

The following plan concept was submitted by John Root.

Requirements for Options with Breakwaters

- All options include north, south, central breakwater, and a sand nourishment program. Without all four elements the project will fail to retain sand and will fail to obtain required permits.
- WPD must acquire 261 Sheridan for any breakwater project to proceed. 261 Sheridan must be included in any sand nourishment program and is needed to support any required permits.
- Construction occurs with one mobilization. Each additional mobilization costs a wasteful \$600,000

WPD Elder 1/Centennial 1 Cost: \$2,285,324

Repair of Existing Beaches



WPD Elder Option1/Centennial Option1 Cost: \$2,285,324

Repair of Existing Beaches

- Advantages:
 - More natural beach
 - Lowest environmental impact on lake
 - Substantially less cost
 - The only option that doesn't require acquisition of 261 Sheridan
- Disadvantages
 - Less available beach
 - Less protection of beach sand

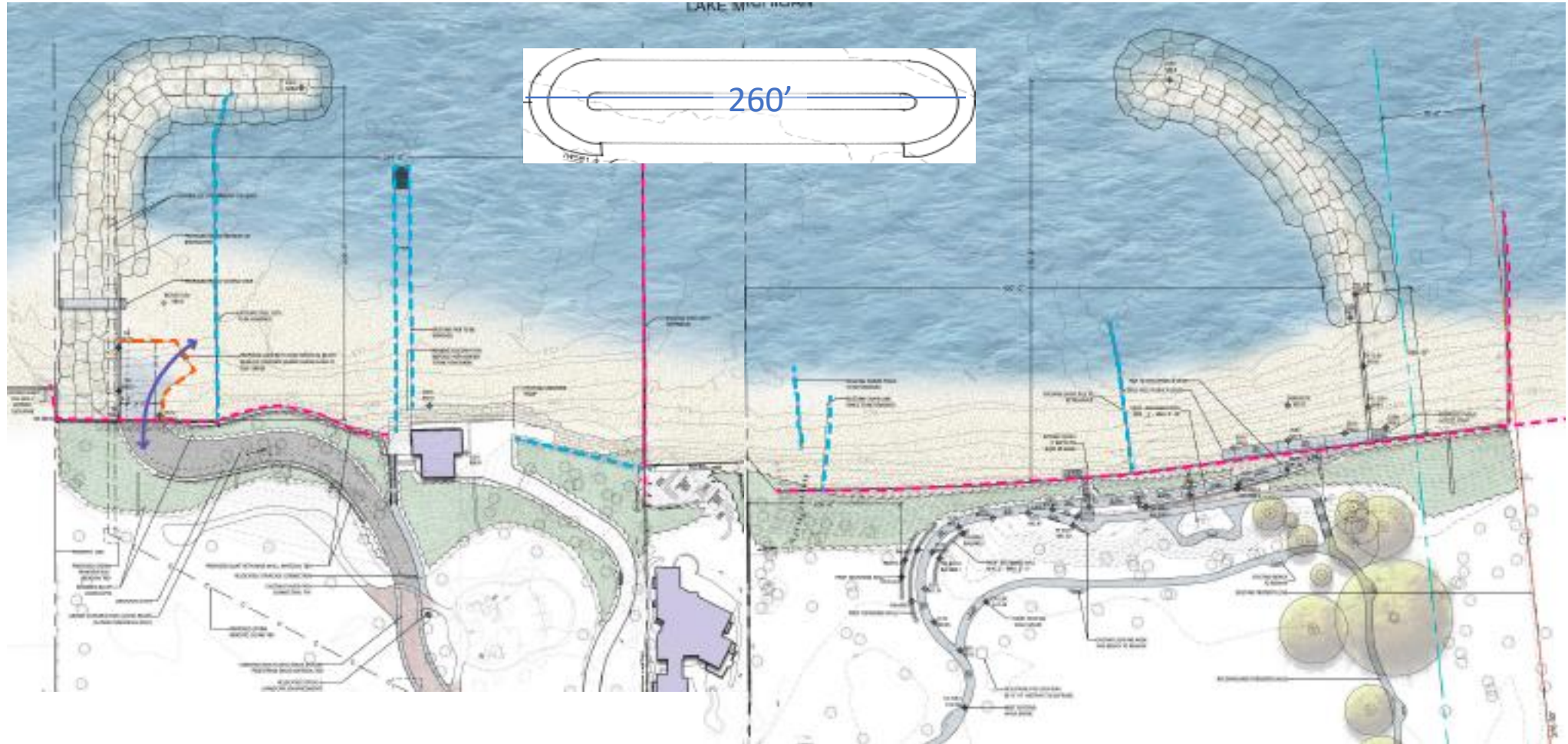
JWR Elder2/Centennial5 Cost: \$10,220,524

