



DIAMONDHEAD COMMERCIAL DISTRICT TRANSFORMATION PROJECT

UNITED STATES DEPARTMENT OF TRANSPORTATION
BETTER UTILIZING INVESTMENTS TO LEVERAGE DEVELOPMENT
GRANT APPLICATION



Funding Opportunity Number: DTOS59-20-RA-BUILD
Funding Opportunity Title: FY 2020 National Infrastructure Investments
CFDA #20.933 – NATIONAL INFRASTRUCTURE INVESTMENTS

Submitted by: The City of Diamondhead, Mississippi
POC: Mr. Michael Reso, City Manager, mreso@diamondhead.ms.gov
Phone (228) 222-4390

May 2020

Table of Contents

I. Project Description.....	3
II. Project Location.....	9
III. Grant Funds, Sources, and Uses of all Project Funding	12
IV. Selection Criteria.....	13
(1) Primary Selection Criteria	13
(a) Safety	13
(b) State of Good Repair.....	14
(c) Economic Competitiveness	14
(d) Environmental Sustainability.....	15
(e) Quality of Life.....	16
Increased Walkability.....	18
(2) Secondary Selection Criteria	18
(a) Innovation	18
(b) Partnership	20
V. Environmental Risk.....	21
Required Planning Documents:	23
VI. Benefit-Cost Analysis	24
VII. Federal Wage Certificate	29

I. Project Description

The City of Diamondhead is pleased to submit its **Commercial District Transformation Project** for funding to the U.S. Department of Transportation (USDOT) for the Fiscal Year 2020 Better Utilizing Investments to Leverage Development (BUILD) grant program. Diamondhead is a rural community that has long supported the aerospace industry and is expanding to accommodate future growth. Federal investments in NASA's jet propulsion test facility at John C. Stennis International Space Center are helping the Gulf Coast to grow. Renewed investment in space exploration and the defense industry are significant drivers of this growth.

HIGHLIGHTS

- ✓ Safety improvements of over \$34M
- ✓ Rural area
- ✓ Promotes energy independence by reducing regional VMT and VHT
- ✓ BCA is 12.24 to 1 using a 7% discount rate

The total investment in the project area, including betterments, is over \$27M. The federal funding for this project would provide the final funding needed for the City's transformation efforts. This project includes building a commercial corridor that will accommodate multiple modes of travel and provide for residential and business development. Diamondhead is requesting \$11.27M in federal funding through the BUILD grant program and will provide a local share match of \$1.25M for a total project of \$12.53M. The overall economic impact of this project is an increase in Gross Regional Product by \$61M and the creation of 565 jobs, with 24% of those having above-average wages. Diamondhead will provide the local match from surplus funds in its General Fund.



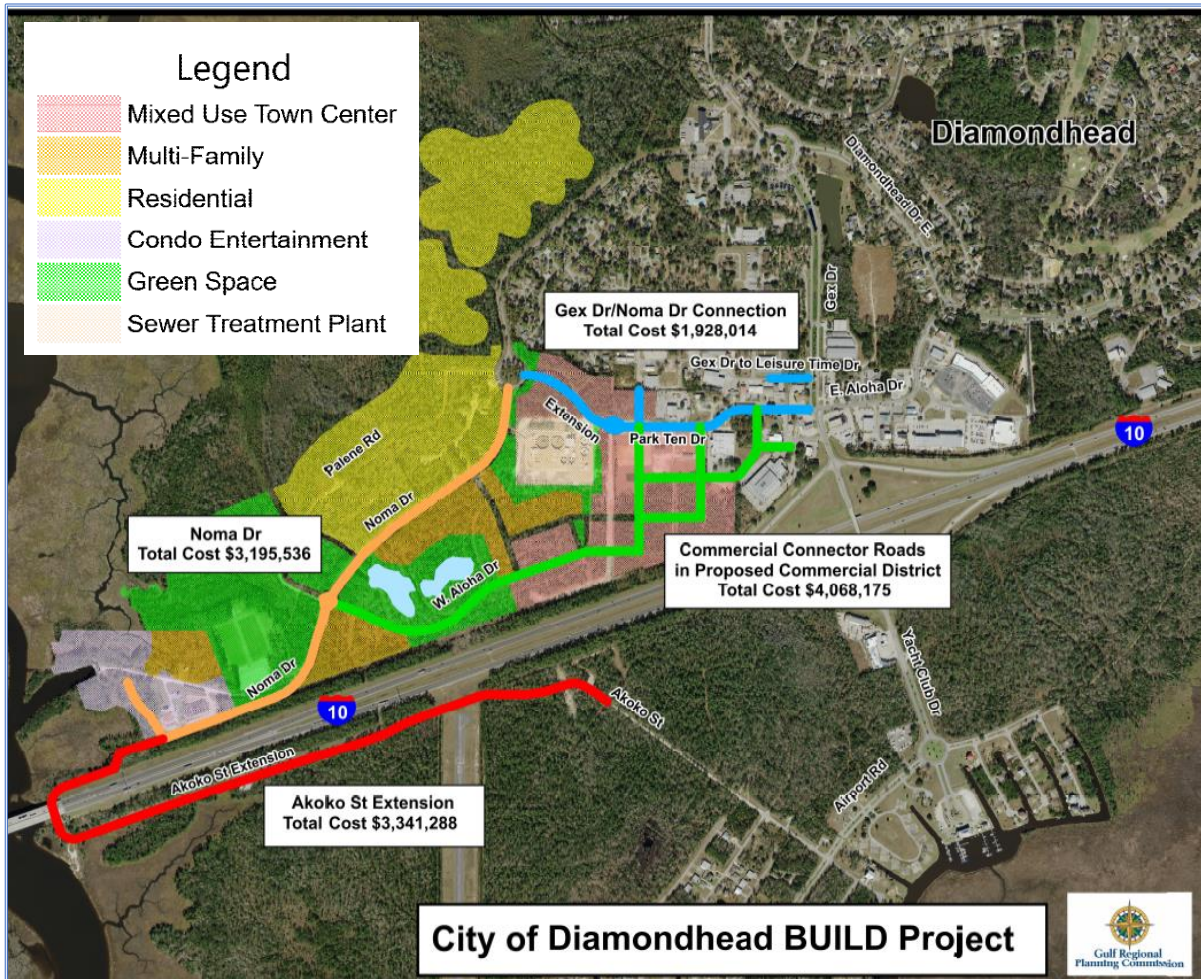
This project is considered a rural project under the BUILD grant as it is designated an **Urban Cluster (# 24040)** for the Gulfport-Biloxi, Mississippi Census-designated area.

The Transformation Project will construct a boulevard to connect the north and south sides of the City that are currently bisected by I-10. The improved roadway network will enable the residents to avoid the Interstate area altogether. The project includes:

- **Roadways:** Complete streets, including Bike/Ped, Electric Vehicles, and decorative lighting
- **Economic Development:** Mixed-use commercial and residential growth
- **Environmental:** Greenspace, Stormwater treatments, and green infrastructure

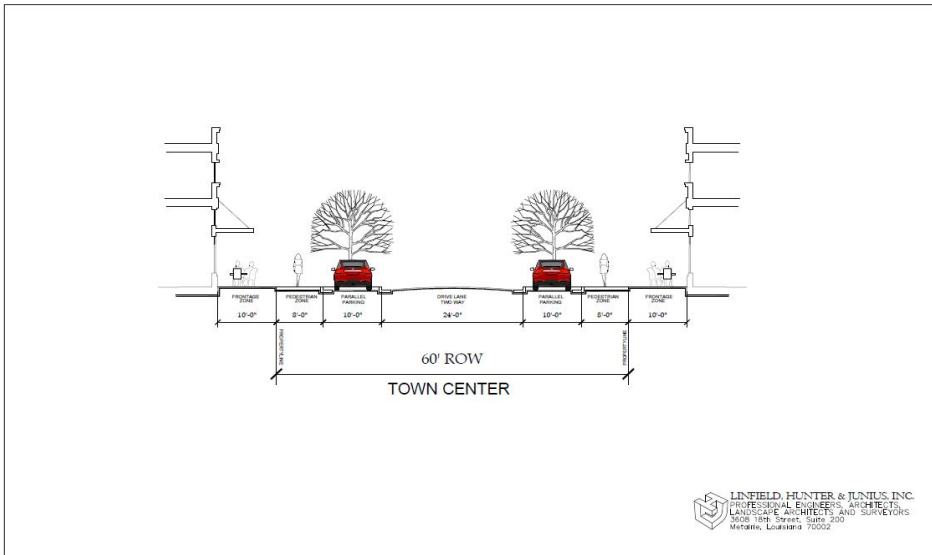
The federal funding would provide the final funding needed and represents only *42% of the total project*. The roadway will connect to the parts of the city separated by Interstate 10 (I-10) and open fifty (50) acres for development.

