

# Construction Cost Estimates

# What's in the Construction Cost Build-Up?



Coastal Partners

Estimated construction costs for the Langstone FCERM scheme are presented showcasing the initial cost estimate undertaken by AECOM in 2020 which forms the baseline costing and the most recent cost estimate at the 50% Design in June 2022 by an independent cost consultant, Faithful & Gould.

These costs are not directly comparable with differing levels of information available at the time of estimating. The build-up of each estimate is shown below and the associated uplift % to allow for any uncertainties at the design stage.

2020 Estimate	
Build-up	Uplift %
Base Construction Cost	n/a
Waterside Working	30
Preliminaries	35
Contingency	60

Level of Information Available Increased



2022 Estimate		
Build-up	Uplift %	Example
Base Construction Cost	n/a	£1,000,000
Waterside Working	30	£300,000
Preliminary Cost (based from Preliminary Cost Model)	n/a	£500,000
Contractor Fees	8	£144,000
Construction Contingency	30	£390,000
Preliminaries Contingency	20	£100,000
Inflation	17	£413,780
Project Design, Management & Survey	20	£569,556
Allowance for utilities & statutory authorities	n/a	£250,000
Total		£3,667,336

# Construction Costs Summary



Coastal Partners

	Whole Scheme		Core Scheme (F1A-5)		Additional Scheme (F1B & 6)	
	2020:	50% Design:	2020:	50% Design:	2020:	50% Design:
With Risk	£4,220,000	£13,996,257	£3,610,000	£10,659,942	£727,272	£5,133,592
	Maintenance: £545,000		Maintenance: £455,000		Maintenance: £90,000	

\*with risk =

- For the 2020 estimate this includes for the base construction costs including 30% waterside working + 35% preliminaries and 60% contingency.
- For the 2022 estimate (50% design costs) this includes for a combination of base construction costs including 30% waterside working + preliminaries + 8% contractor fees + 30% base construction contingency + 20% preliminaries contingency + 17% inflation + 20% Project Design, Survey and Management Costs and a £250k allowance for utilities and statutory authorities.

Note: Whole Scheme is cheaper than Core + Additional as F1A would not be constructed and there is an efficiency with the Preliminary costs.

## Cabinet 2020:

- **Core Scheme:** range of £4.5-5.1 million including risk and appraisal costs
- **Additional Scheme:** costs estimated at an extra £2 million

## Why have costs increased since 2020?

- Changes in defence solution since Outline Design across all frontages following survey results, Early Contractor consultation and feedback from engagement with stakeholders and the community
- Greater understanding of construction method and access although uncertainties do remain at present; e.g. compound spaces, temporary diversions, access routes and construction programme
- Development of a Preliminaries costing model
- Inflation impacts following World and European events over the last 2 years resulting in current uncertainty in the market and rapidly increasing material prices and market rates; e.g. steel and clay



### Market Volatility and Inflation - Unprecedented impact on UK construction and global supply chains.

- Ukraine conflict has had a dramatic and immediate impact on costs
- Covid pandemic continues to impact global supply chains
- Rapid upturn in UK construction fuelling high demands
- Volatility following Brexit continues

### Last 12 month actuals:

- 15% increase on materials

### 12 month forecast:

- 8% further increase on materials

### Concrete

- Energy prices significant factor in increased costs.
- Increase of 15% over last 12 months with prices continuing to rise.
- Precast concrete increased 25% in last 12 months.




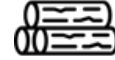











### Fuel / Energy

- Red diesel banned in UK construction, fuel duty now applies. 50% cost impact.
- Ukraine conflict showing 35% increase in fuel.
- Wholesale Gas up 26% since Jan.
- Wholesale Electricity up 16% since Jan.

### Steel

- Ukrainian mills closed
- Belarussian mills under sanctions
- Black Sea ports closed
- Oil and Gas costs driving reduced production to avoid peak energy costs
- Cost rise £300/t in last 10 days of Q1



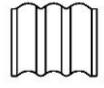









# Industry wide material increases – May 2022 Coastal Partners

MATERIAL	Price Change	Current Movement 12 Months	Forecast Price Change	Forecast 12 Months - Trend	Availability / Concern	MATERIAL	Price Change	Current Movement 12 Months	Forecast Price Change	Forecast 12 Months - Trend	Availability / Concern
 AGGREGATES		12%		10%		 STEEL SUPPLY		50%		2%	
 ASPHALT		10%		8%		 TIMBER /BOARD		50%		5%	
 CEMENT, LIME & GGBS		25%		10%		 SITE ACCOMMODATION		5%		5%	
 CONCRETE		15%		10%		 PLANT HIRE		8%		5%	
 DIESEL / GAS OIL		16% / 54%		5%		 PLANT SALES		5%		5%	
 DRAINAGE		15%		15%		 PRECAST CONCRETE		25%		10%	
 LIGHTING / ELECTRICAL		5%		5%		 RAIL MATERIALS- GENERAL OVERVIEW		10%		10%	
 REBAR & MESH		40%		5%							