Medium Breakwaters

- Advantages:
 - Extended beach
 - Lowest environmental impact of breakwater options
 - Lowest cost of breakwater options
- Disadvantages
 - Less available beach than from longer breakwater options
 - Requires acquisition of 261 Sheridan

WPD Elder 2/Centennial 4 Cost: \$11,660,524

Long Stone & Steel Sheet Pile Breakwaters



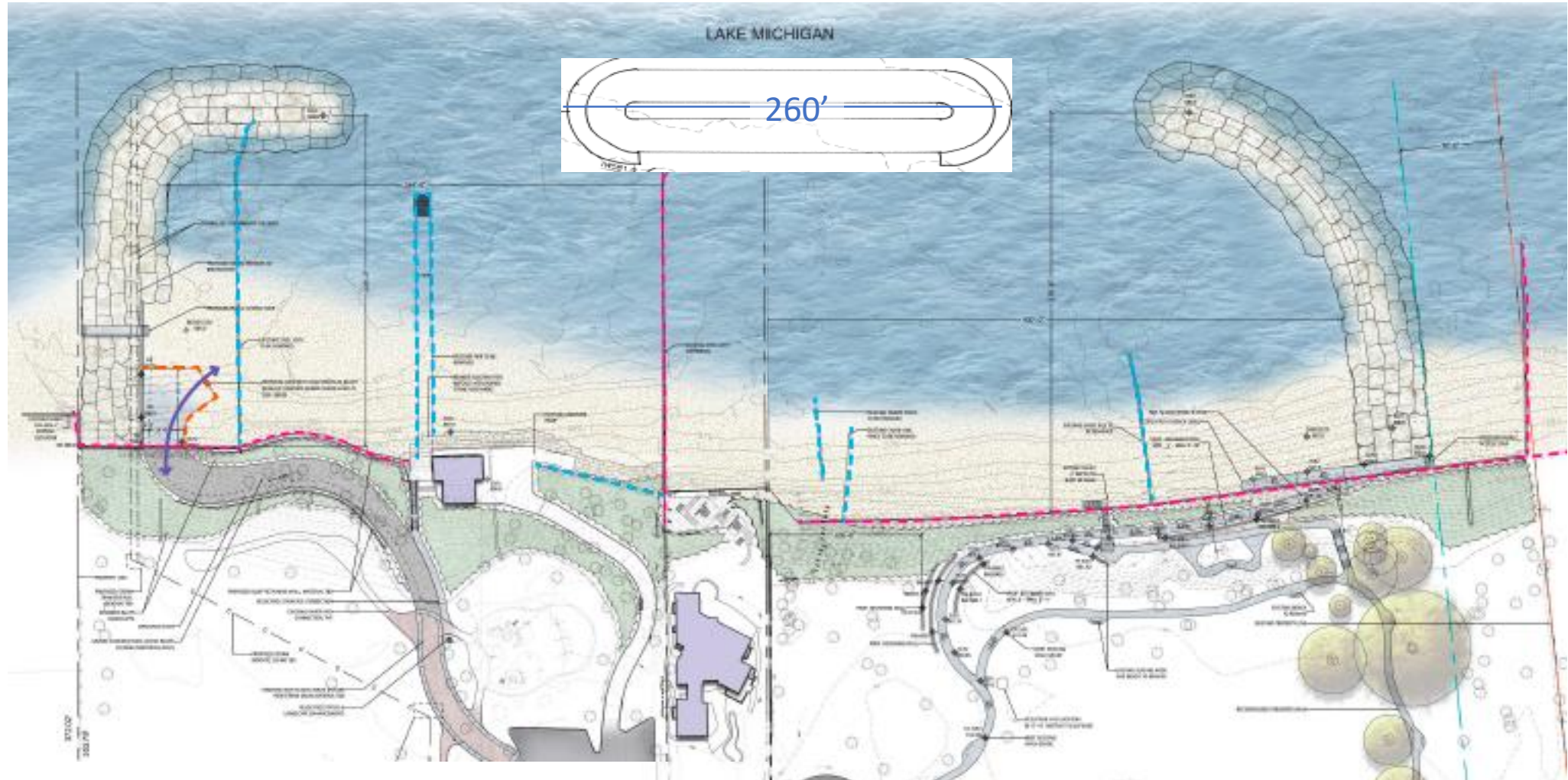
WPD Elder2/Centennial4 Cost: \$11,660,524

