

**RESOLUTION NO. 25-\_\_\_\_\_**

**A RESOLUTION BY THE PINELLAS COUNTY BOARD  
OF COUNTY COMMISSIONERS ADOPTING THE JOE'S  
CREEK INDUSTRIAL PARK MASTER PLAN; AND  
PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the Board of County Commissioners of Pinellas County, Florida is the governing body of Pinellas County; and

**WHEREAS**, in 2008, the Pinellas Planning Council (PPC) established Target Employment Centers (TECs) on the Countywide Land Use Map delineating cohesive areas of industrial-type development throughout Pinellas County; and

**WHEREAS**, the Lealman Community Redevelopment Area (CRA) Plan was adopted in 2016; and

**WHEREAS**, the CRA Plan established redevelopment objectives and strategies for the Lealman CRA; and

**WHEREAS**, as redevelopment occurs in Lealman, Objectives 1 and 2 of the CRA Plan encourage the use of targeted economic development strategies and opportunities to improve the commercial/business environment along major corridors as well as the Joe's Creek Industrial Park; and

**WHEREAS**, in 2023, the Forward Pinellas Board and Countywide Plan Authority adopted the Target Employment and Industrial Lands Study (TEILS) giving local governments the option to prepare Special Area Plans (SAPs) for TECs to provide a greater variety of land uses and allow more local control to Pinellas County municipalities; and

**WHEREAS**, the County has prepared the Joe's Creek Industrial Park Master Plan (Master Plan) to serve as a SAP per the requirements of TEILS; and as a mechanism intended to guide development and redevelopment within the Lealman CRA; and

**WHEREAS**, throughout the development of the Master Plan, the County has sought input from the Lealman community through a multi-day stakeholder engagement event, an online survey, personal door-to-door outreach to the business community, and public meetings with the Lealman CRA Citizen Advisory Committee (CAC); and

**WHEREAS**, County Departments have assisted in the advisement, preparation, and review of Master Plan findings, recommendations, and documents prior to adoption, including the Departments of Housing and Community Development, Public Works, Economic Development, and Utilities, as well as the Lealman CRA staff; and

**WHEREAS**, there have been multiple presentations to the Lealman CRA CAC, County Administration, and Board of County Commissioners; and

**WHEREAS**, on June 25<sup>th</sup>, 2025, the Lealman CRA CAC voted unanimously to recommend approval of the Master Plan to the Board of County Commissioners; and

**WHEREAS**, on July 17, 2025, County staff presented the Master Plan findings and recommendations at a Board of County Commissioners Work Session; and

**WHEREAS**, subsequent to the passing of this Resolution adopting the Master Plan, County staff will draft and propose specific amendments to the County's Comprehensive Plan (a.k.a., PLAN Pinellas) and the Land Development Code in support of Master Plan findings and recommendations.

**NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF PINELLAS COUNTY, FLORIDA**, in regular session duly assembled this 19<sup>th</sup> day of August 2025, that it hereby adopts the Joe's Creek Industrial Park Master Plan, as attached as EXHIBIT A.

This resolution shall become effective immediately upon its adoption.

Commissioner \_\_\_\_\_ offered the foregoing Resolution and moved its adoption, which was seconded by Commissioner \_\_\_\_\_, and upon roll call the vote was:

AYES:

NAYS:

Absent and not voting:

APPROVED AS TO FORM  
By: Derrill McAtee  
Office of the County Attorney

## **EXHIBIT A**

### **JOE'S CREEK INDUSTRIAL PARK MASTER PLAN**

A photograph of a creek with trees and industrial buildings in the background, serving as the background for the title graphic.

J

C

# JOE'S CREEK INDUSTRIAL PARK MASTER PLAN

July 2025

P

# CONTENTS

<i>Section 1: Introduction</i> .....	3
<i>Section 2: Stakeholder Engagement</i> .....	11
<i>Section 3: JCIP Today</i> .....	18
<i>Section 4: Vision Plan</i> .....	40
<i>Section 5: Action Plan</i> .....	47

# APPENDICES

*Appendix A: Real Estate and Market Analysis*

*Appendix B: Infrastructure Assessment*

*B-1: Seawall*

*B-2: Stormwater*

*B-3: Water/Wastewater*

*Appendix C: Stakeholder Engagement*



*Mural on 46th Ave N in the core of the Industrial Park. Source: Kimley-Horn*

# SECTION 1: INTRODUCTION

*Purpose, Objectives, and Background  
Organization of the Master Plan  
How to Use This Plan*

# PURPOSE, OBJECTIVES AND BACKGROUND

The purpose of the Joe's Creek Industrial Park (JCIP) Master Plan (the "Plan") is to not only identify the needs and concerns of the Lealman community's only industrial park, but to help steward the future of the area to continue to serve as an economically vibrant and diverse employment center in Pinellas County. This Plan provides the necessary framework to uphold the Joe's Creek Industrial Park's mission to attract and retain industrial use and manufacturing ventures in the County, while exploring other land use opportunities that will sustain the next generation of investment into the industrial park.

The JCIP Master Plan effort was launched as a proactive and objective effort for necessary infrastructure improvements and to help guide future development in the Lealman area. It builds on the outcomes of the Target Employment and Industrial Land Study (TEILS), which led to Pinellas Countywide Plan rule changes. These changes gave Pinellas County and its cities more flexibility to adjust land use policies, especially within Target Employment Centers (TECs), one of which encompasses the Joe's Creek Industrial Park. TEILS enabled local governments to expand allowable uses and business types in TECs as long as a plan such as this one is created that specifies a flexible redevelopment vision and infrastructure needs. The plan serves as a blueprint for the future, outlining steps and actions to achieve long-term development goals to help the JCIP thrive. It includes infrastructure and land use actions that can be achieved in parallel as well as incrementally.

Creating an actionable and implementable set of recommendations and strategies is the ultimate goal of this document. Economic vitality and long-term growth is what drives the recommendations in this plan, and the time frames attached to them also reiterate a clear and achievable work plan across the next five, 10, and 15 years in JCIP.

## PLAN OBJECTIVES

The Joe's Creek Industrial Park Master Plan is categorized by the following objectives, and are presented in context within the Action Plan section of this document. The Action Plan section describes the recommendations that will support the vision of the JCIP, and identifies the lead partners, funding sources, and phasing needed to implement each recommendation. Creating an actionable and achievable list of recommendations and strategies is the ultimate goal of this plan.



Recommend Changes to Land Use and Development Standards to promote new development and redevelopment



Devise Economic Development Strategies to support the retention/expansion of existing businesses and attract new industries

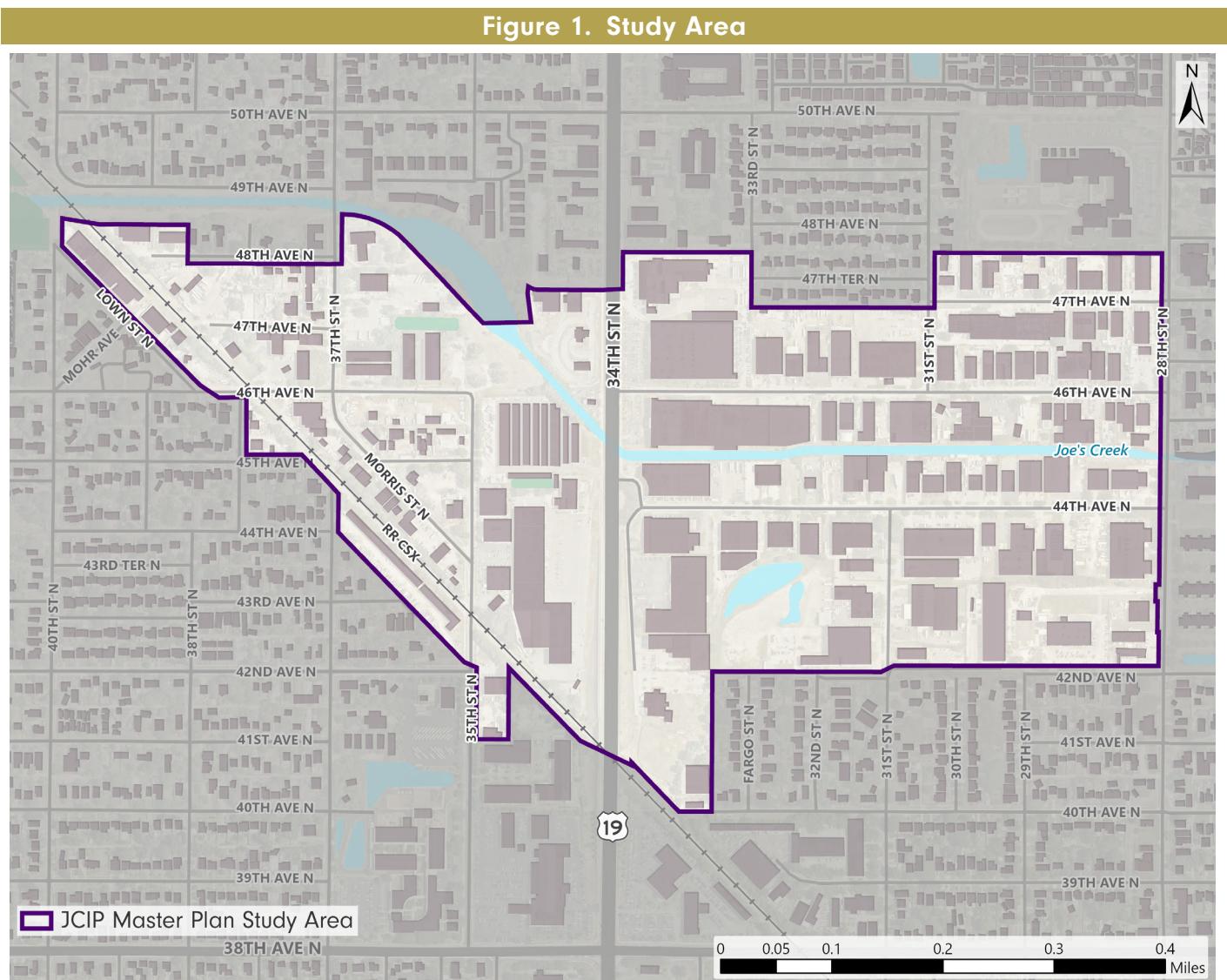


Evaluate Public Infrastructure Needs for improvements to roadways, utilities, and stormwater management systems



Identify Funding Mechanisms to implement improvement projects and programs

**Figure 1** shows the study area which includes the Joe's Creek Industrial Park as well as employment areas to the west of 34th Street. The name sake creek divides the study area into two sections, with larger bodies of water down stream of 34th Street N.



# THE HISTORY OF JOE'S CREEK

The history of Joe's Creek begins in 1843, when a turtle trapper named Joe Silva filed for a land grant in the creek's present day location. His business partner at the time, John Levique, was also involved in the turtle trade with Joe, helping to catch and distribute their catch in New Orleans and Key West. As the legitimacy of Joe Silva's trade grew among locals, so did the name of creek, as maps began to reflect the water way as bearing the name "Joe's Creek." The creek itself is a tidally influenced, 9.8-mile stretch of water that empties into Boca Ciega Bay and subsequently the Gulf of Mexico.

## ESTABLISHMENT OF THE INDUSTRIAL PARK

Like much of Florida in the 19th century, efforts to then tame the wilderness that occupied much of rural Pinellas County gave way to a rise in agricultural endeavors, as cow pasture and orange groves took root throughout the County. As early attempts to reclaim the land and subdue the creek began, the industrial park was established in the 1950s. Early adopters of the Industrial Park solidified the area as a proving ground for small-scale industrial users and manufacturing opportunities in Pinellas County.



*Fossil collection along the banks of a dredged portion of Joe's Creek in 1953.*

*Source: State Archives of Florida, Florida Memory*

## TAMING THE CREEK

During the evolution of the area, the creek itself has seen numerous attempts at dredging and channeling its waters, as well as the installation of seawalls and concrete banks near the end of the creek's path. Channel stabilization efforts include the reinforcement of creek embankments to reduce erosion and sediment deposits that impact water quality, while stormwater management enhancements have led to upgrades to culverts, erosion control measures, and the addition of dry retention areas to improve drainage.

## PREVIOUS PLANS AND PUBLICATIONS

### Lealman CRA (2016)

The evolution of the Industrial Park continued in 2016 with the creation of the Lealman Community Redevelopment Area (CRA), which put Joe's Creek Industrial Park within its boundary. Guiding the redevelopment of the Lealman CRA were the core principles of creating a diverse and prosperous community for citizens of all backgrounds to thrive, while making Lealman a place where businesses and people could enjoy equitable housing, employment, and a variety of cultural amenities.

### Lealman Form-Based Code (2023)

The Lealman Form-Based Code (LFBC) is a zoning and development framework designed to guide growth within the Lealman Community Redevelopment Area. Officially adopted on December 12, 2023, the LFBC aims to create a cohesive, pedestrian-friendly, and economically vibrant community while maintaining architectural consistency. Some of the key features of this plan include:

- ▶ **Development Standards** – Establishes clear guidelines for building types, land use, and urban design.
- ▶ **Flexibility & Adaptation** – Encourages redevelopment while allowing existing structures to remain.
- ▶ **Graphics & Illustrations** – Uses visual aids to clarify regulatory standards.
- ▶ **Waiver & Adjustment Procedures** – Provides flexibility for challenging development sites.
- ▶ **Supersedes Previous Zoning** – Replaces certain provisions in the Pinellas County Land Development Code.

## TEILS Report (2022)

In addition to the previously conducted studies and analysis done in Lealman and the Joe's Creek Industrial Park, one of the more pertinent documents to be published was the Target Employment and Industrial Land Use Study (TEILS). First produced by Forward Pinellas in 2008, the TEILS Report homed in the Countywide Plan for Pinellas County, using its renewed push on retaining and attracting the industries and employers that would provide high wage employment opportunities throughout the County, known as Target Employers. These employers are vital to the economic success of the County, and provide the stability needed to create a sustainable and profitable local market that would be scalable beyond the County limits.

In 2022, the TEILS Report was updated to reflect modern market trends and updates to the economic profile of the County, while subsequently addressing a legislative shift in Florida's approach to affordable housing. Within the TEILS Report was the TEC Local Designation, which identified areas that house smaller-scale manufacturers and artisan users with industrial and warehouse space needs. The TEC Local designation would allow for flex-space and mixed use in conjunction with local sub-area planning efforts (visioning studies, special area plans, etc). Parcels with existing employment could then redevelop with an approach that would accommodate more mixed-use, allowing for the option of residential and retail ventures in addition to the current employment capacity, instead of replacing it.



*"The Plan meets the spirit of TEILS with a localized land use vision and identification of market and infrastructure needs that can help unlock flexible redevelopment unique to JCIP's needs."*



*The Cat Box Adoption Center in Joe's Creek Industrial Park, 3015 46th Ave. N  
Source: Kimley-Horn*

# ORGANIZATION OF THE MASTER PLAN

The Plan has evaluated the existing conditions of the area, analyzed the current state of the JCIP's infrastructure, the real estate market conditions that exist in the Park and the surrounding area, as well as land use and zoning constraints that affect the area. A section of this Plan is also dedicated to synthesizing what was heard from stakeholders. As a result of continued community involvement from those living and working in the JCIP study area, this Master Plan takes into consideration the concerns and aspirations of residents, business and property owners. County staff also leveraged input in the creation of this Plan, helping to align with the Countywide plan's vision in creating a holistic and sustainable concept of what the JCIP can be in the future.

The Plan is organized into the following sections:

## SECTION 2 – STAKEHOLDER ENGAGEMENT

The stakeholder engagement section illuminates the outcomes of the stakeholder engagement efforts. The stakeholder engagement helped to define a redevelopment vision outlined in **Section 4** as well as actions described in **Section 5** based on the needs and wants that were synthesized in tandem with the analysis provided in **Section 3**. Please see **Appendix C** for additional information.

## SECTION 3 – JCIP TODAY

**Section 3** summarizes the JCIP Master Plan study area's existing conditions. The section describes the Joe's Creek Industrial Park in a regional context, provides an overview of the JCIP's land use and zoning characteristics, and summarizes the findings of the Infrastructure Assessment and Real Estate and Market Analysis found in **Appendix A** and **B**, respectively.

## SECTION 4 – VISION PLAN

This section presents the vision for the Plan study area and provides a high-level framework for the area to aspire to over time. A vision map has been developed to further define the area and recognize a context-sensitive approach to achieving the overall vision, while identifying the opportunities and constraints that exist. Four character districts were developed based on the real estate market analysis, land analysis, and infrastructure analysis. Each character district is defined with varying standards and characteristics that can include an incremental redevelopment strategy overtime.

## SECTION 5 – ACTION PLAN

The path to implementation in this section also provides the strategies and action steps to support the Plan's adoption. The strategies outlined are related to land use and zoning, infrastructure enhancements, economic development, and funding opportunities. Each action is accompanied by timing and responsibilities.

## APPENDICES

The appendices listed below are provided under separate cover and can be referenced for additional study information and understanding of the Joe's Creek Industrial Park Master Plan process.

- Appendix A – Real Estate Market Analysis
- Appendix B – Infrastructure Assessment
- Appendix C – Stakeholder Engagement Summary

# HOW TO USE THIS PLAN

This document is intended to be used by business and property owners, residents and civic organizations, developers, Pinellas County departments, surrounding cities, public agencies (Florida Department of Transportation, Pinellas Suncoast Transit Authority, and Forward Pinellas). Pinellas County has developed this Plan to help evaluate potential land use and zoning changes, as well as identifying the infrastructure needed to support existing businesses, attract reinvestment, and help the area in response to evolving economic and community needs into the future.



## RESIDENTS AND CIVIC ORGANIZATIONS

Use this Plan to understand how future redevelopment in the JCIP area presents opportunities for your community and ensure that your community-wide vision for the area is implemented by County staff and your elected officials.



## BUSINESS OWNERS, PROPERTY OWNERS, AND DEVELOPERS

Use this Plan as an investment guide to anticipate where future redevelopment may occur and ensure your future ventures align with the community's vision for the area and follow the recommended development standards.



## AGENCY STAFF

Use this Plan to align agency-led projects and policy with the community's vision for the Joe's Creek Industrial Park. This Plan can also be used as a framework for future corridor plans.



## ELECTED OFFICIALS

Use this Plan to understand how land use policy can support the community's vision for the Joe's Creek Industrial Park. The recommendations of this Plan can inform budgetary decisions and help to prioritize projects and policy directives that will bring economic development/redevelopment, community-building and multimodal opportunities to the area.

**This page left intentionally blank**



*Kane's Furniture along Joe's Creek and 34th Street. Source: Kimley-Horn*

## SECTION 2

# STAKEHOLDER ENGAGEMENT

*Summary of Engagement Activities*

# SUMMARY OF ENGAGEMENT ACTIVITIES

## INTRODUCTION

The JCIP Master Plan's collaborative outreach efforts brought together a variety of stakeholders, including residents, business owners, non-profit leaders, real estate professionals, municipal and agency staff, and others who live, work, learn, serve, and recreate in and around the Joe's Creek area. The feedback gathered from the Plan's stakeholder engagement efforts was used to leverage the Plan's vision in a manner that is meaningful for the community and future stakeholders of the Industrial Park. Pinellas County staff, Community Redevelopment Area coordinators and planning officials helped to facilitate these discussions and gather feedback throughout the duration of the plan. The themes heard through the engagement efforts helped the project team to understand different perspectives for visualizing the future of the area and to understand challenges and opportunities that exist in JCIP. Additional information regarding stakeholder engagement can be found in **Appendix C** at the end of this document.

The following pages summarize key takeaways from the community outreach efforts. Stakeholder engagement was facilitated throughout the course of the project from October 2024 to June 2025. The engagement efforts included the following events and meetings:

- ▶ Lealman Community Redevelopment Area Citizen Advisory Committee
- ▶ Agency Meetings
- ▶ Stakeholder Open House and Interviews
- ▶ Joe's Creek Industrial Park Promotion of the Master Plan
- ▶ Online Survey
- ▶ Board of County Commissioners

## LEALMAN CRA CITIZEN ADVISORY COMMITTEE

Through the development of the plan, the project team met with the Lealman CRA Citizen Advisory Committee (CAC). The project team included three meetings with the Lealman CRA CAC at key milestones. Additional information is described below.

**First Meeting:** The project team met at the Lealman Exchange Center with the Lealman CRA CAC on Wednesday October 23, 2024 for the first of three Lealman CRA CAC meetings to take place during the project duration. Members of the CAC along with County Staff and the project team gave a brief update and overview of the JCIP Master Plan with the initial findings of the market analysis and an introductory assessment of the existing conditions within the study area. It was discussed that the CAC would like to see the Plan customized to the needs of the Joe's Creek area. The project team highlighted the objective approach through analysis and engagement to be included and mentioned the future engagement activities upcoming.

**Second Meeting:** The second meeting of the Lealman CRA CAC took place on February 26, 2024, at the Lealman Exchange. Members of the project team were in attendance, along with new and returning members of the CAC. During the meeting, updates to the Master Plan were presented, including an update to the market analysis and potential development scenarios. A land use vision and brief update on the initial infrastructure findings was also included. The committee was invited to comment and share feedback on the initial findings.



Project team members at the October Lealman CRA CAC Meeting. Source: Kimley-Horn

**Third Meeting:** The third Lealman CRA CAC meeting was held on June 25th, 2025 once again in the Lealman Exchange with the committee members of the Lealman CRA CAC, county staff, members of the public and the project team. As the final installation of this engagement series, this meeting served as the unveiling of the Plan with a presentation that included a summary of real estate market findings, the land use vision, and the infrastructure analysis. Additional detail related to the infrastructure analysis (stormwater, bulkheads/seawall, potable water/wastewater) was presented based on efforts conducted from the last CAC meeting. Phased actions, that could run in parallel, related to real estate market and land use/zoning as well as infrastructure were included by timing (short to long-term). Attendees of the meeting were asked to leverage their input on the strategies and actions outlined in the Plan. Attendees provided input on the land use vision and infrastructure analysis and timing of the plan adoption was discussed. Timing of the plan adoption as well as the technical documents that fed into the actions presented was also discussed. The conclusion of the meeting ended with an unanimous vote in favor of the Plan from the committee members present.

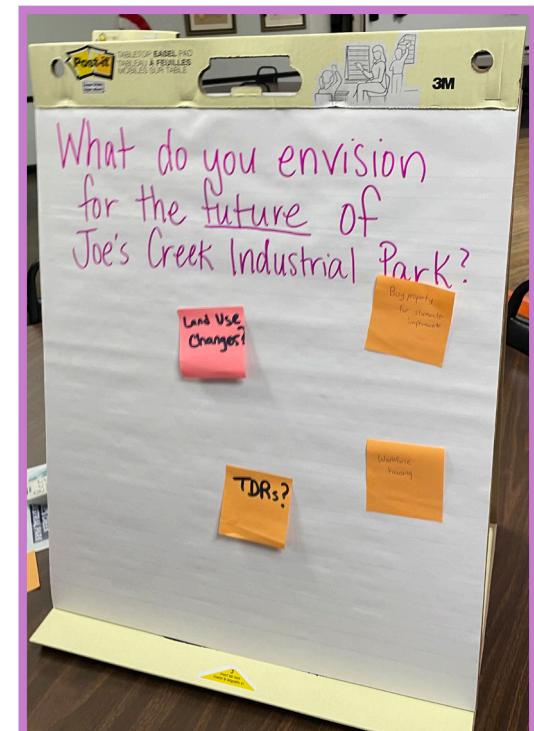
## STAKEHOLDER OPEN HOUSE AND INTERVIEWS

Stakeholder interviews were held within the Industrial Park at the Lealman Veterans of Foreign Wars (VFW) Hall across two days, in an open house format, on November 12th and 13th.

Additional one-on-one interviews were also scheduled and conducted with stakeholders that were unable to attend the open format interviews. The following key themes emerged from the feedback received.

### Existing Challenges and Concerns

- ▶ The **viability of the JCIP is tied to its resiliency** - Some stakeholders mentioned being concerned over flooding and wanting to see dredging of the creek and seawall improvements
- ▶ Retention of businesses and manufacturing is dependent on the **longevity of the existing infrastructure** and the **affordability** of the industrial park
- ▶ Concerns over the **lack of workforce housing** for those who are currently employed at businesses within the industrial park
- ▶ There is a **lack of "Third Spaces"** for workers and residents in the area such as retail, restaurant, and other supporting uses
- ▶ The **permitting process for property upgrades is slow** and can take extended amounts of time to fulfill. There was also concern of turnover and having to work with different staff that can cause delay
- ▶ **Parking is difficult** for businesses in the industrial park
- ▶ Standards for truck access make **loading difficult** as trucks are not allowed to be in the roadway, whereas older buildings without updated standards have trucks in the roadway when accessing the property
- ▶ Code language currently **limits what business owners are able to do** on their properties and there were concerns that the code is not always being applied in the same way
- ▶ **Crime** along 28th Street and surrounding areas is a concern



A visioning board for participants to think about the future of JCIP. Source:Kimley-Horn

## **Future Opportunities and Ideas**

- ▶ Desire for **mixed-use properties as a way reinvigorate** the area with varied types of businesses such as restaurants and retail
- ▶ Enhanced **multimodal transportation** facilities such as sidewalks and crossings. Bike lanes on roadways such as 28th Street would help employees **access businesses within the JCIP area**, and residents to safely access services located in the area
- ▶ Additional greenspace throughout JCIP would **increase the quality of life** for both current and future residents as well as those who work within the industrial park
- ▶ Some business owners **expressed concerns of having to provide sidewalks** internal to JCIP as well as landscaping standards that made redevelopment more difficult.
- ▶ Keeping rents affordable for smaller scale manufacturing enterprises will **help newer businesses thrive** and pave the way for expansion in their sector
- ▶ Grant funding would help **retain businesses that are struggling to meet code requirements** as it relates to landscaping and beautification of Joe's Creek
- ▶ Zoning changes would be amenable to current business owners as a way to **attract new money into the area with more allowable uses**
- ▶ **Covered loading docks** for businesses is a consideration
- ▶ Better **turning radii for trucks** and **pavement improvements** were discussed

## **DOOR TO DOOR PROMOTIOON OF THE MASTER PLAN IN JOE'S CREEK**

Members of the project team conducted a follow up engagement event to the stakeholder open house in November. The team walked the Joe's Creek Industrial Park across two days to notify business owners and tenants of the industrial park of the ongoing outreach efforts of the Master Plan. As a result, additional online survey responses were collected as well as commentary from stakeholders who were unable to attend the open house.

## **AGENCY MEETINGS**

Pinellas County's land use and transportation planning agency, Forward Pinellas, was included in the discussions of how potential build out scenarios and changes to future land use would impact the future of the JCIP. Forward Pinellas serves a dual role as both the Pinellas Planning Council and the Metropolitan Planning Organization (MPO), helping to guide how the county grows and prospers with smart, sustainable redevelopment. Coordination with Forward Pinellas was needed as they were the lead agency on the TEILS study and maintain the Pinellas Countywide Plan rules.

## VISION MAPPING EXERCISE



Attendees at the Stakeholder Open House were asked to provide their input when considering the future of the JCIP by participating in a vision mapping exercise. Participants were asked to place a yellow dot in areas that should be preserved or unchanged, and red dot on areas that should be considered for redevelopment or improvement, as seen in **Figure 2**. The coverage of the study area was evenly dispersed, but opinions varied on where preservation or redevelopment would occur.

Figure 2. Vision Map Board



## ONLINE SURVEY

The online survey received 21 responses from November 2024 to May 2025. Responses to key questions are summarized below and responses related to the Plan's major themes are included in the overall summary.

### A VISION FOR A THRIVING AND SUSTAINABLE FUTURE

The following quotes are taken directly from written responses gathered through the online survey by stakeholders and community members.

#### How would you describe the JCIP area today?

“The area seems like it's improving, but still has a lot more that can be done.”

“Lots of small businesses giving employment to many people.”

“On track to be a vibrant multi-disciplinary business area.”

“The area today is a sitting jewel for Lealman. With the right investment, it can become the walkable district that Lealman lacks.”

#### What do you envision for JCIP's future?

“Fresh looking buildings, professionally paved and landscaped.”

“A blend of manufacturing, light industrial and service providers.”

“I would love to see mixed use - keep some of the factories there, but would love to see retail, cafe's, brewery's, art and dance studios, etc. I want to see a connective soulful tissue between the shops on 54th and 28th St and the JCIP. Rising tide raises all ships.”

“They need to turn this into a PEOPLE friendly area.”

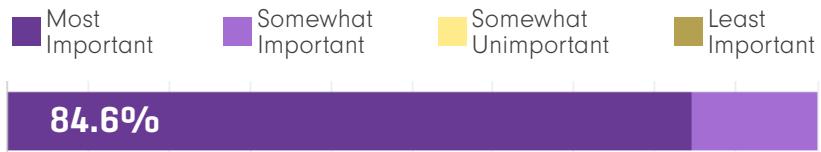
## MOST IMPORTANT TOPICS TO ADDRESS

Survey Respondents were asked to indicate which Master Plan topic areas are most important to address. **Improvements to stormwater/drainage infrastructure for flood mitigation was ranked as the most important by 84.6% of respondents and did not receive any “least important” rankings.** The second most important was improvements to transportation infrastructure. Improvements to promote the identity and appeal of the area was ranked as least important. A full summary of the respondents’ rankings is provided below.

### MASTER PLAN TOPICS

### SURVEY RESPONSES

Improvements to stormwater/drainage infrastructure for flood mitigation and erosion control



Improvements to transportation infrastructure (e.g., roadways, sidewalks, bicycle facilities, bus stops, bridges, etc.)

58.3%



Economic development strategies to support the retention and expansion of existing businesses

50.0%



Improvements that incorporate green infrastructure, sustainable building practices, heat mitigation, and additional green spaces

33.3%



Changes to land development regulations to promote new development and redevelopment of vacant/underutilized properties

25.0%



Economic development strategies to attract new businesses/industries to the area

41.7%



Improvements to promote the identity and appeal of the area (e.g., public realm improvements such as landscaping, signage, and public art)

25.0%



## PRIORITY IMPROVEMENTS

Survey respondents were asked to indicate which improvement(s) are their top priority. The top two priority improvements from each Master Plan topic area are presented below:

### MOBILITY/ROADWAY IMPROVEMENTS

1. Bicycle facilities, e.g., protected bike lanes, shared-use paths/trails
2. Sidewalk improvements (new sidewalks and repair)

### ENVIRONMENTAL/RESILIENCY STRATEGIES

1. Improved stormwater management infrastructure and drainage systems
2. Improved regional/areawide flood mitigation

### SUSTAINABLE REDEVELOPMENT PRACTICES

1. Reducing the amount of impervious surface/pavement on-site to reduce the urban heat island effect and stormwater run-off
2. Installation of flood protection systems



*Image: Looking west on 46th Ave N in the heart of Joe's Creek Industrial Park.  
Source: Kimley-Horn*

## SECTION 3

# JCIP TODAY

*Introduction*

*Real Estate and Market Analysis*

*Land Use and Zoning*

*Baseline Infrastructure Assessment*

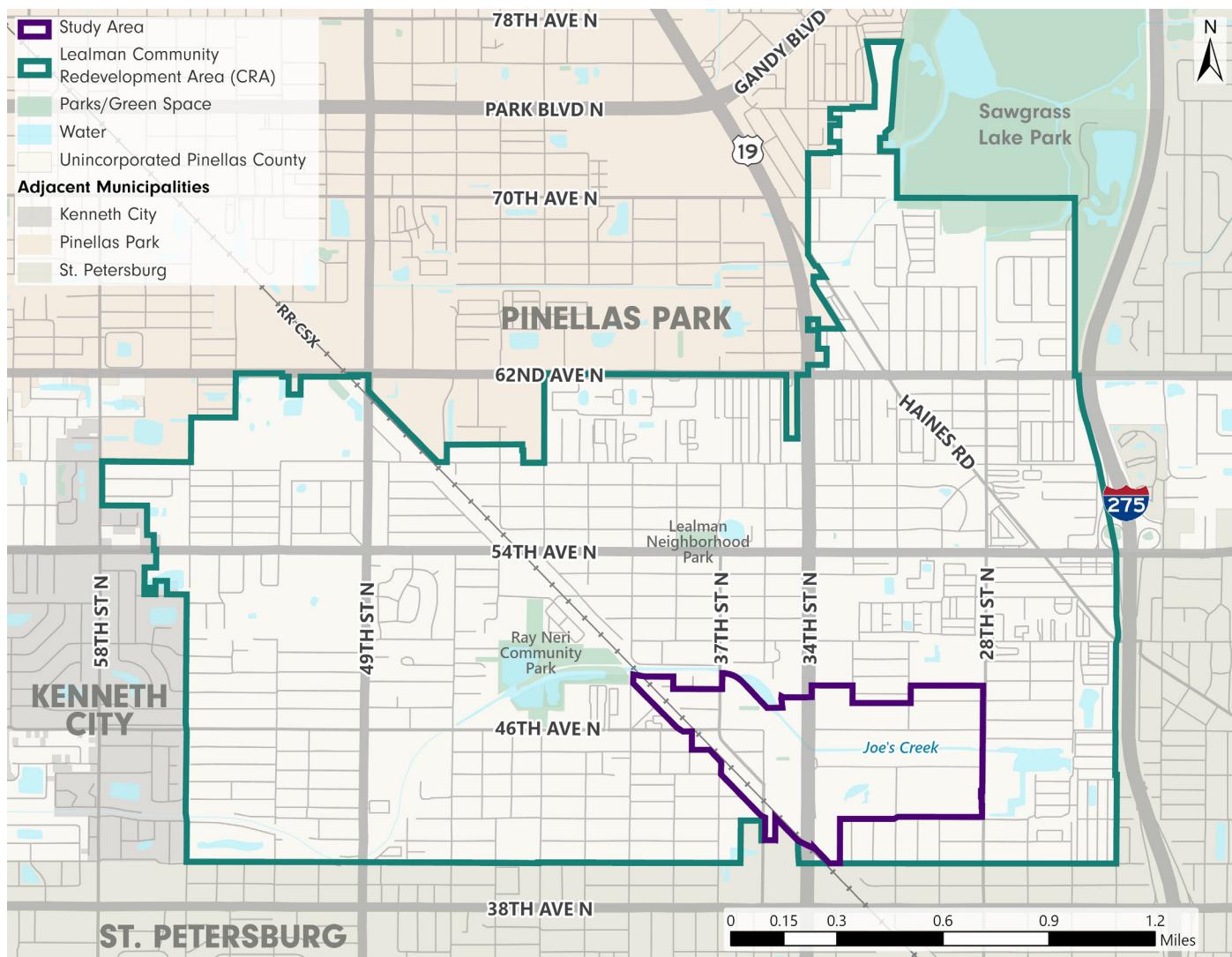
# INTRODUCTION

This section summarizes the existing conditions found in JCIP. This section describes points of interest in and around the study area, presents demographics and employment information from the lens of a real estate and market and provides a summary of existing land use, land use/zoning, and baseline infrastructure. The infrastructure analysis will include a summary of transportation/mobility and an evolution overtime of water infrastructure along Joe's Creek.

