Department of Homeland Security
Federal Emergency Management Agency

v0

General Info

Project #	552697 **P/W #** 180	**Project Type**	Estimated Costs
Project Category	C - Roads and Bridges	**Applicant**	Bay St. Louis, City of (045-03980-00)
Project Title	Bay St. Louis Roads	**Event**	4626DR-MS (4626DR)
Project Size	Large	**Declaration Date**	10/23/2021
Activity Completion Date	10/21/2025	**Incident Start Date**	8/28/2021
		Incident End Date	9/1/2021
Process Step	Obligated		

Damage Description and Dimensions

The Disaster # 4626DR, which occurred between *08/28/2021* and *09/01/2021*, caused:

Damage #934311; Bay St. Louis Roads (Group Ave B)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All of the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Approx. Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Asphalt
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201007; Bay St louis Roads (Group Road 556 & 558)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201009; Bay St. Louis Roads (Group Garden Isle)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface Treatment (chip and seal)
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 13
- **Number of Lanes:** 2

Damage #1201012; Bay St. Louis Roads (Group Lagan)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** Local community, including school bus & 911 emergency routes.
- **Facility Description:** Multiple community roadways, with varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bitumen (chip n seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201014; Bay St. Louis roads (Group HWY 603)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General community use, including school bus routes and 911 emergency service routes.
- **Facility Description:** These roads are of varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201017; Bay St. Louis Roads (Group Central)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General residential community use, including School bus routes & 911 emergency service routes.
- **Facility Description:** Varying road lengths and widths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Final Scope

934311

Bay St. Louis Roads (Group Ave B)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

10th Street Ave B:

GPS Start 30.320218, -89396440, Stop 30.320218, -89.396859:

1. Remove and Replace 7.583333 CY of Double Bituminous Surface Treatment, 130 FT long x 12.6 FT wide x 1.5 IN deep.

10th Street to 15th Street Ave A:

GPS Start 30.320219, -89.393442, Stop 30.323342, -89.393460:

2. Remove and Replace 83.333333 CY of Double Bituminous Surface Treatment, 1,200 FT long x 15 FT wide x 1.5 IN deep.

12th Street Ave D:

GPS Start 30.321553, -89.400219, Stop 30.321585, -89.399824:

3. Remove and Replace 6.296296 CY of Double Bituminous Surface Treatment, 100 FT long x 13.6 FT wide x 1.5 IN deep.

13th Street Ave B:

DP1:

GPS 30.322116, -89.394528:

4. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 9 FT long x 11 FT wide x 6 IN deep.

5. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200, 9 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322539, -89.395815, Stop 30.322156, -89.393471:

6. Remove and Replace 49.583333 CY of Double Bituminous Surface Treatment, 850 FT long x 12.6 FT wide x 1.5 IN deep.

14th Street Ave B:

DP1:

GPS 30.322754, -89.397557:

7. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 21 FT long x 4 FT wide x 6 IN deep.

DP2:

GPS 30.322808, -89.399375:

8. Remove and Replace 1.222222 CY of 610 stone or crushed concrete, 11 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.322839, -89.396099, Stop 30.322805, -89.400249:

9. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

15th Street Ave B:

GPS Start 30.323741, -89.395181, Stop 30.323471, -89.396717:

10. Remove and Replace 12.541667 CY of Double Bituminous Surface Treatment, 215 FT long x 12.6 FT wide x 1.5 IN deep.

17th Street Ave B:

GPS Start 30.324883, -89.396095, Stop 30.325088, -89.398872:

11. Remove and Replace 8.75 CY of Double Bituminous Surface Treatment, 150 FT long x 12.6 FT wide x 1.5 IN deep.

18th Street Ave B:

DP1:

GPS 30.325073, -89.397590:

12. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

13. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.325402, -89396018, Stop 30.325524, -89.399108:

14. Remove and Replace 59.208333 CY of Double Bituminous Surface Treatment, 1,015 FT long x 12.6 FT wide x 1.5 IN deep.

2nd Street to Ave A Ave B:

GPS Start 30.314805, -89.396081, Stop 30.314340, -89.393492:

15. Remove and Replace 48.416667 CY of Double Bituminous Surface Treatment, 830 FT long x 12.6 FT wide x 1.5 IN deep.

7th Street Ave B:

GPS Start 30.318190, -89.396099, Stop 30.318246, -89.397351:

16. Remove and Replace 22.75 CY of Double Bituminous Surface Treatment, 390 FT long x 12.6 FT wide x 1.5 IN deep.

8th Street Ave B:

DP1:

GPS 30.318860, -89.395133:

17. Remove and Replace 2.566667 CY of 610 stone or crushed concrete, 11 FT long x 12.6 FT wide x 6 IN deep.

18. Remove and Replace 3.422222 CY of Sand with less than 20% passing 200, 11 FT long x 12.6 FT wide x 8 IN deep.

DP2:

GPS 30.318882, -89.396534:

19. Remove and Replace 2.1 CY of 610 stone or crushed concrete, 9 FT long x 12.6 FT wide x 6 IN deep.

20. Remove and Replace 2.8 CY of Sand with less than 20% passing 200, 9 FT long x 12.6 FT wide x 8 IN deep.

GPS Start 30.318802, -89.393486, Stop 30.318905, -89.400269:

21. Remove and Replace 125.008333 CY of Double Bituminous Surface Treatment, 2,143 FT long x 12.6 FT wide x 1.5 IN deep.

9th Street Ave B:

GPS Start 30.319413, -89396383, Stop 30.319377, -89.396362:

22. Remove and Replace 13.416667 CY of Double Bituminous Surface Treatment, 230 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A & Sixth ST to Ave B:

DP1:

GPS 30.317587, -89.395077:

23. Remove and Replace 0.166667 CY of 610 stone or crushed concrete, 3 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.222222 CY of Sand with less than 20% passing 200, 3 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.317548, -89.33497, Stop 30.317563, -89.396054:

25. Remove and Replace 63.466667 CY of Double Bituminous Surface Treatment, 1,088 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A &4th Street To Ave D:

DP1:

GPS 30.316004, -89.89.401101:

26. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 6 FT long x 3 FT wide x 6 IN deep.

27. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200, 6 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.316243, -89.393467, Stop 30.316397, -89.400384:

28. Remove and Replace 129.225833 CY of Double Bituminous Surface Treatment, 2,215.3 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A to 6th Street:

DP1:

GPS 30.315849, -89.393504:

29. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

GPS Start 30.314340, -89.393492, Stop 30.317487, -89.393442:

30. Remove and Replace 65.041667 CY of Double Bituminous Surface Treatment, 1,115 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & 5th Street To Ave D:

DP1:

GPS 30.316934, -89.398698:

31. Remove and Replace 2.851852 CY of 610 stone or crushed concrete, 22 FT long x 7 FT wide x 6 IN deep.

GPS 30.617557, -89.396393, Stop 30.317063, -89.396254:

32. Remove and Replace 124.075 CY of Double Bituminous Surface Treatment, 2,127 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & Sixth ST to Ave D:

GPS Start 30.617557, -89.396393, -89.396139, Stop 30.317571, -89.396492:

33. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

34. Remove and Replace 59.722222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Second Street Ave C:

GPS Start 30.315207, -89.398684, Stop 30.316888, -89.401183:

35. Remove and Replace 36.75 CY of Double Bituminous Surface Treatment, 630 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave A:

DP1:

GPS 30.315495, -89.395143:

36. Remove and Replace 6.333333 CY of 610 stone or crushed concrete, 38 FT long x 9 FT wide x 6 IN deep.

37. Remove and Replace 8.444444 CY of Sand with less than 20% passing 200, 38 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314854, -89.396063, Stop 30.315541, -89.393526:

38. Remove and Replace 47.541667 CY of Double Bituminous Surface Treatment, 815 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave C:

GPS Start 30.615552, -89.397145, Stop 30.315371, -89.395978:

39. Remove and Replace 20.462963 CY of Double Bituminous Surface Treatment, 340 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $303,533.43

Project Notes:

1. All site estimates for work to be completed were generated by the FEMA CRC using RSMeans, 2022, 2nd Quarter, Biloxi, MS. See attachment labeled “552697 - DR4626 - FEMA Cost Estimate.xlsx”.

2. All procurement documents have been provided and reviewed. See attachment “Mississippi State Procurement Manual”.

3. Applicant will comply with its local, state, federal procurement laws, regulations and procedures.

4. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

5. **Equipment:** When an individual item of equipment is no longer needed for federally funded programs or projects, non-state Applicants must follow the requirements of 2 CFR § 200.313(c)-(e) stipulating that, when an individual item of equipment is no longer needed for this project and/or other federally funded programs or projects, Applicants must calculate the item’s current fair market value (FMV). If the per-unit FMV is $5,000 or more, FEMA will reduce eligible funding by the

FMV. The Applicant must demonstrate compliance with the disposition requirements of 2 CFR 200.313 at closeout.

6. **Supplies:** When supplies are no longer needed for federally funded programs or projects, all Applicants, including State and Territorial government Applicants, must calculate the current fair market value of any unused residual supplies (including materials) that FEMA funded for any of its projects and determine the aggregate total. The Applicant must provide the current fair market value if the aggregate total of unused residual supplies is greater than $5,000. FEMA reduces eligible funding by this amount.144 If the aggregate total of unused residual supplies is less than $5,000, FEMA does not reduce the eligible funding.

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR4626- MS

GM Damage Inventory #: 934311

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 20 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $303,533.43

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 25,272 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	25,272 SY @$7.50/SY =	$189,542.98
	Total =	$189,542.98

Total Mitigation Costs for this DI = $189,542.98

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $189,542.98

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. **Net Hazard Mitigation cost(s): A – B = $189,542.98**

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($189,542.98/$303,533.43) x 100 = 62.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #934311 is $189,542.98 and is 62.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201007 Bay St louis Roads (Group Road 556 & 558)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

12th Street 556 to Ave A:

GPS Start 30.321426, -89.392394, Stop 30.321499, -89.393383:

1. Remove and Replace 21.666667 CY of Double Bituminous Surface Treatment, 360 FT long x 13 FT wide x 1.5 IN deep.

12th Street 558 to East End (dead end):

GPS Start 30.321520, -89.389919, Stop 30.321460, -89.388914:

2. Remove and Replace 21.546296 CY of Double Bituminous Surface Treatment, 358 FT long x 13 FT wide x 1.5 IN deep.

13th Street Dead End to 556:

DP1:

GPS 30.322145, -89.389938:

3. Remove and Replace 3.177778 CY of 610 stone or crushed concrete, 26 FT long x 6.6 FT wide x 6 IN deep.

4. Remove and Replace 4.237037 CY of Sand with less than 20% passing 200 sieve, 26 FT long x 6.6 FT wide x 8 IN deep.

GPS Start 30.322131, -89.387670, Stop 30.322181, -89.392286:

5. Remove and Replace 88.351852 CY of Double Bituminous Surface Treatment, 1,468 FT long x 13 FT wide x 1.5 IN deep.

14th Street 556 to Dead End:

DP1:

GPS 30.322842, -89.391816:

6. Remove and Replace 4.888889 CY of 610 stone or crushed concrete, 33 FT long x 8 FT wide x 6 IN deep.

7. Remove and Replace 6.518519 CY of Sand with less than 20% passing 200 sieve, 33 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.322787, -89.391407:

8. Remove and Replace 10.37037 CY of 610 stone or crushed concrete, 40 FT long x 14 FT wide x 6 IN deep.

9. Remove and Replace 13.82716 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 14 FT wide x 8 IN deep.

DP3:

GPS 30.3228880, -89.390564:

10. Remove and Replace 9.814815 CY of 610 stone or crushed concrete, 53 FT long x 10 FT wide x 6 IN deep.

11. Remove and Replace 13.08642 CY of Sand with less than 20% passing 200 sieve, 53 FT long x 10 FT wide x 8 IN

deep.

DP4:

GPS 30.322845, -89.390199:

12. Remove and Replace 7.777778 CY of 610 stone or crushed concrete, 42 FT long x 10 FT wide x 6 IN deep.

13. Remove and Replace 10.37037 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 10 FT wide x 8 IN deep.

GPS Start 30.322865, -89.382245, Stop 30.322757, -89.390017:

14. Remove and Replace 49.930556 CY of Double Bituminous Surface Treatment, 719 FT long x 15 FT wide x 1.5 IN deep.

15th Street 558 to Jordan River Drive:

GPS Start 30.323473, -89.389906, Stop 30.323433, -89.388034:

15. Remove and Replace 59.944444 CY of Double Bituminous Surface Treatment, 830 FT long x 15.6 FT wide x 1.5 IN deep.

2nd Street 556 to 560:

DP1:

GPS 30.314588, -89.391165:

16. Remove and Replace 1.944444 CY of 610 stone or crushed concrete, 15 FT long x 7 FT wide x 6 IN deep.

17. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.314346, -89.390018:

18. Remove and Replace 0.37037 CY of 610 stone or crushed concrete, 5 FT long x 4 FT wide x 6 IN deep.

19. Remove and Replace 0.493827 CY of Sand with less than 20% passing 200 sieve, 5 FT long x 4 FT wide x 8 IN deep.

DP3:

GPS 30.314165, -89.388884:

20. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 11 FT long x 9 FT wide x 6 IN deep.

21. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314723, -89.392286, Stop 30.314133, -89.388331:

22. Remove and Replace 75.351852 CY of Double Bituminous Surface Treatment, 1,252 FT long x 13 FT wide x 1.5 IN deep.

3rd Street 560 to 556:

DP1:

GPS 30.315078, -89.390066:

23. Remove and Replace 0.444444 CY of 610 stone or crushed concrete, 8 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.592593 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.314819, -89.388392, Stop 30.315450, -89.392352:

25. Remove and Replace 77.037037 CY of Double Bituminous Surface Treatment, 1,280 FT long x 13 FT wide x 1.5 IN deep.

4th Street 556 to 560:

DP1:

GPS 30.315788, -89.390764:

26. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 14 FT long x 6 FT wide x 6 IN deep.

27. Remove and Replace 2.074074 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS 30.315814, -89.390772:

28. Remove and Replace 0.740741 CY of 610 stone or crushed concrete, 8 FT long x 5 FT wide x 6 IN deep.

29. Remove and Replace 0.987654 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.316015, -89.392349, Stop 30.315729, -89.390055:

30. Remove and Replace 44.236111 CY of Double Bituminous Surface Treatment, 735 FT long x 13 FT wide x 1.5 IN deep.

558 Street 14th to 15th:

DP1:

GPS 30.315694, -89.390122:

31. Remove and Replace 8.555556 CY of 610 stone or crushed concrete, 42 FT long x 11 FT wide x 6 IN deep.

32. Remove and Replace 11.407407 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322736, -89.389949, Stop 30.323271, -89.389971:

33. Remove and Replace 17.62963 CY of Double Bituminous Surface Treatment, 238 FT long x 16 FT wide x 1.5 IN deep.

558 Street 1st to 10th:

DP1:

GPS 30.314168, -89.390063:

34. Remove and Replace 23.703704 CY of 610 stone or crushed concrete, 160 FT long x 8 FT wide x 6 IN deep.

35. Remove and Replace 31.604938 CY of Sand with less than 20% passing 200 sieve, 160 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.319457, -89.389962:

36. Remove and Replace 6 CY of 610 stone or crushed concrete, 27 FT long x 12 FT wide x 6 IN deep.

37. Remove and Replace 8 CY of Sand with less than 20% passing 200 sieve, 27 FT long x 12 FT wide x 8 IN deep.

GPS Start 30.313752, -89.390031, Stop 30.320125, -89.389963:

38. Remove and Replace 162.15463 CY of Double Bituminous Surface Treatment, 2,399 FT long x 14.6 FT wide x 1.5 IN deep.

8th Street 560 to 556:

DP1:

GPS 30.318885, -89.391037:

39. Remove and Replace 1.166667 CY of 610 stone or crushed concrete, 9 FT long x 7 FT wide x 6 IN deep.

40. Remove and Replace 1.555556 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.318961, -89.392042:

41. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

42. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

GPS Start 30.31875, -89.390017, Stop 30.318891, -89.392242:

43. Remove and Replace 43.935185 CY of Double Bituminous Surface Treatment, 730 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $227,082.10

Scope Notes:

1. Damage date was originally incorrectly entered for DI #1201007 in DDD. Correct Damage Dates between 8/28/2021 and 9/1/2021.

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201007

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321426, -89.392394 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima/ HM 406 Specialist

HMP Date: May 27, 2022; Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to

approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $227,082.10

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 15,883 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	15,883 SY @$7.50/SY =	$119,121.17
	Total =	$119,121.17

Total Mitigation Costs for this DI = $119,121.17

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $119,121.17

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $119,121.17

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($119,121.17/$227,082.10) x 100 = 52.46% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201007 is $119,121.17 and is 52.46% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201009 Bay St. Louis Roads (Group Garden Isle)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Road Damage:

Beverly to DeRoach:

GPS Start 30.321684, -89.378953, Stop 30.320534, -89.375797:

1. Remove and Replace 71.296296 CY of Double Bituminous Surface Treatment, 1,100 FT long x 14 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

2. Remove and Replace 59.7222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Clara Street Chapman to House:

DP1:

GPS 30.3229777, -89.379942:

3. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 9 FT long x 2 FT wide x 6 IN deep.

4. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.322836, -89.380153:

5. Remove and Replace 0.055556 CY of 610 stone or crushed concrete, 3 FT long x 1 FT wide x 6 IN deep.

6. Remove and Replace 0.074074 CY of Sand with less than 20% passing 200 sieve, 3 FT long x 1 FT wide x 8 IN deep.

GPS Start 30.3223251, -89.378760, Stop 30.323288, -89.381047:

7. Remove and Replace 53.925926 CY of Double Bituminous Surface Treatment, 832 FT long x 14 FT wide x 1.5 IN deep.

Clara Street DeRoach to Chapman:

DP1:

GPS 30.321561, -89.326920:

8. Remove and Replace 0.222222 CY of 610 stone or crushed concrete, 6 FT long x 2 FT wide x 6 IN deep.

9. Remove and Replace 0.296296 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.321629, -89.322035:

10. Remove and Replace 3.111111 CY of 610 stone or crushed concrete, 21 FT long x 8 FT wide x 6 IN deep.

11. Remove and Replace 4.148148 CY of Sand with less than 20% passing 200 sieve, 21 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.322181, -89.378367:

12. Remove and Replace 1 CY of 610 stone or crushed concrete, 18 FT long x 3 FT wide x 6 IN deep.

13. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 18 FT long x 3 FT wide x 8 IN deep.

