

September 30, 2015



Nick Mimms, PE
City of Ft. Pierce
Deputy City Manager
100 North US 1
Ft. Pierce, FL 34954

Cardno

380 Park Place Blvd
Suite 300
Clearwater, FL 33759
USA

Phone 727 531 3505
Fax 727 539 1294

www.Cardno.com

RE: Revised Cost Estimate for 60% Seawall Design Plan Preparation and City Funded Portion of Final Source Removal Activities for 2016 Parcel #1 – PCB and Petroleum Impacted Areas Former H.D. King Site, Ft. Pierce

Dear Mr. Mimms:

Cardno is pleased to submit this revised technical and cost proposal for conducting Final 2016 Source Removal activities on Parcel #1 of the former HD King Power Plant site on behalf of the Ft. Pierce Redevelopment Agency (FPRA).

BACKGROUND

Cardno has completed the 2015 Interim Source Removal (ISR) program, detailed in recently submitted 2015 ISR Report dated August 31, 2015. A total of 9,619.78 tons of contaminated soil was successfully removed for off-site disposal at the Okeechobee landfill. As with prior ISR events, additional deeper soils with heavy petroleum-impacts and free-phase petroleum product were encountered below the design depth of 4.5 feet. Based on the extent of the deeper impacts encountered during the 2015 removal program, prior test pit data from the proposed 2016 removal area was re-evaluated and the estimated mass of contaminated soil requiring removal in 2016 was revised to 10,000 tons.

One year of groundwater monitoring was completed with the semi-annual sampling event conducted in June 2015. Based on the results of that event and on prior data, Cardno recommended in the 2015 ISR report that the groundwater monitoring be discontinued and the monitor wells be abandoned. While this approach is consistent with discussions with FDEP at our last meeting, the final recommendation to discontinue groundwater sampling has not been approved by FDEP as of the date this proposal was prepared. Costs for any additional groundwater sampling, if required by FDEP, are not included in this proposal.

As you are aware, Cardno personnel imported, staged and hydro-seeded a total of 15,000 cubic yards of supplemental fill from the Savannah Road site after conclusion of the 2015 ISR program. The staged fill material will be utilized as backfill during the 2016 ISR program discussed in the remainder of this proposal. While the costs associated with transport of the fill material have been reduced from the proposal, costs for soil handling, backfilling and compaction are still included.

In accordance with our recent meeting, costs to develop 60% design plans for replacement of the seawall adjacent to the HD King site have also been included as a separate task in this proposal. As you are aware, Cardno's team has been remediating the site in phases since 2010 and is uniquely suited to utilize our extensive knowledge of site conditions to optimize both the design and construction of the proposed new seawall. Integration of the Brownfield remediation work with the proposed seawall replacement in 2016 will:

- allow close collaboration to improve the design and construction methods given the residual contamination landward of the seawall
- limit the potential for spreading of or exposure to residual contamination, and
- reduce overall costs to the City by completing the work concurrently

Once the 60% plans are completed, a guaranteed-maximum price will be developed to finalize the design and construct the seawall. The project schedule included below anticipates that notice-to-proceed (NTP) will be issued in October 2015 to allow design phase services to be completed in 2015. Construction and 2016 ISR activities will not be initiated until January 2016 in order to take full advantage of Voluntary Cleanup Tax Credit (VCTC) recovery for eligible remedial activities.

The original 2016 ISR program cost estimate, produced in 2014, contained a 2% cost escalation factor to account for increases in labor, trucking and disposal costs. However, these costs have remained relatively flat since the original estimate and the escalation factor has been removed.

Based on conversations with Treasure Coast Regional Planning Council (TCRPC) and City representatives, it is our understanding that an additional \$300,000 Revolving Loan Fund (RLF) loan will be utilized to fund a portion of the activities required in 2016. A separate proposal has been prepared to document activities to be funded under the RLF in 2016, and the following cost proposal details the remainder of the proposed 2016 source removal activities and preliminary seawall design elements to be funded by the City. If the RLF funding is not secured, this proposal will be revised to cover the additional tonnage and labor costs listed under the accompanying RLF proposal.