## AREA CONTEXT

JCIP is located within the Lealman Community Redevelopment Area (CRA) and falls within unincorporated Pinellas County. Established in 2016 as the only CRA in unincorporated Pinellas County, it spans approximately 2,500 acres in central Pinellas County. As shown in **Figure 3**, it is bordered by St. Petersburg to the south and east, Kenneth City to the west, and Pinellas Park to the north. It is strategically positioned near US 19/34th Avenue, with easy access to I-275 via the 38th and 54th Avenue interchanges. While there are limited recreational opportunities and green space in the Industrial Park itself, the Lealman CRA contains Ray Neri Community Park and the Lealman Neighborhood Park.

**Figure 3. Area Context**



# REAL ESTATE AND MARKET ANALYSIS

An analysis was conducted to bring insight into the real estate and market patterns found in JCIP and also helped inform the vision presented in **Section 4** as well as strategies and actions listed in **Section 5**. This analysis included a review of baseline and historical conditions; the location, direction, and outcomes of investment decisions; and the use of real estate by various sectors of the local economy and target industries. Analytical factors were synthesized to create an assessment of the area's strengths and weaknesses. Information presented here was used to inform the planning process for the resulting vision plan, factoring in concepts that are based on land uses and development patterns that have the strongest market opportunities. The goal of this analysis was to dissect local market dynamics in and around the Lealman Industrial TEC, evaluate which land in the study area should be preserved for target employment uses, and to craft an achievable redevelopment vision that will support the community's goals for the area. The result of the study is a report of redevelopment potential in the near-term over the next five years. The full market and real estate analysis can be found in **Appendix A**.

## LEALMAN INDUSTRIAL TEC: EXISTING CONDITIONS



The Lealman Industrial TEC is comprised of 160.7 acres and 169 parcels, with most parcels classified for industrial use. Most parcels have diverse ownership, but there are 10 groups of three or more parcels that share one owner. Approximately 15 acres in the Lealman Industrial TEC are vacant, and almost one in five parcels could be considered underutilized based on their taxable value. Some vacant and underutilized parcels, in addition to agglomerations of parcels with common ownership, provide opportunity for redevelopment within the Lealman Industrial TEC without significant land reassembly.



There are 165 buildings in the Lealman Industrial TEC, with an average size of 16,800 square feet (SF) and an age of 55 years old. While some smaller, older buildings may still adequately serve manufacturing and warehousing users looking for smaller spaces with affordable rents, many are in need of reinvestment.



There are at least 129 businesses in the Lealman Industrial TEC, more than half of which are industrial users and seven of which represent the County's target industries. Most industrial tenants are manufacturers, both export-oriented and local-serving, or small-format warehousers. Both contribute to the County's economic growth and provide critical goods and services to the community.



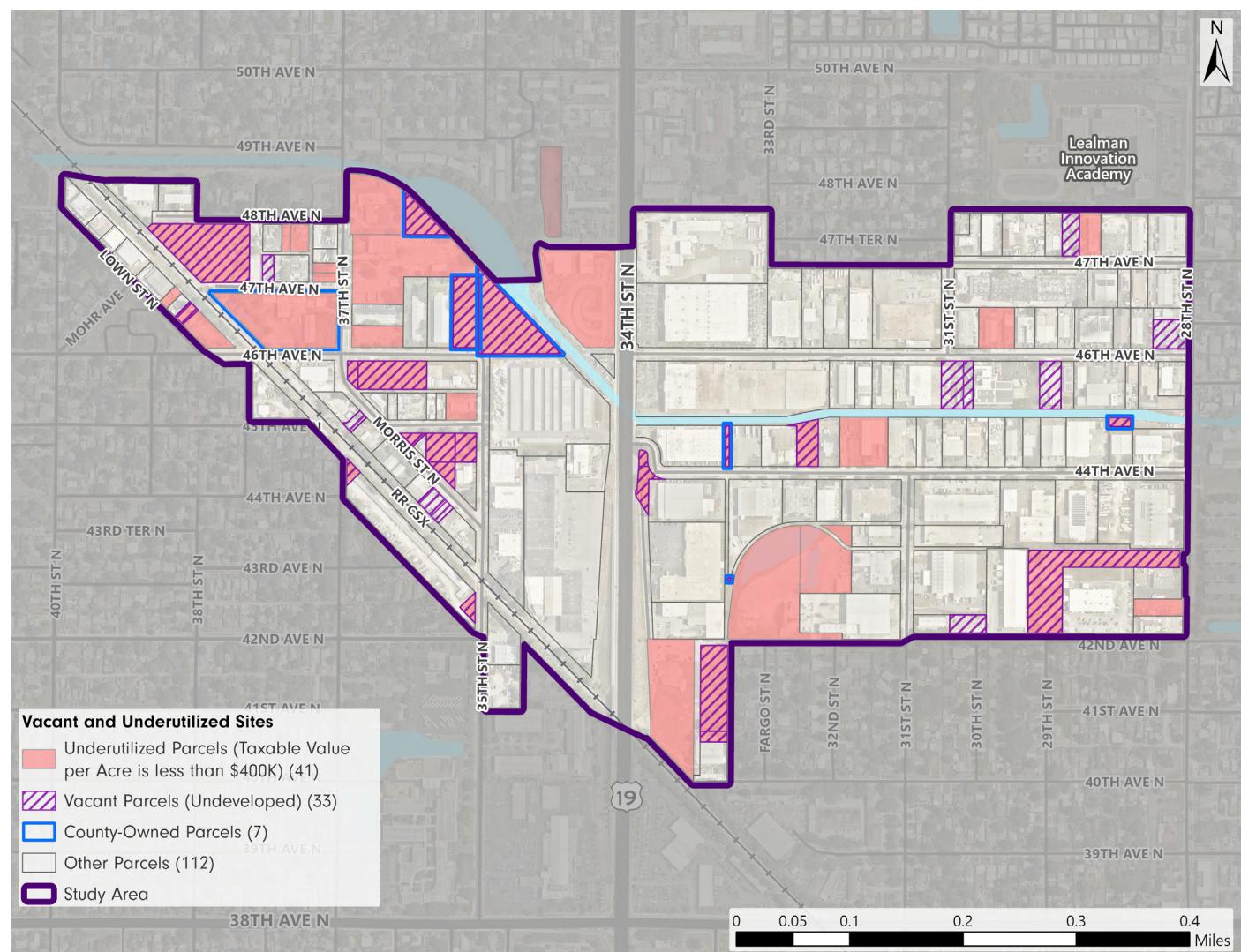
Almost 1,400 employees work in the Lealman Industrial TEC, 30% of which commute from their homes outside of Pinellas County. Average industrial earnings relative to the County's median income may indicate a need for increased supply of workforce housing to support a strong local labor force.

There are approximately 165 buildings in the Lealman Industrial TEC. Building sizes vary throughout the TEC, ranging from less than 1,000 to 169,000 SF. The median building size is approximately 8,400 SF and the average building size is 16,800 SF. The buildings in the TEC are a mix of single and multi-tenant buildings. Many of the buildings in the TEC are older and in need of reinvestment as the average building age is 55 years old.

## VACANT AND UNDERUTILIZED PARCELS

As shown in **Figure 4**, over 15 acres in the Lealman Industrial TEC (roughly 9% of parcelized land) are vacant. Of the 33 vacant parcels, 26 parcels are industrial (11.4 acres total with an average size of 0.4 acres), five parcels are commercial (3.4 acres total with an average size of 0.7 acres), and two parcels are residential (0.7 acres total with an average size of 0.4 acres). 41 parcels have taxable values per acre under \$400,000, some of which include previously highlighted vacant land and land owned by the County. Many of these parcels are located west of 34th St N. Taxable value per acre is one indicator of land underutilization. The taxable value per acre of parcels in the Lealman Industrial TEC ranges from \$0 to \$4 million, with an average taxable value per acre of \$829,600. Parcels with lower taxable values could also indicate opportunities for improvements or redevelopment. However, some of these parcels may be currently used to accommodate parking needs or comply with stormwater regulations. Therefore, development of these parcels would require identifying alternative stormwater management and/or parking strategies.

**Figure 4. Vacant and Under Utilized Parcels**



## LEALMAN INDUSTRIAL TEC: TENANT PROFILE

Of the approximately 129 businesses in the Lealman Industrial TEC, about 54% of tenants (70) are industrial tenants. Of these, approximately 50% are manufacturing businesses. A variety of products are manufactured in the Lealman Industrial TEC including plastics, eyeglasses, food products, metals, and wood materials. Additionally, there are seven tenants representing the County's target industries, which are export-oriented businesses, including the medical technologies and microelectronics industries, among others. While export-oriented businesses are crucial in securing long-term regional economic growth, local-serving industrial businesses also provide critical goods and services to the community, employ many people, and contribute to the County's economic growth. Many local industrial businesses in the Lealman Industrial TEC rely on industrial land, such as those in the motor vehicle products and services (i.e., auto repair) and real estate, construction, and development (i.e., local homebuilders and contractors) industries.

There are also several commercial users occupying industrial space, such as warehouses, in search of lower rents relative to the Pinellas County retail market. Examples of such tenants include fitness studios and pet care services.

### INDUSTRIAL BUSINESS SPOTLIGHT

**There is a wide array of industrial users, some of which are long-term tenants with 100+ employees**



#### FIBERGLASS COATINGS, INC (FGCI)

FGCI is a multi-location fiberglass and composites manufacturer and distributor with over 100 employees, 300,000 SF of warehousing, and a fleet of delivery trucks. The company is the largest independently owned composite materials distributor in Florida and serves customers in industries such as construction, marine fleets, and amusement.



#### DAIRY-MIX, INC

Dairy-Mix, Inc. is a food processing and manufacturing business with over 100 employees. They have occupied the Joe's Creek Industrial Park since 1958 and have invested in multiple renovations and expansions since. Their location receives eight shipments and fills over 20 delivery trucks per day to supply product to their clients across the southeastern United States and the Caribbean.



#### ICARE LABS

Icare Labs is a manufacturing and wholesale optical lab with over 100 employees that produces over 2,000 eyeglass lenses per day. They serve their onsite retail operation, OptiMart, as well as other retailers nationwide, and have been in the Lealman Industrial TEC area since 1968.



#### MESH, LLC

Mesh, LLC is a millwork fabrication firm that has been in business on 44th Avenue in the Joe's Creek Industrial Park for almost 15 years. With over 40 employees, Mesh's highly skilled labor force works with contractors, architects, and designers to provide custom products to upscale hospitality, restaurant, and office users across the country.

## MARKET SUMMARY

The complete real estate and market analysis revealed moderate pressure for industrial development in the Lealman Industrial TEC with limited pressure for other uses.

### INDUSTRIAL



The Countywide industrial/flex market is strong, and the Lealman Industrial TEC offers an opportunity for small, niche warehousing and manufacturing users to establish themselves and grow. Rents in the Lealman Industrial TEC are affordable relative to new product throughout the County, and the Lealman Industrial TEC maintains access to locational advantages required for industrial users. Vacant parcels are not large enough for modern industrial users' needs without further land reassembly, and many infrastructure improvements (utilities, transportation, etc.) will be required to attract major or modern development. Therefore, there is strong market pressure for continued industrial use throughout the area but only moderate potential for new modern development.

### RESIDENTIAL DEMANDS



Demand for residential space continues to increase in Pinellas County, with recent multifamily development typically prioritizing proximity to urban areas, amenities, and access to transit. Limited multifamily development has occurred near the Lealman Industrial TEC over the past decade, and it is unlikely that the submarket area could achieve rents to support new construction in the near-term. However, two affordable developments are in the pipeline within a one mile radius. Additionally, interviews indicated a need for additional workforce and missing middle housing units at affordable price points.

### OFFICE SPACE



There is demand for Class A office space Countywide, but limited office space of this caliber exists in the Lealman Industrial TEC. Additionally, office rents in the area are low and indicate weak demand for office space in general. Given modern location trends for corporate users, it is unlikely the area will capture future Class A office development in the near term. Additionally, the potential for attracting smaller professional operations is limited without additional retail and residential development nearby.

### RETAIL



There is limited potential for retail development in the near term. However, with the conversion of some industrial spaces to retail uses, and the absence of dining options and personal and professional services, there could be some demand for small-format retail in the area. In the long term, there could be additional demand for small-scale retail, especially with increased accessibility and nearby residential development.

## INDUSTRIAL MARKET: MODERATE TO STRONG POTENTIAL



### STRONG NICHE MARKET

Limited available inventory and lower vacancy rate relative to the County **indicates a demand for existing industrial space** in the Lealman Industrial TEC.



### LOCATIONAL ADVANTAGES

The Lealman Industrial TEC is highly accessible to regional transportation networks. **Roadway improvements are required** to further enhance accessibility and improve internal circulation.



### LOCAL MANUFACTURING AND WAREHOUSING HUB

Lealman Industrial TEC offers an **opportunity for small, niche warehousing and manufacturing users** to establish themselves and grow.



### LAND AVAILABILITY

Few parcels are large enough to accommodate **modern industrial development** requirements without significant land assemblage.

## OFFICE MARKET: LIMITED TO NO POTENTIAL



### SUPPLY AND PERFORMANCE

Limited available inventory and low rents relative to County averages indicate **limited demand for office space** in the Lealman Industrial TEC.



### FLIGHT TO QUALITY

Modern office trends indicate **employer's desire for Class A office space**, which is limited in the Lealman Industrial TEC.



### LOCATION

The Lealman Industrial TEC **does not match office target industries and corporate users' preferences** to locate in more urban and mixed-use environments.



### LAND AVAILABILITY

**Limited land is available to accommodate large office development** in the Lealman Industrial TEC. Any potential development in the near term would likely only support smaller-scale professional operations.

## MARKET-RATE MULTIFAMILY MARKET: LIMITED POTENTIAL IN NEAR TERM



### LIMITED NEW CONSTRUCTION

Limited new construction in the submarket indicates **limited demand for market-rate multifamily** in the Lealman Industrial TEC.



### RENTS

The Lealman Industrial TEC is **unlikely to achieve market-rate multifamily rents to support new construction** in the near term.



### LOCATION

**Newer market-rate multifamily development tends to locate in amenitized mixed-use areas.** The Lealman Industrial TEC is an auto-oriented, industrial area with few retail options or services nearby.



### LAND AVAILABILITY

Newer garden-style development requires a minimum of almost eight acres on average. **Few parcels are large enough to accommodate this type of development without significant land assemblage.** However, smaller parcels may be able to accommodate "missing middle" typologies.

## RETAIL MARKET: TARGETED OPPORTUNITIES



### PERFORMANCE

The Lealman Industrial TEC achieves lower rents relative to newer development in the County.



### LIMITED NEW CONSTRUCTION

Limited retail development has occurred in recent years in the Lealman Industrial TEC and submarket area.



### LOCATION

The Lealman Industrial TEC does **not match retailers' site selection preferences to locate in mixed-use environments**, near other major retail nodes, or in highly accessible and visible areas.



### POTENTIAL CONSUMER BASE

The low-density, residential neighborhoods of Lealman provide "built-in" market demand for retail, food and beverage, and consumer services. However, consistent with national trends, **the market is likely too oversupplied to necessitate development of a new retail node** without significant additional population growth.

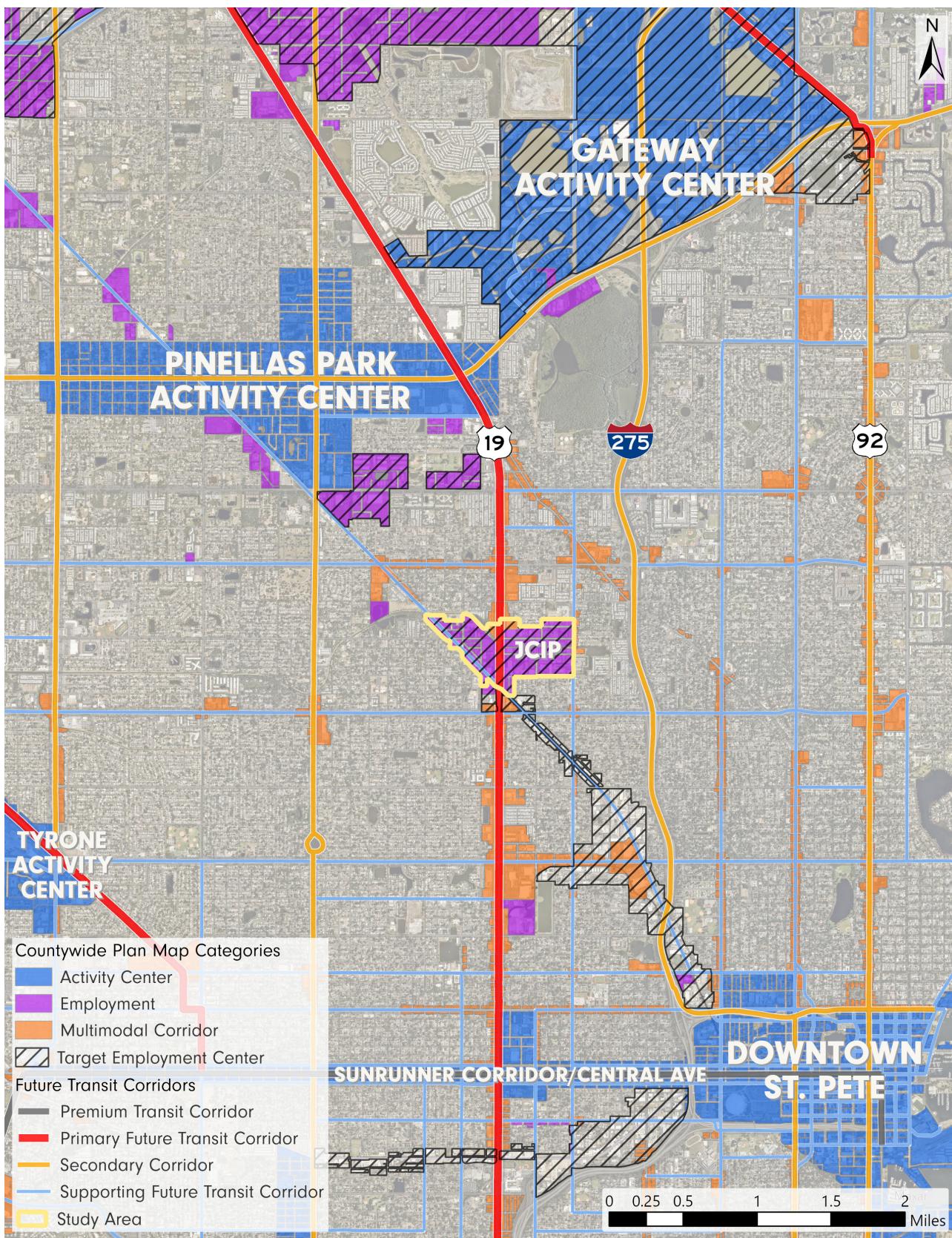
# LAND USE AND ZONING

## AREA CONTEXT

The study area is designated as a Target Employment Center (TEC) on the Countywide Plan Map, the local subcategory born out of the TEILS to further distinguish areas of smaller industry specific to a location. This designation places it among a select group of areas in Pinellas County prioritized for job-generating uses such as industrial, office, and tech-related developments. As indicated in **Figure 5**, It is situated between multiple activity centers, TECs, multimodal corridors, and overlaps with three Future Transit Corridors, as defined on Forward Pinellas's Countywide Plan Map. A Primary Future Transit Corridor runs along 34th Street N, with a Supporting Future Transit Corridor located on 28th Street and the CSX rail line. JCIP's location in central Pinellas County near other key employment hubs and its proximity to US-19 and I-275 make it highly accessible, which is a major asset for logistics and workforce mobility.

Traditional TECs such as the Gateway Mid-County TEC north of the study area are dominated by industrial, office, and tech-related land uses with limited residential or retail integration and are designed to maximize employment density and preserve industrial land. St. Petersburg's TEC to the south includes the Warehouse Arts District comprised of art studios and galleries, breweries, restaurants, light manufacturing, and artisan goods production. JCIP is unique in its TEC designation as it already includes a mix of residential, commercial, and industrial uses within its overlay.

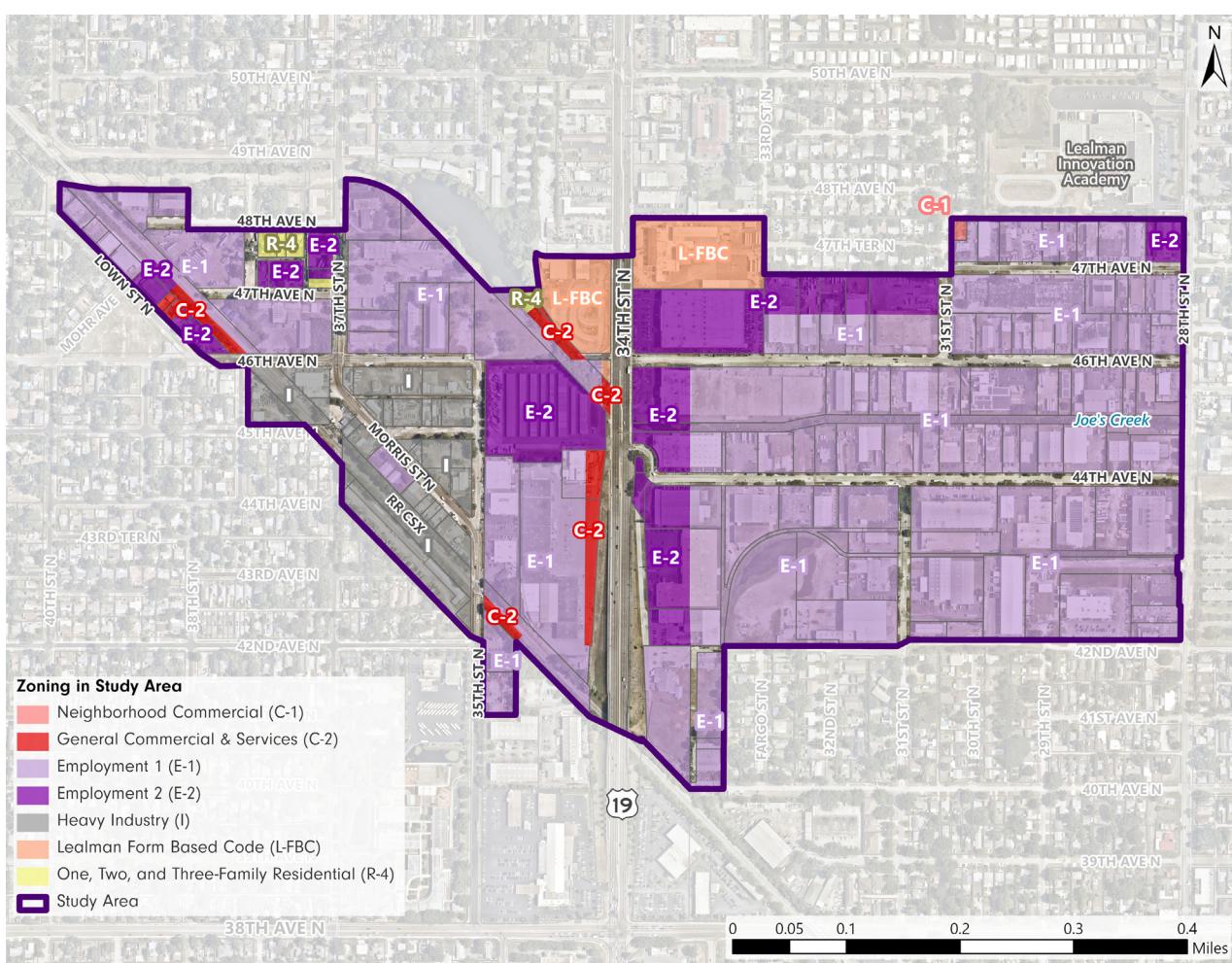
Figure 5. Nearby Activity Centers, Employment Areas, and Multimodal Corridors



## ZONING

The predominant zoning district in the study area is Employment-1 (E-1), comprising 71.2% of total acreage and 62.2% of parcels (117 out of 169). L-FBC is part of the adopted Lealman Form-Based code that was discussed in Section 1.

**Figure 6. Zoning Districts**



**Table 2. Zoning Districts**

Zoning District	Max. Building Height	Min. Setbacks	Acres in Study Area	Percent of Total Acreage
Neighborhood Commercial (C-1)	45'	5'	0.2	0.1%
General Commercial & Services (C-2)	50'	5'	2.8	1.7%
Employment-1 (E-1)	75'	5'	116.7	71.2%
Employment-2 (E-2)	75'	5'	22.6	13.8%
Heavy Industry (I)	100'	20	13.0	7.9%
Lealman Form Based Code (L-FBC)	8-10 stories	10'	7.7	4.7%
One, Two, and Three-Family Residential (R-4)	35'	20'	1.0	0.6%
*Rounded total		<b>Total:</b>	164*	100.0%

## FUTURE LAND USE

The predominant future land use category in the study area is Employment (E), comprising 87.8% of total acreage and 97.0% of parcels (164 out of 169). Mixed Use Corridor- Primary Commerce (MUC P-C) is part of the adopted Form-Based Code that was discussed in **Section 1**.



Figure 7. Future Land Use Categories

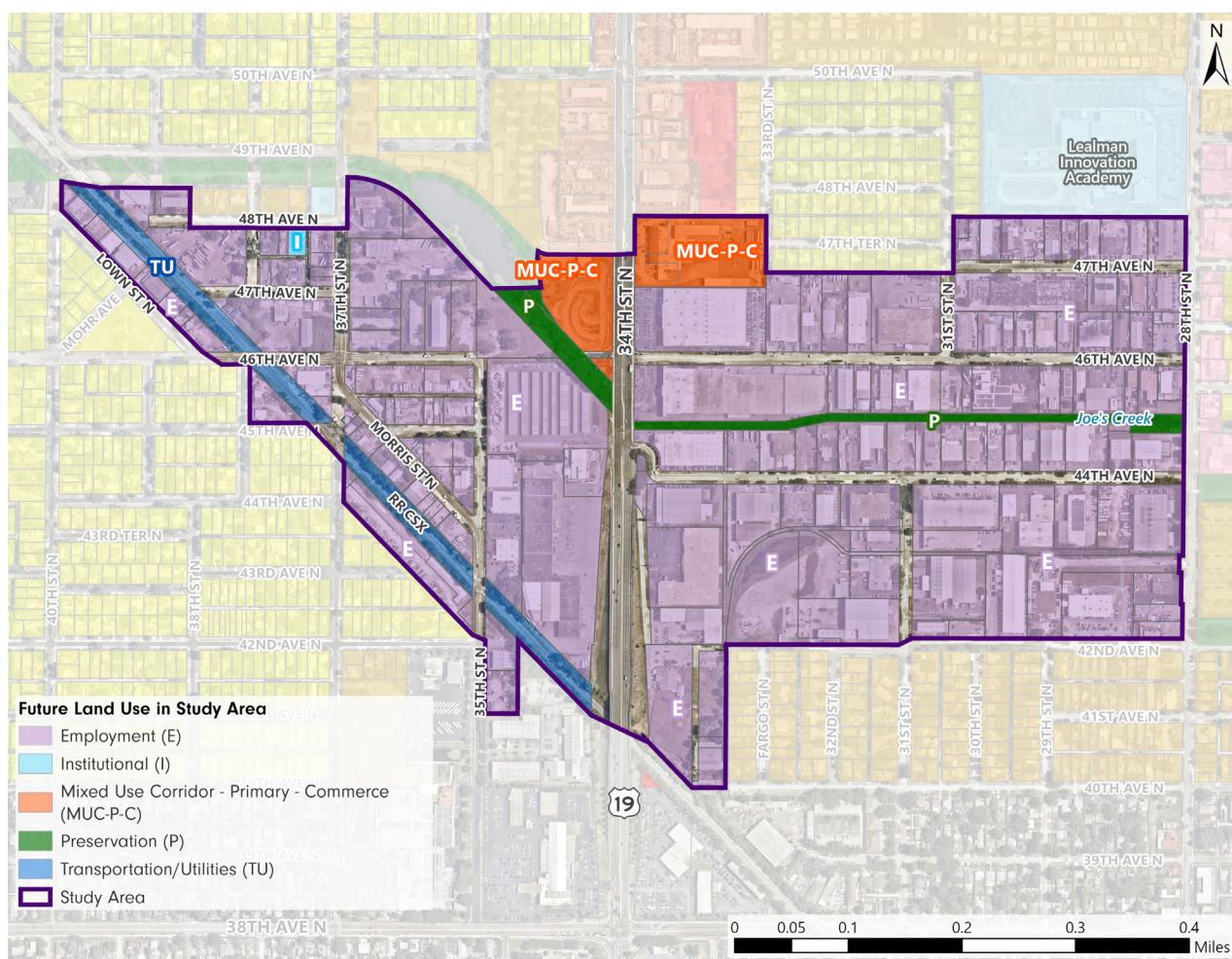


Table 3. Future Land Use Categories

Future Land Use Category	Max. Density (Units per Acre, UPA)	Max. Intensity (Floor Area Ratio, FAR)	Max. Impervious Surface Ratio (ISR)	Acres in Study Area	Percent of Total Acreage
Employment (E)	N/A	0.65 (1.30 for manufacturing, office, and research/development uses)	0.85	144.5	87.7%
Institutional (I)	12.5	0.65	0.85	0.2	0.2%
Mixed Use Corridor - Primary - Commerce (MUC-P-C)	N/A	2.0	0.90	7.8	4.7%
Preservation (P)	N/A	0.1	0.2	4.5	3.2%
Transportation/Utilities (TU)	N/A	0.7	0.9	6.9	4.2%
<b>Total:</b>				163.9	100.0%

## COUNTYWIDE PLAN MAP CATEGORIES

Of the four Countywide plan map categories, the most prevalent is Employment (E), accounting for 88.2% of the total acreage in the study area.

