

Glades Region Master Plan



Executive Summary Glades Region Master Plan Palm Beach County

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Executive Summary

Introduction

Palm Beach County, as a recipient of a 2012 U.S. Department of Housing and Urban Development (HUD) Community Challenge Planning Grant, in conjunction with its partners, and on behalf of the cities of South Bay, Belle Glade, and Pahokee and the surrounding unincorporated areas, has studied and recommended ways to improve mobility, quality of life, and economic sustainability in the Glades Region. This study considered new and emerging economic development opportunities for the Glades Region and summarizes those opportunities in an implementable plan. Further detail on each element of the plan is available in the full report and supporting appendices. This effort was conducted with significant and meaningful public participation throughout the process.

Key aspects of the study include:

- The creation of a comprehensive master plan for the cities and key areas of the region which considers infill and redevelopment opportunities.
- A review of land use and development regulations in order to recommend improvements and ways to incentivize desired redevelopment and business creation.
- The development of a market overview which reviews existing market conditions, demographics, and analyzes key market trends in the region.
- An economic development analysis which examines existing and emerging industry clusters and their potential in the Glades Region.
- A community-based vision for an economically sustainable Glades Region.
- An evaluation of infrastructure needs (including water, wastewater, drainage, roadways and railway) and public transportation improvements needed to support a sustainable Glades Region.
- A review of previous and current studies conducted in the Glades Region.

Achieving long-term economic sustainability in the Glades Region will be linked to four primary implementation elements:

- Local and Regional Tourism Development

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- Glades-based Visitor Attraction
- Direct Intermodal Logistics Center (ILC)-Related Workforce Skills Improvements
- Indirect and Collateral Industries Employment Opportunities

The Glades Region

The project area for the Glades Region Master Plan focused on, but was not limited to, the three (3) municipalities along the southeastern shore of Lake Okeechobee: (1) City of South Bay, (2) City of Belle Glade, and (3) City of Pahokee. The entire Glades Region was analyzed for economic and job-creation opportunities as well as other community stabilizing initiatives.

Located approximately 35 miles west of the West Palm Beach coastal population centers, the Glades Region is a relatively self-contained area anchored by three cities: South Bay, Belle Glade and Pahokee. The region's population is characterized as having low to moderate household incomes, and its economy is primarily agricultural and recreation-based. Long-term unemployment and pervasive poverty are challenges confronting the region. Although isolated, the region is at the crossroads of numerous Southeast Florida highways and within a two-hour drive to a large number of major population centers, making it an ideal logistics, recreational or employment hub.

Figure ES-1 shows the Glades Region area as well as the locations of the Cities of Belle Glade, Pahokee, and South Bay, and **Table ES.1** includes key data relative to each.

Table ES.1
Data for Glades Region Cities

City	Year Incorporated	2013 Population	2013 Poverty Level	2013 Unemployment Rate
Belle Glade	1928	17,372	35.1	18.7
Pahokee	1925	5,828	26.7	27.0
South Bay	1941	4,719	42.3	22.1



Figure ES-1 - Glades Region

Master Plan Elements

The following is a listing and brief overview of the specific planning elements considered in this study and addressed in the Glades Region Master Plan. They are more fully discussed, including recommendations relative to each, in the noted sections of the full report.

- Section 3 (Market Overview and Economic Analysis) – Included evaluation of demographic characteristics, real estate market conditions and target industries to establish the basis for economic development strategies.
- Section 4 (Water) – Included 20 year population and demand projections, distribution system (hydraulic) modeling, and 20 year capital improvement plan with costs and schedules.
- Section 5 (Wastewater) – Included 20 year population and demand projections, transmission system (hydraulic) modeling, infiltration and inflow analysis, and 20 year capital improvement plan with costs and schedules.
- Section 6 (Drainage/Flood Protection and Stormwater Management) – Included coordination with municipalities and Drainage District Engineers regarding stormwater systems and problem areas, prioritization of problem areas, and analysis of alternatives for improvement scenarios.
- Section 7 (Transit Plan) – Included evaluation of potential improvements to the Transit system serving the Glades Region (included routes, schedules, resources and associated costs for service additions, transfer centers and other improvements).
- Section 8 (Roadway Alignments) – Specifically addressed alternative alignments and development of typical sections and design criteria for the extensions of Hooker Highway and Avenue E to serve the Intermodal Logistics Center.
- Section 9 (Roadway and Railroad Improvements) – Included evaluation of long range impacts of Intermodal Logistics Center, inventory of existing roadway conditions, assessment of roadway improvement needs, and high level evaluation of needs for additional roads/railroads.
- Section 10 (Land Planning) – Includes development of Overlay Guidelines, Amendments to facilitate implementation of the Glades Region Master Plan, Comprehensive Plan Amendment, and staff training (this element is still ongoing).

Public Participation Process

Engaging the public in a continuous and meaningful way has been a cornerstone of the Glades Region Master Plan process. In March 2013, Palm Beach County kicked-off the Glades Region Master Plan with an opening presentation and panel forum introducing the community to the multiple aspects of the master plan elements and process. The Community

Challenge Planning Grant, which funded this effort, was clear in two particular areas: the grant dollars were meant for “planning” efforts and not capital improvements; and, a meaningful process of public input and engagement was essential. For the Glades Region Master Plan, the primary process for public input and engagement can be broken into four key components: the Core Planning Committee, the Stakeholder Interview Process, Public Workshops, and Ongoing Outreach through meetings and presentations.

Palm Beach County, in managing the overall Glades Region Master Plan effort, has put great emphasis and effort into assuring all elements of the plan are focused, discreet to their particular objectives, yet remain connected to the other areas of the plan. There are four distinct characteristics of the Glades Region Master Plan that separate the effort from previous plans and studies for the Glades:

- Multi-Disciplinary and Comprehensive
- Inclusive
- Tangible, and
- Enduring

Recommendations

The public participation process yielded a set of key cross-cutting recommendations that support the economic sustainability of the Glades Region. The recommendations have been grouped based on the following categories:

- Plan Implementation - Key local organizations and stakeholders have and will play a vital role in plan implementation.
- Local Visioning Process - Each of the tri-cities could benefit from a local visioning process to articulate its respective plan for future development/redevelopment.
- Infrastructure - All stakeholders committed to the long-term economic sustainability of the Glades communities should work together to support the implementation of all infrastructure, roadway, transportation, and transit recommendations identified in the Glades Region Master Plan.
- Branding - Providing a more positive image of the Glades communities has been a constant theme throughout the Glades Region Master Plan process. Each of the Glades Region Master Plan planning partners and the tri-cities has a prime opportunity to emphasize the positive attributes of the Glades communities.