PROPOSED SCOPE OF WORK

This Cost Proposal is broken down into three sections: 60% seawall design plan and guaranteed maximum price (GMP) preparation, final 2016 source removal activities, and reporting. This proposal combined with the RLF proposal covers the removal the remaining identified soil contamination and costs presented assume remedial activities detailed in both proposals will be conducted concurrently.

Seawall Design Elements

Task I Preparation of 60% Seawall Replacement Design Plans and GMP for Final Design and Construction of Seawall:

Cardno will prepare 60 % design contract plans for the replacement of the seawalls along both sides of Moore's Creek, from the east side of the North 2nd Street Bridge and extending to approximately 20 ft west of the bridge located on North Indian River Drive. In addition, a Guaranteed Maximum Price (GMP) will be developed for finalization of 100% construction plans and construction of the above described seawalls. The 60% design phase will include the following design tasks:

- 1) Provide Analysis and Design of an Anchored Seawall System following CITY'S, Florida Department of Transportation (FDOT) and AASHTO Standards.
- 2) Provide Analysis and Design of a Cantilevered Seawall System following CITY'S, FDOT and AASHTO Standards.
- 3) Provide Special Wall segments/connection details at the following locations: at utility/power line bridge, at pump house, at historic bridge wingwalls and other remaining outfalls,
- 4) Provide and Coordinate Geotechnical and Survey Services.
- 5) Coordinate for Required Permits with the State, The Corp of Engineers (COE) and St. Lucy County Government Environmental Agency.
- 6) Coordinate with Contractor on wall system alternatives, special wall segments/details, impact on existing utilities, impact on existing structures, and constructability. Cardno will attend one field meeting with Contractor.
- 7) Coordinate with City's Utility Departments and other Utility owners having utilities that may be impacted with the new wall construction.
- 8) Coordinate with the CITY with one progress meeting to show conceptual design being developed towards 60 percent completion.
- 9) Prepare 60 Percent Contract plans including the following sheets:
 - Key/Index
 - General Notes
 - Survey
 - Boring Log
 - Seawall Plan Layout
 - Seawall Typical Sections
 - Special Connection Details
- 10) Incorporate the CITY's and Contractor's review comments on the 60 percent Contract plans.
- 11) For the 60 percent Contract plans submittal CARDNO will submit the following to the CITY:
 - Three (3) sets of 11" x 17" prints
 - Design Documentation in PDF form sent via email.
- 12) Provide the CITY with a Guaranteed Maximum Price for the Construction of approximately 1100 lineal feet of Seawall at Moore's Creek starting from the east side of the historic bridge located on North 2nd Street and extending to approximately twenty feet west of the bridge located on North Indian River Drive.

Work will be prepared and checked by a civil engineer registered in Florida as the Engineer of Record. The City will provide the following for Cardno to use and rely on:

- Electronic survey files of the proposed work area
- Copies of maps, plats, aerial photographs, utility atlas/as-builts and other available information and data pertinent to the project within City possession.
- Copies of any City Standard Drawings or Details applicable to the project.

2016 Source Removal Elements

Task II Source Removal: Cardno will provide environmental project oversight and post-excavation confirmatory soil sampling to confirm the removal of PCB/hydrocarbon contaminated soil as part of the final phase of source removal activities in 2016. Post-excavation confirmatory sampling will be conducted in accordance with the EPA/FDEP-approved Revised ISRP. Sample collection and laboratory analytical testing will be implemented pursuant to FDEP SOPs and the EPA criteria.

It is anticipated that the source removal activities will be sequenced such that approximately 1/3 of the final 2016 ISR area will be excavated at any one time so that effective ingress and egress to the excavation and staging areas are properly maintained. Confirmatory side-wall and bottom samples will be collected as the excavation proceeds, therefore reducing laboratory turn-a-round times (waiting for clean results) so that backfilling or over-excavation can proceed, as necessary.