DP4:

GPS 30.322312, -89.378596:

14. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

15. Remove and Replace 1.08642 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 4 FT wide x 8 IN deep.

GPS Start 30.321227, -89.375829, Stop 30.32291, -89.378719:

16. Remove and Replace 64.555556 CY of Double Bituminous Surface Treatment, 996 FT long x 14 FT wide x 1.5 IN deep.

Daffodil Drive Chapman to Primrose:

DP1:

GPS 30.323542, -89.375749:

17. Remove and Replace 3 CY of 610 stone or crushed concrete, 54 FT long x 3 FT wide x 6 IN deep.

18. Remove and Replace 4 CY of Sand with less than 20% passing 200 sieve, 54 FT long x 3 FT wide x 8 IN deep.

DP2:

GPS 30.322683, -89.375538:

19. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

20. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

Dafodil Drive Chapman to Primrose:

GPS Start 30.323542, -89.378083, Stop 30.322445, -89.375273:

21. Remove and Replace 70.075926 CY of Double Bituminous Surface Treatment, 958 FT long x 15.8 FT wide x 1.5 IN deep.

Lilac from Chapman:

DP1:

GPS Start 30.324403, -89.376653 End 30.324254, -89.376250:

22. Remove and Replace 14.555556 CY of 610 stone or crushed concrete, 131 FT long x 6 FT wide x 6 IN deep.

23. Remove and Replace 19.407407 CY of Sand with less than 20% passing 200 sieve, 131 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS Start 30.324142, -89.375967:

24. Remove and Replace 8.148148 CY of 610 stone or crushed concrete, 40 FT long x 11 FT wide x 6 IN deep.

25. Remove and Replace 10.864198 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 11 FT wide x 8 IN deep.

DP3:

GPS 30.323793, -89.374701:

26. Remove and Replace 57.037037 CY of 610 stone or crushed concrete, 280 FT long x 11 FT wide x 6 IN deep.

27. Remove and Replace 76.049383 CY of Sand with less than 20% passing 200 sieve, 280 FT long x 11 FT wide x 8 IN deep.

DP4:

GPS 30.324684, -89.377072:

28. Remove and Replace 2.444444 CY of 610 stone or crushed concrete, 22 FT long x 6 FT wide x 6 IN deep.

29. Remove and Replace 3.259259 CY of Sand with less than 20% passing 200 sieve, 22 FT long x 6 FT wide x 8 IN deep.

DP5:

GPS 30.324361, -89.376064:

30. Remove and Replace 5.166667 CY of 610 stone or crushed concrete, 31 FT long x 9 FT wide x 6 IN deep.

31. Remove and Replace 6.888889 CY of Sand with less than 20% passing 200 sieve, 31 FT long x 9 FT wide x 8 IN deep.

DP6:

GPS 30.324321, -89.376238:

32. Remove and Replace 3.62963 CY of 610 stone or crushed concrete, 28 FT long x 7 FT wide x 6 IN deep.

33. Remove and Replace 4.839506 CY of Sand with less than 20% passing 200 sieve, 28 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.329726, -89.378111, Stop 30.324014, -89.375511:

34. Remove and Replace 56.064815 CY of Double Bituminous Surface Treatmeant, 865 FT long x 14 FT wide x 1.5 IN deep.

Marigold Primrose to Chapman:

DP1:

GPS 30.323523, -89.89.376529:

35. Remove and Replace 9.338889 CY of 610 stone or crushed concrete, 41 FT long x 12.3 FT wide x 6 IN deep.

36. Remove and Replace 12.451852 CY of Sand with less than 20% passing 200 sieve, 41 FT long x 12.3 FT wide x 8 IN deep.

GPS Start 30.323078, -89.375046, Stop 30.323990, -89.377845:

37. Remove and Replace 80.083333 CY of Double Bituminous Surface Treatment, 961 FT long x 18 FT wide x 1.5 IN deep.

Work to be Completed Total: $140,820.95

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project #: 552697

DR-4626- MS

GM Damage Inventory # 1201009

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321227, -89.375829 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 6 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $140,820.95

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 8,959 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	8,959 SY @$7.50/SY =	$67,196.00
	Total =	$67,196.00

Total Mitigation Costs for this DI = $67,196.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,196.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,196.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,196.00/$140,820.95) x 100 = 47.72% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201009 is $67,196.00 and is 47.72% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201012 Bay St. Louis Roads (Group Lagan)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

1st Street (Lagan to End):

DP1:

GPS 30.323647, -89.415307:

1. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 17.5 FT long x 8 FT wide x 6 IN deep.

2. Remove and Replace 3.45679 CY of 610 stone or crushed concrete, 17.5 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.323787, -89.415511:

3. Remove and Replace 4.074074 CY of Sand with less than 20% passing 200 sieve, 27.5 FT long x 8 FT wide x 6 IN deep.

4. Remove and Replace 5.432099 CY of 610 stone or crushed concrete, 27.5 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.323847, -89.415595:

5. Remove and Replace 1.762963 CY of Sand with less than 20% passing 200 sieve, 11.9 FT long x 8 FT wide x 6 IN deep.

6. Remove and Replace 2.350617 CY of 610 stone or crushed concrete, 11.9 FT long x 8 FT wide x 8 IN deep.

DP4:

GPS 30.324001, -89.415885:

7. Remove and Replace 44 CY of Sand with less than 20% passing 200 sieve, 118.8 FT long x 20 FT wide x 6 IN deep.

8. Remove and Replace 58.666667 CY of 610 stone or crushed concrete, 118.8 FT long x 20 FT wide x 8 IN deep.

DP5:

GPS 30.324491, -89.416664:

9. Remove and Replace 18.777778 CY of Sand with less than 20% passing 200 sieve, 50.7 FT long x 20 FT wide x 6 IN deep.

10. Remove and Replace 25.037037 CY of 610 stone or crushed concrete, 50.7 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.323233, -89.414584, Stop 30.324584, -89.416803:

11. Remove and Replace 83.185185 CY of Double Bituminous Surface Treatment, 898.4 FT long x 20 FT wide x 1.5 IN deep.

1st Street to Ave H:

DP1:

GPS 30.321355, -89.411517:

12. Remove and Replace 2.814815 CY of 610 stone or crushed concrete, 30.4 FT long x 5 FT wide x 6 IN deep.

13. Remove and Replace 3.753086 CY of Sand with less than 20% passing 200 sieve, 30.4 FT long x 5 FT wide x 8 IN deep.

DP2:

GPS 30.321970, -89.412486:

14. Remove and Replace 1 CY of 610 stone or crushed concrete, 9 FT long x 6 FT wide x 6 IN deep.

15. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 6 FT wide x 8 IN deep.

DP3:

GPS 30.322046, -89.412759:

16. Remove and Replace 1.333333 CY of 610 stone or crushed concrete, 6 FT long x 12 FT wide x 6 IN deep.

17. Remove and Replace 1.777778 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 12 FT wide x 8 IN deep.

DP4:

GPS 30.322231, -89.412918:

18. Remove and Replace 8.118519 CY of 610 stone or crushed concrete, 8 FT long x 54.8 FT wide x 6 IN deep.

19. Remove and Replace 10.824691 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 54.8 FT wide x 8 IN deep.

DP5:

GPS 30.322467, -89.413306:

20. Remove and Replace 1.481481 CY of 610 stone or crushed concrete, 10 FT long x 8 FT wide x 6 IN deep.

21. Remove and Replace 1.975309 CY of Sand with less than 20% passing 200 sieve, 10 FT long x 8 FT wide x 8 IN deep.

DP6:

GPS 30.322666, -89.413710:

22. Remove and Replace 14.748148 CY of 610 stone or crushed concrete, 72.4 FT long x 11 FT wide x 6 IN deep.

23. Remove and Replace 19.664198 CY of Sand with less than 20% passing 200 sieve, 72.4 FT long x 11 FT wide x 8 IN deep.

DP7:

GPS 30.322910, -89.414048:

24. Remove and Replace 26.62963 CY of 610 stone or crushed concrete, 71.9 FT long x 20 FT wide x 6 IN deep.

25. Remove and Replace 35.506173 CY of Sand with less than 20% passing 200 sieve, 71.9 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.321057, -89.411090, Stop 30.323174, -89.414513:

26. Remove and Replace 129.62963 CY of Double Bituminous Surface Treatment, 1,400 FT long x 20 FT wide x 1.5 IN deep.

2nd Street from Logan:

DP1:

GPS Start 30.323900, -89.413519:

27. Remove and Replace 19.351852 CY of 610 stone or crushed concrete, 55 FT long x 19 FT wide x 6 IN deep.

28. Remove and Replace 25.802469 CY of Sand with less than 20% passing 200 sieve, 55 FT long x 19 FT wide x 8 IN deep.

DP2:

GPS Start 30.323456, -89.412759:

29. Remove and Replace 1.296296 CY of 610 stone or crushed concrete, 14 FT long x 5 FT wide x 6 IN deep.

30. Remove and Replace 1.728395 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.324098, -89.413764, Stop 30.321980, -89.410293:

31. Remove and Replace 117.518519 CY of Double Bituminous Surface Treatment, 1,336 FT long x 19 FT wide x 1.5 IN deep.

Ave H:

DP1:

GPS 30.321678, -89.410518:

32. Remove and Replace 1.9753 CY of Sand with less than 20% passing 200 sieve, 16 FT long x 5 FT wide x 8 IN deep.

33. Remove and Replace 0.987654 CY of 610 stone or crushed concrete, 5 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.322137, -89.410103, Stop 30.321057, -89.411090:

34. Remove and Replace 28.525 CY of Double Bituminous Surface Treatment, 489 FT long x 12.6 FT wide x 1.5 IN deep.

Work to be Completed Total:$119,773.56

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201012

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321057, -89.411090 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 4 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $119,773.56

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 9,015 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	9,015 SY @$7.50/SY =	$67,610.00
	Total =	$67,610.00

Total Mitigation Costs for this DI = $67,610.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,610.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,610.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,610.00/$119,773.56) x 100 = 56.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201012 is $67,610.00 and is 56.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201014 Bay St. Louis roads (Group HWY 603)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Boat Launch Service Roads:

GPS Start 30.327479, -89.422656, Stop 30.329087, -89.423849:

1. Remove and Replace 49.925926 CY of Double Bituminous Surface Treatment, 674 FT long x 16 FT wide x 1.5 IN deep.

Elbrus:

GPS Start 30.324672, -89.422524, Stop 30.323903, -89.424488:

2. Remove and Replace 49.86 CY of Double Bituminous Surface Treatment, 718 FT long x 15 FT wide x 1.5 IN deep.

Etna:

DP1:

GPS 30.327854, -89.425022:

3. Remove and Replace 0.777778 CY of 610 stone or crushed concrete, 14 FT long x 3 FT wide x 6 IN deep.

4. Remove and Replace 1.037037 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.328771, -89.425736, Stop 30.327508, -89.424827:

5. Remove and Replace 30.111111 CY of Double Bituminous Surface Treatment, 542 FT long x 12 FT wide x 1.5 IN deep.

Everest:

GPS Start 30.326991, -89.423590, Stop 30.324167, -89.422189:

6. Remove and Replace 95.083333 CY of Double Bituminous Surface Treatment, 1,141 FT long x 18 FT wide x 1.5 IN deep.

Irazu:

DP1:

GPS 30.322476, -89.419386:

7. Remove and Replace 3.333333 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 9 FT wide x 8 IN deep.

8. Remove and Replace 0.625 CY of Double Bituminous Surface Treatment, 15 FT long x 9 FT wide x 1.5 IN deep.

GPS Start 30.321966, -89.420173, Stop 30.322936, -89.418982:

9. Remove and Replace 39.7037 CY of Double Bituminous Surface Treatment, 536 FT long x 16 FT wide x 1.5 IN.

Logan:

GPS Start 30.325262, -89.424901, Stop 30.326185, -89.423222 (no Damage):

10. Remove and Replace 45.111111 CY of Double Bituminous Surface Treatment, 609 FT long x 16 IN wide x 1.5 IN deep.

Nile:

DP1:

GPS 30.316941, -89.408831:

11. Remove and Replace 13.851852 CY of 610 stone or crushed concrete, 68 FT long x 11 FT wide x 6 IN deep.

12. Remove and Replace 18.469136 CY of Sand with less than 20% passing 200 sieve, 68 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.316480, -89.408101, Stop 30.317760, -89.410180:

13. Remove and Replace 66.666667 CY of Double Bituminous Surface Treatment, 800 FT long x 18 FT wide x 1.5 IN deep.

Pearl:

DP1:

Gps 30.317807, -89.411445:

14. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

15. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.317826, -89.410303, Stop 30.317785, -89.412501:

16. Remove and Replace 51.925926 CY of Double Bituminous Surface Treatment, 701 FT long x 16 FT wide x 1.5 IN deep.

Rainer:

DP1:

GPS 30.326627, -89.424468:

17. Remove and Replace 9.481481 CY of 610 stone or crushed concrete, 64 FT long x 8 FT wide x 6 IN deep.

18. Remove and Replace 12.641975 CY of Sand with less than 20% passing 200 sieve, 64 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.326301, -89.425270, Stop 30.327077, -89.423287:

19. Remove and Replace 76.111111 CY of Double Bituminous Surface Treatment, 685 FT long x 24 FT wide x 1.5 IN deep.

Rushmore Street:

GPS Start 30.328777, -89.425736, Stop 30.328608, -89.426326:

20. Remove and Replace 11.333333 CY of Double Bituminous Surface Treatment, 204 FT long x 12 FT wide x 1.5 IN deep.

Work to be Completed Total: $146,645.26

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory # 1201014

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $146,645.26

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 12,126 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	12,126 SY @$7.50/SY =	$90,948.33
	Total =	$90,948.33

Total Mitigation Costs for this DI = $90,948.33

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $90,948.33

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $90,948.33

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($90,948.33/$146,645.26) x 100 = 62.02% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201014 is $90,948.33 and is 62.02% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201017 Bay St. Louis Roads (Group Central)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Gull:

GPS Start 30.331841, -89.-89.406126, Stop 30.333843, -89.404563:

1. Remove and Replace 46.851852 CY of Double Bituminous Surface Treatment, 880 FT long x 11.5 FT wide x 1.5 IN deep.

Heron:

DP1:

GPS 30.331948, -89.405193:

2. Remove and Replace 1.777778 CY of 610 stone or crushed concrete, 12 FT long x 8 FT wide x 6 IN deep.

3. Remove and Replace 2.37037 CY of Sand with less than 20% passing 200 sieve, 12 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.331948, -89.405193:

4. Remove and Replace 0.888889 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 6 FT wide x 8 IN deep.

GPS 30.331948, -89.405193:

5. Remove and Replace 0.666667 CY of 610 stone or crushed concrete, 6 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.333875, -89.403577, Stop 30.331866, -89.405209:

6. Remove and Replace 62.083333 CY of Double Bituminous Surface Treatment, 894 FT long x 15 FT wide x 1.5 IN deep.

Kingfisher:

GPS Start 30.331887, -89.404316, Stop 30.333813, -89.404578:

7. Remove and Replace 63.736111 CY of Double Bituminous Surface Treatment, 917.8 FT long x 15 FT wide x 1.5 IN deep.

Work to be Completed Total: $48,173.88

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project #: 552697_

DR-4626- MS

GM Damage Inventory #: 1201017

Site Name & Address Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 3 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $48,173.88

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 4,051 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	4,051 SY @$7.50/SY =	$30,380.83
	Total =	$30,380.83

Total Mitigation Costs for this DI = $30,380.83

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $30,380.83

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $30,380.83

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($30,380.83/$48,173.88) x 100 = 63.06% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201017 is $30,380.83 and is 63.06% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	$303,533.43	Uncompleted
9001	1	Lump Sum	$227,082.10	Uncompleted
9001	1	Lump Sum	$140,820.95	Uncompleted
9001	1	Lump Sum	$119,773.56	Uncompleted
9001	1	Lump Sum	$146,645.26	Uncompleted
9001	1	Lump Sum	$48,173.88	Uncompleted

CRC Gross Cost	$986,029.18
Total 406 HMP Cost	$564,799.31
Total Insurance Reductions	$0.00
CRC Net Cost	$1,550,828.49
Federal Share (90.00%)	$1,395,745.65
Non-Federal Share (10.00%)	$155,082.84

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient’s completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.

Insurance

Additional Information

04/08/2025 - Lewis McKay, Insurance Specialist - There are no insurance implications that pertain to this project. There will be no requirement to obtain and maintain insurance.

O&M Requirements

There are no Obtain and Maintain Requirements on **Bay St. Louis Roads** .

406 Mitigation

There is no additional mitigation information on **Bay St. Louis Roads** .

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- EO 11990: Construction activities and equipment storage and staging activities are not to be located in or impact any adjacent wetlands. Source of condition: Executive Order 11990 - Wetlands
- NHPA: All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material is from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout Source of condition: National Historic Preservation Act (NHPA)

EHP Additional Info

There is no additional environmental historical preservation on **Bay St. Louis Roads** .

Final Reviews

Final Review

Reviewed By Not Reviewed

Reviewed On Not Reviewed

Review Comments

No comments available for the Final Review step

Recipient Review

Reviewed By Not Reviewed

Reviewed On Not Reviewed

Review Comments

No comments available for the Final Review step

Project Signatures

Reviewed By Unsigned

Reviewed On Unsigned

General Info

Project #	552697 **P/W #** 180	**Project Type**	Estimated Costs
Project Category	C - Roads and Bridges	**Applicant**	Bay St. Louis, City of (045-03980-00)
Project Title	Bay St. Louis Roads	**Event**	4626DR-MS (4626DR)
Project Size	Large	**Declaration Date**	10/23/2021
Activity Completion Date	10/21/2025	**Incident Start Date**	8/28/2021
		Incident End Date	9/1/2021
Process Step	Canceled		

Damage Description and Dimensions

The Disaster # 4626DR, which occurred between *08/28/2021* and *09/01/2021*, caused:

Damage #934311; Bay St. Louis Roads (Group Ave B)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All of the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Approx. Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Asphalt
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201007; Bay St louis Roads (Group Road 556 & 558)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201009; Bay St. Louis Roads (Group Garden Isle)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads

- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface Treatment (chip and seal)
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 13
- **Number of Lanes:** 2

Damage #1201012; Bay St. Louis Roads (Group Lagan)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** Local community, including school bus & 911 emergency routes.
- **Facility Description:** Multiple community roadways, with varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bitumen (chip n seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201014; Bay St. Louis roads (Group HWY 603)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General community use, including school bus routes and 911 emergency service routes.
- **Facility Description:** These roads are of varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201017; Bay St. Louis Roads (Group Central)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General residential community use, including School bus routes & 911 emergency service routes.
- **Facility Description:** Varying road lengths and widths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Final Scope

934311 Bay St. Louis Roads (Group Ave B)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

10th Street Ave B:

GPS Start 30.320218, -89396440, Stop 30.320218, -89.396859:

1. Remove and Replace 7.583333 CY of Double Bituminous Surface Treatment, 130 FT long x 12.6 FT wide x 1.5 IN deep.

10th Street to 15th Street Ave A:

GPS Start 30.320219, -89.393442, Stop 30.323342, -89.393460:

2. Remove and Replace 83.333333 CY of Double Bituminous Surface Treatment, 1,200 FT long x 15 FT wide x 1.5 IN deep.

12th Street Ave D:

GPS Start 30.321553, -89.400219, Stop 30.321585, -89.399824:

3. Remove and Replace 6.296296 CY of Double Bituminous Surface Treatment, 100 FT long x 13.6 FT wide x 1.5 IN deep.

13th Street Ave B:

DP1:

GPS 30.322116, -89.394528:

4. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 9 FT long x 11 FT wide x 6 IN deep.

5. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200, 9 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322539, -89.395815, Stop 30.322156, -89.393471:

6. Remove and Replace 49.583333 CY of Double Bituminous Surface Treatment, 850 FT long x 12.6 FT wide x 1.5 IN deep.

14th Street Ave B:

DP1:

GPS 30.322754, -89.397557:

7. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 21 FT long x 4 FT wide x 6 IN deep.