Market Overview and Economic Analysis

The Market Overview and Economic Development Analysis considers new and emerging economic development opportunities for the Glades Region and articulates those

opportunities in an implementable plan. It provides an evaluation of demographic characteristics, real estate market conditions and target industry reviews, which then forms the basis for preparation of a set of economic development strategies for the Glades Region. These strategies consider local conditions in each of the three municipalities and unincorporated area which comprise the Glades Region, and the community's vision to the extent possible. Strategies are focused on meeting the objectives identified in the plan, such as net new job creation, training and workforce development, and entrepreneurial opportunities.

The analysis provides a set of general and community-specific recommendations or "civic initiatives" that, if implemented, will provide baseline conditions for economic growth and facilitate longer term economic development. Economic development strategies for the Glades Region should be expected to be implemented over time, in phases, and tied to both public and private investment initiatives that will generate additional employment and incremental improvements in future years. The economic analysis consisted of the following key components: Site/Market Reconnaissance and Public Outreach, Demographic and Economic Profile, Real Estate Market Condition, Target Industry Review, Economic Development Potentials and Strategies, and Economic Impacts.

The purpose of this report is to focus on those "building blocks" that will guide preparation of a comprehensive economic development strategy which is reflective of existing goods and services and employment opportunities relative to the residential population. In addition, the economic analysis is intended to provide a base understanding of existing and emerging industry clusters and their potential in the Glades Region. The "building blocks" address the Glades Region's economic challenges of high unemployment and poverty, disinvestment, lack of jobs, and declining tax revenues.

Target Industry Review

The planning team reviewed previous relevant economic studies, planning efforts and ongoing economic development initiatives to understand those industry clusters with the best potential to enhance the economic sustainability of the Glades Region, namely:

- Agri-business/Food Processing and Production
- Recreation and Visitor/Tourism (and Supporting Retail Services)
- Transportation and Logistics (related to the proposed Intermodal Logistics Center)

Initial Findings: Challenges and Opportunities

Initial research and interviews indicate that the Glades Region has potential demand for new residential, tourism, commercial and employment centers, but its poor infrastructure and general lack of suitable land restrict the market-based growth. Several recommendations were derived from these interviews and reconnaissance efforts, including:

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- Explore the feasibility and plan for niche specialty farms offering unique, quality herbs, fruits and vegetables for both wholesalers and direct retailers. Establish and brand a “Farm to Table” tourism destination by grouping of specialty niche farms with a year-round market.
- Expand interviews and research on potential challenges and opportunities for public and private financing of employment centers and residential development.
- Follow progress of proposed Intermodal Logistics Center and its potential impact on employment and land use.
- Identify sources of funding for feasibility studies to understand product type; absorption/demand potentials; marketable locations; funding sources; developer-builder outreach, etc.
- Seek funding sources which could finance the expansion of tourism in the region. Support the development of additional hospitality and tourism destinations.
- Gain a realistic understanding of the baseline cost and time frame to upgrade the region’s infrastructure. Consider several pilot locations and an overall phasing plan to target specific redevelopment and new real estate investment.

Recommendations

The market overview and economic analysis developed a set of key recommendations to support economic sustainability for the Glades Region based upon the following identified issues:

- Low Economic Diversity
- Small Business Development / Entrepreneurship
- Tourism
- Infrastructure
- Education / Workforce Development
- Opportunity Sites
- Intermodal Logistics Center

The economic analysis has also identified “Opportunity Sites” for each community, as reflected in **Figures ES-2** and **ES-3**. Opportunity Sites are sites that, by their location, visibility, access to unique environmental, cultural and/or historical assets and economic development potential provide the best opportunities for catalytic redevelopment, job creation, business development and private sector investment within the tri-cities in the Glades Region.

Opportunity Sites

1. Proposed Glades Visitor Education Center (1 to 2 acres located somewhere along Highway 98 in unincorporated County adjacent to sugar fields)
2. Re-use of vacant Glades Correctional Institution lands (State approved \$1.2 million sale to BGI Group - redevelopment plans/options TBD)
3. Belle Glade Business Park (additional existing parcels available for development)
4. Torry Island & Preserve (position and market future small resort facilities as stand-alone/self-contained facilities)
5. Proposed Intermodal Logistics Center (850 acres of land to site 2 million square feet of industrial land uses in Phase I)
6. South Bay Park of Commerce (100 acres of vacant undeveloped commercial/industrial land adjacent to the proposed ILC)
7. Intersection of SR 80 / US Highway 27 (prospective Town Center)

Civic Initiatives

Built Environment

Clean up approaches to Belle Glade along major roadways to improve the image of the community

Clean up downtown Belle Glade, and seek solutions to crime and unemployment over time

Infrastructure

Complete the roadway connection from Hooker Highway to provide truck access to the northern portion of the ILC site, as funding is available

Implement additional streetscape enhancements for residential areas of South Bay, and provide both separate routes and clear directional signs for ILC-bound truck and other traffic

Incorporate potential rail and road linkages and improvements to strengthen connections for the ILC site's first phase