Long Breakwaters w Steel Sheet Pile

- Advantages:
 - Large beach
 - Lower cost (\$237,000) than stone breakwater only
- Disadvantages
 - Requires acquisition of 261 Sheridan
 - Stone breakwater with steel pile is an unvetted design
 - Large environmental impact on lake

WPD Elder 2/Centennial 5 Cost: \$11,897,524

Long Stone Breakwaters



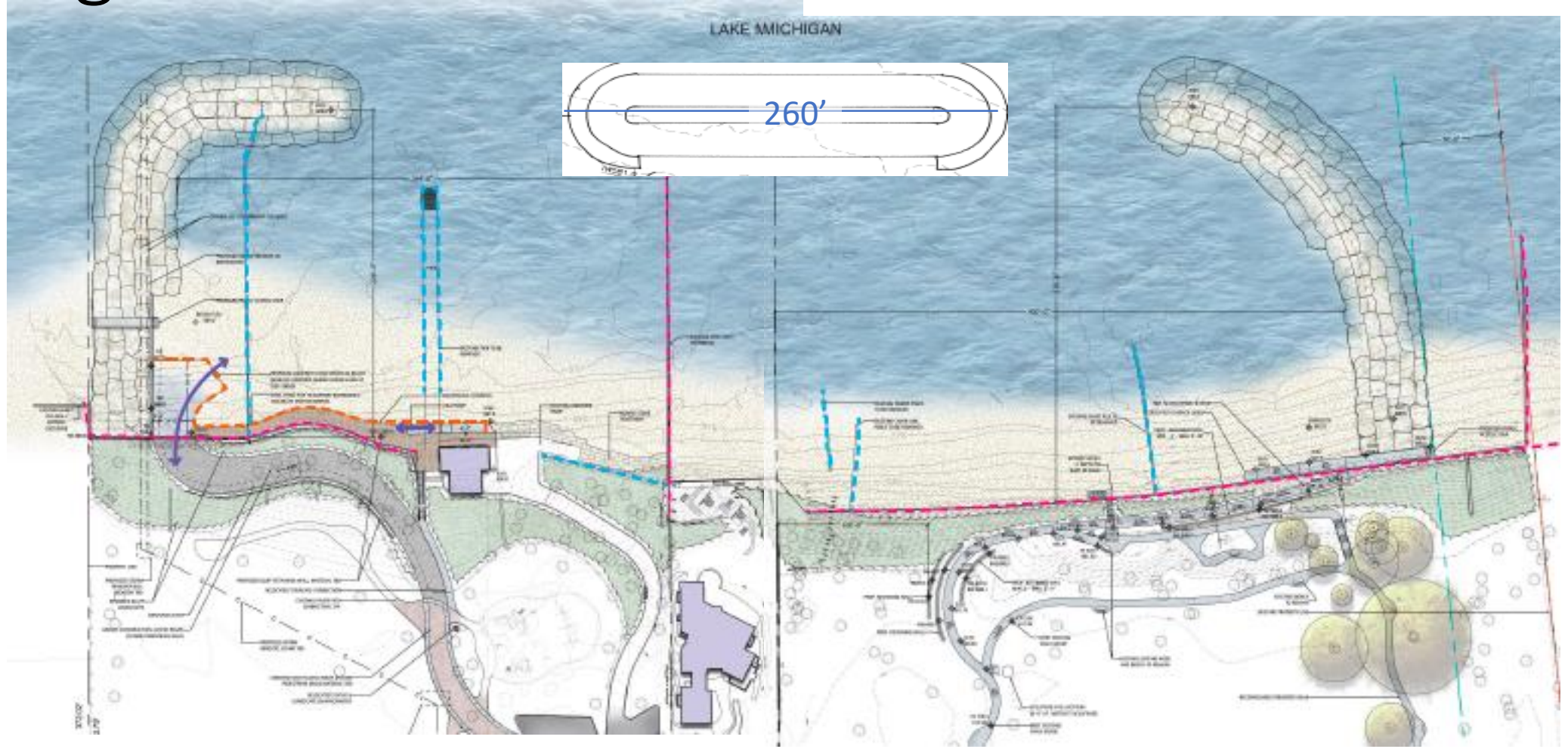
WPD Elder 2/Centennial 5 Cost: \$11,897,524

