

October 6, 2020



## IDC PRESENTATION

# BEACH REMEDIATION EQUIPMENT PACKAGE, SERVICES AND SUPPLIES

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Public Works Director



# 2020 STORM SEASON ACTIVITY

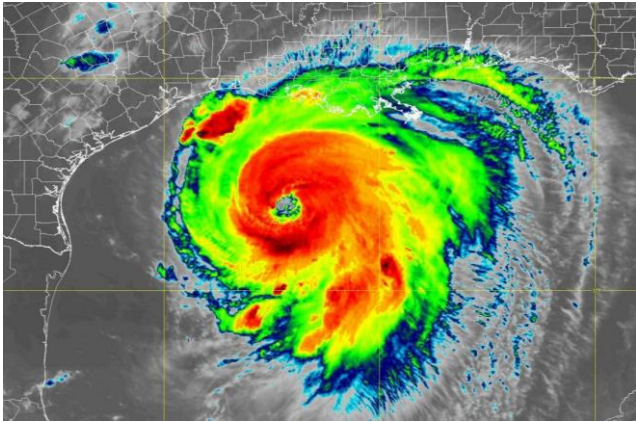
JUNE 2020 – TROPICAL STORM CHRISTOBOL

JULY 2020 – HURRICANE HANNA

AUGUST 2020 – HURRICANE LAURA

SEPTEMBER 2020 – TROPICAL STORM BETA

OCTOBER 2020 – ...



# HURRICANE LAURA



August 2020

Intensity:	Category 4 (150 mph winds) Storm Surge 2-4 ft
Landfall:	August 27, 2020 Cameron, LA ( $\pm 95$ miles East of Galveston)
Rainfall:	$\pm \frac{1}{4}$ -inch (local)



# TROPICAL STORM BETA

September 2020

Intensity: Trop. Storm (60 mph winds) Storm Surge 3-5 ft  
Landfall: September 21, 2020  
Matagorda Bay, LA ( $\pm 97$  miles West of Galveston)  
Rainfall:  $\pm 4 \frac{1}{4}$ -inches (local)

# 2020 DAMAGE COMPILATION





# STORM CLEANUP PROCESS

## TROPICAL STORM CHRISTOBOL:

- Place sand washed up back on the beach
- **Complaint – Sand not considered “Beach Quality” (Impurities Present ~ GLO)**

## HURRICANE HANNA:

- No reported damages

## HURRICANE LAURA:

- Sand hauled to disposal site (Impurities Present)
- **Complaint – Sand taken away**
- Discuss returning sand to the beach with GLO
- City/GLO agree on procedure (Staff to oversee sand relocation & physically remove impurities)



# STORM CLEANUP PROCESS Cont'd

## HURRICANE LAURA Cont'd:

- City crews begin restoring sand to beach
  - Relocate and remove impurities
  - Spread sand out 10 ft from toe of existing dunes to naturally accrete (avoidance of preferential treatment)
- **Complaint: Sand not being used to build dunes**
- City crews begin bringing sand hauled from stockpile back to beach and pile up against dunes

## TROPICAL STORM BETA:

- City crews begin separating debris from sand
- Dunes completely wiped out (new restoration process needed)
- Discuss options with GLO



# DAMAGES: HURRICANE SEASON 2020



- BODDEKER (looking East)



- BODDEKER (looking West)



# DAMAGES: HURRICANE SEASON 2020 Cont'd



- DELLANERA PARK



- DELLANERA PARK PEDESTRIAN BRIDGE



# DAMAGES: HURRICANE SEASON 2020 Cont'd



- BUENA VISTA DR @ SPANISH GRANT



# DAMAGES: HURRICANE SEASON 2020 Cont'd



- BERMUDA BEACH DR @ BERMUDA BEACH



# DAMAGES: HURRICANE SEASON 2020 Cont'd



- MAISON ROUGE @ PIRATES BEACH (PRE-LAURA)



- MAISON ROUGE @ PIRATES BEACH (POST BETA)





# DAMAGES: HURRICANE SEASON 2020 Cont'd



- SAND PIPER @ PIRATES BEACH (PRE-LAURA)



- SAND PIPER @ PIRATES BEACH (POST BETA)





# DAMAGES: HURRICANE SEASON 2020 Cont'd



- SWASHBUCKLE @ PIRATES BEACH WEST (PRE-LAURA)



- SWASHBUCKLE @ PIRATES BEACH WEST (POST BETA)





# DEPARTMENT NEEDS FOR CLEANUP EFFORTS

- SAND CLEANUP: BARBER SURF RAKE
- SAND CLEANUP & DEBRIS REMOVAL: SAND SCREENING EQUIPMENT
- FLOODWATER DISPOSAL: TRAILER MOUNTED DEWATERING PUMP
- SAND FENCING & DEBRIS REMOVAL