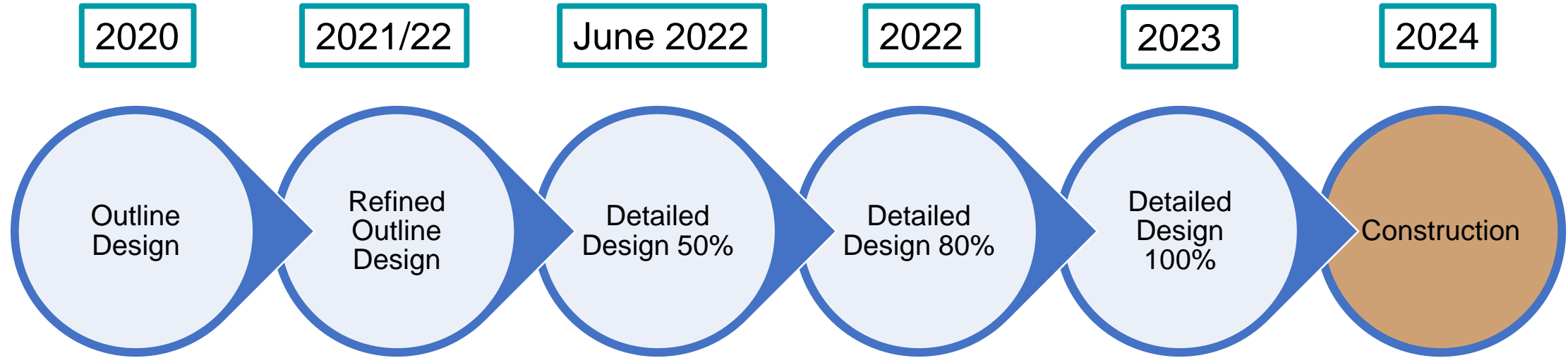
# Industry wide trade increases – May 2022



Coastal Partners

TRADE	PRICE CHANGE	CURRENT MOVEMENT 12 MTH	FORECAST PRICE CHANGE	Forecast Next 12 Months - Trend	AVAILABILITY / CONCERN	TRADE	PRICE CHANGE	CURRENT MOVEMENT 12 MTH	FORECAST PRICE CHANGE	FORECAST NEXT 12 MONTHS	AVAILABILITY / CONCERN
 AGL ELECTRICAL	Yellow	5%	Red	10%	Yellow	 LABOUR / AGENCY BLUE COLLAR	Red	10%	Yellow	7%	Red
 CLADDING	Red	75%	Green	-5%	Red	 LABOUR / AGENCY WHITE COLLAR	Red	10%	Yellow	5%	Yellow
 FENCING	Red	20%	Yellow	5%	Yellow	 M&E	Red	15%	Yellow	8%	Yellow
 FIT OUT / FINISHING TRADES	Yellow	5%	Yellow	5%	Yellow	 SHIPPING	Red	500%	Green	4%	Yellow
 HEAVY CIVILS inc. DRAINAGE EWKS, FRC	Red	10%	Red	20%	Green	 STEEL FABRICATION CIVILS	Red	30%	Red	10%	Yellow
 INDUSTRIAL DOORS	Green	2%	Yellow	5%	Yellow	 STEEL FRAMES WAREHOUSING	Red	45%	Red	10%	Yellow

# Cost Estimation Timeline



<b>Whole:</b>	£4,220,000	£10,383,538	£13,996,257	Updated costing late-2022
<b>Core:</b>	£3,610,000	£8,335,580	£10,659,942	
<b>Additional:</b>	£727,272	£2,997,737	£5,133,592	

Increasing Confidence in Cost Estimate  
Increasing Level of Information Available