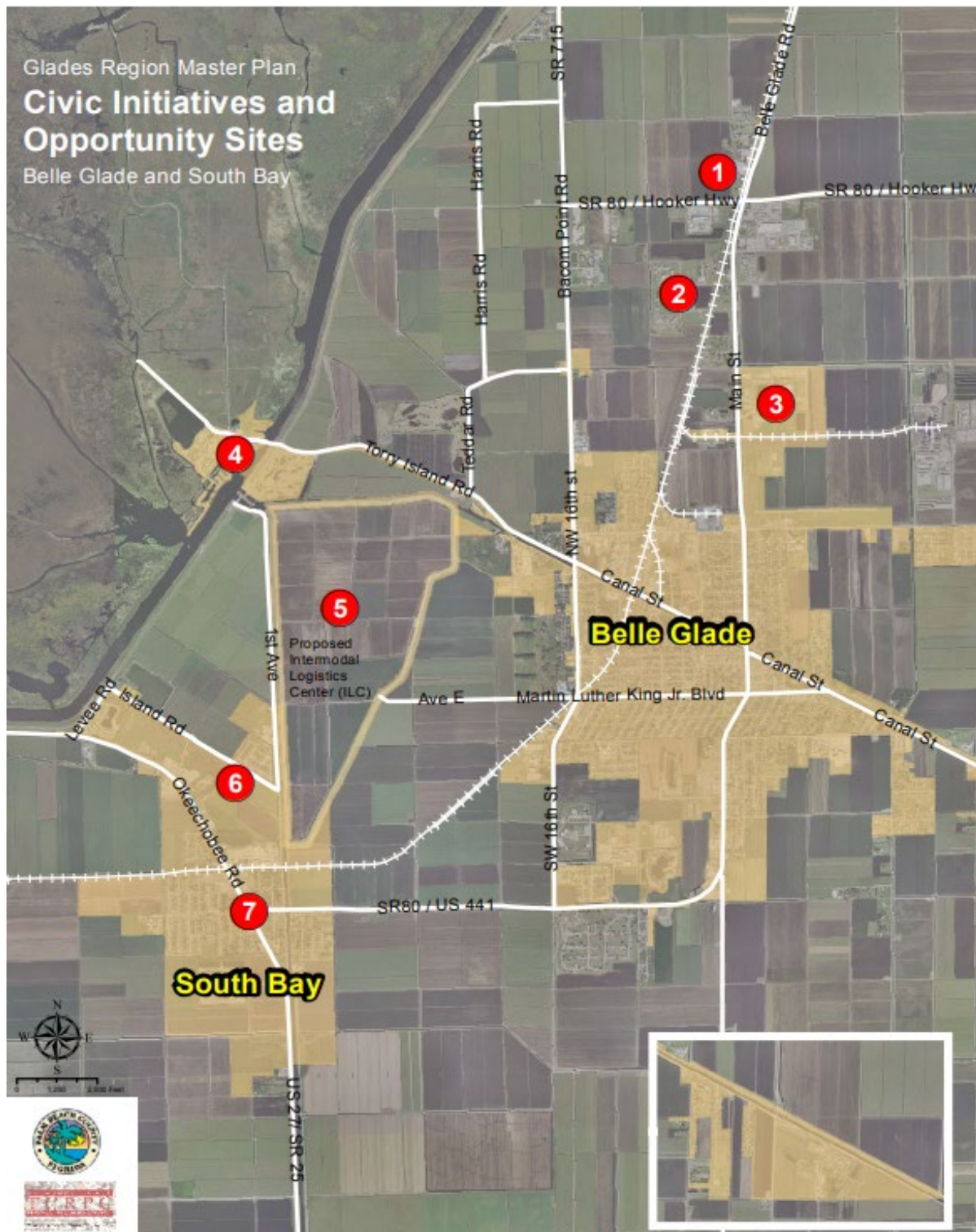


Figure ES-2: Opportunity Sites (Belle Glade and South Bay)

Civic Initiatives

Infill / Redevelopment Historic Preservation

Create and focus infill development to eliminate vacant sites and physical 'gaps' in downtown Belle Glade

Address muck soil conditions affecting construction of new housing and commercial development as well as existing buildings; this will require some form of financial subsidy to reduce the estimated 20% cost premium for building on muck soils, as well as targeted engineering of solutions to existing issues

As the City's population increases through ILC activities, add stronger retail operators to the mix, including grocery, food & beverage and other retail categories, as market supportable

Concentrate redevelopment in the downtown area to reduce blight and disinvestment; this will require adding job opportunities and reducing crime and negative perceptions about Belle Glade

Plan locations for new infill housing in Belle Glade for future ILC employees who may move to the area

Tourism / Visitor Development

Improve hotel and food service offerings in key locations such as U.S. Route 27 as opening of the ILC approaches; additional variety and ranges of quality will broaden market opportunities

Plan key locations such as U.S. Route 27 as opening of the ILC approaches; additional variety and ranges of quality will broaden market opportunities Plan locations for one or more major Truck Service Plazas that will complement the ILC traffic and operations; this will include service stations, 24-hour restaurants, lodging, and specialized retail

Improve connectivity and image along approach roads and access to Torry Island if it becomes a further developed fishing/wildlife visitor destination; improvements should be tied to recommendations identified as part of a comprehensive tourism development plan/strategy for the Glades Region

Opportunity Sites

1. (Old) Cypress Hammock School site
(6 acre vacant site in Canal Point)
2. Vacant water treatment plant
(ensure that redevelopment strategy maintains the water tower as visible opportunity for clear branding/identity)
3. Former Pahokee City Hall site
(tourism redevelopment potential)
4. Mixed-use site in downtown Pahokee
(opportunity for private sector reinvestment in the downtown)
5. Former Everglades Memorial Hospital site (5 acres of adaptive re-use/ redevelopment opportunity)
6. Pahokee Plaza Site
(2.5 acre site ready for redevelopment)

Civic Initiatives

Built Environment

Continue streetscape improvements, including tree planting efforts such as the Royal (and other) Palms that have been planted along Bacom Point Road and Highway 98/441 from the south; this is a strong character and identity feature

Work to reduce/eliminate blight and disinvestment sites like the former hospital

As visitor volumes grow in the Pahokee area, add new food and beverage and targeted retail uses that will serve both tourist and resident markets

Infrastructure

Consistent with the challenges of muck soils throughout the Glades Region, address muck soil issues for construction and infrastructure in Pahokee

Glades Region Master Plan Civic Initiatives and Opportunity Sites Pahokee and Canal Point



Figure ES-3: Opportunity Sites (Pahokee and Canal Point)

Civic Initiatives

Infill / Redevelopment Historic Preservation

As possible, retain and redevelop existing and historic buildings and structures, such as the Pahokee Water Tower and water facilities plant, the former High School building, and commercial structures located on Highway 98/441

Pahokee has more 'imageable' structures that would be attractive to visitors seeking an 'old Florida' character, but they remain an opportunity and not yet a fully realized visitor market asset. Historic tax credits available from the Federal government can provide incentives for historic rehabilitation under the Secretary of the Interior's Guidelines; these programs are administered by the Florida State Historic Preservation Office

To capitalize on this character, it may be useful to develop design guidelines for future infill in downtown Pahokee to encourage the appropriate scale, materials, details and layouts to attract new businesses serving visitors and Pahokee residents

Tourism / Visitor Development

Focus tourism development opportunities in downtown Pahokee and at the Pahokee Marina: upgrade the quality and range of offerings in proportion to tourism marketing and increased volume over time

Add clear directional signs to Pahokee for visitors, who may arrive along Highway 98 from the south or along Muck Road, connecting to Old Connors Highway; this will also involve enhancements to approach roads to reinforce a visitor-friendly character

Fishing and Lake Okeechobee access are the foundations for adding new tourism infrastructure in Pahokee: lodging, food and beverage, selected retail services such as fishing supplies, camping, etc.

Pahokee is close to a number of agro-tourism sites, specialty farms and other agro-businesses that could benefit from a focus on Farm-to-Table restaurants and cafes. A food-based retail concept should be considered for downtown Pahokee as part of both the tourism marketing plan and as a business development strategy for the City

Infrastructure

Water

A Water Master Plan was developed as part of the overall Glades Region Master Plan. The Water Master Plan addresses development of raw and finished water demand projections for the Glades Region; development and calibration of a hydraulic water distribution system model; analysis of water treatment plant and finished water storage capacity; and development of a Capital Improvements Plan through 2035.