# SAND CLEANUP



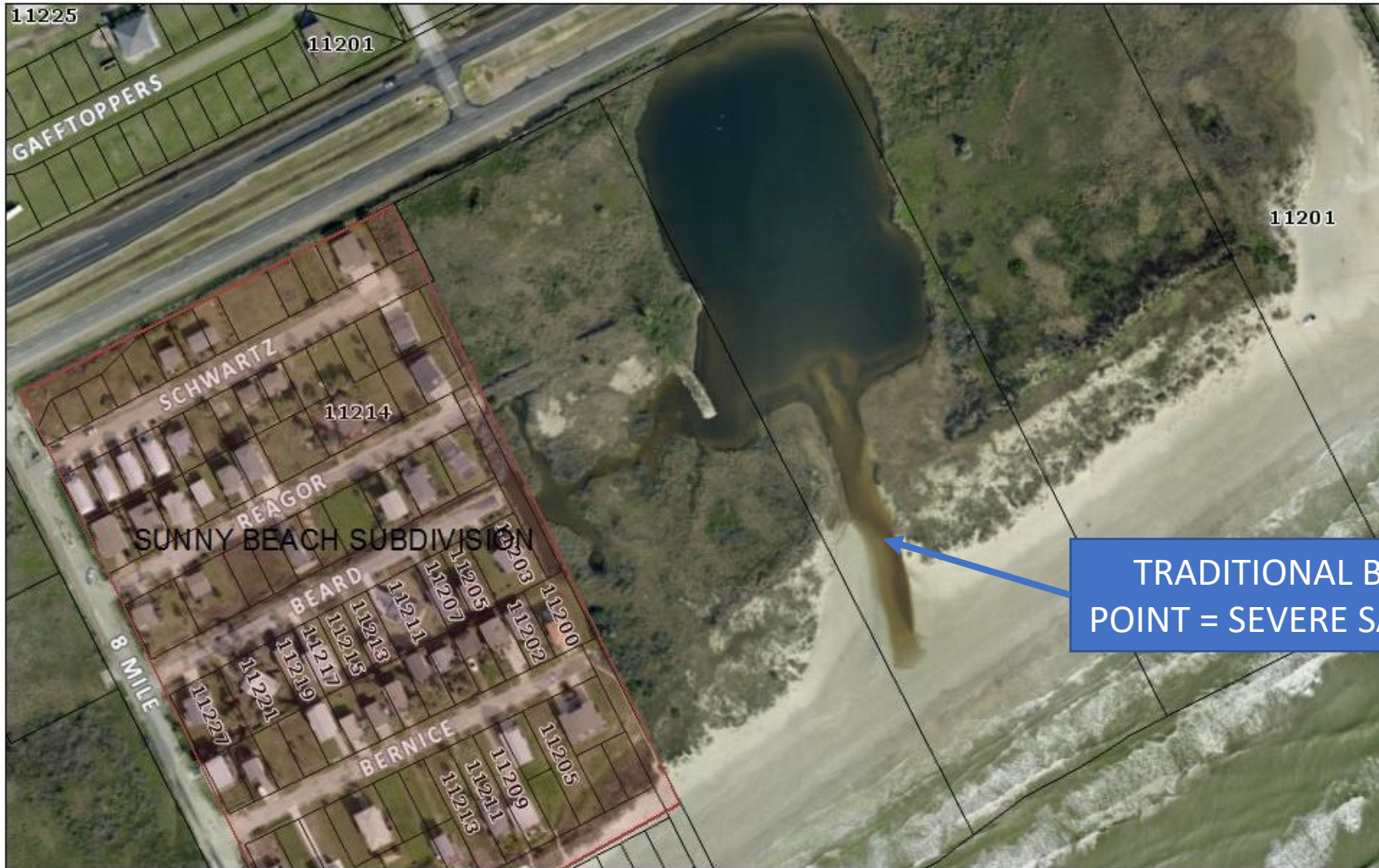
[https://youtu.be/z8TTD\\_75Nyc](https://youtu.be/z8TTD_75Nyc)