Note: Costs are with risk included, excludes sunk costs for appraisals

# How can we increase cost certainty?

**AECOM**

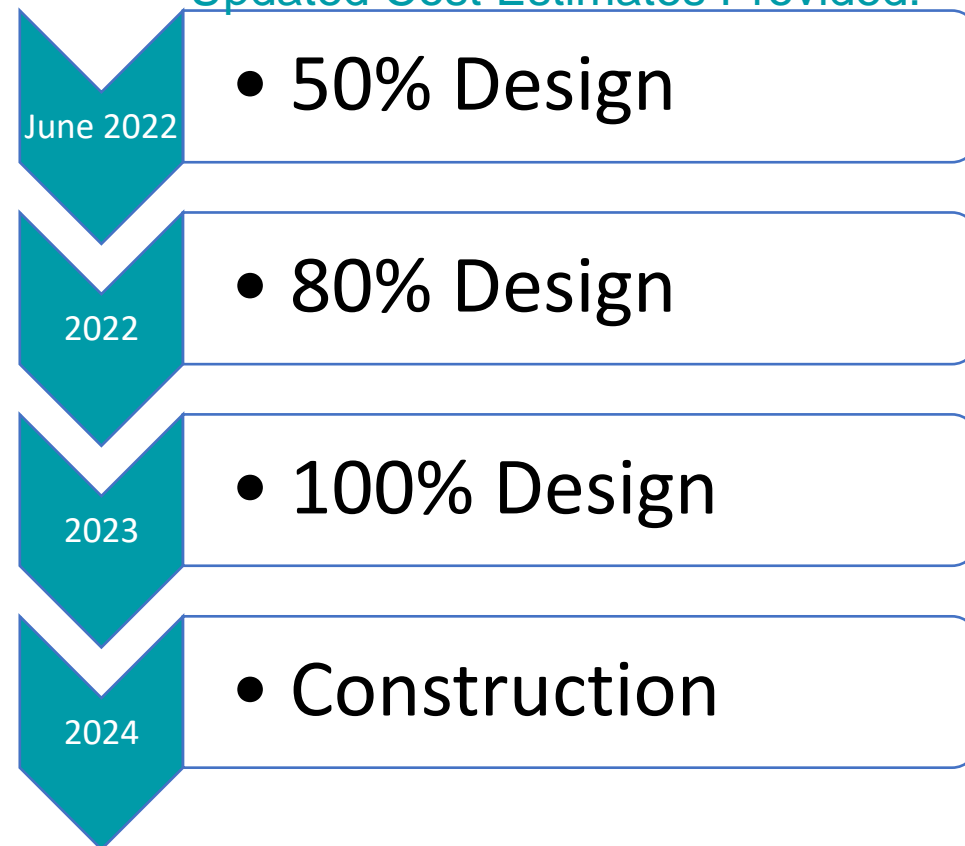


Coastal Partners

## Future cost estimates will consider:

- ✓ The **latest design outputs** as these are refined at the 80% and 100% design completion stages
- ✓ Ongoing **advice from Early Contractor Engagement**
- ✓ Any **efficiencies** that are identified in relation to construction methods and sequencing – construction programme
- ✓ Challenges of gaining **safe access** within the coastal area, foreshore and narrow access areas
- ✓ **Impacts of World and European events** where these still remain
- ✓ **Material costs** for high price items such as steel and clay
- ✓ Levels of **Risk contingency**
- ✓ Tendered prices for Construction

## Updated Cost Estimates Provided:





# Core Scheme – Frontage 1A

## Billy Line

**AECOM**



Coastal Partners

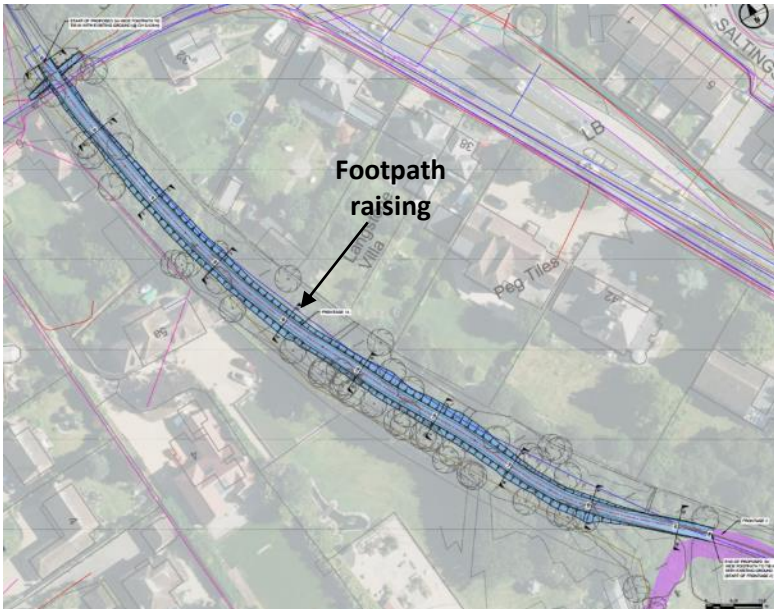
2020 Estimate		2022 Estimate	
Build-up	Cost (£)	Build-up	Cost (£)
Base Construction Cost	£57,250	Base Construction Cost	£215,282
Waterside Working (30%)	n/a	Preliminary Cost*	n/a
Preliminaries (35%)	£20,038	Waterside Working	n/a
Contingency (60%)	£46,373	Total**	£215,282
<b>Total</b>	<b>£123,661</b>	*£2,069,127 total prelims for the whole scheme. ** Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.	