DP2:

GPS 30.322808, -89.399375:

8. Remove and Replace 1.222222 CY of 610 stone or crushed concrete, 11 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.322839, -89.396099, Stop 30.322805, -89.400249:

9. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

15th Street Ave B:

GPS Start 30.323741, -89.395181, Stop 30.323471, -89.396717:

10. Remove and Replace 12.541667 CY of Double Bituminous Surface Treatment, 215 FT long x 12.6 FT wide x 1.5 IN deep.

17th Street Ave B:

GPS Start 30.324883, -89.396095, Stop 30.325088, -89.398872:

11. Remove and Replace 8.75 CY of Double Bituminous Surface Treatment, 150 FT long x 12.6 FT wide x 1.5 IN deep.

18th Street Ave B:

DP1:

GPS 30.325073, -89.397590:

12. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

13. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.325402, -89396018, Stop 30.325524, -89.399108:

14. Remove and Replace 59.208333 CY of Double Bituminous Surface Treatment, 1,015 FT long x 12.6 FT wide x 1.5 IN deep.

2nd Street to Ave A Ave B:

GPS Start 30.314805, -89.396081, Stop 30.314340, -89.393492:

15. Remove and Replace 48.416667 CY of Double Bituminous Surface Treatment, 830 FT long x 12.6 FT wide x 1.5 IN deep.

7th Street Ave B:

GPS Start 30.318190, -89.396099, Stop 30.318246, -89.397351:

16. Remove and Replace 22.75 CY of Double Bituminous Surface Treatment, 390 FT long x 12.6 FT wide x 1.5 IN deep.

8th Street Ave B:

DP1:

GPS 30.318860, -89.395133:

17. Remove and Replace 2.566667 CY of 610 stone or crushed concrete, 11 FT long x 12.6 FT wide x 6 IN deep.

18. Remove and Replace 3.422222 CY of Sand with less than 20% passing 200, 11 FT long x 12.6 FT wide x 8 IN deep.

DP2:

GPS 30.318882, -89.396534:

19. Remove and Replace 2.1 CY of 610 stone or crushed concrete, 9 FT long x 12.6 FT wide x 6 IN deep.

20. Remove and Replace 2.8 CY of Sand with less than 20% passing 200, 9 FT long x 12.6 FT wide x 8 IN deep.

GPS Start 30.318802, -89.393486, Stop 30.318905, -89.400269:

21. Remove and Replace 125.008333 CY of Double Bituminous Surface Treatment, 2,143 FT long x 12.6 FT wide x 1.5 IN deep.

9th Street Ave B:

GPS Start 30.319413, -89396383, Stop 30.319377, -89.396362:

22. Remove and Replace 13.416667 CY of Double Bituminous Surface Treatment, 230 FT long x 12.6 FT wide x 1.5 IN

deep.

Ave A & Sixth ST to Ave B:

DP1:

GPS 30.317587, -89.395077:

23. Remove and Replace 0.166667 CY of 610 stone or crushed concrete, 3 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.222222 CY of Sand with less than 20% passing 200, 3 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.317548, -89.33497, Stop 30.317563, -89.396054:

25. Remove and Replace 63.466667 CY of Double Bituminous Surface Treatment, 1,088 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A &4th Street To Ave D:

DP1:

GPS 30.316004, -89.89.401101:

26. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 6 FT long x 3 FT wide x 6 IN deep.

27. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200, 6 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.316243, -89.393467, Stop 30.316397, -89.400384:

28. Remove and Replace 129.225833 CY of Double Bituminous Surface Treatment, 2,215.3 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A to 6th Street:

DP1:

GPS 30.315849, -89.393504:

29. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

GPS Start 30.314340, -89.393492, Stop 30.317487, -89.393442:

30. Remove and Replace 65.041667 CY of Double Bituminous Surface Treatment, 1,115 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & 5th Street To Ave D:

DP1:

GPS 30.316934, -89.398698:

31. Remove and Replace 2.851852 CY of 610 stone or crushed concrete, 22 FT long x 7 FT wide x 6 IN deep.

GPS 30.617557, -89.396393, Stop 30.317063, -89.396254:

32. Remove and Replace 124.075 CY of Double Bituminous Surface Treatment, 2,127 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & Sixth ST to Ave D:

GPS Start 30.617557, -89.396393, -89.396139, Stop 30.317571, -89.396492:

33. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

34. Remove and Replace 59.722222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Second Street Ave C:

GPS Start 30.315207, -89.398684, Stop 30.316888, -89.401183:

35. Remove and Replace 36.75 CY of Double Bituminous Surface Treatment, 630 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave A:

DP1:

GPS 30.315495, -89.395143:

36. Remove and Replace 6.333333 CY of 610 stone or crushed concrete, 38 FT long x 9 FT wide x 6 IN deep.

37. Remove and Replace 8.444444 CY of Sand with less than 20% passing 200, 38 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314854, -89.396063, Stop 30.315541, -89.393526:

38. Remove and Replace 47.541667 CY of Double Bituminous Surface Treatment, 815 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave C:

GPS Start 30.615552, -89.397145, Stop 30.315371, -89.395978:

39. Remove and Replace 20.462963 CY of Double Bituminous Surface Treatment, 340 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $303,533.43

Project Notes:

1. All site estimates for work to be completed were generated by the FEMA CRC using RSMeans, 2022, 2nd Quarter, Biloxi, MS. See attachment labeled “552697 - DR4626 - FEMA Cost Estimate.xlsx”.

2. All procurement documents have been provided and reviewed. See attachment “Mississippi State Procurement Manual”.

3. Applicant will comply with its local, state, federal procurement laws, regulations and procedures.

4. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

5. **Equipment:** When an individual item of equipment is no longer needed for federally funded programs or projects, non-state Applicants must follow the requirements of 2 CFR § 200.313(c)-(e) stipulating that, when an individual item of equipment is no longer needed for this project and/or other federally funded programs or projects, Applicants must calculate the item’s current fair market value (FMV). If the per-unit FMV is $5,000 or more, FEMA will reduce eligible funding by the

FMV. The Applicant must demonstrate compliance with the disposition requirements of 2 CFR 200.313 at closeout.

6. **Supplies:** When supplies are no longer needed for federally funded programs or projects, all Applicants, including State and Territorial government Applicants, must calculate the current fair market value of any unused residual supplies (including materials) that FEMA funded for any of its projects and determine the aggregate total. The Applicant must provide the current fair market value if the aggregate total of unused residual supplies is greater than $5,000. FEMA reduces eligible funding by this amount.144 If the aggregate total of unused residual supplies is less than $5,000, FEMA does not reduce the eligible funding.

Version 1

Review of the applicant's request for increased cost based on lowest bid of $4,052,749.02 has resulted in project amended cost of $3,415,759.02. NON-FEMA FUNDED items noted in the bid at cost of $68,200.00 and alternate product fog seal $568,750.00 were deducted.

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR4626- MS

GM Damage Inventory #: 934311

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 20 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $303,533.43

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 25,272 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid = 25,272 SY @$7.50/SY = $189,542.98

Total = $189,542.98

Total Mitigation Costs for this DI = $189,542.98

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $189,542.98

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. **Net Hazard Mitigation cost(s): A – B = $189,542.98**

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($189,542.98/$303,533.43) x 100 = 62.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #934311 is $189,542.98 and is 62.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201007 Bay St louis Roads (Group Road 556 & 558)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

12th Street 556 to Ave A:

GPS Start 30.321426, -89.392394, Stop 30.321499, -89.393383:

1. Remove and Replace 21.666667 CY of Double Bituminous Surface Treatment, 360 FT long x 13 FT wide x 1.5 IN deep.

12th Street 558 to East End (dead end):

GPS Start 30.321520, -89.389919, Stop 30.321460, -89.388914:

2. Remove and Replace 21.546296 CY of Double Bituminous Surface Treatment, 358 FT long x 13 FT wide x 1.5 IN deep.

13th Street Dead End to 556:

DP1:

GPS 30.322145, -89.389938:

3. Remove and Replace 3.177778 CY of 610 stone or crushed concrete, 26 FT long x 6.6 FT wide x 6 IN deep.

4. Remove and Replace 4.237037 CY of Sand with less than 20% passing 200 sieve, 26 FT long x 6.6 FT wide x 8 IN deep.

GPS Start 30.322131, -89.387670, Stop 30.322181, -89.392286:

5. Remove and Replace 88.351852 CY of Double Bituminous Surface Treatment, 1,468 FT long x 13 FT wide x 1.5 IN deep.

14th Street 556 to Dead End:

DP1:

GPS 30.322842, -89.391816:

6. Remove and Replace 4.888889 CY of 610 stone or crushed concrete, 33 FT long x 8 FT wide x 6 IN deep.

7. Remove and Replace 6.518519 CY of Sand with less than 20% passing 200 sieve, 33 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.322787, -89.391407:

8. Remove and Replace 10.37037 CY of 610 stone or crushed concrete, 40 FT long x 14 FT wide x 6 IN deep.

9. Remove and Replace 13.82716 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 14 FT wide x 8 IN deep.

DP3:

GPS 30.3228880, -89.390564:

10. Remove and Replace 9.814815 CY of 610 stone or crushed concrete, 53 FT long x 10 FT wide x 6 IN deep.

11. Remove and Replace 13.08642 CY of Sand with less than 20% passing 200 sieve, 53 FT long x 10 FT wide x 8 IN deep.

DP4:

GPS 30.322845, -89.390199:

12. Remove and Replace 7.777778 CY of 610 stone or crushed concrete, 42 FT long x 10 FT wide x 6 IN deep.

13. Remove and Replace 10.37037 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 10 FT wide x 8 IN deep.

GPS Start 30.322865, -89.382245, Stop 30.322757, -89.390017:

14. Remove and Replace 49.930556 CY of Double Bituminous Surface Treatment, 719 FT long x 15 FT wide x 1.5 IN deep.

15th Street 558 to Jordan River Drive:

GPS Start 30.323473, -89.389906, Stop 30.323433, -89.388034:

15. Remove and Replace 59.944444 CY of Double Bituminous Surface Treatment, 830 FT long x 15.6 FT wide x 1.5 IN deep.

2nd Street 556 to 560:

DP1:

GPS 30.314588, -89.391165:

16. Remove and Replace 1.944444 CY of 610 stone or crushed concrete, 15 FT long x 7 FT wide x 6 IN deep.

17. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.314346, -89.390018:

18. Remove and Replace 0.37037 CY of 610 stone or crushed concrete, 5 FT long x 4 FT wide x 6 IN deep.

19. Remove and Replace 0.493827 CY of Sand with less than 20% passing 200 sieve, 5 FT long x 4 FT wide x 8 IN deep.

DP3:

GPS 30.314165, -89.388884:

20. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 11 FT long x 9 FT wide x 6 IN deep.

21. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314723, -89.392286, Stop 30.314133, -89.388331:

22. Remove and Replace 75.351852 CY of Double Bituminous Surface Treatment, 1,252 FT long x 13 FT wide x 1.5 IN deep.

3rd Street 560 to 556:

DP1:

GPS 30.315078, -89.390066:

23. Remove and Replace 0.444444 CY of 610 stone or crushed concrete, 8 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.592593 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.314819, -89.388392, Stop 30.315450, -89.392352:

25. Remove and Replace 77.037037 CY of Double Bituminous Surface Treatment, 1,280 FT long x 13 FT wide x 1.5 IN deep.

4th Street 556 to 560:

DP1:

GPS 30.315788, -89.390764:

26. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 14 FT long x 6 FT wide x 6 IN deep.

27. Remove and Replace 2.074074 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS 30.315814, -89.390772:

28. Remove and Replace 0.740741 CY of 610 stone or crushed concrete, 8 FT long x 5 FT wide x 6 IN deep.

29. Remove and Replace 0.987654 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.316015, -89.392349, Stop 30.315729, -89.390055:

30. Remove and Replace 44.236111 CY of Double Bituminous Surface Treatment, 735 FT long x 13 FT wide x 1.5 IN deep.

558 Street 14th to 15th:

DP1:

GPS 30.315694, -89.390122:

31. Remove and Replace 8.555556 CY of 610 stone or crushed concrete, 42 FT long x 11 FT wide x 6 IN deep.

32. Remove and Replace 11.407407 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322736, -89.389949, Stop 30.323271, -89.389971:

33. Remove and Replace 17.62963 CY of Double Bituminous Surface Treatment, 238 FT long x 16 FT wide x 1.5 IN deep.

558 Street 1st to 10th:

DP1:

GPS 30.314168, -89.390063:

34. Remove and Replace 23.703704 CY of 610 stone or crushed concrete, 160 FT long x 8 FT wide x 6 IN deep.

35. Remove and Replace 31.604938 CY of Sand with less than 20% passing 200 sieve, 160 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.319457, -89.389962:

36. Remove and Replace 6 CY of 610 stone or crushed concrete, 27 FT long x 12 FT wide x 6 IN deep.

37. Remove and Replace 8 CY of Sand with less than 20% passing 200 sieve, 27 FT long x 12 FT wide x 8 IN deep.

GPS Start 30.313752, -89.390031, Stop 30.320125, -89.389963:

38. Remove and Replace 162.15463 CY of Double Bituminous Surface Treatment, 2,399 FT long x 14.6 FT wide x 1.5 IN deep.

8th Street 560 to 556:

DP1:

GPS 30.318885, -89.391037:

39. Remove and Replace 1.166667 CY of 610 stone or crushed concrete, 9 FT long x 7 FT wide x 6 IN deep.

40. Remove and Replace 1.555556 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.318961, -89.392042:

41. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

42. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

GPS Start 30.31875, -89.390017, Stop 30.318891, -89.392242:

43. Remove and Replace 43.935185 CY of Double Bituminous Surface Treatment, 730 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $227,082.10

Scope Notes:

1. Damage date was originally incorrectly entered for DI #1201007 in DDD. Correct Damage Dates between 8/28/2021 and 9/1/2021.

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201007

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321426, -89.392394 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima/ HM 406 Specialist

HMP Date: May 27, 2022; Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $227,082.10

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 15,883 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	15,883 SY @$7.50/SY =	$119,121.17
	Total =	$119,121.17

Total Mitigation Costs for this DI = $119,121.17

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $119,121.17

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $119,121.17

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($119,121.17/$227,082.10) x 100 = 52.46% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201007 is $119,121.17 and is 52.46% of the repair and restoration costs

being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201009 Bay St. Louis Roads (Group Garden Isle)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Road Damage:

Beverly to DeRoach:

GPS Start 30.321684, -89.378953, Stop 30.320534, -89.375797:

1. Remove and Replace 71.296296 CY of Double Bituminous Surface Treatment, 1,100 FT long x 14 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

2. Remove and Replace 59.7222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Clara Street Chapman to House:

DP1:

GPS 30.3229777, -89.379942:

3. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 9 FT long x 2 FT wide x 6 IN deep.

4. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.322836, -89.380153:

5. Remove and Replace 0.055556 CY of 610 stone or crushed concrete, 3 FT long x 1 FT wide x 6 IN deep.

6. Remove and Replace 0.074074 CY of Sand with less than 20% passing 200 sieve, 3 FT long x 1 FT wide x 8 IN deep.

GPS Start 30.3223251, -89.378760, Stop 30.323288, -89.381047:

7. Remove and Replace 53.925926 CY of Double Bituminous Surface Treatment, 832 FT long x 14 FT wide x 1.5 IN deep.

Clara Street DeRoach to Chapman:

DP1:

GPS 30.321561, -89.326920:

8. Remove and Replace 0.222222 CY of 610 stone or crushed concrete, 6 FT long x 2 FT wide x 6 IN deep.

9. Remove and Replace 0.296296 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.321629, -89.322035:

10. Remove and Replace 3.111111 CY of 610 stone or crushed concrete, 21 FT long x 8 FT wide x 6 IN deep.

11. Remove and Replace 4.148148 CY of Sand with less than 20% passing 200 sieve, 21 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.322181, -89.378367:

12. Remove and Replace 1 CY of 610 stone or crushed concrete, 18 FT long x 3 FT wide x 6 IN deep.

13. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 18 FT long x 3 FT wide x 8 IN deep.

DP4:

GPS 30.322312, -89.378596:

14. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

15. Remove and Replace 1.08642 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 4 FT wide x 8 IN deep.

GPS Start 30.321227, -89.375829, Stop 30.32291, -89.378719:

16. Remove and Replace 64.555556 CY of Double Bituminous Surface Treatment, 996 FT long x 14 FT wide x 1.5 IN deep.

Daffodil Drive Chapman to Primrose:

DP1:

GPS 30.323542, -89.375749:

17. Remove and Replace 3 CY of 610 stone or crushed concrete, 54 FT long x 3 FT wide x 6 IN deep.

18. Remove and Replace 4 CY of Sand with less than 20% passing 200 sieve, 54 FT long x 3 FT wide x 8 IN deep.

DP2:

GPS 30.322683, -89.375538:

19. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

20. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

Dafodil Drive Chapman to Primrose:

GPS Start 30.323542, -89.378083, Stop 30.322445, -89.375273:

21. Remove and Replace 70.075926 CY of Double Bituminous Surface Treatment, 958 FT long x 15.8 FT wide x 1.5 IN deep.

Lilac from Chapman:

DP1:

GPS Start 30.324403, -89.376653 End 30.324254, -89.376250:

22. Remove and Replace 14.555556 CY of 610 stone or crushed concrete, 131 FT long x 6 FT wide x 6 IN deep.

23. Remove and Replace 19.407407 CY of Sand with less than 20% passing 200 sieve, 131 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS Start 30.324142, -89.375967:

24. Remove and Replace 8.148148 CY of 610 stone or crushed concrete, 40 FT long x 11 FT wide x 6 IN deep.

25. Remove and Replace 10.864198 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 11 FT wide x 8 IN deep.

DP3:

GPS 30.323793, -89.374701:

26. Remove and Replace 57.037037 CY of 610 stone or crushed concrete, 280 FT long x 11 FT wide x 6 IN deep.

27. Remove and Replace 76.049383 CY of Sand with less than 20% passing 200 sieve, 280 FT long x 11 FT wide x 8 IN deep.

DP4:

GPS 30.324684, -89.377072:

28. Remove and Replace 2.444444 CY of 610 stone or crushed concrete, 22 FT long x 6 FT wide x 6 IN deep.

29. Remove and Replace 3.259259 CY of Sand with less than 20% passing 200 sieve, 22 FT long x 6 FT wide x 8 IN deep.

DP5:

GPS 30.324361, -89.376064:

30. Remove and Replace 5.166667 CY of 610 stone or crushed concrete, 31 FT long x 9 FT wide x 6 IN deep.

31. Remove and Replace 6.888889 CY of Sand with less than 20% passing 200 sieve, 31 FT long x 9 FT wide x 8 IN deep.

DP6:

GPS 30.324321, -89.376238:

32. Remove and Replace 3.62963 CY of 610 stone or crushed concrete, 28 FT long x 7 FT wide x 6 IN deep.

33. Remove and Replace 4.839506 CY of Sand with less than 20% passing 200 sieve, 28 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.329726, -89.378111, Stop 30.324014, -89.375511:

34. Remove and Replace 56.064815 CY of Double Bituminous Surface Treatmeant, 865 FT long x 14 FT wide x 1.5 IN deep.

Marigold Primrose to Chapman:

DP1:

GPS 30.323523, -89.89.376529:

35. Remove and Replace 9.338889 CY of 610 stone or crushed concrete, 41 FT long x 12.3 FT wide x 6 IN deep.

36. Remove and Replace 12.451852 CY of Sand with less than 20% passing 200 sieve, 41 FT long x 12.3 FT wide x 8 IN deep.

GPS Start 30.323078, -89.375046, Stop 30.323990, -89.377845:

37. Remove and Replace 80.083333 CY of Double Bituminous Surface Treatment, 961 FT long x 18 FT wide x 1.5 IN deep.

Work to be Completed Total: $140,820.95

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project #: 552697

DR-4626- MS

GM Damage Inventory # 1201009

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321227, -89.375829 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 6 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $140,820.95

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 8,959 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	8,959 SY @$7.50/SY =	$67,196.00
	Total =	$67,196.00

Total Mitigation Costs for this DI = $67,196.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,196.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,196.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,196.00/$140,820.95) x 100 = 47.72% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201009 is $67,196.00 and is 47.72% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201012 Bay St. Louis Roads (Group Lagan)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

1st Street (Lagan to End):

DP1:

GPS 30.323647, -89.415307:

1. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 17.5 FT long x 8 FT wide x 6 IN deep.