The table, map, and graphics show the project's construction activities:

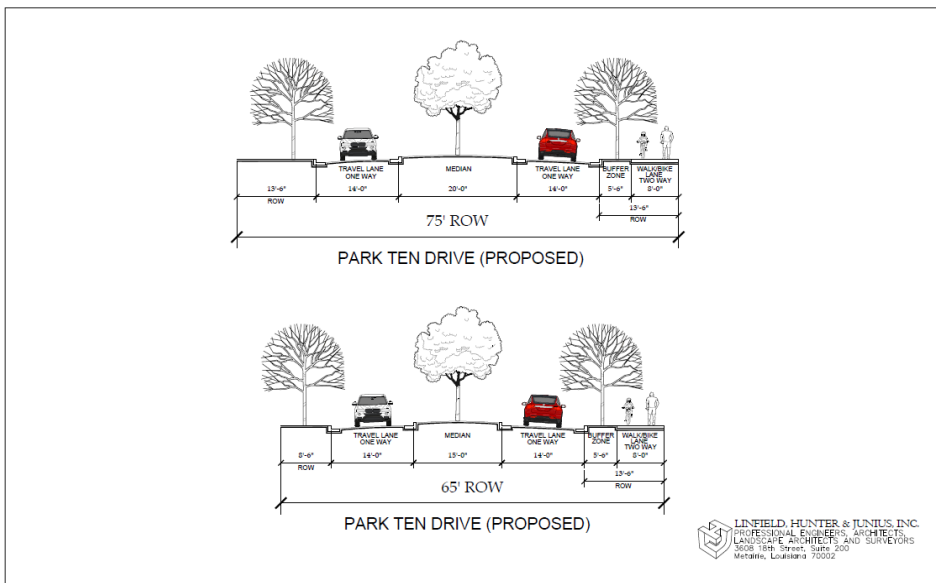


Commercial District Transformation Project		
Roadway	Construction	Lane Configuration
Gex Drive, Noma Drive	Road with Multi-Modal lane	Two 10' lanes, 10' Multiuse Path, 2' Shoulders
Commercial Connector	New Roadways	Two 10' lanes, 10' Multiuse Path, 2' Shoulders
Akoko Street	Widening and new road from Ceolho Way to the Jordan River	Two 10' lanes, 10' Multiuse Path, 2' Shoulders

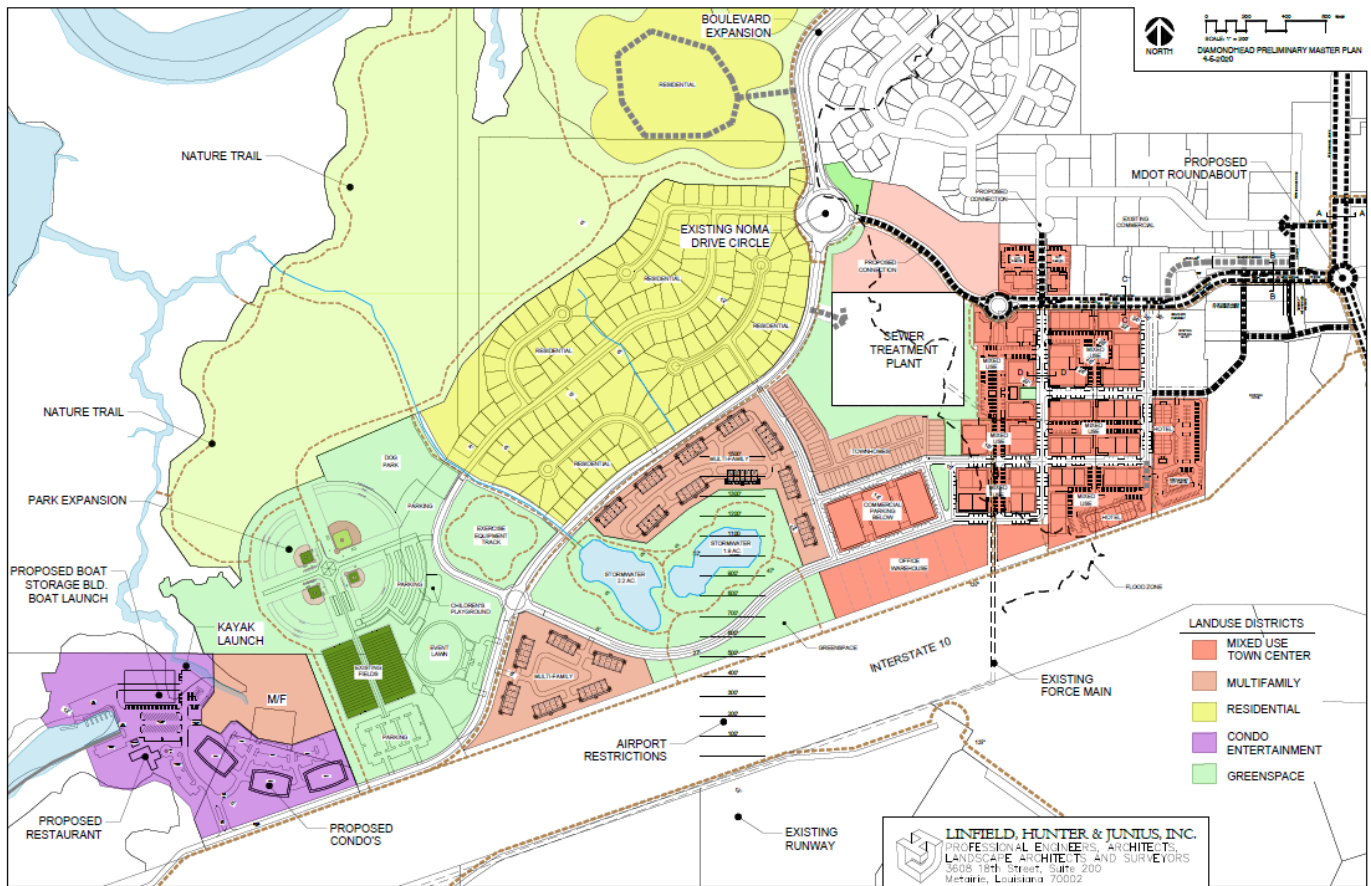
Typical Sections of the project include the following rendering for the downtown area:



The Section below is typical of the connecting roadways:



Below is a map of the new development that this project will support:



Diamondhead has embarked on a twenty-five (25) year Comprehensive Plan that includes strategic growth. **C-Spire**, the local telecommunications and internet provider, completed a \$10M project that installed one gigabyte (1G) of fiber optic internet for all residents and businesses. This project expands broadband coverage to attain five (5) gigabyte (5G) speeds. As shown during the COVID-19, this type of internet connectivity is a necessity. When this project is complete, residents would have remote work capabilities that would enhance the attractiveness of the area, make it more resilient, and further reduce VMT and VHT.

The City has experience delivering large capital improvement projects. Currently, Diamondhead has programmed over \$11.74M in capital infrastructure improvements that include:



Proven Deliverability: Diamondhead’s Current Capital Infrastructure Projects

Project	Status	Funding Source	Funding Amount
Trails and Blueways	Completed	Mississippi State Tidelands	\$400,000
Montjoy Creek Boater Access	Design Phase	Mississippi State Tidelands, FHWA	\$802,000
Veterans Boulevard – new roadway construction	Completed	US Housing and Urban Development	\$410,000
Gateway Treatment, I-10 Exit Lighting Project	Completed 2018	Federal Highway Administration (FHWA)	\$722,000
Ahoni Street – new roadway to the library	Completed 2017	City of Diamondhead	\$101,000
Pavement Management	Completed the first phase in 2019	City of Diamondhead	\$1,400,000 plus \$500,000 annually
East Aloha Drive Widening, to new Library Road	Completed 2018	Federal Highway Administration (FHWA)	\$250,000
Two Modern Roundabouts at I-10 entrance and exit ramps	In the PE phase, anticipated completion in 2022	Federal Highway Administration (FHWA)	\$6,900,000
Total of Capital Projects			\$11,735,000

The project addresses the City's need to expand. As evidence of this, Diamondhead expects to permit one hundred new residential units in FY 2021 and, within three years, build over three hundred new residential homes. Located between the major cities of New Orleans, Louisiana, and Mobile, Alabama, the project has significant benefits to the tri-state region.

Improvements to Quality of Life

This project provides a regional solution for housing, helps reduce travel burdens for commuters, and promotes the quality of life by:

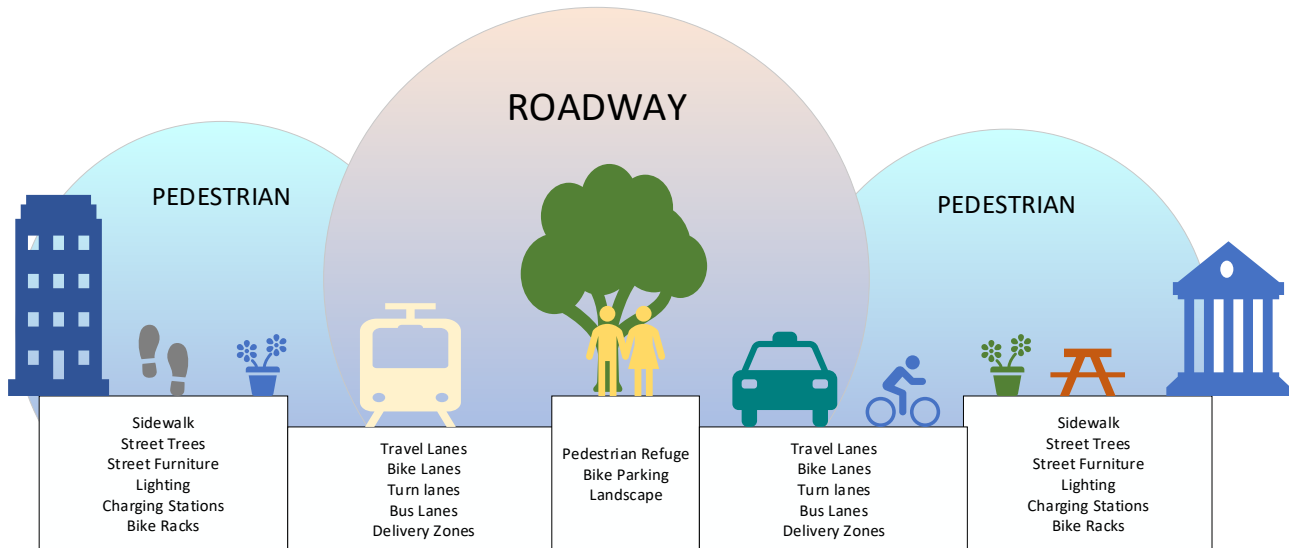
- ✓ Providing housing closer to work locations
- ✓ Reducing extensive commute times
- ✓ Reducing travel for life services such as medical

As an example, **Relativity**, an aerospace industry company, recently expanded its facilities at the Stennis Space Center and added a 220,000 square foot building at the cost of \$56M. This investment includes two hundred (200) new employees, most of which commute from a distance of more than thirty miles.