### Design Changes:

- Raised footpath length increased from 170 to 183m; upon receipt of topographic data.
- Footpath width increased from 1.9m to 3m to conform with new LTN 1/20 guidance.

### Cost Increase:

- Additional disposal of excavated material off site
- Increased allowance for landscaping
- Increase in quantity and rate of clay material



### Risks/ Uncertainties:

- Utilities; Portsmouth Water potable water pipe (main supply to Hayling Island) and Southern Water surface run-off pipe
- Densely vegetated area; limits height of plant and potential for extensive root systems
- Close proximity to residential buildings and gardens
- Diversion of Public Right of Way required

# Core Scheme – Frontage 2

## Billy Line Earth Embankment

**AECOM**



Coastal Partners

### 2020 Estimate

Build-up	Cost (£)
Base Construction Cost	£37,150
Waterside Working (30%)	n/a
Preliminaries (35%)	£13,003
Contingency (60%)	£30,092
<b>Total</b>	<b>£80,245</b>

### 2022 Estimate

Build-up	Cost (£)
Base Construction Cost	£271,833
Preliminary Cost*	n/a
Waterside Working (15%)	£40,775
<b>Total**</b>	<b>£312,608</b>

\*£2,069,127 total prelims for the whole scheme.  
 \*\* Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.

### Design Changes:

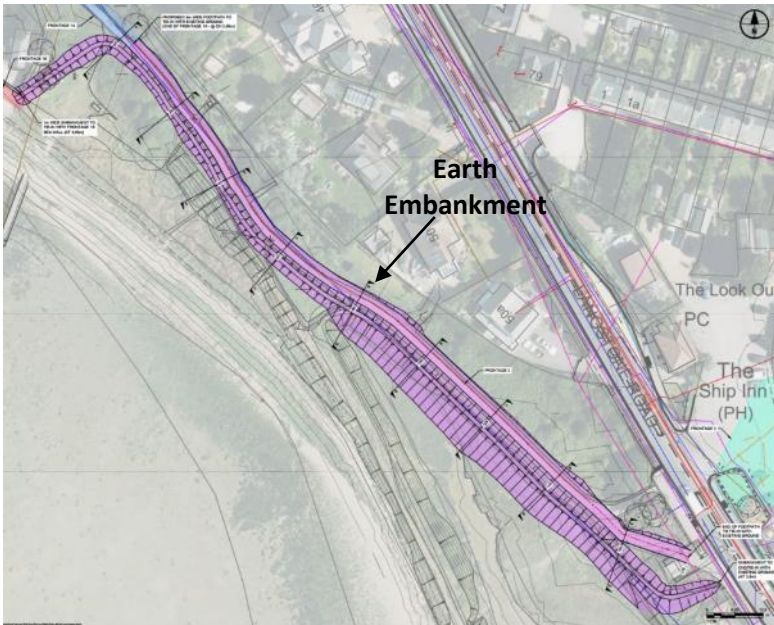
- Frontage length increased from 118 to 172m incorporating widening and resurfacing of the footpath to tie-in with Frontage 1A

### Cost Increase:

- Additional disposal of excavated material off site
- Increase in quantity and rate of clay material
- Inclusion of waterside working for construction of embankment

### Risks/ Uncertainties:

- Current design indicates foreshore encroachment
- Utilities; Portsmouth Water potable water pipe (main supply to Hayling Island) and Southern Water surface run-off pipe
- Close proximity to residential buildings and gardens
- Diversion of Public Right of Way required



# Core Scheme – Frontage 3

## Ship Inn Concrete Apron



2020 Estimate	
Build-up	Cost (£)
Base Construction Cost	£341,000
Waterside Working (30%)	£39,300
Preliminaries (35%)	£133,105
Contingency (60%)	£308,043
<b>Total</b>	<b>£821,448</b>

2022 Estimate	
Build-up	Cost (£)
Base Construction Cost	£587,861
Preliminary Cost*	n/a
Waterside Working (30%)	TBC
<b>Total **</b>	<b>TBC</b>