Cardno will screen potentially contaminated soils discovered during excavation activities, as necessary, with an Organic Vapor Analyzer (OVA) equipped with a Photo Ionization detector (PID), as well conduct visual and olfactory observations to evaluate the potential presence of volatile contaminants. A total of 6,029.12 tons of contaminated soil will be direct loaded into dump/mini-wheeler trucks for transport to an approved/permitted landfill as part of the City funded ISR activities in 2016. The depth and thickness of impacted soil varies across the site and excavation activities will be targeting these areas by depth interval to minimize the potential for over excavation of non-impacted soils. Groundwater is encountered at approximately four-and-a-half (4.5) to five (5) ft below land surface across much of the site and, based on recent test pit work and the observations during the 2015 ISR program, excavation activities will proceed below the water table to remove grossly contaminated soils generating free-product. Excavation below the water table will be conducted rapidly to limit the amount of water entering the excavation. Backfilling of open excavations will be conducted as soon as visual/olfactory observations and/or OVA readings indicate that the grossly-contaminated soil/free-product has been successfully removed to limit the accumulation of standing water in the excavations. Excavation work will proceed in an incremental manner across the site in approximately 100 ft grids to maintain accessibility during backfilling.

Upon completion of excavation activities, confirmatory laboratory analytical sampling will be conducted according to the ISR plan to verify removal of impacts to the appropriate regulatory criteria. Cardno proposes post-excavation confirmatory soil samples be collected from the

sidewalls of the excavation at 25 ft intervals along the perimeter of the excavation. Samples will be collected at the mid-point of the sidewall at each sample location. In areas where the water table is not encountered in the base of the excavation, verification base samples will be collected as a five-point composite sample from each 50-ft square. Each 50-ft square of base area will be subdivided into four equal sections representing individual 25-ft square areas. Split soil samples will be collected from the center of each 25-ft square area and at the common corner of the 25-ft squares (effectively the center of the large 50-ft square that was divided into four sections). One half of each sample will be combined to represent the composite sample for the 50-ft square area, while the other samples will be archived at the laboratory. If any composite soil sample contains exceedances of SCTLs from Ch. 62-777, FAC, then each individual archived sample from that 50-ft square area will be analyzed to determine which smaller subset(s) of the 50-ft square are still impacted. If the composite sample results identify no regulatory exceedances then the archived samples will be discarded without being analyzed. Post-excavation confirmatory samples will be analyzed for PCB/petroleum hydrocarbons (historical impacts) only. If volatile impacts are suspected based on OVA readings, soil samples for volatiles analysis will be collected as discrete grab samples, as required by FDEP. Please note that final sampling protocols may be revised based on FDEP negotiations/requirements and associated costs will be adjusted accordingly.

As discussed, clean backfill provided by the City was staged on-site during June 2015 for subsequent use during the 2016 ISR program. A total of twenty (20) soil samples were collected from the fill material prior to importing during the 2014 backfilling work. Based on the lack of impacts detected and number of samples collected, further sampling of the fill source does not appear necessary, unless requested by FDEP.

During backfilling of excavated areas, fill material will be placed in 12-inch lifts and mechanically compacted using onsite excavation equipment and vibratory/roller compactors to approximately 95-98% modified proctor. Compaction testing and oversight will be conducted by Cardno staff and a certified geotechnical technician.

Based on the information gained from test pit work and observations made during the 2015 ISR program, the project contingency has been reduced from 20% to 10%. This contingency will not be utilized without prior written authorization.

As the City is aware, large, below-grade concrete structures including the former power plant intake and outfall canals have been encountered during ongoing excavation activities. These rectangular canal structures are filled with crushed concrete and have generally been encountered at depths of greater than four feet below land surface (bls). The total depth of these structures is not known but appears to be greater than 10 feet bls. The limited costs included in this proposal for concrete removal and disposal are to cover smaller sections of concrete and rubble encountered during ISR activities that can readily be removed with the track-hoe and are not intended to address these larger subsurface concrete features. Similarly, the larger sheet pile retaining wall encountered in the vicinity of former AST #5 is located at a depth of four feet

below original land surface and extends to more than 11 feet bls. Attempts to remove the sheet pile ring with the track-hoe have been unsuccessful and, in fact, removal may not be necessary depending on final development plans. Based on discussions with the City and FPUA staff, it was agreed that these remnant plant features should be left in place. The locations and elevations of visible portions of the remnant plant features and several 24- to 36-inch intake pipes were recorded by professional land surveyors and added to the existing site survey for reference during future development activity.