# SAND CLEANUP & DEBRIS REMOVAL



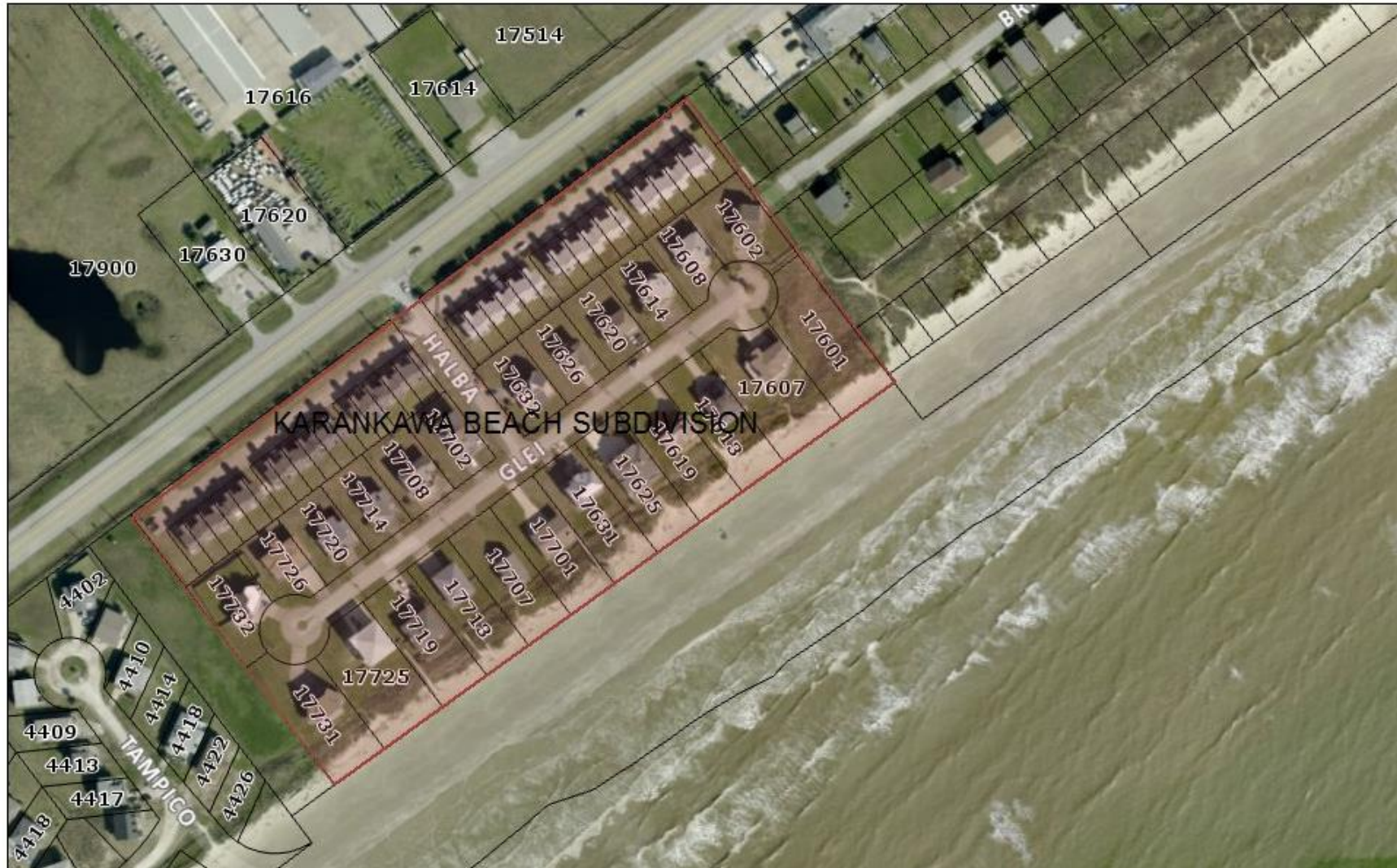
<https://youtu.be/sLqXmk1JsWw>

# FLOODING: SUNNY BEACH



TRADITIONAL BREACH POINT = SEVERE SAND LOSS

# FLOODING: KARANKAWA BEACH



# FLOODWATER REMOVAL: DEWATERING PUMP



<https://www.xylem.com/en-us/brands/godwin/godwin-products/godwin-nc150?jwsourc=cl>

