Aquatic Sites Invasive Species Maintenance for the City of Clearwater

RFP #22-21

March 16, 2021

Cardno

Aquatic Sites Invasive Species Maintenance for the City of Clearwater

RFP #22-21

City of Clearwater
100 S Myrtle Ave 3rd Floor
Clearwater, FL 33756-5520

Prepared by
Cardno, Inc.
3905 Crescent Park Drive, Riverview, FL 33578
813 664 4500
www.cardno.com

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Acronyms

ATV	All-Terrain Vehicles
DRI	Development of Regional Impact
EPA	Environmental Protection Agency
GIS	Geographic information system
GPS	Global Positioning System
RFP	Request for Proposal
UTV	Utility Task Vehicle

Tab 1 Letter of Transmittal

March 16, 2021

Ms. Lori Vogel, CPPB
Procurement Manager
City of Clearwater
Attn: Purchasing
100 S Myrtle Ave, 3rd Floor
Clearwater, FL 33756-5520
lori.vogel@myclearwater.com
Tel. 727-562-4633

Cardno

3905 Crescent Park Drive
Riverview, FL 33578
USA
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RE: Aquatic Sites Invasive Species Maintenance – RFP #22-21

Dear Ms. Vogel, and Members of the Selection Committee:

Cardno is pleased to submit our proposal to the City of Clearwater (City) to provide environmental services as related to controlling nuisance and exotic species in and around ponds, lakes, mitigation, and wetland sites within the City's jurisdiction. Our response attached herein is specifically aligned with the Aquatic Sites Invasive Species Maintenance request for proposal (RFP) issued February 12, 2021, to demonstrate our ability to perform the work and provide a strong and concise narrative describing our qualifications, approach, and value-added benefits in selecting Cardno for this contract.

Project Understanding and Commitment of Services

The Cardno Team is comprised of highly qualified, local, licensed professional environmental technicians and experts. We have held this contract with the City in the past and understand what is required to keep your aquatic sites in compliance. Cardno is familiar with all of the areas requiring aquatic invasive species maintenance, including your lakes, ponds, canals, and mitigation areas. We understand the challenges for each of these sites and the need to maintain a functioning wildlife habitat by controlling nuisance/exotic vegetation in waterbodies/sites and utilizing different treatments for each aquatic system, while minimizing the use of chemicals.

Cardno has built a solid reputation for successfully applying innovative approaches to ensure timely and cost-effective project deliverables for our public and private sector clients. We are a full-service environmental science and engineering firm with extensive resources – including the right personnel, materials/supplies, equipment, licensing, and transportation necessary to support any request listed under this contract. Cost and schedule control require hands-on participation of the Cardno project management team, as introduced below. Cardno staff costs will be controlled on an individual level, with each team member made aware of the budgetary and time constraints for each of his or her task elements. No assignments will be made without a thorough review of the budget limits. Weekly time sheets will also be reviewed along with regular status reports to monitor budget compliance. Cardno project management staff is well versed in several applications to effectively manage our contracts and communicate with the City, including MS Project, BST for project accounting, and regular project team meetings. Cardno thrives in meeting and exceeding our clients' expectations. We believe that the project management systems and controls we have in place provide our project managers and clients with the information to confidently produce excellent results.

Project Management Team

Cardno is proud of our history in providing environmental support for the City of Clearwater and has direct experience in providing aquatic invasive species maintenance throughout the State of Florida. **Patrick Boser**, with more than 22 years' experience, will serve as the **project manager** acting as the primary point of contact and strategic planner for this contract. **Richard Gross** is our **principal in charge and senior technical advisor** who has supervised the construction of numerous complex mitigation areas in Florida. **Annie Otto**, will serve as **certified biologist**, with her expertise in Florida ecosystems, wetland mitigation design, permitting, and ecological/biological assessments. Mr. Boser, Mr. Gross, and Ms. Otto have worked together for more than 20 years, successfully completing contracts for the City and numerous private and public sector clients across the Tampa Bay region. In addition to our project management team and applicators based in Riverview, Cardno can use additional personnel out of our Clearwater based office. Together, we are committed to providing the City of Clearwater with the highest quality of service and expertise needed to successfully manage your projects while identifying the most effective, technologically advanced and cost-effective options available.

Should you have any questions or require additional information following your review of our proposal, please do not hesitate to contact Patrick Boser or Rick Gross with phone numbers and email listed below. We appreciate this opportunity to work with the City of Clearwater again.

Sincerely,

Cardno, Inc.

Patrick Boser
Project Ecologist/Project Manager
for Cardno
Tel.: 813.257.0010
Email: patrick.boser@cardno.com

Richard Gross
Principal in Charge/Senior Mitigation Manager
for Cardno
Tel.: 813.257.0006
Email: richard.gross@cardno.com

Tab 2 Professional Experience of the Company, and Key Personnel

About Cardno

Founded in 1945, Cardno, Inc. (Cardno) is a professional environmental and engineering services firm with expertise and experience in supporting some of the largest companies around the world on projects and programs ranging from large-scale infrastructure improvements to addressing the world's most complex environmental challenges. With more than 130 offices across the country and worldwide, Cardno provides clients with access to 6,000 professionals with exceptional local client service and project delivery. Our team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Key areas of specialization include environmental consulting and engineering; ecological consulting, mitigation and restoration; geological services; civil, structural, geotechnical, mining, and subsurface utility engineering; land development; and industrial hygiene.

Cardno has more than 300 staff in Florida, 75 of whom are located in our Riverview office where the current contract will be managed.

Cardno is financially sound as a strong company with sufficient capital resources for normal ongoing operations. Cardno currently generates positive cash flow from operations and utilizes internal project management and financial systems providing timely information key to proactive management of business operations and working capital investment. Cardno is not dependent upon any specific customer, industry, or service and as a result overall economic risk is limited due to our large customer base, and dispersion across geographic areas and industries served. As a publicly traded company, the City of Clearwater also has access to our financial history via Cardno's Investor Center web page at https://www.cardno.com/investorcentre/ investor-information/.

Aquatic Habitat Vegetation Management

For over 40 years, Cardno has provided a broad range of services in managing nuisance and exotic species in upland restoration, wetland and upland creation, man-made waterways, and natural areas throughout Florida. These services have included the control of air potato, skunk vine, climbing fern, cattail, Brazilian pepper, Melaleuca, Peruvian primrose-willow, torpedo grass, cogon grass, natal grass, hydrilla, water hyacinth, and many others. Cardno has used many methodologies in controlling nuisance and exotic plants, including herbicide treatment, mechanical shrub and tree removal, manual removal, and biological control all from licensed restricted use pesticide commercial applicators.

Initial mechanical removal of algae and slender spikerush from residential pond.

Cardno's lake management services offer nuisance and exotic aquatic vegetation and algae treatments, aquascaping, littoral shelf planting, manual removal, and fish stocking. We service many man-made and natural waterways throughout Florida including retention ponds and ditches. Retention ponds and ditches require a lot of maintenance and clearing with all of the inputs they receive as part of their function.

Algae continues to be our number one targeted species for aquatic chemical applications. Our experience has taught us that every waterway differs, so we have established many different techniques to control algae. We work closely with leading aquatic researchers to stay abreast of the latest control measures, including biological control products, in addition to non-copper based algae control products. Many of these enhancements include colorants, stimulants, and nutrient fixing bacteria. Alternatives to the application of products are the use of biological control measures. These include herbaceous plant installations and fish stocking. Cardno also offers native seeding and plant and tree installations. Cardno is currently supporting similar scopes of work for lake management contracts in Pinellas, Hillsborough, Manatee, Pasco and Sarasota Counties. Cardno field staff are trained and experienced in distinguishing target from non-target plant species and in best management practices for herbicide usage. Cardno has a team of educated, certified, and experienced professionals, along with the in-house equipment and resources that will enable us to provide the necessary capacity to meet multiple-site deployments.

To help ensure success, projects need a management plan that is flexible and supports site development goals. Cardno inspects project areas every month to gauge native plant density and composition, and manage undesirable weeds. With regular maintenance and monitoring this helps control invasive plant species prior to them becoming problematic. Our aquatic management team creates tailored effective maintenance and management plans to support long-term project success. Using our extensive experience, our staff combines cutting-edge technology and equipment, with site-specific ecological and botanical knowledge to identify and quantify problem areas, and potential threats to site success.

Key Staff Qualifications

Cardno has the capability and skills needed to perform the scope of work outlined in the City of Clearwater Request for Proposal (RFP). **Project Manager, Patrick Boser** will serve as the primary point of contact with the City. Mr. Boser provides project management expertise with a focus on large-scale mitigation maintenance and aquatic habitat enhancement and on-site quality assurance. He will be in direct communication with the City during all phases of project development and post completion management. Mr. Boser is familiar with the site locations listed in this bid. Cardno has held this contract multiple times in the past 20+ years, which Mr. Boser has performed and managed the aquatic vegetation services.

Patrick Boser will work closely with the Project Team to oversee and coordinate with key staff to perform the scope of work. **Principal-in-Charge, Richard Gross** will serve as a senior technical advisor. Richard Gross has supervised the construction of numerous complex mitigation areas and has been project superintendent for hundreds of planting and maintenance projects. **Annie Otto** will serve as our **Certified Biologist** and **John Bailey** will serve as our **Professional Wetland Scientist** who have more than 40 years' combined experience. Ms. Otto and Mr. Bailey are experts in wetland delineation and Florida ecology, and have extensive botanical knowledge and experience in Central Florida ecosystems.

Cardno's Aquatic Services Team Structure

Cardno has specifically chosen the Staff listed below to work on this project based off of their knowledge and technical experience. We understand how challenging this project can be and will only allow senior experienced licensed applicators to perform any treatments.

Principal in Charge- Richard Gross. Rick will provide support to the project manager.

Project Ecologist/Manager- Patrick Boser. Patrick will coordinate treatment scheduling, communication with City Staff, quality assurance, and perform treatment assistance where needed. License #CM24692.

Certified Biologist- Annie Otto. Annie will assist the Team with technical expertise for this project.

Professional Wetland Scientist- John Bailey. John will assist the Team whenever environmentally sensitive issues may arise.

Fisheries Biologist- Chris White- Chris will ensure safety protocols are followed and perform treatment applications. License #CM25852.

Field Supervisors- Mike Eales and Fabian Nunn. Mike and Fabian will provide site supervision, diagnosis, prescribe treatments, and perform applications. Mike's License #CM22437, Fabian's License #CM21702.

Senior Field Technician- Dennis Mercer. Dennis will perform treatment applications. License #CM26291.

Senior Field Technician- Leonard Morrow. Leonard will perform treatment applications. License #CM22220

Senior Field Technician- Dave Johnson. David will perform treatment applications. License #CM23077.