The City currently has two dead-end roads in its commercial district. The roadway projects will connect these two roads to help improve the traffic flow and increase visibility to our existing businesses. Safe

pedestrian and bike accommodations are also much needed in this area. In addition to walking and biking, many residents have electric golf carts and use them for internal city travel. Electric golf carts have become popular because they are environmentally conscious, and residents believe their efforts support the more significant environmental cause. Below is a schematic of the roadway design:



This project should be funded through BUILD Grant funds because it meets the *following primary selection criteria*:

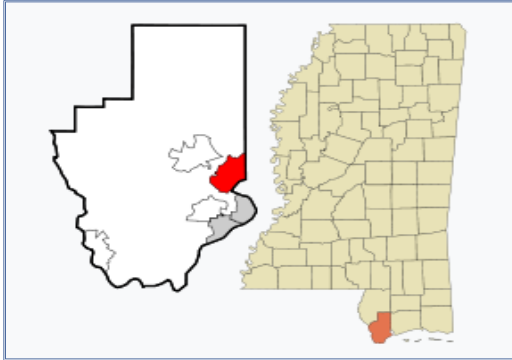
- **Enhances Safety**- Safety savings of over \$36.4M
- **Increases State of Good Repair** – state-of-the-art Asset Management allocates \$500K annually
- **Increases Economic Competitiveness**- Increases Gross Regional Product by \$3M
- **Environmentally sustainable**- Emissions benefits of over \$2.4M through reduced VMT and VHT
- **Expands Broadband coverage** and promotes telecommuting and telemedicine
- **Enhances the Quality of Life**- Creates a "sense of place" and encourages biking and walking
- **An outstanding economic impact for Rural Application** -BCA ratio of 12.24 to 1.0

Upon receiving the BUILD award, the project would immediately start. The City of Diamondhead will administer the project. A detailed project estimate is complete, and a landscape architectural firm has completed renderings. The funding for the project is in place, community support for the project is secure, and the demand for the project is urgent.

II. Project Location

The City of Diamondhead is located on the eastern border of Hancock County, Mississippi, and is bisected by Interstate Highway 10. It is only sixty (60) miles east of New Orleans, Louisiana, and ninety (90) miles west of Mobile, Alabama. Distances to these and other major cities include:

Diamondhead Location Map



Distances to Cities and Population

City	Distance (miles)	Population (2019)
Gulfport, MS	23	71,870
Slidell, LA	30	27,711
Biloxi, MS	36	45,968
Pascagoula, MS	55	21,685
New Orleans, LA	60	371,006
Mobile, AL	90	189,572
Baton Rouge, LA	116	221,599
Jackson, MS	167	164,422

The City has an unofficial population of approximately 8,647, as estimated by the US Census in July 2019. It is categorized as an **Urban Cluster, #24040**, according to the US Census Bureau in 2010. The growth of Diamondhead was made possible by the Federal Highway Act of 1956 and brought industry and commerce to the area. Soon after the start of the construction of I-10 in Mississippi, investors purchased 6,000 acres of land that became the community of Diamondhead. After years of continuous growth, Diamondhead pursued and became an official city in 2012.

Diamondhead is expected to grow by approximately 10% in ten years.

The project will have benefits to the entire region as it will affect the surrounding communities and will benefit the growth of industries. **The laborshed within a forty-five-minute drive is over 550,000 workers.** Hancock County has seen nearly a five percent (5%) increase in



population in the last five years due to Stennis Space Center (SSC) recently awarded contracts. SSC



flight-certified the spacecraft that landed Americans to the moon and has supported the Apollo and the Space shuttle programs. It is currently serving the Space X's planned colonization of Mars with craft powered by the Raptor engine. SSC has more than thirty (30) resident agencies and employs over 5,000 workers in disciplines that range from geospatial, earth sciences, data centers, rocket assembly, and jet engine testing. It is home to the following:

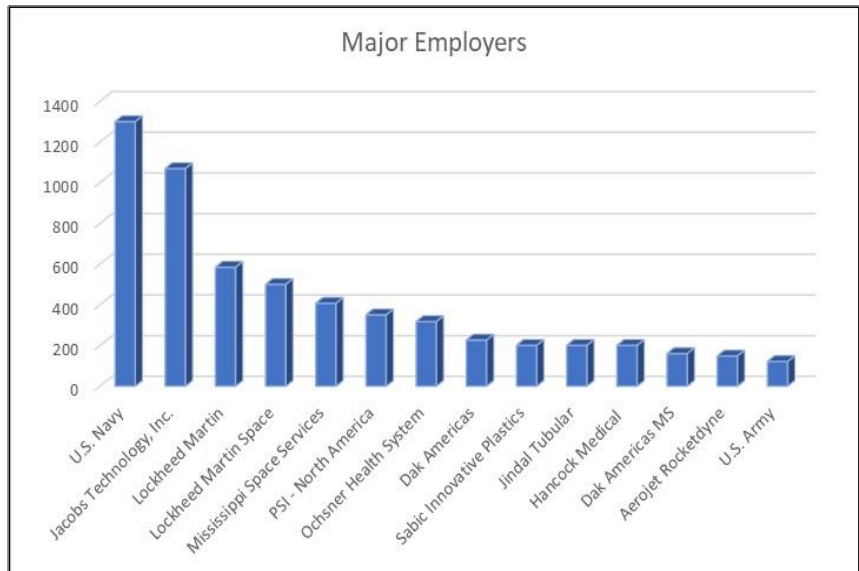
- NASA Jet Propulsion Test Center
- Naval Meteorology and Oceanography Command – World's largest concentration of oceanographers
- Naval Research Lab (NRL) – Headquarters

EMPLOYMENT IMPACTS:

SSC has been a robust source of growth and revenue. Calculations show that in a mere 50-mile radius, Stennis provides a direct annual economic impact:

- \$654 million
- 5,000 jobs

This project supports the following major industries shown to the right:



Another example is that of the President's FY 2020 budget request for the National Aeronautics and Space Administration (NASA)

exceeded \$22B with amendments for its lunar space mission in 2024 and included beginning the planning for a mission to Mars by 2035. Given that the rocket engines will be tested at SSC in Hancock County, *a significant investment of people and funding will occur, and the considerable amount of economic growth from those aspirations needs to be planned for.* Much of that investment will be from private companies and other countries, such as Australia and Canada, that are joining the missions and providing funding.

More rocket engine testing to be done at Stennis as NASA awards \$1.79 billion contract to Aerojet Rocketdyne
 NASA awarded Aerojet Rocketdyne a \$1.79 billion contract to produce 18 more RS-25 engines for its Artemis program.
 By Desirae Duncan Published May 3, 2020 at 4:20 PM

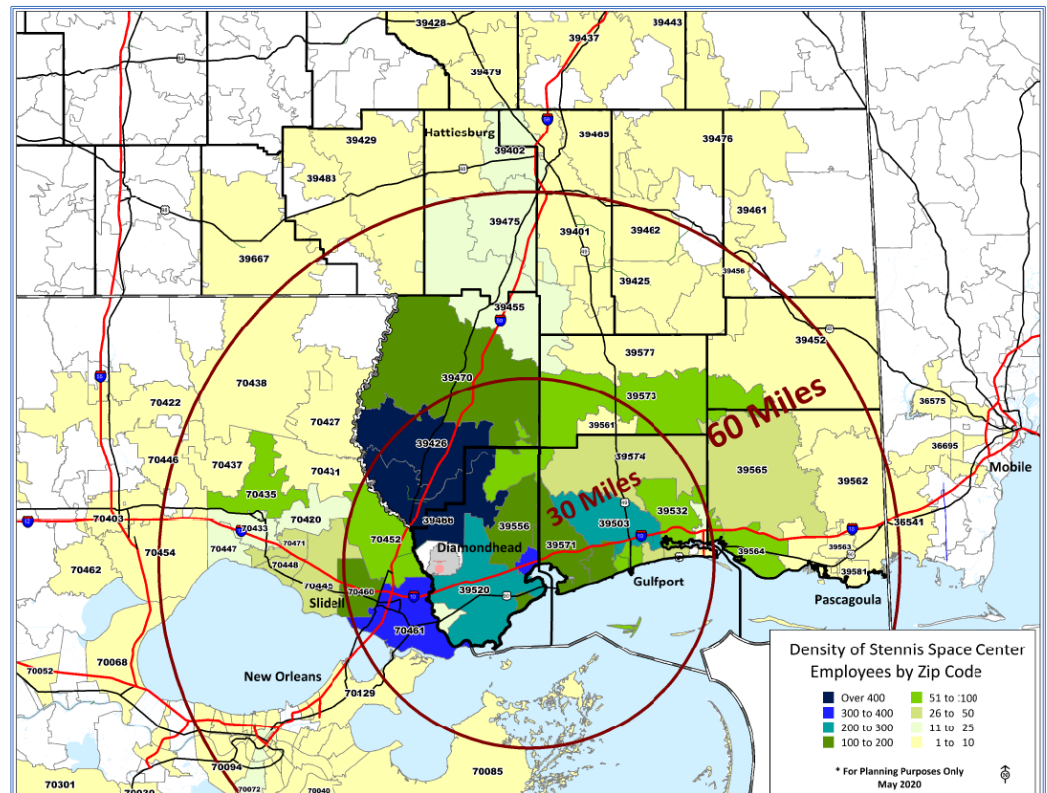
REGIONAL GROWTH

The economic climate and military activities continue to expand. The military presence has evolved, and the population on the Gulf Coast has continued to grow. One example of this growth is the number of naval vessel construction contracts that are now confirmed to be constructed on the Gulf Coast. Huntington Ingalls Industries shipbuilding in Pascagoula, MS has been awarded the following major contracts:

- \$5.1 billion contract for the construction of six (6) Arleigh Burke-class destroyers
- \$1.4 billion contract to build a new amphibious warship
- \$48.5 million for repairs on the guided-missile destroyer USS Fitzgerald
- \$11.8 million add-on to an existing contract to accelerate the design of the LPD 17 Flight II
- \$9.2 million for post-shakedown work on USS Paul Ignatius, a guided-missile destroyer
- \$746 million to VT Halter Marine for the construction of U.S. Coast Guard Icebreakers

With this growth in Pascagoula, employees that work at SSC and live near Pascagoula will experience competition for housing and increased vehicle traffic. Therefore, living closer to SSC will become an attractive option for those employees.

The chart shows the location of workers and how far they commute within the region with yellow indicating a further travel distance. As shown below, there are a considerable number of employees that live outside of the area and would benefit from living closer to work.



III. Grant Funds, Sources, and Uses of all Project Funding

The City of Diamondhead requests \$M to construct the Commercial District Transformation Project. This amount represents ninety percent (90%) of the estimated total project cost of \$12.53M. The remaining ten percent (\$1.25M) will be paid for by the City through funds it currently has in its operating account. The following tables summarizes the funding sources and expenditures of the proposed project.

Table of Project Funds, Sources, and Uses

Funding Source	Amount	Percent of Total Project	Responsible Party
BUILD FY 2020 Funds	\$11,279,712	90%	Federal Share
City of Diamondhead	\$1,253,301	10%	Local Share
BUILD Project Cost	\$12,533,013	100%	
Estimated Betterments	\$10,000,000		Broadband
	\$5,000,000		Utilities
Total Project Investments	\$27,533,013		

Table of Expenditures by Project Phase and Federal Year (FY)

Phase	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Totals
Design	\$875,000					\$875,000
ROW Survey	\$25,000					\$25,000
ROW Acquisition		\$865,000				\$865,000
Environmental	\$100,000					\$100,000
Construction		\$1,506,063	\$2,757,463.34	\$2,757,463.34	\$2,757,463.34	9,778,453
Construction Inspection		\$139,563	\$250,000	\$250,000	\$250,000	\$889,563
Totals	\$1,000,000	\$2,510,626	\$3,007,463.34	\$3,007,463.34	\$3,007,463.34	\$12,533,013

IV. Selection Criteria

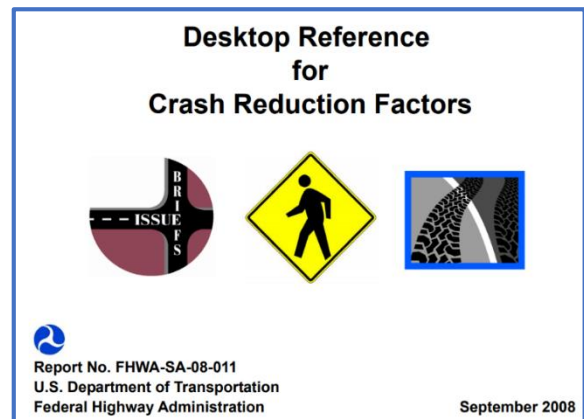
(1) Primary Selection Criteria

(a) Safety

The current traffic pattern causes crashes within the City and on the Interstate. This project will reduce the amount of travel for residents and result in a safety savings of **over \$36.4M** from vehicle crashes of all types as nearly **one hundred (100) vehicle crashes** will be avoided each year. It will also address the current traffic circulation issues within the City. Residents will be able to avoid the regional area for essential life services. There has been a significant amount of crashes on or approaching the exit ramps from I-10 at the Diamondhead exit in both the east and west directions. Included in these crashes **are five fatalities** in the last three years alone. While MDOT has a project in the current TIP to address the crashes at the I-10 exit ramps to Diamondhead, this project will allow citizens to stay within the City for essential life services and not need to use the Interstate.

This project has incorporated safety features at the beginning of the project so that the City is safer once it is complete. Using the Desktop Reference for Crash Reduction Factors (CRF) and incorporating safety features from the beginning of designing this project, the following safety countermeasures include:

- **SIGNALIZED COUNTERMEASURES**
 - Pedestrian signals which have up to a 55% CRF
 - Improved visibility of signal size which has up to a 36% CRF
 - Backplates on signals to improve visibility which up to a 20% CRF
- **GEOMETRIC COUNTERMEASURES**
 - Improved sight distances and alignments which have up to a 56% CRF
- **SIGNS, MARKINGS, AND OPERATIONAL COUNTERMEASURES**
 - Install pedestrian crossing which has up to a 37% CRF



Also, the project will include adding shoulders to roadways that do not already have shoulder, back-in angle parking, and protected multiuse pathways. *All of these are known as safety countermeasures.*

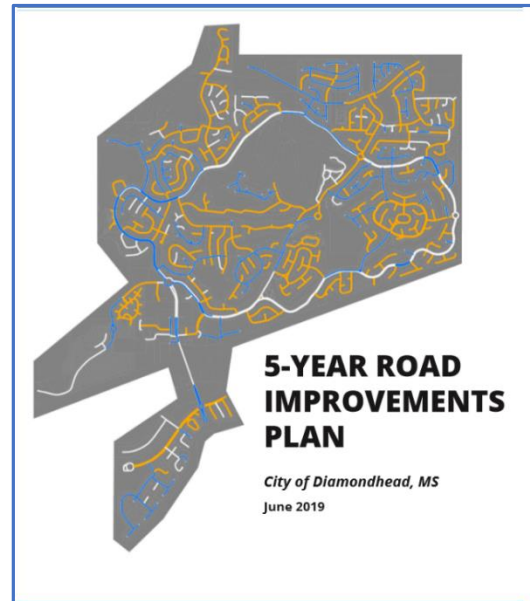
This project will provide a choice to residents so they can avoid those locations that have more crashes. With the new additions proposed within this project, travelers will be able to stay within the City for everyday items and experiences so they will not have to use the interchange and Interstate. Also, to connect from the parts of the City currently separated by the Interstate, the residents will be able to do this through their local road network and not have to use the interstate system. Connecting the two divided sections of the City is not only convenient to the traveling public, but it also allows emergency vehicles to respond quickly and safely to inevitable incidents.

(b) State of Good Repair

Diamondhead has an **asset management program** in existence for its roadways and their maintenance. The City contracted with the engineering firm "Civil-Link" to video, inventory, and rate their roadways in 2018. Based on this program, the City now has an asset management program that allows them to determine when and how to treat the roads so that they stay in proper condition. In 2019, Diamondhead spent over \$900K to pave its streets to bring them to standard.

The Asset Management Program enables them to properly program funding so that it is allocated to their roadways at the right time and at the right amount. The City also has a maintenance department that handles repairs to the roads and its appurtenances.

Diamondhead has budgeted \$500K annually to preserve its pavement infrastructure. This effort of asset and pavement management demonstrates a high level of funding commitment for a rural community to have a working transportation network.



(c) Economic Competitiveness

The overall economic impact of this project is an increase in Gross Regional Product by \$61M and the creation of 565 jobs, with 24% of those having above-average wages. The significant benefits of this project are all based on the degree of economic competitiveness that this project provides to the region as it allows for substantial economic impact. The project will allow for the considerable development of commercial and retail businesses in Hancock County. There is currently a shortage of housing for professionals in the area. Elliot Homes is adding approximately three hundred (300) homes that will drive investment needs for citizens of the city. Other developers are doing in-fill projects that will also increase the residential units in the area. These new housing developments are much needed to attract and retain new industries to the area. NASA has plans to invest over \$21B in the next ten years in its space program. Of this, Stennis Space Center will receive a considerable amount and has already started to see investments from private space industry-related businesses in the area. For example, Space X recently announced that it was investing \$91M into a new facility at Stennis Space Center, which will add two hundred (200) new employees. As mentioned earlier, Relativity also has invested \$56M into its facilities and will hire an additional two hundred (200) employees.