2. Remove and Replace 3.45679 CY of 610 stone or crushed concrete, 17.5 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.323787, -89.415511:

3. Remove and Replace 4.074074 CY of Sand with less than 20% passing 200 sieve, 27.5 FT long x 8 FT wide x 6 IN deep.

4. Remove and Replace 5.432099 CY of 610 stone or crushed concrete, 27.5 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.323847, -89.415595:

5. Remove and Replace 1.762963 CY of Sand with less than 20% passing 200 sieve, 11.9 FT long x 8 FT wide x 6 IN deep.

6. Remove and Replace 2.350617 CY of 610 stone or crushed concrete, 11.9 FT long x 8 FT wide x 8 IN deep.

DP4:

GPS 30.324001, -89.415885:

7. Remove and Replace 44 CY of Sand with less than 20% passing 200 sieve, 118.8 FT long x 20 FT wide x 6 IN deep.

8. Remove and Replace 58.666667 CY of 610 stone or crushed concrete, 118.8 FT long x 20 FT wide x 8 IN deep.

DP5:

GPS 30.324491, -89.416664:

9. Remove and Replace 18.777778 CY of Sand with less than 20% passing 200 sieve, 50.7 FT long x 20 FT wide x 6 IN deep.

10. Remove and Replace 25.037037 CY of 610 stone or crushed concrete, 50.7 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.323233, -89.414584, Stop 30.324584, -89.416803:

11. Remove and Replace 83.185185 CY of Double Bituminous Surface Treatment, 898.4 FT long x 20 FT wide x 1.5 IN deep.

1st Street to Ave H:

DP1:

GPS 30.321355, -89.411517:

12. Remove and Replace 2.814815 CY of 610 stone or crushed concrete, 30.4 FT long x 5 FT wide x 6 IN deep.

13. Remove and Replace 3.753086 CY of Sand with less than 20% passing 200 sieve, 30.4 FT long x 5 FT wide x 8 IN deep.

DP2:

GPS 30.321970, -89.412486:

14. Remove and Replace 1 CY of 610 stone or crushed concrete, 9 FT long x 6 FT wide x 6 IN deep.

15. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 6 FT wide x 8 IN deep.

DP3:

GPS 30.322046, -89.412759:

16. Remove and Replace 1.333333 CY of 610 stone or crushed concrete, 6 FT long x 12 FT wide x 6 IN deep.

17. Remove and Replace 1.777778 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 12 FT wide x 8 IN deep.

DP4:

GPS 30.322231, -89.412918:

18. Remove and Replace 8.118519 CY of 610 stone or crushed concrete, 8 FT long x 54.8 FT wide x 6 IN deep.

19. Remove and Replace 10.824691 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 54.8 FT wide x 8 IN deep.

DP5:

GPS 30.322467, -89.413306:

20. Remove and Replace 1.481481 CY of 610 stone or crushed concrete, 10 FT long x 8 FT wide x 6 IN deep.

21. Remove and Replace 1.975309 CY of Sand with less than 20% passing 200 sieve, 10 FT long x 8 FT wide x 8 IN deep.

DP6:

GPS 30.322666, -89.413710:

22. Remove and Replace 14.748148 CY of 610 stone or crushed concrete, 72.4 FT long x 11 FT wide x 6 IN deep.

23. Remove and Replace 19.664198 CY of Sand with less than 20% passing 200 sieve, 72.4 FT long x 11 FT wide x 8 IN deep.

DP7:

GPS 30.322910, -89.414048:

24. Remove and Replace 26.62963 CY of 610 stone or crushed concrete, 71.9 FT long x 20 FT wide x 6 IN deep.

25. Remove and Replace 35.506173 CY of Sand with less than 20% passing 200 sieve, 71.9 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.321057, -89.411090, Stop 30.323174, -89.414513:

26. Remove and Replace 129.62963 CY of Double Bituminous Surface Treatment, 1,400 FT long x 20 FT wide x 1.5 IN deep.

2nd Street from Logan:

DP1:

GPS Start 30.323900, -89.413519:

27. Remove and Replace 19.351852 CY of 610 stone or crushed concrete, 55 FT long x 19 FT wide x 6 IN deep.

28. Remove and Replace 25.802469 CY of Sand with less than 20% passing 200 sieve, 55 FT long x 19 FT wide x 8 IN deep.

DP2:

GPS Start 30.323456, -89.412759:

29. Remove and Replace 1.296296 CY of 610 stone or crushed concrete, 14 FT long x 5 FT wide x 6 IN deep.

30. Remove and Replace 1.728395 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.324098, -89.413764, Stop 30.321980, -89.410293:

31. Remove and Replace 117.518519 CY of Double Bituminous Surface Treatment, 1,336 FT long x 19 FT wide x 1.5 IN deep.

Ave H:

DP1:

GPS 30.321678, -89.410518:

32. Remove and Replace 1.9753 CY of Sand with less than 20% passing 200 sieve, 16 FT long x 5 FT wide x 8 IN deep.

33. Remove and Replace 0.987654 CY of 610 stone or crushed concrete, 5 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.322137, -89.410103, Stop 30.321057, -89.411090:

34. Remove and Replace 28.525 CY of Double Bituminous Surface Treatment, 489 FT long x 12.6 FT wide x 1.5 IN deep.

Work to be Completed Total:$119,773.56

Version 1

Entered to cost align project request to $4,052,749.02 per bid, and to review submitted ineligible cost of $68200.00 Non-FEMA Funded Items and alternate, item-Fog Seal $568,750.00 for Determination Memo.

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201012

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321057, -89.411090 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 4 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $119,773.56

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 9,015 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	9,015 SY @$7.50/SY =	$67,610.00
	Total =	$67,610.00

Total Mitigation Costs for this DI = $67,610.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,610.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,610.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,610.00/$119,773.56) x 100 = 56.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201012 is $67,610.00 and is 56.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201014 Bay St. Louis roads (Group HWY 603)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Boat Launch Service Roads:

GPS Start 30.327479, -89.422656, Stop 30.329087, -89.423849:

1. Remove and Replace 49.925926 CY of Double Bituminous Surface Treatment, 674 FT long x 16 FT wide x 1.5 IN deep.

Elbrus:

GPS Start 30.324672, -89.422524, Stop 30.323903, -89.424488:

2. Remove and Replace 49.86 CY of Double Bituminous Surface Treatment, 718 FT long x 15 FT wide x 1.5 IN deep.

Etna:

DP1:

GPS 30.327854, -89.425022:

3. Remove and Replace 0.777778 CY of 610 stone or crushed concrete, 14 FT long x 3 FT wide x 6 IN deep.

4. Remove and Replace 1.037037 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.328771, -89.425736, Stop 30.327508, -89.424827:

5. Remove and Replace 30.111111 CY of Double Bituminous Surface Treatment, 542 FT long x 12 FT wide x 1.5 IN deep.

Everest:

GPS Start 30.326991, -89.423590, Stop 30.324167, -89.422189:

6. Remove and Replace 95.083333 CY of Double Bituminous Surface Treatment, 1,141 FT long x 18 FT wide x 1.5 IN deep.

Irazu:

DP1:

GPS 30.322476, -89.419386:

7. Remove and Replace 3.333333 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 9 FT wide x 8 IN deep.

8. Remove and Replace 0.625 CY of Double Bituminous Surface Treatment, 15 FT long x 9 FT wide x 1.5 IN deep.

GPS Start 30.321966, -89.420173, Stop 30.322936, -89.418982:

9. Remove and Replace 39.7037 CY of Double Bituminous Surface Treatment, 536 FT long x 16 FT wide x 1.5 IN.

Logan:

GPS Start 30.325262, -89.424901, Stop 30.326185, -89.423222 (no Damage):

10. Remove and Replace 45.111111 CY of Double Bituminous Surface Treatment, 609 FT long x 16 IN wide x 1.5 IN deep.

Nile:

DP1:

GPS 30.316941, -89.408831:

11. Remove and Replace 13.851852 CY of 610 stone or crushed concrete, 68 FT long x 11 FT wide x 6 IN deep.

12. Remove and Replace 18.469136 CY of Sand with less than 20% passing 200 sieve, 68 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.316480, -89.408101, Stop 30.317760, -89.410180:

13. Remove and Replace 66.666667 CY of Double Bituminous Surface Treatment, 800 FT long x 18 FT wide x 1.5 IN deep.

Pearl:

DP1:

Gps 30.317807, -89.411445:

14. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

15. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.317826, -89.410303, Stop 30.317785, -89.412501:

16. Remove and Replace 51.925926 CY of Double Bituminous Surface Treatment, 701 FT long x 16 FT wide x 1.5 IN deep.

Rainer:

DP1:

GPS 30.326627, -89.424468:

17. Remove and Replace 9.481481 CY of 610 stone or crushed concrete, 64 FT long x 8 FT wide x 6 IN deep.

18. Remove and Replace 12.641975 CY of Sand with less than 20% passing 200 sieve, 64 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.326301, -89.425270, Stop 30.327077, -89.423287:

19. Remove and Replace 76.111111 CY of Double Bituminous Surface Treatment, 685 FT long x 24 FT wide x 1.5 IN deep.

Rushmore Street:

GPS Start 30.328777, -89.425736, Stop 30.328608, -89.426326:

20. Remove and Replace 11.333333 CY of Double Bituminous Surface Treatment, 204 FT long x 12 FT wide x 1.5 IN deep.

Work to be Completed Total: $146,645.26

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory # 1201014

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $146,645.26

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 12,126 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	12,126 SY @$7.50/SY =	$90,948.33
	Total =	$90,948.33

Total Mitigation Costs for this DI = $90,948.33

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $90,948.33

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $90,948.33

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($90,948.33/$146,645.26) x 100 = 62.02% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201014 is $90,948.33 and is 62.02% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

1201017 Bay St. Louis Roads (Group Central)

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Gull:

GPS Start 30.331841, -89.-89.406126, Stop 30.333843, -89.404563:

1. Remove and Replace 46.851852 CY of Double Bituminous Surface Treatment, 880 FT long x 11.5 FT wide x 1.5 IN deep.

Heron:

DP1:

GPS 30.331948, -89.405193:

2. Remove and Replace 1.777778 CY of 610 stone or crushed concrete, 12 FT long x 8 FT wide x 6 IN deep.

3. Remove and Replace 2.37037 CY of Sand with less than 20% passing 200 sieve, 12 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.331948, -89.405193:

4. Remove and Replace 0.888889 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 6 FT wide x 8 IN deep.

GPS 30.331948, -89.405193:

5. Remove and Replace 0.666667 CY of 610 stone or crushed concrete, 6 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.333875, -89.403577, Stop 30.331866, -89.405209:

6. Remove and Replace 62.083333 CY of Double Bituminous Surface Treatment, 894 FT long x 15 FT wide x 1.5 IN deep.

Kingfisher:

GPS Start 30.331887, -89.404316, Stop 30.333813, -89.404578:

7. Remove and Replace 63.736111 CY of Double Bituminous Surface Treatment, 917.8 FT long x 15 FT wide x 1.5 IN deep.

Work to be Completed Total: $48,173.88

406 HMP Scope

Hazard Mitigation Proposal (HMP):

GM Project #: 552697_

DR-4626- MS

GM Damage Inventory #: 1201017

Site Name & Address Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 3 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $48,173.88

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 4,051 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	4,051 SY @$7.50/SY =	$30,380.83
	Total =	$30,380.83

Total Mitigation Costs for this DI = $30,380.83

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $30,380.83

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $30,380.83

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($30,380.83/$48,173.88) x 100 = 63.06% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201017 is $30,380.83 and is 63.06% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	$303,533.43	Uncompleted
9001	1	Lump Sum	$227,082.10	Uncompleted
9001	1	Lump Sum	$140,820.95	Uncompleted
9001	1	Lump Sum	$119,773.56	Uncompleted
9001	1	Lump Sum	$146,645.26	Uncompleted
9001	1	Lump Sum	$48,173.88	Uncompleted
9999	1	Lump Sum	($1,550,828.49)	Uncompleted
9999	1	Lump Sum	$3,749,215.59	Uncompleted
9999	1	Lump Sum	$1,550,828.49	Uncompleted
9999	1	Lump Sum	($1,247,295.06)	Uncompleted

CRC Gross Cost	$3,487,949.71
Total 406 HMP Cost	$564,799.31
Total Insurance Reductions	$0.00
CRC Net Cost	$4,052,749.02
Federal Share (90.00%)	$3,647,474.12
Non-Federal Share (10.00%)	$405,274.90

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient’s completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.

Insurance

Additional Information

04/08/2025 - Lewis McKay, Insurance Specialist - There are no insurance implications that pertain to this project. There will be no requirement to obtain and maintain insurance.

O&M Requirements

There are no Obtain and Maintain Requirements on **Bay St. Louis Roads** .

406 Mitigation

There is no additional mitigation information on **Bay St. Louis Roads** .

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- EO 11990: Construction activities and equipment storage and staging activities are not to be located in or impact any adjacent wetlands. Source of condition: Executive Order 11990 - Wetlands
- NHPA: All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material is from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout Source of condition: National Historic Preservation Act (NHPA)

EHP Additional Info

There is no additional environmental historical preservation on **Bay St. Louis Roads** .

Final Reviews

Final Review

Reviewed By WILSON, PAUL R.

Reviewed On 01/07/2025 8:04 PM EDT

Review Comments

Recipient Review

Reviewed By Sager, Diane

Reviewed On 01/07/2025 8:52 PM EDT

Review Comments

4th State review completed. Cat C project includes 406 HMP funding includes specialized EHP conditions the applicant must comply with for federal funding.

Project Signatures

Reviewed By Unsigned

Reviewed On Unsigned

General Info

Project #	552697 **PW #** 180	**Project Type**	Estimated Costs
Project Category	C - Roads and Bridges	**Applicant**	Bay St. Louis, City of (045-03980-00)
Project Title	Bay St. Louis Roads	**Event**	4626DR-MS (4626DR)
Project Size	Large	**Declaration Date**	10/23/2021
Activity Completion Date	10/21/2025	**Incident Start Date**	8/28/2021
		Incident End Date	9/1/2021
Process Step	Obligated		

Damage Description and Dimensions

The Disaster # 4626DR, which occurred between *08/28/2021* and *09/01/2021*, caused:

Damage #934311; Bay St. Louis Roads (Group Ave B)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All of the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Approx. Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Asphalt
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201007; Bay St louis Roads (Group Road 556 & 558)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201009; Bay St. Louis Roads (Group Garden Isle)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads

- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface Treatment (chip and seal)
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 13
- **Number of Lanes:** 2

Damage #1201012; Bay St. Louis Roads (Group Lagan)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** Local community, including school bus & 911 emergency routes.
- **Facility Description:** Multiple community roadways, with varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bitumen (chip n seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201014; Bay St. Louis roads (Group HWY 603)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General community use, including school bus routes and 911 emergency service routes.
- **Facility Description:** These roads are of varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201017; Bay St. Louis Roads (Group Central)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General residential community use, including School bus routes & 911 emergency service routes.
- **Facility Description:** Varying road lengths and widths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Final Scope

934311 Bay St. Louis Roads (Group Ave B)

*****GM Version 2******

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

10th Street Ave B:

GPS Start 30.320218, -89396440, Stop 30.320218, -89.396859:

1. Remove and Replace 7.583333 CY of Double Bituminous Surface Treatment, 130 FT long x 12.6 FT wide x 1.5 IN deep.

10th Street to 15th Street Ave A:

GPS Start 30.320219, -89.393442, Stop 30.323342, -89.393460:

2. Remove and Replace 83.333333 CY of Double Bituminous Surface Treatment, 1,200 FT long x 15 FT wide x 1.5 IN deep.

12th Street Ave D:

GPS Start 30.321553, -89.400219, Stop 30.321585, -89.399824:

3. Remove and Replace 6.296296 CY of Double Bituminous Surface Treatment, 100 FT long x 13.6 FT wide x 1.5 IN deep.

13th Street Ave B:

DP1:

GPS 30.322116, -89.394528:

4. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 9 FT long x 11 FT wide x 6 IN deep.

5. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200, 9 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322539, -89.395815, Stop 30.322156, -89.393471:

6. Remove and Replace 49.583333 CY of Double Bituminous Surface Treatment, 850 FT long x 12.6 FT wide x 1.5 IN deep.

14th Street Ave B:

DP1:

GPS 30.322754, -89.397557:

7. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 21 FT long x 4 FT wide x 6 IN deep.

DP2:

GPS 30.322808, -89.399375:

8. Remove and Replace 1.222222 CY of 610 stone or crushed concrete, 11 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.322839, -89.396099, Stop 30.322805, -89.400249:

9. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

15th Street Ave B:

GPS Start 30.323741, -89.395181, Stop 30.323471, -89.396717:

10. Remove and Replace 12.541667 CY of Double Bituminous Surface Treatment, 215 FT long x 12.6 FT wide x 1.5 IN deep.

17th Street Ave B:

GPS Start 30.324883, -89.396095, Stop 30.325088, -89.398872:

11. Remove and Replace 8.75 CY of Double Bituminous Surface Treatment, 150 FT long x 12.6 FT wide x 1.5 IN deep.

18th Street Ave B:

DP1:

GPS 30.325073, -89.397590:

12. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

13. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.325402, -89396018, Stop 30.325524, -89.399108:

14. Remove and Replace 59.208333 CY of Double Bituminous Surface Treatment, 1,015 FT long x 12.6 FT wide x 1.5 IN deep.

2nd Street to Ave A Ave B:

GPS Start 30.314805, -89.396081, Stop 30.314340, -89.393492:

15. Remove and Replace 48.416667 CY of Double Bituminous Surface Treatment, 830 FT long x 12.6 FT wide x 1.5 IN deep.

7th Street Ave B:

GPS Start 30.318190, -89.396099, Stop 30.318246, -89.397351:

16. Remove and Replace 22.75 CY of Double Bituminous Surface Treatment, 390 FT long x 12.6 FT wide x 1.5 IN deep.

8th Street Ave B:

DP1:

GPS 30.318860, -89.395133:

17. Remove and Replace 2.566667 CY of 610 stone or crushed concrete, 11 FT long x 12.6 FT wide x 6 IN deep.

18. Remove and Replace 3.422222 CY of Sand with less than 20% passing 200, 11 FT long x 12.6 FT wide x 8 IN deep.

DP2:

GPS 30.318882, -89.396534:

19. Remove and Replace 2.1 CY of 610 stone or crushed concrete, 9 FT long x 12.6 FT wide x 6 IN deep.

20. Remove and Replace 2.8 CY of Sand with less than 20% passing 200, 9 FT long x 12.6 FT wide x 8 IN deep.

GPS Start 30.318802, -89.393486, Stop 30.318905, -89.400269:

21. Remove and Replace 125.008333 CY of Double Bituminous Surface Treatment, 2,143 FT long x 12.6 FT wide x 1.5 IN deep.

9th Street Ave B:

GPS Start 30.319413, -89396383, Stop 30.319377, -89.396362:

22. Remove and Replace 13.416667 CY of Double Bituminous Surface Treatment, 230 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A & Sixth ST to Ave B:

DP1:

GPS 30.317587, -89.395077:

23. Remove and Replace 0.166667 CY of 610 stone or crushed concrete, 3 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.222222 CY of Sand with less than 20% passing 200, 3 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.317548, -89.33497, Stop 30.317563, -89.396054:

25. Remove and Replace 63.466667 CY of Double Bituminous Surface Treatment, 1,088 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A &4th Street To Ave D:

DP1:

GPS 30.316004, -89.89.401101:

26. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 6 FT long x 3 FT wide x 6 IN deep.

27. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200, 6 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.316243, -89.393467, Stop 30.316397, -89.400384:

28. Remove and Replace 129.225833 CY of Double Bituminous Surface Treatment, 2,215.3 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A to 6th Street:

DP1:

GPS 30.315849, -89.393504:

29. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

GPS Start 30.314340, -89.393492, Stop 30.317487, -89.393442:

30. Remove and Replace 65.041667 CY of Double Bituminous Surface Treatment, 1,115 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & 5th Street To Ave D:

DP1:

GPS 30.316934, -89.398698:

31. Remove and Replace 2.851852 CY of 610 stone or crushed concrete, 22 FT long x 7 FT wide x 6 IN deep.

GPS 30.617557, -89.396393, Stop 30.317063, -89.396254:

32. Remove and Replace 124.075 CY of Double Bituminous Surface Treatment, 2,127 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & Sixth ST to Ave D:

GPS Start 30.617557, -89.396393, -89.396139, Stop 30.317571, -89.396492:

33. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

34. Remove and Replace 59.722222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Second Street Ave C:

GPS Start 30.315207, -89.398684, Stop 30.316888, -89.401183:

35. Remove and Replace 36.75 CY of Double Bituminous Surface Treatment, 630 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave A:

DP1:

GPS 30.315495, -89.395143:

36. Remove and Replace 6.333333 CY of 610 stone or crushed concrete, 38 FT long x 9 FT wide x 6 IN deep.

37. Remove and Replace 8.444444 CY of Sand with less than 20% passing 200, 38 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314854, -89.396063, Stop 30.315541, -89.393526:

38. Remove and Replace 47.541667 CY of Double Bituminous Surface Treatment, 815 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave C:

GPS Start 30.615552, -89.397145, Stop 30.315371, -89.395978:

39. Remove and Replace 20.462963 CY of Double Bituminous Surface Treatment, 340 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $303,533.43

Project Notes:

1. All site estimates for work to be completed were generated by the FEMA CRC using RSMeans, 2022, 2nd Quarter, Biloxi, MS. See attachment labeled “552697 - DR4626 - FEMA Cost Estimate.xlsx”.

2. All procurement documents have been provided and reviewed. See attachment “Mississippi State Procurement Manual”.

3. Applicant will comply with its local, state, federal procurement laws, regulations and procedures.

4. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial

source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

5. **Equipment:** When an individual item of equipment is no longer needed for federally funded programs or projects, non-state Applicants must follow the requirements of 2 CFR § 200.313(c)-(e) stipulating that, when an individual item of equipment is no longer needed for this project and/or other federally funded programs or projects, Applicants must calculate the item's current fair market value (FMV). If the per-unit FMV is $5,000 or more, FEMA will reduce eligible funding by the FMV. The Applicant must demonstrate compliance with the disposition requirements of 2 CFR 200.313 at closeout.

6. **Supplies:** When supplies are no longer needed for federally funded programs or projects, all Applicants, including State and Territorial government Applicants, must calculate the current fair market value of any unused residual supplies (including materials) that FEMA funded for any of its projects and determine the aggregate total. The Applicant must provide the current fair market value if the aggregate total of unused residual supplies is greater than $5,000. FEMA reduces eligible funding by this amount.144 If the aggregate total of unused residual supplies is less than $5,000, FEMA does not reduce the eligible funding.

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

934311 Hazard Mitigation - Placement of Geogrid 27,236.00 SY $6.00 $163,416.00
HMP C/B % = ($163,416.00/$781,532.46) x 100 = 20.91% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR4626- MS

GM Damage Inventory #: 934311

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 20 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $303,533.43

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 25,272 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	25,272 SY @$7.50/SY =	$189,542.98
	Total =	$189,542.98

Total Mitigation Costs for this DI = $189,542.98

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $189,542.98

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. **Net Hazard Mitigation cost(s): A – B = $189,542.98**

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($189,542.98/$303,533.43) x 100 = 62.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #934311 is $189,542.98 and is 62.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201007 Bay St louis Roads (Group Road 556 & 558)

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

12th Street 556 to Ave A:

GPS Start 30.321426, -89.392394, Stop 30.321499, -89.393383:

1. Remove and Replace 21.666667 CY of Double Bituminous Surface Treatment, 360 FT long x 13 FT wide x 1.5 IN deep.

12th Street 558 to East End (dead end):

GPS Start 30.321520, -89.389919, Stop 30.321460, -89.388914:

2. Remove and Replace 21.546296 CY of Double Bituminous Surface Treatment, 358 FT long x 13 FT wide x 1.5 IN deep.

13th Street Dead End to 556:

DP1:

GPS 30.322145, -89.389938:

3. Remove and Replace 3.177778 CY of 610 stone or crushed concrete, 26 FT long x 6.6 FT wide x 6 IN deep.

4. Remove and Replace 4.237037 CY of Sand with less than 20% passing 200 sieve, 26 FT long x 6.6 FT wide x 8 IN deep.

GPS Start 30.322131, -89.387670, Stop 30.322181, -89.392286:

5. Remove and Replace 88.351852 CY of Double Bituminous Surface Treatment, 1,468 FT long x 13 FT wide x 1.5 IN deep.

14th Street 556 to Dead End:

DP1:

GPS 30.322842, -89.391816:

6. Remove and Replace 4.888889 CY of 610 stone or crushed concrete, 33 FT long x 8 FT wide x 6 IN deep.

7. Remove and Replace 6.518519 CY of Sand with less than 20% passing 200 sieve, 33 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.322787, -89.391407:

8. Remove and Replace 10.37037 CY of 610 stone or crushed concrete, 40 FT long x 14 FT wide x 6 IN deep.

9. Remove and Replace 13.82716 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 14 FT wide x 8 IN deep.

DP3:

GPS 30.3228880, -89.390564:

10. Remove and Replace 9.814815 CY of 610 stone or crushed concrete, 53 FT long x 10 FT wide x 6 IN deep.

11. Remove and Replace 13.08642 CY of Sand with less than 20% passing 200 sieve, 53 FT long x 10 FT wide x 8 IN deep.

DP4:

GPS 30.322845, -89.390199:

12. Remove and Replace 7.777778 CY of 610 stone or crushed concrete, 42 FT long x 10 FT wide x 6 IN deep.

13. Remove and Replace 10.37037 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 10 FT wide x 8 IN deep.

GPS Start 30.322865, -89.382245, Stop 30.322757, -89.390017:

14. Remove and Replace 49.930556 CY of Double Bituminous Surface Treatment, 719 FT long x 15 FT wide x 1.5 IN deep.

15th Street 558 to Jordan River Drive:

GPS Start 30.323473, -89.389906, Stop 30.323433, -89.388034:

15. Remove and Replace 59.944444 CY of Double Bituminous Surface Treatment, 830 FT long x 15.6 FT wide x 1.5 IN deep.

2nd Street 556 to 560:

DP1:

GPS 30.314588, -89.391165:

16. Remove and Replace 1.944444 CY of 610 stone or crushed concrete, 15 FT long x 7 FT wide x 6 IN deep.

17. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.314346, -89.390018:

18. Remove and Replace 0.37037 CY of 610 stone or crushed concrete, 5 FT long x 4 FT wide x 6 IN deep.

19. Remove and Replace 0.493827 CY of Sand with less than 20% passing 200 sieve, 5 FT long x 4 FT wide x 8 IN deep.

DP3:

GPS 30.314165, -89.388884:

20. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 11 FT long x 9 FT wide x 6 IN deep.

21. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314723, -89.392286, Stop 30.314133, -89.388331:

22. Remove and Replace 75.351852 CY of Double Bituminous Surface Treatment, 1,252 FT long x 13 FT wide x 1.5 IN deep.

3rd Street 560 to 556:

DP1:

GPS 30.315078, -89.390066:

23. Remove and Replace 0.444444 CY of 610 stone or crushed concrete, 8 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.592593 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.314819, -89.388392, Stop 30.315450, -89.392352:

25. Remove and Replace 77.037037 CY of Double Bituminous Surface Treatment, 1,280 FT long x 13 FT wide x 1.5 IN deep.

4th Street 556 to 560:

DP1:

GPS 30.315788, -89.390764:

26. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 14 FT long x 6 FT wide x 6 IN deep.

27. Remove and Replace 2.074074 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS 30.315814, -89.390772:

28. Remove and Replace 0.740741 CY of 610 stone or crushed concrete, 8 FT long x 5 FT wide x 6 IN deep.

29. Remove and Replace 0.987654 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.316015, -89.392349, Stop 30.315729, -89.390055:

30. Remove and Replace 44.236111 CY of Double Bituminous Surface Treatment, 735 FT long x 13 FT wide x 1.5 IN deep.

558 Street 14th to 15th:

DP1:

GPS 30.315694, -89.390122:

31. Remove and Replace 8.555556 CY of 610 stone or crushed concrete, 42 FT long x 11 FT wide x 6 IN deep.

32. Remove and Replace 11.407407 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322736, -89.389949, Stop 30.323271, -89.389971:

33. Remove and Replace 17.62963 CY of Double Bituminous Surface Treatment, 238 FT long x 16 FT wide x 1.5 IN deep.

558 Street 1st to 10th:

DP1:

GPS 30.314168, -89.390063:

34. Remove and Replace 23.703704 CY of 610 stone or crushed concrete, 160 FT long x 8 FT wide x 6 IN deep.

35. Remove and Replace 31.604938 CY of Sand with less than 20% passing 200 sieve, 160 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.319457, -89.389962:

36. Remove and Replace 6 CY of 610 stone or crushed concrete, 27 FT long x 12 FT wide x 6 IN deep.

37. Remove and Replace 8 CY of Sand with less than 20% passing 200 sieve, 27 FT long x 12 FT wide x 8 IN deep.

GPS Start 30.313752, -89.390031, Stop 30.320125, -89.389963:

38. Remove and Replace 162.15463 CY of Double Bituminous Surface Treatment, 2,399 FT long x 14.6 FT wide x 1.5 IN deep.

8th Street 560 to 556:

DP1:

GPS 30.318885, -89.391037:

39. Remove and Replace 1.166667 CY of 610 stone or crushed concrete, 9 FT long x 7 FT wide x 6 IN deep.

40. Remove and Replace 1.555556 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.318961, -89.392042:

41. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

42. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

GPS Start 30.31875, -89.390017, Stop 30.318891, -89.392242:

43. Remove and Replace 43.935185 CY of Double Bituminous Surface Treatment, 730 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $227,082.10

Scope Notes:

1. Damage date was originally incorrectly entered for DI #1201007 in DDD. Correct Damage Dates between 8/28/2021 and 9/1/2021.

406 HMP Scope

GM Version 2

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201007 Hazard Mitigation - Placement of Geogrid 15,883.00 SY $6.00 $95,298.00

HMP C/B % = ($95,298.00/$510,145.28) x 100 = 18.68% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201007

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321426, -89.392394 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima/ HM 406 Specialist

HMP Date: May 27, 2022; Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $227,082.10

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 15,883 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	15,883 SY @$7.50/SY =	$119,121.17
	Total =	$119,121.17

Total Mitigation Costs for this DI = $119,121.17

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $119,121.17

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $119,121.17

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($119,121.17/$227,082.10) x 100 = 52.46% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201007 is $119,121.17 and is 52.46% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201009 Bay St. Louis Roads (Group Garden Isle)

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Road Damage:

Beverly to DeRoach:

GPS Start 30.321684, -89.378953, Stop 30.320534, -89.375797:

1. Remove and Replace 71.296296 CY of Double Bituminous Surface Treatment, 1,100 FT long x 14 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

2. Remove and Replace 59.7222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Clara Street Chapman to House:

DP1:

GPS 30.3229777, -89.379942:

3. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 9 FT long x 2 FT wide x 6 IN deep.

4. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.322836, -89.380153:

5. Remove and Replace 0.055556 CY of 610 stone or crushed concrete, 3 FT long x 1 FT wide x 6 IN deep.

6. Remove and Replace 0.074074 CY of Sand with less than 20% passing 200 sieve, 3 FT long x 1 FT wide x 8 IN deep.

GPS Start 30.3223251, -89.378760, Stop 30.323288, -89.381047:

7. Remove and Replace 53.925926 CY of Double Bituminous Surface Treatment, 832 FT long x 14 FT wide x 1.5 IN deep.

Clara Street DeRoach to Chapman:

DP1:

GPS 30.321561, -89.326920:

8. Remove and Replace 0.222222 CY of 610 stone or crushed concrete, 6 FT long x 2 FT wide x 6 IN deep.

9. Remove and Replace 0.296296 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.321629, -89.322035:

10. Remove and Replace 3.111111 CY of 610 stone or crushed concrete, 21 FT long x 8 FT wide x 6 IN deep.

11. Remove and Replace 4.148148 CY of Sand with less than 20% passing 200 sieve, 21 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.322181, -89.378367:

12. Remove and Replace 1 CY of 610 stone or crushed concrete, 18 FT long x 3 FT wide x 6 IN deep.

13. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 18 FT long x 3 FT wide x 8 IN deep.

DP4:

GPS 30.322312, -89.378596:

14. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

15. Remove and Replace 1.08642 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 4 FT wide x 8 IN deep.

GPS Start 30.321227, -89.375829, Stop 30.32291, -89.378719:

16. Remove and Replace 64.555556 CY of Double Bituminous Surface Treatment, 996 FT long x 14 FT wide x 1.5 IN deep.

Daffodil Drive Chapman to Primrose:

DP1:

GPS 30.323542, -89.375749:

17. Remove and Replace 3 CY of 610 stone or crushed concrete, 54 FT long x 3 FT wide x 6 IN deep.

18. Remove and Replace 4 CY of Sand with less than 20% passing 200 sieve, 54 FT long x 3 FT wide x 8 IN deep.

DP2:

GPS 30.322683, -89.375538:

19. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

20. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

Dafodil Drive Chapman to Primrose:

GPS Start 30.323542, -89.378083, Stop 30.322445, -89.375273:

21. Remove and Replace 70.075926 CY of Double Bituminous Surface Treatment, 958 FT long x 15.8 FT wide x 1.5 IN deep.

Lilac from Chapman:

DP1:

GPS Start 30.324403, -89.376653 End 30.324254, -89.376250:

22. Remove and Replace 14.555556 CY of 610 stone or crushed concrete, 131 FT long x 6 FT wide x 6 IN deep.

23. Remove and Replace 19.407407 CY of Sand with less than 20% passing 200 sieve, 131 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS Start 30.324142, -89.375967:

24. Remove and Replace 8.148148 CY of 610 stone or crushed concrete, 40 FT long x 11 FT wide x 6 IN deep.

25. Remove and Replace 10.864198 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 11 FT wide x 8 IN deep.

DP3:

GPS 30.323793, -89.374701:

26. Remove and Replace 57.037037 CY of 610 stone or crushed concrete, 280 FT long x 11 FT wide x 6 IN deep.

27. Remove and Replace 76.049383 CY of Sand with less than 20% passing 200 sieve, 280 FT long x 11 FT wide x 8 IN deep.

DP4:

GPS 30.324684, -89.377072:

28. Remove and Replace 2.444444 CY of 610 stone or crushed concrete, 22 FT long x 6 FT wide x 6 IN deep.

29. Remove and Replace 3.259259 CY of Sand with less than 20% passing 200 sieve, 22 FT long x 6 FT wide x 8 IN deep.

DP5:

GPS 30.324361, -89.376064:

30. Remove and Replace 5.166667 CY of 610 stone or crushed concrete, 31 FT long x 9 FT wide x 6 IN deep.

31. Remove and Replace 6.888889 CY of Sand with less than 20% passing 200 sieve, 31 FT long x 9 FT wide x 8 IN deep.

DP6:

GPS 30.324321, -89.376238:

32. Remove and Replace 3.62963 CY of 610 stone or crushed concrete, 28 FT long x 7 FT wide x 6 IN deep.

33. Remove and Replace 4.839506 CY of Sand with less than 20% passing 200 sieve, 28 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.329726, -89.378111, Stop 30.324014, -89.375511:

34. Remove and Replace 56.064815 CY of Double Bituminous Surface Treatmeant, 865 FT long x 14 FT wide x 1.5 IN deep.

Marigold Primrose to Chapman:

DP1:

GPS 30.323523, -89.89.376529:

35. Remove and Replace 9.338889 CY of 610 stone or crushed concrete, 41 FT long x 12.3 FT wide x 6 IN deep.

36. Remove and Replace 12.451852 CY of Sand with less than 20% passing 200 sieve, 41 FT long x 12.3 FT wide x 8 IN deep.

GPS Start 30.323078, -89.375046, Stop 30.323990, -89.377845:

37. Remove and Replace 80.083333 CY of Double Bituminous Surface Treatment, 961 FT long x 18 FT wide x 1.5 IN deep.

Work to be Completed Total: $140,820.95

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201009 Hazard Mitigation - Placement of Geogrid 10,938.00 SY $6.00 $65,628.00
HMP C/B % = ($65,628.00/$390,866.16) x 100 = 16.79% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project #: 552697

DR-4626- MS

GM Damage Inventory # 1201009

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321227, -89.375829 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 6 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $140,820.95

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 8,959 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	8,959 SY @$7.50/SY =	$67,196.00
	Total =	$67,196.00

Total Mitigation Costs for this DI = $67,196.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,196.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,196.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,196.00/$140,820.95) x 100 = 47.72% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201009 is $67,196.00 and is 47.72% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201012 Bay St. Louis Roads (Group Lagan)

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

1st Street (Lagan to End):

DP1:

GPS 30.323647, -89.415307:

1. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 17.5 FT long x 8 FT wide x 6 IN deep.

2. Remove and Replace 3.45679 CY of 610 stone or crushed concrete, 17.5 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.323787, -89.415511:

3. Remove and Replace 4.074074 CY of Sand with less than 20% passing 200 sieve, 27.5 FT long x 8 FT wide x 6 IN deep.

4. Remove and Replace 5.432099 CY of 610 stone or crushed concrete, 27.5 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.323847, -89.415595:

5. Remove and Replace 1.762963 CY of Sand with less than 20% passing 200 sieve, 11.9 FT long x 8 FT wide x 6 IN deep.

6. Remove and Replace 2.350617 CY of 610 stone or crushed concrete, 11.9 FT long x 8 FT wide x 8 IN deep.

DP4:

GPS 30.324001, -89.415885:

7. Remove and Replace 44 CY of Sand with less than 20% passing 200 sieve, 118.8 FT long x 20 FT wide x 6 IN deep.

8. Remove and Replace 58.666667 CY of 610 stone or crushed concrete, 118.8 FT long x 20 FT wide x 8 IN deep.

DP5:

GPS 30.324491, -89.416664:

9. Remove and Replace 18.777778 CY of Sand with less than 20% passing 200 sieve, 50.7 FT long x 20 FT wide x 6 IN deep.

10. Remove and Replace 25.037037 CY of 610 stone or crushed concrete, 50.7 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.323233, -89.414584, Stop 30.324584, -89.416803:

11. Remove and Replace 83.185185 CY of Double Bituminous Surface Treatment, 898.4 FT long x 20 FT wide x 1.5 IN deep.

1st Street to Ave H:

DP1:

GPS 30.321355, -89.411517:

12. Remove and Replace 2.814815 CY of 610 stone or crushed concrete, 30.4 FT long x 5 FT wide x 6 IN deep.

13. Remove and Replace 3.753086 CY of Sand with less than 20% passing 200 sieve, 30.4 FT long x 5 FT wide x 8 IN deep.

DP2:

GPS 30.321970, -89.412486:

14. Remove and Replace 1 CY of 610 stone or crushed concrete, 9 FT long x 6 FT wide x 6 IN deep.

15. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 6 FT wide x 8 IN deep.