Figure 8. Countywide Plan Map Categories

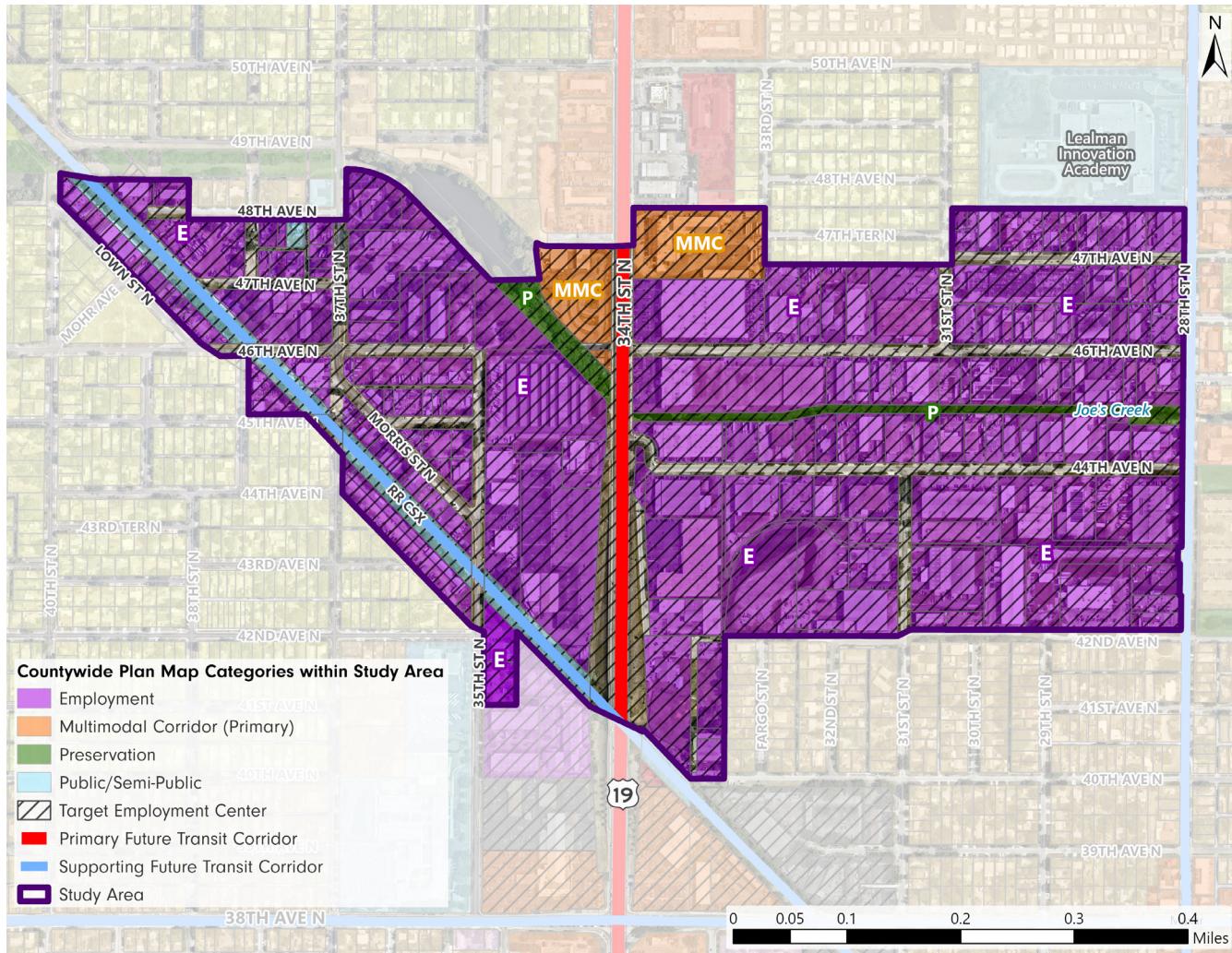


Table 4. Countywide Plan Map Categories

Countywide Plan Map Category	Max. Density (Units per Acre, UPA)	Max. Intensity (Floor Area Ratio, FAR)	Max. Impervious Surface Ratio (ISR)	Acres in Study Area	Percent of Total Acreage
Employment (E)	N/A	0.65	0.85	144.5	88.2%
Multimodal Corridor – Primary (MMC)	55	3.5	N/A	7.8	4.7%
Public/Semi-Public (P/SP)	Institutional	12.5	0.65	7.1	4.4%
	Transportation/Utility	N/A	0.70		
Preservation (P)	N/A	0.1	0.2	4.5	2.7%
<b>Total:</b>					163.9 100.0%

# BASELINE INFRASTRUCTURE ASSESSMENT

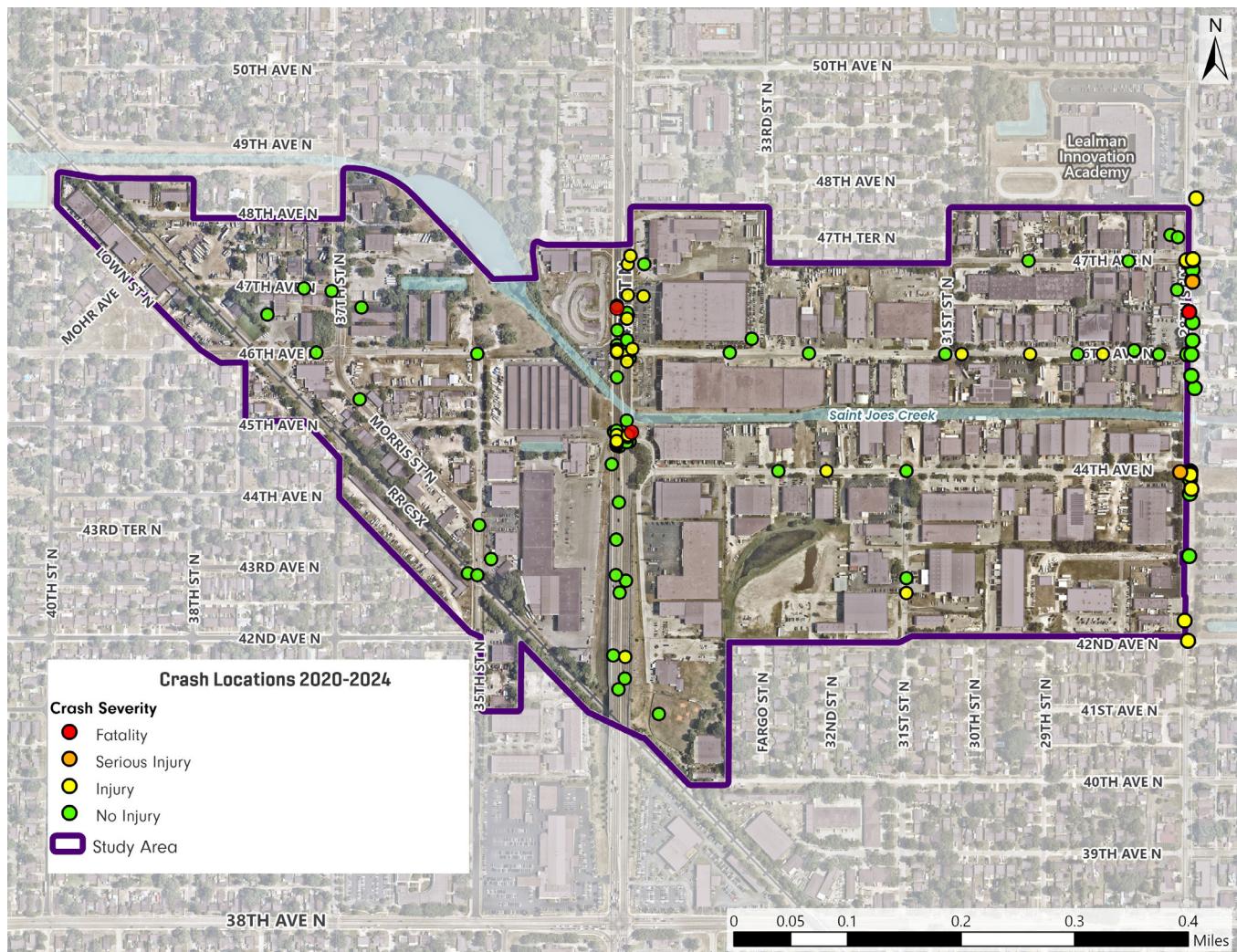


## TRANSPORTATION AND MOBILITY

## SAFETY

Between 2020 to 2024, 158 crashes occurred within the study area (**Figure 9**). 80 crashes occurred on 34th Street (US 19) within the study area, averaging 16 crashes per year. The three locations where most crashes occurred were 34th Street and 46th Avenue N, 34th Street and 44th Avenue N, and between 38th Avenue N and 44th Avenue N on 34th Street. Of all 158 that occurred for all segments in the study area, three crashes were fatal, two resulted in serious injury, 34 resulted in non-incapacitating injury, and the remaining 119 crashes resulted in no injury. Seven crashes were bicyclists, one of which resulted in a serious injury. There were six pedestrian crashes, with two crashes resulting in a fatality.

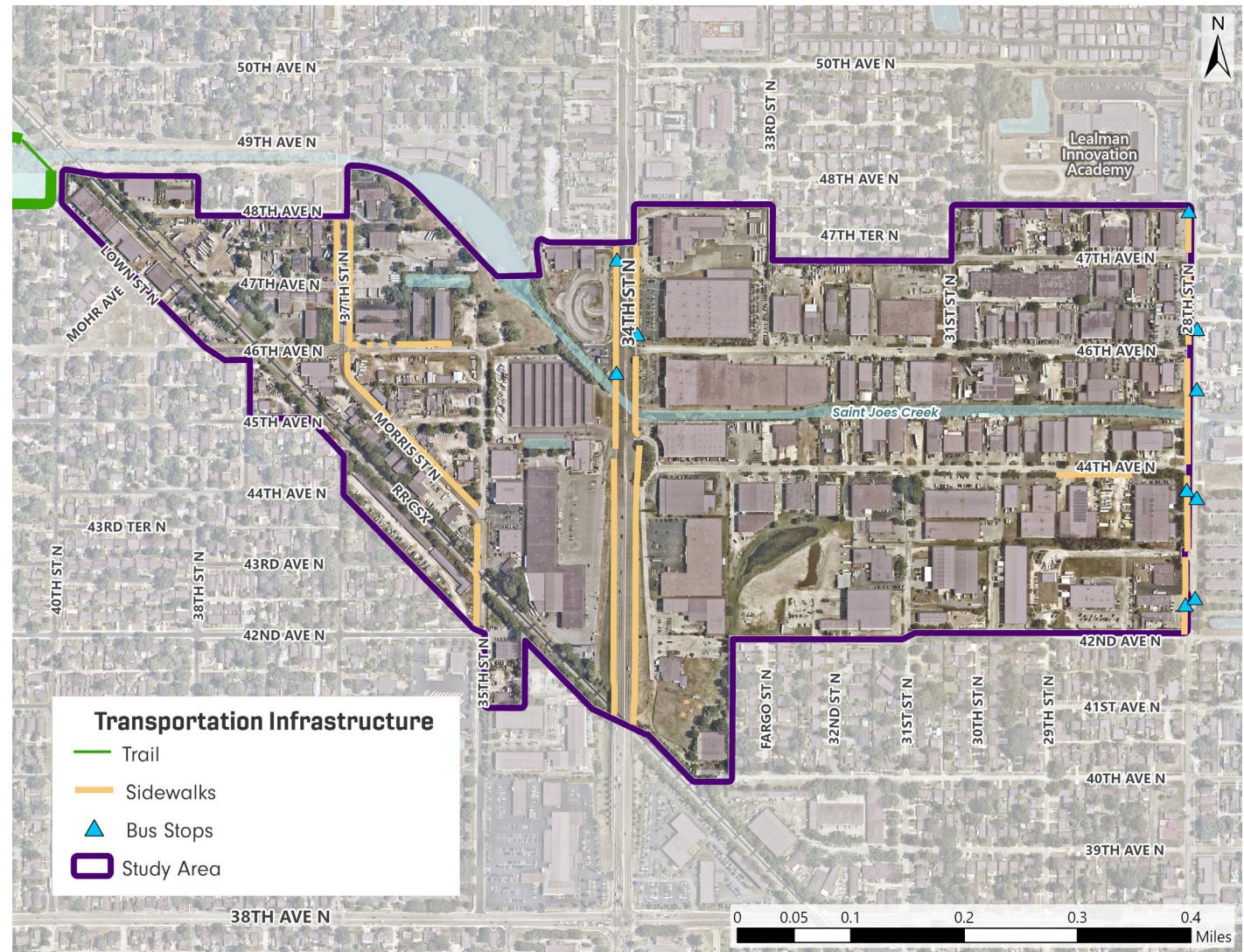
### Figure 9. Crash Locations (2020-2024)



## TRANSPORTATION INFRASTRUCTURE

There are two transit routes running through the study area: Route 34 which is located on US 19/34th Street, and Route 11 which runs along 28th Street. The Pinellas Suncoast Transit Authority (PSTA) has 11 stops located along both of these routes within the study area. Route 34 averages 20-minute headways at the peak and 30-minute during the off-peak on weekdays, 30-minute headways on Saturday and one-hour headways on Sundays and holidays. Route 11 has 45-minutes headways for the peak and off-peak for weekdays, with 45 minute average headways on Saturdays and one-hour headways on Sundays and holidays as well. Sidewalk connectivity is limited, with the majority of the Industrial Park and surrounding residential areas lacking the presence of sidewalks. There are no dedicated bike lanes or paths within the study area boundaries. A trail around Ray Neri park lies to the west of the study area, but does not share connectivity to any area pedestrian infrastructure.

**Figure 10. Transportation Infrastructure**

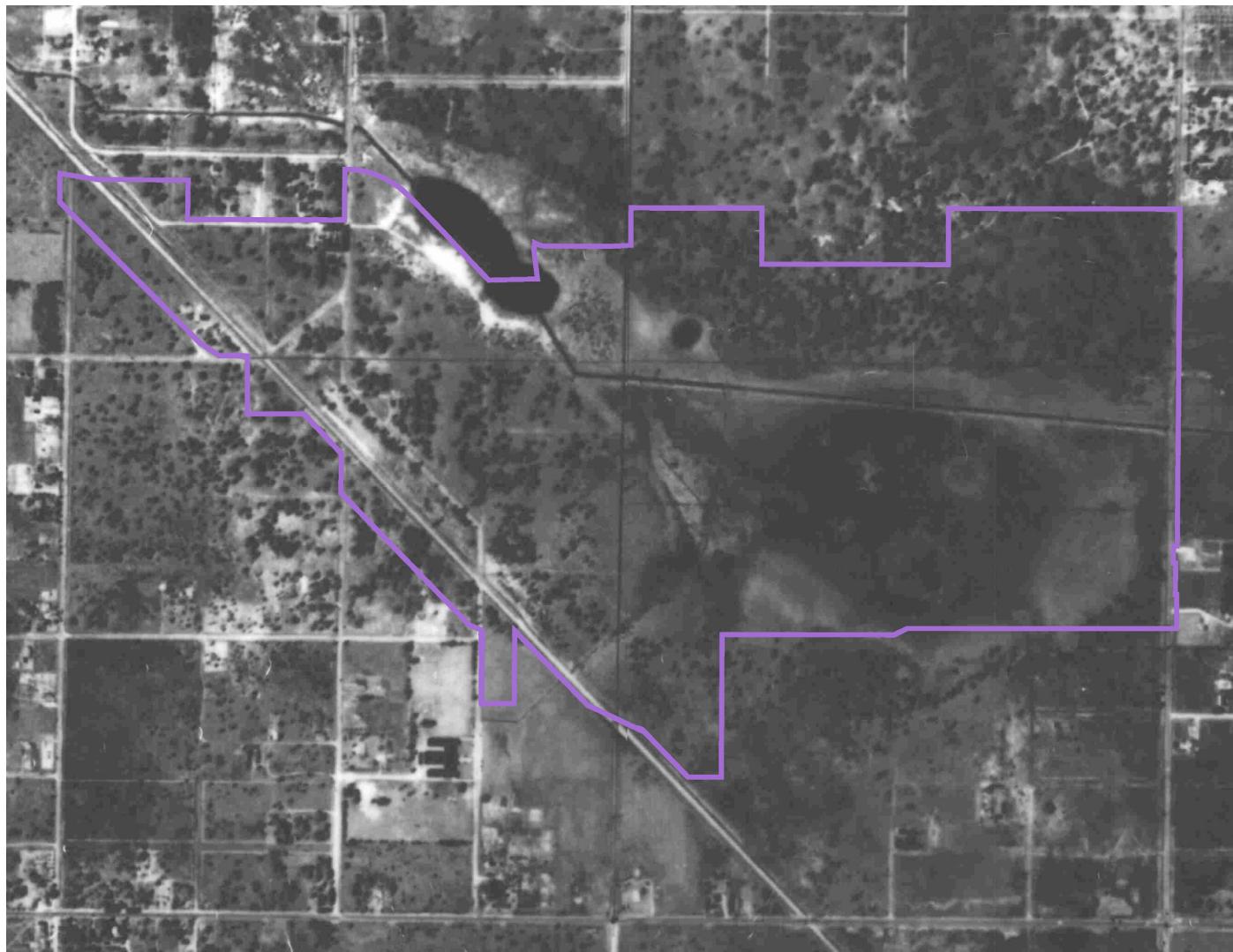


## STORMWATER INFRASTRUCTURE: THE EVOLUTION OF JOE'S CREEK



The headwaters of Joe's Creek were once a series of wetlands and natural scrub whose hydrology was characterized by naturally occurring storage areas. Many of the stormwater ponds present today in the Joe's Creek region have origins as these wetlands. The creek outfalls into Cross Bayou approximately 5.8 miles downstream of the 37th Street crossing. The Joe's Creek region was historically used as agricultural land through the late 1800s and early 1900s, but as the population in Pinellas County grew throughout the late 1950s and 1960s, residential, industrial, and commercial land uses increased. Most of the wetlands have been replaced by impervious surfaces, leading to increased stormwater runoff through the years. The historical aerial photo shown in **Figure 11** reveals that the area where Joe's Creek Industrial Park sits today was wetland in 1942 and 34th Street did not connect through the area. The area remained largely undeveloped until the late 1950s and 1960s, but the 1942 aerial shows channelization of Joe's Creek had already occurred, most likely to support agricultural demand in the early 1900s. Despite the channelization and increase in runoff within the Joe's Creek watershed, the natural terrain has remained largely unchanged with low-lying areas that fill and spill over into one another. For a more detailed discussion, the stormwater technical memorandum can be referenced in **Appendix B**.

**Figure 11. Aerial of Joe's Creek, 1942**

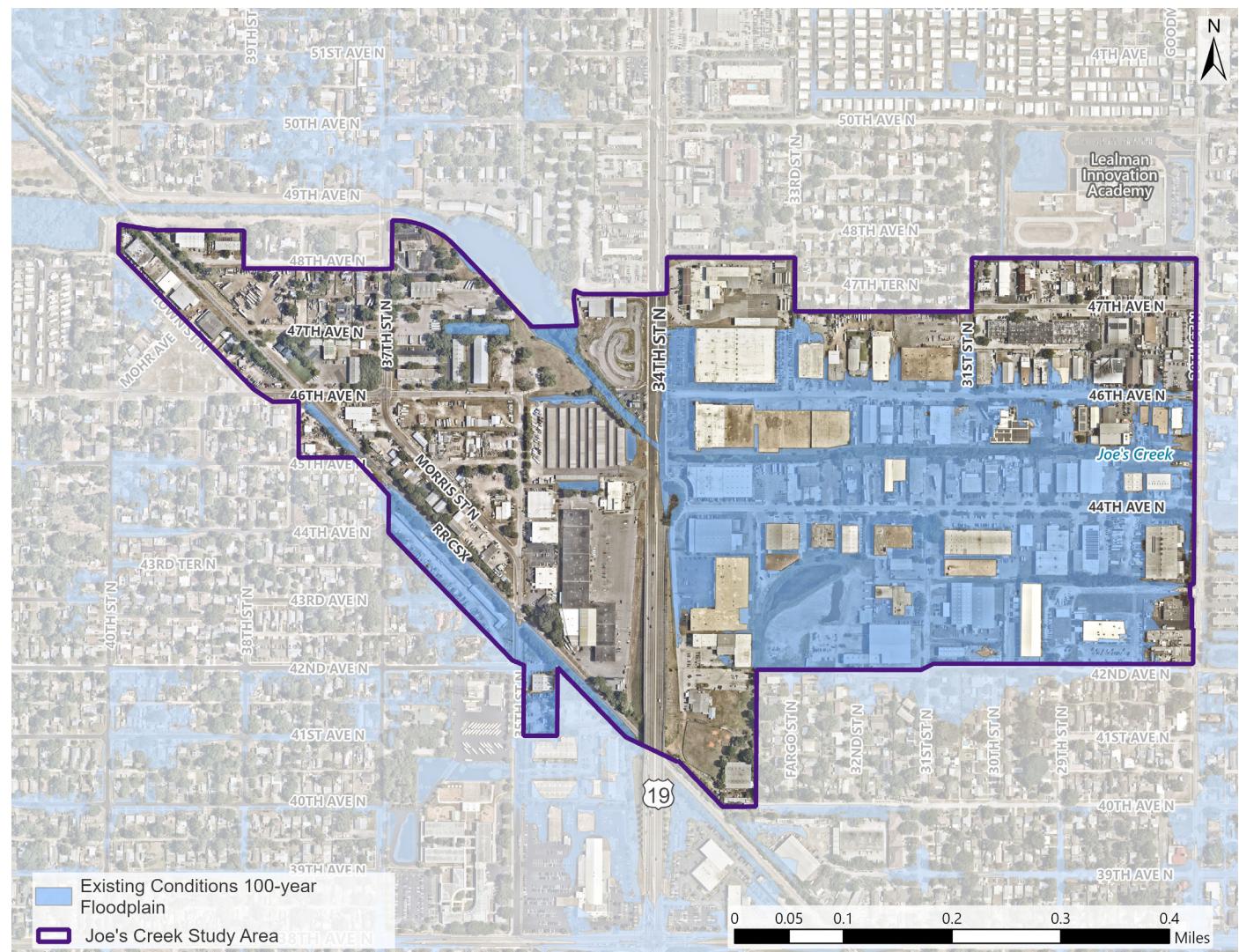


## STORMWATER INFRASTRUCTURE: JOE'S CREEK TODAY

Figure 12 shows the existing floodplain in the Joe's Creek Industrial Park. Through the use of stormwater storage, channelization and urbanization of the area, the existing floodplain in the Joe's Creek area has been reduced. However, the footprint of the historic floodplain still reflects the presence of the lake that once existed prior to development. Today, there are three major stormwater storage areas within the Joe's Creek watershed directly impacting JCIP:

- ▶ Silver Lake east of the study area
- ▶ Detention Pond 2 northwest of the study
- ▶ Ray Neri Park (Detention Pond 3) west of the study area

Figure 12. 100-Year Floodplain

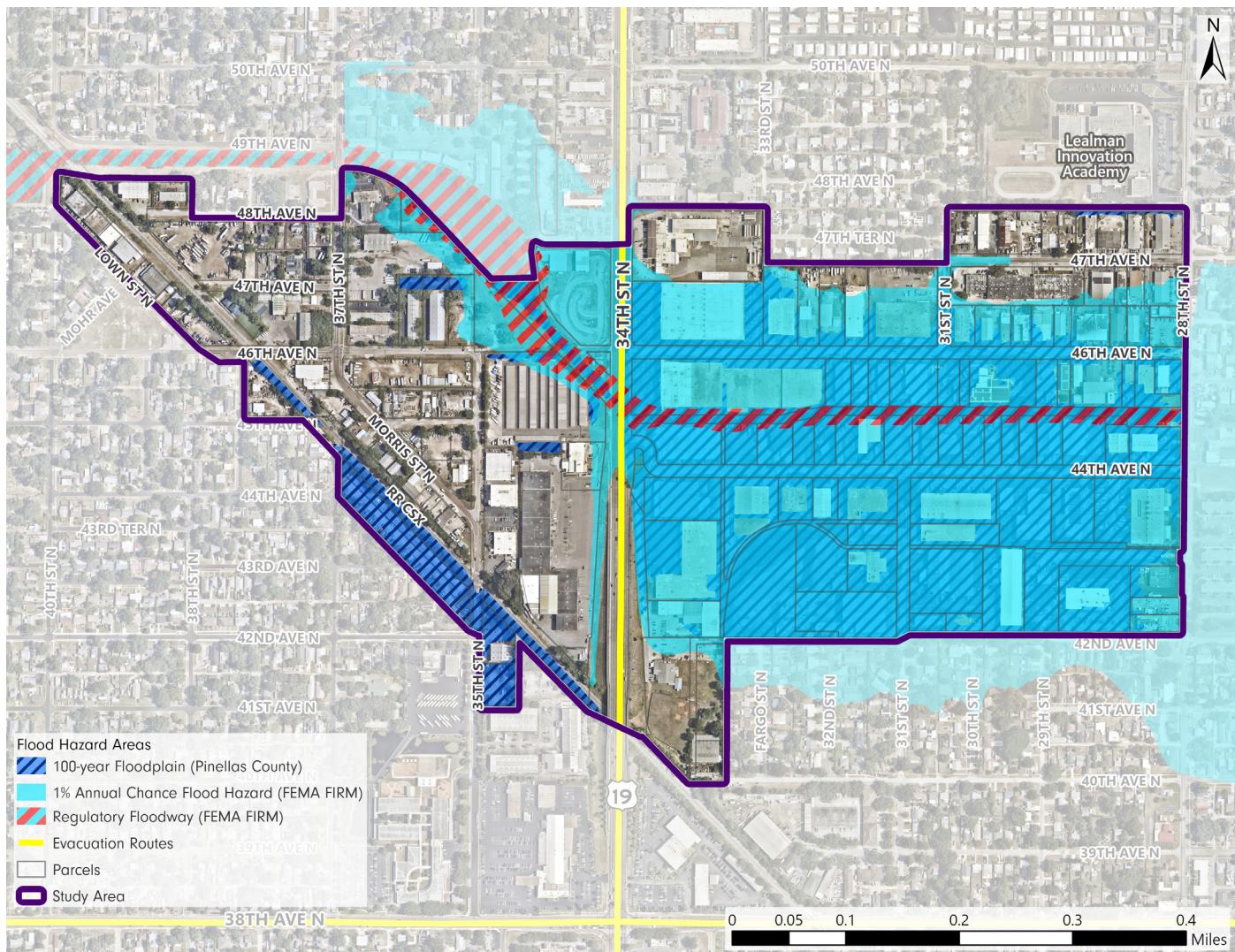


## STORMWATER INFRASTRUCTURE: FLOOD HAZARD AREA IMPACTS



Nearly two-thirds of properties (107 out of 169) shown in **Figure 13** are partially or mostly in a flood hazard area, meaning they are highly vulnerable to flooding during a 100-year storm event. 19 of the properties in the study area (11.2%) are at least partially covered by a flood hazard area. 88 properties are mostly or completely within a flood hazard area. The remaining 62 properties (36.7%) are not within a flood hazard area and are mainly located on the north side of the CSX railroad and west of 34th Street N.

**Figure 13. Flood Hazard Area Impacts**



**Table 5. Flood Hazard Area Impacts - All Properties**

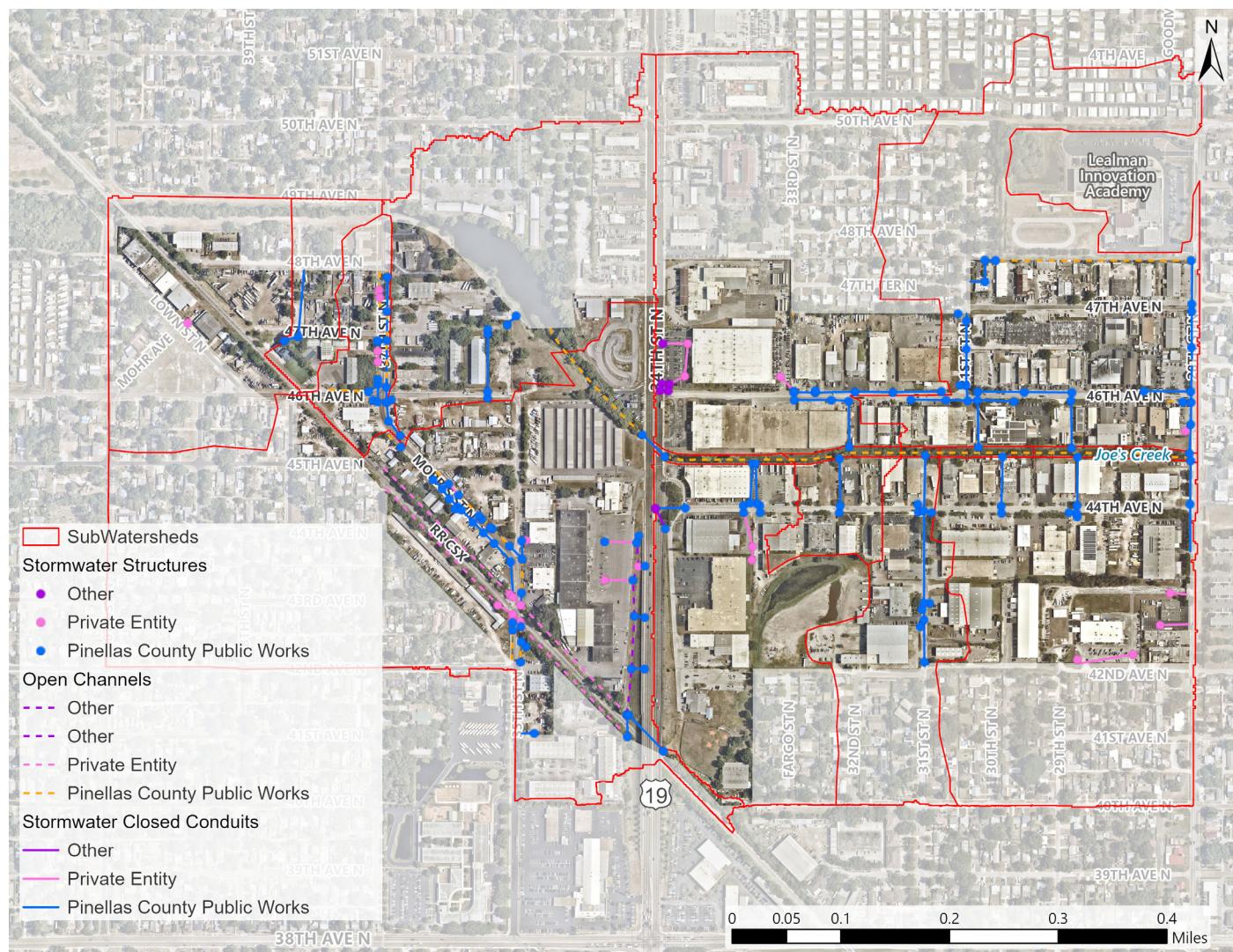
	Number of Parcels	Percent of Total (169 parcels)
In Floodplain - Mostly	88	52.1%
In Floodplain - Partially	19	11.2%
Not in Floodplain	62	36.7%
<b>Total:</b>	169	100%

## STORMWATER INFRASTRUCTURE: EXISTING ASSETS

Joe's Creek is the primary means of stormwater conveyance in the study area, with approximately 3,250 linear feet of water way maintained by Pinellas County and private entities. Three major stormwater storage facilities serve the study area, providing flood mitigation, water quality enhancement, and green space opportunities. Nearly 100% of the study area's developed sites are impervious, making onsite stormwater attenuation a challenge. The majority of development in the JCIP area occurred before stormwater regulations were put into place, therefore improvements or redevelopment of existing properties could result in a decrease in imperviousness and improve stormwater management within the Industrial Park, due to the requirement to meet current stormwater code standards. **Figure 14** shows the existing stormwater infrastructure in the Joe's Creek Industrial Park.

Note: Not all stormwater infrastructure is mapped, particularly private assets.

#### Figure 14. Joe's Creek Existing Infrastructure



## STORMWATER INFRASTRUCTURE: BULKHEADS

As part of the containment strategy to fight erosion and embankment degradation along the creek, bulkheads were installed along the banks of Joe's Creek as early as the 1950s according to aerial photographs of the area. The bulkheads present in Joe's Creek are approaching the end of their useful service life. Ownership of the bulkheads is the responsibility of the individual property owners, as is the maintenance responsibility.

An initial seawall assessment and site visit was conducted on April 11, 2025 with members of the project team and staff from Pinellas County. Large amounts of vegetation overgrowth and inaccessibility due to a lack of easements and fencing around properties abutting Joe's Creek makes accessibility a challenge. Due to these conditions, approximately 22% of the bulkhead was reviewed on the north bank of Joe's Creek, with the majority of the south bank bulkhead remaining inaccessible at the time of the site visit.

The bulkheads in Joe's Creek are anchored through a "deadman tie back system", a method in which tie rods or cables are anchored to a buried concrete block (the deadman) in order to stabilize retaining walls or other structures.

Of the approximate 22% of bulkhead that was reviewed, the concrete elements of the bulkhead structure (wall panels and concrete cap) are considered to be in good condition, with isolated areas of degradation. Erosion was seen at joints near the western end of the bulkhead, as well as rotational movement on portions of the bulkhead which is attributed to the tie back system. However, due to the nature of the deadman tie back system, not all of the tie back system was readily visible. Evidence of wall anchor failure on several portions of the wall which caused walls to rotate in some sections of the bulkhead.

Additional information from the bulkhead analysis can be referenced in the bulkhead technical memorandum in **Appendix B**.



# WATER AND WASTEWATER INFRASTRUCTURE

The objective of the water and wastewater infrastructure assessment is to provide a high-level analysis of the condition of the existing potable water and wastewater facilities within the JCIP study area. The accompanying technical memorandum can be found in Appendix B-3 and serves as an evaluation of the existing potable water and wastewater infrastructure as well as an assessment of anticipated future utility demands. Pinellas County does not own or operate the potable or reclaimed water infrastructure within the JCIP study area. However, the County does own and maintain the wastewater infrastructure.

## POTABLE WATER

All water supplied to the JCIP study area is from the Cosme Water Plant in Odessa, Florida, and water is transmitted approximately 30 miles to the area. The plant is owned and maintained by the City of St. Petersburg. Distribution mains within the area may be near the end of their useful service life, however, no installation dates were available nor provided for the City of St. Petersburg water main infrastructure, and remaining useful life was not assessed.

## SANITARY SEWER

The wastewater collection system within the JCIP study area is owned and maintained by Pinellas County Utilities. Wastewater is collected via gravity sewer mains, which connect to three lift stations throughout the area and wastewater is sent to treatment via manifolding force mains. The JCIP study area wastewater flows are sent and treated at the Pinellas County owned and maintained South Cross Bayou Advanced Water Reclamation Facility. The existing infrastructure was predominantly installed in the 1950s, and while it is sized for commercial and industrial land uses, the existing force mains within the area are near the end of their useful service life. A map of the Pinellas County sanitary sewer network assets can be found in **Figure 11**.

## SERVICE NEEDS

The future potable water and wastewater infrastructure service demands were estimated from anticipated land usage changes. The future demands were compared to the existing infrastructure water and wastewater treatment plant capacities. To determine if the existing water and wastewater pipelines capacities within the defined service area are adequate or need to be upsized, a water hydraulic model and master plan and wastewater hydraulic model and master plan must be completed. Future demands were based on the expected redevelopment over the next 20 years.

