STATE OF MISSISSIPPI
Tate Reeves
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
Joe Spraggins, Executive Director

AMENDMENT # 1 OF MEMORANDUM OF AGREEMENT BETWEEN MISSISSIPPI DEPARTMENT OF MARINE RESOURCES AND CITY OF OCEAN SPRINGS

The Memorandum of Agreement (MOA) between the Mississippi Department of Marine Resources (MDMR) and City of Ocean Springs (COS) is hereby mutually amended as follows:

COS's RESPONSIBILITIES

The COS, at its discretion, may enter the property to perform routine maintenance of the grounds. Additionally, the COS will create and maintain the green parking lot located at 323 Front Beach Drive, Ocean Springs, MS 39564 on the Reynolds property per Attachment A – Operations and Maintenance Plan.

All other terms and conditions set forth in the original contract executed August 17, 2023 remain in full effect.

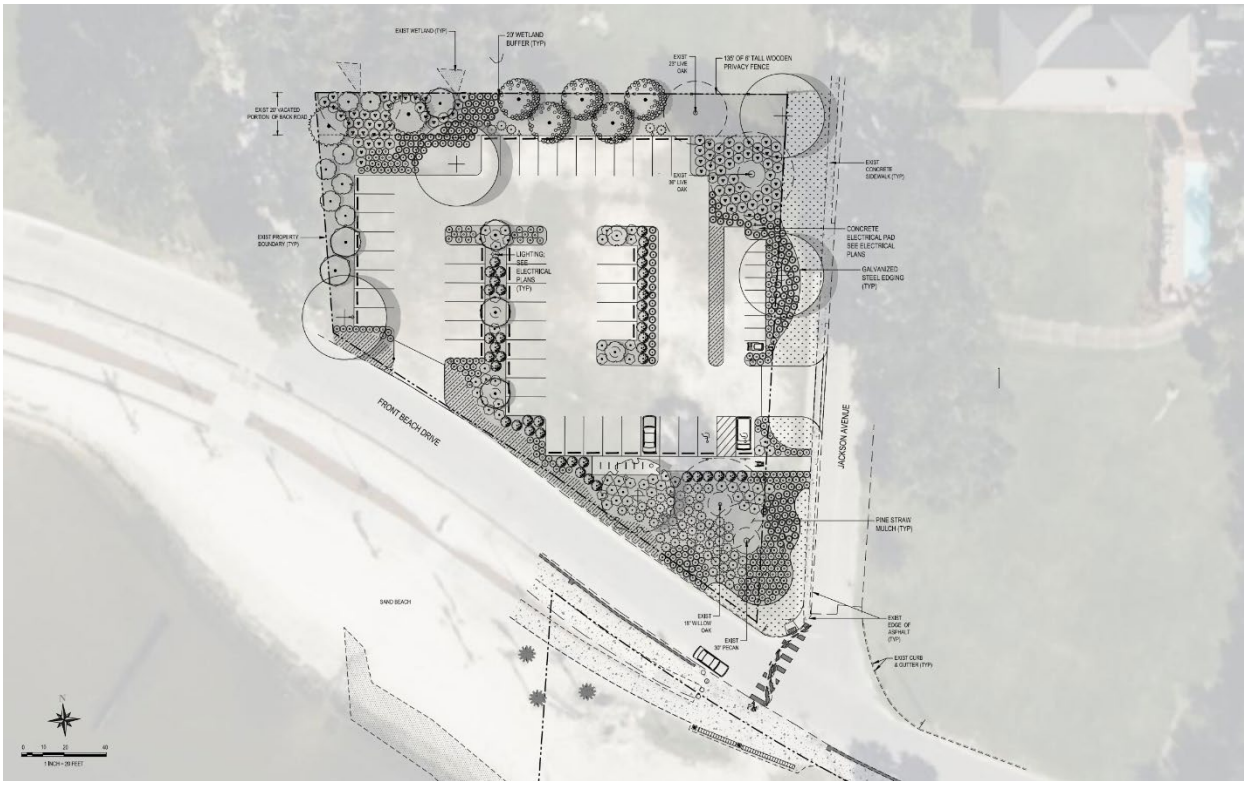
MS Department of Marine Resources	**City of Ocean Springs**
Joe Spraggins, Executive Director	Kenny Holloway, Mayor
Date: _____	Date: _____

Attachment A

FRONT BEACH RESTORATION AND PUBLIC ACCESS

OPERATIONS AND MAINTENANCE PLAN

November 2023



Prepared for:

City of Discovery
OCEAN SPRINGS
MISSISSIPPI

1018 Porter Ave.
Ocean Springs, MS 39564

Prepared by:

CYPRESS
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1. Introduction & Purpose

This Operations and Maintenance (O&M) Plan outlines the procedures and responsibilities for the upkeep of the gravel parking lot and native vegetation landscaping located at 323 Front Beach Drive, Ocean Springs, MS 39564.