Upon completion of the project, developers will have the opportunity to take advantage of Hancock County's **Commercial Development Incentive Program** that was established by the County Board of Supervisors in 2017. The City has agreed to match the county tax abatement program. This means that both the city and county property taxes could be decreased by potential businesses. The tax exemption policy and redevelopment zones were established to promote private investment throughout Hancock County. If qualified, the exemption will allow for up to 100% abatement of county ad valorem taxes (excluding school taxes, road and bridge taxes, and community college taxes) for businesses including new structures in any of the proposed commercial development zones.

At present, the land involved in this project is classified as agricultural, and the property taxes are minimal. For example, 14 acres on the north side of I-10 are currently paying only sixty-seven dollars (\$67) a year total in property taxes. However, afterward, the property taxes would significantly increase. Diamondhead levies a tax on the real and personal property based on the assessed value of a property, as compiled by the information extracted from the City assessment tax rolls. The taxes on real estate attach as an enforceable lien on the property by the Mississippi Code of 1972, as amended. The rates are expressed in terms of mills (i.e., ten mills equal one cent). The combined tax rate to finance general governmental services, including the payment of principal and interest on the long-term debt but exclusive of school bond and interest for the year ended September 30, 2017, was 34 mills or \$34.00 per \$1,000 of assessed valuation. Thus, the City has 34 mills for property taxes.

The Transformation project includes the following economic impacts:

- *Business owners can take advantage of Tax Abatement*
- *Increased in total property taxes and sales taxes*
- *Increased private investments- i.e., C-Spire's \$10M*

EVIDENCE OF HOUSING GROWTH

- **Elliott Homes'** new subdivision with one hundred (100) home sites, plus they have purchased over 75 other scattered parcels to build new homes. These homes will be values between \$160K and \$300K. This is over a \$2M investment in the new subdivision.
- **Structures of Diamondhead, Inc.** is developing Beaux Vue subdivision. This is a total of thirty-one (31) new home sites.
- This year, Diamondhead is on pace to double the number of residential building permits issued for new homes (estimated to hit one hundred (100) permits). Within three years, the City expects to permit over three hundred (300) new homes.

Increase in value of existing houses

This project is expected to have a significant impact on the value of existing properties in Diamondhead. Based on a walkability study conducted by the Gulf Regional Planning Commission, the walkability score will increase from the project x to Y and that houses with above average levels of walkability sell from \$4,000 to \$34,000 more than houses with average levels of walkability.

(http://blog.walkscore.com/wp-content/uploads/2009/08/WalkingTheWalk_CEOsforCities.pdf)

(d) Environmental Sustainability

Mississippi's coastal area has long been a leader in environmental issues and creating a sustainable and livable area. The Gulf Coast has endured significant environmental catastrophes, including the current **Bonnet Carre Spillway Salinity Crisis 2019**, which has caused a natural disaster to the marine environment and economy of the Coast. In addition, the 2010 British Petroleum (BP) Oil Spill disaster greatly affected the area. Given these incidents, environmental issues are at the forefront of development on the Coast. This project will be a leader on environmental issues such as water runoff and the design of surfaces. It will include state-of-the-art techniques to minimize and help mitigate

environmental issues and incorporate best practices for stormwater mitigation per the MDOT Highway Design Manual.

One of the most critical environmental concerns on the Coast is stormwater runoff and contamination of waterways. The design will mitigate the effects of stormwater runoff and, in doing so, will incorporate state-of-the-art technologies and material. For example, the permeable pavement will be included where possible and catch basin techniques will be used to collect and filter the water. This type of environmentally friendly approach will be a model for future development on the Coast to preserve the ecosystem.

This project will directly address the **regional sustainability** goal of reducing vehicle miles traveled, as identified in the Regional sustainability plan for the U. S. Department of Housing and Urban Development (HUD). The entire Plan document can be found at <http://www.grpc.com/wp-content/uploads/2018/04/FINAL-Plan-for-Opportunity-Small.pdf>. As noted on page 57 of the Plan, the recommendations called for enhancing the Quality of Life by providing more transportation choices so that the number of commuters who can choose to walk, bike or bus, would improve the quality of life for residents of the region by:



- Reduced demand for energy by reducing the need for fossil fuels
- Reducing the number of cars on the road and mobile emissions resulting from vehicles
- Alleviating congesting and decreasing commute times
- Promoting healthy, active alternatives to driving
- Supporting access to and interaction with communities and neighborhoods

(e) Quality of Life

This project will preserve the environment by lowering the number of pollutants emitted into the air and by reducing the number of daily VMT per capita. The results in the BCA show that this project will have an **environmental benefit of over \$2.43M**. This amount includes significant reductions in nitric oxide, particular matter, and carbon dioxide. The breakdown for these amounts is shown in the BCA section.

This project decreases the negative effects on air quality created by high VMT amounts. Improved air quality can also reduce respiratory issues and promote better public health. **The value of personal time and reliability for this project is estimated to exceed \$36.35M**, which significantly increases the quality of life of residents.

Equity

Designing communities and transportation systems for cars excludes citizens that do not have regular access to personal vehicles. Vulnerable populations, such as low-income households, minorities,

children, persons with disabilities, and older adults, typically own fewer vehicles and have longer commutes. Transportation options such as walking and biking, are sometimes the only available and affordable transportation choice. Without adequate facilities, they are more likely to be exposed to unsafe routes for pedestrians and bicycles because they have no other choice.

Desirable Community

Many people believe it is important to live “within an easy walk” of shops, cafes, schools, and other community places. Smaller cities are having trouble keeping and attracting businesses that require a millennial workforce. This “brain drain” is adversely affecting smaller cities. Many millennials want a lifestyle where they can live in compact, walkable, bikeable communities. Evidence exists that the baby boomer generation shares a similar desire for more compact, walkable communities. If smaller cities expect to attract or retain both millennials and boomers, planning for denser, walkable, and bikeable communities would be an effective formula.

Quality of Place

Active transportation provides the opportunity for an increase in the quality of place for individual residents as well as the community as a whole. Active transportation networks create complete streets that make walking or biking more enjoyable, increase social interactions, improve health, and reduce driving for short trips. This project would add to the quality of life of residents in Diamondhead as they would be better able to connect to the more significant part of Hancock County. Given this excellent quality of place, Diamondhead would provide the better livability features. As noted in the **TIP Strategies** document, Quality of Place is a guiding principle for growth. The document can be found at <https://irp-cdn.multiscreensite.com/1446ff30/files/uploaded/2019-11-19%20MS%20Gulf%20Coast%20Plan%20FINAL.pdf>



The residents would also have more services within their community, so they would not have to leave to go to a restaurant or visit a doctor's office. The opportunities for this development would allow for more residents to telecommute per government policy and, therefore, would be able to spend more of their disposable time and money within the City. This project creates public health benefits by encouraging walking and

biking. It also helps seniors to "age-in-place" by providing services near where they live and have a better quality of life as they age.

Increased Walkability

Existing Demand

The map shows the results of the existing walkability demand score analysis. The analysis indicates that the most significant potential bicycle and pedestrian demand is as expected in Diamondhead's city center. This is where doctor's offices, hair salons, banks, restaurants, pharmacies, and the retail establishments are located. Just outside of this area is considered medium demand. This includes a few destinations but also comprises many residences that are within walking distance of the city center. The last area shown on the map is considered to have some pedestrian and bike demand.

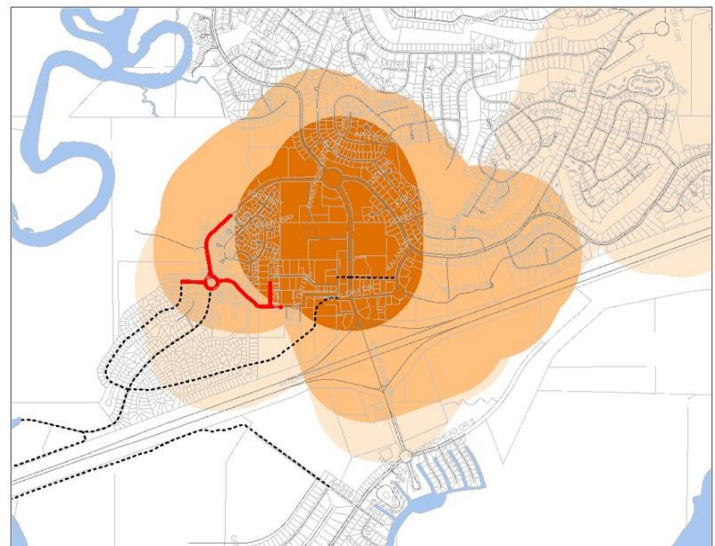
Future Demand

The area in red, including Park Ten Drive, Alapa Drive, and Noma Drive, has the highest potential to make an impact on the synergy of economic district. This area's current demand index is just below the threshold used to identify area "Medium Ped/Bike Demand." The additional generators from the project would improve this area from being rated as "Some Ped/Bike Demand" to an area considered to have "Medium Ped/Bike Demand." New mixed-use development adding residential population combined with simply one or two new destinations combined with the already high pedestrian and bicycle demand area in close proximity would make substantial impacts to activity.

Current Diamondhead Walkability



Future Diamondhead Walkability



(2) Secondary Selection Criteria

(a) Innovation

Through the construction of this Project, Diamondhead will create a state-of-the-art corridor for multi-modal use and emerging technologies such as solar installations and electric vehicle charging stations. The interchanges at the Diamondhead exit on I-10 are already being updated to modern roundabouts that are a part of a modernization project throughout the City. Access management techniques such as raised medians along the new roadways and permeable pavements to effectively control stormwater runoff will be incorporated where appropriate. The roads will be designed and built as complete streets and incorporate new traffic calming techniques to create a "sense of place." The project would help senior citizens live more active and involved lives. The design will include treatments that will promote

an "age-in-place" community such as accessible shopping and health care facilities and local providers of specialized medical services. The roadways include amenities such as:

- Larger traffic light signal heads and backboards so that they are more recognizable,
- Safer to an aging population
- More significant street signs with larger font sizes to be more recognizable and visible
- Advanced Pavement Markings, Pavement Colors, and flashing warning lights

By designing with an age-in-place approach, the project will meet and exceed federal ADA requirements.