The Pinellas County 2024-2029 Six-Year Plan, published in 2023, contains the following completed Capital Improvement projects within the study area to help mitigate some of the infrastructure needs:



► Wastewater Lift Station Rehabilitations

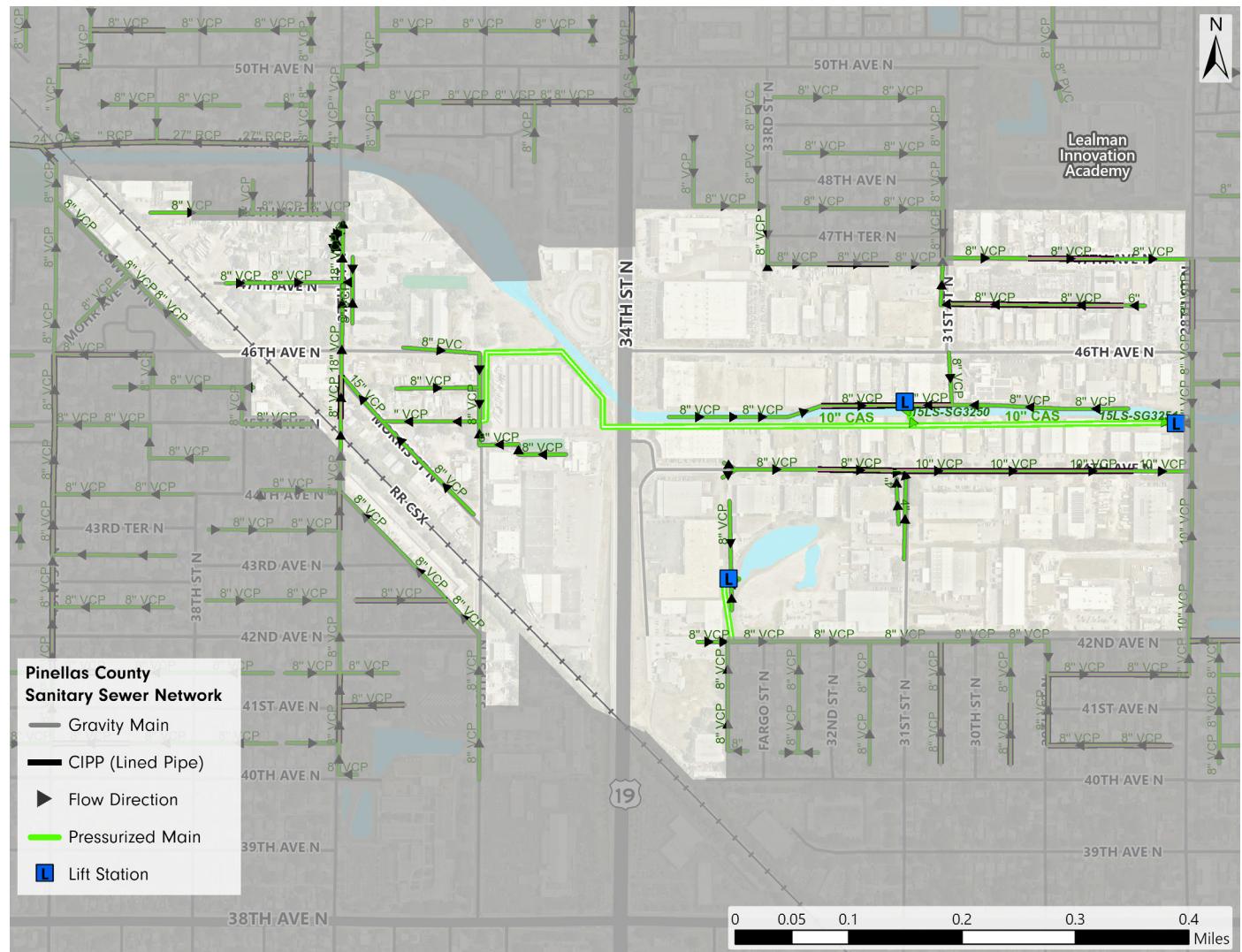
- The two pump stations along Joe's creek (LS 122 and 123) have both been rehabbed for a 30-year improvement period.
- Status: LS 122 was completed in 2024. LS 123 was completed in 2023

► Sanitary Sewer Cured in Place Pipe (CIPP) Lining

- Sanitary sewer service laterals on the west side of the industrial park running along Morris Street between 46th Ave and 49th Ave are to be CIPP lined.
- Status: Completed as of this document

Additional resources related to potential capital improvements and actions can be found in **Section 5** of the Plan.

**Figure 16. Existing Pinellas County Utilities Sewer Infrastructure**





*North bank of Joe's Creek and 34th Street*  
Source: Kimley-Horn

# SECTION 4

# VISION PLAN

*Introduction*

*Land Use and Zoning Vision*

*Character Districts*

# INTRODUCTION

This section presents the vision for the JCIP Master Plan study area. The vision plan for the area's four character districts were defined based on the study area's existing conditions, opportunities and constraints, and community and stakeholder input. The overall Land Use Vision is accompanied by a description, which align with the Plan's purpose, and provides for the policy recommendation and actions for implementation presented in **Section 5**. The four Character Districts were defined to support a context-sensitive approach to accomplishing the JCIP Master plan objectives, with each character district having its own set of considerations and recommendations that address the unique characteristics and needs of the area. This section contains the following:

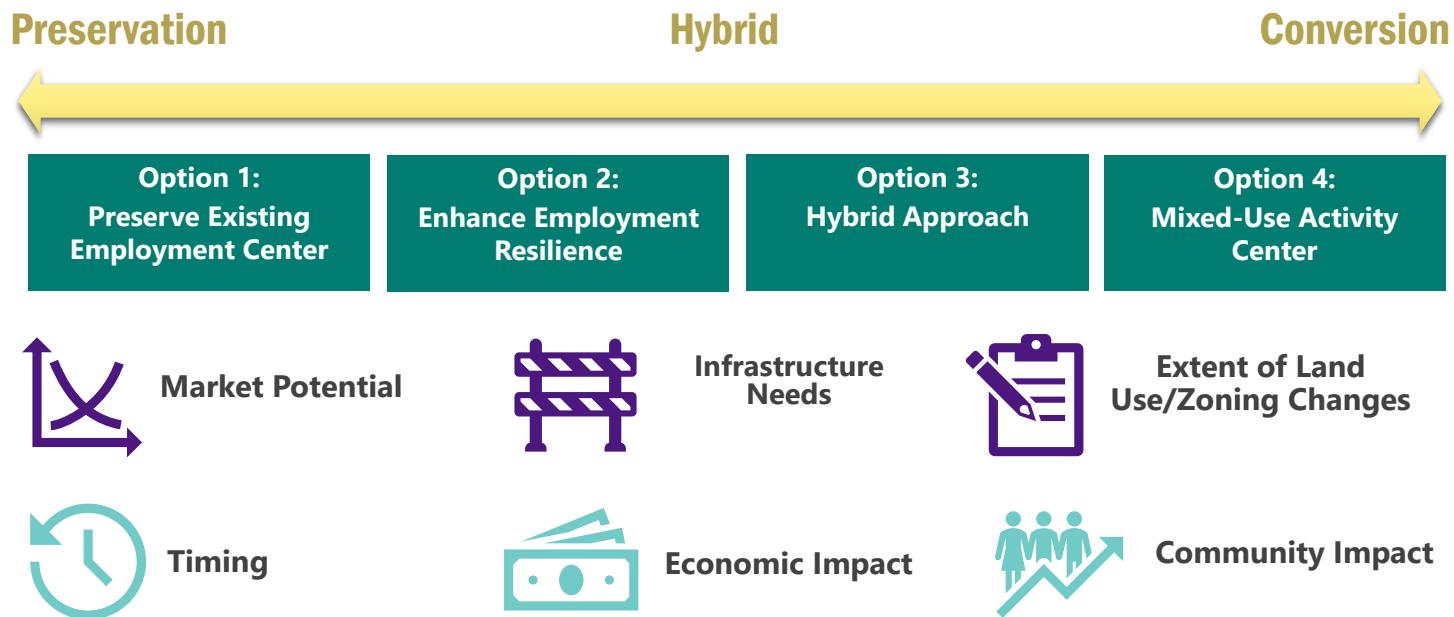
- ▶ **Land Use Vision:** Presents the overall vision statement for the study area and objectives that provide guidelines for accomplishing the vision.
- ▶ **Character Districts:** Identifies four character districts within the overall study area based on existing uses and the desired goals expressed by stakeholders. A high-level summary is provided that explains the visionary attributes of each character district related to land use mix, density and intensity, urban design and public realm elements, community assets, and mobility.

## LAND USE AND ZONING VISION

An overall vision for the Plan was crafted to provide a high-level framework for the area to aspire to over time. The following recommendations will support fulfilling the vision as the area continues to redevelop. The action plan in **Section 5** supports the implementation of the Plan vision outlined in the following pages.

The land use vision map contemplates supplementation through a Target Employment Center (TEC) overlay. The overlay could include different criteria for areas in the JCIP that align with the land use vision map. Expanded densities/intensities, uses, and development standards would be "unlocked" if certain criteria is met as specified further in the TEC-Overlay. This approach is consistent with TEILs and the Pinellas Countywide Plan Rules.

As part of the land analysis, these factors below were utilized in conjunction with stakeholder engagement to create a balanced approach to redevelopment. **Option 3 (Hybrid)** was the optimal scenario to allow for flexibility of uses (housing/retail/restaurants) in selected areas while supporting existing businesses and allowing for future reinvestment in an incremental way. The land use vision can be revisited overtime with changing market conditions.



# CHARACTER DISTRICTS

## PRIMARY MIXED USE CORRIDOR

Continue existing permitted employment-based uses and allow for an expanded mix of uses with active ground floor commercial uses, multi-family residential, offices, and/or temporary lodging in the above stories; Public and civic spaces such as parklets and plazas

## SUPPORTING MIXED USE CORRIDOR

In addition to existing permitted employment-based uses, allow for residential uses including a mixture of multi-family and missing-middle housing types; Neighborhood-scale retail, cafes, light industrial workshops and expanded employment, and personal services (laundromat, day cares, salons, etc.); Open space/parks; Community facilities

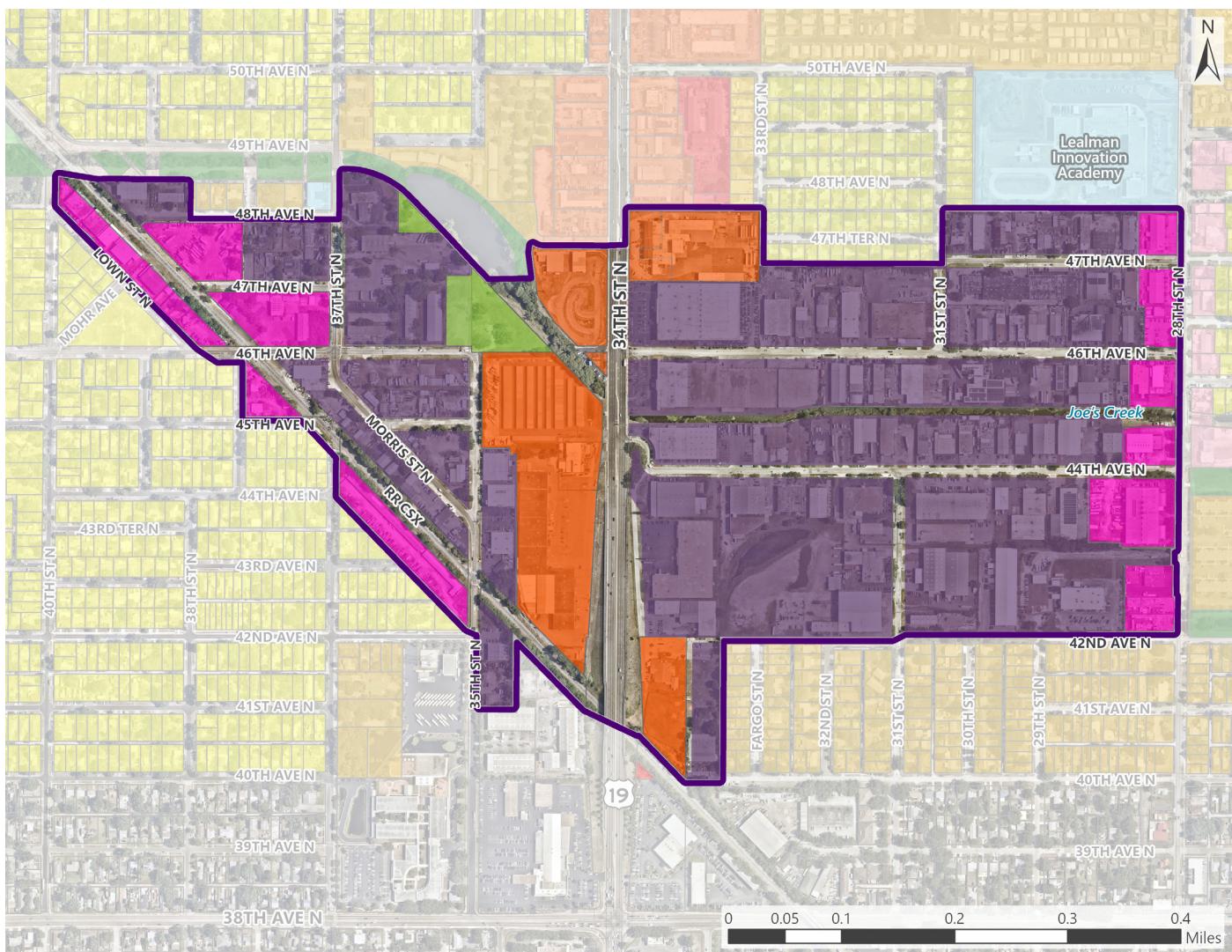
## EMPLOYMENT

Allow these areas to continue to be characterized by employment-type uses such as office buildings, laboratories, warehouses/distribution centers, manufacturing, etc.; Co-working spaces and small business incubators (e.g., maker spaces, studios, tasting rooms, test kitchens, office buildings)

## POTENTIAL STORMWATER MANAGEMENT

Predominately stormwater management with the potential for green and open spaces with the possibility of trail extension (coordination needed)

## Figure 17. Character Districts Map

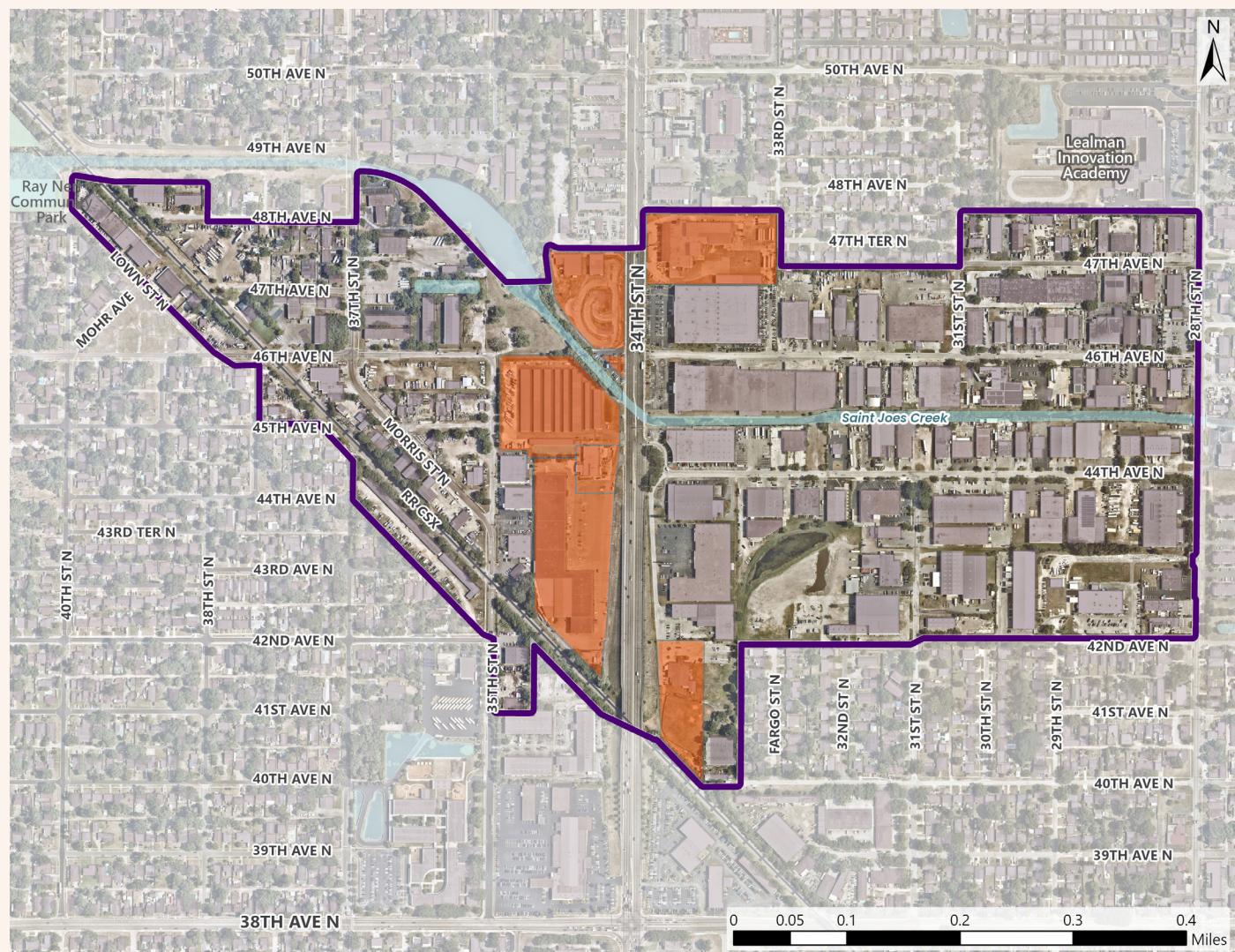


## PRIMARY MIXED USE CORRIDOR

The US 19/34th Street N corridor is a major transportation artery in Pinellas County and is also a key area for commercial and mixed-use development. The corridor is currently a mix of commercial, employment, office, storage, community/recreational and other uses along the roadway with single-family residential areas typically located just off the corridor. The vision for this character district could include policy changes that allows for a mix of uses such as commercial and industrial uses east of US 19 and multi-family residential outside of floodplain (west of US 19), mix of multi-family, retail, restaurant, and other uses. The intent is to allow for higher density/intensities and mid-rise development along US 19 to serve the community at large.



Figure 18. Primary Mixed Use Corridor

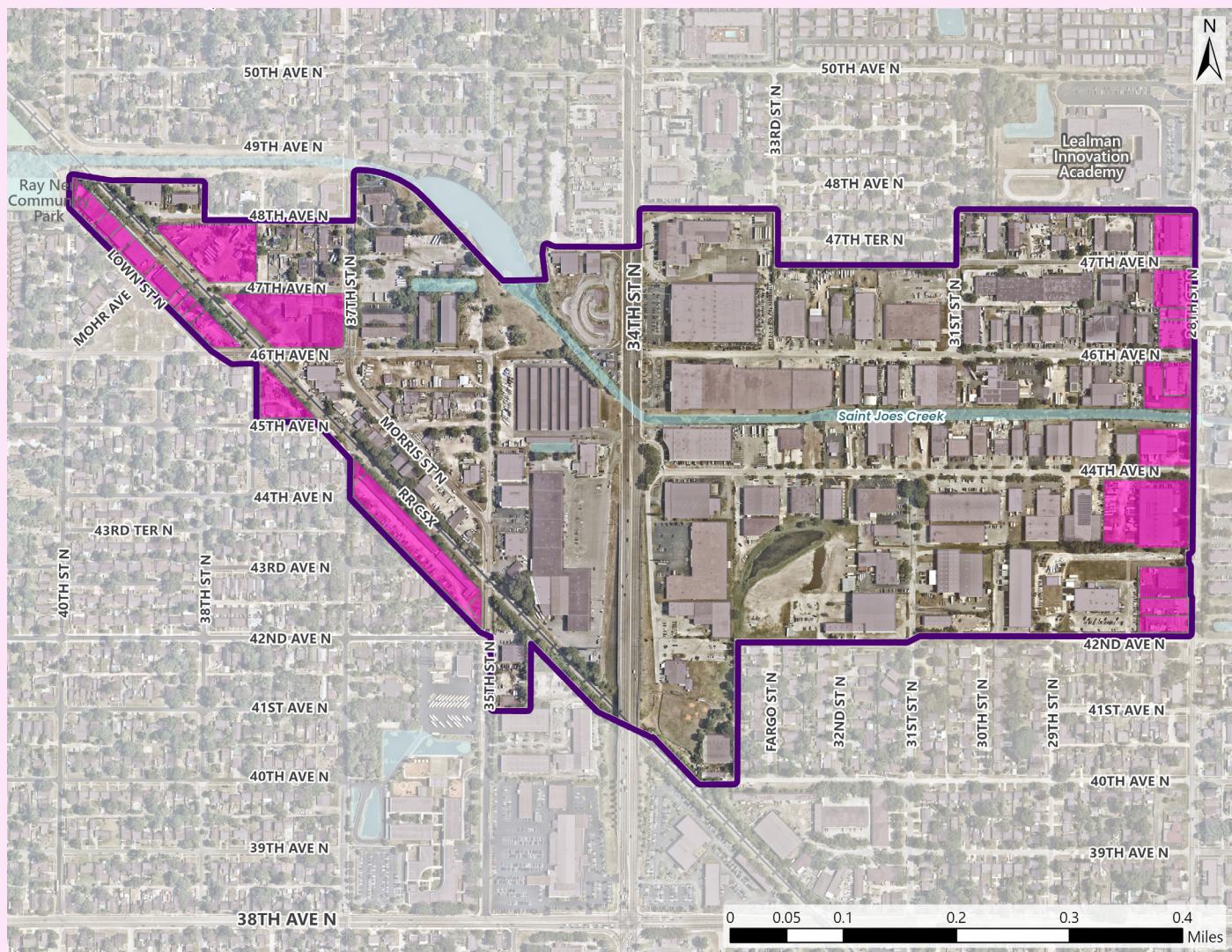


## **SUPPORTING MIXED USE CORRIDOR**

These areas currently consist of smaller parcels adjacent to neighborhoods which include neighborhood uses such as housing, retail, restaurants and light industrial workshops. The vision for this district is for policy changes to allow for mixed-use redevelopment with ground floor, neighborhood-scale retail and restaurants or compatible light industrial workshops and residential above, in addition to existing allowable uses.



### Figure 19. Supporting Mixed Use Corridor

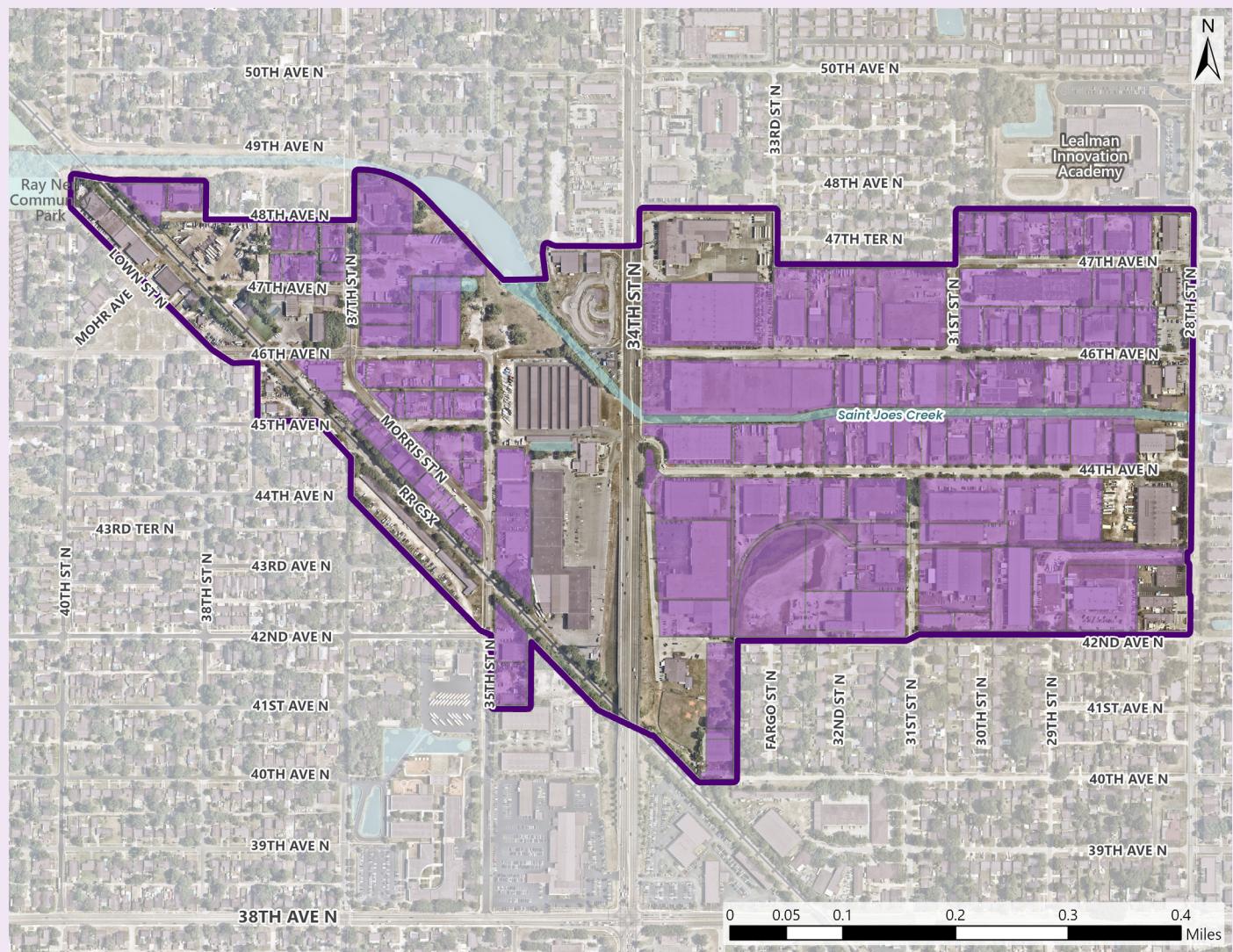


## EMPLOYMENT

This area makes up the majority of the JCIP study area and includes primarily industrial and commercial land uses. The vision for this district is to provide opportunities for density/intensity increases and expanded employment uses through a TEC overlay. The purpose is to provide flexibility and provide alternative development standards to support existing businesses and attract reinvestment and address infrastructure needs.



**Figure 20. Employment**

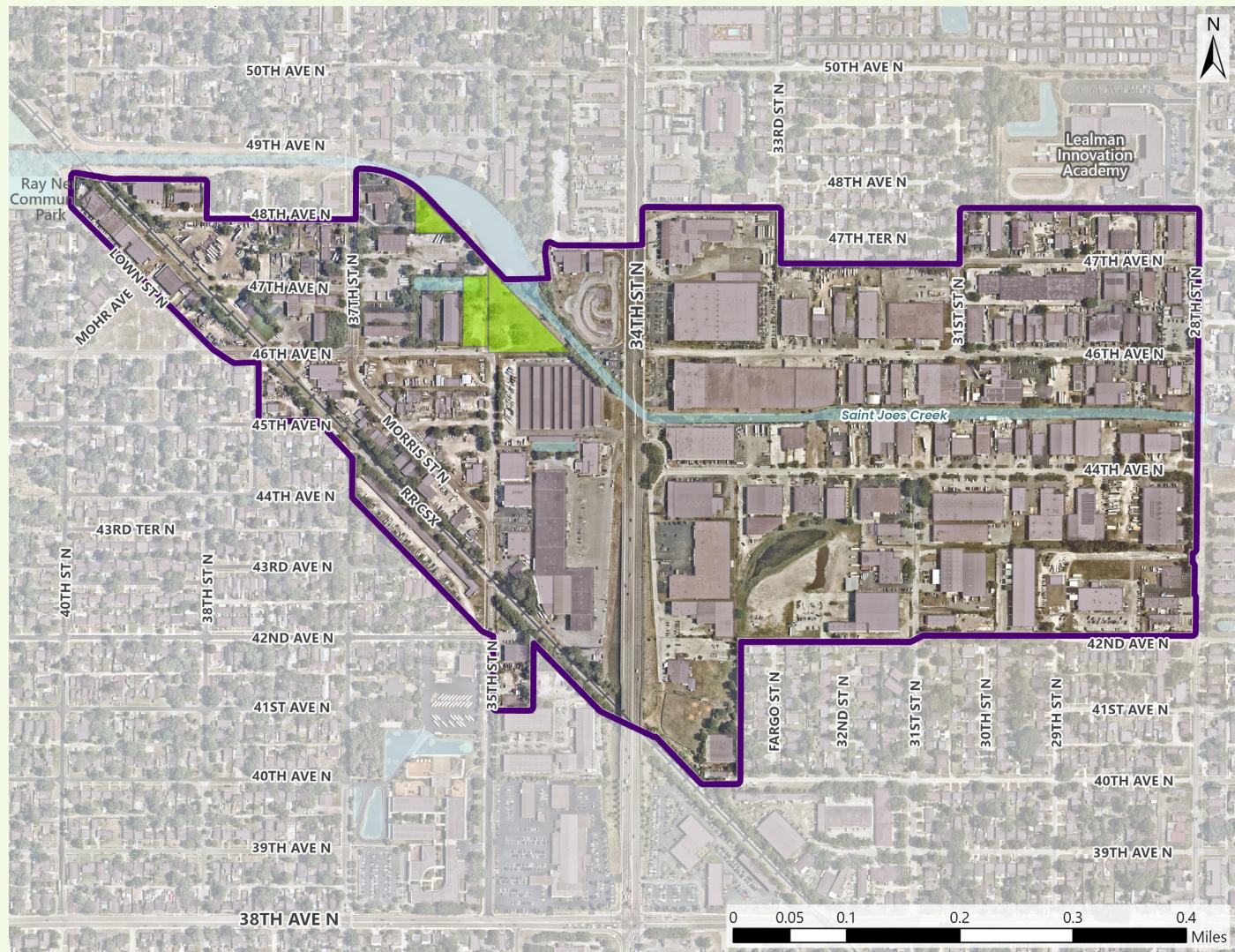


# POTENTIAL STORMWATER MANAGEMENT

This district consists of predominately stormwater management with the possibility of the Joe's Creek Restoration and Trail expansion (including greenspace opportunities and connections to the trail). Coordination will be needed with Pinellas County Public Works overtime as these areas are utilized for other uses.



## Figure 20. Potential Stormwater Management





## SECTION 5

# ACTION PLAN

*Introduction*

*Actions*

*Funding*

*Conclusion*

# INTRODUCTION

This section includes the recommendations and action steps to support the Plan's implementation. The intent is to continue momentum from previous Countywide and Pinellas County planning efforts. The implementation phasing tables and actions also address the objectives previously listed in the Plan.



**Recommend Changes to Land Use and Development Standards** to promote new development and redevelopment



**Devise Economic Development Strategies** to support the retention/expansion of existing businesses and attract new industries



**Evaluate Public Infrastructure Needs** for improvements to roadways, utilities, and stormwater management systems



**Identify Funding Mechanisms** to implement improvement projects and programs

The recommended actions are organized by land use and zoning, infrastructure enhancements (including stormwater, potable water, wastewater, and transportation/mobility), and other overarching actions. Funding strategies are also included in this section. The tables below include actions with accompanying key leads and timing. The timing is listed as follows:

- ▶ Continuous: Ongoing and continuous implementation efforts once the plan is adopted.
- ▶ Short-term: Implementation within the first five years of plan adoption.
- ▶ Mid-term to Long-term: Implementation beyond five years after plan adoption.

The land use and zoning and infrastructure actions should be pursued and achieved in tandem. The land use vision is an incremental redevelopment strategy. Because conditions are never static, the next steps should be dynamic and revisited as new information or circumstances arise for updates to the actions.



*Presentation of action plan items at the final public engagement event.  
Source: Kimley Horn*

# ACTIONS



The actions presented on the following pages address land use and zoning, infrastructure enhancements (including stormwater, potable water, wastewater, and transportation/mobility) and economic/community actions.

## LAND USE AND ZONING

Below are the actions related to land use and zoning to realize the land use vision map. The needs of the stakeholders and the real estate market should be reassessed over time.

Please note: the letters are a key and not a ranking of project priority.

**Table 9. Land Use and Zoning (LZ)**

Action	Lead Partners	Timing
<b>A</b> <b>Create Pinellas County Comprehensive Plan Amendment</b> Adopt text amendments to include the Target Employment Center (TEC) standards	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA	Short-term
<b>B</b> <b>Create Pinellas County Code Updates</b> Integrate the Target Employment Center (TEC) Overlay to allow additional flexibility of uses and standards with locational criteria	<b>Pinellas County:</b> Housing & Community Development, Building & Development Review, Lealman CRA	Short-term
<b>C</b> <b>Pursue Forward Pinellas Countywide Plan Amendment</b> Special Area Plan Adoption and Plan Amendment Application	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA; <b>Forward Pinellas</b>	Short-term
<b>D</b> <b>Monitor and Reassess the Land Use/Zoning Strategies and the Land Use Vision</b> Reassess that the land use vision and zoning is meeting the needs of the stakeholders	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA; <b>Forward Pinellas</b>	Short to Mid/ Long-term
<b>E</b> <b>Incremental updates as needed over time</b> Allow the Plan to provide flexibility (uses and densities/intensities) while considering future updates based on monitoring and changing market conditions.	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA; <b>Forward Pinellas</b>	Mid/Long-term

## INFRASTRUCTURE: TRANSPORTATION/MOBILITY

The table below provides actions related to transportation infrastructure.