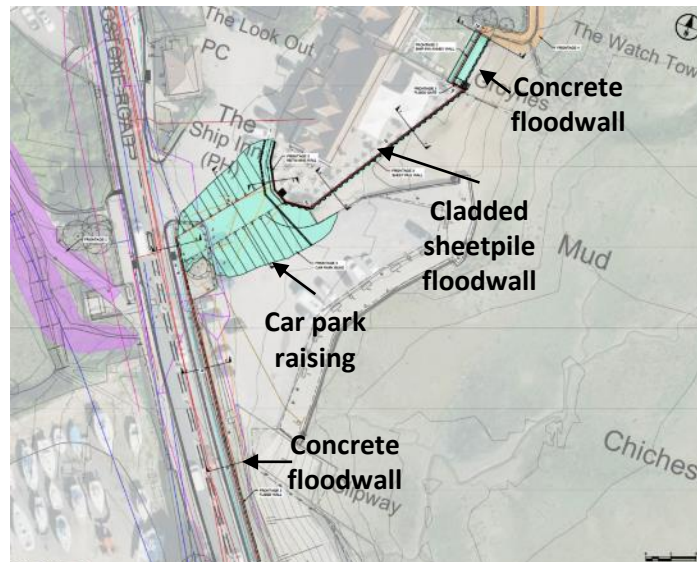
\*£2,069,127 total prelims for the whole scheme.  
 \*\* Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.

### Design Changes:

- Change in defence solution in the Car Park from a flip-up flood barrier to car park raising with a retaining wall.
- Change in defence solution and increase in length at the Ship Inn from a reinforced concrete flood wall with glass top to a sheetpile wall with suitable cladding following structural investigations.
- Seepage cut-off requirement following seepage analysis introduced additional sheetpiles at the Ship Inn Annexe.

### Risks/ Uncertainties:

- Car Park frequently used
- Adjacent to main A3023
- Medium pressure gas main in the grassed area in the car park
- Potential for flooding of working area during an extreme event
- Buried obstructions when piling
- Instability of Ship Inn Patio when removing existing wall



### Cost Increase:

- Increase in quantities of excavation, breaking out, reinforced concrete, sheet piles and handrails.
- Significant increase in market rates particularly for steel.
- Small reduction in sheet pile length following investigations.



# Core Scheme – Frontage 4

Watchtower – Winklemarket (incl. Flood Gate)



Coastal Partners

2020 Estimate		2022 Estimate	
Build-up	Cost (£)	Build-up	Cost (£)
Base Construction Cost	£393,000	Base Construction Cost	£992,967
Waterside Working (30%)	£104,400	Preliminary Cost*	n/a
Preliminaries (35%)	£174,090	Waterside Working	£297,890
Contingency (60%)	£402,894	Total**	£1,290,857
<b>Total</b>	<b>£1,074,384</b>	*£2,069,127 total prelims for the whole scheme. ** Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.	

## Design Changes:

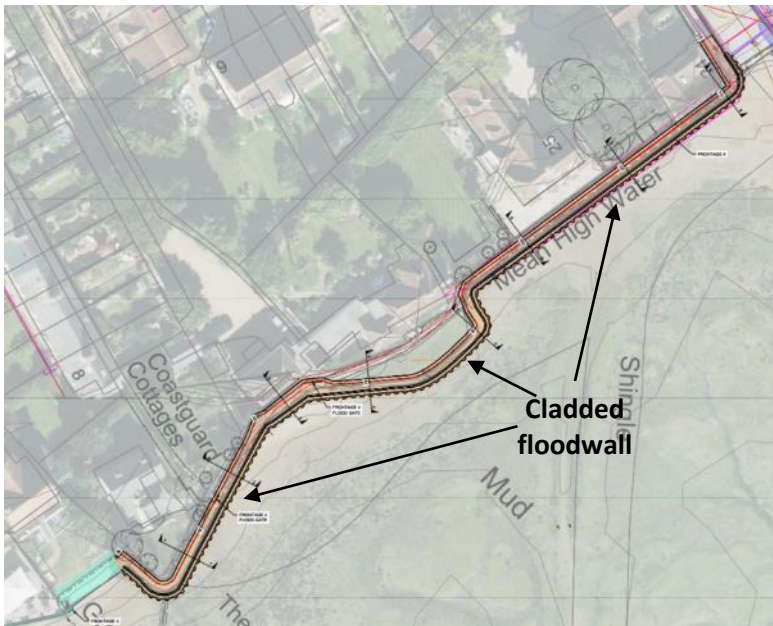
- Extension of reinforced concrete floodwall seaward of the Winklemarket following structural investigations.
- Removal of the timber boardwalk following strong community opposition and assessment of future maintenance. Replaced with a min. 1.5m wide cladded concrete wall.
- Seepage cut-off requirement following seepage analysis introduced additional sheetpiles across the high street.

## Cost Increase:

- Mainly driven by inclusion of a piling matt at c.£140k, general drainage allowance at c.£25k and a landscaping allowance at c.£20k.
- Increase in quantities of excavation, disposal, cladding and concrete encasement.