The project will use a sustainable design that will help them realize the numerous long-term benefits for the City. The project will incorporate best practices for low impact development to improve the ecosystem and environment that already exists.

(i) Innovative Technologies

Upon completion of the roadways, the City will keep track of future maintenance needs on the new roads and establish prioritized improvements. This effort will include an innovative pavement management technology system and managed by the consulting engineering firm of Civil-Link. They use a GIS-based video and web interface tool that captures the road conditions and recommends pavement treatments and estimated costs using a life-cycle approach. Diamondhead intends to incorporate solar technologies on the lighting and signals of this project, where feasible and practical.

As previously mentioned, the newly developed area will also receive broadband services from C-spire, a full-service provider of transport, Internet, and telecom services.

(ii) Innovative Project Delivery

The project will use the best practices in construction management and will include a construction supervisor as early as possible in the project. However, given the relative simplicity of the project and its straight forward nature, the project will be constructed using known best practices. The project will examine the road reconstruction portion on Noma Drive and use a recycling method such as hot-in-place recycling if warranted. This will be dependent on the boring samples that will be attained during the design phase.

(iii) Innovative Financing

The project will be funded through the BUILD grant and a cash match to the Federal funds from the City of Diamondhead. Diamondhead has an excess of funds in its general ledger and has enough money to first instanced the funding needed. Therefore, the City will not need to finance any funding for this project and has cash reserves if they are needed. Due to its strong leadership, forward-thinking, and search for excellence in management, the City has grown and is in an excellent financial position.

(b) Partnership

If awarded this BUILD funding, the Diamondhead will partner with the Gulf Regional Planning Commission (GRPC) on the Design phase of the project. GRPC is the federally designated Metropolitan Planning Organization (MPO) for the Gulf Coast. GRPC would be the Local Public Agency (LPA) for the design and environmental phases of the project. GRPC is certified with the Mississippi Department of Transportation (MDOT) as an LPA. Having different LPAs for the Design and Construction phase is a benefit in that it allows the parties to focus on their efforts, anticipate future phases, and move quickly when the next phase is authorized.



This partnership will expedite these phases of the Project as GRPC will proactively be involved in the project, and the administrative steps will be coordinated more efficiently between the MPO and the MDOT and the Federal Highway Administration (FHWA). Once the project has completed the initial phases, the Construction Phase will be managed by the City. The City, as the Project Sponsor, and will be the Local Public Agency (LPA) that will administer the Federal-Aid process for the construction phases.

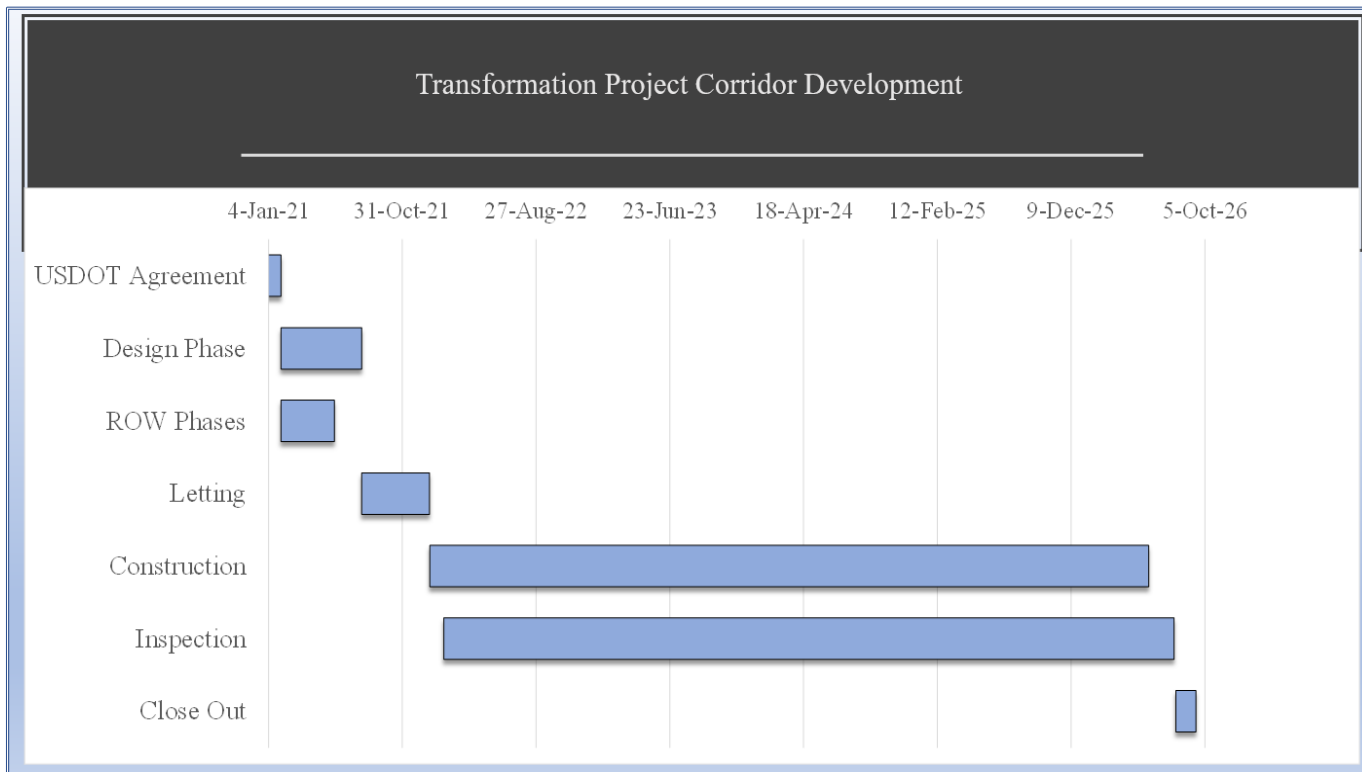
The unique partnership with GRPC will allow for an extensive planning process and result in a comprehensive vision for Diamondhead that has a regional perspective that GRPC brings to the project. The City is now embarking on implementing the Plan so that the benefits can be realized. In addition to the close partnership that the City has with the citizens, a robust public partnership lead by GRPC and its federally required Public Participation Plan (PPP), will enhance the public outreach and ensure that the outreach is significant and meets federally mandated requirements for inclusion of disadvantaged populations. Design charrettes will take place with the Community Associations within Diamondhead and local organizations such as the Chambers of Commerce, the Gulf Coast Business Council, and Partners for Stennis. The project will be developed to meet the needs of incoming residents and to enhance community interests.

V. Environmental Risk

(a) Project Schedule

The project will take approximately two years to complete. The Design Phase will start immediately after an agreement is in place for the BUILD funds and should take almost six to eight months to complete. The construction phase will take approximately two years to complete. The mill and overlay portions of the Project on Noma Drive and Akoka Drive would be done at the start of the project and should only take three months to complete.

