COCHECHO WATERFRONT

Draft Concept Plans

March 15, 2016
COCHECHO WATERFRONT

PROJECT TEAM

Donald W. Powers  Architecture/Urban Design
Jeremy R. Lake

Jonathan Ford  Civil Engineering/Urban Design
Robert M. Roseen

Jeffrey R. Hyland  Landscape Arch./Urban Design
Jennifer Martel

David G. Lamothe  Geotechnical/Environmental
Rebecca Cox

Barry M. Abramson  Financial Analysis

Abramson & Associates, Inc.
Real Estate Advisory Services

Union Studio
Architecture & Community Design

Hosley Witten Group

Ironwood
Design Group, LLC

GZA
Project Team Introductions

**Project Process**

Recap of Previous Session

Draft Concept Plans
- Framework Plans
- Preliminary Park Designs
- Shoreline Approaches
- Grading Approaches
- Financial Analysis

Waste Remediation Approach

Preliminary Permit Input

Next Steps

**AGENDA**
**Conceptual Design**
- Task 1: Pre-Design
- Task 2: Preliminary Site Concepts
- Task 3: Draft Concept Plans

**Fast-Tracked Engineering**
- Task 4: Soil Remediation Plans and Permitting
- Task 5: Dock Design and Permitting

**Future Tasks (Phase 2)**
- Soil Remediation Oversight
- Dock Construction Oversight
- Concept Refinement
- Detailed Site Planning/Engineering
- Developer RFP Assistance
Project Team Introductions

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COCHECHO WATERFRONT

PREVIOUS SESSION

WATERFRONT PARK

SITE CONNECTIONS

DOCK LOCATION
PRELIMINARY SITE CONCEPTS

PREVIOUS SESSION

COCHECHO WATERFRONT
COCHECHO WATERFRONT

PREVIOUS SESSION

COCHECHO WATERFRONT DEVELOPMENT ADVISORY COMMITTEE MINUTES

Meeting Date: February 16, 2016
Meeting Time: 8:30 am
Meeting Type: Regular Meeting
Meeting Location: 2nd floor, City Hall

PRESENT: Jack Metter (Chair), Dave Lynch, Karen Fitzgerald, Norma Franke Goodnight, Peg Fanello, Robbie Woodard, Dennis C. Goss

EXOFFICIO MEMBERS: Mayor Susan Wester, Michael Jareck

STAFF: Steve Bell - City Planner, Gary Barlow - Recreation Director, Dan Smith - Engineer

OTHERS: Chris Wysocki, Amanda George

1. Meeting called to order at 8:30 am.

Matter: You will notice that you have a binder on your desk that contains the meeting documents.

Matter: The only downside is that it may be difficult to find anything.


Matter: Lynch made a motion to approve the minutes of 1-19-16. Cooke seconded.

Matter: The vote was unanimous.

3. Citizen Forum: None

4. Changes to the Agenda: Matter asked to move Item 7:3-4 after Item 7:2.

5. Correspondence: None

6. Old Business:

A. Review of CWDAC Work Plan

Matter: The most recent work plan is in the notebook for your review.

7. New Business:

B. Review of Pre-Permitting Meeting held on 2/15/16 with Bert Rice

Matter: The meeting was held at the request of Mr. Rice, who is interested in developing a waterfront walkway.

Matter: The meeting was held to discuss the feasibility of a proposed project.

Matter: The project would include the construction of a pedestrian walkway along the waterfront.

Matter: The meeting was attended by representatives from the Planning Department, Engineering, and the City Manager.

Matter: The project would provide a much-needed improvement to the waterfront area.

C. Review of Newly Proposed CWDAC Operating Procedures

Matter: The revisions were approved by the committee.

Matter: The revisions include changes to the operating procedures for the CWDAC.

Matter: The vote was unanimous.

D. Review of Waterfront Park Programs

Matter: The committee reviewed the proposal for a waterfront park program.

Matter: The proposal includes a variety of activities and events to promote the use of the waterfront.

Matter: The vote was unanimous.