Table 1 Overview of Key Staff Qualifications

Staff	Experience
Patrick Boser *Project Ecologist/ Project Manager* > Commercial Applicator License, #CM24692 > AA, Hillsborough County Community College	Mr. Boser specializes in mitigation maintenance, lake management, ecological monitoring, and permit compliance. He is the manager of the Lake Management/Mitigation Department at Cardno. Mr. Boser has extensive knowledge in habitat management of nuisance/exotic vegetation. He is responsible for coordinating crews and subcontractors to perform maintenance of lakes and wetland mitigation sites. He has coordinated the maintenance of mitigation sites, upland preserves, and natural and man-made waterbodies throughout Florida. He has experience in numerous maintenance techniques including manual and mechanical removal, selective herbicide treatment, and biological control measures. Mr. Boser understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species.
Richard Gross *Principal-in-Charge* > AA, Business, Stark Community College	Mr. Gross, with more than 30 years of experience, is responsible for project supervision and implementation of planting and nuisance removal projects. He has supervised construction of complex mitigation areas and has been project superintendent for hundreds of planting and maintenance projects. Mr. Gross has supervised construction activities with general contractors on projects that have required extensive coordination between municipal governments, regulatory agencies, and developers. Areas of expertise include freshwater mitigation and coastal design, wildlife and plant surveys, and project management on all planting activities for wetland and upland creation/ enhancement areas, freshwater mitigation areas, dune restoration, and coastal restoration projects. He has also supervised nuisance/invasive species removal for permit compliance at more than 250 projects in the South Florida area.
John Bailey, PWS *Biologist* > Professional Wetland License, #763 > MS, Wetland Ecology, University of Florida > BS, Forest Resources Management, Southern Illinois	Mr. Bailey is a Certified Professional Wetland Scientist with over 28 years of experience. He is an expert in wetland delineation and Florida ecology, and has extensive botanical knowledge and experience in Central Florida ecosystems. Mr. Bailey has project experience is in ecological assessments of wetlands and uplands, environmental resource permitting, wetland delineation (including aerial wetland delineations), listed species assessments and surveys, wetland mitigation design, wetland hydroperiod assessment, and data analysis. Mr. Bailey has extensive experience coordinating with project staff to complete projects on time and within budget.
Michael Eales *Field Supervisor/ Treatment Applicator* > Commercial Applicator License, #CM22437	Mr. Eales specializes in mitigation maintenance and lake management. He is a mitigation coordinator of the mitigation/lake management crew at Cardno and is responsible for producing weekly work schedules. In this role, Mr. Eales inspects all mitigation and lake management projects for thoroughness of treatments and permit compliance. He produces inspection reports and recommends solutions to improve the overall quality of Cardno's Mitigation Division work products. He also supervises and implements field work for ecological restoration projects at Cardno. Restoration work includes invasive species control, native plant installation, and erosion control. Mr. Eales is also experienced in GIS and the use of handheld global positioning system (GPS) units, maps and compasses to navigate to plot locations.

Staff	Experience
Annie Otto *Certified Wildlife Biologist/ Restoration Ecologist* > Certified Wildlife Biologist > BS, Environmental Science, Jacksonville College	Ms. Otto has experience in wildlife ecology and permitting; ornithology; wetland ecology, assessment, and permitting; and fire ecology throughout Florida's ecosystems. Specific areas of expertise include listed species assessments, biological resource inventories, design of holistic management plans for lands with listed species, wetland delineation and permitting, and mitigation design and monitoring. Primary responsibilities include managing teams of field ecologists, supervising and conducting wetland delineations/ evaluations and wildlife surveys, preparation of permit applications, and participating in client and agency interactions.
Fabian Nunn *Field Supervisor/ Treatment Applicator* > Commercial Applicator License, #CM21702 > AA, University of South Florida > BA, University of South Florida	Mr. Nunn specializes in mitigation maintenance and lake management. He supervises and implements field work for ecological restoration projects at Cardno. Restoration work includes invasive species control, native plant installation, and erosion control. Mr. Nunn is also experienced in geographic information systems (GIS) and the use of handheld GPS units, maps and compasses to navigate to plot locations. He has extensive knowledge in habitat management of nuisance/exotic vegetation.
Chris White *Fisheries Biologist* > Commercial Applicator License, #CM25852 > SWFWMD WAP Certified > BS, Fisheries and Aquatic Sciences, Purdue University	Mr. White manages ecological restoration projects in the Southeast. In this role, Mr. White manages day-to-day field crew operations, generates pricing for proposals and bids, and leads the safety compliance in his office. He is responsible for performing all aspects of fieldwork for habitat restoration. Mr. White also assists with macroinvertebrate, fishery, and habitat surveys, and mammal, reptile, amphibian, and bird identification. Mr. White understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species.
Leonard Morrow *Senior Field Technician* > Commercial Applicator License, #CM22220 > AS, Environmental Science, Hillsborough Community College	Mr. Morrow specializes in mitigation maintenance and lake management. He provides field observation and quality control of wetland mitigation and aquatic habitat enhancement projects in varying sizes, from less than an acre to multiple acres in size. Mr. Morrow also provides on-site quality assurance and direct communication contact with the client representative during all phases of project development and post completion management to ensure agency compliance. Mr. Morrow has conducted maintenance of mitigation sites throughout Central Florida. He has experience in numerous maintenance techniques including hand removal, selective herbicide treatment, and mechanical removal. Mr. Morrow understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species.

Licenses/Certifications

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM24692

BOSER, PATRICK GLENN
710 W PINEDALE DR
710 W PINEDALE DR
PLANT CITY, FL 33563

Categories
6, 5A, 21

Issued: March 4, 2021
Expires: February 28, 2025

Signature of Licensee
NICOLE "NIKKI" FRIED, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM21702

NUNN, FABIAN THOMAS
7107 PIERCE HARWELL RD
PLANT CITY, FL 33565

Categories
5A, 21

Issued: December 29, 2020
Expires: June 30, 2024

Signature of Licensee
NICOLE "NIKKI" FRIED, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM22437

EALES, MICHAEL D
1922 KETTLER DR
LUTZ, FL 33559

Categories
5A, 21

Issued: June 30, 2017
Expires: July 31, 2021

Signature of Licensee
ADAM H. PUTNAM, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM25852

WHITE, CHRISTOPHER ALLEN
1710 MIRA LAGO CIRCLE
RUSKIN, FL 33570

Categories
21, 5A

Issued: December 13, 2018
Expires: December 31, 2022

Signature of Licensee
ADAM H. PUTNAM, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM26291

MERCER II, DENNIS ALAN
836 SUNDIAL HOOP
PLANT CITY, FL 33565

Categories
5A, 6

Issued: August 19, 2019
Expires: August 31, 2023

Signature of Licensee
NICOLE "NIKKI" FRIED, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

Florida Department of Agriculture and Consumer Services
Pesticide Certification Office
Commercial Applicator License
License # CM22220

MORROW, LEONARD DARRYL
CARDNO ENTRIX
3905 CRESCENT PARK DR
RIVERVIEW, FL 33578

Categories
5A, 21

Issued: August 16, 2017
Expires: April 30, 2021

Signature of Licensee
ADAM H. PUTNAM, COMMISSIONER

The above individual is licensed under the provisions of Chapter 487, F.S. to purchase and apply restricted use pesticides.

FLORIDA

GV18076-1
Certificate #
GV18076
Trainee ID #

UF UNIVERSITY of FLORIDA IFAS Extension

Certificate of Training
Best Management Practices
Florida Green Industries

The undersigned hereby acknowledges that

Leonard D. Morrow

has successfully met all requirements necessary to be fully trained through the Green Industries Best Management Practices Program developed by the Florida Department of Environmental Protection with the University of Florida Institute of Food and Agricultural Sciences.

Issuer	Instructor	Date of Class	DEP Program Administrator
	D. Rainey	4/21/2012	Kristine P. Jones

Not valid without seal

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM

Leonard Morrow

Class Date
April 30, 2014

Inspector Number
30710

QUALIFIED STORMWATER MANAGEMENT INSPECTOR

UF IFAS UNIVERSITY of FLORIDA

GV914236-1
Certificate #
GV914236
Trainee ID #

Certificate of Training
Best Management Practices
Florida Green Industries

The undersigned hereby acknowledges that

Chris White

has successfully met all requirements necessary to be fully trained through the Green Industries Best Management Practices Program developed by the Florida Department of Environmental Protection with the University of Florida Institute of Food and Agricultural Sciences.

Issuer	Instructor	Date of Class	DEP Program Administrator
	T. Wichman	5/12/2020	

Not valid without seal

EDUCATION EXPERIENCE PWS ETHICS

Society of Wetland Scientists
Professional Certification Program, Inc.

renews the designation

Professional Wetland Scientist

For

John J. Bailey

In recognition of all the professional requirements approved by the Society of Wetland Scientists Certification Renewal Program, and verified by the Society's Certification Renewal Review Panel. Professional Wetland Scientist Number **763** issued on **9/29/1995** and recertified on **5/5/2015.** Due to recertify again by **9/29/2020.**

Robert D. Shannon, Ph.D, PWS
President

Pat Frost, PWS
Certification Renewal Chair

THE WILDLIFE SOCIETY

The Wildlife Society

INCORPORATED IN WASHINGTON, D.C.

grants the designation

Certified Wildlife Biologist

to

Annette Lee Otto

in recognition of fulfillment of all the professional requirements approved by The Wildlife Society and verified by the Society's Certification Review Board. This designation is valid for 5 years, beginning the first day of January 2020, provided membership in the Society remains in good standing.

President, The Wildlife Society

Chair, Certification Review Board

Executive Director, The Wildlife Society

Project Experience

Our team's success is well demonstrated by our project history with similar scopes of work. We assist our clients through all aspects of vegetation management. Our staff has assisted clients with a wide variety of tasks including exotic vegetation nuisance control and removal, native plant supply and installation, plant establishment and maintenance, and ecological restoration planning and design. Relevant project experience is summarized below.

Project Name	Non-Native Species Control Contract: Inspection, Planting, Maintenance and Stormwater Ponds – Pasco County, Florida
Client	Pasco County BOCC
Service Dates	January 30, 2017 – Ongoing
Summary of Work	Cardno conducts events to control nuisance/exotic vegetation in stormwater ponds, upland and wetland mitigation areas in various sites throughout Pasco County.

Project Name	Hillsborough County Non-native Species Control Contract
Client	Hillsborough County Conservation and Environmental Lands Management
Service Dates	March 2016 – April 2022
Summary of Work	Cardno provides nuisance/exotic vegetation control, forestry mowing, tractor mowing, canopy reduction, and planting to sites across Hillsborough County.

Project Name	As-Needed Land Management – Hillsborough County, Florida
Client	Tampa Bay Water
Service Dates	April 2019 – Ongoing
Summary of Work	Cardno controls nuisance/exotic vegetation on over 400 acres of wetland mitigation, multiple stormwater ponds, and upland restoration areas.

Project Name	Environmental Planting, Monitoring, Reporting & Maintenance Services- Pinellas County, Florida
Client	Pinellas County BOCC
Service Dates	December 2019 – Ongoing
Summary of Work	Cardno conducts nuisance/exotic vegetation control, planting, monitoring and reporting in numerous ponds and wetland mitigation sites across Pinellas County.

References

Pasco County BOCC

Juanita Bernal Leon, Senior Project Manager
Pasco County BCC | Engineering Division – Public Works
P: 727-834-3611
Internal: x1034
4454 Grand Blvd.
New Port Richey, FL 34652
jbernalleon@pascocountyfl.net|Website: www.pascocountyfl.net

Pinellas County

David Brian Brown
Ecological Service Unit and Water and Navigation Program Manager,
Division of Environmental Management, Public Works
22211 U.S. Hwy 19 N., Bldg 1
Clearwater, Florida 33765
(727) 464-8862 (office)
(813) 210-7876 (cell)
dbbrown@pinellascounty.org

Tampa Bay Water

Christopher Shea P.W.S.
Senior Environmental Analyst
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References Continued

Hillsborough County

Ken Bradshaw

Field Operations Manager

Conservation and Environmental Lands Management

P: (813) 672-7876

E: bradshawk@HillsboroughCounty.org

W: HillsboroughCounty.org

Hillsborough County

10940 McMullen Rd., Riverview FL 33569

Equipment

Cardno owns and operates a wide range of equipment, allowing for a diverse and efficient approach in performing invasive plant control and native plant installation. We also have the unique ability to share equipment resources between other offices throughout Florida based on project needs and availability. This works to everyone's advantage, saving on expensive equipment rental costs. We offer a range of equipment including Boats, All-Terrain Vehicles (ATV) / Utility Task Vehicles (UTV), Skid Sprayers, and Tractors Our available equipment anticipated for use under this contract is summarized in Table 2 below.