Project Timeline

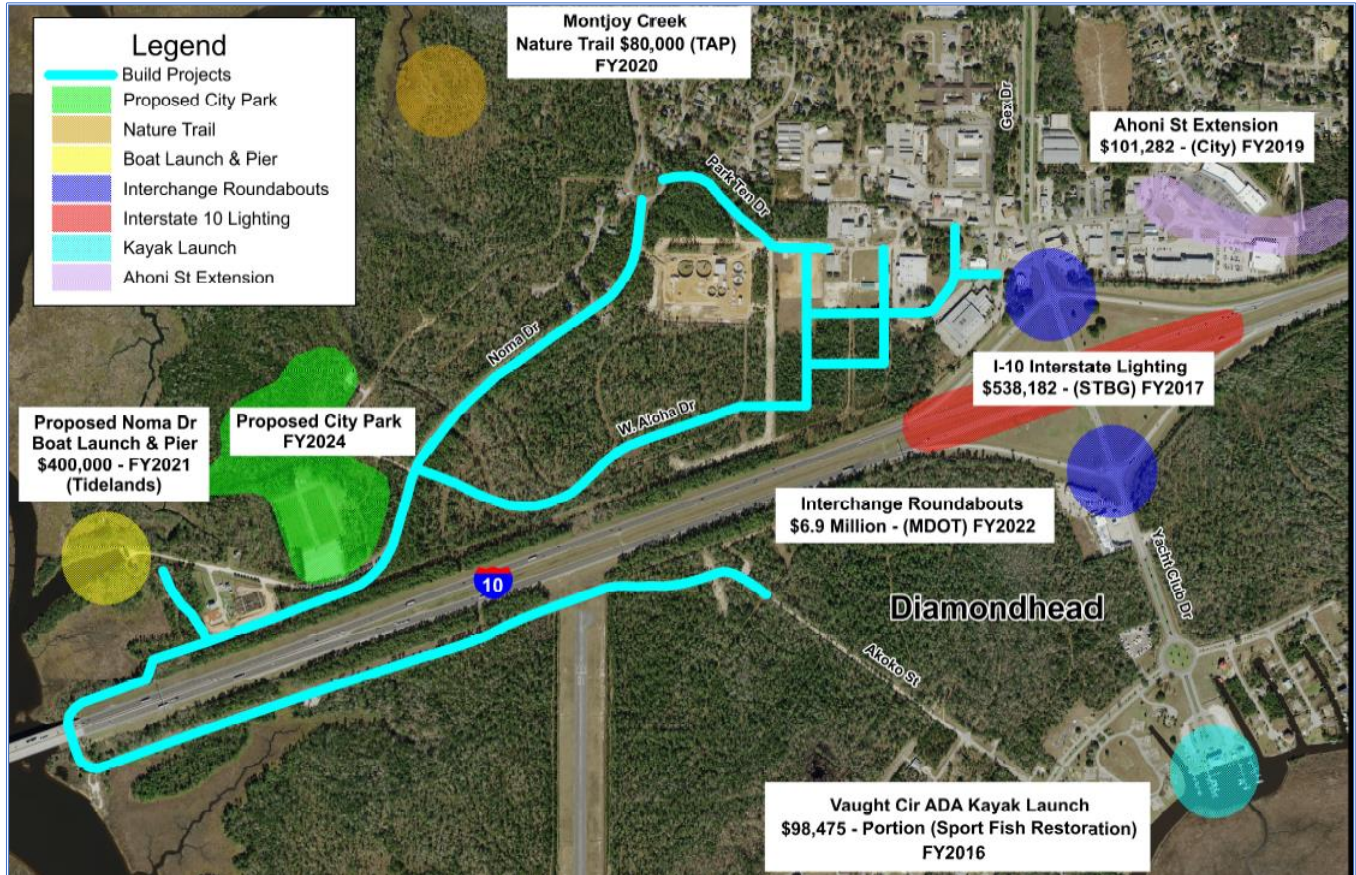


Technical Feasibility

This project is a road construction project through vacant land and a reconstruction project on an existing roadway. The project will need to go through a NEPA process as an Environmental Assessment (EA). However, there are no condemnations, and there are no properties that need to be relocated, condemned, or have contamination. The project is not anticipating having any wetland issues that would require an Army Corps of Engineers permit; however, it is noted that it would be determined during the NEPA process. The project is less complex than other EAs, and the timeframe for completing the EA is much less than more complex projects. There is nothing that presents a risk to this project from a construction standpoint.

Reference should be made to Table 3 presented earlier in the document that shows the major projects that the City has completed or completed major phases of. Below is a map of the City's capital projects:

Map of Diamondhead Capital Projects



The City has worked on numerous public works projects that demonstrate their ability to work with federal and state agencies, differing fund sources and regulations, and engineering complexities. The City has a highly competent staff and resources that have helped them completed these projects and develop future development projects. The following is a list of completed projects that demonstrate the ability to deliver substantial projects:

- ✓ Design Phase of two modern roundabouts, located at Diamondhead Drive East and Golf Club drive, were completed in 2017 as a USDOT Transportation Alternatives Program (TAP) funded project of \$250K.
- ✓ The Rotten Bayou Blueway Kayak and Biking Trail which is nine (9) miles long and includes two Kayak Launches (Bayou Drive Kayak Launch and Vault Circle Kayak Launch) – were completed using Boater Access funds and MS State Tidelands funds totaling approximately \$400K
- ✓ Boat Access grant through the State of Mississippi Department of Marine Resources for \$802K
- ✓ Live Oak Drive road reconstruction and drainage project for \$360K.
- ✓ Design Phase for Highway Decorative gateway treatment lighting project by MDOT for \$780K
- ✓ Design Phase for GRPC TIP Sidewalk grant for \$500K

(b) Required Approvals

There are few, if any, required approvals necessary for this project to progress because the area is already zoned for commercial development. The Right of Way (ROW) Acquisition phase is expected to be completed on schedule as there are only five property owners in the area, and they have expressed

interest in selling or donating their property. There are no existing structures on the properties, so there are no homeowners that would be displaced. The approvals necessary would be completed through the NEPA process and follow the Uniform Act. While this phase needs to be completed, the project is expected to progress on a straight-forward process of an Environmental Assessment (EA) and not an Environmental Impact Statement (EIS) because the project is not complex and takes place in a known environment.

Required Planning Documents: If awarded funding, the project would be added to the Gulf Regional Planning Commission's Transportation Improvement Program (TIP), the Statewide Transportation Improvement Program (STIP), and the Long-Range Transportation Plan (LRTP). A letter of support from the MPO states this is included with this application.

(c) Assessments of Project Risks and Mitigation Strategies

Diamondhead will progress this project using a Risk Management approach. That means that at every phase of this project, the City will identify and assess the best method for progressing to the next phase and identify the critical paths needed to move the project forward. While using the Risk Management Approach, the Diamondhead believes that this project has minimal risk and is a straight-forward roadway construction project through a vacant plot of land.



VI. Benefit-Cost Analysis

Methodology - Benefits

The benefits of this project are derived from a reduction in travel so that overall VMT and VHT are reduced. This is because residents will be closer to goods and services. An example of this would be in a medical office where remote medical diagnostics could take place in real-time and thereby reduce the need to travel to a medical complex in a large city to receive specialized care. Safety will be improved due to the reduction in VMT and VHT as well. It should also be noted that private investment for the water and sewer connections and for 5G broadband internet would be realized through this project.

Benefits were calculated by comparing travel times and vehicle hours traveled that exist currently with those that would experience after the project is completed. Currently, residents in the City have the longest travel time to work and must travel longer than any other city in the region for shopping, medical appointments, and other life services. After completion, the travel time for these activities is expected to decrease. The table below shows the current commute for the coastal communities:

Current Average Travel Times (Minutes)

County	City	Travel Time
Hancock County		29
	Bay St. Louis	24.1
	Diamondhead	33.9
	Waveland	29.7
Harrison County		22.7
	Pass Christian	24.5
	Long Beach	22
	Gulfport	21.2
	Biloxi	19.4
	D'Iberville	21.3
Jackson County		24.5
	Ocean Springs	23.7
	Gautier	26
	Pascagoula	17.4
	Moss Point	19.9

Sources: US Census Bureau, American Community Survey (ACS), and Puerto Rico Community Survey (PRCS), 5-Year Estimates. July 1, 2018

The mean travel time to work for the other cities in 22.6 minutes, and the average for all three coastal counties is 25.5 minutes. This data shows that people that live in the City of Diamondhead have over 30% longer travel times than others in the region. This BUILD project grant would enable Diamondhead's mean travel time to be more comparable to the rest of the region's travel time and reduced to an estimated 29 minutes. This is because the project would spur new development providing Diamondhead residents with more job opportunities closer to their residence. The project would also reduce travel time for basic life-services such as trips to medical facilities, entertainment, and shopping. After the project, the need to travel for these types of services would be greatly reduced as those needs would be fulfilled *within* the City.

In order to determine the benefits of a change in travel time and travel patterns, a base number of Average Daily Traffic (ADT) was determined and compared to the future ADT after the project was completed. This was also done for Vehicle Hours Traveled (VHT), and Vehicle Miles Traveled (VMT). The construction phase of the project was assumed the project would be completed at the end of FY 2024. The full build-out of the commercial district would occur in 2028 and that is when benefits for the project were assumed to start. The methodology for this is presented in the Benefit-Cost Appendix. Below is a summary of the project's benefits:

Benefits by Mode

Mode	Traveler Benefits (\$M)		Traveler Benefits (non - \$M)			Business Productivity (\$)	Social/ Environ. (non-\$)	Total
	Vehicle Operating Costs	Business Time & Reliability Costs	Value of Personal Time & Reliability	Safety Cost	Additional Consumer Surplus			
Passenger Car	37.3	15.7	21.2	36.4	0.4	0.3	2.4	113.7
Totals	37.3	15.7	21.2	36.4	0.4	0.3	2.4	113.7

Diamondhead's project reduces the amount of time traveled and vehicle operating costs and increases the safety and socioeconomic aspects of the region. The tables below further break down these benefits related to the environment and driver safety. Both of the following factors are critical to the region and City, due to its elevated collision rate near Interstate 10.