E. Adjournment

Matter: The meeting adjourned at 9:35 am.
Project Team Introductions

Project Process

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**Draft Concept Plans**

*Framework Plans*

*Preliminary Park Designs*

*Shoreline Approaches*

*Grading Approaches*

*Financial Analysis*

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**AGENDA**

COCHECHO WATERFRONT
Scheme A

- Linear Park out to Knuckle
- River Street Aligned
- Bluff Excavated Enough to Allow Residential Liner
- Potential for Expansion into Skate Park area
- Active Park 3.7 Acres
- Developable Area 7.0 Acres
- Active Park 0.4 Acres
- Developable Area 2.2 Acres
- Passive Park 5.45 Acres
- Park Depth Increased for Active Uses
- Parking for Park Uses also serves as Turnaround
- Active Park
  - 3.7 Acres
  - Potential for Expansion into Skate Park area
- Passive Park
  - 5.45 Acres
- Linear Park
  - out to Knuckle
- River Street
  - Aligned
COCHECHO WATERFRONT FRAMEWORK PLANS

Scheme B

- River Street Offset
- Minor Bluff Excavation to Allow Additional Park Area
- Bluff Leveled at Top to Create Residential Cluster
- Creates Space for Gateway Feature
- Active Park
  - 4.0 Acres
- Developable Area
  - 6.8 Acres
- Passive Park
  - 5.45 Acres
- Park Depth Increased for Active Uses
- Parking for Park Uses also serves as Turnaround
- Active Park
  - 0.6 Acres
- Developable Area
  - 3.5 Acres
- Developable Area
  - 3.5 Acres

Active Park
- 0.6 Acres

Passive Park
- 5.45 Acres

Active Park
- 4.0 Acres

Developable Area
- 6.8 Acres

Developable Area
- 3.5 Acres

Developable Area
- 3.5 Acres

COCHECHO WATERFRONT
Scheme C

COCHECHO WATERFRONT FRAMEWORK PLANS

- Park Depth Allows for Active Uses along Downtown Edge
- Creates Space for Waterfront Development
- River Street Relocated
- Street Relocation Allows More Park Area but Exposes Pump House
- Bluff Excavated Fully to Create Developable Area
- Active Park 3.8 Acres
- Developable Area 7.0 Acres
- Parking for Park Uses also serves as Turnaround
- Park Depth Decreased around the Knuckle
- Developable Area 5.3 Acres
- Active Park 1.0 Acres
- Passive Park 5.45 Acres
- Park Area Depth Allows for Active Uses along Downtown Edge

Downtown Edge Edge

Active

Passive

Developable

5.45

7.0

5.3

3.8

1.0

Acres

Acres

Acres

Acres

Acres

Acres

Acres
FRAMEWORK PLANS

Scheme C North, Scheme A South

COCHECHO WATERFRONT
COCHECHO WATERFRONT

FRAMEWORK PLANS

COCHECHO WATERFRONT
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AGENDA
COCHECHO WATERFRONT

PRELIMINARY PARK DESIGNS

COCHECHO WATERFRONT

SITE ANALYSIS
COCHECHO WATERFRONT

PRELIMINARY PARK DESIGNS

SITE ANALYSIS

APPROXIMATE LOCATION OF HISTORIC COAL SHED

APPROXIMATE LOCATION OF HISTORIC VELVET MILLS

HISTORIC STONE WALL

SHEET PILE WALL

MUDFLATS

ROCKY SAND BAR

APPROXIMATE LOCATION OF SOLID WASTE LANDFILL
PRELIMINARY PARK DESIGNS

COCHECHO WATERFRONT

SITE ANALYSIS

1888 DRAWING
FARMHOUSE
COAL SHED

HISTORIC PRESERVATION # 731
PARK PROGRAM:
TOUR BOATS

PRELIMINARY PARK DESIGNS
COCHECHO WATERFRONT
PARK PROGRAM: TOUR BOATS
PARK PROGRAM: CIVIC PLAZA

PRELIMINARY PARK DESIGNS

COCHECHO WATERFRONT
PARK PROGRAM: CIVIC PLAZA

WINTER CARNIVAL
20,000 SF PLAZA

SUMMERTIME FUN
20,000 SF PLAZA

PRELIMINARY PARK DESIGNS COCHECHO WATERFRONT
PARK PROGRAM:
CIVIC PLAZA

MOVIE NIGHT
20,000 SQ. PLAZA

FARMLER'S MARKET
20,000 SQ. PLAZA

PRELIMINARY PARK DESIGNS
COCHECHO WATERFRONT
PARK PROGRAM: ROWING DOCK

PRELIMINARY PARK DESIGNS  COCHECHO WATERFRONT
PARK PROGRAM:
ROWING DOCK

FLOAT
RAMP
PIER
PRELIMINARY PARK DESIGN

COCHECHO WATERFRONT

PARK PROGRAM:
SHORT-TERM DOCK

SHORT-TERM BOAT DOCK
ROWING DOCK LOCATION 2
KAYAK RAMP BETWEEN PLAZA AND ROCKY SAND BAR
TOUR BOAT TIE-UP
ROWING DOCK LOCATION 1
PLAZA
COCHECHO WATERFRONT
PRELIMINARY PARK DESIGNS