Table 2 Available Equipment for Cardno's Riverview Office

Available Equipment	
Power and Manual Equipment	
Kubota L4701HST 4x4 Tractor with Loader	Brush Trimmers (8)
Land Pride 72-inch Grapple	Power Auger (4)
48-inch Pull Behind Trail Mower	
Backpack Sprayers (15)	
Chain Saws (6)	
Ground Transportation / Equipment	
2016 Dodge Ram 2500 4x4	Utility Trailers (6)
2015 Dodge Ram 1500 4x4	14-foot Dump Trailer
2015 Ford F150 4x4	John Deere UTV with Spray Assembly (3)
2014 Ford F150 4x4	Honda ATV with Spray Assembly (5)
2018 Dodge Ram 2500 4x4	Polaris UTV, 6-seat Crew Model (2)
2007 Toyota Tundra 4x4	
Boat/Water Transportation	
14-foot Carolina Skiff with Spray Assembly (2)	18-foot Tacker Grizzly with Spray Assembly
12-foot Jon Boat (2), 14-foot Jon Boat	15-foot Panther Airboat with Spray Assembly
Water Quality and Water Level Monitoring- Additional Services	
Turbidity Meters (6)	Secchi Disk (5)
Water Level Meters (6)	YSI 30 Conductivity, Salinity, Temperature (2)
Light Sensor	YSI ProDSS Multi-parameter Spot Measuring Sonde
Microscopes (4)	YSI 6600 Series Multi-Parameter Data Sondes (4)
Niskin Water Samplers	
Global Positioning System (GPS) and Survey Equipment	
GeoXT 7000 Series (4)	GarmineTrex Legend WAAS Handheld GPS (12)
GeoXT 2005 Standalone GPS Unit	Survey Levels (2)
Trimble R1 Sub-meter Receiver	

Tab 3 Understanding of Services to be Performed and Approach to Meeting Requirements

Project Plan/Approach

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With Cardno's familiarity and experience of the City of Clearwater's (the City) lakes and ponds, and with direction and knowledge base from the City's project managers, we will provide a high level of service that exceeds expectation. With our technical expertise, deep bench of resources, and experience in working with the City on previous projects, we are confident in our ability to deliver strong management practices and treatments for various aquatic systems. Upon arrival to a site, Cardno's Project Manager, Patrick Boser will carefully inspect the site prior to giving our crew(s) final instructions. While on-site, the crew is assisted by our Field Supervisors, Mike Eales and Fabian Nunn. Cardno's crew carefully treats with EPA approved herbicides and/ or hand removes nuisance vegetation without impacts to desirable vegetation in place. In addition, Cardno removes and disposes of litter we encounter at each site. After maintenance is completed, the site is re-inspected by the on-site supervisor to verify quality of work. We realize it is our responsibility to ensure that nuisance vegetation on-site is treated/controlled in a responsible manner. During our maintenance of City ponds and lakes, we will also inspect for other problems that may exist, such as extreme hydrologic conditions, vandalism, survivorship problems, erosion, and litter. We will report these situations to the City's project manager immediately. The following shows our understanding of the required maintenance intervals by site location.

Waterway Management Program Event Intervals

Lakes and Ponds (20)

Lake Hobart	6x/year	Lake Carol	6x/year
Lake Hibiscus	6x/year	Lake Louise	6x/year
Crest lake	6x/year	Linn Lake & Gabion	1x/month
Terrace lake	6x/year	Rice lake	1x/month
Westchester lake	6x/year	Lake Julia	1x/month
Lake Tangerine	6x/year	Highland Ponds	1x/month
Cypress Bend Pond	6x/year	Arcturas Ave. Pond	1x/month
Hampton Road Pond	6x/year	Drew St, Pond	1x/month
Sall's Lake	6x/year	Palmetto St. Ponds	1x/month
Lake Lucille	6x/year	Prospect Lake	1x/month

Creeks, Channels, Ditches & Gabions (10)

Channel G Gabion	4x/year	Channel F Gabion North	4x/year
Tropic Hills Outfall	4x/year	Channel F Gabion South	4x/year
Allen's Creek Gabion South	4x/year	Channel B Gabion	4x/year
Stevenson Creek Gabion	4x/year	Allen's Creek Gabion North	4x/year
Channel H Gabion	4x/year	Byram Ditch	1x/month

Right of Ways (5)

West Drive	6x/year	Power Company ROW	1x/month
N. Old Coachman Rd.	6x/year	Landmark Dr	1x/month
Us Highway 19 N.	6x/year		

Parks and Recreational Areas (8)

Frank Tack Park	6x/year	Cliff Stephen's Park	1x/month
DD Davis Park	6x/year	Allen's Creek Park	1x/month
Moccasin Lake Park	1x/month	Lake Chautauqua Park	1x/month
Cooper's Bayou Park	1x/month	Lake Chautauqua South	1x/month

Environmental/Stormwater Monitoring Facilities (6)

Woodlawn Terrace	1x/month	Alligator Lake	1x/month
Coachman Ridge Park	1x/month	Kapok Park	2x/month
Lake Bellevue	1x/month	Glen Oaks Park	2x/month

The above site locations will be maintained through the use of backpack sprayers, boats with spray assemblies, and John Deere Gators with spray assemblies.

Reporting

Cardno believes communication is key when managing a project of this caliber. Clear communication can help educate the public and inform our clients of our progress. Being able to collectively communicate the needs of our clients is important so that we provide the most efficient and effective plan of action to achieve the desired project objectives. One of our avenues for clear communication comes from our reporting. Figures 2 and 3 are representative report styles we can use for the required monthly and annual reports.

Cardno Monthly Report City of Clearwater Aquatic Sites Maintenance					
Site Name	Date Treated	Species Treated/Trash	Herbicides/Equipr	Tansitional Treatment	Weather Condition
Sall's Lake					
Notes:					
Lake Lucille					
Notes:					
Lake Carol					
Notes:					
Lake Louise					
Notes:					
Linn Lake & Gabion					
Notes:					
Rice Lake					
Notes:					
Lake Julia					
Notes:					
Highland Ponds					
Notes:					

Figure 2 Monthly Report Table Example

CITY OF CLEARWATER
Aquatic Sites Maintenance
2019 ANNUAL REPORT

Overall Condition	Nuisance Species	Special Concerns	Recommendations
Lucille			
Good	cattails, torpedo grass	None	Plant native vegetation Around lake.
BEFORE		AFTER	
Prospect			
Good	algae, hydrilla	None	None
BEFORE		AFTER	

Overall Condition	Nuisance Species	Special Concerns	Recommendations
Rice			
Good	water lettuce, water-hyacinth	Access, residents' fences.	None
BEFORE		AFTER	

Figure 3 Annual Report Example

Tab 4 Company's Philosophy Regarding Maintenance of Natural Resources

The policy of effectively maintaining natural resources is not just a simple scientific or technical challenge. It is about integrating diverse needs, interests, and visions. Cardno believes the most effective way to achieve this mixed set of goals - to promote livable communities, vibrant economies, and healthy landscapes - is to have the right people with the best available information address issues of common concern. We consider natural resources in the context of the broader landscape level and acknowledge that humans are part of the landscape and they need to be involved in management and planning processes in an equitable way. At Cardno, natural resource management requires understanding of the physical, chemical, and biological factors that interact and control ecological processes in terrestrial, wetland and aquatic ecosystems – and the species that depend on them. Within this framework, Cardno scientists, restoration engineers and resource economists are available to link client goals with regulatory requirements to manage and conserve our natural resources.

Lake and wetland maintenance have always been a significant part of the overall environmental services package that Cardno offers our clients. We have devoted an entire department of the company to maintenance and habitat management practice services that include lake and pond management, uplands and wetlands restoration/mitigation design, construction oversight, planting, nuisance/exotic plant maintenance and qualitative and quantitative monitoring. The professional staff of this practice area in Riverview is supported by two additional crews of laborers and environmental technicians who conduct planting and maintenance services across central Florida. The number of crews and the number of crew members are dictated by overall workload and can be expanded to meet the City of Clearwater's project needs. We currently have more than 100 lake and wetland management projects under contract for regular maintenance services. In addition, we have numerous other related projects that are required by permit and have time sensitive schedules. We offer the City a strong bench of resources to successfully manage numerous projects and locations, always with a focus on quality, safety, and service.

Cardno has the ability to offer innovative solutions to weed control problems that may be preventing a site from reaching success criteria and the City's management goals. We understand the need for ecological restoration is growing due to human and natural activities that damage or destroy landscapes and native habitats.

Shallow areas in Florida ponds and lakes are the perfect places for exotic and nuisance emergent plants to colonize. In addition, fairly shallow ponds in Florida create perfect conditions for submerged aquatics, especially in neighborhoods with yard fertilization and pet waste. Cardno is well aware of the potential for nuisance plants to be introduced through anthropogenic means and takes every precaution to prevent this from happening on our project sites. We understand that consistent and appropriate treatment of nuisance/exotic species is key to controlling these aggressive plants. All herbicides used by Cardno in lakes, ponds, and wetlands are approved for the specific use necessary and are applied by environmental technicians who are state certified applicators (including aquatics, natural areas, and right of way). Our technicians are trained in the identification of plant species and selective control techniques.

Finally, Cardno has a strong commitment to meeting the needs of our clients while balancing what is right for the environment. We strive to negotiate environmental problems that will maintain the diversity and health of the natural environment, and the functions and operation of the built environment, while enabling our clients to successfully complete their projects in a timely, cost effective manner. As an innovator in the environmental field, Cardno continually seeks new ways and technologies to meet the challenges of the ever-evolving fields of resource management and protection.

Tab 5 Cost of Services

Cardno understands the need to be budget conscious and cost effectiveness when servicing multiple projects; therefore, we have tailored our cost to reflect fees for all work associated with the scope of services. Below is the cost for each site/location treatment plan, multiplied to an annual amount per location.

Table 3 List of Waterbodies / Sites / Unit and Total Pricing

Name	Treatment Frequency	Unit Price	Annual Total
Lakes and Ponds (20)			
Lake Hobart	6x/year	$125.00	$750.00
Lake Hibiscus	6x/year	$145.00	$870.00
Crest Lake	6x/year	$350.00	~~$2,700.00~~ $2,100.00
Terrace Lake	6x/year	$185.00	~~$2,100.00~~ $1,110.00
Westchester Lake	6x/year	$275.00	$1,650.00
Lake Tangerine	6x/year	$100.00	$600.00
Cypress Bend Pond	6x/year	$200.00	$1,200.00
Hampton Road Pond	6x/year	$60.00	$360.00
Sall's Lake	6x/year	$100.00	$600.00
Lake Lucille	6x/year	$265.00	$1,590.00
Lake Carol	6x/year	$95.00	$570.00
Lake Louise	6x/year	$115.00	$690.00
Linn Lake & Gabion	1x/month	$350.00	$4,200.00
Rice Lake	1x/month	$225.00	$2,700.00
Lake Julia	1x/month	$175.00	$2,100.00
Highland Ponds	1x/month	$350.00	$4,200.00
Arcturas Avenue Pond	1x/month	$80.00	$960.00
Drew Street Pond	1x/month	$85.00	$1,020.00
Palmetto St. Ponds	1x/month	$155.00	$1,860.00
Prospect Lake	1x/month	$325.00	$3,900.00
Creeks, Channels, Ditches and Gabions (10)			
Channel G Gabion	4x/year	$225.00	$900.00
Tropic Hills Outfall Gabion	4x/year	$300.00	$1,200.00
Allen's Creek Gabion's, North Section	4x/year	$285.00	$1,140.00
Allen's Creek Gabion's, South Section	4x/year	$400.00	$1,600.00
Stevenson Creek, Golf Course Gabion	4x/year	$175.00	$700.00
Channel H Gabion's	4x/year	$125.00	$500.00
Channel F Gabion, North Section	4x/year	$175.00	$700.00
Channel F Gabion's, South Section	4x/year	$375.00	$1,500.00
Channel B Gabion	4x/year	$475.00	$1,900.00