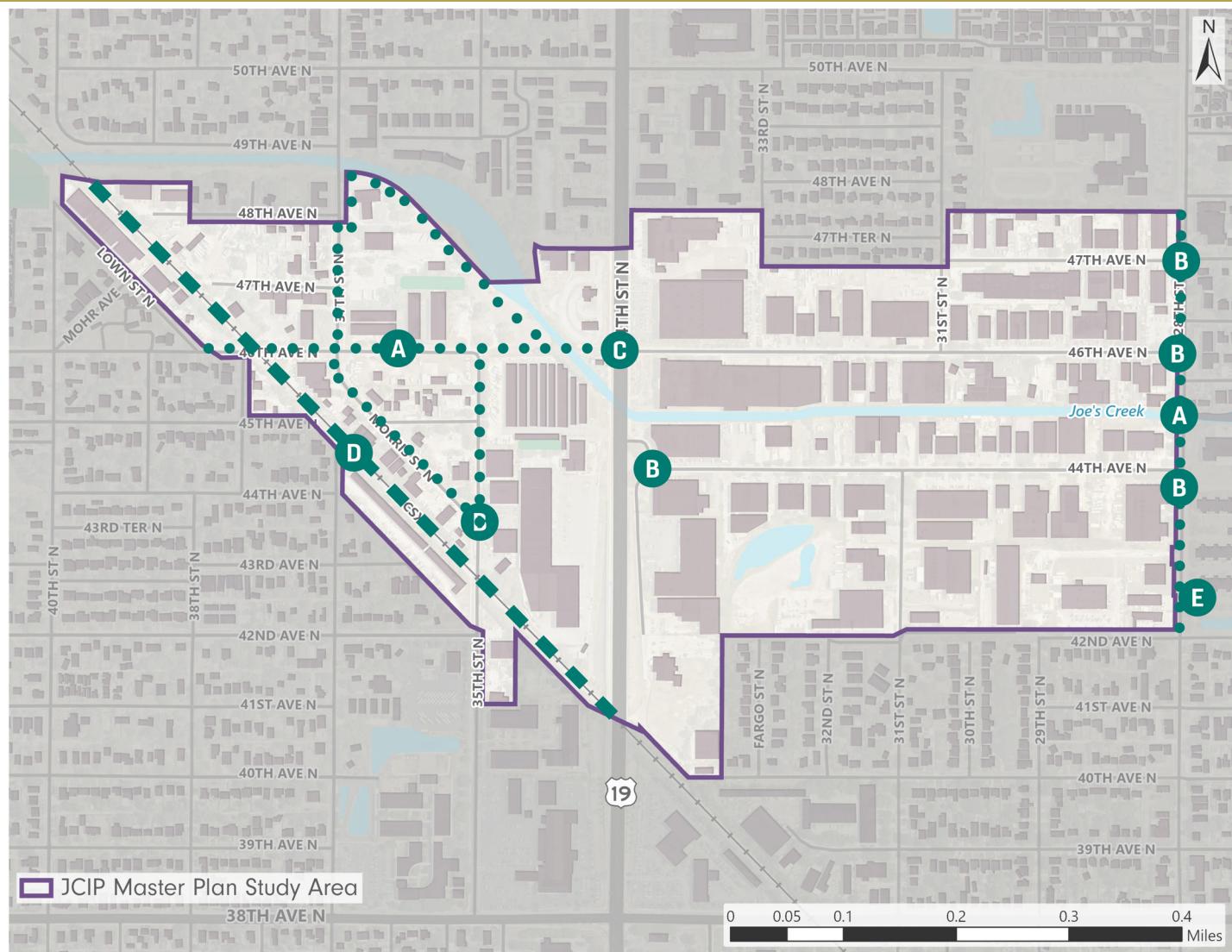
Please Note: the letters are a key for **Figure 21** on page 51 and not a ranking of project priority.

**Table 10. Infrastructure (Transportation/Mobility)**

Action	Lead Partners	Timing
<b>A Prioritize and Implement Separated Bicycle Facilities and/or New/Improved Sidewalks</b> Program and construct facilities on the following locations over time: <ul style="list-style-type: none"><li>• 46th Avenue (east of the railroad to Joe's Creek/34th Street)</li><li>• Joe's Creek Restoration and Greenway Trail (west of JCIP to 34th Street) and provide connections to neighborhoods</li><li>• Morris Street / 35th (review possibility of expanding sidewalk)</li><li>• 28th Street trail, sidewalk, protected bicycle facility</li></ul>	<b>Pinellas County:</b> Public Works, Lealman CRA	<b>Short-term to Mid/long-term</b>
<b>B Prioritize and Implement Crossing/Intersection Improvements</b> <ul style="list-style-type: none"><li>• Morris Street and 35th Street (Crossing and Intersection improvements)</li><li>• 33rd Street/44th Avenue area (Improve truck access)</li><li>• 28th Street at 44th Avenue (Evaluate crashes and program intersection improvements and Pedestrian/Bicycle crossing improvements)</li><li>• 28th Street at 46th Avenue (Evaluate crashes intersection improvements and Pedestrian/Bicycle crossing improvements)</li></ul>	<b>Pinellas County:</b> Public Works, Lealman CRA	<b>Short-term to Mid/long-term</b>
<b>C Evaluate 46th Avenue and 34th Street/US 19 Connection</b> <ul style="list-style-type: none"><li>• With redevelopment evaluate/study possibility of new intersection for bicycle/pedestrian access or full vehicular in coordination with the Lealman CRA, the community, and businesses</li></ul> Conduct signal warrant analysis	<b>Pinellas County:</b> Public Works, Lealman CRA, <b>Forward Pinellas,</b> <b>FDOT</b>	<b>Mid/long-term</b>
<b>D Evaluate Railroad</b> <ul style="list-style-type: none"><li>• Evaluate railroad for potential trail</li></ul>	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA, <b>Forward Pinellas</b>	<b>Mid/long-term</b>
<b>E Transit Improvements</b> <ul style="list-style-type: none"><li>• 28th Street north of 42nd Avenue (create transit stop improvements)</li><li>• Analyze other improved stop locations, coordinate with businesses and PSTA on transit route improvements over time on 34th Street and 28th Street</li></ul>	<b>Pinellas County:</b> Housing & Community Development, Lealman CRA, <b>PSTA</b>	<b>Short-term to Mid/long-term</b>
<b>JCIP-wide</b>		
<b>F Revisit sidewalk improvements</b> in Joe's Creek Industrial Park with future redevelopment	<b>Pinellas County:</b> Public Works	<b>Continuous</b>
<b>G Continue roadway resurfacing</b> <ul style="list-style-type: none"><li>• Resurface roadways based on pavement conditions schedule</li></ul>	<b>Pinellas County:</b> Public Works	<b>Continuous</b>
<b>H Identify shared parking</b> <ul style="list-style-type: none"><li>• Purchase property for shared parking locations over time</li></ul>	<b>Pinellas County:</b> Public Works, Lealman CRA	<b>Short-term to Mid/long-term</b>
<b>I Identify opportunities for lighting improvements along roadways</b> Work with Lealman CRA CAC and stakeholders	<b>Pinellas County:</b> Public Works, Lealman CRA	<b>Short-term to Mid/long-term</b>

The map shown in **Figure 21** shows the approximate location of recommended improvements related to transportation infrastructure in JCIP. The letters on the map correspond with actions listed in **Table 10**.

**Figure 21. Transportation/Mobility Improvements**



## INFRASTRUCTURE: STORMWATER

The table below provides actions related to stormwater infrastructure. **Figures 22 through 24** on the following pages show additional information on locations for stormwater improvements identified in the tables.

Please note: the letters are a key and not a ranking of project priority.

**Table 11. Infrastructure (Stormwater)**

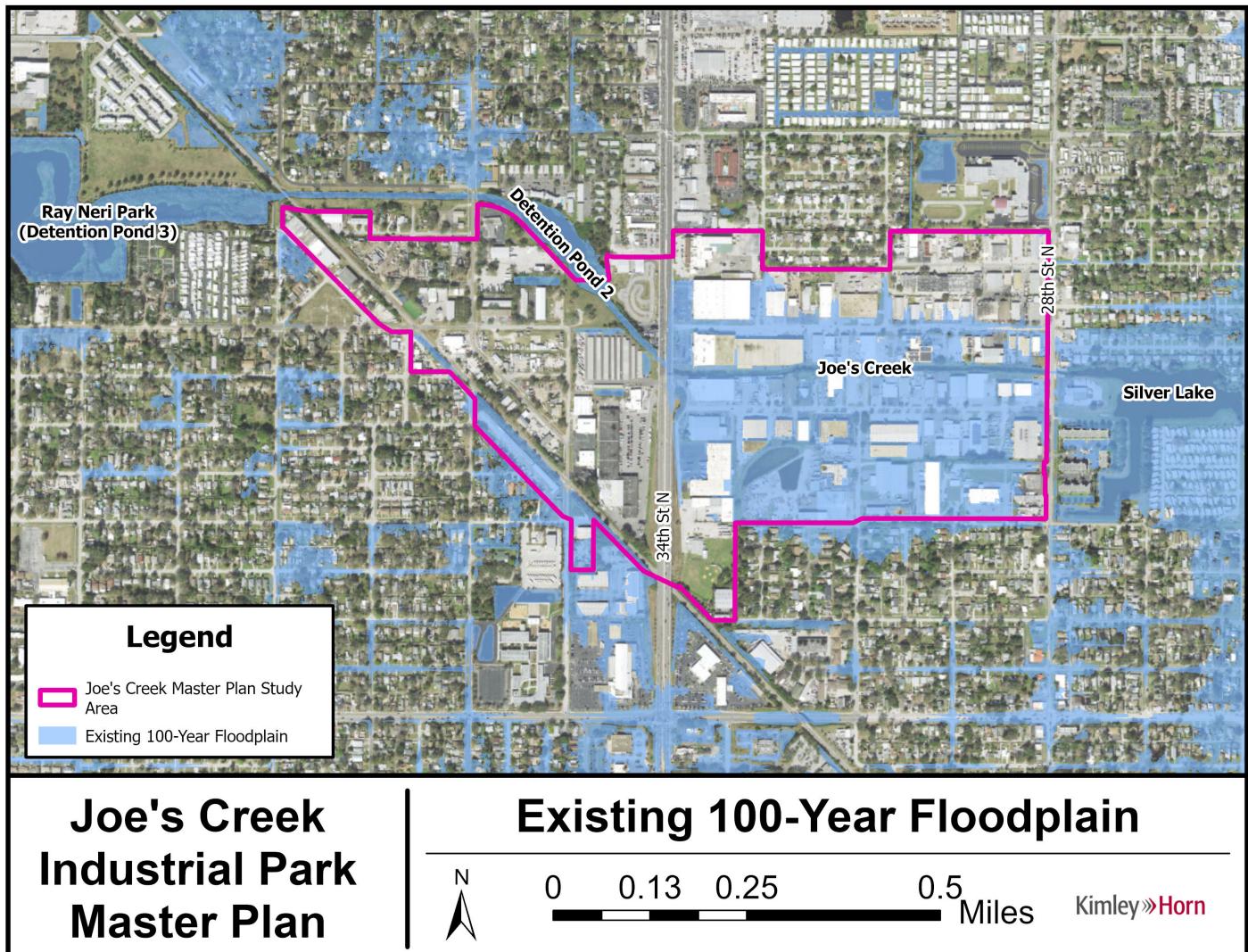
Action		Lead Partners	Timing
<b>A</b>	<p><b>Encourage Interim Solutions</b></p> <ul style="list-style-type: none"> <li>• Incremental stormwater improvements with new development</li> <li>• Integrate cisterns, green roofs, rain gardens, and dry floodproofing as stormwater mitigation</li> </ul>	Coordination with property owner and <b>Pinellas County: Public Works</b>	<b>Continuous</b>
<b>B</b>	<p><b>Phased Implementation of Improvements</b> (Proposed in the Joe's Creek Model Update, Alternatives Analysis, and Feasibility Study Preliminary Report)</p> <ul style="list-style-type: none"> <li>34th Street Culvert Improvements (Upsize) (Short-term)*</li> <li>• Adding operable weirs downstream of 34th Street at Ray Neri Park (Short-term)</li> <li>• Adding storage downstream of 34th Street (Mid/Long-term)</li> </ul>	<b>Pinellas County: Public Works</b>	<b>Short to Mid/Long-term</b>
<b>C</b>	<p><b>Program and Implement Additional Proposed Improvements</b></p> <ul style="list-style-type: none"> <li>• Addition of 40 acres of storage upstream of 34th Street (Mid/Long-term)**</li> <li>• Regional Stormwater Facility (Alum Treatment Facility) (Short-term)</li> </ul>	<b>Pinellas County: Public Works</b>	<b>Short-term to Mid/Long-term</b>
<b>Bulkhead/Seawall Specific Actions</b>			
<b>D</b>	<p><b>Access Agreements</b></p> <ul style="list-style-type: none"> <li>• Pursue agreements with private property owners to gain access for evaluation of bulkheads</li> </ul>	<b>Pinellas County: Public Works, Lealman CRA</b>	<b>Short-term</b>
<b>E</b>	<p><b>Perform Additional Bulkhead Evaluations Prior to Dredging</b></p> <ul style="list-style-type: none"> <li>• Perform further evaluations</li> <li>• Determine representative locations of walls and tie-back system through testing</li> </ul>	<b>Pinellas County: Public Works, Lealman CRA</b>	<b>Short-term</b>
<b>F</b>	<p><b>Identify potential funding opportunities to assist with bulkhead repair</b></p> <ul style="list-style-type: none"> <li>• Assist private property owners to pursue funding</li> </ul>	<b>Pinellas County: Public Works, Lealman CRA</b>	<b>Short-term</b>
<b>G</b>	<p><b>Monitor and repair bulkheads as needed</b></p> <ul style="list-style-type: none"> <li>• Continue periodic monitoring of the existing bulkhead wall for identification of areas needing repairs</li> </ul>	<b>Pinellas County</b> to work with impacted businesses to determine next steps	<b>Short-term</b>
	<p>*This is programmed, not funded, anticipated to go to RFP in FY26 These proposed improvements together make up Alt B</p>		
	<p>** Included in proposed Alt + 40-Acres map</p>		

## EXISTING 100-YEAR FLOODPLAIN

Figure 22 shows the existing floodplain found in the Joe's Creek study area.



Figure 22. Existing 100 Year Floodplain



## STORMWATER: FLOODPLAIN WITH INITIAL ALTERNATIVE IMPROVEMENTS

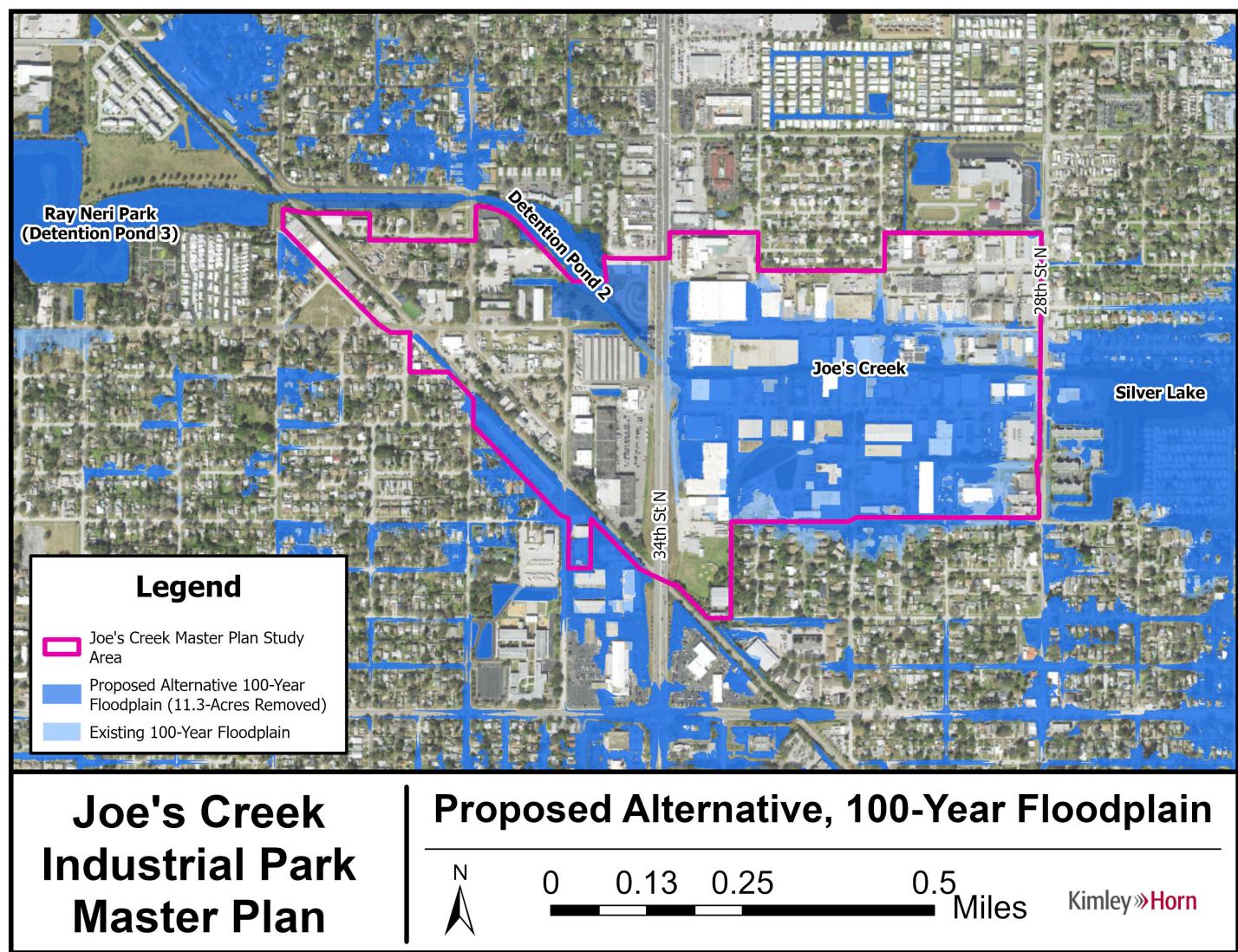
The area in the light blue "Existing 100-Year Floodplain" shows areas that could be improved with the solutions mentioned below in **Figure 23**.

### ► Interim solutions

- Incremental stormwater improvements with new development
- Integrate cisterns, green roofs, rain gardens, and dry floodproofing as stormwater mitigation for private property owners
- **Phased implementation of improvements proposed in the "Joe's Creek Model Update, Alternatives Analysis, and Feasibility Study Preliminary Report"**
- 34th Street Culvert Improvements (Upsize) (Short-term)\*
  - Adding operable weirs downstream of 34th Street at Ray Neri Park (Short-term)
  - Adding storage downstream of 34th Street (Mid/Long-term)

\*This is programmed, not funded, anticipated to go to RFP in FY26. These proposed improvements together make up Alt B

**Figure 23. Floodplain with Proposed Alternative Improvements**



## STORMWATER: FLOODPLAIN WITH ALL ALTERNATIVE IMPROVEMENTS

The area in the light blue "Existing 100-Year Floodplain" shows areas that could be improved with the solutions mentioned below in **Figure 24**.



### ► Interim solutions

- Incremental stormwater improvements with new development
- Integrate cisterns, green roofs, rain gardens, and dry floodproofing as stormwater mitigation for private property owners

### ► Phased implementation of improvements proposed in the "Joe's Creek Model Update, Alternatives Analysis, and Feasibility Study Preliminary Report"

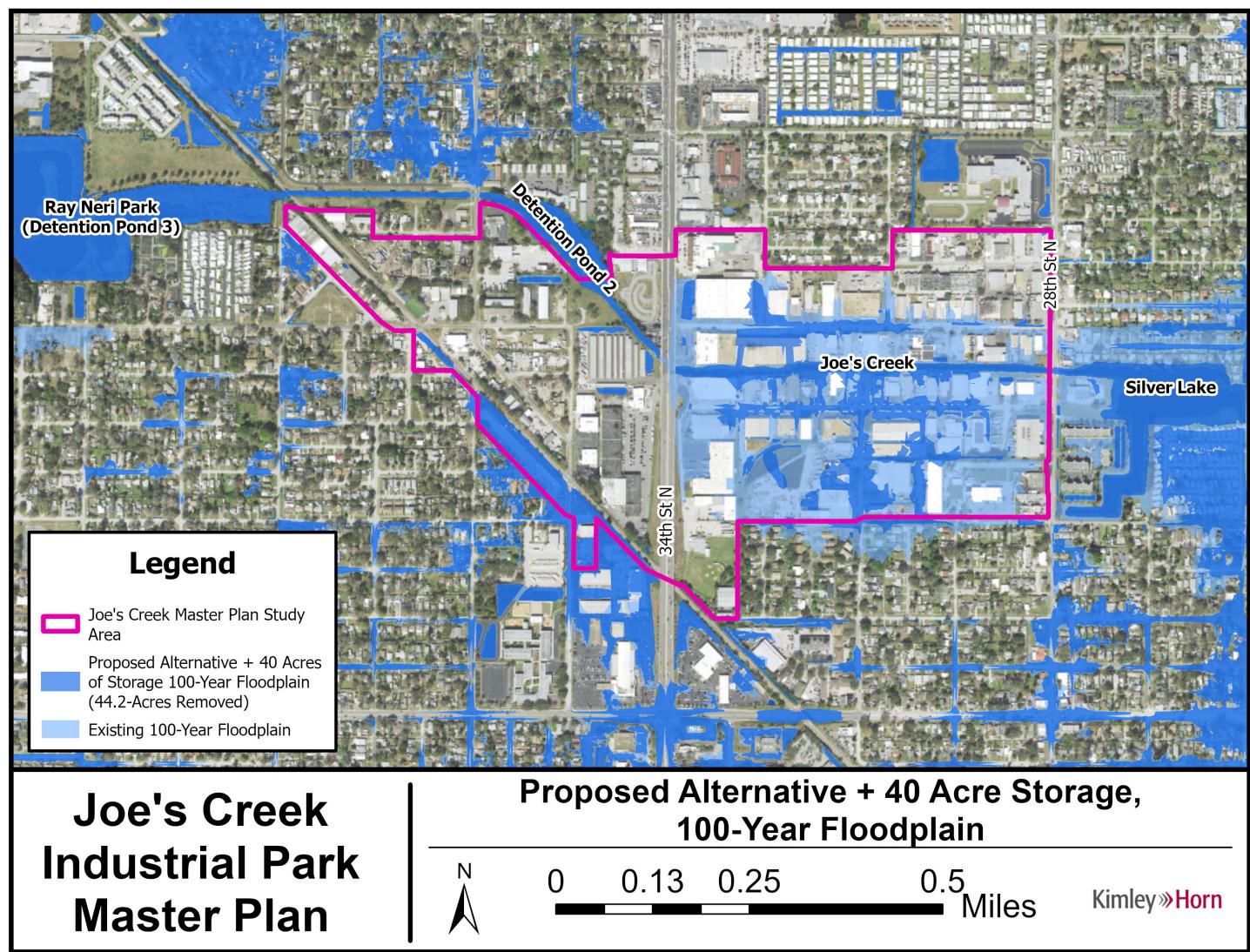
- 34th Street Culvert Improvements (Upsize) (Short-term)\*
  - Adding operable weirs downstream of 34th Street at Ray Neri Park (Short-term)
  - Adding storage downstream of 34th Street (Mid/Long-term)

### ► Additional proposed improvements

- Addition of 40 acres of storage upstream of 34th Street (Mid/Long-term)\*\*
- Regional Stormwater Facility (Alum Treatment Facility) (Short-term)
- 

\*This is programmed, not funded, anticipated to go to RFP in FY26. These proposed improvements together make up Alt B  
\*\* Included in proposed Alt + 40-Acres map

**Figure 24. Floodplain with All Alternative Improvements**



## INFRASTRUCTURE: POTABLE WATER AND WASTEWATER

The table below provides actions related to potable water and wastewater infrastructure.

Please note: the letters are a key and not a ranking of project priority.

**Table 12. Infrastructure (Potable Water and Wastewater)**

Action	Lead Partners	Timing
<b>A</b> <b>Coordination with other efforts</b> <ul style="list-style-type: none"> <li>Coordinate with other infrastructure projects in the area as needed</li> <li>Continued maintenance from Pinellas County Utilities and the City of St. Petersburg for potable water distribution and wastewater collection/transmission systems</li> </ul>	<b>Pinellas County: Utilities, Public Works; City of St. Petersburg</b>	<b>Short-term</b>
<b>B</b> <b>Additional potable capacity analysis</b> <ul style="list-style-type: none"> <li>Complete a water hydraulic model and master plan of the JCIP study area to determine if the pipelines have capacity to serve the additional flows</li> </ul>	Coordination with <b>City of St. Petersburg</b>	<b>Short-term</b>
<b>C</b> <b>Additional wastewater capacity analysis</b> <ul style="list-style-type: none"> <li>Complete a wastewater hydraulic model and master plan of the JCIP study area to determine if the pipelines and lift stations have capacity to serve the additional flows</li> </ul>	<b>Pinellas County: Utilities</b>	<b>Mid/Long-term</b>
<b>D</b> <b>Program and implement overall capital improvements</b> <ul style="list-style-type: none"> <li>Replacement of Cast Iron pipes within the JCIP study area as they are nearing the end of their remaining useful life</li> <li>Rehabilitate and Cured-in-Place Pipe (CIPP) line the remaining Vitrified Clay Pipe (VCP) and Ductile Iron Pipe (DIP) gravity sewer main pipes within the study area. Additional projects potentially needed for upsizing lift stations, forcemains, water pipelines, and wastewater pipelines may be needed</li> </ul>	<b>Pinellas County: Utilities; City of St. Petersburg coordination</b>	<b>Mid/Long-term</b>

## ECONOMIC AND COMMUNITY DEVELOPMENT



The table below provides actions related to other overarching themes that include a range of continuous, short-term, and long-term priorities to realize the objectives.

Please note: the letters are a key and not a ranking of project priority.

**Table 13. Economic and Community Development Strategies**

Action		Lead Partners	Timing
<b>A</b>	<b>Continue to provide funding</b> and encourage businesses to apply for Economic Sites Program (ESP) programming.	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Continuous</b>
<b>B</b>	<b>Coordinate events</b> with Joe's Creek Industrial Park businesses to encourage partnerships	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Continuous</b>
<b>C</b>	<b>Continue to retain existing businesses and attract diverse new businesses</b> through small business assistance/enterprise programs	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Continuous</b>
<b>D</b>	<b>Facilitate partnerships</b> between the community and businesses and between educational/workforce training institutions and target industry employers to understand potential skill gaps	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Continuous</b>
<b>E</b>	<b>Continue partnerships</b> with Lealman CRA CAC, business owners, property owners, and the Lealman community to implement the Plan	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Continuous</b>
<b>F</b>	<b>Consider creating a staff position</b> for a site plan reviewer liaison focused on the Lealman CRA	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Short-term</b>
<b>G</b>	<b>Reassess real estate market and land analysis</b> as well as stakeholder needs	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Mid-term</b>
<b>H</b>	<b>Update the Lealman CRA Master Plan</b> to connect areas outside of JCIP to the rest of Lealman and to coordinate economic development strategies	<b>Pinellas County:</b> Lealman CRA, Housing & Community Development	<b>Short-term</b>
<b>I</b>	<b>Include gateway monuments and district signage</b> along with the Joe's Creek Restoration and Greenway Trail and to JCIP itself	<b>Pinellas County:</b> Lealman CRA, Housing & Community Development	<b>Short-term to Mid/Long-term</b>
<b>J</b>	<b>Purchase property for green space</b>	<b>Pinellas County:</b> Lealman CRA, Pinellas County Economic Development	<b>Short Term to Mid/Long-term</b>

# FUNDING

Below are funding strategies that Pinellas County and key partners can leverage to achieve the Plan. A variety of funding strategies will be necessary to improve the infrastructure of the area with and without the land use vision. These funding options are not intended to be a definitive list. They will evolve over time as development unfolds and as funding changes. The funding options include the following:

- 1) Local government programs
- 2) Special assessments
- 3) Federal, state, and local grant or loan programs.

## FEDERAL, STATE, AND LOCAL GRANT OR LOAN PROGRAMS

Table 14. Funding Opportunities

Agency	Opportunity	Description
Florida Department of Environmental Protection (FDEP)	Recreational Trails Program (RTP)	Funds the maintenance, restoration, or renovation of trails, trailside facilities and trail linkages.
Forward Pinellas	Transportation Planning and Technical Assistance	Funds projects related to complete streets concept plan development, safety analyses, community charettes and other eligible transportation planning related activities.
PeopleforBikes	PeopleforBikes Grant	Funds bicycle infrastructure projects that improve access to recreational amenities
Environmental Protection Agency (EPA)	Brownfield Cleanup Grants	Offers multiple grant types to fund assessments and clean up activities related to local brownfield sites
	Green Infrastructure Funding Opportunities	Grant opportunities for green infrastructure, flood mitigation, habitat and landscape restoration
U.S. Department of Transportation(USDOT)	Better Utilizing Investments to Leverage Development (BUILD) Grant program	Provides funds for surface transportation infrastructure projects with significant local or regional impact
Pinellas Community Foundation	Cathleen W. Grant Field of Interest Fund for Environmental Protection	Awards up to \$3,500 for projects or programs that will make Pinellas County a better place to live or visit by improving the County's environment and natural resources.
Florida Commerce	Rebuild Florida Program	Funds infrastructure restoration and improvement projects in communities impacted by the 2023 and 2024 storms
	Planning and Technical Assistance Grant Program	Funds various planning initiatives, such as economic development, resiliency strategies and critical local planning issues
Florida Department of Transportation (FDOT)	Beautification Program	Funds the purchase and installation of plant materials, soil amendments and irrigation systems, and site preparation (including removal of invasive species, dead trees, etc.) along FDOT right-of-way.
American Association of Retired Persons (AARP)	AARP Community Challenge	Funds quick action projects that create vibrant public places that improve open spaces, parks and access to other amenities.
Duke Energy	Local Impact Grants	Funds up to \$20,000 for work in the areas of vibrant economies, climate resiliency and justice, equity and inclusion

# CONCLUSION



The JCIP Master Plan was developed in partnership with Pinellas County, Forward Pinellas, several Pinellas County departments including the Lealman CRA staff, Lealman CRA Citizen Advisory Committee, as well as community partners, businesses, property owners, and members of the community. Achieving the objectives of the JCIP Master Plan and the land use vision will require continuous, short, mid and long-term actions that can be achieved in parallel.

The Plan represents a critical first step to develop a framework that provides additional flexibility in land uses and infrastructure actions with the purpose of supporting existing businesses, attracting reinvestment, and adapting to evolving future economic needs. The JCIP Master Plan actions should be revisited over time with changing conditions. There will be a need for continued partnership between the different departments of Pinellas County identified in the Plan (including the Lealman CRA), Forward Pinellas, PSTA, FDOT, as well as the private sector and local partners. It will be important that discussions on funding strategies continue in the near-term so that components of the vision can begin to be realized.



# APPENDIX A

# MARKET ANALYSIS

*Completed February 2025*



# JOE'S CREEK MASTER PLAN

Kimley-Horn

Briefing Book | February 10, 2025

 **SBFRIEDMAN**

VISION  
ECONOMICS  
STRATEGY  
FINANCE  
IMPLEMENTATION

# TABLE OF CONTENTS

---

	Page
INTRODUCTION	3
EXISTING CONDITIONS	4
MARKET ANALYSIS	18
INDUSTRIAL	19
OFFICE	28
MARKET-RATE MULTIFAMILY	32
RETAIL	41
MIXED-USE	48
MARKET SUMMARY	49

# INTRODUCTION

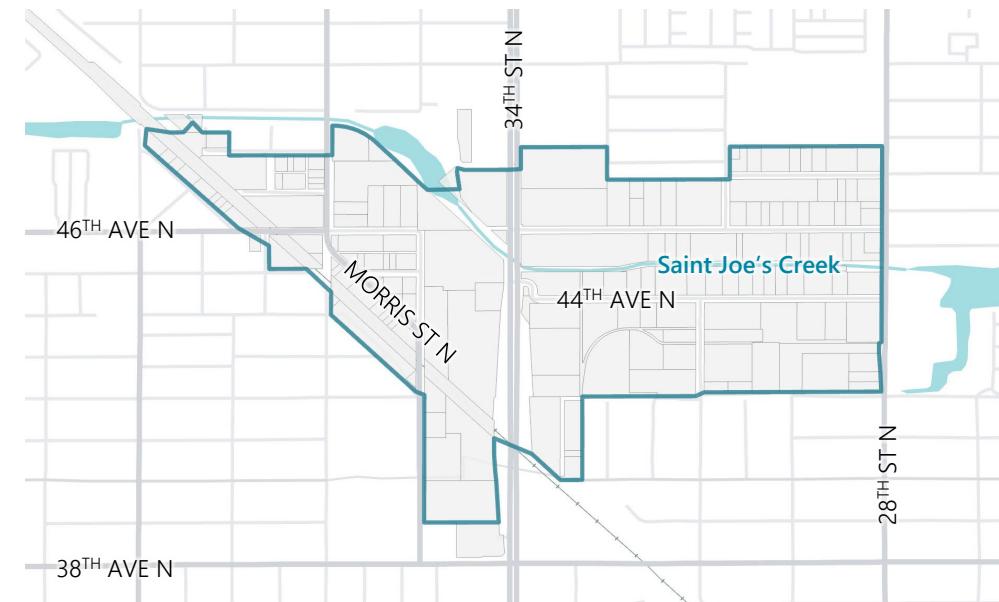
## The Joe's Creek Master Plan will help balance needs and priorities in the wake of new regulations

The Lealman Industrial Target Employment Center is anchored by the Joe's Creek Industrial Park, which has existed since the 1950s as a smaller-scale industrial activity hub. As a Target Employment Center (TEC), historic land use policies in Pinellas County have favored the preservation of office and industrial land use. However, in 2022, Forward Pinellas approved the Target Employment and Industrial Land Study (TEILS) Update which provides for greater flexibility within the TEC categories under the new "Local" mixed-use designation. This Local TEC designation allows for some identified TECs, including the Lealman Industrial TEC, to incorporate a range of alternative uses and housing options within close distance to key employers while preserving land for target employment uses.