Long Breakwaters

- Advantages:
 - Large beach
 - Proven design for protecting beaches
- Disadvantages
 - Requires acquisition of 261 Sheridan
 - Large environmental impact on lake
 - More expensive than stone breakwater with steel sheet pile (\$237,000)

WPD Elder 3/Centennial 5 Cost: \$13,209,824

Long Breakwaters w Raised Boardwalk



WPD Elder3/Centennial5 Cost: \$13,209,824

Long Breakwaters w Raised Boardwalk

- Advantages:
 - Raised boardwalk w boat storage
 - Large beach
 - Proven design for protecting beaches
- Disadvantages
 - Expense of boardwalk w boat storage is large (\$1,312,300)
 - Requires acquisition of 261 Sheridan
 - Large environmental impact on lake

COST COMPARISON ALL OPTIONS		
Option	Description	Cost
WPD Elder 1/Centennial 1	Repair of Existing Beaches	\$2,285,324
JWR Elder 2/Centennial 5	Medium Breakwaters	\$10,220,534
WPD Elder 2/Centennial 4	Long Stone & Steel Sheet Pile Breakwaters	\$11,660,524
WPD Elder 2/Centennial 5	Long Stone Breakwaters	\$11,897,524
WPD Elder 3/Centennial 5	Long Breakwaters w Raised Boardwalk	\$13,209,824

Centennial Park + Beach:

OPTION 3: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	10000	\$450,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	350	\$2,037,000
Granite Staircase Lump Sum	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$4,563,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00		\$175,000
TOTAL			\$4,738,600

Centennial Park + Beach:

OPTION 1: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 25,000.00	1	\$25,000
Removal of Fencing and Wooden Structures	\$ 25,000.00	1	\$25,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
Extend Stairs	\$ 2,000.00	1	\$2,000
TOTAL			\$212,800
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 90,000.00		\$90,000
TOTAL	\$ 302,800.00		\$302,800

Elder Lane Park + Beach:

OPTION 1: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Removal of gabions	\$ 60,000.00	1	\$60,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	160	\$400,000
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	2000	\$90,000
Paving of Parking Lot	\$ 6.00	26254	\$157,524
Pier Repairs (by others) *	\$ 400,000.00	1	\$400,000
TOTAL	\$ 1,517,524.00		\$1,917,524
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 90,000.00		\$90,000
TOTAL	\$ 1,607,524.00		\$2,007,524