Byram Ditch	1x/month	$450.00	$5,400.00
Right-of-Ways (5)			
West Drive	6x/year	$85.00	$510.00
N. Old Coachman Road	6x/year	$220.00	$1,3200.00
US Highway 19 N.	6x/year	$300.00	$1,800.00
Power Company Right of Way	1x/month	$255.00	$3,060.00
Landmark Drive	1x/month	$320.00	$3,840.00

Parks and Recreational Areas (8)			
Frank Tack Park	6x/year	$155.00	$930.00
D.D. Davis Park	6x/year	$100.00	$600.00
Moccasin Lake Park	1x/month	$200.00	$2,400.00
Cooper's Bayou Park	1x/month	$500.00	$6,000.00
Cliff Stephen's Park	1x/month	$875.00	$10,500.00
Allen's Creek Park	1x/month	$1,500.00	$18,000.00
Lake Chautauqua Park	1x/month	$195.00	$2,340.00
Lake Chautauqua South	1x/month	$250.00	$3,000.00
Environmental / Stormwater Monitoring Facilities (6)			
Woodlawn Terrace	1x/month	$500.00	$6,000.00
Coachman Ridge Park	1x/month	$280.00	$3,360.00
Lake Bellevue	1x/month	$600.00	$7,200.00
Alligator Lake	1x/month	$700.00	$8,400.00
Kapok Park	2x/month	~~$1,500.00~~	$18,000.00
Glen Oaks Park	2x/month	~~$750.00~~	$9,000.00
Bidder's Total			~~$156,420.00~~

$750.00

$375.00

$154,830.00

Tab 6 Other Forms

EXCEPTIONS / ADDITIONAL MATERIAL / ADDENDA

Proposers shall indicate any and all exceptions taken to the provisions or specifications in this solicitation document. Exceptions that surface elsewhere and that do not also appear under this section shall be considered invalid and void and of no contractual significance.

Exceptions (mark one):

****Special Note – Any material exceptions taken to the City's Terms and Conditions may render a Proposal non-responsive.**

__X__ No exceptions

_____ Exceptions taken (describe--attach additional pages if needed)

Additional Materials submitted (mark one):

__X__ No additional materials have been included with this proposal

_____ Additional Materials attached (describe--attach additional pages if needed)

Acknowledgement of addenda issued for this solicitation:

Prior to submitting a response to this solicitation, it is the vendor's responsibility to confirm if any addenda have been issued.

Addenda Number	Initial to acknowledge receipt
#1	Patrick Brown

Vendor Name Cardno, Inc. Date: 3/16/2021

VENDOR INFORMATION

Company Legal/Corporate Name: Cardno, Inc.

Doing Business As (if different than above): N/A

Address: 3905 Crescent Park Drive

City: Riverview State: FL Zip: 33578 -

Phone: 813-664-4500 Fax: 813-664-0440

E-Mail Address: Patrick.boser@cardno.com Website: www.cardno.com

DUNS # 07-839-1683

Remit to Address (if different than above):

Address: N/A

City: _____ State: ____ Zip: _____

Order from Address (if different from above):

Address: _____

City: _____ State: _____ Zip: _____

Contact for Questions about this proposal:

Name: Patrick Boser Fax: 813-664-0440

Phone: 813-927-1201 E-Mail Address: Patrick.boser@cardno.com

Day-to-Day Project Contact (if awarded):

Name: Patrick Boser Fax: 813-664-0440

Phone: 813-927-1201 E-Mail Address: Patrick.boser@cardno.com

_____ Certified Small Business

Certifying Agency: _____

_____ Certified Minority, Woman or Disadvantaged Business Enterprise

Certifying Agency: _____

Provide supporting documentation for your certification, if applicable.

VENDOR CERTIFICATION OF PROPOSAL

By signing and submitting this Proposal, the Vendor certifies that:

a) It is under no legal prohibition to contract with the City of Clearwater.
b) It has read, understands, and is in compliance with the specifications, terms and conditions stated herein, as well as its attachments, and any referenced documents.
c) It has no known, undisclosed conflicts of interest.
d) The prices offered were independently developed without consultation or collusion with any of the other respondents or potential respondents or any other anti-competitive practices.
e) No offer of gifts, payments or other consideration were made to any City employee, officer, elected official, or consultant who has or may have had a role in the procurement process for the services and or goods/materials covered by this contract.
f) It understands the City of Clearwater may copy all parts of this response, including without limitation any documents and/or materials copyrighted by the respondent, for internal use in evaluating respondent's offer, or in response to a public records request under Florida's public records law (F.S. 119) or other applicable law, subpoena, or other judicial process.
g) Respondent hereby warrants to the City that the respondent and each of its subcontractors ("Subcontractors") will comply with, and are contractually obligated to comply with, all Federal Immigration laws and regulations that relate to their employees.
h) Respondent certifies that they are not in violation of section 6(j) of the Federal Export Administration Act and not debarred by any Federal or public agency.
i) It will provide the materials or services specified in compliance with all Federal, State, and Local Statutes and Rules if awarded by the City.
j) It is current in all obligations due to the City.
k) It will accept such terms and conditions in a resulting contract if awarded by the City.
l) The signatory is an officer or duly authorized agent of the respondent with full power and authority to submit binding offers for the goods or services as specified herein.

ACCEPTED AND AGREED TO:

Company Name: Cardno, Inc.

Signature: _____

Printed Name: Richard Gross

Title: Principal in Charge/ Senior Mitigation Manager

Date: March 16, 2021

E-VERIFY ELIGIBILITY FORM

VERIFICATION OF EMPLOYMENT ELIGIBILITY FORM

PER FLORIDA STATUTE 448.095, CONTRACTORS AND SUBCONTRACTORS MUST REGISTER WITH AND USE THE E-VERIFY SYSTEM TO VERIFY THE WORK AUTHORIZATION STATUS OF ALL NEWLY HIRED EMPLOYEES.

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The Contractor and its Subcontractors are aware of the requirements of Florida Statute 448.095.
2. The Contractor and its Subcontractors are registered with and using the E-Verify system to verify the work authorization status of newly hired employees.
3. The Contractor will not enter into a contract with any Subcontractor unless each party to the contract registers with and uses the E-Verify system.
4. The Subcontractor will provide the Contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized alien.
5. The Contractor must maintain a copy of such affidavit.
6. The City may terminate this Contract on the good faith belief that the Contractor or its Subcontractors knowingly violated Florida Statutes 448.09(1) or 448.095(2)(c).
7. If this Contract is terminated pursuant to Florida Statute 448.095(2)(c), the Contractor may not be awarded a public contract for at least 1 year after the date on which this Contract was terminated.
8. The Contractor is liable for any additional cost incurred by the City as a result of the termination of this Contract.

Sean Clauson
Authorized Signature

Sean Clauson
Printed Name

Assistant Vice President
Title

Cardno, Inc.
Name of Entity/Corporation

STATE OF Indiana

COUNTY OF Marion

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization on, this 10th day of March, 2021, by Sean J. Clauson (name of person whose signature is being notarized) as the Assist. Vice President (title) of Cardno, Inc. (name of corporation/entity), personally known yes, or produced _____ (type of identification) as identification, and who did/did not take an oath.

Holly Bose
Notary Public

Holly Bose
Printed Name

My Commission Expires: 10-06-2027
NOTARY SEAL ABOVE

HOLLY BOSE
My Commission Expires 10-06-2027
NOTARY PUBLIC SEAL
Morgan County
Commission Number NP0722810
STATE OF INDIANA

SCRUTINIZED COMPANIES FORMS

SCRUTINIZED COMPANIES THAT BOYCOTT ISRAEL LIST CERTIFICATION FORM

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The vendor, company, individual, principal, subsidiary, affiliate, or owner is aware of the requirements of section 287.135, Florida Statutes, regarding companies on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel; and
2. The vendor, company, individual, principal, subsidiary, affiliate, or owner is eligible to participate in this solicitation and is not listed on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel; and
3. "Boycott Israel" or "boycott of Israel" means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israeli-controlled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered as evidence that a company is participating in a boycott of Israel; and
4. If awarded the Contract (or Agreement), the vendor, company, individual, principal, subsidiary, affiliate, or owner will immediately notify the City of Clearwater in writing, no later than five (5) calendar days after any of its principals are placed on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel.

Sean J. C
Authorized Signature

Sean Clauson
Printed Name

Assistant Vice President
Title

Cardno, Inc.
Name of Entity/Corporation

STATE OF Indiana

COUNTY OF Marion

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization on, this 10th day of March, 2021, by Sean J. Clauson (name of person whose signature is being notarized) as the Assistant Vice President (title) of Cardno, Inc. (name of corporation/entity), personally known yes, or produced _____ (type of identification) as identification, and who did/did not take an oath.

HOLLY BOSE
My Commission Expires 10-06-2027
NOTARY PUBLIC SEAL
Morgan County
Commission Number NP0722810
STATE OF INDIANA

Holly Bose
Notary Public

Holly Bose
Printed Name

My Commission Expires: 10-06-2027
NOTARY SEAL ABOVE

Cardno W-9

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Cardno, Inc.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☑ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
8310 South Valley Hwy, Suite 300

Requester's name and address (optional)

6 City, state, and ZIP code
Englewood, CO 80112

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
☐☐☐ – ☐☐ – ☐☐☐☐

or

Employer identification number
4 5 – 2 6 6 3 6 6 6

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ [signature] Date ▶ 11/19/2020

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

Cat. No. 10231X Form **W-9** (Rev. 10-2018)

Aquatic Sites Invasive Species Maintenance

Appendix A

RESUMES

Cardno

Annie L. Otto, CWB

Project Role
Certified Biologist

Current Position

Restoration Ecologist

Discipline Areas
> Restoration and Mitigation Management
> Listed Species Surveys and Permitting
> Avian Protection Plan and Avian Risk Assessment
> Wetland Delineation, Evaluation and Permitting
> Environmental Permitting

Years' Experience
17

Joined Cardno
2017-Current, 2015-2016, 2003-2009

Education
BS, Environmental Science, Jacksonville University, 2000

Professional Registrations
FDEP Qualified Stormwater Management Inspector #5811

FWC Authorized Gopher Tortoise Agent GTA-19-00129

Certifications
Certified Wildlife Biologist, The Wildlife Society

Summary of Experience

Ms. Otto has experience in wildlife ecology and permitting; ornithology; wetland ecology, assessment, and permitting; and fire ecology throughout Florida's ecosystems. Specific areas of expertise include listed species assessments, biological resource inventories, design of holistic management plans for lands with listed species, wetland delineation and permitting, and mitigation design and monitoring. Primary responsibilities include managing teams of field ecologists, supervising and conducting wetland delineations/ evaluations and wildlife surveys, preparation of permit applications, and participating in client and agency interactions.

Significant Projects

Restoration and Mitigation

Project Manager/Field Ecologist – Coastal Dune Restoration Planting – Jacksonville Beach, Florida

Ms. Otto conducted dune planting services for the City of Jacksonville Coastal Dune Restoration project. Services included ensuring and oversight of planting with careful adherence to plant spacing, plant quality, and technical planting requirements specifically for sea oat installation. Efforts included close coordination with third-party project management consultant to ensure deadlines were met effectively and with the highest quality product. Daily planting reports, weekly summaries, and monthly status reports were created and communicated by Ms. Otto in effort to maintain consistent project management and the accomplishment of project goals. 2017-Present.

Project Manager/Field Ecologist – Mitigation Planting/Wetland Enhancement – Titusville, Florida

Ms. Otto assisted with planting oversight, project management, and wetland enhancement for the Blue Origin Manufacturing Facility. Services included oversight on planting effort with careful adherence to plant spacing, plant quality, and technical planting requirements. Efforts included close coordination with third-party project management consultant to ensure deadlines were met effectively and with the highest quality product. Weekly status reports were created and communicated by Ms. Otto in effort to maintain consistent project management and the accomplishment of project goals.