Proper maintenance ensures the longevity and aesthetic of the parking lot, while preserving the natural beauty of the surrounding native vegetation. A copy of your O&M manual in its entirety must be maintained at your facility and available for review upon request. It will act as a guide for new staff. The plan should be updated regularly, as needed.

2. Routine Maintenance & Documentation

Regular inspections are crucial to identifying issues early and maintaining the parking lot's functionality and appearance. Routine record keeping is accomplished by utilizing the following reports:

a. Maintenance Schedule

b. Monthly Inspection Report

c. Incident/Follow-Up Action Report

i. Document all problems, occurrences, emergencies, complaints that result in or necessitate deviation from routine O&M procedures, and any situations that have the potential to affect public health, safety, welfare, or the environment or have the potential to violate any permits, regulations or laws relating to the water system. In addition, this report records the follow-up action taken to correct the circumstance. Document and address any issues promptly after inspections.

A copy of reports should be kept at [location TBD] for review upon request, especially in the event that the regular operator is not available. Also have manufacturer's recommendations and specifications for materials on record. See samples below:

Landscape Maintenance Schedule

TASK	MONTH											
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
PLANT CARE												
Monitoring												
Pruning (as needed)												
Deadhead plants												
Cut back perennials & grasses												
Watering (as needed)												
PLANT BEDS												
Weeding (as needed)												
Mulching												
Soil testing												
Winter clean up												
PEST MANAGEMENT												
Monitoring												
LAWN												
Watering (as needed)												
Fertillize/Lime												
Seeding												
Herbicide												
Mowing												
Soil test												

Monthly Inspection Report

Date: _____

Inspected by: _____

CATEGORY	CHECK FOR	NOTE	INITIALS
LANDSCAPE	Health of vegetation		
	Leaks, broken lines, misdirected sprinkler heads in watering system		
HARDSCAPE	Gravel erosion		
	Potholes		
	Drainage issues		
	Legibility of crosswalk paint		
LIGHTING	Operability		
FENCE	Rot		
	Termites		
	Bad hardware		
	Other damage		
COMMENTS			
ACTION ITEMS			

Incident / Follow-Up Action Report

Date: _____

Inspected by: _____

INCIDENT
FOLLOW-UP ACTION
INITIALS:

3. Landscaping

a. Performance Standards

i. All trees, shrubs, groundcover, and sod shall be maintained using proven landscape best management practices (BMPs) at all times. Any dead, diseased, or hazardous tree or shrub should be immediately removed and replaced with the same or comparable species of the same or similar size when appropriate and available in local nurseries. Large trees should be replaced using the city's dbh formula for replacements.

ii. To maintain access on walkways, a minimum of 8' clearance of space must be established between any tree canopy and ground. For driveways and parking, a minimum of 10' clearance is required.

b. Plant Care

i. Plant Profiles: Below is a chart of the plants on site, and maintenance information.

CATEGORY	SPECIES	WATERING	PRUNING	FERTILIZATION	OTHER NOTES
EVERGREEN TREES	• Dahoon Holly (*Ilex cassine*) • Eastern Redcedar (*Juniperus virginiana*) • Sweetbay Magnolia (*Magnolia virginiana)* • Wax Myrtle (*Morella cerifera*)	First two years until established. Afterwards, as needed	Maintain natural shape. No pruning needed other than clearance over permeable paver areas	Only after soil testing	Inspect for diseases as needed
DECIDUOUS TREES	• Pond Cypress (*Taxodium var. inbricarium*)	First two years until established. Afterwards, as needed	Maintain natural shape. Prune for crossing branches, hazardous limbs, and clearance	Only after soil testing	Root prune knees in permeable paver areas to prevent tripping hazards
SHRUBS	• American Beautyberry (*Callicarpa americana*) • False Rosemary (*Conradina conascens*) • Dwarf Yaupon Holly (*Ilex vomitoria 'Nana'*) • Saw Palmetto (*Serenoa repens*)	Water as needed	Maintain natural shape. No pruning needed other than clearance over permeable paver areas	Only after soil testing	Rosemary doesn't like overwatering
	• Dwarf Palmetto[1] (*Sabal minor*)	Drought, flood, saturated soil tolerant	No pruning unless to maintain clearance	Only after soil testing	Inspect for burn in winter, and fungus
PERENNIAL GRASSES	• Pink Muhly Grass[2] (*Muhlenbergia capillaris*)	Drought tolerant	Cut back to 6 inches in later winter or early spring when it is dormant and brown	Only after soil testing	Little to no insect or disease pests
	• Lace Grass[3] (*Eragrostis capillaris*)	Drought tolerant	Cut to ground in early spring	Only after soil testing	Little to no insect or disease pests