In 2013 it was estimated that 33,663 residents were served by Palm Beach County Water Utilities Department in the Glades Region, with an average annual finished water demand of 5.30 mgd, and maximum day and peak hour finished water demands expected to reach 7.18 mgd and 12.92 mgd, respectively. For 2035, the Glades Region population is projected to be 53,136 residents, with anticipated annual average finished water demand projection of 8.04 mgd, maximum day demand of 11.02 mgd, and peak hour demand of 20.06 mgd.

A summary of projected Glades Region service area population and finished average annual water demand is shown in **Figure ES-4**.

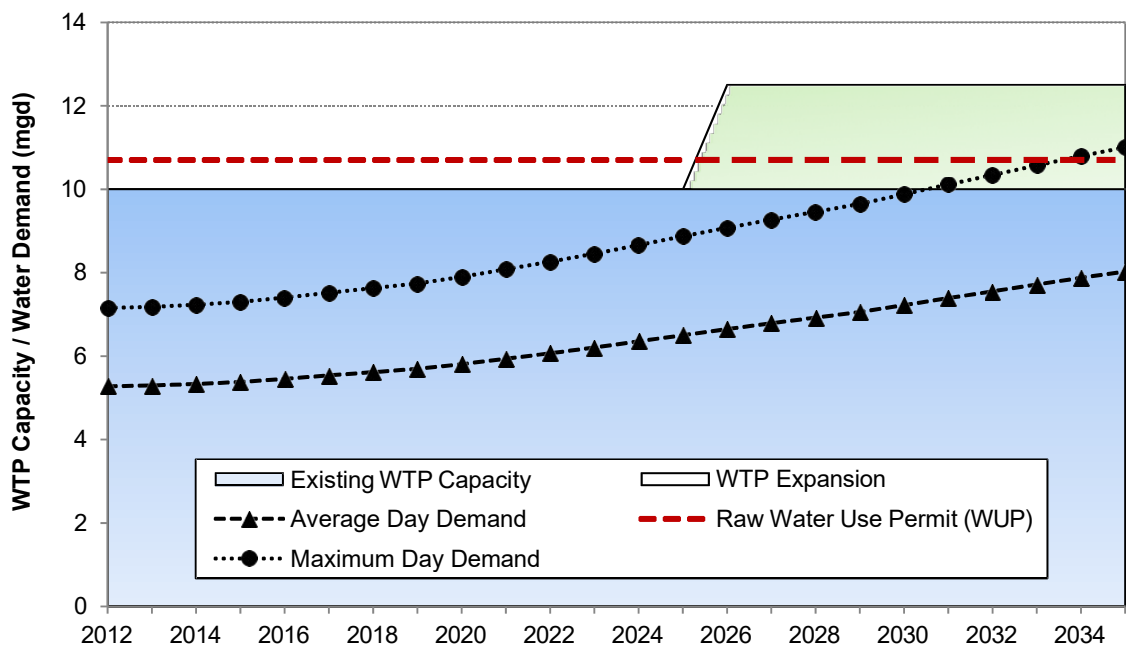


Figure ES-4: Projected Glades Region Service Area Population and Water Demand

Existing Water System Assets

Palm Beach County Water Utilities Department currently operates one raw water wellfield in the Glades Region, with a total annual raw water allocation of 3,443 million gallons equivalent to an average of 10.7 mgd. The current water use permit is scheduled to expire in October 2025.

Groundwater is pumped to Water Treatment Plant No. 11, which is a reverse osmosis facility with a total permitted capacity of 10 mgd. The comparison of maximum day demand projections, Water Treatment Plant capacity, and permitted raw water quantity in **Figure ES-5** shows that both additional raw and finished water will be required before year 2030. A Water Treatment Plant capacity expansion and other projects to meet 2035 demands were analyzed and evaluated for incorporation into the Capital Improvements Plan.

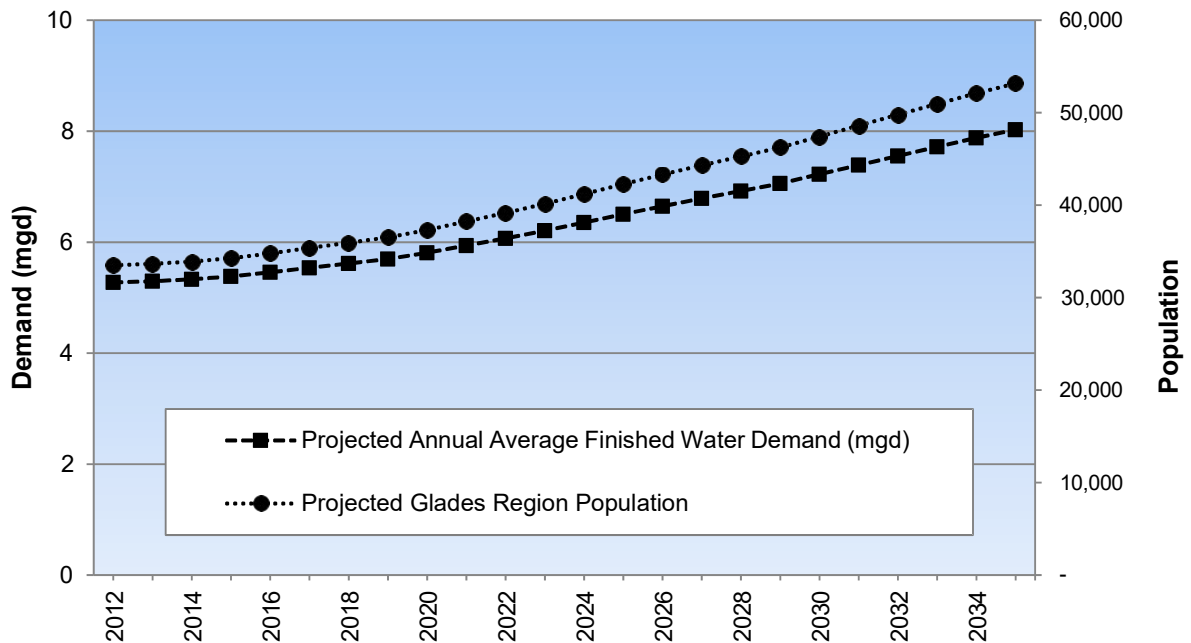


Figure ES-5 – Comparison of Maximum Day Demand Projections with Water Treatment Plant Capacity

The water distribution system is comprised of 203 linear miles of pipe, three repump facilities, and several elevated and ground storage tanks that provide a total 5.5 MG of finished water storage. The service area encompasses approximately 44 square miles.

Water Model Development

A hydraulic model of the water distribution system was created using InfoWater v8.1. Modeling evaluations included multiple scenarios of annual average demand, maximum

day demand, peak hour demand, and fire flow conditions. Steady state and extended period simulations provided the appropriate level of knowledge to allow for complete system evaluation.

Finished water storage capacity is used for operational equalization, fire reserve, and emergency needs. The existing storage capacity of 5.5 MG is sufficient to meet the storage requirements through 2035 for both the minimum Palm Beach County Water Utilities Department fire reserve requirement and the more conservative AIA fire storage reserve recommendations.