Environmental Benefits by Classification

Mode	Emissions					
	VOC	NOX	SOX	PM	CO2	Total
All Auto	75,949.35	261,487.10	0	2,023,550.09	67,346.27	2,428,332.80
Totals	75,949.35	261,487.10	0	2,023,550.09	67,346.27	2,428,332.80

Value of Safety Benefits by Type (annual)

Mode	Fatality Collisions	Injury Collisions	Property Damage Only (PDO)	Total Collisions per Vehicle
Passenger Car	0.2	22.53	75.73	98.47
Totals	0.2	22.53	75.73	98.47

Broader economic benefits were calculated based on the 3.5 miles of new and improved roadway stimulating corridor development and by providing further access to vacant parcels of land. Based on the City's understanding of the potential for economic development for the area, the expected complete build-out by 2043 would produce the following economic development:

Projected New Developments by Type and Number

New Developments – 2043						
Type	Unit Square Foot	Units	Jobs Per Unit	Total Square Foot	Total Jobs	Daily Trips*
Restaurant	5,500	4	25	22,000	100	1,979
Hotel	15,000	1	12	15,000	12	490
Shopping Center	10,000	4	30	40,000	60	1,718
Offices	1,500	40	8	60,000	160	661
Fast Food	3,000	8	16	24,000	64	11,907
Large Office	20,000	2	200	40,000	200	319
Dwelling Units		265				2536
Totals	55,000	324	291	201,000	596	19,610

*8th edition ITE Trip Generation Report

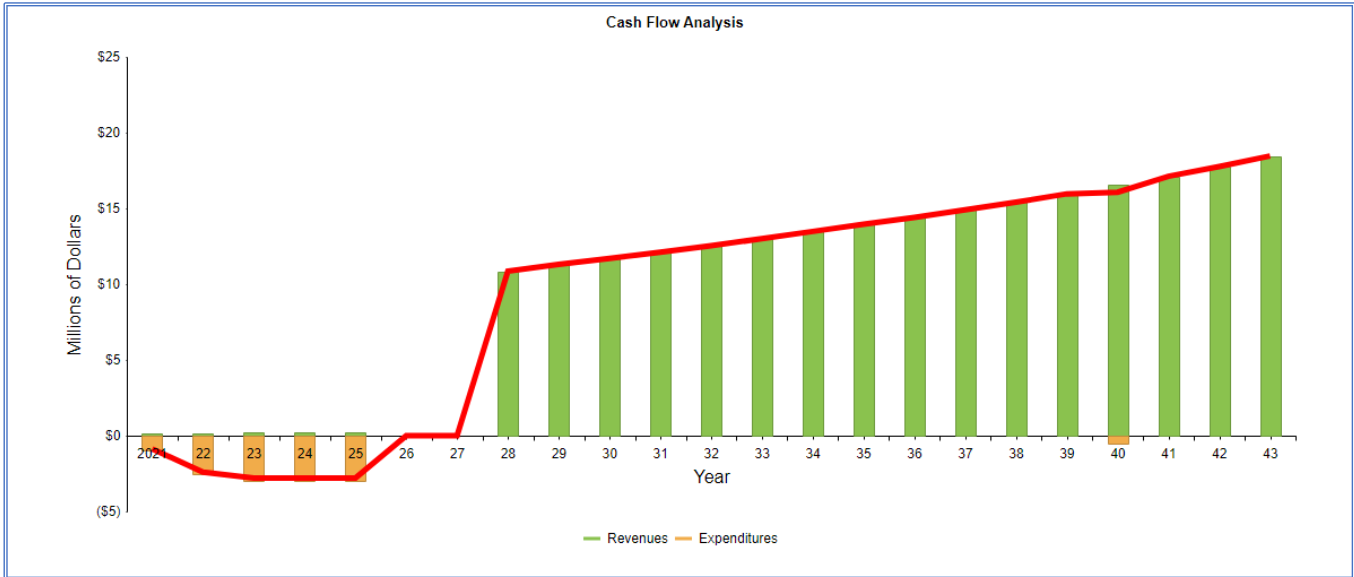
Methodology-Costs

Based on an engineering estimate that is included in the Appendix as provided by Digital Engineering, Inc., the table below shows the project costs and the percentage of Local and Federal share:

PROJECT COSTS					
Roadway	Construction	Lane Configuration	Total Project Cost	Federal Share (90%)	Local Share (10%)
Gex Drive, Noma Drive	Road with Multi-Modal lane	Two 10' lanes, 10' Multiuse Path, 2' Shoulders	\$1,928,014	\$1,735,213	\$192,801
Commercial Connector	New Roadways	Two 10' lanes, 10' Multiuse Path, 2' Shoulders	\$7,263,711	\$6,537,340	\$726,619
Akoko Street	Widening and new road from Ceolho Way to the Jordan River	Two 10' lanes, 10' Multiuse Path, 2' Shoulders	\$3,341,288	\$3,007,159	\$334,129
Totals =			\$12,533,013	\$11,279,712	\$1,139,820

Costs were also estimated for maintenance on the roadway at years seven and fourteen post completion of the roadway using an asset management approach. The estimated cost for a minor overlay at those times were approximated at \$500K.

Cash Flow Analysis



Results -Benefit and Costs

After extensive analysis, the following Benefit to Cost Ratio (B/C) was calculated using a 3% and 7% Discount rate, shown respectively in the table below:

Benefit-Cost Summary

Benefits	Project vs. Base
	7% Discount Rate (\$M)
Vehicle Operating Costs	37.27
Business Time and Reliability Costs	15.7
Safety Costs	36.35
Productivity from Access/ Connectivity	0.28
Environmental Factors	2.43
Consumer Surplus and other Social Welfare	0.38
Total Benefits	113.67

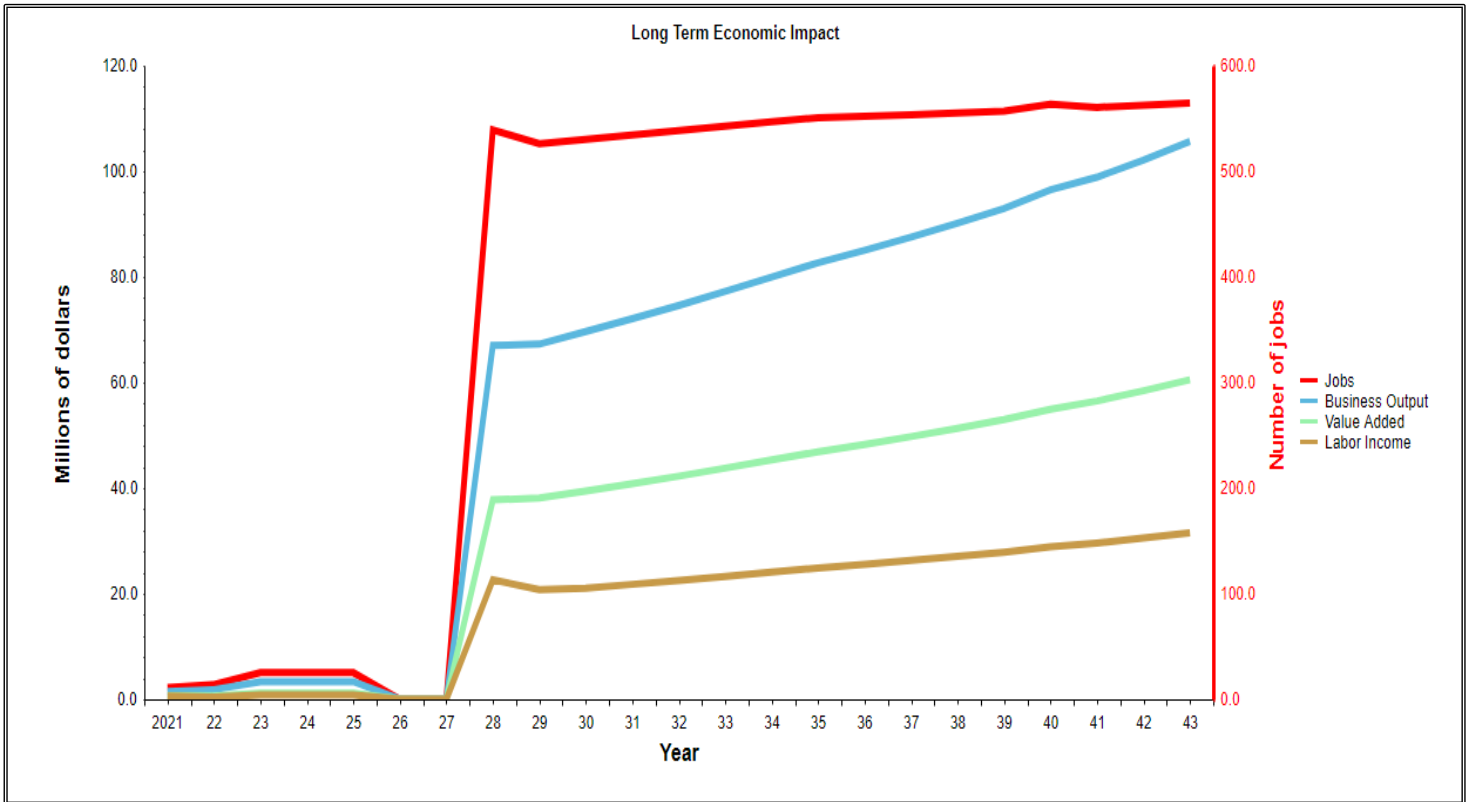
Costs	Project vs. Base
	7% Discount Rate (\$M)
Capital Investment Costs	9.38
Operation and Maintenance Costs	0.12
Cost Adjustments	-0.21
Total Benefits	9.29

Benefit/ Cost Ratio	12.24
----------------------------	--------------

Overall Economic Impact and Benefits

The total economic impact over twenty (20) years for the region would be an increase in Gross Regional Product of \$61M or approximately \$3M per year. The project would result in an increase in societal benefits from traveler savings, environmental benefits, and wider economic benefits of \$97.93M over the life of the project. The project would create 565 jobs, with 24% of those having above average wages. A graph of these impacts is shown below:


COMMERCIAL TRANSFORMATION PROJECT: ECONOMIC IMPACT



VII. Federal Wage Certificate

I, Mr. Michael Reso, on behalf of the City of Diamondhead, Mississippi the sponsoring agency for the Department of Transportation's BUILD grant, now certify that the City of Diamondhead, Mississippi will comply with the requirements of Subchapter IV of Chapter 31 of Title 40, United States Code (Federal Wage Rate Requirements), if awarded a USDOT BUILD Grant for funding for this project.

Date: 5-11-20

Signature: 

Applicant: CITY OF DIAMONDHEAD, MISSISSIPPI
Title: CITY MANAGER