[1] https://www.nrcs.usda.gov/plantmaterials/etpmcbr13659.pdf
[2] https://extension.msstate.edu/news/southern-gardening/2022/use-pink-muhly-grass-for-winter-garden-color
[3] http://www.newmoonnursery.com/plant/Eragrostis-spectabilis

CATEGORY	SPECIES	WATERING	PRUNING	FERTILIZATION	OTHER NOTES
LAWN	• St. Augustine Grass[4] (*Stenotaphrum secundatum*), disease-resistant variety	Water often	Cut at 2.5-3 inch height	Only after soil testing	Inspect and treat for weeds, insects, disease

[4] https://extension.msstate.edu/sites/default/files/publications/publications/p1322_1.pdf

ii. Pruning and Trimming: Prune and trim plants as needed to maintain shape and prevent overgrowth.
    1. Prune evergreen shrubs and trees as well as shade trees in late winter to early spring while they are dormant and right before the new growing season begins.
    2. Prune flowering trees right after they flower.
    3. After a freeze, do not trim immediately. Let the plant heal and recover healthy tissue, and then prune the dead parts a little later.

iii. Mulching: Apply organic, non-dyed, pine straw at a depth of 3" to conserve moisture and control weed growth. One typical, industry sized bale can cover up to 50 square feet of ground. Do not place mulch in wetlands.
    1. Fertilization: Use natural, organic fertilizers as least 25 feet away from wetlands – Do not use a type that will harm wetlands (i.e. nitrogen, phosphorus). Mature trees don't need fertilization, and in many cases natives need minimal. Utilize a yearly soil test to determine appropriate fertilizer type and rate for plants not yet established.
        a. For timing, the following is recommended: [5]
            i. First choice – autumn (Oct-Dec)
            ii. Second choice – winter or early spring (Feb-Apr)
            iii. Third choice – mid-summer (May-July)

c. Treatment of Invasive Plant Species

i. The following list of invasive plant species has a high likelihood of spreading to the site. Once present, consistent treatment is likely required to manage the growth and spread. Treatment methods more appropriate for adjacent wetlands/aquatic habitat include: hand-pulling/cutting, foliar herbicide application, cut stump herbicide application, spot mowing.[6] For detailed removal strategies, the following resources could be used: (add links)

[5] https://joa.isa-arbor.com/request.asp?JournalID=1&ArticleID=1519&Type=2
[6] https://slconservancy.org/2021/08/16/4-environmentally-conscious-ways-to-kill-invasive-plants/

INVASIVE PLANT SPECIES		
COMMON NAME	**SCIENTIFIC NAME**	**BEST MANAGEMENT PRACTICES**
Alligatorweed	*Alternanthera philoxeroides*	Apply herbicide[7]
Chinese Privet	*Ligustrum sinense*	Mechanical removal, cut stump, basal bark, foliar herbicide[8]
Chinese Tallow	*Triadica sebifera*	Cut stump, apply herbicide
Cogongrass	*Imperata cylindrica*	Burn, till, apply herbicide[9]
Japanese Climbing Fern	*Lydogium japonicum*	Apply herbicide[10]
Japanese Honeysuckle	*Lonicera japonica*	Mechanical removal, apply herbicide, cut stump[11]
Torpedo Grass	*Panicum repens*	Apply herbicide[12]

d. Irrigation

i. Adjust watering frequency to correspond with precipitation. Provide supplemental watering during dry periods to sustain plant health.

ii. For irrigation system:

1. Inspect entire watering system for leaks, broken lines, misdirected sprinkler heads, emitters, and/or soaker hoses.
2. Optional rain sensor can be installed to conserve water usage.
3. Check for sprinkler run-off.
4. Winterize the system yearly, flushing out water that could cause freeze damage during the cold season.
5. Audit the system once or twice during the summer.