Listed Species Surveys and Permitting

Project Manager/Field Ecologist – Wildlife Surveys – Southeastern United States

Ms. Otto has extensive experience with participating in, leading, and managing wildlife surveys on public and private land for a wide array of clients throughout the southeastern United States. Efforts included surveys for the presence of listed species, potential habitat evaluation, habitat delineation, and agency negotiation. Target species have included, but are not limited to, Florida panther, gopher tortoise, Florida scrub-jay, eastern indigo snake, wood stork, bald eagle, Everglade's snail kite, and migratory and wading bird species. Techniques included vehicular and pedestrian transects, small mammal trapping, anuran call census, and use of a gopher tortoise burrow camera. Expertise extends to the wide range of listed and non-listed species in the southeast and their habitat requirements. 2003-present.

Project Manager/Field Ecologist – Florida Scrub-jay Surveys for New Substation – Volusia County

Ms. Otto designed and implemented territory surveys for Florida scrub-jay family groups for a proposed substation parcel and transmission corridor in Volusia County. Required close coordination with U.S. Fish and Wildlife Service (USFWS) and the local municipality staff to ensure compliance with all permit conditions. 2014.

Lead Ecologist – Listed Species Assessment – Desoto and Manatee Counties, Florida

Ms. Otto conducted appropriate pedestrian and vehicular surveys for listed species, including but not limited to crested caracara, Florida grasshopper sparrow, burrowing owl, red-cockaded woodpecker, bald eagle, gopher frog, Florida scrub-jay, Florida mouse, eastern indigo snake, Florida golden aster and Florida bonamia, and gopher tortoise for the 24,000-acre project. 2007-2009.

Task Manager/ Field Ecologist – Natural Environmental Resource Damage Assessment/Aerial Avian Surveys – New Orleans, Louisiana

Ms. Otto conducted numerous aerial surveys via fixed wing aircraft to assess and quantify the avian population within the New Orleans delta for Natural Environmental Resource Damage Assessment (NERDA) response for the project. Survey work required close coordination with USFWS staff and the local municipality staff to ensure compliance with federal survey standards.

Task Manager/ Field Ecologist – Wildlife Aerial Surveys – Throughout Florida

Ms. Otto conducted numerous helicopter surveys for state and federally listed wildlife in a variety of habitats. Surveyed uplands for nesting bald eagles, and wetlands for wading bird nesting and roosting colonies and nesting Florida sandhill cranes. Extensively involved in analyzing and mapping the collected data and participated in its incorporation into client reports and permitting documents. 2007-Present

Avian Protection Plan and Avian Risk Assessment

Project Manager/Lead Ecologist – Avian Protection Plan and Risk Assessment – North Carolina, South Carolina, and Florida

Ms. Otto, designed and implemented an avian protection plan for a large utility company to reduce avian interactions with electrical utilities. Aspects of the plan included conducting an avian risk assessment, research and development of construction and retrofitting techniques to make electrical utilities avian-safe, developing standard procedures to address avian injuries/mortalities, nest management techniques, and developing an employee training program. 2009-Present.

Lead Ecologist – Avian Protection Plan and Risk Assessment – Desoto, Hillsborough, Manatee, and Polk Counties, Florida

Ms. Otto, assisted with designing and implementing an avian protection plan for the utilities and infrastructure of a large Florida mine company to reduce avian interactions with electrical utilities. Aspects of the plan included leading and conducting an avian risk assessment, research and development of construction and retrofitting techniques to make electrical utilities avian-safe, developing standard procedures to address avian injuries/mortalities, nest management techniques, and developing an employee training program. 2015.

Wetland Delineation, Evaluation, and Permitting

Project Manager/Lead Ecologist – Wetland Delineation, Evaluation and Permitting – Throughout Florida

Ms. Otto conducted Florida Department of Environmental Protection (FDEP) and Water Management District's (WMD's) and Natural Resource Conservation Service (NRCS) and U.S. Army Corps of Engineers (USACE) delineations, delineation reviews, and wetland assessments using Florida's Uniform Mitigation Assessment Methodology (UMAM) or Wetland Rapid Assessment Procedure (WRAP). Efforts included developing, preparing, and submitting application materials to Federal, State and local regulatory agencies for wetland delineation and evaluation approval. 2005-Present.

Project Manager/ Lead Ecologist – Natural Resource Conservation Service Wetland Determinations – Polk, Highlands, Glades and Hendry Counties, Florida

Ms. Otto obtained certified wetland determinations from the NRCS for several large Florida ranches. Certified wetland determination offers landowners assurance of a federal wetland delineation as long as the property remains in agricultural use. 2009-present.

Environmental Permitting

Project Manager/Field Ecologist – Substation and Transmission Line Assessments – Throughout Florida

Ms. Otto has provided site assessments, wetland delineations, general and species-specific listed species surveys, FWS and FWC listed species permitting, listed species relocations, and permit compliance monitoring for several substations and transmission lines in Florida. 2009-present

Project Manager/ Field Ecologist – Dispersed Water Management Project – Hendry County, Florida

Utilizing an approved NRCS wetland determination, Ms. Otto has assisted with the design and permitting of a large scale dispersed water management project. Efforts included listed species surveys, agency negotiations regarding the wetland determinations and wetland impacts, and adherence to the USACE Regional General Permit SAJ-106 guidelines, particularly with federally listed species issues. 2015.

Professional History

Year started at Cardno – 2015

> Cardno – Restoration Ecologist
> Flatwoods Consulting Group – Senior Ecologist – 2009 - 2015
> ENTRIX, Inc./Biological Research Associates – Senior Ecologist – 2003 – 2009
> National Park Service – Environmental Specialist – 2000 – 2002
> Environmental Services, Inc. – Environmental Specialist – 2000 - 2001

Patrick G. Boser

Project Role
Project Manager

Current Position
Project Ecologist/Project Manager

Contact Information
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813 257 0010

Discipline Areas

> Mitigation Maintenance
> Lake Management
> Ecological Monitoring/Permit Compliance
> Mitigation Quality Control

Years' Experience 22

Joined Cardno
1998

Education
> AA, Hillsborough Community College, 1996

Continuing Education And Certifications
> Commercial Applicator Restricted Use Pesticide License, State of Florida Department of Agriculture and Consumer Services: Aquatics, Natural Areas and ROW

Summary of Experience

Mr. Patrick Boser's areas of specialization are mitigation maintenance, lake management, ecological monitoring, and permit compliance. He is the manager of the Lake Management/Mitigation Department at Cardno. He has extensive knowledge in habitat management of nuisance/exotic vegetation. He is responsible for coordinating the crew and sub-contractors to perform maintenance of lakes and wetland mitigation sites.

Mitigation Maintenance

Mr. Boser has coordinated the maintenance of mitigation sites throughout Central Florida. He has experience in numerous maintenance techniques including hand removal, selective herbicide treatment, and mechanical removal. Mr. Boser understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species. He provides mitigation maintenance services for a variety of projects including the Tampa Bay Regional Reservoir, Connerton CDD, Mira Bay, and Cypress Creek Town Center.

Lake Management

Mr. Boser has coordinated lake management activities on numerous retention ponds and natural lakes in Central Florida. Activities include herbicide prescription, budgeting, and quality control. Mr. Boser coordinates aquatic weed control services for numerous projects in Central Florida including Tampa Bay Buccaneers, Pinellas County, and Tampa Bay Water.

Ecological Monitoring/Permit Compliance

Mr. Boser conducts ecological monitoring for a number of wetland mitigation areas. He also produces the monitoring reports for submittal to regulatory agencies, makes recommendations to clients for remediation measures that may be needed, and coordinates with agency personnel in the implementation of measure that will ensure achievement of permit required success criteria.

Mitigation Quality Control

Mr. Boser conducts inspections of all lake management and mitigation areas to document the level of contract and/or permit compliance. When necessary, he coordinates with the responsible staff member to ensure that permit conditions are being met.

Significant Projects

Mitigation Maintenance – Haynesworth Tract – Pinellas County, Florida
Conducted mitigation maintenance at the Haynesworth tract. This project involved wetland mitigation that was incorporated into a Surface Water Improvement and Management system, meant to improve surface water quality flowing into Tampa Bay.

Field Operations Manager – Tampa Bay Water, Mitigation Bank – Florida
Cardno provides land management services associated with the C.W. Bill Young Reservoir in Hillsborough County Florida. Project sites include East Pruitt 406 acres, West Pruitt 452 acres, and North Carlton-Smith 480 mitigation and conservation lands. Cardno provides control of invasive vegetation species utilizing herbicides and mechanical means to ensure these vast tracts of land are maintained to permitted standards.

Field Operations Manager – Tampa Bay Water, Land Management – Florida
Mr. Boser was the Field Operations Manager for Pre-planting maintenance, planting, and post planting maintenance. The project consisted of the creation of 43 acres of freshwater marsh and 35 acres of oligohaline marsh.

Field Operations Manager – Cypress Creek Town Center Alston Tract – Hillsborough County, Florida
Restoration and creation of 250-acre off-site mitigation site. Cardno developed plans for restoration of flatwoods, wetlands, and ecologically based management of natural lands. Services included seeding, planting, monitoring, and long-term maintenance. Restoration of pasture to flatwoods and planting of degraded slough system was accomplished.

Project Manager – Hillsborough County Habitat Restoration & Land Management – Hillsborough County, Florida
Mr. Boser is the Project Manager for this contract. He provides bid estimates, herbicide prescriptions, and oversight for mechanical vegetation reduction.

Project Manager – Pasco County Non-Native Species Control Contract – Pasco County, Florida
Maintenance of wetland mitigation, natural land, passive park and stormwater contract. Mr. Boser provides oversight of maintenance, scheduling, and reporting to Pasco County.

Deputy Project Manager – Lee County, Environmental Maintenance Contract – Lee County, Florida
Mr. Boser supports the project manager to oversee project estimating, scheduling, coordination and planning, staffing and staff management, equipment/fleet management, and material procurement.

Land Management – CF Industries Restoration Activities – Hillsborough County, Florida
Cardno oversaw the restoration of 53 acres of wetlands and creation of 139 acres of forested and herbaceous wetlands through construction oversight, field adjustments, and plant installation. The project also involved wetland enhancement and upland restoration. The services were part of a team permitting effort involving the expansion of a phosphogypsum stack at the Plant City facility.

Land Management – Non-native Species Control – Hillsborough County, Florida
Hillsborough County Conservation and Environmental Lands manages more than 61,000 acres of environmentally sensitive wildlife habitat and corridors acquired through the Jan K. Platt Environmental Lands Acquisition and Protection Program. Cardno provides invasive control, forestry mowing, tractor mowing, canopy reduction, and planting to sites across Hillsborough County.

Lake Management – Estancia at Wiregrass CDD – Pasco County, Florida
Located just north of Wesley Chapel and the Shops at Wiregrass. This large-scale project includes 35 storm water ponds and multiple acres of Created Wetland Mitigation. Most of the pond slopes were planted with native grasses. These plantings have reduced the amount of nutrient runoff from neighboring yards and landscaped common areas. In return, this buffer has kept grass clippings thrown from mowers from entering the water body. Cardno key services include environmental monitoring; lake management; landscape architecture; and wetland mitigation maintenance.

Lake Management – Harbor Bay CDD, Mira Bay – Florida
Cardno provides lake management services for Harbor Bay CDD Mira Bay. This property has 26 stormwater ponds and one large lagoon. Cardno has also provided aquascaping services in and around many of these ponds.