## Risks/ Uncertainties:

- Tidal working; temporary works required to protect from tidal damage
- Buried obstructions when piling
- Landward access restricted
- Stability of existing walls and properties
- Utilities under the existing footpath
- Levels of foreshore encroachment
- Landowner objection



# Core Scheme – Frontage 5

Langstone High Street - Embankment

**AECOM**

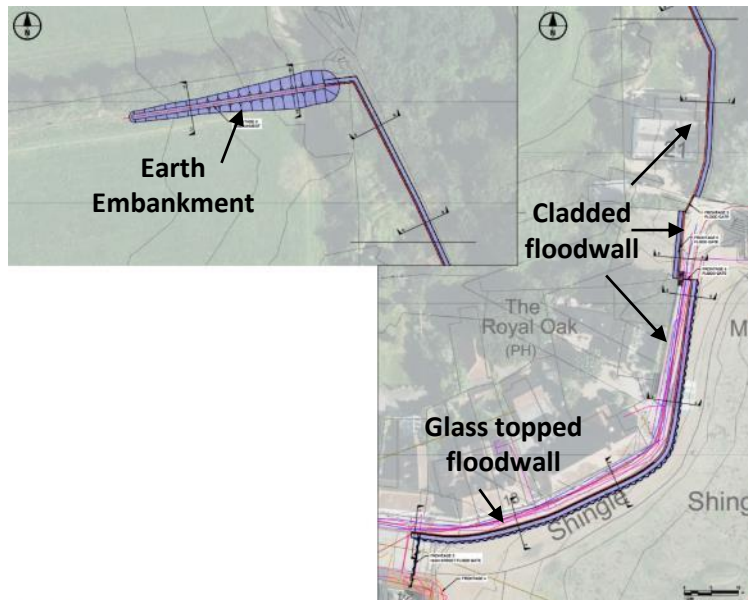


Coastal Partners

2020 Estimate		2022 Estimate	
Build-up	Cost (£)	Build-up	Cost (£)
Base Construction Cost	£570,000	Base Construction Cost	£808,300
Waterside Working (30%)	£127,800	Preliminary Cost*	n/a
Preliminaries (35%)	£244,230	Waterside Working	£238,719
Contingency (60%)	£565,218	Total**	£1,047,019
<b>Total</b>	<b>£1,507,248</b>	*£2,069,127 total prelims for the whole scheme. ** Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.	

## Design Changes:

- Change in defence solution with removal of the king post wall/ crest raising replaced with a reinforced concrete floodwall and sheetpile apron, topped with flood glass following structural investigations and community feedback.
- Slight increase in frontage length by 6m.
- Seepage cut-off requirement following seepage analysis.



## Risks/ Uncertainties:

- Tidal working; temporary works required to protect from tidal damage
- Buried obstructions when piling
- Utilities under the existing footpath
- Stability of existing buildings
- Residential access required
- Narrow construction space with dense vegetation adjacent

## Cost Increase:

- Increase in quantities of excavation and reinforced concrete
- Introduction of flood glass
- Reduction in sheetpile length following investigations

# Additional Scheme – Frontage 1B

## Mill Lane and Harborside

**AECOM**



2020 Estimate		2022 Estimate	
Build-up	Cost (£)	Build-up	Cost (£)
Base Construction Cost	£225,000	Base Construction Cost	£864,001
Waterside Working (30%)	£51,900	Preliminary Cost*	n/a
Preliminaries (35%)	£96,915	Waterside Working	£259,200
Contingency (60%)	£224,289	Total**	£1,123,201
<b>Total</b>	<b>£598,104</b>		

\*£2,069,127 total prelims for the whole scheme. For the additional scheme preliminaries are at 50% of the base construction cost.  
 \*\* Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.  
 Note: May 22 figures estimated at £822k; circa. £2.55m with risks.

### Cost Increase:

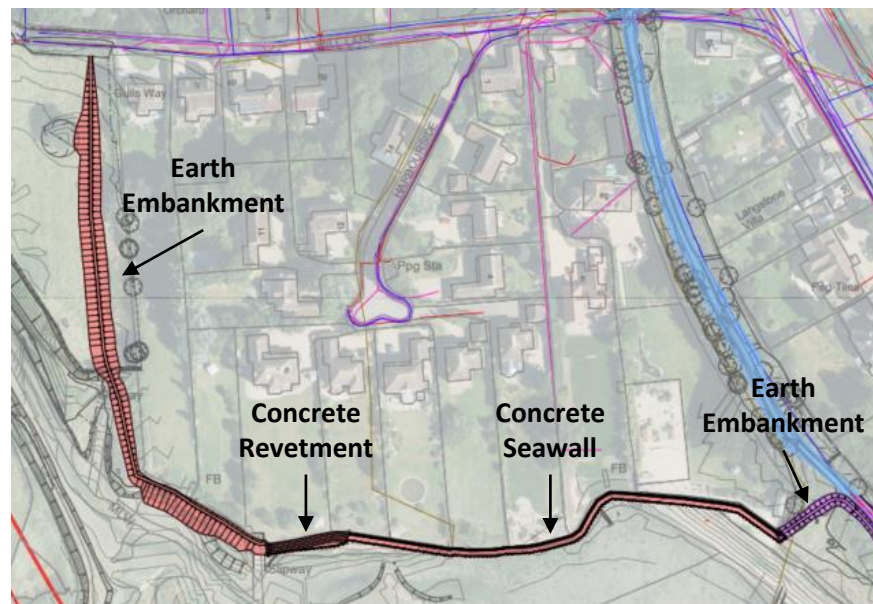
- Increase in quantity of materials, landscape clearance, quantity of making good to the existing seawall and quantity of reinforced concrete to the new wall and apron.
- Clay material rate has increased.