4. Permeable Paver Maintenance

a. Performance Standards

i. The permeable paver system has a 60+ year lifetime, and typically requires little maintenance. The modular pavers hold gravel fill in place, and most silt and sediment will decay and pass naturally through the system.[13]

ii. Permeable paver areas should be free of trash, excess leaves, and overgrowth of plants. Remove debris by hand, broom, rake, or leaf blower to reduce removing gravel.

[7] https://extension.msstate.edu/sites/default/files/publications/publications/alligator_weed_P3735-14b_web.pdf
[8] https://www.aces.edu/blog/topics/forestry-wildlife/control-options-for-chinese-privet/
[9] https://sfyl.ifas.ufl.edu/archive/hot_topics/environment/cogongrass.shtml
[10] https://forestry.alabama.gov/Pages/Informational/Invasive/Japanese_Climbing_Fern.aspx
[11] https://plants.ifas.ufl.edu/plant-directory/lonicera-japonica/
[12] http://extension.msstate.edu/publications/torpedograss
[13] https://www.truegridpaver.com/wp-content/uploads/2016/12/TRUEGRID-Maintenance-Guide.pdf

iii. Inspect gravel drive for potholes and dips and correct as needed, per manufacturer specifications.

b. Weed Control

i. Weed control methods should take in consideration the adjacent wetlands/aquatic habitat. Apply mechanical weeding (i.e. hand pulling) and/or EPA-approved weed control methods to prevent weed growth in the gravel. Sprayer's license is required to apply.*

c. Drainage Maintenance

i. Inspect pavers at least 3 times a year after heavy rain. Look for pooling water and visible dirt or material in the gaps between the pavers. This is an indication that you may have a clog beneath the surface. Pavers can be pulled up and infill or base material can be replaced. Simply reuse the paver. Ensure proper drainage by clearing ditches and culverts.

ii. To move excess sediment through the system, use a garden hose or power washer to aim a direct spray at the pavers. Take caution to not wash out gravel during the process. This should help to clear out any dirt clumps and get things moving regularly again.[14]

5. Signage & Lighting

a. Signage

i. Maintain clear signage indicating parking spaces, directions, and any safety warnings.

b. Lighting

i. Ensure adequate lighting for nighttime use, repairing or replacing malfunctioning lights promptly.

6. Fence Maintenance

a. Look for signs of rot. If rot is spotted, replace the panel to prevent it from spreading.
b. If termites are present, treat with borax.
c. Check for loose nails or screws and replace as needed.
d. Keep tree limbs and vegetation off of the fence to prevent moisture build-up.
e. Stain the fence after installation and 2-3 years to protect the wood.

7. Waste Management

a. Litter Removal

i. Regularly remove litter and debris from the parking lot and landscaped areas at a minimum of once week.

[14] https://www.truegridpaver.com/permeable-paver-maintenance/

8. Adaptive Management

a. Storm Preparedness

i. Have a plan in place to secure the parking lot during severe weather events. Coordinate any pruning or removal of hazardous trees ahead of hurricane and storm season.

ii. Remove items that could become loose during high winds and storm surge, such as trash receptacles, dumpsters, and outdoor furniture.

b. Storm Impacts

i. The site will be evaluated for impacts after major storm events.

ii. The City should replace any material damaged by a storm event within 3 months, post-event.

iii. Impacts to restored areas on site resulting from a storm event exceeding 50% or 1,714 SF will be considered a Force Majeure event.

c. Emergency Contacts

i. Maintain a list of emergency contacts for quick response in case of accidents or natural disasters. See sample below:

TRADE	NAME	ADDRESS	PHONE
Electrician			
Equipment rental			
Restroom trailer hauler			
Waste management			

9. Budgeting

a. Create and maintain a yearly budget for ongoing maintenance, ensuring there are funds available for necessary repairs and improvements. If the maintenance will be contracted, it is suggested to use a two – three year contract with options to renew once and a budgeted increase cost of compliance built into the budget.

b. Budgets should also account for replacement of plants and trees, mulch material and its application, irrigation work, and chemicals for fertilization, weed control and pest control.