Recommendations / Capital Improvements Plan

Capital improvement projects were classified into three groups: Water Treatment Plant No. 11 Projects, Storage and Pump Station Improvement Projects, and Distribution System Projects. **Table ES.2** (on page ES-16) summarizes the project costs under the three categories, along with the approximate expenditure timing.

Wastewater

Palm Beach County Water Utilities Department operates the Glades Region wastewater facilities serving the cities of South Bay, Belle Glade, and Pahokee in western Palm Beach County. In support of the Challenge Grant, a Wastewater Master Plan was also developed for incorporation into the overall Glades Region Master Plan.

Specific areas addressed in the Wastewater Master Plan include: Wastewater service area and existing facilities, renewal and replacement needs, population projections, wastewater flow and loading projections, transmission system hydraulic modeling, collection and transmission system capacity and reliability analysis, infiltration and inflow assessment, regulatory driven issues and improvements, wastewater treatment plant operations and maintenance performance.

The purpose of this study was to determine the requirements for future utilities infrastructure, including renewal and replacement, through the 2035 planning horizon and to develop a guide for capital improvements planning and implementation. The objective was to develop a plan that would provide an equitable, technologically sound and economical implementation strategy for managing the wastewater collection, treatment and disposal systems in the western portion of the Palm Beach County service area, known as the Glades Region Wastewater Service Area.

Wastewater Service Area and Existing Facilities

The overall Glades Region Wastewater Service Area encompasses approximately 43.5 square miles in western Palm Beach County. The wastewater service areas associated with the Belle Glade Wastewater Treatment Facility and Pahokee Wastewater Treatment

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Facility are shown in **Figure ES-6**. There are currently no interconnections between the two collection/treatment systems.



Figure ES-6: Glades Region Wastewater Service Sub-Areas

Population projections for each wastewater service area are summarized in **Figure ES-7**.

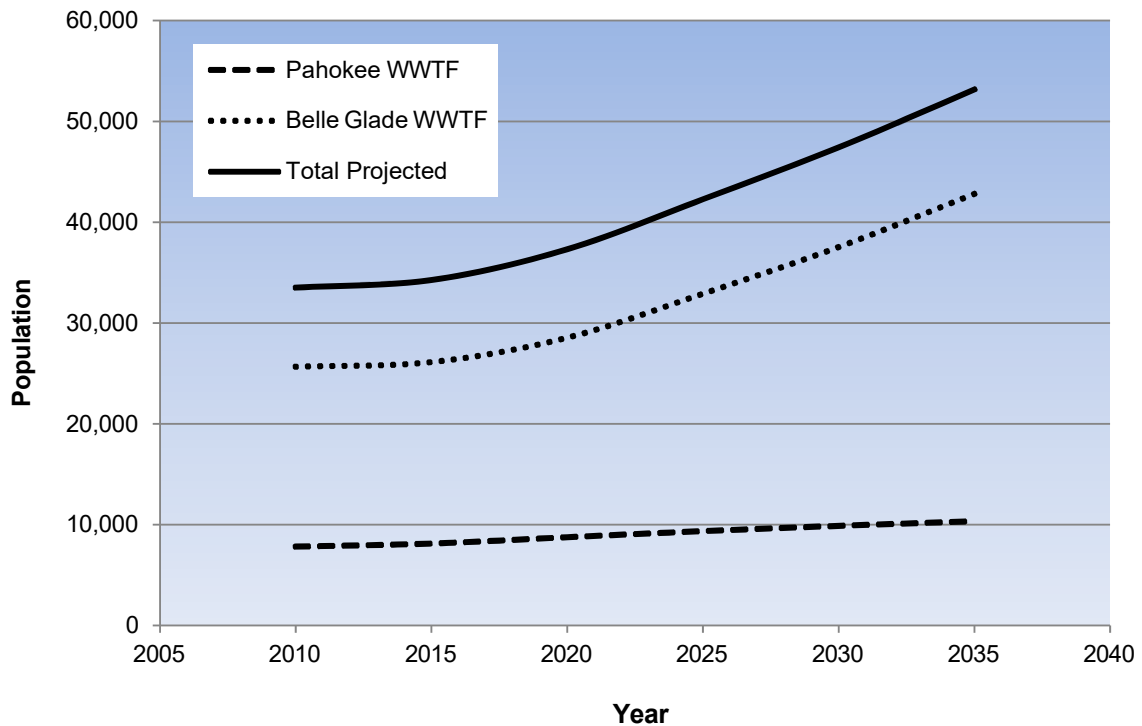


Figure ES-7: Wastewater Service Area Population Projections

Transmission and Collection System

The Glades Region Wastewater Service Area master planning effort included an evaluation of the wastewater transmission system through the use of hydraulic modeling methods (using the County's preferred modeling platform, InfoWater®).

The gravity collection systems in the Glades Region were reportedly installed from the 1950s through the 1990s and infiltration and inflow is a significant issue. System-level and basin-level evaluations of the effects of potable water usage, rainfall, and groundwater elevation on total Wastewater Treatment Facility flows was conducted. A number of conclusions were made based on these evaluations, and are presented in the Wastewater Master Plan report. A comprehensive program of assessment and repair is recommended for the Belle Glade, South Bay, and Pahokee wastewater collection systems to limit infiltration and inflow and help maintain a reliable and structurally sound system.

Recommendations / Capital Improvements Plan

The wastewater master planning effort for the Glades Region Wastewater Service area included an evaluation of its wastewater system, consisting of collection (i.e., lift stations), transmission (force mains), treatment and disposal. Projects have been grouped based on the following categories:

- Collection System (Lift Stations)
- Transmission System (Force Mains)
- Infiltration and Inflow
- Wastewater Treatment and Disposal

Recommended capital improvements were developed for short and long term time horizons as summarized in **Table ES.2**.

Drainage

An element of this plan is the completion of a new Drainage System Inventory and Evaluation. The Glades Region Master Plan is intended to be a guiding document and this element is intended to identify drainage problem areas and provide detailed analyses of the top five problem areas with recommended alternative solutions and associated costs.

The area is in proximity of three major South Florida Water Management District canals, the West Palm Beach Canal, the Hillsboro Canal, and the North New River Canal. The lands within the Study Area are also situated partially or fully within the service areas of a number of designated Water Control Districts. The Water Control Districts primarily function to drain and provide irrigation water to the agricultural lands they serve, but they also receive stormwater discharge from developed lands. The Water Control Districts' systems consist of networks of main canals and lateral canals, along with control structures, pumps, and other appurtenances for moving water. Much of the discharge from the municipal and County stormwater systems is received by the Water Control Districts' canals and is, therefore, impacted by the operation of the Water Control Districts' systems.