### Risks/ Uncertainties:

- Scheme price unaffordable to community
- Difficult access along a soft designated foreshore; type of plant may be limited
- Tidal working; temporary works required to protect from tidal damage
- Pile length in 2022 estimation was 2.3m, likely to increase to 8m; risk of buried obstructions in foreshore

### Design Changes:

- Embankment length increased from 110 to 225m; upon receipt of topographic data and wave run-up calculations.
- Seawall refurbishment length increased from 105 to 156m. following condition assessment





# Additional Scheme – Frontage 6

## Langstone Spit

**AECOM**



2020 Estimate		2022 Estimate	
Build-up	Cost (£)	Build-up	Cost (£)
Base Construction Cost	£46,000	Base Construction Cost	£460,577
Waterside Working (30%)	£13,800	Preliminary Cost*	n/a
Preliminaries (35%)	£20,930	Waterside Working	£138,173
Contingency (60%)	£48,438	Total**	£598,751
<b>Total</b>	<b>£129,168</b>	*£2,069,127 total prelims for the whole scheme. For the additional scheme preliminaries are at 50% of the base construction cost. ** Contractor fee, contingencies, inflation, project design costs and utility allowance not available per frontage.	

### Design Changes:

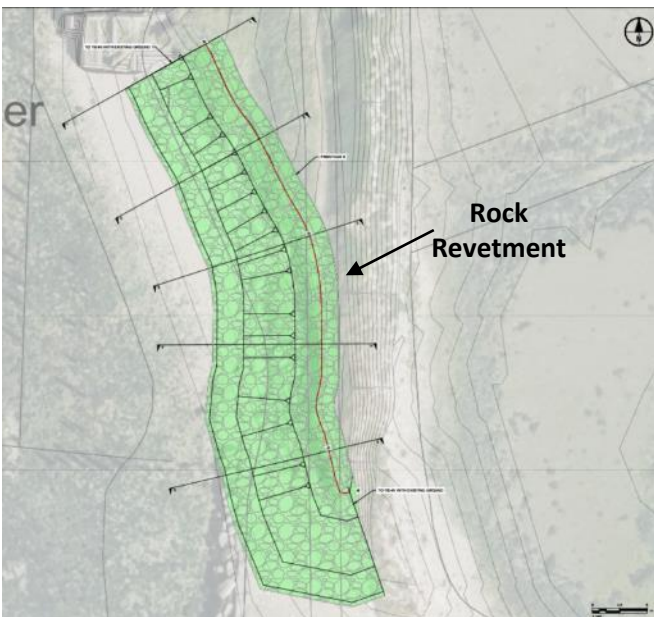
- Revetment length increased from 50 to 52m
- Design has significantly changed following ECI advice and wave parameter calculations with extensive foreshore excavation, two layers of 60-300kg secondary rock and two layers of 1-3t primary rock armour.
- Section size from landward to seaward edge has increased significantly.

### Cost Increase:

- Significant increase in amount of materials. Rock armour quantity has increased from c. 315m<sup>3</sup> to 1,350m<sup>3</sup>.

### Risks/ Uncertainties:

- Tidal working; temporary works required to protect from tidal damage
- Difficult access along protected foreshore
- Levels of foreshore encroachment



# Whole Scheme - Preliminaries



Coastal Partners

## What are they?

- Time-related on site costs; e.g. site team staff, labourers, plant maintenance, site offices and welfare facilities, service charges, survey equipment
- Non time-related on site costs; e.g. site establishment – water, electricity, waste, security, ecological & environmental monitoring/ protection
- Temporary Works for compounds; e.g. fencing, diversions, service protection, haul road
- Plant associated with main compound and satellite compounds; ‘General Purpose Plant’

## Preliminaries

Scheme	How have they been estimated?	Cost (£)
Whole	Preliminary Cost Model	£2,069,127
Core	Preliminary Cost Model	£2,069,127
Additional	50% of the Base Construction Cost	£860,976

## How have they been estimated?

- A preliminary cost model has been developed using rates for reference projects
- Based on an anticipated construction programme of 2 years (April-September 2024 & April-September 2025) working around the Over-Wintering Bird Period
- Based on an outline (not confirmed) site set-up.