Elder Lane Park + Beach:

OPTION 2: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	175	\$437,500
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	9600	\$432,200
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$ 5,820.00	300	\$1,746,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	200	\$640,000
Concrete for ramp	\$ 100.00	1700	\$170,000
Access Roadway Stone w/Drainage	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$ 220,000.00	1	\$220,000
TOTAL			\$5,910,724
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00		\$175,000
TOTAL			\$6,085,724

Elder Lane Park + Beach:

OPTION 3:

Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per f	\$ 2,500.00	160	\$400,000
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	10800	\$486,000
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$ 5,820.00	300	\$1,746,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	420	\$1,344,000
Concrete for ramps (Vehicle & Walkv	\$ 100.00	2120	\$212,000
Access Roadway Stone w/Drainage	\$250,000.00	1	\$250,000
Retaining Walls	\$100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$220,000.00	1	\$220,000
Elevate Ipe Boardwalk 200 lf	\$525,000.00	1	\$525,000
TOTAL			\$7,198,024
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)			\$200,000
TOTAL			\$7,398,024

Centennial Park + Beach:

OPTION 5:

Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$600,000.00	1	\$600,000
Demo (Steel, fencing, wood piles)	\$100,000.00	1	\$100,000
Bluff Restoration	\$120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	350	\$2,037,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$250,000.00	1	\$250,000
Retaining Walls	\$120,000.00	1	\$120,000
Park Improvements (walkways and drinking fou	\$110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$300,000.00	1	\$300,000
TOTAL			\$4,708,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)			\$190,000
TOTAL			\$4,898,600

Centennial Park + Beach:

OPTION 2: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	250	\$1,455,000
Steel Staircase Lump Sum	\$ 50,000.00	1	\$50,000
Steel Sheet Piling 30'	\$ 3,200.00	228	\$729,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$4,386,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00		\$175,000
TOTAL			\$4,561,600

Centennial Park + Beach:

OPTION 4: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL	
Mobilization	\$ 600,000.00	1	\$ 600,000.00	\$600,000
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$ 100,000.00	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$ 120,000.00	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$ 540,000.00	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$ 40,800.00	\$40,800
35 ton per foot breakwater	\$ 5,820.00	250	\$ 1,455,000.00	\$1,455,000
Steel Staircase Lump Sum	\$ 25,000.00	1	\$ 25,000.00	\$25,000
Steel Sheet Piling 30'	\$ 3,200.00	228	\$ 729,600.00	\$729,600
Concrete for ramp	\$ 100.00	812	\$ 81,200.00	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$ 250,000.00	\$250,000
Retaining Walls	\$ 120,000.00	1	\$ 120,000.00	\$120,000
Park Improvements (walkways and drinking fountain)	\$ 110,000.00	1	\$ 110,000.00	\$110,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$ 300,000.00	\$300,000
TOTAL				\$4,471,600
SOFT COSTS				
(Engineering, plans/drawings, permit costs, etc)	\$ 190,000.00			\$190,000
TOTAL				\$4,661,600

Centennial Park + Beach:

OPTION 5: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	350	\$2,037,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
Park Improvements (walkways and drinking fountain)	\$ 110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$4,708,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 190,000.00		\$190,000
TOTAL			\$4,898,600

Centennial Park + Beach:

OPTION 6: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL	
Mobilization	\$ 600,000.00	1	\$ 600,000.00	\$600,000
Demo (Steel, fencing, wood piles)	\$ 90,000.00	1	\$ 90,000.00	\$90,000
Bluff Restoration	\$ 120,000.00	1	\$ 120,000.00	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$ 540,000.00	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$ 40,800.00	\$40,800
35 ton per foot breakwater	\$ 5,820.00	250	\$ 1,455,000.00	\$1,455,000
Steel Staircase Lump Sum	\$ 50,000.00	1	\$ 50,000.00	\$50,000
Steel Sheet Piling 30'	\$ 3,200.00	248	\$ 793,600.00	\$793,600
Concrete for ramp	\$ 100.00	1212	\$ 121,200.00	\$121,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$ 250,000.00	\$250,000
Retaining Walls	\$ 120,000.00	1	\$ 120,000.00	\$120,000
Dog Gate (utilities)	\$ 25,000.00	1	\$ 25,000.00	\$25,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$ 300,000.00	\$300,000
TOTAL				\$4,505,600
SOFT COSTS				
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00			\$175,000
TOTAL				\$4,680,600