Task III Reporting and Project Management: A final source removal report will be prepared documenting the removal activities and results of post-excavation confirmatory sampling and will be submitted to EPA/FDEP for review and approval. Due to the residual low-level groundwater impacts remaining at the site a restriction on groundwater use will be placed on the deed and a conditional Site Rehabilitation Completion Order (SRCO) will be requested at the conclusion of the 2016 ISR Program.

SCHEDULE OF COMPENSATION

Sea Wall Elements

Task I: Preparation of 60% Seawall Replacement Design Plans and GMP development for final Design and Construction

Cardno Labor & Expenses	\$49,410
Subcontracted Services	
Project Survey	\$5,000
Geotechnical Services	\$16,300
Permitting Services.....	<u>\$9,000</u>
Task I Subtotal.....	\$79,710

2016 Source Removal Elements

Task II: Remaining Identified Soil Contamination on Parcel #1

Cardno Labor & Expenses (estimated based on 6,029.12 tons @ \$7.05/ton).....	\$42,505
Mobilization/Demobilization	\$15,000
Excavation, transportation and disposal (6,029.12 tons @ \$68.50/ton)	\$412,995*
Confirmatory sampling (estimated 100 samples @ \$210 ea.).....	\$21,000
Handle, backfill, compact and final grade (+/-15,000 cy @ \$4.80/cy)	\$72,000
Concrete/Debris Excavation (+/- 400 cy @ \$15/cy)	\$6,000
Concrete/Debris Disposal (+/- 400 cy @\$15/cy).....	\$6,000
Geotechnical Compaction Testing and Oversight (25 days @ \$1,200/day)	\$30,000
Excavation and Handling of Clean Overburden (+/-1,025 cy @ \$25/cy)	\$25,625
Sampling of Clean On-site Overburden – 2 samples @ 1/500 cy stockpile @ \$210 ea.)	\$420
Erosion Control – (Installation of 1,250 feet of silt fence @ \$1.50/ft)	\$1,875
Wind/Privacy screen replacement	\$4,063

Construction Fence Rental	\$3,000
Permits.....	<u>\$150</u>
Task II Subtotal.....	\$640,633

Task III: Reporting and Project Management

Cardno Labor & Expenses	\$29,000
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Task II and III Estimated Subtotal:..... \$669,633

Contingency 10% \$96,963

Estimated City Portion (Tasks I, II & III) (Not including \$300,000 from RLF proposal)..... \$846,303

ESTIMATED 2016 GRAND TOTAL (Including \$300,000 RLF funded portion) \$1,146,306

Notes: *Cost estimate assumes all remaining PCBs on-site are Non-TSCA. If levels greater than 50 mg/kg are encountered in confirmatory samples, additional fees will apply.

PROPOSED PROJECT SCHEDULE

60 % Seawall Design

Cardno can begin work on the 60% design plans immediately and will complete the 60% plans within 60 days of NTP.

2016 ISR Program

Cardno will conduct a stakeholder meeting in December 2015 to coordinate the 2016 ISR activities and discuss integration of seawall construction efforts. Cardno will mobilize to the site to implement source removal activities during January 2016. A tentative project schedule is further outlined below and will be adjusted based on notice-to-proceed (NTP):

- Notice to Proceed – October 2015**
- Mobilization and Source Removal Activities – January – March 2016
- Preparation and Submittal of Final Source Removal Report – May 2016
- FDEP Approval of ISR Report – August 2016
- Preparation of DRC Package – September 2016
- FDEP Approval and Issuance of SRCO – October 2016
- VCTC Preparation – September/October 2016

** NTP is anticipated in October 2015 to allow design phase services to be completed in 2015. Construction and 2016 ISR activities will not be initiated until January 2016 in order to take full advantage of Voluntary Cleanup Tax Credit (VCTC) recovery for eligible remedial activities.

Cardno project fees and expenses will be billed on a lump sum basis. Excavation, transportation and disposal costs will be invoiced based on actual volume/tonnage of material disposed of at the landfill.

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Work performed for this project will be in compliance with the current Agreement for Consulting Services contract with the FPRA.

After review of the scope of services, please call me or Greg Schultz at 727.531.3505, if you have any questions.

Sincerely,

Approved by:



Rick Hagberg, PG
Director
For Cardno
Email: Richard.Hagberg@Cardno.com

Signed by: _____
Title: _____
Date: _____