Scheme A
PRELIMINARY PARK DESIGNS

COCHECHO WATERFRONT
COCHECHO WATERFRONT
PRELIMINARY PARK DESIGNS
COCHECHO WATERFRONT
PRELIMINARY PARK DESIGNS

COCHECHO WATERFRONT
PRELIMINARY PARK DESIGNS  COCHECHO WATERFRONT

COCHECHO WATERFRONT
PRELIMINARY PARK DESIGNS

Scheme C

short-term boat dock
rowng dock
7000 sf boathouse
rental kiosk
kayak ramp
gateway steps to water
plaza
parking 35-50 cars
overlook
adventure park
Project Team Introductions

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AGENDA
STRUCTURAL
- Revetment
- Seawall
- Gabion Wall
- Bulkhead

LIVING SHORELINE
- Vegetated stabilization
- Fringing salt marsh
- Live crib wall

Wall/Wetland Combination
(various wall materials alternatives)

Steps

Green Gabion Wall

Live Crib Wall

Brush Mattress

Root Wad

Imbricated Riprap

Riprap

High Salt Marsh

Low Salt Marsh
(frequent inundation)
S H O R E L I N E  A P P R O A C H E S

C O C H E C H O  W A T E R F R O N T

DOVER WATERFRONT Shoreline Stabilization Concepts
March 14, 2016
COCHECHO WATERFRONT

Precedents: Milwaukee, New York

SHORELINE APPROACHES

DOVER WATERFRONT Shoreline Stabilization Concepts
March 14, 2016

COCHECHO WATERFRONT
COCHECHO WATERFRONT

Precedents: New York, San Diego

SHORELINE APPROACHES

DOVER WATERFRONT Shoreline Stabilization Concepts
March 14, 2016

COCHECHO WATERFRONT
Summary

1. Range of shoreline stabilization/restoration approaches – structural to living shoreline
2. Creative & strategic application of approaches consistent with place type & public access

To Be Determined

1. Location of riverfront street
2. Plaza locations and design
3. Detailed grading transition from riverfront street to water (approach varies across site)
4. Floodplain & wetlands approach
Project Team Introductions

Project Process

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AGENDA
SEA-LEVEL RISE SCENARIOS AT 2050 AND 2100

Global Mean Sea Level Rise (feet)

- 0.6 feet sea level
- 1.3 feet sea level
- 2.0 feet sea level
- 3.9 feet sea level
- 6.6 feet sea level

YEAR

1900 1950 2000 2050 2100

Figure modified from NH Coastal Risks and Hazards Commission, Science and Technical Advisory Panel Report (2014).

GRADING APPROACHES

COCHECHO WATERFRONT
GRADING APPROACHES

COCHECHO WATERFRONT
NOTE: Preliminary quantities and costs are based on schematic development frameworks and preliminary grading/earthwork approaches. Costs should be used for preliminary planning purposes only. Additional design development and negotiation with regulatory authorities is needed to refine design and cost.
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**GRADING APPROACHES**

**COCHECHO WATERFRONT**
Summary (highest to lowest cost)

1. Scheme C: 121,400 cy export (overburden + rock) expensive walls south of Washington St.
2. Scheme A: 32,600 cy import, 17,200 cy rock export, reduced walls
3. Scheme B: 50,200 cy import, minimized walls

Conclusions

1. Meeting 2100 SLR elevation requires significant fill
2. All grading schemes are conservative
3. Access to south bluff development from extension of Washington Street (vs. River Street) will likely minimize site costs
4. Balanced site could add development area south of Washington Street and cut Scheme B cost by keeping material onsite

To Be Determined

1. South ledge quantities/assumptions & reuse potential onsite as fill
2. Properly maintaining ledge in place as an alternative to retaining walls may partially offset cost
3. Location of riverfront street & interior block/street layout
4. Detailed grading transition from riverfront street to water (approach varies across site)
Project Team Introductions

Project Process

Recap of Previous Session

**Draft Concept Plans**

Framework Plans
Preliminary Park Designs
Shoreline Approaches
Grading Approaches
Financial Analysis