Richard A. Gross

Project Role
Project Principal

Current Position
Senior Mitigation Manager

Contact Information
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richard.gross@cardno.com
810 257 0006

Education
> AA, Business, Stark Community College
> USF, Biology/ Wetland Course Work
> Specialized On the Job/In the Field Trainings
> 40-Hour OSHA HAZWOPER Certification

Discipline Areas
> Mitigation Planting/Design
> Aquascaping
> Habitat Restoration/Nuisance Species Control
> Upland Restoration
> Dune/Coastal Restoration
> Construction Oversight
> Tree Spade Services

Years' Experience 33

Joined Cardno
1987

Memberships
> Native Plant Society
> Southeast Utility Contractors Association (SUCA)

Summary of Experience

Mr. Richard "Rick" Gross is responsible for project supervision and implementation of planting and nuisance removal projects throughout the Southeastern United States. He has supervised the construction of numerous complex mitigation areas and has been project superintendent for hundreds of planting and maintenance projects for private and public sector clients. Mr. Gross has supervised construction activities with general contractors on projects that have required extensive coordination between municipal governments, regulatory agencies, and developers. Areas of expertise include freshwater mitigation and coastal design, wildlife and plant surveys, and project management on all planting activities for wetland and upland creation/enhancement areas, freshwater mitigation areas, dune restoration, and coastal restoration projects. He has also supervised nuisance/invasive species removal for permit compliance at more than 150 projects in the South Florida area.

Significant Projects

Mitigation Planting/Design

Project Manager – Southwest Florida Water Management District (SWFWMD) – Polk County, Florida
Mr. Gross supervised the planting for a 610-acre mitigation project designed by the SWFWMD for the Florida Department of Transportation. The project was a part of a 1,256-acre wildlife and passive recreation park purchased by the SWFWMD. It included 434 acres of marsh enhancement and restoration, 149 acres of forested wetland enhancement and restoration, 24 acres of upland habitat restoration, and 3 acres of created marsh.

Project Manager – Whittenhorse Creek North – Orange County, Florida
Mr. Gross supervised the creation of 42 acres of habitat, consisting of four zones. Vegetation installation included 32,139 herbaceous plants, three species; 34,095 trees, nine species; and manual sprigging of 35.4 acres with maidencane plugs.

Aquascaping

Project Manager – MacDill Air Force Base – Hillsborough County, Florida
Mr. Gross oversaw the creation of a 12.6-acre marine mitigation wetland site requiring the installation of 21,950 aquatic plants of 12 species.

Project Manager – Northwest Expressway – Hillsborough County, Florida
Mr. Gross supervised the creation of three freshwater communities totaling 73.82 acres within 26 separate sites. More than 357,300 herbaceous plants consisting of 12 species and 77,600 trees of 15 species were planted.

Principal-in-Charge – Blue Origin Manufacturing Facility – Merit Island, Florida
Construction of the Blue Origin Manufacturing Facility included the enhancement of 25.9 acres of wetland enhancement and the creation of a 29.8-acre on-site mitigation area. Cardno coordinated with the engineer and construction companies involved in the project to install more than 251,877 emergent aquatic plants and 22,863 grass and trees throughout upland enhancement areas, wetland enhancement areas, and wetland creation areas. Cardno still conducts ongoing mechanical and manual treatment of nuisance exotic species throughout the entire 55.7 acres of creation, wetland enhancement, and upland enhancement areas. Mr. Morrow coordinated staffing, procurement of material, and communication with client representatives. Routine

inspections were performed to ensure anticipated quality standards were maintained and discovered deficiencies were corrected.

Project Manager – GL Homes, The Ridge at Wiregrass Ranch – Wesley Chapel, Florida
Construction of the Ridge at Wiregrass Ranch included the enhancement and creation of 48 acres of on-site mitigation areas and wetland buffers. Cardno coordinated with the owner, engineer, and earthwork company involved to install more than 225,500 emergent aquatic plants and 17,000 grasses, shrubs, and trees throughout wetland buffers, enhancement areas, and wetland creation areas. Cardno conducts ongoing mechanical treatment of nuisance exotic species throughout the mitigation and wetland buffer areas. Cardno also provides monthly lake management services of 11 on-site ponds.

Habitat Restoration/Nuisance Species Control

Co-Project Manager – CF Industries – Hillsborough County, Florida
Mr. Gross oversaw the restoration of 53 acres of wetlands and creation of 139 acres of forested and herbaceous wetlands through construction oversight, field adjustments, and plant installation. The project also involved wetland enhancement and upland restoration. The services were part of a team permitting effort involving the expansion of a phosphogypsum stack at the Plant City facility.

Project Manager – SWFWMD – Hillsborough County, Florida
Mr. Gross supervised the restoration of approximately 90 acres of shoreline marsh and forested wetlands in this SWFWMD Surface Water Improvement and Management (SWIM) project. The project involved the redirection of water into these restored wetlands to provide biological treatment to improve water quality in Lake Thonotosassa. Mr. Gross assisted the SWIM Project Manager with design modifications that ensured better survival of planted species.

Plant Installation – Non-native Species Control – Hillsborough County, Florida
Hillsborough County Conservation and Environmental Lands manages more than 61,000 acres of environmentally sensitive wildlife habitat and corridors acquired through the Jan K. Platt Environmental Lands Acquisition and Protection Program. Cardno provides invasive control, forestry mowing, tractor mowing, canopy reduction, and planting to sites across Hillsborough County.

Plant Installation – Newland Communities Lake Hutto Project – Hillsborough County, Florida
Lake Hutto is a 1,127-acre Development of Regional Impact (DRI) located in Hillsborough County. Cardno was instrumental in the design of upland and wetland onsite preservation areas to meet the conditions set forth in the development order and satisfies all mitigation requirements for various agencies. Cardno is currently conducting habitat management and enhancement of the preservation areas, including restoring and creating significant wildlife habitat through the uses of prescribed fire and mechanical shrub and canopy reduction methods.

Principal-in-Charge – *Cypress Creek Town Center Alston Tract – Hillsborough County, Florida*
Restoration and creation of 250-acre off-site mitigation site. Plans for restoration of flatwoods, wetlands, and ecologically based management of natural lands were developed by Cardno. Services include seeding, planting, monitoring, and long-term maintenance. Restoration of pasture to flatwoods and planting of degraded slough system was accomplished.

Upland Restoration

Mr. Gross has participated in several projects that involved the restoration of previously disturbed upland habitats. The services that he provided included oversight of necessary earthwork and the installation of native species. He is familiar with the techniques and methods essential for successful upland restoration: proper site preparation, harvesting of seed, direct seeding, planting, control of nuisance/invasive species, and monitoring requirements.

Dune/Coastal Restoration

Project Manager – 2016-2017 Post Storm Dune Restoration Project – Jacksonville Beach, Florida
Mr. Gross managed the installation of 620,000 sea oat and ground cover species to restore approximately 6.0 miles of beach for The City of Jacksonville. Services included ensuring and oversight of planting with careful adherence to plant spacing, plant quality, and technical planting requirements specifically for sea oat installation. Efforts included close coordination with third-party project management consultant to ensure deadlines were met effectively and with the highest quality product.

Project Manager – MacDill Air Force Base Restoration – Hillsborough County, Florida
Mr. Gross oversaw the planting, maintenance, and restoration activities. Restoration involved storm water treatment/polishing coupled with creation of a low salinity lagoon, tidal channels, creation of tidal marshes, estuarine wetland enhancement, and upland enhancement. Improved habitat values and the addition of habitat acreages provided opportunities for many differing species of coastal wildlife, inclusive of commercial and sportfishing species, bird populations, a host of invertebrate species (crabs, shrimp, oysters, etc.), and small mammals.

Project Manager – Tampa Bay Mitigation Bank – Hillsborough County, Florida
Cardno conducted pre-planting maintenance, planting, monitoring and post-planting maintenance on the freshwater/oligohaline portions of this mitigation bank in southern Hillsborough County. The freshwater marsh was approximately 43 acres, and the oligohaline marsh was approximately 35 acres. Both areas included small areas of higher marsh and open water ponds.

Principal-in-Charge –2016–2017 Post-Storm Dune Restoration Project – Jacksonville Beach, Florida
The project involved the installation of 620,000 sea oat and ground cover species to restore approximately 6 miles of beach for the City of Jacksonville. Services included overseeing planting with careful adherence to plant spacing, plant quality, and technical planting requirements specifically for sea oat installation. Cardno's efforts included close coordination with the third-party project management consultant to ensure deadlines were met effectively and with the highest quality product. Mr. Morrow coordinated staffing, procurement of material, and communication with client representatives. Routine inspections were performed to ensure anticipated quality standards were maintained and discovered deficiencies were corrected.

Construction Oversight

Project Manager – Connerton, LLC – Pasco County, Florida
Mr. Gross oversaw the earthwork to coordinate the environmental aspects of mitigation area construction, muck removal and placements, de-watering of donor wetlands, maintenance of haul roads in and out of donor wetlands for tree spade activities, and erosion control in environmentally sensitive areas. He also supervised the installation of approximately 1,000 trees into the forested mitigation areas. Other plantings included 1,093 trees and 33,106 herbaceous plants.

John Bailey, PWS

Project Role
Professional Wetland Scientist

Current Position
Project Scientist

Contact Information
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Riverview, FL 33578
john.bailey@cardno.com
813 257 0008

Disciplines Lead
> Wetland Delineation
> Section 404 Wetland Permitting
> ERP Permitting
> Wetland Functional Assessment
> Wetland Mitigation Design
> Listed Species Surveys

Years' Experience 30

Joined Cardno
1993

Education
> MS, Wetland Ecology, University of Florida, 1994
> BS, Forest Resources Management, Southern Illinois University, 1986

Continuing Education & Certifications
> Professional Wetland Scientist, #763, Society of Wetland Scientists, 1995
> MSHA Training
> YMCA, Open Water Diver, 1993

Summary of Experience

Mr. John Bailey is a Certified Professional Wetland Scientist (PWS), an expert in wetland delineation and Florida ecology, and has extensive botanical knowledge of, and experience in, South and Central Florida ecosystems. His master's research at the Center for Wetlands at the University of Florida focused on assessing changes in wetland plant communities associated with cattle ranching and ditching. His project experience is in ecological assessments of wetlands and uplands, environmental resource permitting, wetland delineation, listed species assessments and surveys, wetland mitigation design, wetland hydroperiod assessment, and data analysis.

Significant Projects

Project Scientist – Bell Shoals Road Widening – Hillsborough County, Florida
The purpose of this project was to widen three miles of Bell Shoals Road from two lanes to four lanes. Construction of the roadway improvements required impacts to a number of wetlands and the relocation of gopher tortoises requiring permits from the U.S. Army Corps of Engineers (USACE), Southwest Florida Water management District (SWFWMD), Hillsborough County Environment Protect Commission, and Florida Fish and Wildlife Conservation Commission. Mr. Bailey provided all services necessary to receive these environmental permits including wetland delineation, listed species surveys, wetland functional assessments (based on the Uniform Mitigation Assessment Method [UMAM]), design of created wetland mitigation areas and drafting of environmental narrative reports. The project required significant team and agency coordination.

Project Scientist – Two Rivers Ranch Mitigation Bank – Hillsborough and Pasco Counties, Florida
Mr. Bailey is providing environmental support for the permitting of an approximately 1,500-acre mitigation bank, with permits from both the USACE and SWFWMD. Services provided include mitigation bank design, project coordination and oversight, preparation of permit application packages, response to requests for additional information, wetland delineations, listed species surveys, and UMAM analyses/credit determination.

Project Scientist – Crystal River Commons – Citrus County, Florida
Mr. Bailey provided biological support for the environmental permitting of this approximately 265-acre mixed-use development. Scope of services included pre-construction permit coordination, wetland delineations, listed species surveys, agency permitting (USACE and SWFWMD), UMAM analyses, wetland impact avoidance and minimization, and development of a mitigation plan to compensate for unavoidable impacts to on-site wetlands.