Additionally, the Live Local Act (LLA), which is designed to encourage affordable housing development, took effect in July 2023. Under the LLA, a number of new land use provisions were introduced that provide greater flexibility for eligible affordable housing developments in areas zoned for commercial, industrial and mixed land uses.

In light of these new regulations, Pinellas County (the "County") engaged SB Friedman Development Advisors, LLC (SB Friedman) to conduct a market study to assess local market dynamics in and around the Lealman Industrial TEC, evaluate which land in the Study Area should be preserved for target employment uses, and to craft an achievable redevelopment vision that will support the community's goals for the area. The result of this study is an assessment of redevelopment potential in the near-term over the next 5 years.

### LEALMAN INDUSTRIAL TEC



Source: Esri, Pinellas County, SB Friedman

### TARGET INDUSTRIES IN PINELLAS COUNTY



BUSINESS  
SERVICES



FINANCIAL  
SERVICES



INFORMATION  
TECHNOLOGY



MEDICAL  
TECHNOLOGIES /  
LIFE & MARINE  
SCIENCES



MICRO-  
ELECTRONICS



AVIATION/  
AEROSPACE/  
DEFENSE



MARKETING,  
DESIGN, AND  
PUBLISHING

# EXISTING CONDITIONS

# LEALMAN INDUSTRIAL TEC: REAL ESTATE PROFILE

## The Lealman Industrial TEC is in southern Pinellas County, anchored by Joe's Creek Industrial Park

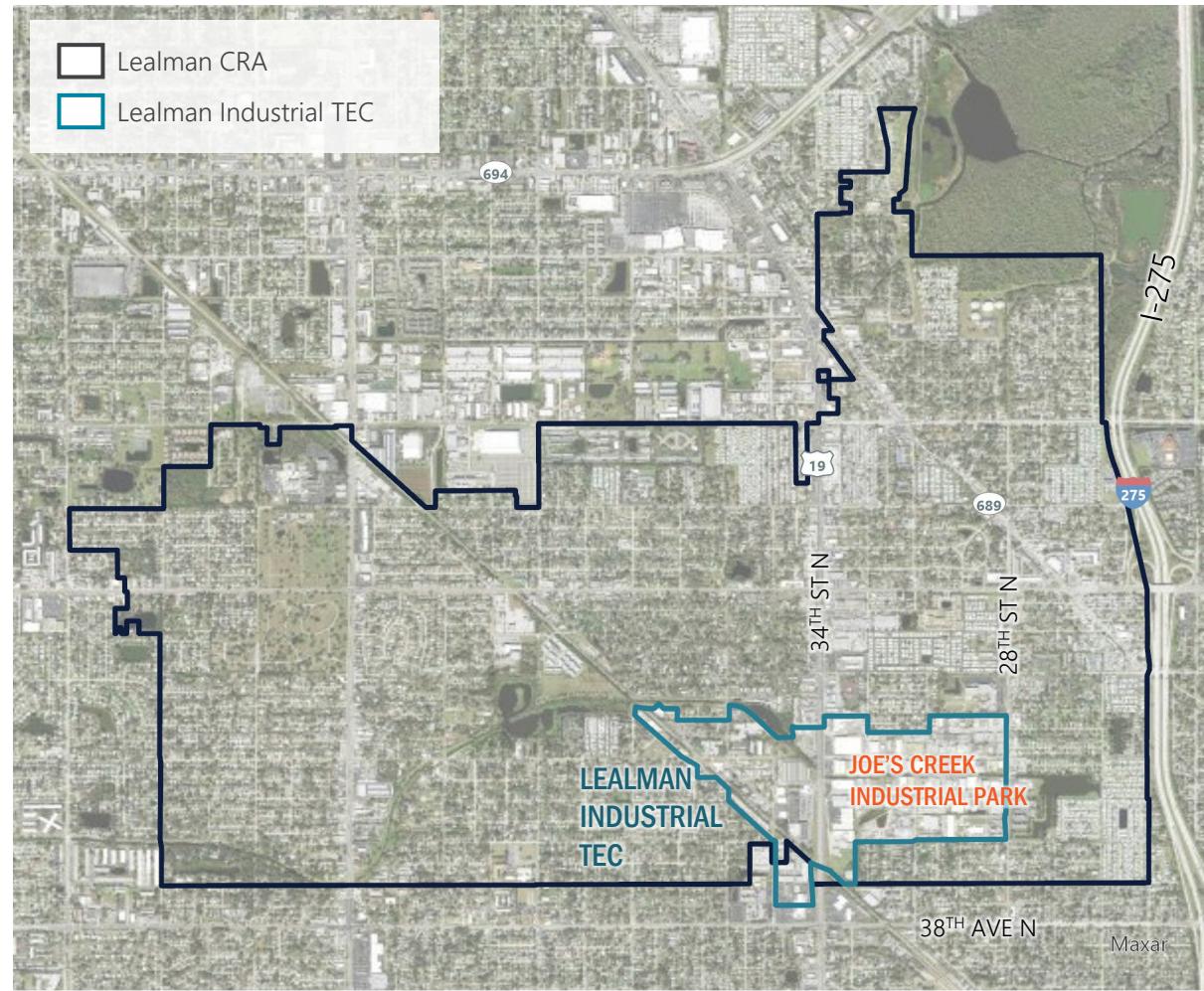
The Lealman Industrial TEC is in southern Pinellas County along 34<sup>th</sup> St N just west of I-275. The Lealman Industrial TEC is approximately 201 acres and includes 175 parcels. The average parcel size in the Lealman Industrial TEC is 1.9 acres. Overall, there are 4 parcels that are larger than 5 acres in size, which is typically the minimum amount of space required to support modern industrial or multifamily users.

The Lealman Industrial TEC includes the Joe's Creek Industrial Park and is situated in the greater Lealman Community Redevelopment Area (CRA) which was established in 2016. While the Lealman Industrial TEC comprises 8% of acres of the Lealman CRA, it contributes 17% of the tax base. The total taxable value of the area is approximately \$146 million.

**175**  
PARCELS

**201**  
ACRES

Source: Pinellas County Property Appraiser's Office, SB Friedman  
SB Friedman Development Advisors, LLC



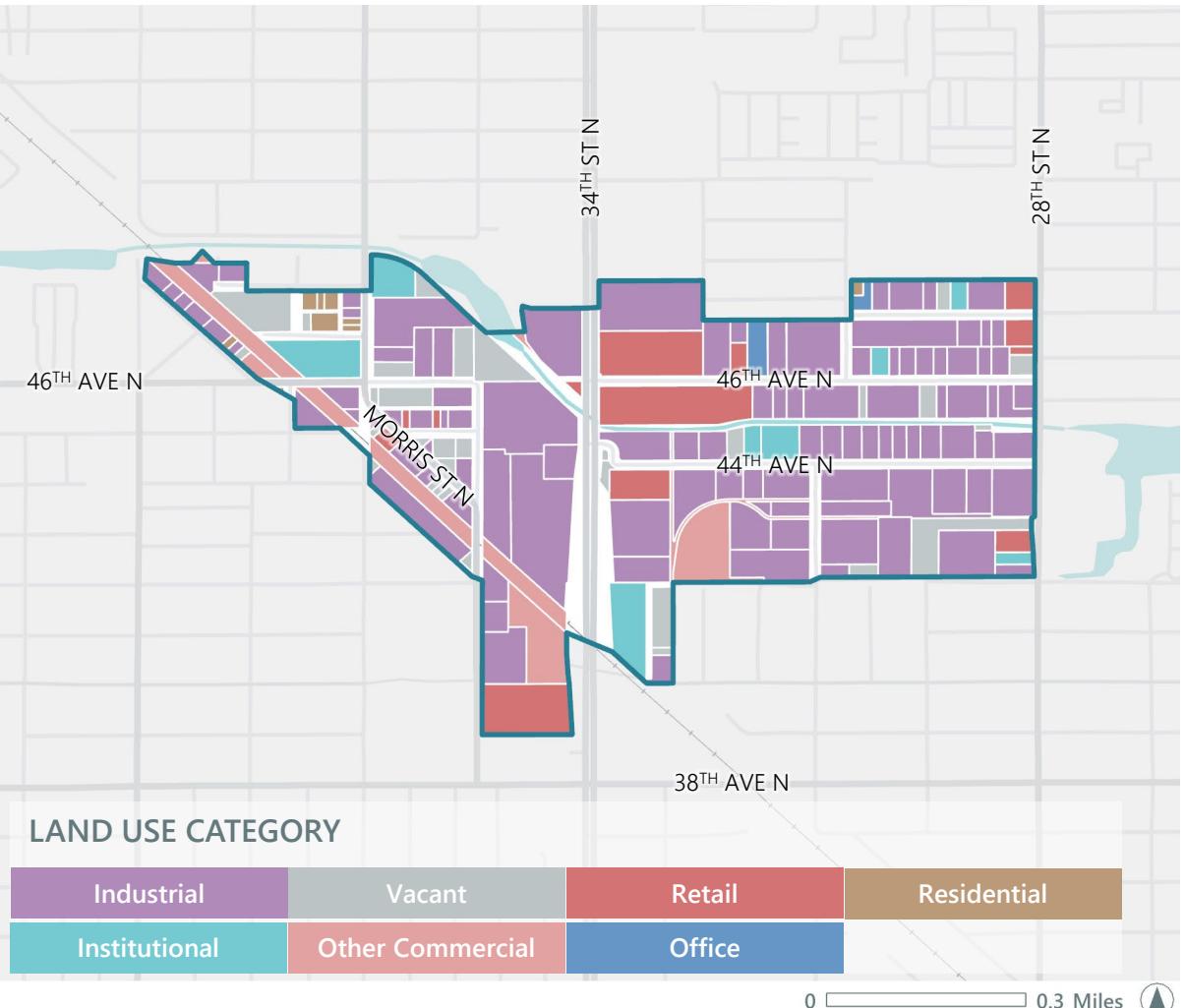
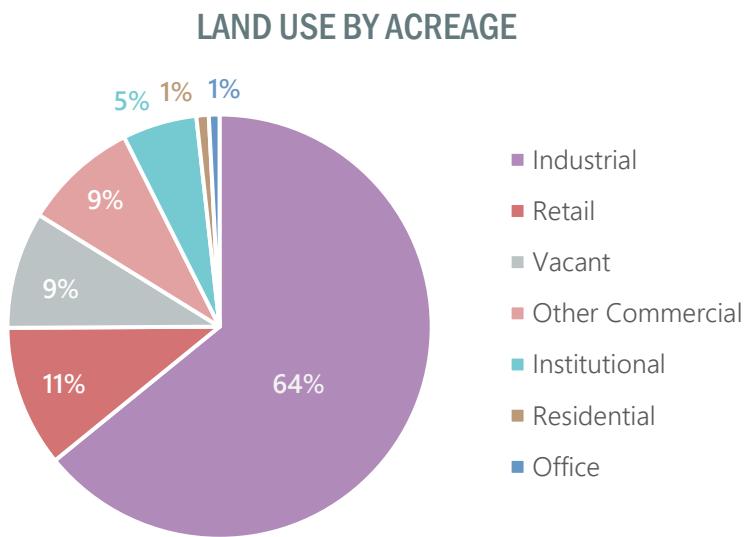
Source: Esri, Pinellas County, SB Friedman

0 1 Mile

# LEALMAN INDUSTRIAL TEC: EXISTING LAND USE

## Over 60% of parcels have industrial land uses

Approximately 64% of parcelized land within the Lealman Industrial TEC represents industrial land uses. Other land uses in the Lealman Industrial TEC include retail (11%), other commercial (9%), institutional (5%), residential (1%) and office (1%). Approximately 9% of parcelized land within the Lealman Industrial TEC is vacant.



[1] Map and chart reflect Pinellas County land use designations, which may differ from CoStar designations/active real estate use.

Source: Esri, Pinellas County Property Appraiser's Office, SB Friedman

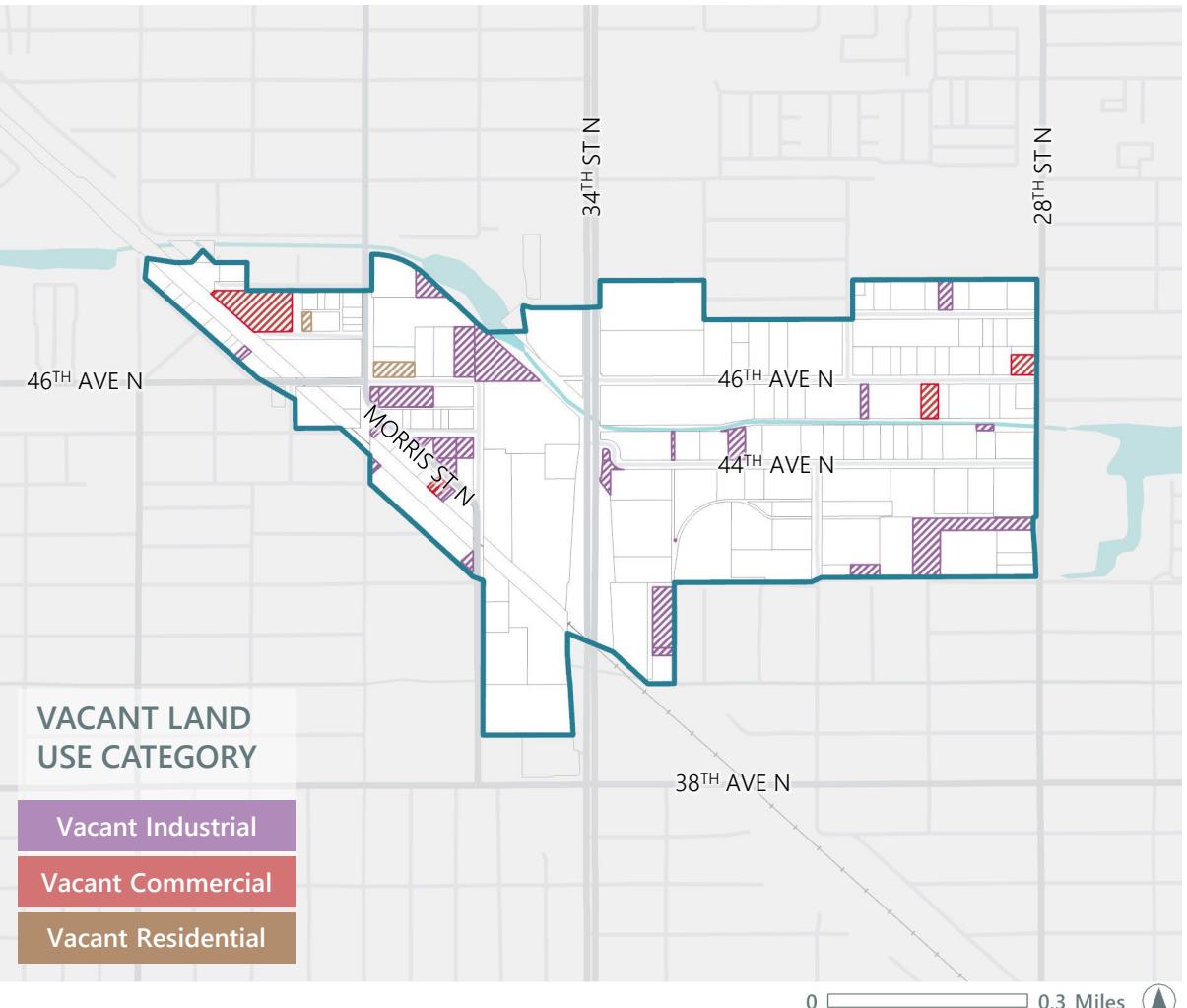
SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: VACANT LAND

## 9% of parcels in TEC are vacant, totaling over 15 acres

Over 15 acres in the Lealman Industrial TEC (roughly 9% of parcelized land) are vacant. Of the 33 vacant parcels, 26 parcels are industrial (11.4 acres total with an average size of 0.4 acres), 5 parcels are commercial (3.4 acres total with an average size of 0.7 acres), and 2 parcels are residential (0.7 acres total with an average size of 0.4 acres). Vacant parcels can often be prime opportunities for future development, however, the limited size of vacant parcels is a key development constraint without reassembly. Some of these vacant parcels may share common ownership with existing active land users or provide parking for neighboring parcels.

Parcel Land Use	Number of Parcels	Total Acreage	Average Parcel Size
Vacant Industrial	26	11.4 acres	0.4 acres
Vacant Commercial	5	3.4 acres	0.7 acres
Vacant Residential	2	0.7 acres	0.4 acres
<b>TOTAL</b>	<b>33</b>	<b>15.5 acres</b>	<b>0.5 acres</b>



[1] Parcels shown on map are classified as vacant land. Parcels that include vacant buildings may not be considered vacant land.

Source: Esri, Pinellas County Property Appraiser's Office, SB Friedman

SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: OWNERSHIP PROFILE

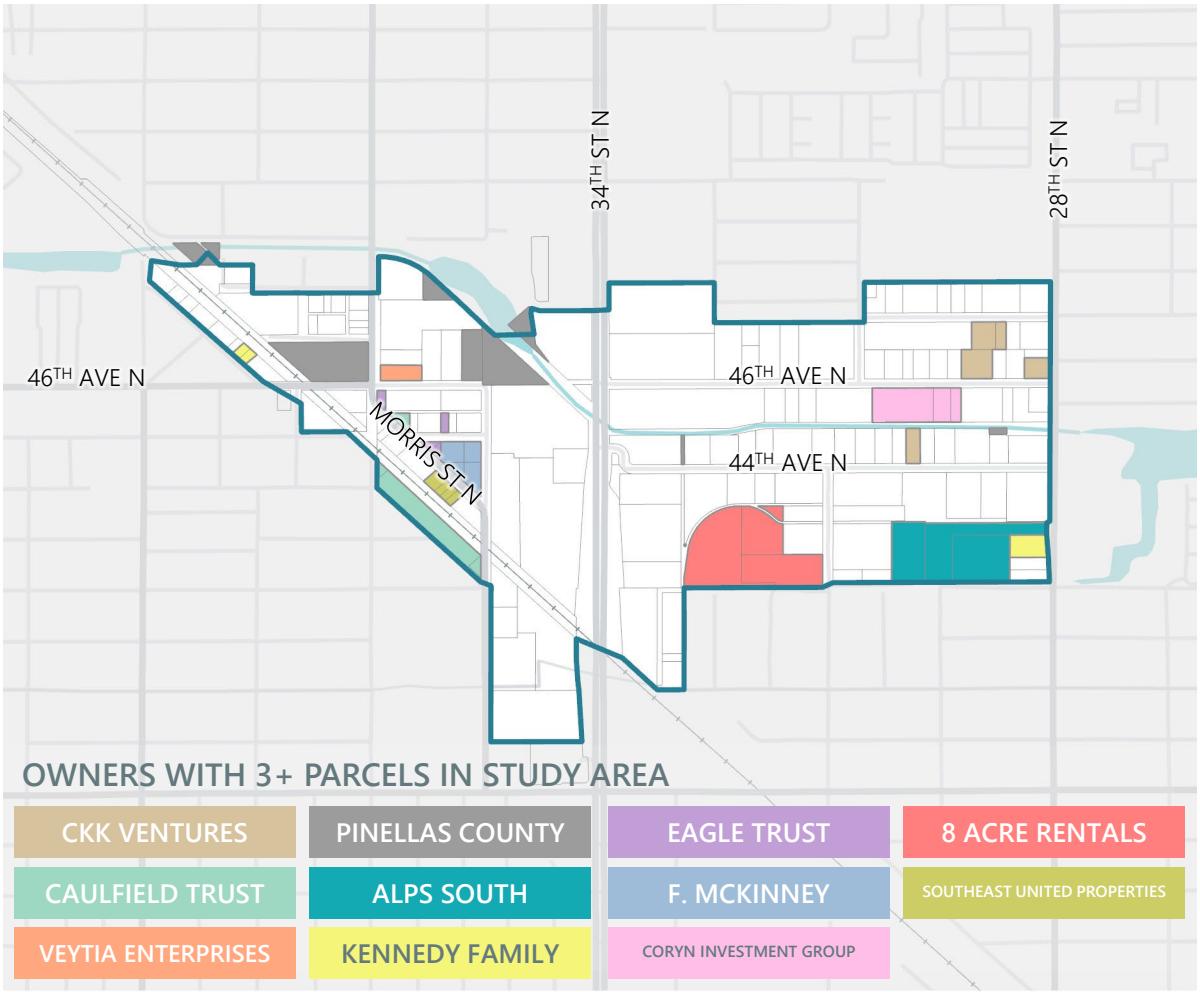
## There is diverse ownership of parcels within the TEC, few landowners have large contiguous sites

The 175 parcels within the Lealman Industrial TEC are associated with 124 various owners, indicating diverse ownership of land throughout the TEC.

However, there are 10 landowners who own 3 or more parcels within the TEC. Many of these owners have parcels that are close to one another but not necessarily contiguous, such as CKK Ventures. Interviews indicated that several businesses have acquired additional parcels due to business expansion needs.

Only two owners currently have larger tracts of contiguous land: 8 Acre Rentals, LLC, and Alps South, LLC. These tracts of land, while comprised of various individual parcels, amount to 7.5 acres and 6.5 acres in size, respectively.

These agglomerations, some of which are currently vacant, could serve as potential redevelopment sites, while smaller individual sites with separate owners may need to be reassembled to achieve certain types of development outcomes.



[1] If adjacent parcels share the same owner, they have been merged to show one contiguous tract of land on the map.

Source: Esri, Pinellas County Property Appraiser's Office, SB Friedman

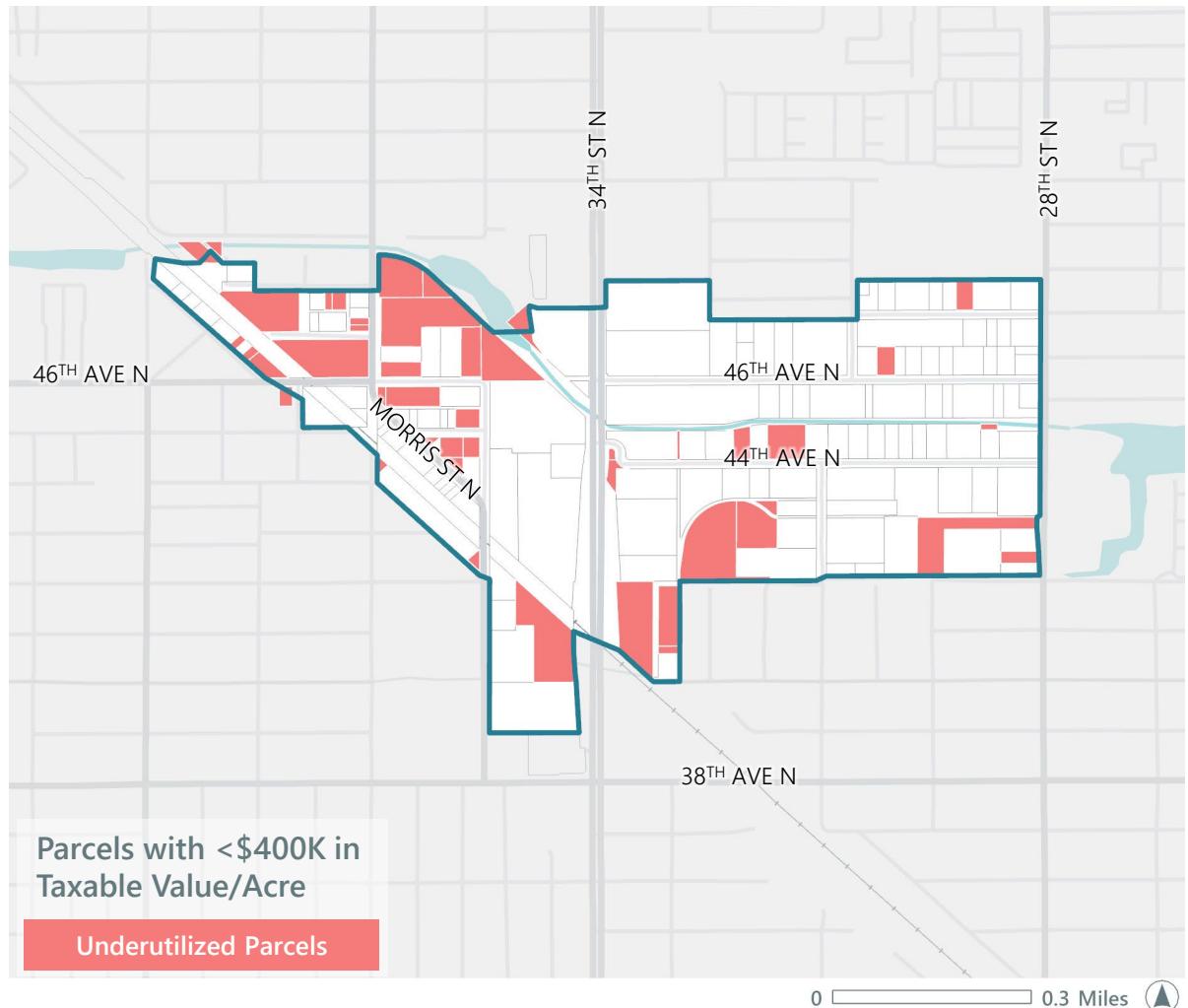
SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: LOWER VALUE PARCELS

## Many lower value parcels are located in the western half of the Joe's Creek Industrial TEC

Taxable value per acre is one indicator of land underutilization. The taxable value per acre of parcels in the Lealman Industrial TEC ranges from \$0 to \$4 million, with an average taxable value per acre of \$829,600.

Approximately 29 parcels have taxable values per acre under \$400,000, some of which include previously highlighted vacant land and land owned by the County. Many of these parcels are located on the western half of the Lealman Industrial TEC, west of 34th St N. These could potentially be considered "underutilized" relative to other parcels in the Lealman Industrial TEC. Parcels with lower taxable values could also indicate opportunities for improvements or redevelopment. However, some of these parcels may be currently used to accommodate parking needs or comply with stormwater regulations. Therefore, development of these parcels would require identifying alternative stormwater management and/or parking strategies.



[1] Parcels owned by railroad have been excluded from analysis.

Source: Esri, Pinellas County Property Appraiser's Office, SB Friedman

SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: BUILDING PROFILE

There are approximately 165 buildings in the Lealman Industrial TEC, many of which have low FARs

There are approximately 165 buildings in the Lealman Industrial TEC. Building sizes vary throughout the TEC, ranging from less than 1,000 to 169,000 square feet (SF). The median building size is approximately 8,400 SF and the average building size is 16,800 SF. The buildings in the TEC are a mix of single and multi-tenant buildings. Many of the buildings in the TEC are older and in need of reinvestment. The average building age is 55 years old.

The average floor area ratio (FAR), or ratio of a building's total floor area to the size of the land it is built on, is 0.3, indicating most development in the area is lower-density. Since there is no master stormwater system serving the Lealman Industrial TEC, each parcel is required to accommodate its own stormwater management. As a result, industrial buildings do not typically maximize their allowable FAR to accommodate stormwater regulations or potential truck traffic. For parcels to maximize FAR in the future, alternative traffic, parking, and stormwater strategies will be required.

**165**  
BUILDINGS

**16.8K**  
AVG. SF

**0.3**  
FAR

## SAMPLE SINGLE-TENANT BUILDINGS



## SAMPLE MULTI-TENANT BUILDINGS



# LEALMAN INDUSTRIAL TEC: BUSINESS PROFILE

## There are approximately 129 businesses in the Lealman Industrial TEC, over half are industrial users

There are approximately 129 businesses in the Lealman Industrial TEC. About 54% of tenants (70) are industrial tenants. Of these, approximately 50% are manufacturing businesses. A variety of products are manufactured in the Lealman Industrial TEC including plastics, food products, metals and wood materials. Additionally, there are 7 tenants representing the County's target industries, which are export-oriented businesses, including the medical technologies and microelectronics industries, among others. While export-oriented businesses are crucial in securing long-term regional economic growth, local-serving industrial businesses also provide critical goods and services to the community, employ many people, and contribute to the County's economic growth. Many local industrial businesses in the Lealman Industrial TEC rely on industrial land, such as those in the motor vehicle products and services (i.e., auto repair) and real estate, construction and development (i.e., local homebuilders and contractors) industries.

There are also several commercial users occupying industrial space, such as warehouses, in search of lower rents relative to the Pinellas County retail market. Examples of such tenants include fitness studios and pet care services.

**129**

**BUSINESSES**

**54%**

**INDUSTRIAL  
TENANTS**

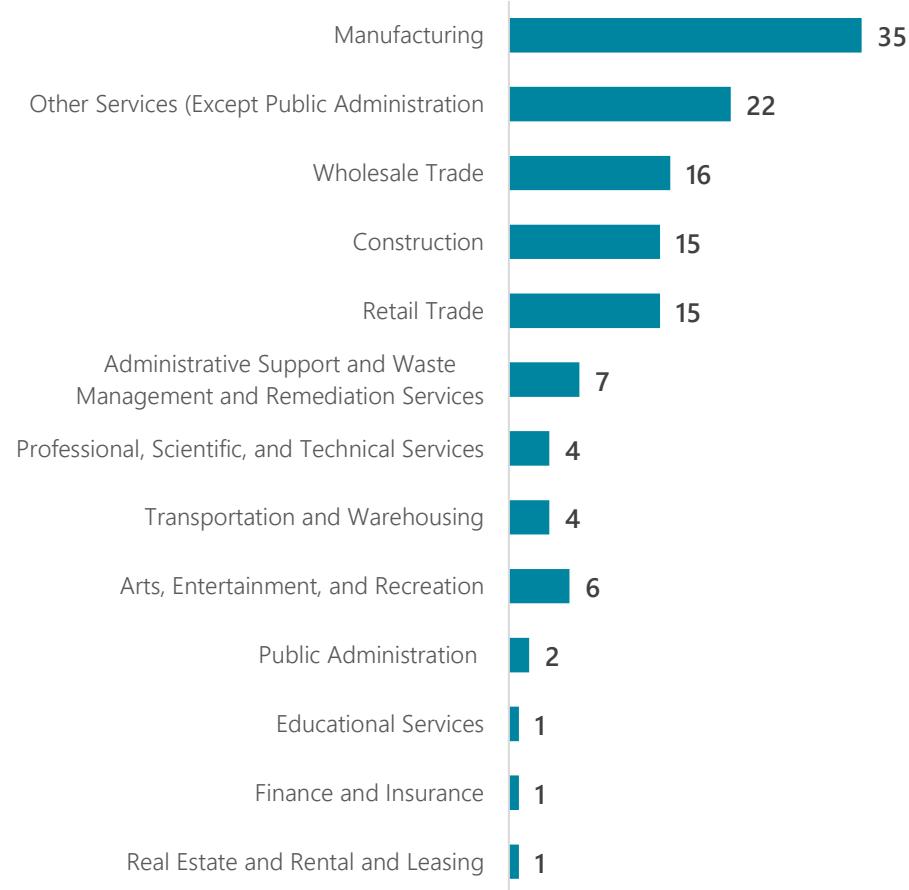
**7**

**TARGET  
INDUSTRIES**

Source: CoStar (data from July 2024), Data Axle, SB Friedman

SB Friedman Development Advisors, LLC

### BUSINESS COUNT BY INDUSTRY IN THE LEALMAN INDUSTRIAL TEC



# LEALMAN INDUSTRIAL TEC: INDUSTRIAL BUSINESS PROFILES

There is a wide array of industrial users, some of which are long-term tenants with 100+ employees

## FIBERGLASS COATINGS, INC (FGCI)



FGCI is a multi-location fiberglass and composites manufacturer and distributor with over 100 employees, 300,000 SF of warehousing, and a fleet of delivery trucks. The company is the largest independently owned composite materials distributor in Florida, and serves customers in industries such as construction, marine fleets and amusement.

## ICARE LABS



Icare Labs is a manufacturing and wholesale optical lab with over 100 employees that produces over 2,000 eyeglass lenses per day. They serve their onsite retail operation, OptiMart, as well as other retailers nationwide, and have been in the Lealman Industrial TEC area since 1968.

Source: CoStar, SB Friedman

SB Friedman Development Advisors, LLC

## DAIRY-MIX, INC



Dairy-Mix, Inc. is a food processing and manufacturing business with over 100 employees. They have occupied the Joe's Creek Industrial Park since 1958 and have invested in multiple renovations and expansions since. Their location receives 8 shipments and fills over 20 delivery trucks per day to supply product to their clients across the southeastern United States and the Caribbean.