## What can influence them?

- Construction Programme & Duration
- Site set-up (compound(s) and access routes)
- Market rates

## How can we increase certainty?

- Continue discussions with the ECI Contractor who is providing advice and recommendations on both construction programme and site set-up
- Continue to liaise with landowners
- Confirm optimal construction programme, duration and site set-up



Supporting Information

# Construction Costs Build-up – Whole Scheme



Estimated construction costs for the Langstone FCERM Whole scheme are presented showcasing the initial cost estimate undertaken by AECOM in 2020 which forms the baseline costing and the most recent cost estimate at the 50% Design in June 2022 by an independent cost consultant, Faithful & Gould.

2020 Estimate	
Build-up (uplift percentage)	Cost
Base Construction Cost	n/a
Waterside Working (30%)	n/a
Preliminaries (35%)	n/a
Contingency (60%)	n/a
<b>Total</b>	<b>£4,220,000</b>

These costs are not directly comparable with differing levels of information available at the time of estimating. The build-up of each estimate is shown and the associated uplift % to allow for any uncertainties at the design stage.

2022 Estimate		
Build-up	Uplift %	Cost
Base Construction Cost	n/a	£5,175,579
Waterside Working	30	Incl. above
Preliminary Cost (based from Preliminary Cost Model)	n/a	£2,069,127
Contractor Fees	8	£579,576
Construction Contingency	30	£1,552,674
Preliminaries Contingency	20	£413,825
Inflation	17	£1,664,433
Project Design, Management & Survey	20	£2,291,043
Allowance for utilities & statutory authorities	n/a	£250,000
<b>Total</b>		<b>£13,996,257</b>

Costs have been provided for the whole scheme. Costs per frontage are currently unavailable

# Construction Costs – Core Scheme



Estimated construction costs for the Langstone FCERM Core scheme are presented showcasing the initial cost estimate undertaken by AECOM in 2020 which forms the baseline costing and the most recent cost estimate at the 50% Design in June 2022 by an independent cost consultant, Faithful & Gould.

## 2020 Estimate

Build-up (uplift percentage)	Cost
Base Construction Cost	£1,429,000
Waterside Working (30%)	£271,500
Preliminaries (35%)	£584,675
Contingency (60%)	£1,353,105
<b>Total</b>	<b>£3,610,000</b>

These costs are not directly comparable with differing levels of information available at the time of estimating. The build-up of each estimate is shown and the associated uplift % to allow for any uncertainties at the design stage.

## 2022 Estimate

Build-up	Uplift %	Cost
Base Construction Cost	n/a	£3,453,627
Waterside Working	30	Incl. above
Preliminary Cost (based from Preliminary Cost Model)	n/a	£2,069,127
Contractor Fees	8	£441,820
Construction Contingency	30	£1,036,088
Preliminaries Contingency	20	£413,825
Inflation	17	£1,260,463
Project Design, Management & Survey	20	£1,734,990
Allowance for utilities & statutory authorities	n/a	£250,000
<b>Total</b>		<b>£10,659,942</b>

# Construction Costs – Additional Scheme



Estimated construction costs for the Langstone FCERM Additional scheme are presented showcasing the initial cost estimate undertaken by AECOM in 2020 which forms the baseline costing and the most recent cost estimate at the 50% Design in June 2022 by an independent cost consultant, Faithful & Gould.

## 2020 Estimate

Build-up (uplift percentage)	Cost
Base Construction Cost	£271,000
Waterside Working (30%)	£65,700
Preliminaries (35%)	£117,845
Contingency (60%)	£272,727
<b>Total</b>	<b>£727,272</b>

These costs are not directly comparable with differing levels of information available at the time of estimating. The build-up of each estimate is shown and the associated uplift % to allow for any uncertainties at the design stage.

## 2022 Estimate

Build-up	Uplift %	Cost
Base Construction Cost	n/a	£1,721,951
Waterside Working	30	Incl. above
Preliminary Cost @50% of Base Construction Cost	n/a	£860,976
Contractor Fees	8	£206,634
Construction Contingency	30	£516,585
Preliminaries Contingency	20	£172,195
Inflation	17	£591,318
Project Design, Management & Survey	20	£813,932
Allowance for utilities & statutory authorities	n/a	£250,000
<b>Total</b>		<b>£5,133,592</b>