DP3:

GPS 30.322046, -89.412759:

16. Remove and Replace 1.333333 CY of 610 stone or crushed concrete, 6 FT long x 12 FT wide x 6 IN deep.

17. Remove and Replace 1.777778 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 12 FT wide x 8 IN deep.

DP4:

GPS 30.322231, -89.412918:

18. Remove and Replace 8.118519 CY of 610 stone or crushed concrete, 8 FT long x 54.8 FT wide x 6 IN deep.

19. Remove and Replace 10.824691 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 54.8 FT wide x 8 IN deep.

DP5:

GPS 30.322467, -89.413306:

20. Remove and Replace 1.481481 CY of 610 stone or crushed concrete, 10 FT long x 8 FT wide x 6 IN deep.

21. Remove and Replace 1.975309 CY of Sand with less than 20% passing 200 sieve, 10 FT long x 8 FT wide x 8 IN deep.

DP6:

GPS 30.322666, -89.413710:

22. Remove and Replace 14.748148 CY of 610 stone or crushed concrete, 72.4 FT long x 11 FT wide x 6 IN deep.

23. Remove and Replace 19.664198 CY of Sand with less than 20% passing 200 sieve, 72.4 FT long x 11 FT wide x 8 IN deep.

DP7:

GPS 30.322910, -89.414048:

24. Remove and Replace 26.62963 CY of 610 stone or crushed concrete, 71.9 FT long x 20 FT wide x 6 IN deep.

25. Remove and Replace 35.506173 CY of Sand with less than 20% passing 200 sieve, 71.9 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.321057, -89.411090, Stop 30.323174, -89.414513:

26. Remove and Replace 129.62963 CY of Double Bituminous Surface Treatment, 1,400 FT long x 20 FT wide x 1.5 IN deep.

2nd Street from Logan:

DP1:

GPS Start 30.323900, -89.413519:

27. Remove and Replace 19.351852 CY of 610 stone or crushed concrete, 55 FT long x 19 FT wide x 6 IN deep.

28. Remove and Replace 25.802469 CY of Sand with less than 20% passing 200 sieve, 55 FT long x 19 FT wide x 8 IN deep.

DP2:

GPS Start 30.323456, -89.412759:

29. Remove and Replace 1.296296 CY of 610 stone or crushed concrete, 14 FT long x 5 FT wide x 6 IN deep.

30. Remove and Replace 1.728395 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.324098, -89.413764, Stop 30.321980, -89.410293:

31. Remove and Replace 117.518519 CY of Double Bituminous Surface Treatment, 1,336 FT long x 19 FT wide x 1.5 IN deep.

Ave H:

DP1:

GPS 30.321678, -89.410518:

32. Remove and Replace 1.9753 CY of Sand with less than 20% passing 200 sieve, 16 FT long x 5 FT wide x 8 IN deep.

33. Remove and Replace 0.987654 CY of 610 stone or crushed concrete, 5 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.322137, -89.410103, Stop 30.321057, -89.411090:

34. Remove and Replace 28.525 CY of Double Bituminous Surface Treatment, 489 FT long x 12.6 FT wide x 1.5 IN deep.

Work to be Completed Total:$119,773.56

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201012 Hazard Mitigation - Placement of Geogrid 8,613.00 SY $6.00 $51,678.00

HMP C/B % = ($51,678.00/$371,822.32) x 100 = 13.90% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201012

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321057, -89.411090 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

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Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 4 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $119,773.56

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 9,015 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	9,015 SY @$7.50/SY =	$67,610.00
	Total =	$67,610.00

Total Mitigation Costs for this DI = $67,610.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,610.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,610.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,610.00/$119,773.56) x 100 = 56.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201012 is $67,610.00 and is 56.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201014 Bay St. Louis roads (Group HWY 603)

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Boat Launch Service Roads:

GPS Start 30.327479, -89.422656, Stop 30.329087, -89.423849:

1. Remove and Replace 49.925926 CY of Double Bituminous Surface Treatment, 674 FT long x 16 FT wide x 1.5 IN deep.

Elbrus:

GPS Start 30.324672, -89.422524, Stop 30.323903, -89.424488:

2. Remove and Replace 49.86 CY of Double Bituminous Surface Treatment, 718 FT long x 15 FT wide x 1.5 IN deep.

Etna:

DP1:

GPS 30.327854, -89.425022:

3. Remove and Replace 0.777778 CY of 610 stone or crushed concrete, 14 FT long x 3 FT wide x 6 IN deep.

4. Remove and Replace 1.037037 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.328771, -89.425736, Stop 30.327508, -89.424827:

5. Remove and Replace 30.111111 CY of Double Bituminous Surface Treatment, 542 FT long x 12 FT wide x 1.5 IN deep.

Everest:

GPS Start 30.326991, -89.423590, Stop 30.324167, -89.422189:

6. Remove and Replace 95.083333 CY of Double Bituminous Surface Treatment, 1,141 FT long x 18 FT wide x 1.5 IN deep.

Irazu:

DP1:

GPS 30.322476, -89.419386:

7. Remove and Replace 3.333333 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 9 FT wide x 8 IN deep.

8. Remove and Replace 0.625 CY of Double Bituminous Surface Treatment, 15 FT long x 9 FT wide x 1.5 IN deep.

GPS Start 30.321966, -89.420173, Stop 30.322936, -89.418982:

9. Remove and Replace 39.7037 CY of Double Bituminous Surface Treatment, 536 FT long x 16 FT wide x 1.5 IN.

Logan:

GPS Start 30.325262, -89.424901, Stop 30.326185, -89.423222 (no Damage):

10. Remove and Replace 45.111111 CY of Double Bituminous Surface Treatment, 609 FT long x 16 IN wide x 1.5 IN deep.

Nile:

DP1:

GPS 30.316941, -89.408831:

11. Remove and Replace 13.851852 CY of 610 stone or crushed concrete, 68 FT long x 11 FT wide x 6 IN deep.

12. Remove and Replace 18.469136 CY of Sand with less than 20% passing 200 sieve, 68 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.316480, -89.408101, Stop 30.317760, -89.410180:

13. Remove and Replace 66.666667 CY of Double Bituminous Surface Treatment, 800 FT long x 18 FT wide x 1.5 IN deep.

Pearl:

DP1:

Gps 30.317807, -89.411445:

14. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

15. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.317826, -89.410303, Stop 30.317785, -89.412501:

16. Remove and Replace 51.925926 CY of Double Bituminous Surface Treatment, 701 FT long x 16 FT wide x 1.5 IN deep.

Rainer:

DP1:

GPS 30.326627, -89.424468:

17. Remove and Replace 9.481481 CY of 610 stone or crushed concrete, 64 FT long x 8 FT wide x 6 IN deep.

18. Remove and Replace 12.641975 CY of Sand with less than 20% passing 200 sieve, 64 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.326301, -89.425270, Stop 30.327077, -89.423287:

19. Remove and Replace 76.111111 CY of Double Bituminous Surface Treatment, 685 FT long x 24 FT wide x 1.5 IN deep.

Rushmore Street:

GPS Start 30.328777, -89.425736, Stop 30.328608, -89.426326:

20. Remove and Replace 11.333333 CY of Double Bituminous Surface Treatment, 204 FT long x 12 FT wide x 1.5 IN deep.

Work to be Completed Total: $146,645.26

406 HMP Scope

GM Version 2

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201014 Hazard Mitigation - Placement of Geogrid 12,380.00 SY $6.00 $74,280.00
HMP C/B % = ($74,280.00/$371,561.98) x 100 = 19.99% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory # 1201014

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $146,645.26

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 12,126 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	12,126 SY @$7.50/SY =	$90,948.33
	Total =	$90,948.33

Total Mitigation Costs for this DI = $90,948.33

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $90,948.33

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $90,948.33

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($90,948.33/$146,645.26) x 100 = 62.02% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201014 is $90,948.33 and is 62.02% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201017 Bay St. Louis Roads (Group Central)

*******GM Version 2*******

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Gull:

GPS Start 30.331841, -89.-89.406126, Stop 30.333843, -89.404563:

1. Remove and Replace 46.851852 CY of Double Bituminous Surface Treatment, 880 FT long x 11.5 FT wide x 1.5 IN deep.

Heron:

DP1:

GPS 30.331948, -89.405193:

2. Remove and Replace 1.777778 CY of 610 stone or crushed concrete, 12 FT long x 8 FT wide x 6 IN deep.

3. Remove and Replace 2.37037 CY of Sand with less than 20% passing 200 sieve, 12 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.331948, -89.405193:

4. Remove and Replace 0.888889 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 6 FT wide x 8 IN deep.

GPS 30.331948, -89.405193:

5. Remove and Replace 0.666667 CY of 610 stone or crushed concrete, 6 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.333875, -89.403577, Stop 30.331866, -89.405209:

6. Remove and Replace 62.083333 CY of Double Bituminous Surface Treatment, 894 FT long x 15 FT wide x 1.5 IN deep.

Kingfisher:

GPS Start 30.331887, -89.404316, Stop 30.333813, -89.404578:

7. Remove and Replace 63.736111 CY of Double Bituminous Surface Treatment, 917.8 FT long x 15 FT wide x 1.5 IN deep.

Work to be Completed Total: $48,173.88

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201017 Hazard Mitigation - Placement of Geogrid 4,042.00 SY $6.00 $24,252.00
HMP C/B % = ($24,252.00/$115,318.82) x 100 = 21.03% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project #: 552697_

DR-4626- MS

GM Damage Inventory #: 1201017

Site Name & Address Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 3 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $48,173.88

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 4,051 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	4,051 SY @$7.50/SY =	$30,380.83
	Total =	$30,380.83

Total Mitigation Costs for this DI = $30,380.83

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $30,380.83

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $30,380.83

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($30,380.83/$48,173.88) x 100 = 63.06% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201017 is $30,380.83 and is 63.06% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	$303,533.43	Uncompleted
9001	1	Lump Sum	$227,082.10	Uncompleted
9001	1	Lump Sum	$140,820.95	Uncompleted
9001	1	Lump Sum	$119,773.56	Uncompleted
9001	1	Lump Sum	$146,645.26	Uncompleted
9001	1	Lump Sum	$48,173.88	Uncompleted
9001	1	Lump Sum	$477,999.03	Uncompleted
9001	1	Lump Sum	$69,262.68	Uncompleted
9001	1	Lump Sum	$53,870.96	Uncompleted
9001	1	Lump Sum	$283,063.18	Uncompleted
9001	1	Lump Sum	$51,817.40	Uncompleted
9001	1	Lump Sum	$40,302.43	Uncompleted
9001	1	Lump Sum	$250,045.21	Uncompleted
9001	1	Lump Sum	$32,133.65	Uncompleted
9001	1	Lump Sum	$24,992.84	Uncompleted
9001	1	Lump Sum	$224,916.72	Uncompleted
9001	1	Lump Sum	$33,462.68	Uncompleted
9001	1	Lump Sum	$26,026.53	Uncompleted
9001	1	Lump Sum	$252,048.76	Uncompleted
9001	1	Lump Sum	$27,330.89	Uncompleted
9001	1	Lump Sum	$21,257.36	Uncompleted
9001	1	Lump Sum	$67,144.94	Uncompleted
9001	1	Lump Sum	$10,992.70	Uncompleted
9001	1	Lump Sum	$8,549.88	Uncompleted

CRC Gross Cost	$2,941,247.02
Total 406 HMP Cost	$474,552.00
Total Insurance Reductions	$0.00
CRC Net Cost	$3,415,799.02
Federal Share (90.00%)	$3,074,219.12
Non-Federal Share (10.00%)	$341,579.90

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient’s completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.

Insurance

Additional Information

04/08/2025 - Lewis McKay, Insurance Specialist - There are no insurance implications that pertain to this project. There will be no requirement to obtain and maintain insurance.

O&M Requirements

There are no Obtain and Maintain Requirements on **Bay St. Louis Roads** .

406 Mitigation

There is no additional mitigation information on **Bay St. Louis Roads** .

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material is from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout
- Construction activities and equipment storage and staging activities are not to be located in or impact any adjacent wetlands.

EHP Additional Info

There is no additional environmental historical preservation on **Bay St. Louis Roads** .

Final Reviews

Final Review

Reviewed By WILSON, PAUL R. **Reviewed On** 05/20/2025 11:14 AM EDT

Review Comments

IP request has completed EHP review.

Recipient Review

Reviewed By Sager, Diane **Reviewed On** 05/20/2025 1:19 PM EDT

Review Comments

This Version 3 acknowledges the applicant request for an Improved Project.

Project Signatures

Reviewed By Unsigned **Reviewed On** Unsigned

General Info

Project #	552697 **P/W #** 180	**Project Type**	Estimated Costs
Project Category	C - Roads and Bridges	**Applicant**	Bay St. Louis, City of (045-03980-00)
Project Title	Bay St. Louis Roads	**Event**	4626DR-MS (4626DR)
Project Size	Large	**Declaration Date**	10/23/2021
Activity Completion Date	10/21/2025	**Incident Start Date**	8/28/2021
		Incident End Date	9/1/2021
Process Step	Signed		

Damage Description and Dimensions

The Disaster # 4626DR, which occurred between *08/28/2021* and *09/01/2021*, caused:

Damage #934311; Bay St. Louis Roads (Group Ave B)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All of the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Approx. Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Asphalt
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201007; Bay St louis Roads (Group Road 556 & 558)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads
- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 12.6
- **Number of Lanes:** 2

Damage #1201009; Bay St. Louis Roads (Group Garden Isle)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** City of Bay Saint Louis Roads

- **Facility Description:** All the city streets service public access and including school bus, 911 routes and all other emergency services.
- **Year Built:** 1978
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bituminous Surface Treatment (chip and seal)
- **GPS Latitude/Longitude:** 30.31706, -89.34446
- **Width (ft):** 13
- **Number of Lanes:** 2

Damage #1201012; Bay St. Louis Roads (Group Lagan)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** Local community, including school bus & 911 emergency routes.
- **Facility Description:** Multiple community roadways, with varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double Bitumen (chip n seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201014; Bay St. Louis roads (Group HWY 603)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General community use, including school bus routes and 911 emergency service routes.
- **Facility Description:** These roads are of varying widths and lengths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Damage #1201017; Bay St. Louis Roads (Group Central)

General Facility Information:

- **Facility Type:** Roads (No Culverts)
- **Facility:** General residential community use, including School bus routes & 911 emergency service routes.
- **Facility Description:** Varying road lengths and widths.
- **Approx. Year Built:** 1950
- **Location Description:** 688 Hwy 90 Bay Saint Louis MS 39520 City Hall meeting Location GPS below is also the meeting location
- **Road Type:** Double bitumen (chip & seal)
- **Width (ft):** 14
- **Number of Lanes:** 2

Final Scope

934311 Bay St. Louis Roads (Group Ave B)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

10th Street Ave B:

GPS Start 30.320218, -89396440, Stop 30.320218, -89.396859:

1. Remove and Replace 7.583333 CY of Double Bituminous Surface Treatment, 130 FT long x 12.6 FT wide x 1.5 IN deep.

10th Street to 15th Street Ave A:

GPS Start 30.320219, -89.393442, Stop 30.323342, -89.393460:

2. Remove and Replace 83.333333 CY of Double Bituminous Surface Treatment, 1,200 FT long x 15 FT wide x 1.5 IN deep.

12th Street Ave D:

GPS Start 30.321553, -89.400219, Stop 30.321585, -89.399824:

3. Remove and Replace 6.296296 CY of Double Bituminous Surface Treatment, 100 FT long x 13.6 FT wide x 1.5 IN deep.

13th Street Ave B:

DP1:

GPS 30.322116, -89.394528:

4. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 9 FT long x 11 FT wide x 6 IN deep.

5. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200, 9 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322539, -89.395815, Stop 30.322156, -89.393471:

6. Remove and Replace 49.583333 CY of Double Bituminous Surface Treatment, 850 FT long x 12.6 FT wide x 1.5 IN deep.

14th Street Ave B:

DP1:

GPS 30.322754, -89.397557:

7. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 21 FT long x 4 FT wide x 6 IN deep.

DP2:

GPS 30.322808, -89.399375:

8. Remove and Replace 1.222222 CY of 610 stone or crushed concrete, 11 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.322839, -89.396099, Stop 30.322805, -89.400249:

9. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

15th Street Ave B:

GPS Start 30.323741, -89.395181, Stop 30.323471, -89.396717:

10. Remove and Replace 12.541667 CY of Double Bituminous Surface Treatment, 215 FT long x 12.6 FT wide x 1.5 IN deep.

17th Street Ave B:

GPS Start 30.324883, -89.396095, Stop 30.325088, -89.398872:

11. Remove and Replace 8.75 CY of Double Bituminous Surface Treatment, 150 FT long x 12.6 FT wide x 1.5 IN deep.

18th Street Ave B:

DP1:

GPS 30.325073, -89.397590:

12. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

13. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.325402, -89396018, Stop 30.325524, -89.399108:

14. Remove and Replace 59.208333 CY of Double Bituminous Surface Treatment, 1,015 FT long x 12.6 FT wide x 1.5 IN deep.

2nd Street to Ave A Ave B:

GPS Start 30.314805, -89.396081, Stop 30.314340, -89.393492:

15. Remove and Replace 48.416667 CY of Double Bituminous Surface Treatment, 830 FT long x 12.6 FT wide x 1.5 IN deep.

7th Street Ave B:

GPS Start 30.318190, -89.396099, Stop 30.318246, -89.397351:

16. Remove and Replace 22.75 CY of Double Bituminous Surface Treatment, 390 FT long x 12.6 FT wide x 1.5 IN deep.

8th Street Ave B:

DP1:

GPS 30.318860, -89.395133:

17. Remove and Replace 2.566667 CY of 610 stone or crushed concrete, 11 FT long x 12.6 FT wide x 6 IN deep.

18. Remove and Replace 3.422222 CY of Sand with less than 20% passing 200, 11 FT long x 12.6 FT wide x 8 IN deep.

DP2:

GPS 30.318882, -89.396534:

19. Remove and Replace 2.1 CY of 610 stone or crushed concrete, 9 FT long x 12.6 FT wide x 6 IN deep.

20. Remove and Replace 2.8 CY of Sand with less than 20% passing 200, 9 FT long x 12.6 FT wide x 8 IN deep.

GPS Start 30.318802, -89.393486, Stop 30.318905, -89.400269:

21. Remove and Replace 125.008333 CY of Double Bituminous Surface Treatment, 2,143 FT long x 12.6 FT wide x 1.5 IN deep.

9th Street Ave B:

GPS Start 30.319413, -89396383, Stop 30.319377, -89.396362:

22. Remove and Replace 13.416667 CY of Double Bituminous Surface Treatment, 230 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A & Sixth ST to Ave B:

DP1:

GPS 30.317587, -89.395077:

23. Remove and Replace 0.166667 CY of 610 stone or crushed concrete, 3 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.222222 CY of Sand with less than 20% passing 200, 3 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.317548, -89.33497, Stop 30.317563, -89.396054:

25. Remove and Replace 63.466667 CY of Double Bituminous Surface Treatment, 1,088 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A &4th Street To Ave D:

DP1:

GPS 30.316004, -89.89.401101:

26. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 6 FT long x 3 FT wide x 6 IN deep.

27. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200, 6 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.316243, -89.393467, Stop 30.316397, -89.400384:

28. Remove and Replace 129.225833 CY of Double Bituminous Surface Treatment, 2,215.3 FT long x 12.6 FT wide x 1.5 IN deep.

Ave A to 6th Street:

DP1:

GPS 30.315849, -89.393504:

29. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

GPS Start 30.314340, -89.393492, Stop 30.317487, -89.393442:

30. Remove and Replace 65.041667 CY of Double Bituminous Surface Treatment, 1,115 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & 5th Street To Ave D:

DP1:

GPS 30.316934, -89.398698:

31. Remove and Replace 2.851852 CY of 610 stone or crushed concrete, 22 FT long x 7 FT wide x 6 IN deep.

GPS 30.617557, -89.396393, Stop 30.317063, -89.396254:

32. Remove and Replace 124.075 CY of Double Bituminous Surface Treatment, 2,127 FT long x 12.6 FT wide x 1.5 IN deep.

Ave B & Sixth ST to Ave D:

GPS Start 30.617557, -89.396393, -89.396139, Stop 30.317571, -89.396492:

33. Remove and Replace 75.833333 CY of Double Bituminous Surface Treatment, 1,300 FT long x 12.6 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

34. Remove and Replace 59.722222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Second Street Ave C:

GPS Start 30.315207, -89.398684, Stop 30.316888, -89.401183:

35. Remove and Replace 36.75 CY of Double Bituminous Surface Treatment, 630 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave A:

DP1:

GPS 30.315495, -89.395143:

36. Remove and Replace 6.333333 CY of 610 stone or crushed concrete, 38 FT long x 9 FT wide x 6 IN deep.

37. Remove and Replace 8.444444 CY of Sand with less than 20% passing 200, 38 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314854, -89.396063, Stop 30.315541, -89.393526:

38. Remove and Replace 47.541667 CY of Double Bituminous Surface Treatment, 815 FT long x 12.6 FT wide x 1.5 IN deep.

Third Street Ave B to Ave C:

GPS Start 30.615552, -89.397145, Stop 30.315371, -89.395978:

39. Remove and Replace 20.462963 CY of Double Bituminous Surface Treatment, 340 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $303,533.43

Project Notes:

1. All site estimates for work to be completed were generated by the FEMA CRC using RSMeans, 2022, 2nd Quarter, Biloxi, MS. See attachment labeled “552697 - DR4626 - FEMA Cost Estimate.xlsx”.

2. All procurement documents have been provided and reviewed. See attachment “Mississippi State Procurement Manual”.

3. Applicant will comply with its local, state, federal procurement laws, regulations and procedures.

4. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

5. **Equipment:** When an individual item of equipment is no longer needed for federally funded programs or projects, non-state Applicants must follow the requirements of 2 CFR § 200.313(c)-(e) stipulating that, when an individual item of equipment is no longer needed for this project and/or other federally funded programs or projects, Applicants must calculate the item’s current fair market value (FMV). If the per-unit FMV is $5,000 or more, FEMA will reduce eligible funding by the FMV. The Applicant must demonstrate compliance with the disposition requirements of 2 CFR 200.313 at closeout.

6. **Supplies:** When supplies are no longer needed for federally funded programs or projects, all Applicants, including State and Territorial government Applicants, must calculate the current fair market value of any unused residual supplies (including materials) that FEMA funded for any of its projects and determine the aggregate total. The Applicant must provide the current fair market value if the aggregate total of unused residual supplies is greater than $5,000. FEMA reduces eligible funding by this amount.144 If the aggregate total of unused residual supplies is less than $5,000, FEMA does not reduce the eligible funding.

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

934311 Hazard Mitigation - Placement of Geogrid 27,236.00 SY $6.00 $163,416.00
HMP C/B % = ($163,416.00/$781,532.46) x 100 = 20.91% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR4626- MS

GM Damage Inventory #: 934311

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 20 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $303,533.43

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 25,272 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	25,272 SY @$7.50/SY =	$189,542.98
	Total =	$189,542.98

Total Mitigation Costs for this DI = $189,542.98

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $189,542.98

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. **Net Hazard Mitigation cost(s): A – B = $189,542.98**

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($189,542.98/$303,533.43) x 100 = 62.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #934311 is $189,542.98 and is 62.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201007 Bay St louis Roads (Group Road 556 & 558)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

12th Street 556 to Ave A:

GPS Start 30.321426, -89.392394, Stop 30.321499, -89.393383:

1. Remove and Replace 21.666667 CY of Double Bituminous Surface Treatment, 360 FT long x 13 FT wide x 1.5 IN deep.

12th Street 558 to East End (dead end):

GPS Start 30.321520, -89.389919, Stop 30.321460, -89.388914:

2. Remove and Replace 21.546296 CY of Double Bituminous Surface Treatment, 358 FT long x 13 FT wide x 1.5 IN deep.

13th Street Dead End to 556:

DP1:

GPS 30.322145, -89.389938:

3. Remove and Replace 3.177778 CY of 610 stone or crushed concrete, 26 FT long x 6.6 FT wide x 6 IN deep.

4. Remove and Replace 4.237037 CY of Sand with less than 20% passing 200 sieve, 26 FT long x 6.6 FT wide x 8 IN deep.

GPS Start 30.322131, -89.387670, Stop 30.322181, -89.392286:

5. Remove and Replace 88.351852 CY of Double Bituminous Surface Treatment, 1,468 FT long x 13 FT wide x 1.5 IN deep.

14th Street 556 to Dead End:

DP1:

GPS 30.322842, -89.391816:

6. Remove and Replace 4.888889 CY of 610 stone or crushed concrete, 33 FT long x 8 FT wide x 6 IN deep.

7. Remove and Replace 6.518519 CY of Sand with less than 20% passing 200 sieve, 33 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.322787, -89.391407:

8. Remove and Replace 10.37037 CY of 610 stone or crushed concrete, 40 FT long x 14 FT wide x 6 IN deep.

9. Remove and Replace 13.82716 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 14 FT wide x 8 IN deep.

DP3:

GPS 30.3228880, -89.390564:

10. Remove and Replace 9.814815 CY of 610 stone or crushed concrete, 53 FT long x 10 FT wide x 6 IN deep.

11. Remove and Replace 13.08642 CY of Sand with less than 20% passing 200 sieve, 53 FT long x 10 FT wide x 8 IN deep.

DP4:

GPS 30.322845, -89.390199:

12. Remove and Replace 7.777778 CY of 610 stone or crushed concrete, 42 FT long x 10 FT wide x 6 IN deep.

13. Remove and Replace 10.37037 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 10 FT wide x 8 IN deep.

GPS Start 30.322865, -89.382245, Stop 30.322757, -89.390017:

14. Remove and Replace 49.930556 CY of Double Bituminous Surface Treatment, 719 FT long x 15 FT wide x 1.5 IN deep.

15th Street 558 to Jordan River Drive:

GPS Start 30.323473, -89.389906, Stop 30.323433, -89.388034:

15. Remove and Replace 59.944444 CY of Double Bituminous Surface Treatment, 830 FT long x 15.6 FT wide x 1.5 IN deep.

2nd Street 556 to 560:

DP1:

GPS 30.314588, -89.391165:

16. Remove and Replace 1.944444 CY of 610 stone or crushed concrete, 15 FT long x 7 FT wide x 6 IN deep.

17. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.314346, -89.390018:

18. Remove and Replace 0.37037 CY of 610 stone or crushed concrete, 5 FT long x 4 FT wide x 6 IN deep.

19. Remove and Replace 0.493827 CY of Sand with less than 20% passing 200 sieve, 5 FT long x 4 FT wide x 8 IN deep.

DP3:

GPS 30.314165, -89.388884:

20. Remove and Replace 1.833333 CY of 610 stone or crushed concrete, 11 FT long x 9 FT wide x 6 IN deep.

21. Remove and Replace 2.444444 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 9 FT wide x 8 IN deep.

GPS Start 30.314723, -89.392286, Stop 30.314133, -89.388331:

22. Remove and Replace 75.351852 CY of Double Bituminous Surface Treatment, 1,252 FT long x 13 FT wide x 1.5 IN deep.

3rd Street 560 to 556:

DP1:

GPS 30.315078, -89.390066:

23. Remove and Replace 0.444444 CY of 610 stone or crushed concrete, 8 FT long x 3 FT wide x 6 IN deep.

24. Remove and Replace 0.592593 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.314819, -89.388392, Stop 30.315450, -89.392352:

25. Remove and Replace 77.037037 CY of Double Bituminous Surface Treatment, 1,280 FT long x 13 FT wide x 1.5 IN deep.

4th Street 556 to 560:

DP1:

GPS 30.315788, -89.390764:

26. Remove and Replace 1.555556 CY of 610 stone or crushed concrete, 14 FT long x 6 FT wide x 6 IN deep.

27. Remove and Replace 2.074074 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS 30.315814, -89.390772:

28. Remove and Replace 0.740741 CY of 610 stone or crushed concrete, 8 FT long x 5 FT wide x 6 IN deep.

29. Remove and Replace 0.987654 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.316015, -89.392349, Stop 30.315729, -89.390055:

30. Remove and Replace 44.236111 CY of Double Bituminous Surface Treatment, 735 FT long x 13 FT wide x 1.5 IN deep.

558 Street 14th to 15th:

DP1:

GPS 30.315694, -89.390122:

31. Remove and Replace 8.555556 CY of 610 stone or crushed concrete, 42 FT long x 11 FT wide x 6 IN deep.

32. Remove and Replace 11.407407 CY of Sand with less than 20% passing 200 sieve, 42 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.322736, -89.389949, Stop 30.323271, -89.389971:

33. Remove and Replace 17.62963 CY of Double Bituminous Surface Treatment, 238 FT long x 16 FT wide x 1.5 IN deep.

558 Street 1st to 10th:

DP1:

GPS 30.314168, -89.390063:

34. Remove and Replace 23.703704 CY of 610 stone or crushed concrete, 160 FT long x 8 FT wide x 6 IN deep.

35. Remove and Replace 31.604938 CY of Sand with less than 20% passing 200 sieve, 160 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.319457, -89.389962:

36. Remove and Replace 6 CY of 610 stone or crushed concrete, 27 FT long x 12 FT wide x 6 IN deep.

37. Remove and Replace 8 CY of Sand with less than 20% passing 200 sieve, 27 FT long x 12 FT wide x 8 IN deep.

GPS Start 30.313752, -89.390031, Stop 30.320125, -89.389963:

38. Remove and Replace 162.15463 CY of Double Bituminous Surface Treatment, 2,399 FT long x 14.6 FT wide x 1.5 IN deep.

8th Street 560 to 556:

DP1:

GPS 30.318885, -89.391037:

39. Remove and Replace 1.166667 CY of 610 stone or crushed concrete, 9 FT long x 7 FT wide x 6 IN deep.

40. Remove and Replace 1.555556 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 7 FT wide x 8 IN deep.

DP2:

GPS 30.318961, -89.392042:

41. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

42. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

GPS Start 30.31875, -89.390017, Stop 30.318891, -89.392242:

43. Remove and Replace 43.935185 CY of Double Bituminous Surface Treatment, 730 FT long x 13 FT wide x 1.5 IN deep.

Work to be Completed Total: $227,082.10

Scope Notes:

1. Damage date was originally incorrectly entered for DI #1201007 in DDD. Correct Damage Dates between 8/28/2021 and 9/1/2021.

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201007 Hazard Mitigation - Placement of Geogrid 15,883.00 SY $6.00 $95,298.00

HMP C/B % = ($95,298.00/$510,145.28) x 100 = 18.68% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201007

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321426, -89.392394 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima/ HM 406 Specialist

HMP Date: May 27, 2022; Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $227,082.10

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 15,883 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	15,883 SY @$7.50/SY =	$119,121.17
	Total =	$119,121.17

Total Mitigation Costs for this DI = $119,121.17

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $119,121.17

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $119,121.17

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($119,121.17/$227,082.10) x 100 = 52.46% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201007 is $119,121.17 and is 52.46% of the repair and restoration costs

being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201009 Bay St. Louis Roads (Group Garden Isle)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2*******

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Road Damage:

Beverly to DeRoach:

GPS Start 30.321684, -89.378953, Stop 30.320534, -89.375797:

1. Remove and Replace 71.296296 CY of Double Bituminous Surface Treatment, 1,100 FT long x 14 FT wide x 1.5 IN deep.

Chapman to DeRoche Garden:

GPS Start 30.322913, -89.378365, Stop 30.321893, -89.375831:

2. Remove and Replace 59.7222 CY of Double Bituminous Surface Treatment, 860 FT long x 15 FT wide x 1.5 IN deep.

Clara Street Chapman to House:

DP1:

GPS 30.3229777, -89.379942:

3. Remove and Replace 0.333333 CY of 610 stone or crushed concrete, 9 FT long x 2 FT wide x 6 IN deep.

4. Remove and Replace 0.444444 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.322836, -89.380153:

5. Remove and Replace 0.055556 CY of 610 stone or crushed concrete, 3 FT long x 1 FT wide x 6 IN deep.

6. Remove and Replace 0.074074 CY of Sand with less than 20% passing 200 sieve, 3 FT long x 1 FT wide x 8 IN deep.

GPS Start 30.3223251, -89.378760, Stop 30.323288, -89.381047:

7. Remove and Replace 53.925926 CY of Double Bituminous Surface Treatment, 832 FT long x 14 FT wide x 1.5 IN deep.

Clara Street DeRoach to Chapman:

DP1:

GPS 30.321561, -89.326920:

8. Remove and Replace 0.222222 CY of 610 stone or crushed concrete, 6 FT long x 2 FT wide x 6 IN deep.

9. Remove and Replace 0.296296 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 2 FT wide x 8 IN deep.

DP2:

GPS 30.321629, -89.322035:

10. Remove and Replace 3.111111 CY of 610 stone or crushed concrete, 21 FT long x 8 FT wide x 6 IN deep.

11. Remove and Replace 4.148148 CY of Sand with less than 20% passing 200 sieve, 21 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.322181, -89.378367:

12. Remove and Replace 1 CY of 610 stone or crushed concrete, 18 FT long x 3 FT wide x 6 IN deep.

13. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 18 FT long x 3 FT wide x 8 IN deep.

DP4:

GPS 30.322312, -89.378596:

14. Remove and Replace 0.814815 CY of 610 stone or crushed concrete, 11 FT long x 4 FT wide x 6 IN deep.

15. Remove and Replace 1.08642 CY of Sand with less than 20% passing 200 sieve, 11 FT long x 4 FT wide x 8 IN deep.

GPS Start 30.321227, -89.375829, Stop 30.32291, -89.378719:

16. Remove and Replace 64.555556 CY of Double Bituminous Surface Treatment, 996 FT long x 14 FT wide x 1.5 IN deep.

Daffodil Drive Chapman to Primrose:

DP1:

GPS 30.323542, -89.375749:

17. Remove and Replace 3 CY of 610 stone or crushed concrete, 54 FT long x 3 FT wide x 6 IN deep.

18. Remove and Replace 4 CY of Sand with less than 20% passing 200 sieve, 54 FT long x 3 FT wide x 8 IN deep.

DP2:

GPS 30.322683, -89.375538:

19. Remove and Replace 0.844444 CY of 610 stone or crushed concrete, 6 FT long x 7.6 FT wide x 6 IN deep.

20. Remove and Replace 1.125926 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 7.6 FT wide x 8 IN deep.

Dafodil Drive Chapman to Primrose:

GPS Start 30.323542, -89.378083, Stop 30.322445, -89.375273:

21. Remove and Replace 70.075926 CY of Double Bituminous Surface Treatment, 958 FT long x 15.8 FT wide x 1.5 IN deep.

Lilac from Chapman:

DP1:

GPS Start 30.324403, -89.376653 End 30.324254, -89.376250:

22. Remove and Replace 14.555556 CY of 610 stone or crushed concrete, 131 FT long x 6 FT wide x 6 IN deep.

23. Remove and Replace 19.407407 CY of Sand with less than 20% passing 200 sieve, 131 FT long x 6 FT wide x 8 IN deep.

DP2:

GPS Start 30.324142, -89.375967:

24. Remove and Replace 8.148148 CY of 610 stone or crushed concrete, 40 FT long x 11 FT wide x 6 IN deep.

25. Remove and Replace 10.864198 CY of Sand with less than 20% passing 200 sieve, 40 FT long x 11 FT wide x 8 IN deep.

DP3:

GPS 30.323793, -89.374701:

26. Remove and Replace 57.037037 CY of 610 stone or crushed concrete, 280 FT long x 11 FT wide x 6 IN deep.

27. Remove and Replace 76.049383 CY of Sand with less than 20% passing 200 sieve, 280 FT long x 11 FT wide x 8 IN deep.

DP4:

GPS 30.324684, -89.377072:

28. Remove and Replace 2.444444 CY of 610 stone or crushed concrete, 22 FT long x 6 FT wide x 6 IN deep.

29. Remove and Replace 3.259259 CY of Sand with less than 20% passing 200 sieve, 22 FT long x 6 FT wide x 8 IN deep.

DP5:

GPS 30.324361, -89.376064:

30. Remove and Replace 5.166667 CY of 610 stone or crushed concrete, 31 FT long x 9 FT wide x 6 IN deep.

31. Remove and Replace 6.888889 CY of Sand with less than 20% passing 200 sieve, 31 FT long x 9 FT wide x 8 IN deep.

DP6:

GPS 30.324321, -89.376238:

32. Remove and Replace 3.62963 CY of 610 stone or crushed concrete, 28 FT long x 7 FT wide x 6 IN deep.

33. Remove and Replace 4.839506 CY of Sand with less than 20% passing 200 sieve, 28 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.329726, -89.378111, Stop 30.324014, -89.375511:

34. Remove and Replace 56.064815 CY of Double Bituminous Surface Treatmeant, 865 FT long x 14 FT wide x 1.5 IN deep.

Marigold Primrose to Chapman:

DP1:

GPS 30.323523, -89.89.376529:

35. Remove and Replace 9.338889 CY of 610 stone or crushed concrete, 41 FT long x 12.3 FT wide x 6 IN deep.

36. Remove and Replace 12.451852 CY of Sand with less than 20% passing 200 sieve, 41 FT long x 12.3 FT wide x 8 IN deep.

GPS Start 30.323078, -89.375046, Stop 30.323990, -89.377845:

37. Remove and Replace 80.083333 CY of Double Bituminous Surface Treatment, 961 FT long x 18 FT wide x 1.5 IN deep.

Work to be Completed Total: $140,820.95

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201009 Hazard Mitigation - Placement of Geogrid 10,938.00 SY $6.00 $65,628.00
HMP C/B % = ($65,628.00/$390,866.16) x 100 = 16.79% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project #: 552697

DR-4626- MS

GM Damage Inventory # 1201009

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321227, -89.375829 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 6 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $140,820.95

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 8,959 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	8,959 SY @$7.50/SY =	$67,196.00
	Total =	$67,196.00

Total Mitigation Costs for this DI = $67,196.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,196.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,196.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,196.00/$140,820.95) x 100 = 47.72% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201009 is $67,196.00 and is 47.72% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201012 Bay St. Louis Roads (Group Lagan)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2*******

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual

road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

1st Street (Lagan to End):

DP1:

GPS 30.323647, -89.415307:

1. Remove and Replace 2.592593 CY of Sand with less than 20% passing 200 sieve, 17.5 FT long x 8 FT wide x 6 IN deep.

2. Remove and Replace 3.45679 CY of 610 stone or crushed concrete, 17.5 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.323787, -89.415511:

3. Remove and Replace 4.074074 CY of Sand with less than 20% passing 200 sieve, 27.5 FT long x 8 FT wide x 6 IN deep.

4. Remove and Replace 5.432099 CY of 610 stone or crushed concrete, 27.5 FT long x 8 FT wide x 8 IN deep.

DP3:

GPS 30.323847, -89.415595:

5. Remove and Replace 1.762963 CY of Sand with less than 20% passing 200 sieve, 11.9 FT long x 8 FT wide x 6 IN deep.

6. Remove and Replace 2.350617 CY of 610 stone or crushed concrete, 11.9 FT long x 8 FT wide x 8 IN deep.

DP4:

GPS 30.324001, -89.415885:

7. Remove and Replace 44 CY of Sand with less than 20% passing 200 sieve, 118.8 FT long x 20 FT wide x 6 IN deep.

8. Remove and Replace 58.666667 CY of 610 stone or crushed concrete, 118.8 FT long x 20 FT wide x 8 IN deep.

DP5:

GPS 30.324491, -89.416664:

9. Remove and Replace 18.777778 CY of Sand with less than 20% passing 200 sieve, 50.7 FT long x 20 FT wide x 6 IN deep.

10. Remove and Replace 25.037037 CY of 610 stone or crushed concrete, 50.7 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.323233, -89.414584, Stop 30.324584, -89.416803:

11. Remove and Replace 83.185185 CY of Double Bituminous Surface Treatment, 898.4 FT long x 20 FT wide x 1.5 IN

deep.