Elder Lane Park + Beach:

OPTION 1: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Removal of gabions	\$ 60,000.00	1	\$60,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	160	\$400,000
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	2000	\$90,000
Paving of Parking Lot	\$ 6.00	26254	\$157,524
Pier Repairs (by others) *	\$ 400,000.00	1	\$400,000
TOTAL	\$ 1,517,524.00		\$1,917,524
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 90,000.00		\$90,000
TOTAL	\$ 1,607,524.00		\$2,007,524

Centennial Park + Beach:

OPTION 1: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Removal of Fencing and Wooden Structures	\$ 25,000.00	1	\$25,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
Extend Stairs	\$ 2,000.00	1	\$2,000
TOTAL			\$187,800
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 90,000.00		\$90,000
TOTAL	\$ 302,800.00		\$277,800
GRAND TOTAL ELDER/CENTENNIAL			\$2,285,324

Elder Lane Park + Beach:

OPTION 2: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	175	\$437,500
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	9600	\$432,200
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$ 5,820.00	300	\$1,746,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	200	\$640,000
Concrete for ramp	\$ 100.00	1700	\$170,000
Access Roadway Stone w/Drainage	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$ 220,000.00	1	\$220,000
TOTAL			\$5,910,724
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00		\$175,000
TOTAL			\$6,085,724

Centennial Park + Beach:

OPTION 4: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	250	\$1,455,000
Steel Staircase Lump Sum	\$ 25,000.00	1	\$25,000
Steel Sheet Piling 30'	\$ 3,200.00	228	\$729,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
Park Improvements (walkways and drinking fountain)	\$ 110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$3,871,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 190,000.00		\$190,000
TOTAL			\$4,061,600

Elder/Centennial Beach Central Breakwater

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
35 ton per foot breakwater	\$5,280	260	\$1,513,200.00
GRAND TOTAL			\$11,660,524.00

Elder Lane Park + Beach:

OPTION 3:

Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	160	\$400,000
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	10800	\$486,000
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$ 5,820.00	300	\$1,746,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	420	\$1,344,000
Concrete for ramps (Vehicle & Walkway)	\$ 100.00	2120	\$212,000
Access Roadway Stone w/Drainage	\$250,000.00	1	\$250,000
Retaining Walls	\$100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$220,000.00	1	\$220,000
Elevate Ipe Boardwalk 200 lf	\$525,000.00	1	\$525,000
TOTAL			\$7,198,024
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)			\$200,000
TOTAL			\$7,398,024

Centennial Park + Beach:

OPTION 5: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	350	\$2,037,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
Park Improvements (walkways and drinking fountain)	\$ 110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$4,108,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.) \$ 190,000.00			\$190,000
TOTAL			\$4,298,600

Elder/Centennial Beach Central Breakwater

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
35 ton per foot breakwater	\$5,280	260	\$1,513,200.00
GRAND TOTAL			\$13,209,824.00

Elder Lane Park + Beach:

OPTION 2: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	175	\$437,500
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	9600	\$432,200
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$ 5,820.00	300	\$1,746,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	200	\$640,000
Concrete for ramp	\$ 100.00	1700	\$170,000
Access Roadway Stone w/Drainage	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$ 220,000.00	1	\$220,000
TOTAL			\$5,910,724
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 175,000.00		\$175,000
TOTAL			\$6,085,724

Centennial Park + Beach:

OPTION 5: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Demo (Steel, fencing, wood piles)	\$ 100,000.00	1	\$100,000
Bluff Restoration	\$ 120,000.00	1	\$120,000
Sand Placement Mason Sand	\$ 45.00	12000	\$540,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$ 5,820.00	350	\$2,037,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 120,000.00	1	\$120,000
Park Improvements (walkways and drinking fountain)	\$ 110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$ 300,000.00	1	\$300,000
TOTAL			\$4,108,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)	\$ 190,000.00		\$190,000
TOTAL			\$4,298,600

Elder/Centennial Beach Central Breakwater

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
35 ton per foot breakwater	\$5,280	260	\$1,513,200.00
GRAND TOTAL			\$11,897,524.00

COST COMPARISON ALL OPTIONS		
Option	Description	Cost
WPD Elder 1/Centennial 1	Repair of Existing Beaches	\$2,285,324
JWR Elder 2/Centennial 5	Medium Breakwaters	\$10,220,534
WPD Elder 2/Centennial 4	Long Stone & Steel Sheet Pile Breakwaters	\$11,660,524
WPD Elder 2/Centennial 5	Long Stone Breakwaters	\$11,897,524
WPD Elder 3/Centennial 5	Long Breakwaters w Raised Boardwalk	\$13,209,824

Elder Lane Park + Beach:

OPTION 2: Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Mobilization	\$ 600,000.00	1	\$600,000
Buried Stone Revetment 12 ton per ft.	\$ 2,500.00	175	\$437,500
Concrete demo/removal	\$ 100.00	600	\$60,000
Bluff Restoration	\$ 150,000.00	1	\$150,000
Sand Placement Mason Sand	\$ 45.00	9600	\$432,200
Paving of Parking Lot	\$ 6.00	26254	\$157,524
35 ton per foot breakwater	\$5,280	200	\$1,056,000
15 ton per foot 1/2 breakwater	\$ 3,000.00	100	\$300,000
Stone Steps 35 Ton Breakwater	\$ 55,000.00	1	\$55,000
Steel Sheet Piling 30'	\$ 3,200.00	200	\$640,000
Concrete for ramp	\$ 100.00	1700	\$170,000
Access Roadway Stone w/Drainage	\$ 250,000.00	1	\$250,000
Retaining Walls	\$ 100,000.00	1	\$100,000
Relocated Stormwater Outfall 60" LF	\$ 600.00	500	\$300,000
Relocated Stormwater Outfall 36" LF	\$ 450.00	650	\$292,500
Demo (steel, pier, misc.)	\$ 220,000.00	1	\$220,000
TOTAL			\$5,220,724
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc. \$ 175,000.00			\$175,000
TOTAL			\$5,395,724

Centennial Park + Beach:

OPTION 5:

Land Based

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
Demo (Steel, fencing, wood piles)	\$100,000.00	1	\$100,000
Bluff Restoration	\$120,000.00	1	\$120,000
Sand Placement Mason Sand	\$45	6000	\$270,000
Paving of Parking Lot	\$ 6.00	6800	\$40,800
35 ton per foot breakwater	\$5,280	250	\$1,320,000
Steel Sheet Piling 30'	\$ 3,200.00	128	\$409,600
Concrete for ramp	\$ 100.00	812	\$81,200
Access Roadway Stone w/Drainage (TBD)	\$250,000.00	1	\$250,000
Retaining Walls	\$120,000.00	1	\$120,000
Park Improvements (walkways and drinking fountains)	\$110,000.00	1	\$110,000
ADA walkway and connection Lump Sum	\$300,000.00	1	\$300,000
TOTAL			\$3,121,600
SOFT COSTS			
(Engineering, plans/drawings, permit costs, etc.)			\$190,000
TOTAL			\$3,311,600

Elder/Centennial Beach Central Breakwater

ELEMENT DESCRIPTION	UNIT PRICE	QTY.	TOTAL
35 ton per foot breakwater	\$5,280	260	\$1,513,200.00
GRAND TOTAL			\$10,220,524.00