Project Scientist – JED Landfill Expansion – Florida
Mr. Bailey was responsible for managing the State Environmental Resource Report (ERP) and federal USACE wetland impact permitting of this 100-acre expansion to the existing Osceola Omni Waste Disposal Facility. This included a re-evaluation of the USACE wetland jurisdiction based on the Rapanos decision, UMAM assessment of on-site wetlands, and evaluation of the use of the expansion area by listed species, including the crested caracara and Florida grasshopper sparrow. Mitigation for impacts to wetland was provided via several mitigation banks.

> PADI, Advanced Open Water Dive, 2008
> PADI, Enriched Air Diver, 2009
> Accomplished Nature and Underwater Photographer

Project Manager – Cypress Creek Town Center – Pasco County, Florida
Mr. Bailey provided wetland delineation and wetland impact permitting support services for this 500-acre mixed commercial development. The project is centered around a newly created interchange on I-75 (SR 56), a regional commercial node. Both state (SWFWMD) ERP and federal USACE Individual permits were obtained. Mitigation for wetland impacts required to construct the project was provided by designing and implementing a 250-acre upland and wetland restoration and enhancement project.

Project Manager – Grand Hampton – Hillsborough County, Florida
Mr. Bailey managed the wetland permitting, mitigation design, upland habitat monitoring, wetland delineation, and listed species surveys for this 800-acre residential development.

Project Manager – Omni Waste Disposal Site – Osceola County, Florida
Mr. Bailey provided wetland delineation and environmental permitting for a 264-acre waste disposal facility located on a 2,179-acre site. This large, complicated project involved listed species, wetland impacts, alternative site analysis, re-hydration of ditched wetlands, and potential legal challenges. Mitigation for this site consisted of a 1,200-acre upland and wetland preservation area that required the drafting of a long-term management plan.

Senior Ecologist – Wetland Delineation and Assessment on Proposed Phosphate Mine Site – Hardee County, Florida
Mr. Bailey provided project coordination, wetland delineation, and evaluation of all wetlands on a 14,000-acre future mine site for the Farmland-Hydro Corporation. This land was purchased by the Mosaic Company and is part of the Pioneer and Ona Tracts. Wetland quality was assessed using the Wetland Rapid Assessment Procedure, and wetland boundaries were delineated and approved by both state and federal agencies. Delineations were based on ortho-rectified and georeferenced color infrared digital imagery. A sub-meter accuracy global positioning system unit was used extensively to aid in ground truthing of aerially interpreted wetland boundaries.

Senior Ecologist – Cypress Creek Development of Regional Impact – Pasco County, Florida
Mr. Bailey provided wetland delineation and environmental permitting for a 404-acre mixed commercial development. The project was located on the east side of the newly created interchange on I-75 (SR 56), a regional commercial node. Both SWFWMD and an USACE individual permit were required. The mitigation plan consisted of wetland creation, restoration, and enhancement, as well as upland preservation.

Senior Ecologist – Wetland Normal Pool Study – Pasco County, Florida
Mr. Bailey established normal pool elevations in over 100 wetlands and measured more or less simultaneous water levels in all to assess the extent of water table drawdowns in wetlands near two public water supply wellfields.

Project Manager – Environmental Monitoring, Cross Bar Ranch Wellfield – Pasco County, Florida
Mr. Bailey conducted vegetation sampling, water level monitoring, and data analysis for Water Use Permit compliance for Tampa Bay Water. Services included site setup, data collection, data analysis, and report writing.

Previous Employment

> Center for Wetlands, University of Florida, Research Assistant, 1990-1993
> Argonne National Laboratory, Consulting Botanist, 1992
> Savannah River Ecology Laboratory, Aiken SC. Research Technician, 1986-1990
> Department of Forestry, Southern Illinois University, Research Assistant, 1985-1986
> Village of LaGrange Park, Forestry Technician, 1985

Michael Eales

Project Role
Field Supervisor / Applicator

Current Position Field Supervisor

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813 712 2922

Discipline Areas

> Mitigation Maintenance
> Lake Management
> Mitigation Quality Control

Years' Experience 17

Joined Cardno
2004

Education
> GED

Continuing Education And Certifications
> Commercial Applicator Restricted Use Pesticide License/Aquatics, Natural Areas, State of Florida Department of Agriculture and Consumer Services

Summary of Experience

Mr. Michael Eales areas of specialization are mitigation maintenance and lake management. He is a mitigation coordinator of the mitigation/lake management crew at Cardno, and is responsible for producing weekly work schedules. In this role, Mr. Eales inspects mitigation and lake management projects for thoroughness of treatments and permit compliance. He produces inspection reports and recommends solutions to improve overall quality of the Mitigation Division services.

Mr. Eales conducts inspections of lake management and mitigation areas to document the level of contract and/or permit compliance. When necessary, he coordinates with the responsible staff members to ensure permit conditions are being met.

Mitigation Maintenance

Mr. Eales coordinates the maintenance of mitigation sites throughout Central Florida. He has experience in numerous maintenance techniques, including hand removal, selective herbicide treatment, and mechanical removal. He understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species. Mr. Eales provides mitigation maintenance services for a variety of projects in Central Florida including Fish Hawk, Waterset, Mira Bay, and Valencia Lakes.

Lake Management

Mr. Eales has coordinated lake management activities on numerous retention ponds and natural lakes. Activities have included herbicide prescription, budgeting, and quality control. He provides aquatic weed control services for numerous projects including Valencia Lakes, Mira Bay, and Waterset.

Significant Projects

Maintenance Crew Supervisor – Lee County, Exotic Plant Control – Lee County, Florida
Services include control of exotic invasive pest plants using hand crews and heavy equipment and installation of native plants for mitigation and habitat restoration projects.

Mitigation Maintenance – Waterset North Community Development District (CDD) – Tampa, Florida
Services include control of exotic invasive pest plants and installation of native plants for mitigation and habitat restoration projects. Mr. Eales received a Cardno Cloud Nine Client Award for his work on this project.

Lake Management – Valencia Lakes – Florida
Cardno currently provides the service and field supervision for the Valencia Lakes Property Owners Association lake management. Mr. Eales performs the management of 43 ponds, totaling 131 acres of waterways. He has serviced this account for over ten years.

Lake Management – Harbor Bay CDD, Mira Bay – Florida
Cardno currently provides the lake management services for Harbor Bay CDD - Mira Bay. This property has 26 ponds and one large lagoon. Mr. Eales has serviced this account for over ten years.

- Florida Department of Agriculture:
  - Licensed – Aquatic Applicator
  - Licensed – Natural Areas Applicator
- First Aid/CPR

Invasive Control – Non-native Species Control – Hillsborough County, Florida
Hillsborough County Conservation and Environmental Lands manages more than 61,000 acres of environmentally sensitive wildlife habitat and corridors acquired through the Jan K. Platt Environmental Lands Acquisition and Protection Program. Cardno provides invasive control, forestry mowing, tractor mowing, canopy reduction, and planting to sites across Hillsborough County.

Mitigation Maintenance Coordinator – Connerton Community Development District (CDD) – Pasco County, Florida
Mr. Morrow conducts mitigation maintenance at the Connerton CDD. This 4,800-acre master planned community includes numerous multi-acre wetland mitigation sites, including over 3,000 mature cypress trees that were successfully transplanted. This project has been recognized numerous times for its unique character and environmental stewardship.

Mitigation Maintenance Coordinator – Phillips & Jordan, Blue Origin Manufacturing Facility – Florida
Construction of the Blue Origin Manufacturing Facility included the enhancement of 25.9 acres of wetland enhancement and the creation of a 29.8-acre on-site mitigation area. Cardno coordinated with the engineer and construction companies involved in the project to install more than 251,877 emergent aquatic plants and 22,863 grass and trees throughout upland enhancement areas, wetland enhancement areas, and wetland creation areas. Cardno still conducts ongoing mechanical and manual treatment of nuisance exotic species throughout the entire 55.7 acres of creation, wetland enhancement, and upland enhancement areas. Mr. Morrow coordinated staffing, procurement of material, and communication with client representatives. Routine inspections were performed to ensure anticipated quality standards were maintained and discovered deficiencies were corrected.

Mitigation Maintenance Coordinator – GL Homes, The Ridge at Wiregrass Ranch – Wesley Chapel, Florida
Construction of the Ridge at Wiregrass Ranch included the enhancement and creation of 48 acres of on-site mitigation areas and wetland buffers. Cardno coordinated with the owner, engineer, and earthwork company involved to install more than 225,500 emergent aquatic plants and 17,000 grasses, shrubs, and trees throughout wetland buffers, enhancement areas, and wetland creation areas. Cardno conducts ongoing mechanical treatment of nuisance exotic species throughout the mitigation and wetland buffer areas. Cardno also provides monthly lake management services of 11 on-site ponds. Mr. Morrow provided support and oversight of crews to ensure the highest standards of quality. As a result, the Ridge at Wiregrass Ranch project was completed ahead of the anticipated schedule and on budget.

Mitigation Maintenance Coordinator – Walt Disney Imagineering, Wilderness Lodge Exotic Species Control – Florida
Cardno field crews conducted invasive species control of exotic and nuisance species along the shoreline of the Wilderness Lodge lakefront development and enhancement. Cardno continues to provide ongoing maintenance. Mr. Morrow coordinated staffing, procurement of material, and communication with client representatives. Routine inspections were performed to ensure anticipated quality standards were maintained and discovered deficiencies were corrected.

Previous Employment

- Onsource Landscape and Golf, Operations Manager & Landscape and Nursery Supervisor, 1987-2001

Leonard D. Morrow

Project Role
Senior Field Technician

Current Position
Environmental Scientist I / Operations Manger

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Discipline Areas

> Mitigation Maintenance
> Lake Management
> Mitigation Quality Control

Years' Experience 33

Joined Cardno
2001

Education
> Vocational - College Certification

Certifications
> Florida Department of Environmental Protection:
- Certification – Stormwater, Erosion, and Sedimentation Control Inspector Training Program, Qualified Stormwater Management Inspector
- Certification – Green Industry Best Management Practices

Summary of Experience

Mr. Leonard Morrow's areas of specialization are mitigation maintenance and restoration. Mr. Morrow provides field observation and quality control of wetland mitigation and aquatic habitat enhancement projects of varying sizes, from less than an acre to multiple acres in size. He also provides on-site quality assurance and direct communication contact with client representatives during all phases of project development and post completion management to ensure agency compliance.

Mr. Morrow has conducted maintenance and planting of mitigation and restoration sites throughout Florida. He has experience in numerous maintenance techniques including hand removal, selective herbicide treatment, and mechanical removal. Mr. Morrow understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species.

Significant Projects

Project Manager – Lee County, Exotic Nuisance Control – Lee County, Florida
Serving as the primary point of contact, overseeing project estimating, scheduling, coordination and planning, staffing and staff management, equipment/fleet management, and material procurement. Services include control of exotic invasive pest plants using hand crews and heavy equipment and installation of native plants for mitigation and habitat restoration projects.

Field Manager – Tampa Bay Water, Mitigation Bank – Hillsborough County, Florida
Cardno provides land management services associated with the C.W. Bill Young Reservoir in Hillsborough County Florida. Project sites include East Pruitt 406 acres, West Pruitt 452 acres, and North Carlton-Smith 480 mitigation and conservation lands. Cardno provides control of invasive vegetation species utilizing herbicides and mechanical means to ensure these vast tracts of land are maintained to permitted standards. Mr. Morrow provides technical oversight and support involving right-of-way restoration for numerous municipal projects. Has been actively involved with the wetland and upland land management activities associated with the C.W. Bill Young Reservoir.

Nuisance Plant Control – Cypress Creek Town Center Alston Tract – Hillsborough County, Florida
Restoration and creation of 250-acre off-site mitigation site. Plans for restoration of flatwoods, wetlands, and ecologically based management of natural lands were developed by Cardno. Services include seeding, planting, monitoring, and long-term maintenance. Restoration of pasture to flatwoods and planting of degraded slough system was accomplished.