1st Street to Ave H:

DP1:

GPS 30.321355, -89.411517:

12. Remove and Replace 2.814815 CY of 610 stone or crushed concrete, 30.4 FT long x 5 FT wide x 6 IN deep.

13. Remove and Replace 3.753086 CY of Sand with less than 20% passing 200 sieve, 30.4 FT long x 5 FT wide x 8 IN deep.

DP2:

GPS 30.321970, -89.412486:

14. Remove and Replace 1 CY of 610 stone or crushed concrete, 9 FT long x 6 FT wide x 6 IN deep.

15. Remove and Replace 1.333333 CY of Sand with less than 20% passing 200 sieve, 9 FT long x 6 FT wide x 8 IN deep.

DP3:

GPS 30.322046, -89.412759:

16. Remove and Replace 1.333333 CY of 610 stone or crushed concrete, 6 FT long x 12 FT wide x 6 IN deep.

17. Remove and Replace 1.777778 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 12 FT wide x 8 IN deep.

DP4:

GPS 30.322231, -89.412918:

18. Remove and Replace 8.118519 CY of 610 stone or crushed concrete, 8 FT long x 54.8 FT wide x 6 IN deep.

19. Remove and Replace 10.824691 CY of Sand with less than 20% passing 200 sieve, 8 FT long x 54.8 FT wide x 8 IN deep.

DP5:

GPS 30.322467, -89.413306:

20. Remove and Replace 1.481481 CY of 610 stone or crushed concrete, 10 FT long x 8 FT wide x 6 IN deep.

21. Remove and Replace 1.975309 CY of Sand with less than 20% passing 200 sieve, 10 FT long x 8 FT wide x 8 IN deep.

DP6:

GPS 30.322666, -89.413710:

22. Remove and Replace 14.748148 CY of 610 stone or crushed concrete, 72.4 FT long x 11 FT wide x 6 IN deep.

23. Remove and Replace 19.664198 CY of Sand with less than 20% passing 200 sieve, 72.4 FT long x 11 FT wide x 8 IN deep.

DP7:

GPS 30.322910, -89.414048:

24. Remove and Replace 26.62963 CY of 610 stone or crushed concrete, 71.9 FT long x 20 FT wide x 6 IN deep.

25. Remove and Replace 35.506173 CY of Sand with less than 20% passing 200 sieve, 71.9 FT long x 20 FT wide x 8 IN deep.

GPS Start 30.321057, -89.411090, Stop 30.323174, -89.414513:

26. Remove and Replace 129.62963 CY of Double Bituminous Surface Treatment, 1,400 FT long x 20 FT wide x 1.5 IN deep.

2nd Street from Logan:

DP1:

GPS Start 30.323900, -89.413519:

27. Remove and Replace 19.351852 CY of 610 stone or crushed concrete, 55 FT long x 19 FT wide x 6 IN deep.

28. Remove and Replace 25.802469 CY of Sand with less than 20% passing 200 sieve, 55 FT long x 19 FT wide x 8 IN deep.

DP2:

GPS Start 30.323456, -89.412759:

29. Remove and Replace 1.296296 CY of 610 stone or crushed concrete, 14 FT long x 5 FT wide x 6 IN deep.

30. Remove and Replace 1.728395 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 5 FT wide x 8 IN deep.

GPS Start 30.324098, -89.413764, Stop 30.321980, -89.410293:

31. Remove and Replace 117.518519 CY of Double Bituminous Surface Treatment, 1,336 FT long x 19 FT wide x 1.5 IN deep.

Ave H:

DP1:

GPS 30.321678, -89.410518:

32. Remove and Replace 1.9753 CY of Sand with less than 20% passing 200 sieve, 16 FT long x 5 FT wide x 8 IN deep.

33. Remove and Replace 0.987654 CY of 610 stone or crushed concrete, 5 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.322137, -89.410103, Stop 30.321057, -89.411090:

34. Remove and Replace 28.525 CY of Double Bituminous Surface Treatment, 489 FT long x 12.6 FT wide x 1.5 IN deep.

Work to be Completed Total:$119,773.56

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201012 Hazard Mitigation - Placement of Geogrid 8,613.00 SY $6.00 $51,678.00

HMP C/B % = ($51,678.00/$371,822.32) x 100 = 13.90% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory #: 1201012

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.321057, -89.411090 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 4 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $119,773.56

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 9,015 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	9,015 SY @$7.50/SY =	$67,610.00
	Total =	$67,610.00

Total Mitigation Costs for this DI = $67,610.00

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $67,610.00

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $67,610.00

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($67,610.00/$119,773.56) x 100 = 56.45% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201012 is $67,610.00 and is 56.45% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201014 Bay St. Louis roads (Group HWY 603)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2********

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Boat Launch Service Roads:

GPS Start 30.327479, -89.422656, Stop 30.329087, -89.423849:

1. Remove and Replace 49.925926 CY of Double Bituminous Surface Treatment, 674 FT long x 16 FT wide x 1.5 IN deep.

Elbrus:

GPS Start 30.324672, -89.422524, Stop 30.323903, -89.424488:

2. Remove and Replace 49.86 CY of Double Bituminous Surface Treatment, 718 FT long x 15 FT wide x 1.5 IN deep.

Etna:

DP1:

GPS 30.327854, -89.425022:

3. Remove and Replace 0.777778 CY of 610 stone or crushed concrete, 14 FT long x 3 FT wide x 6 IN deep.

4. Remove and Replace 1.037037 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 3 FT wide x 8 IN deep.

GPS Start 30.328771, -89.425736, Stop 30.327508, -89.424827:

5. Remove and Replace 30.111111 CY of Double Bituminous Surface Treatment, 542 FT long x 12 FT wide x 1.5 IN deep.

Everest:

GPS Start 30.326991, -89.423590, Stop 30.324167, -89.422189:

6. Remove and Replace 95.083333 CY of Double Bituminous Surface Treatment, 1,141 FT long x 18 FT wide x 1.5 IN deep.

Irazu:

DP1:

GPS 30.322476, -89.419386:

7. Remove and Replace 3.333333 CY of Sand with less than 20% passing 200 sieve, 15 FT long x 9 FT wide x 8 IN deep.

8. Remove and Replace 0.625 CY of Double Bituminous Surface Treatment, 15 FT long x 9 FT wide x 1.5 IN deep.

GPS Start 30.321966, -89.420173, Stop 30.322936, -89.418982:

9. Remove and Replace 39.7037 CY of Double Bituminous Surface Treatment, 536 FT long x 16 FT wide x 1.5 IN.

Logan:

GPS Start 30.325262, -89.424901, Stop 30.326185, -89.423222 (no Damage):

10. Remove and Replace 45.111111 CY of Double Bituminous Surface Treatment, 609 FT long x 16 IN wide x 1.5 IN deep.

Nile:

DP1:

GPS 30.316941, -89.408831:

11. Remove and Replace 13.851852 CY of 610 stone or crushed concrete, 68 FT long x 11 FT wide x 6 IN deep.

12. Remove and Replace 18.469136 CY of Sand with less than 20% passing 200 sieve, 68 FT long x 11 FT wide x 8 IN deep.

GPS Start 30.316480, -89.408101, Stop 30.317760, -89.410180:

13. Remove and Replace 66.666667 CY of Double Bituminous Surface Treatment, 800 FT long x 18 FT wide x 1.5 IN deep.

Pearl:

DP1:

Gps 30.317807, -89.411445:

14. Remove and Replace 1.814815 CY of 610 stone or crushed concrete, 14 FT long x 7 FT wide x 6 IN deep.

15. Remove and Replace 2.419753 CY of Sand with less than 20% passing 200 sieve, 14 FT long x 7 FT wide x 8 IN deep.

GPS Start 30.317826, -89.410303, Stop 30.317785, -89.412501:

16. Remove and Replace 51.925926 CY of Double Bituminous Surface Treatment, 701 FT long x 16 FT wide x 1.5 IN deep.

Rainer:

DP1:

GPS 30.326627, -89.424468:

17. Remove and Replace 9.481481 CY of 610 stone or crushed concrete, 64 FT long x 8 FT wide x 6 IN deep.

18. Remove and Replace 12.641975 CY of Sand with less than 20% passing 200 sieve, 64 FT long x 8 FT wide x 8 IN deep.

GPS Start 30.326301, -89.425270, Stop 30.327077, -89.423287:

19. Remove and Replace 76.111111 CY of Double Bituminous Surface Treatment, 685 FT long x 24 FT wide x 1.5 IN deep.

Rushmore Street:

GPS Start 30.328777, -89.425736, Stop 30.328608, -89.426326:

20. Remove and Replace 11.333333 CY of Double Bituminous Surface Treatment, 204 FT long x 12 FT wide x 1.5 IN deep.

Work to be Completed Total: $146,645.26

406 HMP Scope

GM Version 2

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201014 Hazard Mitigation - Placement of Geogrid 12,380.00 SY $6.00 $74,280.00
HMP C/B % = ($74,280.00/$371,561.98) x 100 = 19.99% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project # 552697

DR-4626- MS

GM Damage Inventory # 1201014

Site Name & Address: Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 10 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $146,645.26

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 12,126 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	12,126 SY @$7.50/SY =	$90,948.33
	Total =	$90,948.33

Total Mitigation Costs for this DI = $90,948.33

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $90,948.33

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $90,948.33

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($90,948.33/$146,645.26) x 100 = 62.02% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201014 is $90,948.33 and is 62.02% of the repair and restoration costs being protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

1201017 Bay St. Louis Roads (Group Central)

****** Version 3 ****** This version has been prepared to document the Subrecipient's request for an improved project. In Lieu of repairing the roads using DBST, the Subrecipient intends to use asphalt. Pursuant to 44 CFR § 206.203(d). Federal funding for such improved projects shall be limited to the Federal share of the approved estimate of eligible costs.

*******GM Version 2*******

Per Amendment Request from Applicant, FEMA Management has increased the cost estimate for each Damage Inventory item as per the lowest Bid costs and added prorated Mobilization and Traffic Maintenace costs as well. For a complete breakdown of costs per individual road and line item, see the attached extract document, 'DR 4626 Bay St Louis [552697] Request to Amend Cost based on Bid - Bid extract.pdf'. HMP costs were decreased in the Bid cost estimate and will be adjusted to align with the Amendment Request and this version.

Work to be Completed

The applicant will utilize contract and/or force account for repairs to City of Bay St. Louis to restore this facility back to its pre-disaster design, function and capacity (in-kind) within the existing footprint.

Gull:

GPS Start 30.331841, -89.-89.406126, Stop 30.333843, -89.404563:

1. Remove and Replace 46.851852 CY of Double Bituminous Surface Treatment, 880 FT long x 11.5 FT wide x 1.5 IN deep.

Heron:

DP1:

GPS 30.331948, -89.405193:

2. Remove and Replace 1.777778 CY of 610 stone or crushed concrete, 12 FT long x 8 FT wide x 6 IN deep.

3. Remove and Replace 2.37037 CY of Sand with less than 20% passing 200 sieve, 12 FT long x 8 FT wide x 8 IN deep.

DP2:

GPS 30.331948, -89.405193:

4. Remove and Replace 0.888889 CY of Sand with less than 20% passing 200 sieve, 6 FT long x 6 FT wide x 8 IN deep.

GPS 30.331948, -89.405193:

5. Remove and Replace 0.666667 CY of 610 stone or crushed concrete, 6 FT long x 6 FT wide x 6 IN deep.

GPS Start 30.333875, -89.403577, Stop 30.331866, -89.405209:

6. Remove and Replace 62.083333 CY of Double Bituminous Surface Treatment, 894 FT long x 15 FT wide x 1.5 IN deep.

Kingfisher:

GPS Start 30.331887, -89.404316, Stop 30.333813, -89.404578:

7. Remove and Replace 63.736111 CY of Double Bituminous Surface Treatment, 917.8 FT long x 15 FT wide x 1.5 IN deep.

Work to be Completed Total: $48,173.88

406 HMP Scope

*****GM Version 2*****

Per Applicant version request, Bid cost documents submitted with the following HMP scope and cost:

1201017 Hazard Mitigation - Placement of Geogrid 4,042.00 SY $6.00 $24,252.00
HMP C/B % = ($24,252.00/$115,318.82) x 100 = 21.03% ≤ 100%

Hazard Mitigation Proposal (HMP):

GM Project #: 552697_

DR-4626- MS

GM Damage Inventory #: 1201017

Site Name & Address Bay St. Louis Roads/688 Hwy 90 Bay Saint Louis, MS 39520

GPS Lat / Lon: 30.31706, -89.34446 (various site locations)

HMP writer Name and Title: Roshan Karna, Civil Engineer & Tamika Ali-Yerima, HM 406 Specialist

HMP Date: May 27, 2022, Revised on September 30, 2022

****

Work to be Completed

(I) Damage Description & Dimensions (DDD):

Due to the storm event from Hurricane Ida within August 28 to September 1, 2002, heavy storm wind and rain caused damages to approximately 3 road sections at various locations within City of Bay St. Louis such as road washouts, potholes, and shoulder erosion. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections.

Total repair cost of damaged elements being protected by the HMP at this DI = $48,173.88

(II) Hazard Mitigation Proposal (HMP) Scope of Work:

Mitigation consists of using 4,051 SY of geogrid between the pavement section (chip seal) and subbase to strengthen subgrade. See document with filename "HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of" for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost provided by the Applicant,

Installation of geogrid =	4,051 SY @$7.50/SY =	$30,380.83
	Total =	$30,380.83

Total Mitigation Costs for this DI = $30,380.83

(III) Hazard Mitigation Proposal (HMP) Cost:

A. Gross cost(s) of Mitigation if the HMP is Approved = $30,380.83

B. Less cost(s) of Items not needed if the HMP is Approved = $0

C. Net Hazard Mitigation cost(s): A – B = $30,380.83

(IV) Cost Effectiveness Calculation:

HMP Cost/Benefit % = (Net Hazard Mitigation Cost /Total like and in-kind repair cost) X 100

HMP C/B % = ($30,380.83/$48,173.88) x 100 = 63.06% ≤ 100%

(V) HMP Cost-Effectiveness:

The Hazard Mitigation Proposal for this single DI #1201017 is $30,380.83 and is 63.06% of the repair and restoration costs being

protected. In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4.0 June 2020, Chapter 8, IV Section A and Appendix J. Section I. B, this mitigation measure does not exceed 100 percent of the eligible repair cost and is considered to be cost-effective.

(VI) Compliances and Assurances:

This HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, choice of contractors or vendors, permits and compliance with all regulatory codes and standards of the State of Mississippi. FEMA will pay only the incremental difference in cost between repairs and mitigation and will not duplicate funding for repair or replacement of eligible work.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the sites.

HMP Notes:

1. The mitigation proposal cost estimate was generated using cost estimate provided by the applicant. See document with filename “HM DR4626MS HM Applicant Supplied Total Mitigation Scope and Cost Estimate Project #552697 Bay St. Louis, City of” for GPS coordinates of each damaged road sections where geogrid will be placed.

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	$303,533.43	Uncompleted
9001	1	Lump Sum	$227,082.10	Uncompleted
9001	1	Lump Sum	$140,820.95	Uncompleted
9001	1	Lump Sum	$119,773.56	Uncompleted
9001	1	Lump Sum	$146,645.26	Uncompleted
9001	1	Lump Sum	$48,173.88	Uncompleted
9001	1	Lump Sum	$477,999.03	Uncompleted
9001	1	Lump Sum	$69,262.68	Uncompleted
9001	1	Lump Sum	$53,870.96	Uncompleted
9001	1	Lump Sum	$283,063.18	Uncompleted
9001	1	Lump Sum	$51,817.40	Uncompleted
9001	1	Lump Sum	$40,302.43	Uncompleted
9001	1	Lump Sum	$250,045.21	Uncompleted
9001	1	Lump Sum	$32,133.65	Uncompleted
9001	1	Lump Sum	$24,992.84	Uncompleted
9001	1	Lump Sum	$224,916.72	Uncompleted
9001	1	Lump Sum	$33,462.68	Uncompleted
9001	1	Lump Sum	$26,026.53	Uncompleted
9001	1	Lump Sum	$252,048.76	Uncompleted
9001	1	Lump Sum	$27,330.89	Uncompleted
9001	1	Lump Sum	$21,257.36	Uncompleted
9001	1	Lump Sum	$67,144.94	Uncompleted
9001	1	Lump Sum	$10,992.70	Uncompleted
9001	1	Lump Sum	$8,549.88	Uncompleted

CRC Gross Cost	$2,941,247.02
Total 406 HMP Cost	$474,552.00
Total Insurance Reductions	$0.00
CRC Net Cost	$3,415,799.02
Federal Share (90.00%)	$3,074,219.12
Non-Federal Share (10.00%)	$341,579.90

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient’s completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.

Insurance

Additional Information

04/08/2025 - Lewis McKay, Insurance Specialist - There are no insurance implications that pertain to this project. There will be no requirement to obtain and maintain insurance.

O&M Requirements

There are no Obtain and Maintain Requirements on **Bay St. Louis Roads** .

406 Mitigation

There is no additional mitigation information on **Bay St. Louis Roads** .

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? Yes

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material is from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout
- Construction activities and equipment storage and staging activities are not to be located in or impact any adjacent wetlands.

EHP Additional Info

There is no additional environmental historical preservation on **Bay St. Louis Roads** .

Final Reviews

Final Review

Reviewed By Not Reviewed

Reviewed On Not Reviewed

Review Comments

No comments available for the Final Review step

Recipient Review

Reviewed By Not Reviewed

Reviewed On Not Reviewed

Review Comments

No comments available for the Final Review step

Project Signatures

Reviewed By Unsigned

Reviewed On Unsigned

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-04-MS-4626-PW-00180(271)	$1,550,828.49	90%	$1,395,745.64	11/30/2022

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #
0	11/30/2022	$1,395,745.64	90%	Accepted	4626DRMSP00001801
2	2/11/2025	$1,678,473.48	90%	Accepted	4626DRMSP00001801