## MESH, LLC



Mesh, LLC is a millwork fabrication firm that has been in business on 44<sup>th</sup> Avenue in the Joe's Creek Industrial Park for almost 15 years. With over 40 employees, Mesh's highly skilled labor force works with contractors, architects and designers to provide custom products to upscale hospitality, restaurant and office users across the country.

# LEALMAN INDUSTRIAL TEC: EMPLOYMENT PROFILE

As of 2021, there were approximately 1,373 jobs in the Lealman Industrial TEC

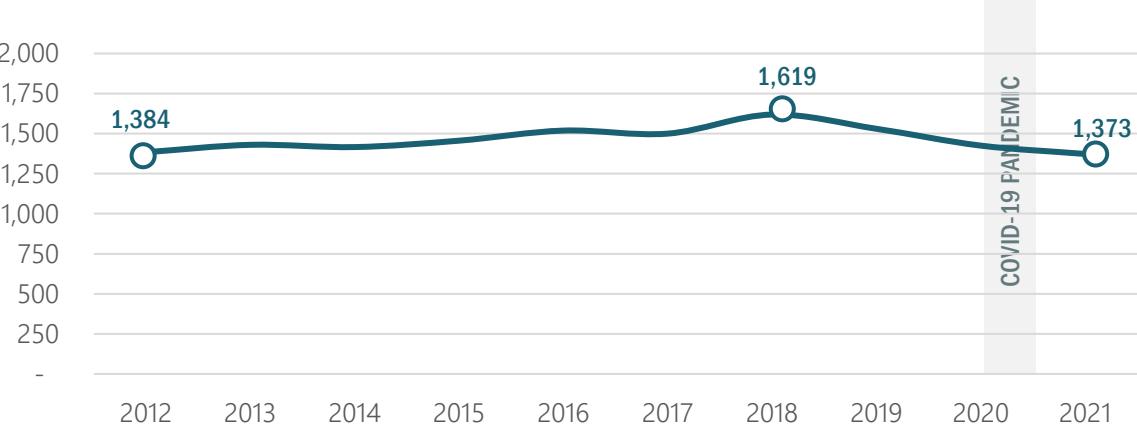
## EMPLOYMENT CHANGE IN LEALMAN INDUSTRIAL TEC, 2012 TO 2021



Employment in the Lealman Industrial TEC has been relatively stable since 2012. Employment in the Lealman Industrial TEC grew by 17% from 2012 to 2018, but the area has experienced a slight loss of jobs since 2019. The sector with the largest growth in employment was health care and social assistance, while the sector with the largest loss of jobs was transportation and warehousing. The manufacturing industry continues to be the largest employer in the area, offering almost 400 jobs.

The Lealman Industrial TEC is an important employment area within the Lealman CRA. While the Lealman Industrial TEC comprises 8% of acres of the Lealman CRA, it captures approximately 22% of jobs.

## HISTORIC LEALMAN INDUSTRIAL TEC EMPLOYMENT



[1] Data reflects the number of employees in each industry sector. Due to the diverse nature of business operations for many tenants in the Lealman TEC, this may not align with the tenancy data shown on page 11, which categorizes tenants by industry based on their primary industry.

Source: Longitudinal Employer Household Dynamics (2021), SB Friedman

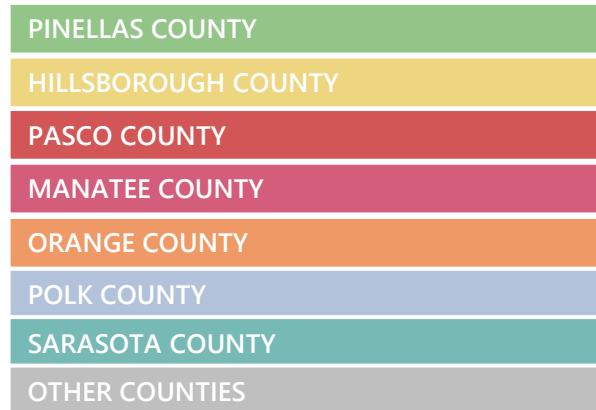
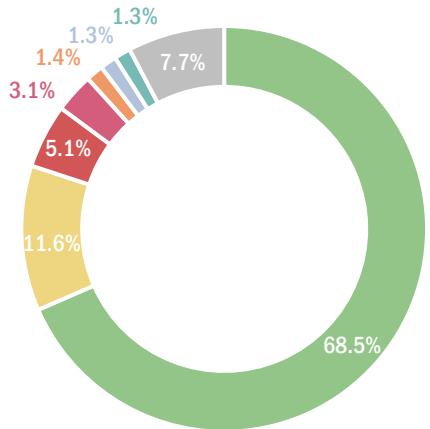
SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: COMMUTER PROFILE

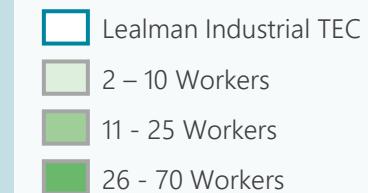
Of the 1,373 employees in the Lealman Industrial TEC, almost 70% live in Pinellas County

The Lealman Industrial TEC is an important hub for jobs countywide, with many employees living in nearby zip codes in the mid- and southern regions of the county. However, approximately 30% of workers also commute in from neighboring counties, including Hillsborough, Pasco and Manatee Counties. Interviews indicated that employees may choose to live outside of Pinellas County due to housing affordability challenges.

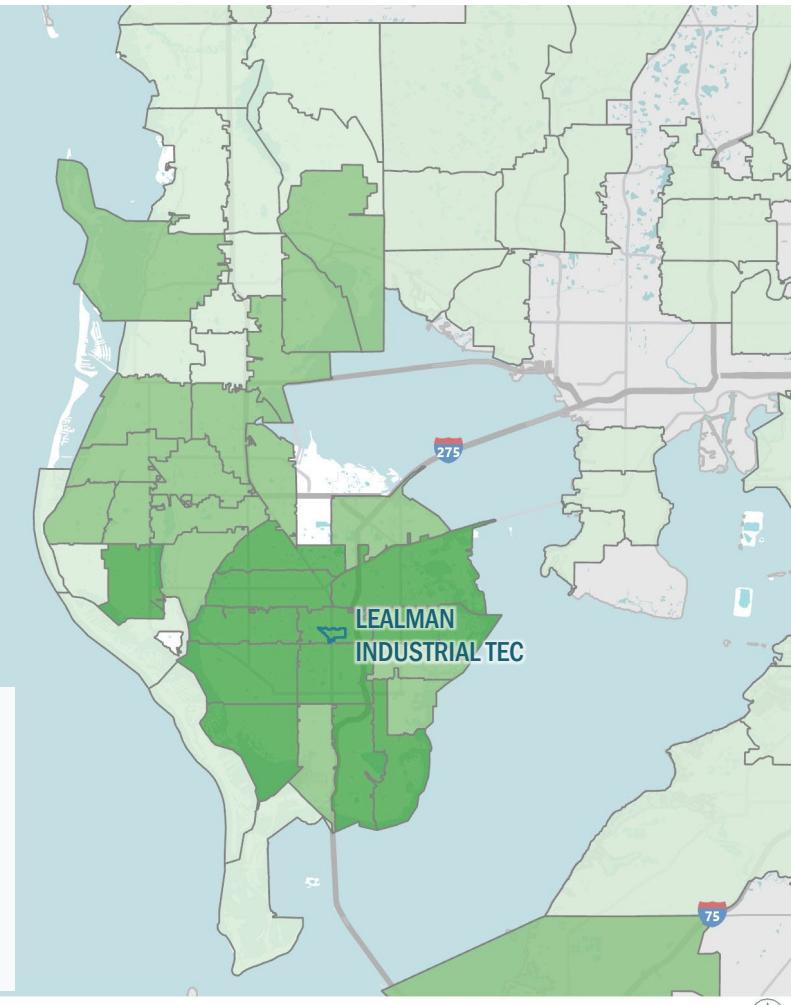
## SHARE OF WHERE WORKERS LIVE BY COUNTY, 2021



## NUMBER OF WORKERS WHO LIVE IN EACH ZIP CODE



Source: Esri, LEHD (2021), Pinellas County, SB Friedman



0 5 Miles

Source: Longitudinal Employer Household Dynamics (2021), SB Friedman

SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: INDUSTRIAL EARNINGS

## Industrial employees in Lealman Industrial TEC earn \$12k less than county industrial employees

In 2023, the area median income (AMI) for a three-person household in the Tampa-St. Petersburg-Clearwater, FL MSA was \$80,460.

Average annual earnings for industrial workers in the Lealman Industrial TEC area [1] range from approximately \$68,000 to \$80,000, which is about \$12,000 less than the average range of earnings for industrial workers throughout Pinellas County overall.

Business owners in the Lealman Industrial TEC have expressed a need for workforce housing in the area to continue to attract and retain employees. Workforce housing is defined as housing that is affordable, or costs less than 30% of a household's income, to households earning between 60% and 120% of the area's AMI. Based on typical industrial wages of employees in the Lealman Industrial TEC, many employees would likely qualify for workforce housing dependent upon their household size.

### TAMPA-ST. PETERSBURG-CLEARWATER, FL MSA 2023 MAXIMUM INCOME LIMITS BY HOUSEHOLD SIZE

HH Size	30% AMI	60% AMI	80% AMI	100% AMI	120% AMI	> 120% AMI
	Extremely Low Income	Very Low Income	Low Income	Median Income	Moderate Income	High Income
1	\$18,720	\$36,540	\$48,720	\$62,580	\$73,080	> \$73,080
2	\$20,880	\$41,760	\$55,680	\$71,520	\$83,520	> \$83,520
3	\$23,490	\$46,980	\$62,640	\$80,460	\$93,960	> \$93,960
4	\$26,070	\$52,140	\$69,520	\$89,400	\$104,280	> \$104,280
5	\$28,170	\$56,340	\$75,120	\$96,552	\$112,680	> \$112,680
6	\$30,270	\$60,540	\$80,720	\$103,704	\$121,080	> \$121,080



[1] Zip code 33714.

Source: Florida Housing Finance Corporation, Lightcast, SB Friedman  
SB Friedman Development Advisors, LLC

# LEALMAN INDUSTRIAL TEC: EXISTING INFRASTRUCTURE

## Transportation, stormwater and flood management, and other infrastructure improvements necessary

At the site level, real estate decisions are often made based on the availability and cost of utilities. Many employers prefer sites that are fully served with all utilities (water, sewer, electric, natural gas, etc.) and have adequate excess capacities to meet the potential demand of the user. Infrastructure improvements are needed to continue to serve existing businesses and attract future development.

- **Transportation Infrastructure:** The Lealman Industrial TEC is bisected by 34th St N, also known as US-19, which has a speed-limit of 45 miles per hour and features 3 lanes, plus a left turning lane, on each side. As of 2023, the annual average daily traffic (AADT) count was 44,500 cars. Aside from 38th Ave N to the south of the TEC and 50th Ave N to the north of the TEC, the only access points are on the eastern side of US-19 at 44th Ave N and 46th Ave N. Since US-19 is an elevated highway, many parcels face connectivity issues and are limited to few entry points. This poses challenges to trucks serving industrial users in the area and simultaneously prevents any sense of walkability in the area that would be conducive to a mixed-use environment. Additionally, pavement and road conditions are poor in many areas within the Joe's Creek Industrial Park. Interviews indicated that lanes and driveway areas are not wide enough to accommodate required turning radii and truck access to businesses.
- **Multimodal Infrastructure:** There is little pedestrian or bike infrastructure. 34th St N. is a Primary Future Transit Corridor and 28th St. N. is a Supporting Future Transit corridor. Bus route 52 runs south/north along 34th St N./US-19 frequently. Otherwise, the nearest public transportation options are local routes running east/west on 38th Ave N or 54th Ave N.

- **Stormwater Management:** The area's namesake Saint Joe's Creek is a designated floodway running east/west through the TEC. Bulkheads lining the creek assist in stormwater conveyance. With many of the structures in the area built more than 50 years ago, limited stormwater management improvements on private property have been made, which places many users at risk.
- **Other Utilities:** Several industrial businesses in the area have cited a need for improved electrical (3-phase) power supply to continue to operate or expand in the area. Electric service is privately provided by Duke Energy.

Many existing buildings were constructed prior to adoption of the County's most recent stormwater and building regulations. Any redevelopment of the property would require improvements to the site to bring it up to current codes. Many existing users assert that current County codes and requirements would reduce developable land even further, as a portion of land area would instead be designated for sidewalks, bike lanes, easements, detention, or parking. The extraordinary costs associated with transportation and stormwater regulations, as well as limited land availability to accommodate such requirements, may limit redevelopment potential.

# LEALMAN INDUSTRIAL TEC: EXISTING CONDITIONS TAKEAWAYS

## The Lealman Industrial TEC is an important economic hub



The Lealman Industrial TEC is comprised of 201 acres and 175 parcels, with most parcels classified for industrial use. Most parcels have diverse ownership, but there are 10 groups of 3 or more parcels that share one owner. Approximately 15 acres in the Lealman Industrial TEC are vacant, and almost 1 in 5 parcels could be considered underutilized based on their taxable value. Some vacant and underutilized parcels, in addition to agglomerations of parcels with common ownership, provide opportunity for redevelopment within the Lealman Industrial TEC without significant land reassembly.



There are 165 buildings in the Lealman Industrial TEC, with an average size of 16,800 SF and age of 55 years old. While some smaller, older buildings may still adequately serve manufacturing and warehousing users looking for smaller spaces with affordable rents, many are in need of reinvestment.



There are at least 129 businesses in the Lealman Industrial TEC, more than half of which are industrial users and seven of which represent the County's target industries. Most industrial tenants are manufacturers, both export-oriented and local-serving, or small-format warehousing. Both contribute to the County's economic growth and provide critical goods and services to the community.



Almost 1,400 employees work in the Lealman Industrial TEC, 30% of which commute from their homes outside of Pinellas County. Average industrial earnings relative to the county's median income may indicate a need for increased supply of workforce housing to support a strong local labor force.

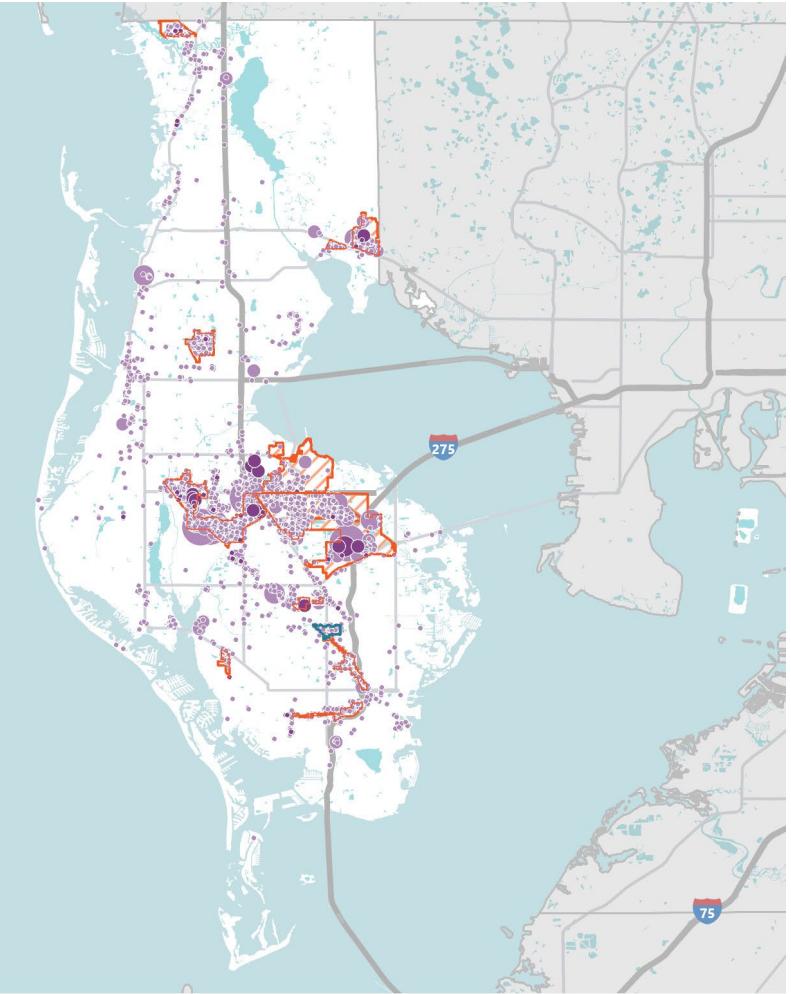
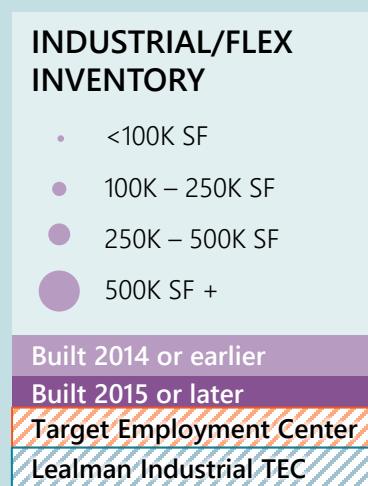
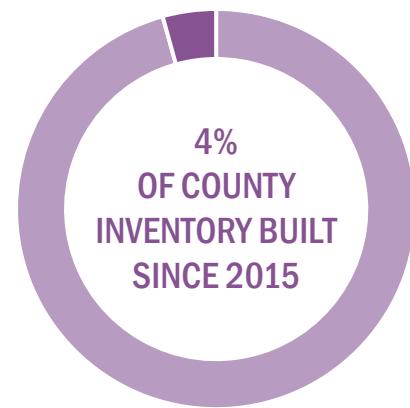
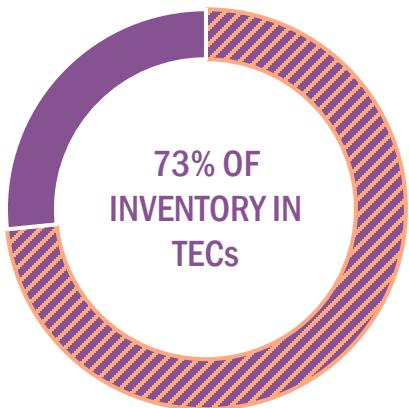
# MARKET ANALYSIS

# PINELLAS COUNTY: INDUSTRIAL/FLEX SUPPLY

Pinellas County has nearly 74M SF of industrial/flex space, 54M SF of which are in TECs

There are approximately 74 million SF of existing industrial/flex space in Pinellas County. Since 2015, 3.2 million SF of new industrial/flex space has been constructed, accounting for 4% of all inventory. As the third largest industrial market in the Tampa Bay region, after Hillsborough County and Polk County, Pinellas County captures the largest amount of manufacturing space.

About 73% (54 million SF) of all industrial/flex space in the county is located within a Target Employment Center, illustrating the importance of protecting these sites for employment uses in the future.

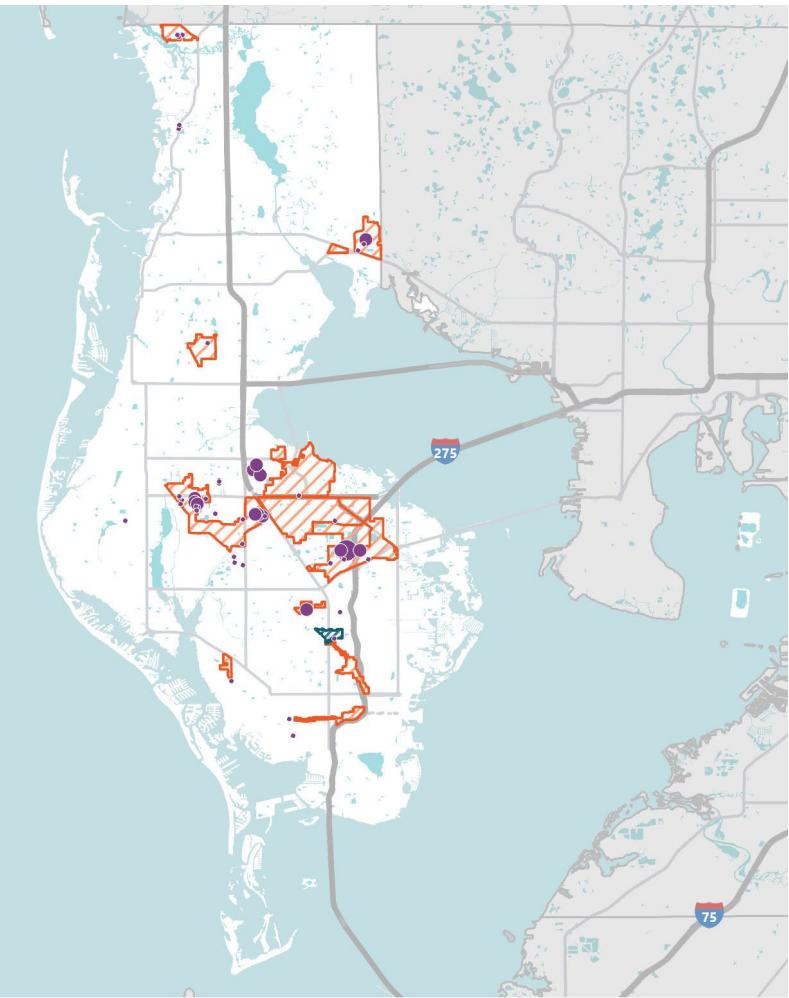
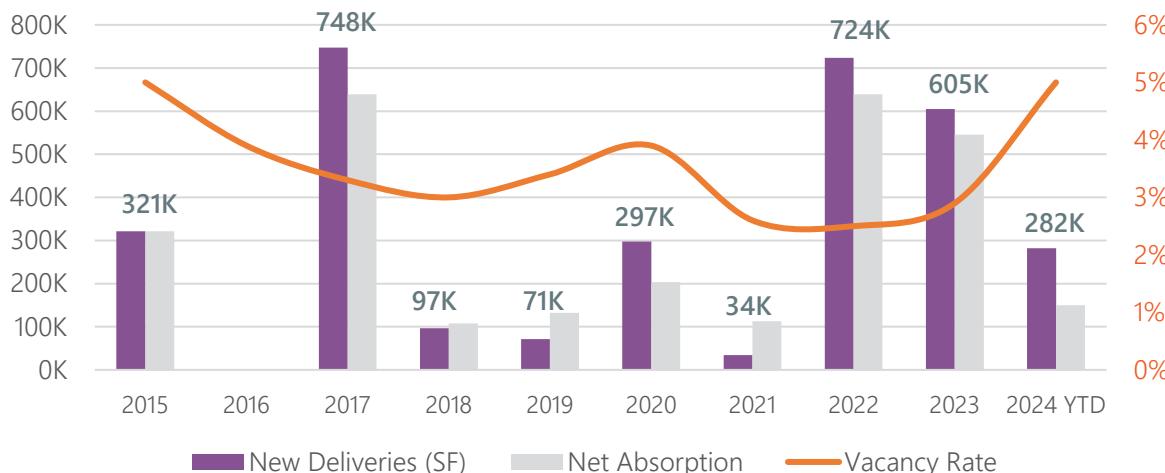


# PINELLAS COUNTY: RECENT INDUSTRIAL/FLEX DEVELOPMENT

## Vacancy remains low despite recent development

Since 2015, approximately 3.2 million SF of industrial/flex space have been constructed in the County, or an annual average of 353,000 SF. Roughly 79% (2.5 million SF) of this recent development has occurred within Target Employment Centers, particularly within the Gateway TECs. New construction increased following the COVID-19 pandemic due to growth in e-commerce and warehousing/distribution industries. Year to date in 2024, the pace of deliveries and absorption have slowed, indicating that post-COVID industrial growth is beginning to decelerate. Overall, the industrial/flex vacancy rate rose to 5% this year as new buildings are slower to be leased.

### INDUSTRIAL/FLEX DELIVERIES AND OVERALL VACANCY



Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman

# PINELLAS COUNTY: RECENT INDUSTRIAL/FLEX TRENDS

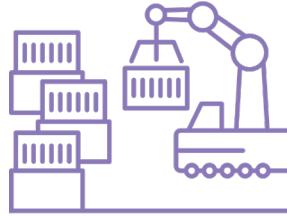
Additional industrial space of all sizes will be in demand across the County



## RESHORING

Numerous federal incentives, such as the Infrastructure Investment and Jobs Act and Inflation Reduction Act, in addition to potential higher tariffs have encouraged companies to localize production. As a major regional manufacturing hub, Pinellas County has been a beneficiary of these economic policies.

*Additional space may be needed to accommodate companies taking advantage of recent federal policy changes.*



## MANUFACTURING HUB

While distribution and e-commerce has grown since the COVID-19 pandemic, Pinellas County continues to capture the largest amount of manufacturing space in the region. Many manufacturers are constrained and are leasing additional space for additional operations, such as warehousing, offsite.

*Manufacturing users in Pinellas County will continue to require additional space to meet operational requirements.*



## SMALLER BUILDING SIZE

Overall, almost half of all recent industrial developments built since 2015 are less than 20,000 SF in size. There is a demand for relatively smaller industrial space to support growth in warehousing, while distribution and manufacturing users will continue to likely require larger spaces.

*While many modern industrial users require larger spaces, demand for smaller industrial spaces remains.*

# PINELLAS COUNTY: RECENT INDUSTRIAL/FLEX BUILDINGS

## Recent industrial/flex buildings are often larger-format with features that meet modern users' needs

Overall, recently constructed industrial/flex facilities range from 1,000 SF to 280,000 SF with an average size of 51,000 SF. Many modern industrial buildings provide loading docks, ample parking, larger floorplates and relatively high ceiling heights compared to older stock. The availability of large-scale sites at reasonable acquisition prices is necessary to accommodate new industrial facilities with large buildable area, parking and freight traffic.



	Amazon	Cypress Business Park	Monin	Conklin Metals
Address	6101 45 <sup>th</sup> St N	12310 62 <sup>nd</sup> St N #200	9411 Belcher Rd N	9950 28th St N
City	St. Petersburg	Largo	Pinellas Park	St. Petersburg
Target Employment Center	Pinellas Park: 62 <sup>nd</sup> Ave	Gateway: West	NA	Gateway: South
Tenant	Amazon	Monin, DHL, Red Bull	Monin	Conklin Metal Industries
Square Feet	144,300	50,000	86,350	110,700
Year Built	2022	2020	2024	2023
Average Rent/SF	\$12.10	\$10.00	\$14.00	\$13.50
Type	Distribution	Distribution	Manufacturing	Flex
Ceiling Height	36'	32'	30'	32'
Loading Docks	11	33	8	18
Parking Ratio	6.4	1.1	1.41	1.37
Acreage	20.7	7.3	12.5	18.65

Source: CoStar (data from November 2024), SB Friedman

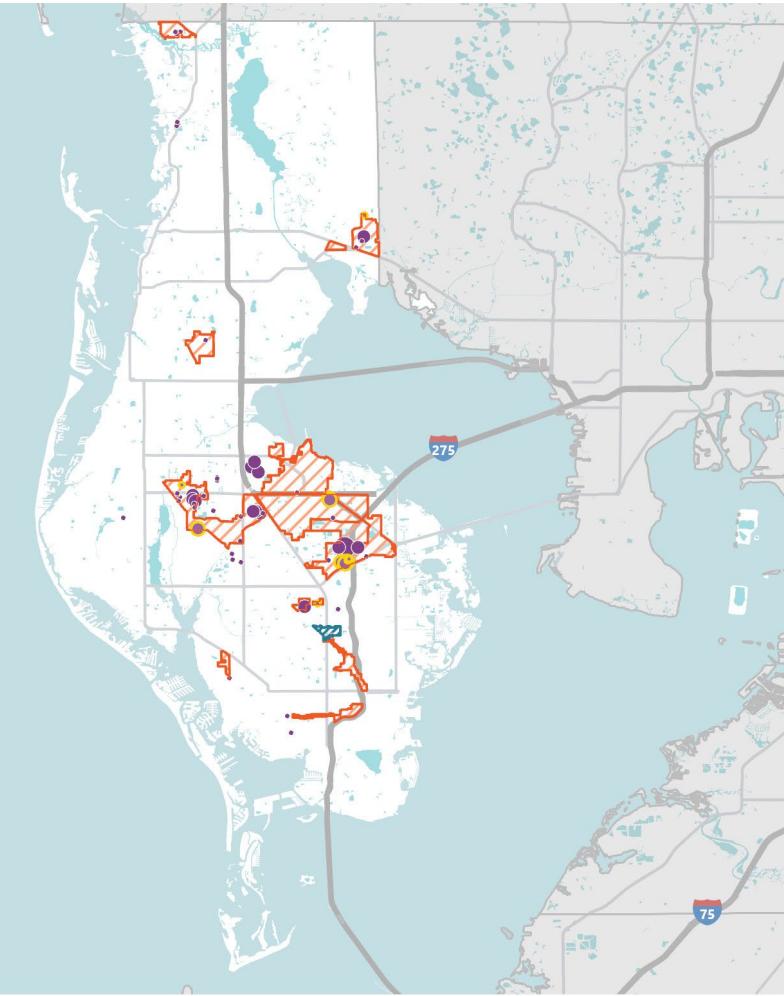
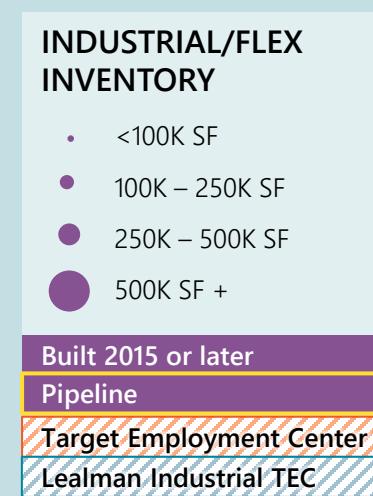
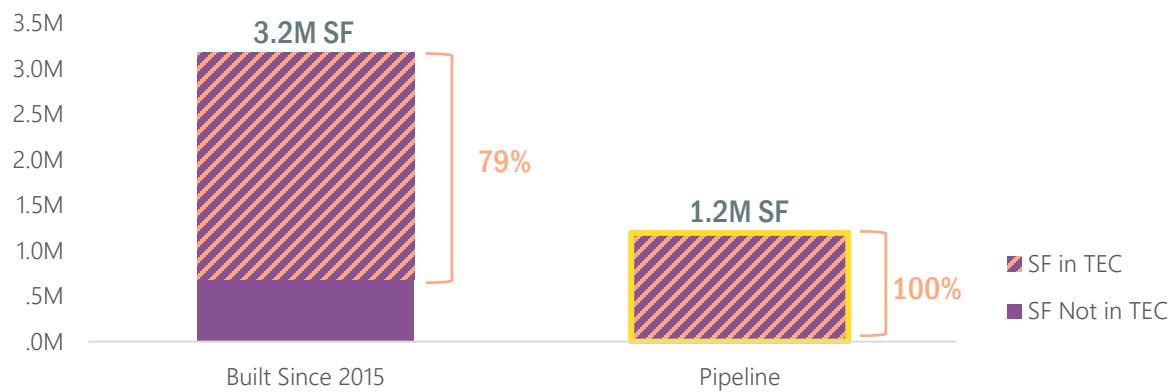
SB Friedman Development Advisors, LLC

# PINELLAS COUNTY: UPCOMING INDUSTRIAL/FLEX PROJECTS

There are approximately 1.2M SF of industrial/flex space in the pipeline

There are approximately 1.2 million SF of industrial/flex space in the pipeline. All of the upcoming developments are located within TECs with access to regional transportation corridors. Access to regional transportation is a major competitive advantage for industrial users, particularly those seeking access to the regional supply chain, labor supply and distribution networks.

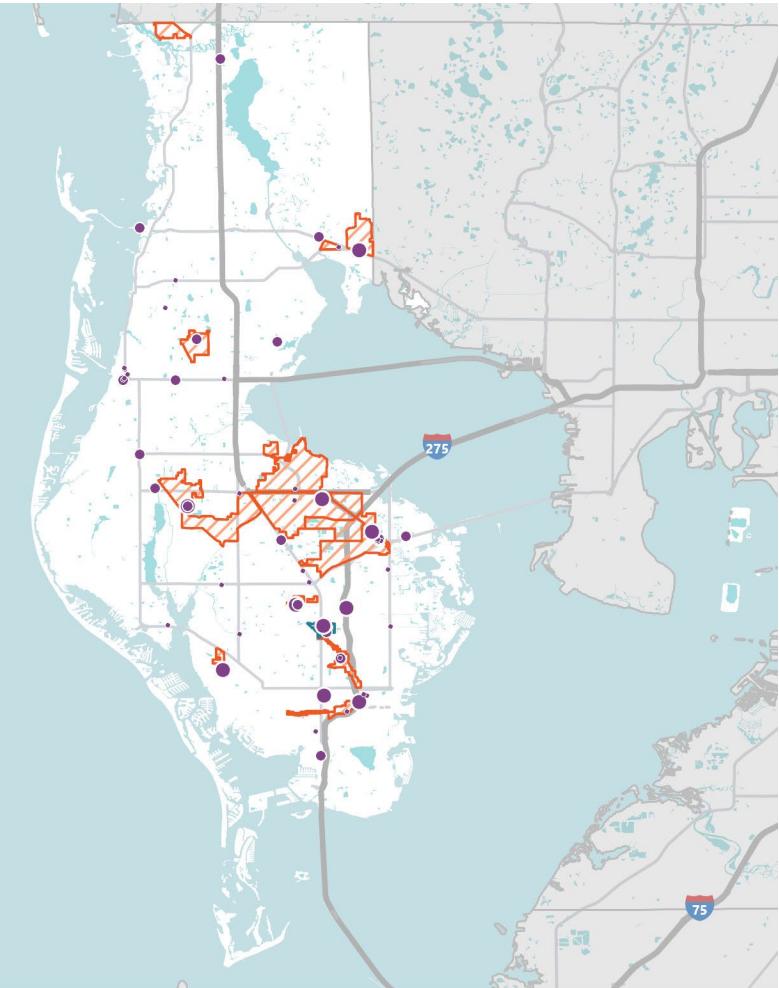
## INDUSTRIAL SF BUILT SINCE 2015 AND PIPELINE



# PINELLAS COUNTY: OBSOLETE INDUSTRIAL/FLEX SPACE

Approximately 2.4M SF of industrial/flex space has been demolished in Pinellas County since 2000

As the needs of industrial businesses shift over time, existing older industrial buildings are often rendered obsolete. Nearly 2.4 million SF of industrial/flex space was demolished in the county between 2000 and 2024. Demolished buildings were typically 34,000 SF in size and built in 1967 on average. Almost half of demolished industrial space was dedicated to warehousing. Demolished space in Target Employment Centers, specifically, has typically been redeveloped as modern manufacturing and warehousing space.