Improvement Alternatives

Coordination efforts relative to infrastructure, operations, and problem areas were held with all of the cities, Palm Beach County, and the Water Control Districts. Problem areas were prioritized and two conceptual design alternatives were proposed/analyzed for each of the five top problem areas. Costs and implementation horizons for these improvements are identified in **Table ES.2**

System maintenance is also vital for proper functioning of stormwater management systems. Municipalities and the County should review the written procedures prepared for MS4 NPDES

permit compliance to confirm that sufficient inspection and maintenance activities are scheduled for these problem areas.

Table ES.2
Infrastructure Related Capital Improvements
(excluding roadway, which is captured in
“Mobility”)

Improvement Category	Capital Cost	
	Near Term	Long Term
Water		
• Water Treatment Plant 11	\$10,281,000	\$2,520,000
• Storage and Pumping	\$1,105,000	\$2,120,000
• Distribution System	\$35,993,000	\$1,310,000
Wastewater		
• Collection System	\$17,393,750	\$8,860,750
• Transmission System	\$2,770,000	\$0
• Infiltration and Inflow	\$9,270,000	\$0
• Treatment and Disposal	\$15,910,000	\$9,450,000
Drainage		
• Area B1	\$1,121,200	\$0
• Area S1	\$37,800	\$0
• Area P1	\$146,000	\$0
• Area S2	\$715,300	\$0
• Area U1	\$132,800	\$0
Totals	\$95,997,050	\$24,260,750

Mobility

Transit

To fulfill the objectives of the Glades Region Master Plan, PalmTran contracted with the Center for Urban Transportation Research at the University of South Florida to conduct a Glades Region Master Transit Plan. The study entails a system assessment of the Palm Tran existing fixed route(s) 40, 47 and 48 bus schedules in the Glades Region. The goal is to provide a solution to serve the Intermodal Logistics Center with fixed route bus service that improves reliability, service efficiency, service effectiveness, and customer satisfaction. This project is expected to produce the following outcomes/benefits:

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- Additional and improved fixed-route bus service in the Glades Region for working commuters, providing frequent and well-located access to employment centers.
- Connectivity between bus routes for ease of transfers and efficient travel patterns for riders through a transfer center with coordinated bus schedules.
- Provide customer convenience with bus stop amenities to include shelters, benches, and ADA accessible boarding/alighting areas.

Glades Region Scenarios for Mobility

One primary task for reorienting service in the Glades Region is to determine a primary transfer center uniting Belle Glade, Pahokee, West Palm Beach, and the Intermodal Logistics Center. Two scenarios were developed to address a regional master transit plan for the Glades area focusing on the future Intermodal Logistics Center:

- Scenario I: West Tech as primary transfer center; and
- Scenario II: The Intermodal Logistics Center as primary transfer center.

Scenario II, reflected in **Figure ES-8**, was selected as most desirable.

A phased implementation approach, based on improvements, not on timelines, is suggested:

- Phase I – truncate the Route 40 at Mall at Wellington Green and commence new service from the Intermodal Transit Center to the Intermodal Logistics Center
- Phase II – make frequency and span improvements to the Routes 47 and 48
- Phase III – make frequency improvements to the Route 43 to supplement service between the Intermodal Transit Center and the Mall at Wellington Green.

Table ES.3 displays the cost of implementation for Phase I, Phase II and Phase III.