# SAND FENCING



# CITY OWNED PARCELS: BERMUDA BEACH & SPANISH GRANT

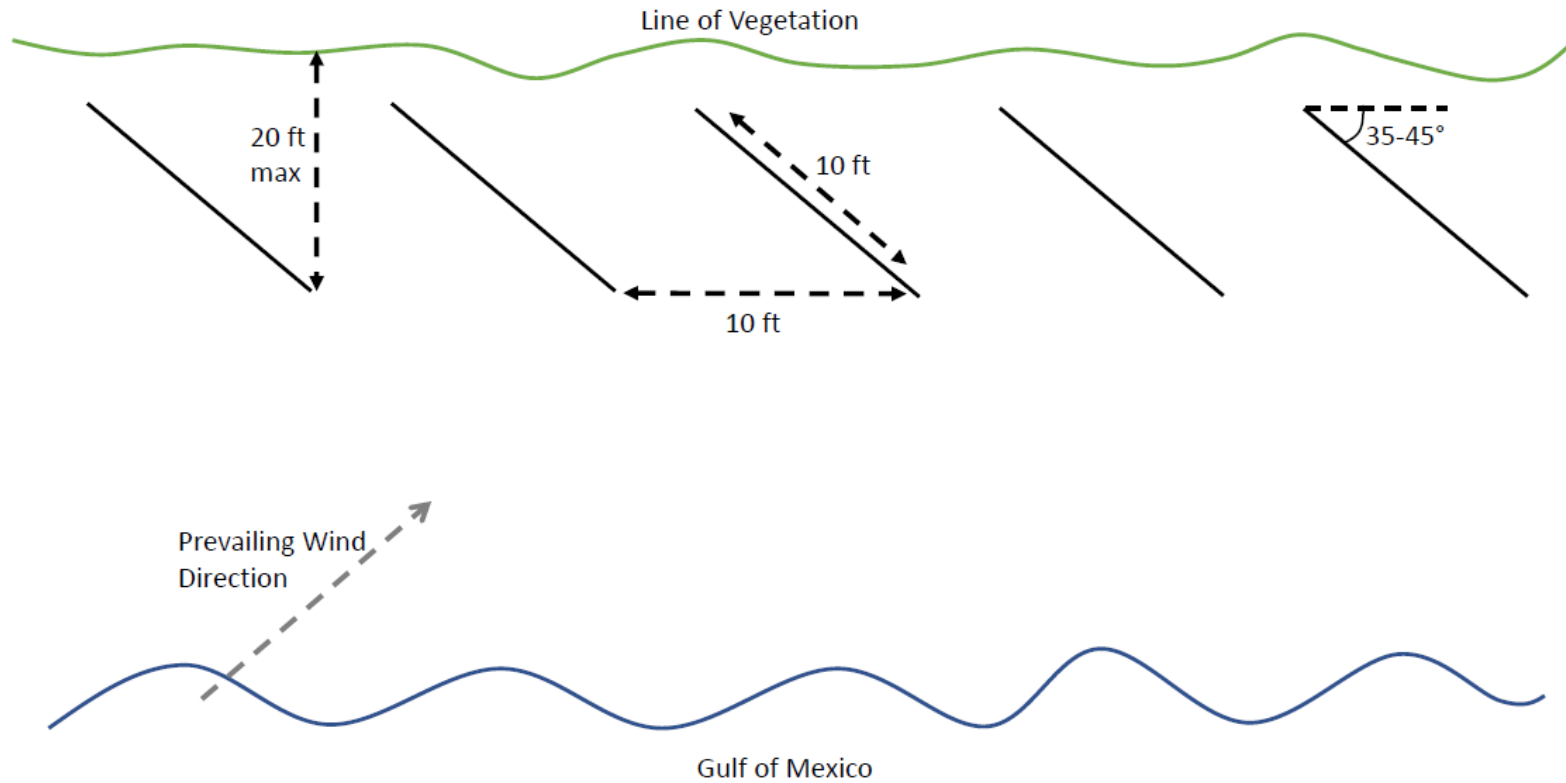


# CITY OWNED PARCELS: PIRATES BEACH





# SAND FENCING LAYOUT





# DEBRIS REMOVAL

## CONDUCTED ON CITY OWNED PROPERTY ONLY

- AVOIDS MISAPPROPRIATION OF PUBLIC FUNDS
- AVOIDS APPEARANCE OF PREFERENTIAL TREATMENT
- DOES NOT REQUIRE OUTSIDE APPROVAL





# DEPARTMENT NEEDS SUMMARY

BEACH REMEDIATION EQUIPMENT PACKAGE				
ITEM	DESCRIPRION	QUANTITY	UNIT COST	EXTENDED COST
		[#]	[\$]	[\$]
1	BARBER SURF RAKE	1	\$ 60,000.00	\$ 60,000.00
2	FRONT END LOADER SOIL SIFTING ATTACHMENT	1	\$ 65,000.00	\$ 65,000.00
3	6-INCH TRAILER MOUNTED TRASH PUMP	1	\$ 90,000.00	\$ 90,000.00
4	SAND FENCING MATERIALS & INSTALLATION, AND DEBRIS REMOVAL ON CITY OWNED LOTS	1	\$ 100,000.00	\$ 100,000.00
<b>EQUIPMENT SUBTOTAL:</b>				\$ 315,000.00
<b>CONTINGENCY (5%):</b>				\$ 15,750.00
<b>TOTAL:</b>				\$ 330,750.00



?'s

Engineered Beaches on Galveston Island



Dellanera/Seascapes

Babe's Beach

Historic Seawall Beach