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Preliminary Permit Input

Next Steps

AGENDA
**PRELIMINARY PUBLIC IMPROVEMENT COST ESTIMATES**

<table>
<thead>
<tr>
<th>Scheme</th>
<th>North</th>
<th>South</th>
<th>Combined</th>
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</thead>
<tbody>
<tr>
<td><strong>Scheme A</strong></td>
<td></td>
<td></td>
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<tr>
<td>ADA ACCESSIBLE PADDLE BOAT DOCK</td>
<td>355,000</td>
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<tr>
<td>SHORT-TERM VISITOR BOAT DOCK</td>
<td>123,000</td>
<td>123,000</td>
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<tr>
<td>LARGE TOURISM BOAT TIE-UP</td>
<td>330,000</td>
<td>330,000</td>
<td>330,000</td>
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<tr>
<td>GATEWAY NODE AT RIVER STREET INTERSECTION</td>
<td>150,000</td>
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<td>RIVERFRONT PARK</td>
<td>668,000</td>
<td>37,000</td>
<td>705,000</td>
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<td>1,764,000</td>
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<td>Earthwork &amp; Walls</td>
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<td>10,200,000</td>
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<td>1,700,000</td>
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*Note: All estimates in $2016*
## PRELIMINARY TIF ESTIMATES

<table>
<thead>
<tr>
<th></th>
<th>Scheme A</th>
<th>Scheme B</th>
<th>Scheme C</th>
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<tbody>
<tr>
<td>Private Acreage</td>
<td>9.2</td>
<td>10.3</td>
<td>12.3</td>
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<tr>
<td>Program</td>
<td></td>
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<tr>
<td>Multi-Family Apartment Units</td>
<td>178</td>
<td>200</td>
<td>242</td>
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<tr>
<td>Town House Units</td>
<td>56</td>
<td>62</td>
<td>76</td>
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<tr>
<td>Total Residential Units</td>
<td>234</td>
<td>262</td>
<td>318</td>
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<td>Commercial Square Feet</td>
<td>24,500</td>
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<td>Build-Out Substantially Completed</td>
<td>2023 / 2024</td>
<td>2025</td>
<td>2025 / 2026</td>
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<td>Public Improvement Costs (Inflated $)</td>
<td>$12,570,000</td>
<td>$15,170,000</td>
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<td>Required Transfer from General Fund</td>
<td>$820,000</td>
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<td>Annual TIF Revenues - Stabilized Year - 2027</td>
<td>$1,430,000</td>
<td>$1,599,000</td>
<td>$1,935,000</td>
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<td>Annual Debt Service (full)</td>
<td>($925,000)</td>
<td>($1,116,000)</td>
<td>($1,363,000)</td>
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<tr>
<td>Net Cash Flow (not Including Land Sale Revs) - 2027</td>
<td>$505,000</td>
<td>$483,000</td>
<td>$572,000</td>
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<tr>
<td>Debt Coverage - 2027</td>
<td>1.55</td>
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<td>1.42</td>
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<td>Total Land Sale Revenues</td>
<td>$800,000 - $3,200,000</td>
<td>$900,000 - $3,600,000</td>
<td>$1,300,000 - $4,400,000</td>
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## PRELIMINARY TIF ESTIMATES

Plaza Cost for B, C = A

<table>
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<td>12.3</td>
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<td><strong>Program</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Family Apartment Units</td>
<td>178</td>
<td>200</td>
<td>242</td>
</tr>
<tr>
<td>Town House Units</td>
<td>56</td>
<td>62</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total Residential Units</strong></td>
<td>234</td>
<td>262</td>
<td>318</td>
</tr>
<tr>
<td><strong>Commercial Square Feet</strong></td>
<td>24,500</td>
<td>24,500</td>
<td>24,500</td>
</tr>
<tr>
<td><strong>Build-Out Substantially Completed</strong></td>
<td>2023 / 2024</td>
<td>2025</td>
<td>2025 / 2026</td>
</tr>
<tr>
<td><strong>Public Improvement Costs (Inflated $)</strong></td>
<td>$12,570,000</td>
<td>$13,540,000</td>
<td>$15,610,000</td>
</tr>
<tr>
<td><strong>Required Transfer from General Fund</strong></td>
<td>$820,000</td>
<td>$900,000</td>
<td>$1,150,000</td>
</tr>
<tr>
<td><strong>Annual TIF Revenues - Stabilized Year - 2027</strong></td>
<td>$1,430,000</td>
<td>$1,599,000</td>
<td>$1,935,000</td>
</tr>
<tr>
<td><strong>Annual Debt Service (full)</strong></td>
<td>($925,000)</td>
<td>($996,000)</td>
<td>($1,149,000)</td>
</tr>
<tr>
<td><strong>Net Cash Flow (not Including Land Sale Revs) - 2027</strong></td>
<td>$505,000</td>
<td>$603,000</td>
<td>$786,000</td>
</tr>
<tr>
<td><strong>Debt Coverage - 2027</strong></td>
<td>1.55</td>
<td>1.61</td>
<td>1.68</td>
</tr>
<tr>
<td><strong>Total Land Sale Revenues</strong></td>
<td>$800,000 - $3,200,000</td>
<td>$900,000 - $3,600,000</td>
<td>$1,300,000 - $4,400,000</td>
</tr>
</tbody>
</table>
Project Team Introductions