PALM BEACH COUNTY
GRANT CHALLENGE APPLICATION

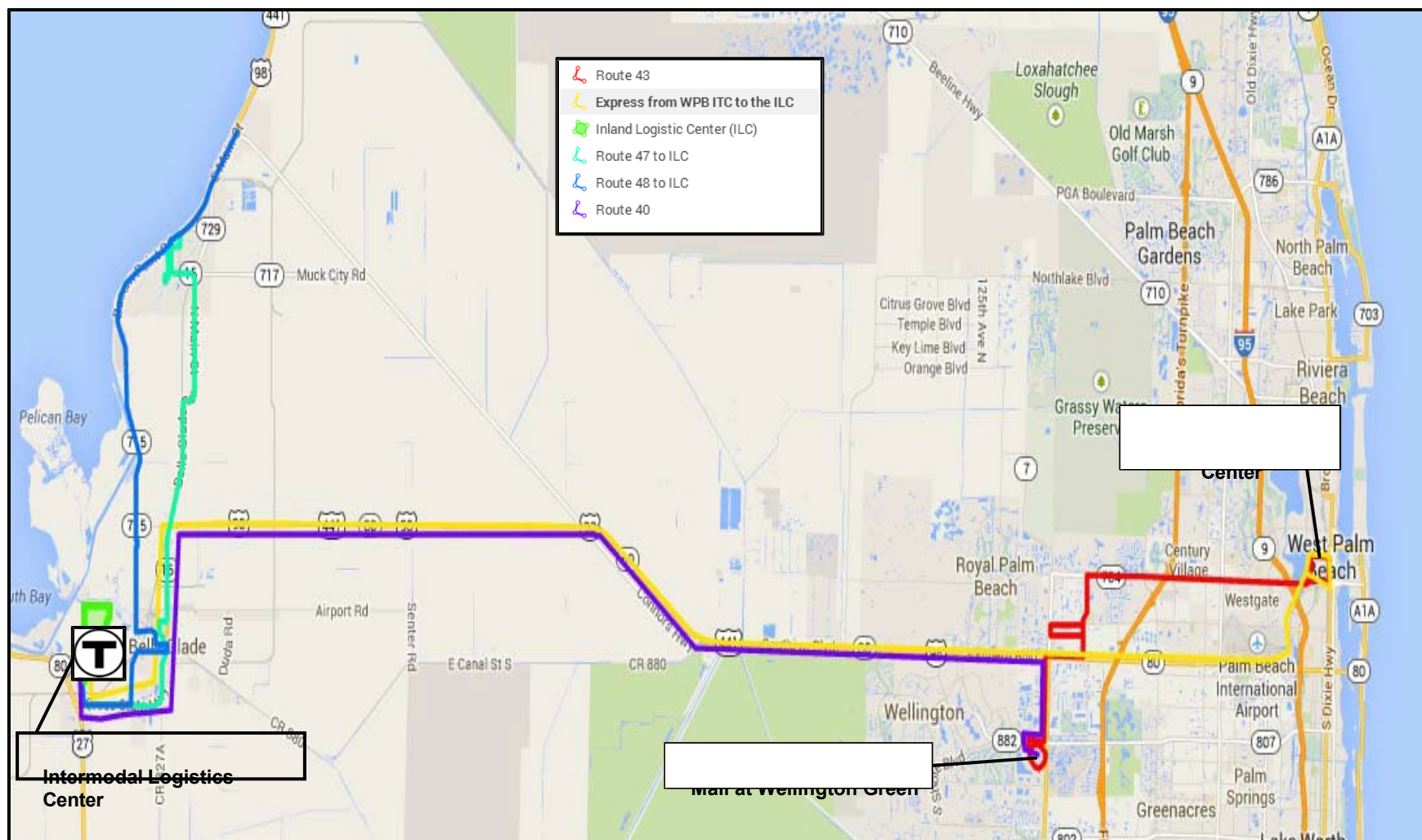


Table ES.3
Glades Master Transit Plan; Preferred Scenario Details / Costs

Description	Current Annual Revenue Hours	Additional Vehicle Requirement	Net New Annual Service Hours	Annual Operating Costs
Phase I				
Truncate Route 40 at Mall at Wellington Green while increasing frequency to 20 minute service from Mall at Wellington Green to Intermodal Logistics Center	20,295	4	26,280	\$3,206,160
Create new route – direct express/limited stop connection between Intermodal Transit Center to Intermodal Logistics Center	N/A	9	59,130	\$7,213,860
Subtotal	20,295	13	85,410	\$10,420,020
Phase II				
Increase frequency on route 47 to 20 minute service, extend southern terminus to the Intermodal Logistics Center	19,009	2	13,140	\$1,603,080
Increase frequency on route 48 to 20 minute service, extend southern terminus to the Intermodal Logistics Center	15,682	2	13,140	\$1,603,080
Subtotal	34,691	4	26,280	\$3,206,160
Phase III				
Increase frequency on route 43 to one bus every 20 minutes from Intermodal Transit Center to Mall at Wellington Green	25,984	2	13,140	\$1,603,080
Subtotal	25,984	2	13,140	\$1,603,080
GRAND TOTAL	80,970	19	124,830	\$15,229,260

Roadway Alignment

In order to support the overall Glades Region Master Plan, an analysis of proposed alignments to serve as a bypass route around the cities of Belle Glade and South Bay and to serve the proposed Intermodal Logistics Center (ILC) was performed.

Figure ES-9 shows the layout of the proposed alignments.

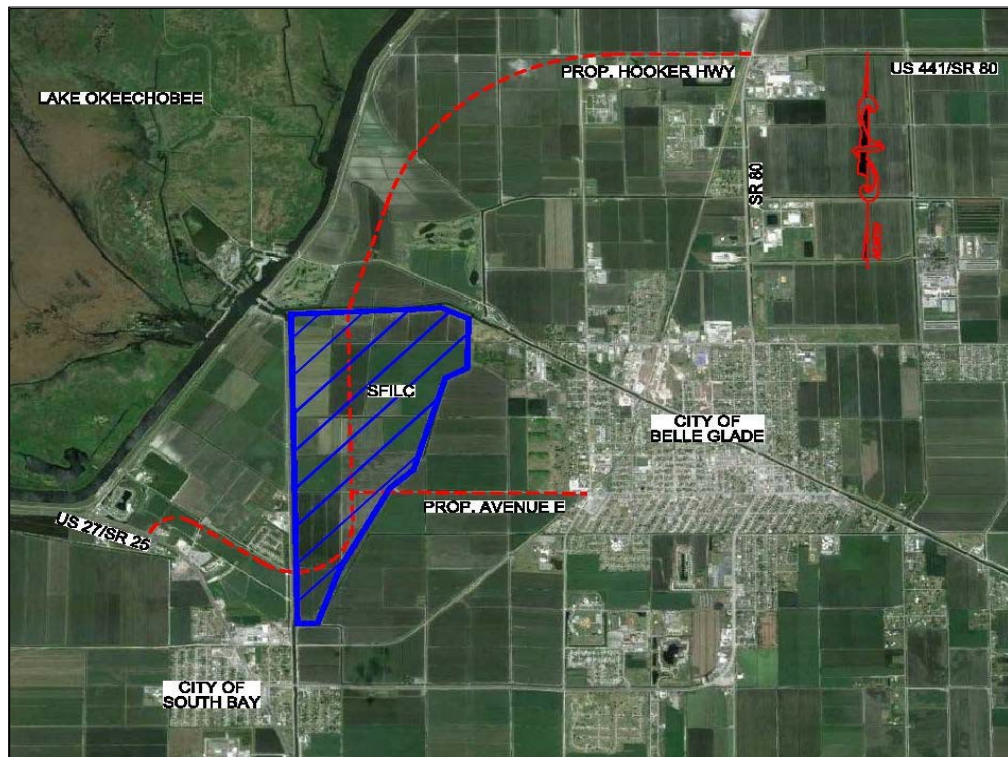


Figure ES-9: Proposed Roadway Alignments

The design study consisted of three different proposed alignments for each of the roadway sections surrounding the Intermodal Logistics Center (North Hooker Highway, South Hooker Highway and Avenue E). The primary basis for each of these alignments is the location of the Intermodal Logistics Center. The Hooker Highway alignments are to pass through the Intermodal Logistics Center from the north and out the southwest portion of the Intermodal Logistics Center and Avenue E will connect to the existing Avenue E extension in the City of Belle Glade.

The proposed roadways in this study are to be completed in two phases. The half-sections are to be completed first; once the half-sections meet capacity then the second half of the full section will be constructed. **Table ES.4** includes the opinions of probable construction cost (including engineering, surveying, and right-of-way acquisition) for the recommended alignment alternatives.

Roadway and Railroad

Included in the Glades Region Master Plan was an inventory of the existing roadway conditions, future roadway needs (with and without the planned Intermodal Logistic Center) and a study of the feasibility of extending a railroad line to the Glades Region.

Review of Existing Roadways and Long Range Traffic Study

The Traffic Division, in coordination with the Palm Beach County Roadway Production Division, completed a review of the existing roadway conditions in the Glades Region. Although the current long range analysis does not identify any capacity related issues with the existing roadway network, there are extensive existing deficiencies associated with the existing conditions of the roadways. Specifically, the problems are primarily due to the presence of muck within the roadway limits.

The potential long range roadway impacts of the proposed Intermodal Logistics Center were evaluated based upon various factors including, but not limited to, the existing land use of the Intermodal Logistics Center, the extension of Hooker Highway through the Intermodal Logistics Center site, the extension of Avenue E to Hooker Highway, estimated Intermodal Logistics Center employees and various other long range assumptions. The 2035 South East Regional Planning Model was determined to be the preferred model available to evaluate the long range traffic forecast for the Intermodal Logistics Center.

Based upon the modeling, the existing roadway links are within capacity. Although the need for the widening of existing roadways is not identified at this time, the character of the roadway will be significantly impacted by the increase in vehicle and truck traffic. Various intersection improvement needs were identified, and **Table ES.4** summarizes their estimated costs.