Lake Management – Estancia at Wiregrass CDD – Pasco County, Florida
Located just north of Wesley Chapel and the Shops at Wiregrass. This large-scale project includes 35 storm water ponds and multiple acres of Created Wetland Mitigation. Most of the pond slopes were planted with native grasses. These plantings have reduced the amount of nutrient runoff from neighboring yards and landscaped common areas. In return, this buffer has kept grass clippings thrown from mowers from entering the water body. Cardno key services include environmental monitoring; lake management; landscape architecture; and wetland mitigation maintenance.

Fabian Nunn

Project Role
Field Supervisor / Applicator

Current Position
Field Supervisor

Contact Information
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fabian.nunn@cardno.com
813 664 4500

Discipline Areas

> Mitigation Maintenance
> Lake Management

Years' Experience 16

Joined Cardno
2005

Education
> AA, University of South Florida
> BA, University of South Florida

Continuing Education And Certifications
> Commercial Applicator Restricted Use Pesticide License/Aquatics, Natural Areas State of Florida Department of Agriculture and Consumer Services
> ProcellaCOR SC certified applicator

Summary of Experience

Mr. Fabian Nunn's areas of specialization are mitigation maintenance and lake management. He has coordinated the maintenance of mitigation sites throughout Central Florida. He has experience in numerous maintenance techniques including hand removal, selective herbicide treatment, and mechanical removal. Mr. Nunn understands the need to meet permit requirements of state, federal, and local regulatory agencies regarding nuisance species cover, while protecting desirable planted and recruited species.

Mr. Nunn has coordinated lake management activities on numerous retention ponds and natural lakes. Activities include herbicide prescription, budgeting, and quality control. He provides aquatic weed control services for numerous projects including Seven Oaks, Lake Talia, Cypress Creek Town Center, Pasco County Recreational Fields, East/West Pruitt, North Carlton-Smith, and Cypress Creek Town Center.

Significant Projects

Maintenance Crew Supervisor – Lee County, Exotic Species Control – Lee County, Florida

Services include control of exotic invasive pest plants using hand crews and heavy equipment and installation of native plants for mitigation and habitat restoration projects.

Mitigation Maintenance – Seven Oaks Community Development District (CDD) – Hillsborough County, Florida

Services included exotic/nuisance vegetation control, native species planting, monitoring, and maintenance.

Lake Management – Lake Talia Homeowners Association (HOA), Lake Management – Hillsborough County, Florida

Cardno provide Lake Talia HOA with a comprehensive lake management program at 12 ponds (including the sump) in Phases 1 and 2, and two natural lake area shorelines. This project included monthly inspections/treatments to control nuisance aquatic vegetation and algae. All herbicide treatments were conducted by a state-certified applicator.

Lake Management – Tampa Bay Water, Mitigation Bank – Hillsborough County, Florida

Cardno provides land management services associated with the C.W. Bill Young Reservoir in Hillsborough County Florida. Project sites include East Pruitt 406 acres, West Pruitt 452 acres, and North Carlton-Smith 480 mitigation and conservation lands. Cardno provides control of invasive vegetation species utilizing herbicides and mechanical means to ensure these vast tracts of land are maintained to permitted standards.

Lake Management – Harbor Bay CDD, Mira Bay – Hillsborough County, Florida

Cardno provides lake management services for Harbor Bay CDD Mira Bay. This property has 26 stormwater ponds and one large lagoon. Cardno has also provided aqua scaping services in and around many of these ponds.

Lake Management – Cypress Creek Town Center, Alston Tract – Hillsborough County, Florida

Restoration and creation of 250-acre off-site mitigation site. Cardno developed plans for restoration of flatwoods, wetlands, and ecologically based management of natural lands. Services included seeding, planting, monitoring, and long-term maintenance. Restoration of pasture to flatwoods and planting of degraded slough system was accomplished.

Lake Management – Pasco County Non-Native Species Control Contract – Pasco County, Florida

Cardno conducts events to control exotic nuisance species in upland and wetland mitigation areas in various sites throughout Pasco County, Florida. Services include maintenance of wetland mitigation, natural land, passive park, and stormwater contract.

Mitigation Maintenance – Estancia at Wiregrass CDD – Pasco County, Florida

Located just north of Wesley Chapel and the Shops at Wiregrass. This large-scale project includes 35 storm water ponds and multiple acres of Created Wetland Mitigation. Most of the pond slopes were planted with native grasses. These plantings have reduced the amount of nutrient runoff from neighboring yards and landscaped common areas. In return, this buffer has kept grass clippings thrown from mowers from entering the water body. Cardno key services include environmental monitoring; lake management; landscape architecture; and wetland mitigation maintenance.

Mitigation Maintenance – Connerton CDD – Pasco County, Florida

This 4,800-acre master planned community includes numerous multi-acre wetland mitigation sites, including over 3,000 mature cypress trees that were successfully transplanted. This project has been recognized numerous times for the unique character and environmental stewardship.

Mitigation Maintenance – Pasco County, Florida

Mr. Nunn conducted mitigation maintenance at Cypress Creek Town Center, Seven Oaks, and other Pasco County sites. These projects involved wetland mitigation that was incorporated into a Surface Water Improvement and Management system.

Christopher White

Project Role
Fisheries Biologist / Applicator / Safety Compliance

Current Position
Senior Consultant

Contact Information
3905 Crescent Park Drive Riverview, FL 33578
Chris.white@cardno.com
574 249 8504

Discipline Area
> Natural Areas Restoration
> Native Landscaping
> Exotic Species Control
> Bioengineering/ Erosion Control Techniques
> Wetland Delineation
> Identification of Trees, Herbaceous Plants, Mammals, Fish, Reptiles, Amphibians, and Birds Species
> Boat, Backpack, and Tote Barge Shocking
> Seining and Netting; Macroinvertebrate and Periphyton Collection
> Stream and Lake Habitat Analysis
> QHEI & HHEI Analysis
> GPS Mapping

Years' Experience 15

Joined Cardno
2004–2009, 2011–Present

Summary of Experience

As a Senior Consultant, Mr. Christopher (Chris) White manages ecological restoration projects in the Southeast United States and formerly oversaw Cardno's Michigan restoration team. In this role, Mr. White manages day-to-day field crew operations, generates pricing for proposals and bids, and leads the safety compliance in his office. He is responsible for performing all aspects of field work for habitat restoration. Mr. White also assists with macroinvertebrate, fishery, and habitat surveys, and mammal, reptile, amphibian, and bird identification.

Significant Projects

Project Manager – Oakland County Parks Swallow Wort and Bittersweet Treatments – Michigan

Cardno was contracted to treat bittersweet and swallow wort on over 100 acres of multiple park locations throughout Oakland County. ANC permits were obtained for all herbicide work and maps were created for future Oakland County Park use to show bittersweet and swallow wort locations. Mr. White was the project manager responsible for overseeing all aspects of the project.

Project Manager – Clinton River Spillway Invasive Species Control – Michigan

Cardno implemented the Invasive Species Control Plan, which includes herbaceous and woody control of exotic/invasive species over a four year period. Field crews administered herbicide application from motorized boats to treat exotic common reed (*Phragmites australis*). A combination of backpack and ATV-mounted sprayers as well as hand-wicking methods was used during years 2 and 3. Field crews also treated 11 exotic/invasive woody species by using cut-stump treatments, and then disposed the cut material off-site. The method of direct application helped avoid over spraying. Foliar treatments will be administered in the spring/summer to combat re-sprouts. Mr. White was the project manager responsible for overseeing all aspects of the project.

Field Technician – Sisters of the Holy Cross Native Planting – Indiana

Cardno designed and installed a custom seed mix for a 14-acre clearing along the St. Joseph River. A three-year maintenance regime was implemented to reduce non-native species competition. In 2010, we performed a prescribed burn. Currently, Cardno is conducting prairie maintenance and invasive species control. Mr. White was field technician responsible for maintaining the site by conducting invasive/exotic species control measures.

Field Crew Supervisor – Hoosier Prairie Nature Preserve – Indiana

Hoosier Prairie is an Indiana DNR Division of Nature Preserves property in Lake County, Indiana. It is one of the largest wet prairie and black oak savanna remnants in the region and contains a vast number of rare and endangered plant species. In 2006 Cardno was contracted to clear 20 acres of woody overgrowth that consisted primarily of aspen, black oaks, and glossy buckthorn. Treatment was performed by hand during the winter months to minimize impacts to the site. The project was completed in spring of 2007 with minimal damage to off-target species. Mr. White was the field crew supervisor and functioned as lead project contact.

Education

> BS, Fisheries and Aquatic Sciences, Purdue University, 2004

Affiliations

> American Fisheries Society
> Purdue University Chapter, Past-President
> West Michigan Environmental Action Council, WMEAC
> Michigan Association of County Drain Commission, MACDC
> West Michigan Conservation Network, WMCN
> Friends of the Rouge River, FOTR

Field Crew Supervisor – American Transmission Company, Superior Coastal Plain Boreal Forest Restoration – Wisconsin

American Transmission Company hired Cardno to design and implement a restoration plan for 120 acres of required mitigation in the Superior Coastal Plain in northwestern Wisconsin. The project is consistent with the State Wildlife Action Plan and includes restoration of historical boreal forest wetland communities and associated uplands within the Pokegama-Carnegie State Natural Area. The project's intent is to set in place a vegetation succession strategy that, within 10 years, will result in a positive trajectory of boreal forest tree species on the site. Restoration activities occurred the first 4 years of the project, while monitoring will continued through year 10. The site successful met its performance standards and was released after year 10. Mr. White was the field crew supervisor and functioned as lead project contact.

Field Crew Supervisor – Rockies Express Pipeline (REX) East – Indiana

Rockies Express Pipeline is an approximately 1,663-mile natural gas pipeline system from Colorado to Ohio. Cardno completed wetland delineations, evaluated threatened and endangered species habitat, provided topsoil testing, and assisted with mitigation site location for all of the Indiana and Ohio corridors of a 42-inch diameter natural gas pipeline traversing approximately 622 miles from Audrain County, Missouri, across Illinois and Indiana to Monroe County, Ohio. Mr. White was the field crew supervisor and worked to document and delineated natural features along the right-of-way.

Project Assistant – Natural Resource Damage Assessment – Florida and Louisiana

Cardno staff assisted a multi-state assessment team working with USFWS in surveying avian impacts in the Gulf of Mexico. Mr. White was a project assistant responsible for surveying mile long transects along the shoreline of the Gulf of Mexico recording birds to species. He communicated daily with Cardno while in remote areas, recorded GPS coordinates for survey transects, and completed daily reports. Mr. White coordinated survey efforts with multiple organizations was critical for the success of this project.

Field Technician – Battelle Memorial Institute Fish Collection in Minnesota and Wisconsin – Minnesota

Cardno was responsible for acquiring Minnesota DNR collection permits, collecting fish with various gears including angling, trap nets, and electrofishing, recording data on fish species, length, and location, and shipping fish to a laboratory for processing. As a field technician, Mr. White assisted with the collection of fish species using different methods of collection. Methods included boat shocking, trap nets, and angling. Fish specimens were collected for mercury testing through the EPA.

Previous Employment

> Creative Home Resources, Carpenter, 2009-2011
> Cardno JFNew, Ecologist, June-November 2010

Certifications

> Wildland Firefighter Certification: S-130, S-190
> Licensed Commercial Pesticide Applicator, Categories: Aquatic and Right-of-Way, Michigan
> 40-Hour OSHA HAZWOPER Certification
> Natural Shoreline Professional Certification, Michigan
> Storm Water Operator Certification, Michigan
> CPR and First Aid Certification

Continuing Education

> Annual Chainsaw Training Course, Natural Resource Management and Training, 2016

Please Respect the Environment

ABOUT CARDNO

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD]. For additional information, visit www.cardno.com.

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

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