Project Process

Recap of Previous Session

Draft Concept Plans
   Framework Plans
   Preliminary Park Designs
   Shoreline Approaches
   Grading Approaches
   Financial Analysis

Waste Remediation Approach

Preliminary Permit Input

Next Steps

AGENDA
Groundwater Management Zone – limited petroleum and arsenic/manganese impacts

Soils at north end impacted by tannery wastes, solid waste, construction debris, river dredgings, elevated methane gas & VOCs – buildings may need vapor intrusion barriers

NHDES requiring an updated Remedial Action Plan (RAP):
- Possible additional soil sampling
- Updated soil gas survey
- Plan for waste removal
- Capping of waste to remain
- Activity and Use Restriction
- Restrict excavation in impacted areas
- Soil and groundwater management plan

**RAP can be developed once Preferred Concept is approved and site grades have been established (Phase 2?)**

**Once a Preferred Concept has been identified, remedial strategy is to present proposed “Remedial Approach” for the site to obtain permitting agency concurrence prior to RAP development for submission to NHDES for approval.**

**REMEDIATION APPROACH**
Proposed Remedial Approach:

- In public areas, excavate top 2 feet of soil below final grades, place Hi-Vis barrier fabric and replace with clean soils from cut area of site (hill below former prison) to protect human health and safety from exposure to existing site soil contamination
- (Prior to excavation – hand probes and analytical testing to confirm waste acceptable in dredge cell)
- Excavated soils placed in dredge landfill
  (GZA considered screening and segregating soils from public area cuts but would be more expensive than hauling to dredge cell directly due to analytical costs and double handling)
- Remaining flat area of site at ~El. 10 capped with Hi-Vis barrier fabric
- Fabric covered with clean soils from hill to raise grade for site

Include in Remedial Approach submission:

- Typical waterfront sections/details
- Grading Plan
- Typical cross sections across site
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AGENDA
Pre-Permitting Meeting Held on 2/4/16

Attended by EPA, Army Corps, NHDES (AOT, water, wetlands, air, solid waste, petroleum)

Determined that will separate the following items for permitting
1. Remedial Action Plan, dredge cell closure (Year 1-2)
2. Dock design and permitting for crew (Year 1)
3. Riverside park and site development (Year 1-2)

Identified the Following Priorities
1. Human health risk with respect to solid waste is #1 priority
2. Wetlands, shoreland, floodplain, all of secondary concerns

Wetlands
1. Current wetlands of low quality and heavily impacted
2. Supportive of dredge/fill in exchange for mitigation/ restoration/ protection of high quality wetlands elsewhere
3. Mitigation value TBD by EPA/ACOE
Floodplain

1. “Remove More, Fill Less” is the recommendation from ACOE if possible with respect to human health
2. If fill and subsequent loss of floodplain storage is needed for soil remediation they would be supportive of additional compensatory dredge/cut within wetlands
3. To be determined if any floodplain storage loss is expected
4. FEMA will not be engaged so long as there is a balance of flood storage in which case a flood study would be required.

Sea Level Rise

1. Agencies supportive of SLR concerns
2. 2100 Mean High Water & 100-YR floodplain + 6.3’
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Next Steps

AGENDA
Conceptual Design
Task 1: Pre-Design
Task 2: Preliminary Site Concepts
Task 3: Draft Concept Plans

Fast-Tracked Engineering
Task 4: Soil Remediation Plans and Permitting
Task 5: Dock Design and Permitting

Future Tasks (Phase 2)
Soil Remediation Oversight
Dock Construction Oversight
Concept Refinement
Detailed Site Planning/Engineering
Developer RFP Assistance
DISCUSSION

COCHECHO WATERFRONT