Recommended Roadway Improvements and Alternative Solutions

The single most important issue associated with addressing the roadways in the Glades Region is the presence of muck within the roadway limits. There are various options and/or alternatives to address the muck, such as:

- Removal of the muck (de-mucking) and replacing it with approved back fill material
- Surcharging the existing muck
- Construction of a geo-grid

In many instances the mitigation of the muck soils may not be feasible, due to either cost or constructability, therefore the leveling and overlay of the existing roadway was also evaluated. The cost associated with the leveling and overlaying of the existing roadway is significantly less than the costs to mitigate the muck and reconstruct the roadway. However, if the muck is not removed, the roadway will continue to prematurely fail and require continuous leveling and overlay. The frequency of the leveling and overlay would be determined by the deterioration of the structural capacity of the roadway ("waffling" of the asphalt) due to various factors including but not limited to the depth of the muck, traffic volumes and truck traffic. **Table ES.4** identifies Glades Region roadway reconstruction/repaving costs.

Rail Network

The Florida Department of Transportation commissioned the US-27 Multimodal Planning and Conceptual Engineering Study to determine the feasibility of a rail corridor generally following the US-27 corridor from the Homestead Extension of the Florida Turnpike in Miami-Dade County to the Palm Beach/Hendry County line. The purpose of the rail corridor is to meet South Florida's growing transportation needs for freight and passenger movement associated with the potential development of inland logistic centers in Palm Beach County, Glades County and St. Lucie County.

The development of a new rail corridor along US-27 would connect the Port of Miami with the SCFE railway and provide a reliever for the FEC and CSX railways, located mostly along the coast, and divert some long haul truck traffic to the new rail corridor.

The Planning and Conceptual Engineering Study concluded a new railroad corridor is feasible within the US-27 right of way. There are multiple constraints and/or issues that would have to be addressed such as the limited right of way width of US-27 in the South Bay area, intersection configurations, adjacent canals and major drainage control structures. The estimated cost of the development of a US-27 railroad is approximately \$1.2 billion.

Table ES.4
Mobility Related Capital Improvements

Improvement Category	Capital Cost	
	Near Term	Long Term
Roadway Alignment ⁽¹⁾⁽²⁾	\$30,060,000	\$15,030,000
Intersection Upgrades ⁽¹⁾⁽³⁾	\$700,000	\$0
Reconstruction / Repaving ⁽⁴⁾	\$6,305,000	\$6,305,000
Totals	\$37,065,000	\$21,335,000

⁽¹⁾ Timing connected to Intermodal Logistic Center

⁽²⁾ See Section 8, Table 8.4. Cost split 2/3 in Near Term, 1/3 in Long Term

⁽³⁾ See Section 9, Table 9.1.

⁽⁴⁾ Repaving costs utilized in lieu of reconstruction; assume recurring requirement – See Section 9, Table 9.2.

Planning and Regulation

As part of the project team, the Planning, Zoning and Building Department staff participated in the development of the Glades Region Master Plan. Planning, Zoning and Building Department participated in periodic meetings with stakeholders, provided data and support to the partners and stakeholders, participated in the Treasure Coast Regional Planning Council workshops with each of the Glades communities, developed strategies to implement the findings of the Glades Region Master Plan, and prepared Comprehensive Plan amendments needed to implement the Master Plan.

County staff joined efforts to review the existing conditions in the Glades Urban Service Area and review policies and land development regulations to develop guidelines where the County could address the livability principals: promoting affordable housing; enhancing economic competitiveness; supporting existing communities; coordinating policies and leveraging investments; valuing communities and neighborhoods; and providing more transportation choices.

Based on data analysis and public input, the primary challenge by far is the lack of economic opportunity and growth in this region. Through these efforts, County staff anticipates that the Glades Region Master Plan will be a guide for the Glades area to help increase economic development; create employment opportunities for the Glades communities; and serve as a comprehensive document to secure funding for significant infrastructure projects in the Glades.

The Comprehensive Plan acknowledges the cities' planning efforts, recognizes the different nature of the Glades and has policies to promote economic growth in the unincorporated areas of the Glades. To further this effort, County staff will include additional policies in the County's Comprehensive Plan to promote and support the Glades Region Master Plan within the 15-2 Amendment Round. The County will research and develop a staff report to recommend updates to the Comprehensive Plan to support the following: the Glades Region Master Plan, Flexible Regulations, Historic Resources, Outdated Policies (remove or revise), Economic Growth, Annexation Strategies, Intergovernmental Coordination, Density Review, Provision of Technical Assistance, and Joint Government Regulations and Process.

Implementation Plan

Implementation of the Glades Region Master Plan is expected to consist of the execution of the recommendations identified within the various study elements, and/or timely and appropriate modifications to those recommendations as conditions change moving forward. The recommended activities can be subdivided into three general categories: Policies, Programs, and Capital Improvements. Some of these activities constitute a single event, while others may be recurring or ongoing. Lastly, timing of events may be important (priority, phasing, precedent). The list below and **Table ES.5** show the summarized recommendations, categorized as noted above.

Implementation Plan Policies and Programs include:

- Acknowledge Glades Region Master Plan as the building plan applied to the Glades Urban Service Area in the Comprehensive Plan (near term, single event)
- Develop policies to continue protecting historic resources (near term, single event)
- Remove or revise outdated policies (near term, single event)

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- Provide policies with additional flexibility to promote economic growth in the Glades resources (near term, single event)
- Develop policies to encourage and promote intergovernmental coordination between local governments and agencies resources (near term, single event)
- Work with communities in western areas to assist with local regulations that will create incentives for new development (near term, ongoing)
- Provide the Glades cities with possible annexation strategies within their future annexation areas (near term, ongoing)
- Review the residential and non-residential densities and intensities (near term, ongoing)
- Provide technical assistance to the Glades Communities through Interlocal Agreement(s) (near term, ongoing)
- Encourage the Municipalities and Unincorporated County to jointly establish a clear vision with goals and solutions to foster investment in logical development patterns for the Glades Region Master Plan area (near term, ongoing)
- Multiple additional short and longer term policies and programs addressing:
 - Low Economic Diversity
 - Small Business Development / Entrepreneurship
 - Tourism

Table ES.5
Proposed Implementation Capital Improvement Activities

Improvement Category	Capital Cost	
	Near Term	Long Term
Water	\$47,379,000	\$5,950,000
Wastewater	\$45,343,750	\$18,310,750
Drainage	\$2,153,100	\$0
Transportation ⁽¹⁾⁽²⁾	\$37,065,000	\$21,335,000
Totals	\$131,940,850	\$45,595,750

⁽¹⁾ Excludes annual Transit costs of approximately \$15.2M – See Section 7, Table 7.1

⁽²⁾ Repaving costs utilized in lieu of reconstruction; assume recurring requirement – See Section 9, Table 9.2.

It should be noted that these activities are based on the best available information at this time, and it is expected that the implementation plan will evolve and be modified accordingly as additional information becomes available and conditions change.