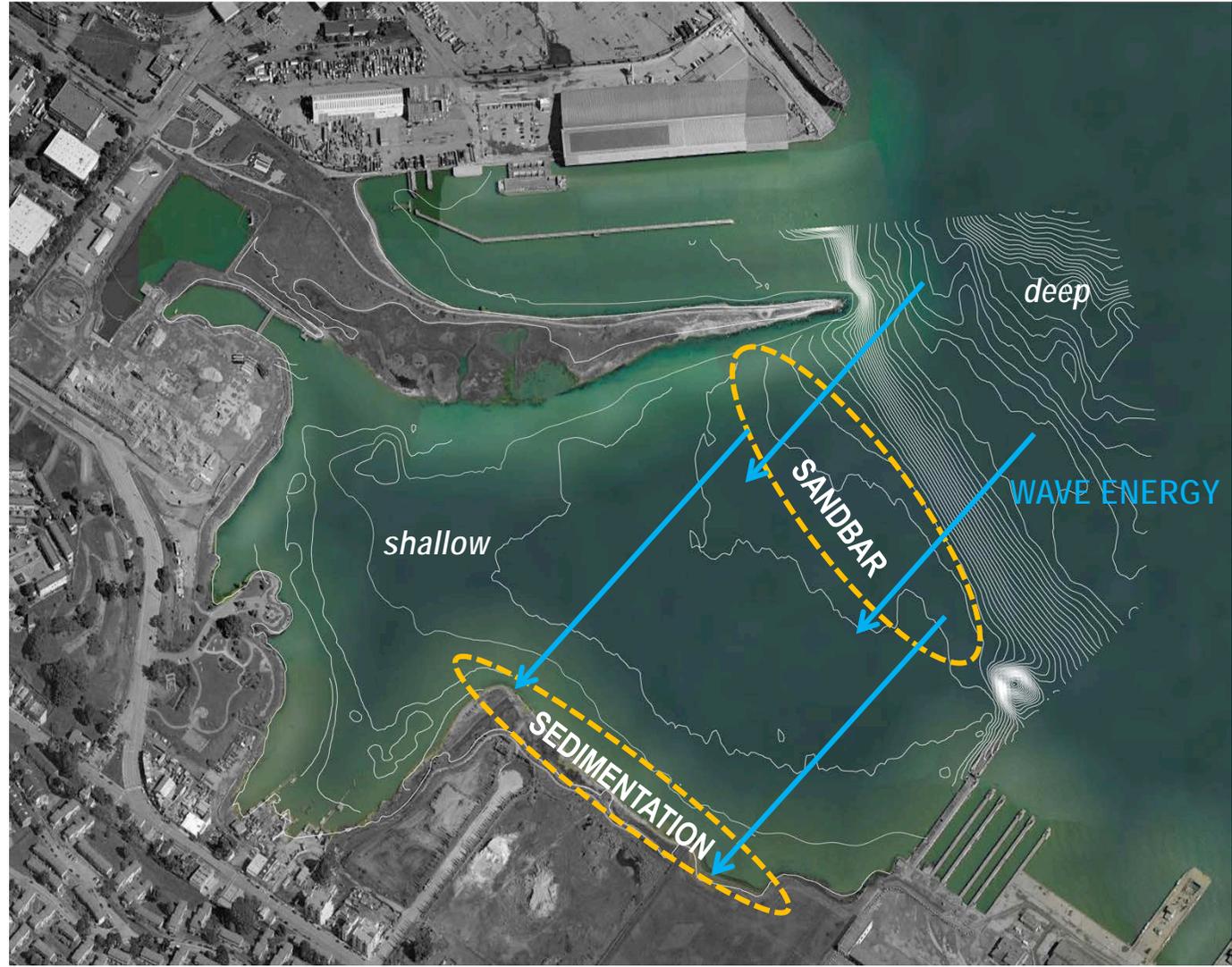
DEFINITIONS

SHOALING:

(n) sandbank or sand bar in a shallow water body

(v) to become shallow as a result of wave energy

Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study; Sea Level Rise Opportunities & Constraints, WRA



STRATEGY 4

- Design to accommodate natural sedimentation processes of the basin
- Consider opportunity to create beach and/or enhance sand dunes on Northeast shoreline of India Basin Open Space



CLIMATE CHANGE & SEA LEVEL RISE

SEA LEVEL RISE (Most Likely Scenario)

Legend

- 2100 +46"
- 2100 +26"
- Existing Sea Level

Predicted "MOST LIKELY SCENARIO"
Sea Level Rise*
2100 = 26" to 46" above existing mean sea level

*One SF: "Guidance for Incorporating Sea Level Rise Into Capital Planning in San Francisco", 2014

*BCDC: Sea Level Rise Policies Fact Sheet

Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study; Sea Level Rise Opportunities & Constraints, WRA



STRATEGY 5

Create **continuous band of habitat** along the waterfront as a buffer from sea level rise.

Create **continuous access and signage/wayfinding** along the waterfront.

Anticipate that short-term investments located near the shoreline may **need to be relocated upland in the future given long-term sea level rise.**



PREDICTED FLOODING DURING STORMS



Flood Prediction for 100-yr storm (worst case scenario) per FEMA prediction

Source: Coastal Processes Report, Moffat & Nichol, India Basin Waterfront Study
FEMA: Federal Emergency Management Agency



STRATEGY 6

Locate all major capital improvements **AT or ABOVE elevation +20'**

INCLUDES:

- Utilities
- Roads
- Restrooms
- Permanent Structures & Facilities
- Infrastructure
- Bridges



STRATEGY SUMMARY

1. Identify opportunities to **enhance or create wetlands** and a **range of habitats**.
Respect existing habitats and species in the design and construction process.
2. Use **living shoreline projects** to test strategies for **erosion control, wave attenuation,** and **habitat improvement / creation**.
3. Locate **multiple human-powered boat launches** throughout the basin where the **lowest tide line is closest to the shoreline**.
4. Design to accommodate sedimentation processes of the basin. Consider opportunity to **create beach** and/or **enhance sand dunes** on Northeast shoreline of India Basin Open Space.
5. Create **continuous band of habitat** along the waterfront as a buffer from sea level rise. Create **continuous access and signage/wayfinding** along the waterfront. Anticipate that short-term investments located near the shoreline may **need to be relocated upland in the future given long-term sea level rise**.
6. Locate all major **capital improvements AT or ABOVE elevation 20'**.



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USES, AMENITIES & PROGRAM

**POTENTIAL USES,
AMENITIES & PROGRAM**

**(POSTER SESSION
/ DISCUSSION)**

CIRCULATION	 Rentals	 Parking		
ACTIVE	 Playground	 Athletic Field // Lawn	 Basketball Courts	 Fenced Off-Leash Dog Area
	 Fitness	 Recreation Center	 Tennis Courts	
PASSIVE	 Picnic Area	 Restrooms	 Plaza	 Bird Watching
	 BBQ	 Performance	 Art + Sculpture	
	WATER	 Beach	 Human Powered Boating	 Fishing
HABITAT	 Wetlands			
COMMERCIAL / CULTURAL AMENITY	 Cafe	 Jobs	 Historic // Cultural Center	
	POTENTIAL PROGRAM FOR ALL SITES not shown on map	 Wayfinding	 Trails	 Living Shoreline