Source: CoStar (data from September 2024), Esri, Pinellas County, SB Friedman

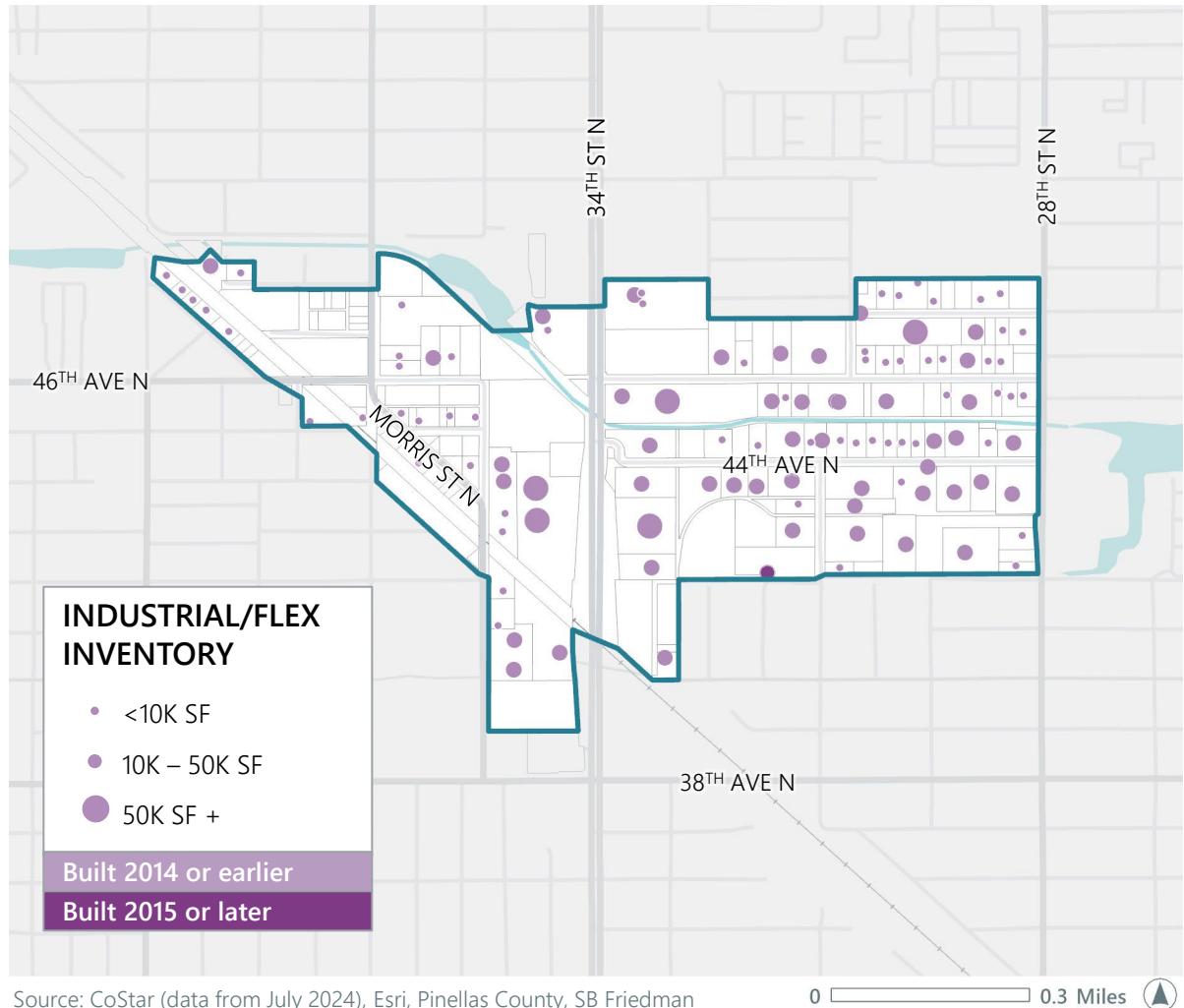
0 5 Miles

# LEALMAN INDUSTRIAL TEC: INDUSTRIAL/FLEX SUPPLY

## The Lealman Industrial TEC has 1.9M SF of industrial/flex space

The Lealman Industrial TEC includes nearly 2 million SF of industrial/flex space, capturing approximately 2.6% of industrial/flex space in Pinellas County. The Lealman Industrial TEC is an important hub for local-serving and export-oriented manufacturers and warehouse users seeking smaller spaces to start or level-up their operations. Roughly 47% of industrial space in the Lealman Industrial TEC is manufacturing space and 37% is warehouse space.

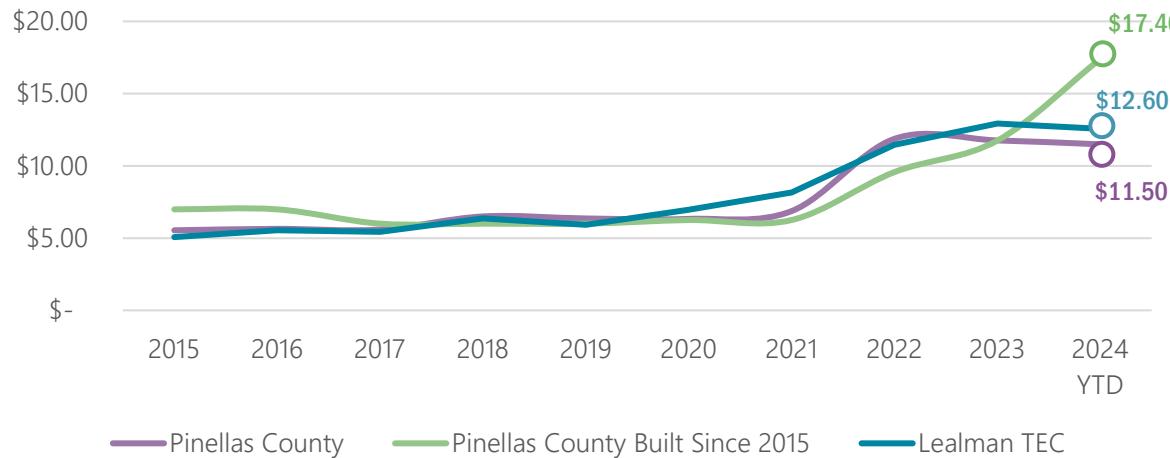
Industrial properties in the Lealman Industrial TEC are typically 17,200 SF in size. The average industrial building in the TEC is 54 years old, indicating many industrial properties in the TEC may not meet standards required for large-scale, export-oriented industrial users based on countywide demolition trends. These older, "at-risk" buildings often provide more affordable options for smaller businesses seeking to expand or start operations but may require substantial rehabilitation or redevelopment to attract industrial target industry businesses.



# INDUSTRIAL/FLEX PERFORMANCE

## Lealman Industrial TEC's performance indicates demand for space

RENT PER SQUARE FOOT BY GEOGRAPHY, 2015-2024 YTD



Pinellas County industrial/flex space has an average triple net (NNN) asking rent of \$11.50 per SF. The average rent in the Lealman Industrial TEC is about \$12.60/SF (NNN), which is about \$1.10/SF higher than the average overall rent in the county. Recently constructed industrial/flex space yields an average rent premium of nearly \$5/SF at \$17.40/SF countywide.

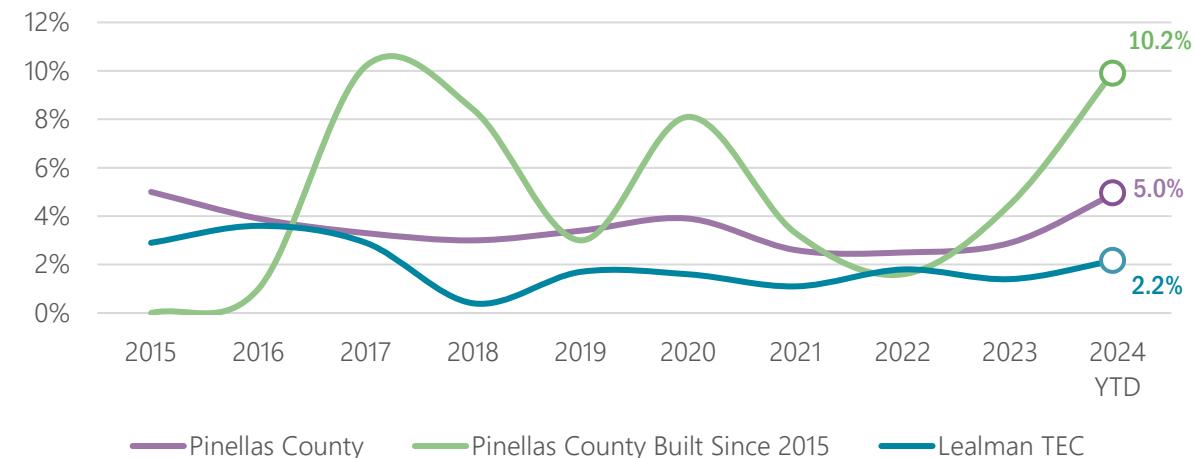
Industrial/flex rent per SF gradually increased between 2015 and 2020, but most rent growth has occurred in recent years as industrial rents have nearly doubled pre-COVID levels. While rents in the Lealman Industrial TEC have historically been relatively competitive with countywide industrial/flex rents, they now exceed the overall county average but remain affordable relative to newly constructed industrial/flex space.

[1] Triple net rent requires the tenant to separately pay expenses such as utilities, property taxes, maintenance and insurance.

Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman

SB Friedman Development Advisors, LLC

VACANCY RATE BY GEOGRAPHY, 2015-2024 YTD



Industrial occupancy has been strong in the County over the last 10 years, maintaining vacancy rates of less than 5%.

Buildings in the Lealman Industrial TEC maintain a relatively lower vacancy rate of 2.2%. Recently constructed industrial has experienced more volatile vacancy rates, as new product continues to be built and leased. Currently, the average vacancy rate of new industrial/flex space is relatively high at 10.2%.

Despite its supply of relatively small and old buildings, low vacancy in the Lealman Industrial TEC indicates that there is a demand for this type of space in the county.

# INDUSTRIAL MARKET POTENTIAL

The Lealman Industrial TEC is a hub for smaller-scale, local manufacturing and warehouse users



## STRONG NICHE MARKET

Limited available inventory and lower vacancy rate relative to the County indicates a demand for industrial space in the Lealman Industrial TEC.



## LOCATIONAL ADVANTAGES

The Lealman Industrial TEC is highly accessible to regional transportation networks. Roadway improvements within the Joe's Creek Industrial Park are required to further enhance accessibility and improve internal circulation.



## LOCAL MANUFACTURING AND WAREHOUSING HUB

The Lealman Industrial TEC is an important hub for local-serving and export-oriented manufacturers and warehouse users seeking smaller spaces to start or level-up their operations. With such high demand for these spaces countywide, it is crucial to protect existing employers and provide space for them expand or grow.



## LAND AVAILABILITY

Newer industrial development is often larger-format and requires more acreage to provide docks, parking and other amenities that meet users' needs. Few parcels in the Lealman Industrial TEC are large enough to accommodate modern industrial development without significant reassembly.

## INDUSTRIAL MARKET POTENTIAL IN THE LEALMAN INDUSTRIAL TEC: MODERATE

Given the strong industrial/flex market, presence of strong niche manufacturing and warehousing clusters, and locational advantages of the Lealman Industrial TEC, the market potential for industrial uses in the Lealman Industrial TEC is moderate.

Existing buildings in the Lealman Industrial TEC are well-positioned to continue to support small-scale manufacturers and warehousing users seeking relatively lower rent compared to newer product in the county. Therefore, the area is likely to continue to attract small-scale manufacturers and warehouse users who are looking to start or expand their businesses. To preserve land for employment uses, it is critical to ensure that existing buildings within the Lealman Industrial TEC continue to meet industrial users' needs and can provide opportunities for existing businesses to expand and grow.

Industrial development has been limited in the Lealman Industrial TEC relative to the county overall, which has favored locating near the Gateway. Given the size of the vacant industrial parcels in the Lealman Industrial TEC and need for infrastructure improvements, attracting major development or larger-scale users, such as major manufacturers or other target industries, will require significant land assembly and investment in infrastructure and utilities improvements.

# PINELLAS COUNTY: OFFICE SUPPLY

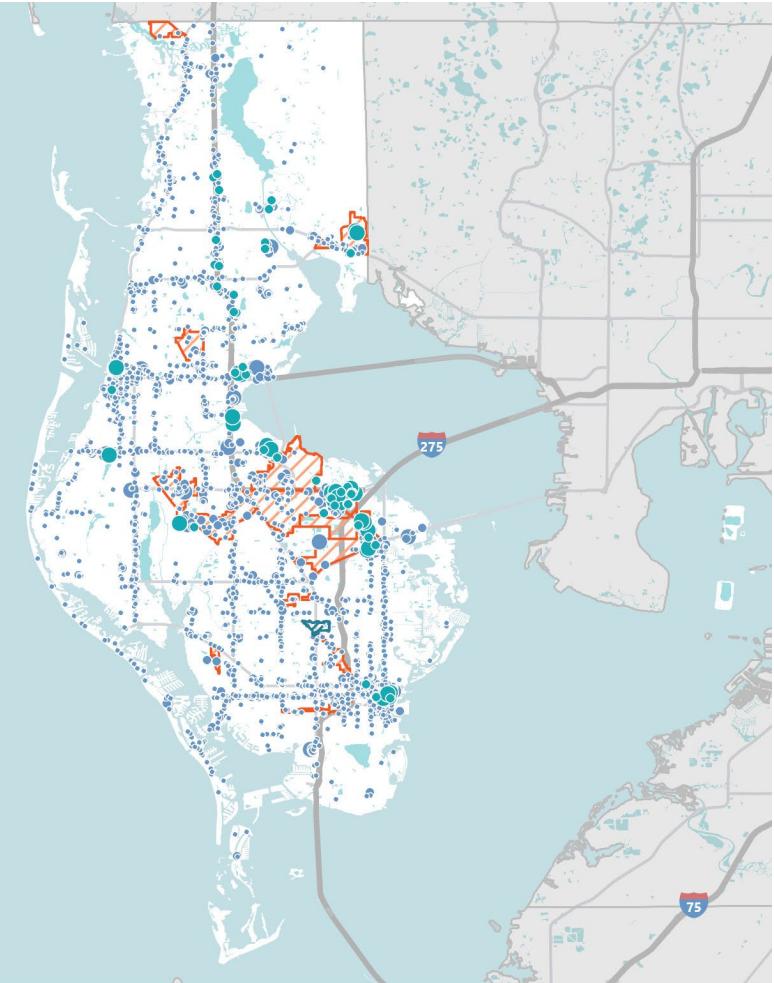
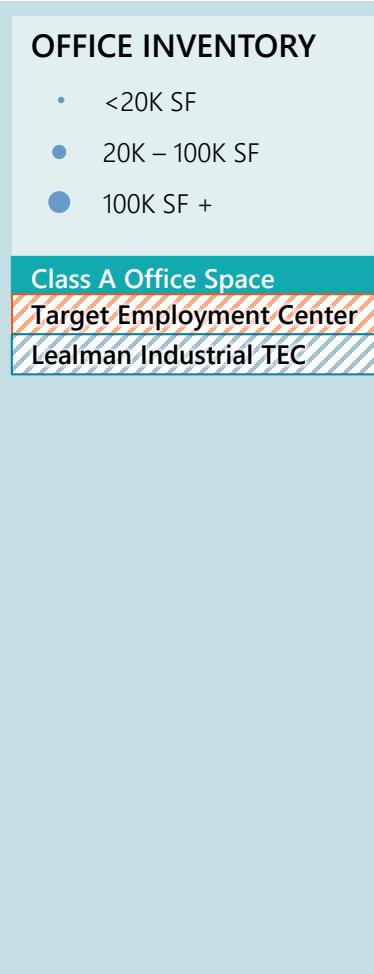
## There are large concentrations of Class A office space in Target Employment Centers

Pinellas County has almost 42 million SF of office space, of which approximately 9.3 million SF is Class A. The average office building was constructed in 1971 and is roughly 11,000 SF. Office buildings are located across the county; Class A office space is often located in Target Employment Centers and urban Activity Centers while professional and medical office space is located along major transportation corridors following retail and residential growth. Overall, rents are approximately \$24/SF (NNN) and vacancy is slightly elevated at 9.1% compared to pre-pandemic levels.

**42M**  
OFFICE SQUARE FEET  
IN INVENTORY

**9.1%**  
OVERALL  
VACANCY RATE

**\$23.70**  
AVERAGE OFFICE  
RENT/SF



Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman

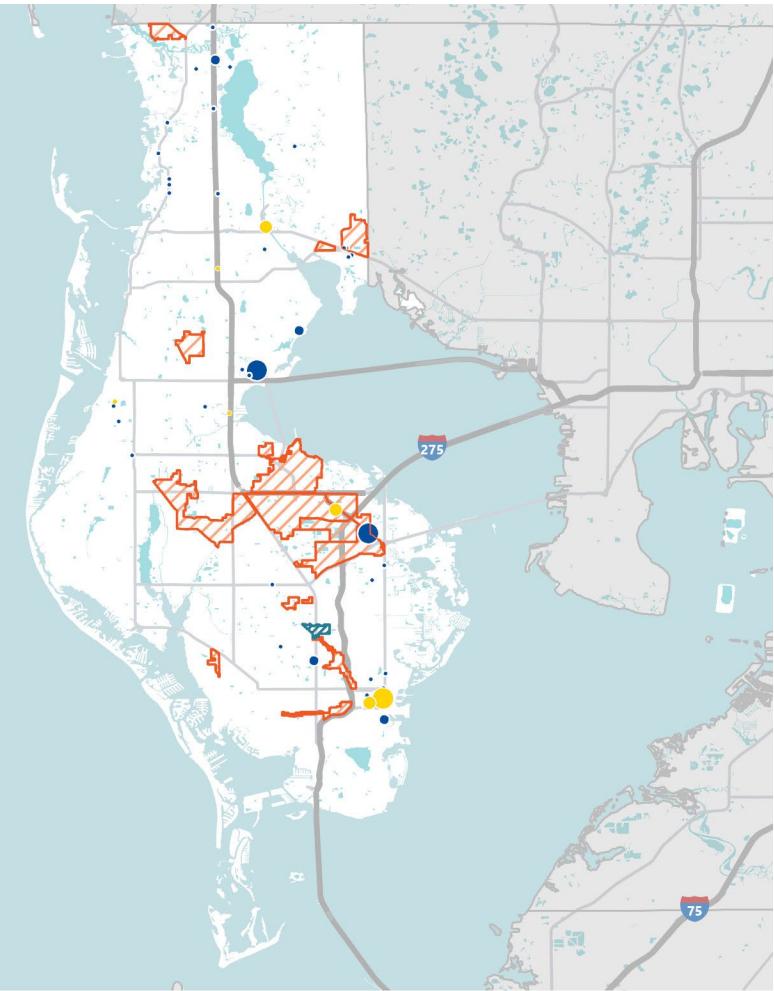
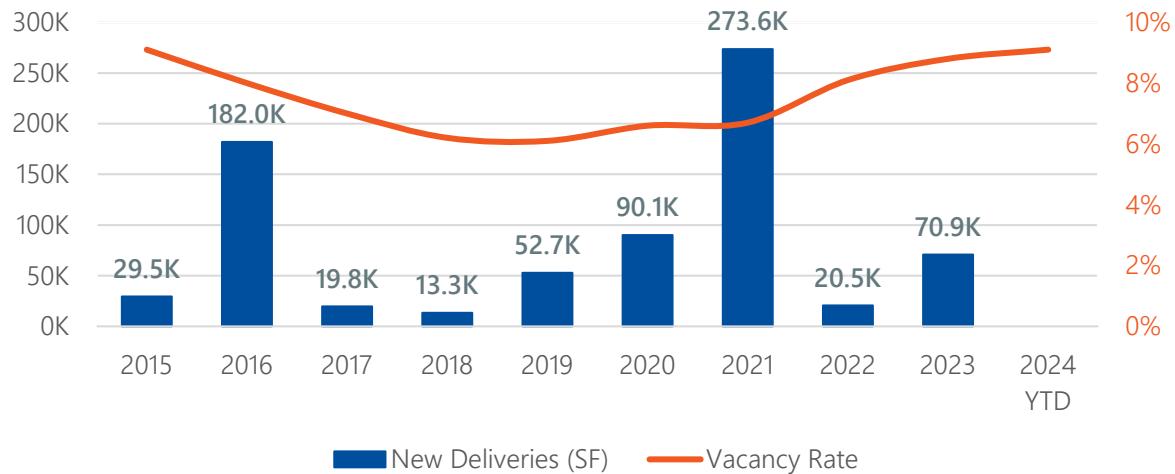
0 5 Miles

# RECENT AND UPCOMING OFFICE DEVELOPMENT

Target industries and corporate users tend to prefer mixed-use environments with access to workforce

Over 750,000 SF of office space have been delivered since 2015 and there are an additional 974,000 SF in the pipeline. Nationally, there has been a recent shift from car-oriented, single-use business parks to walkable, vibrant mixed-use places. Class A office tenants typically prefer mixed-use environments with easy access to workforce. Regionally, the majority of recent and pipeline Class A office is being built in urban submarkets including Westshore and Downtown Tampa. Within the county, approximately 30% of recent office development has occurred in a TEC. However, only 2% of pipeline office space will be in a TEC, as more office users are continuing to move to higher-quality Class A space in urban areas like downtown St. Petersburg.

## RECENT DELIVERIES AND VACANCY



Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman

# LEALMAN INDUSTRIAL TEC: OFFICE SUPPLY

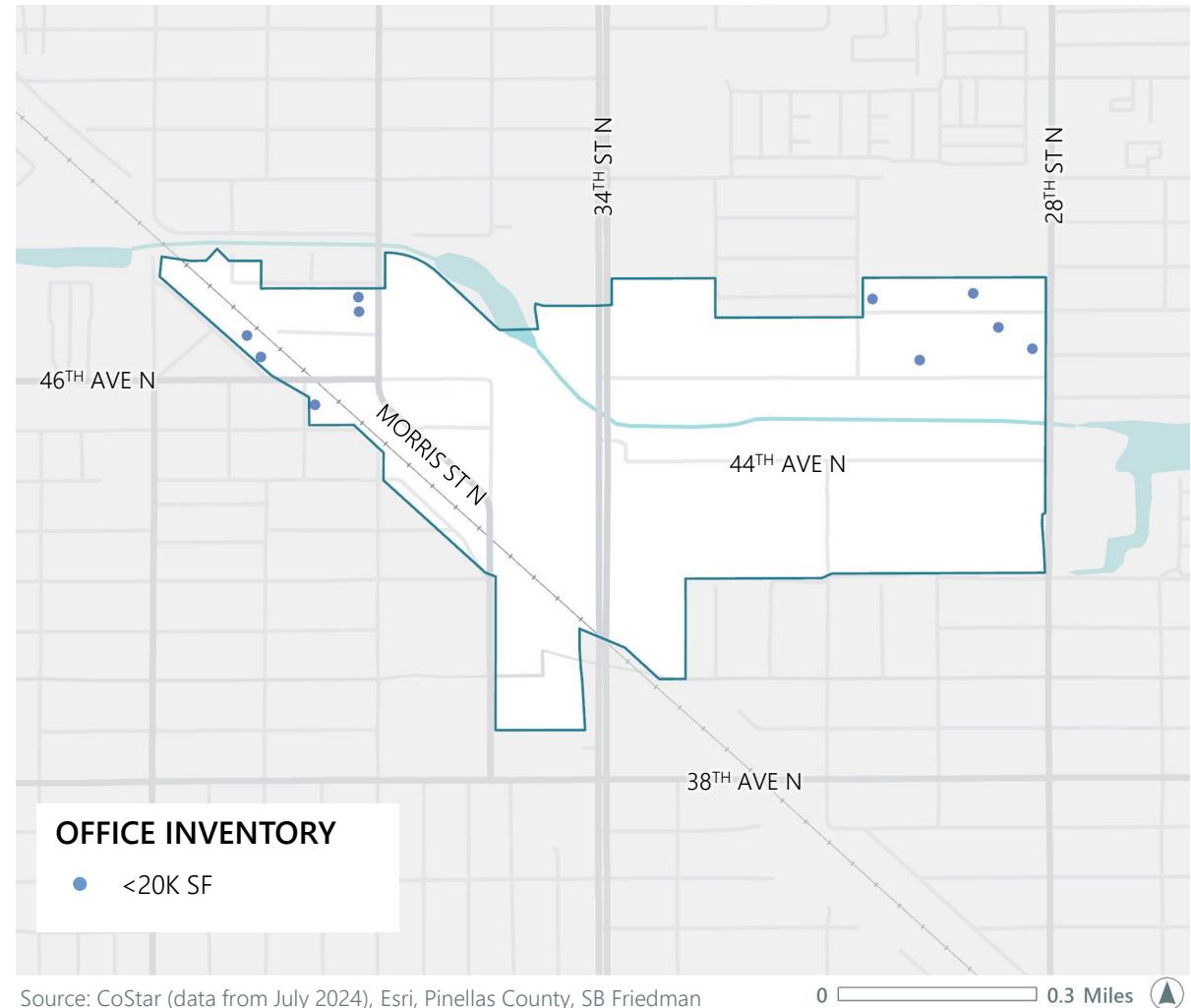
The Lealman Industrial TEC has only 35,000 SF of office space, which is mostly Class C

The Lealman Industrial TEC has almost 35,000 SF of office space across 10 buildings. These buildings range in size from 800 to 13,680 SF, with an average office size of 3,500 SF. Most office buildings (90%) are Class C, and one building is Class B. No office space has been built in the Lealman Industrial TEC since 2006 and the average age of an office building in the TEC is 53 years old. While buildings are highly occupied, the average rent is only two-thirds of the county average, indicating demand for office in the TEC is limited.

**35K**  
OFFICE SQUARE FEET

**0%**  
OVERALL  
VACANCY RATE

**\$15.00**  
AVERAGE OFFICE  
RENT (NNN)



# OFFICE MARKET POTENTIAL

## Limited to no potential for office development in Lealman Industrial TEC



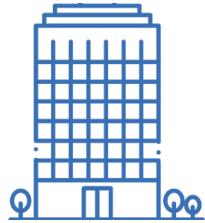
### SUPPLY AND PERFORMANCE

Limited available inventory and low rents relative to county averages indicate limited demand for office space in the Lealman Industrial TEC.



### LOCATION

The Lealman Industrial TEC does not match office target industries and corporate users' preferences to locate in more urban and mixed-use environments.



### FLIGHT TO QUALITY

Modern office trends indicate employers desire Class A office space, which is limited in the Lealman Industrial TEC.



### LAND AVAILABILITY

Limited land is available in the Lealman Industrial TEC to accommodate large office development. Any potential development in the near term could likely only support smaller-scale professional operations.

### OFFICE MARKET POTENTIAL IN THE LEALMAN INDUSTRIAL TEC: LIMITED TO NONE

According to a recent study by SB Friedman (TEILS, 2021), Pinellas County has a growing Class A office market. Average rents indicate a demand for high quality office space, driven by employment growth and the changing needs of tenants.

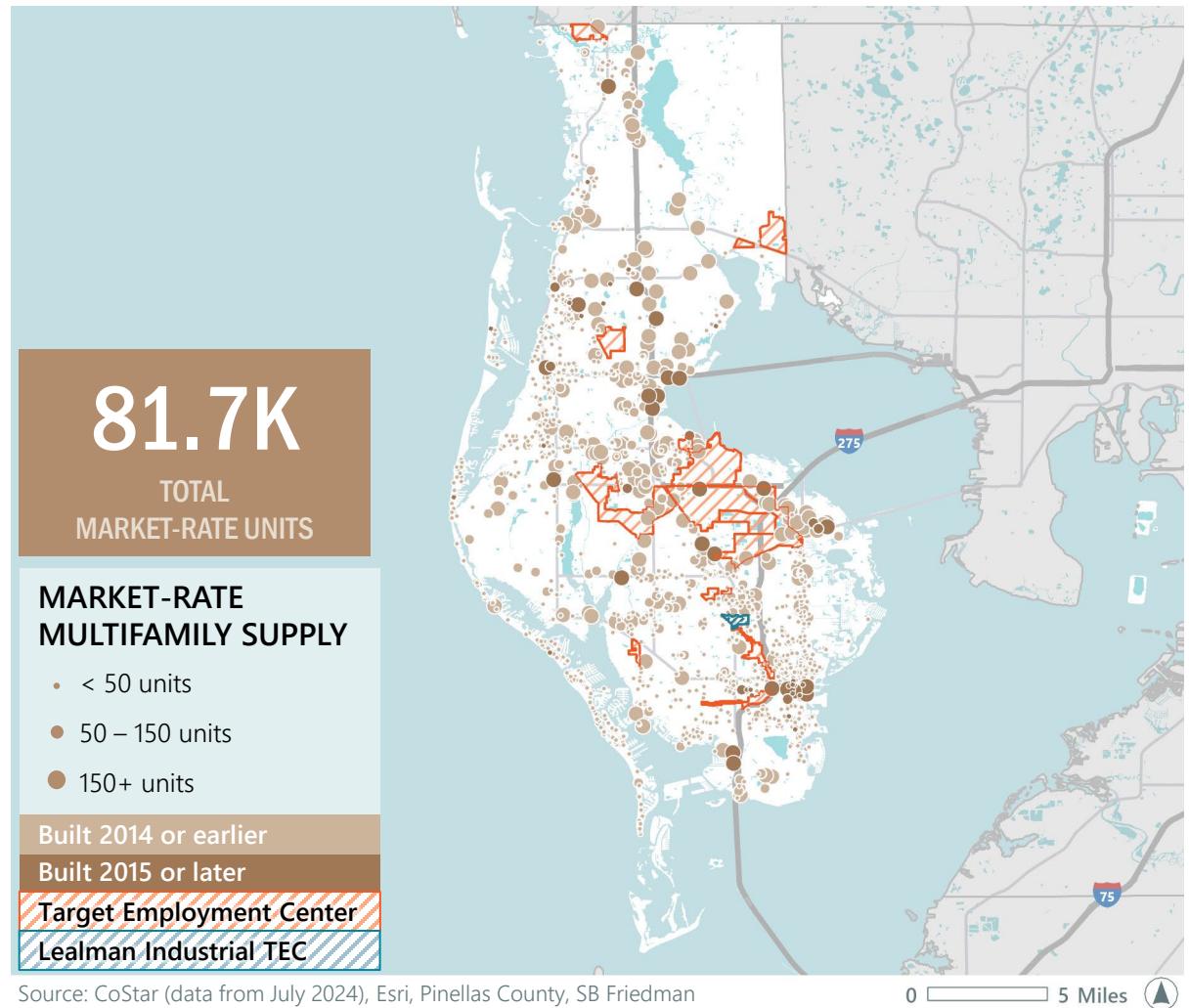
Currently, almost 1 million SF are in the pipeline in the county, only 2% of which will be in a TEC. Many recent and future developments in the region are in urban areas like downtown Tampa, Westshore and downtown St. Petersburg. This is because office-oriented target industries and Class A corporate users tend to prefer mixed-use environments with amenities, resulting in a shift from single-use suburban office parks to mixed-use activity centers and urban office locations.

The Lealman Industrial TEC is a smaller office cluster, comprised of older Class B and Class C space. There is limited potential for new office development in the Lealman Industrial TEC in the near-term due to employers' location preferences, land availability, and recent performance. Average office rents in the TEC are low relative to the county, indicating limited demand for office space. Additionally, countywide office vacancy is slightly elevated, indicating there may not be demand for additional office space in the near-term or that existing office space is not meeting the needs of modern users. The potential for attracting smaller professional operations is limited without additional retail and residential development nearby.

# PINELLAS COUNTY: MARKET-RATE MULTIFAMILY SUPPLY

There are 81,700 market-rate multifamily rental units in the county

Pinellas County has over 81,700 market-rate multifamily rental units. Demand for amenity-rich, mixed-use neighborhoods and residential buildings has grown in recent years. New multifamily construction has primarily been concentrated in the southern half of Pinellas County, particularly in downtown St. Petersburg and mid-county in the Gateway area along US-19 or other major transportation corridors, or in highly amenitized, mixed-use areas. Older developments with fewer units and amenities are dispersed across the county.

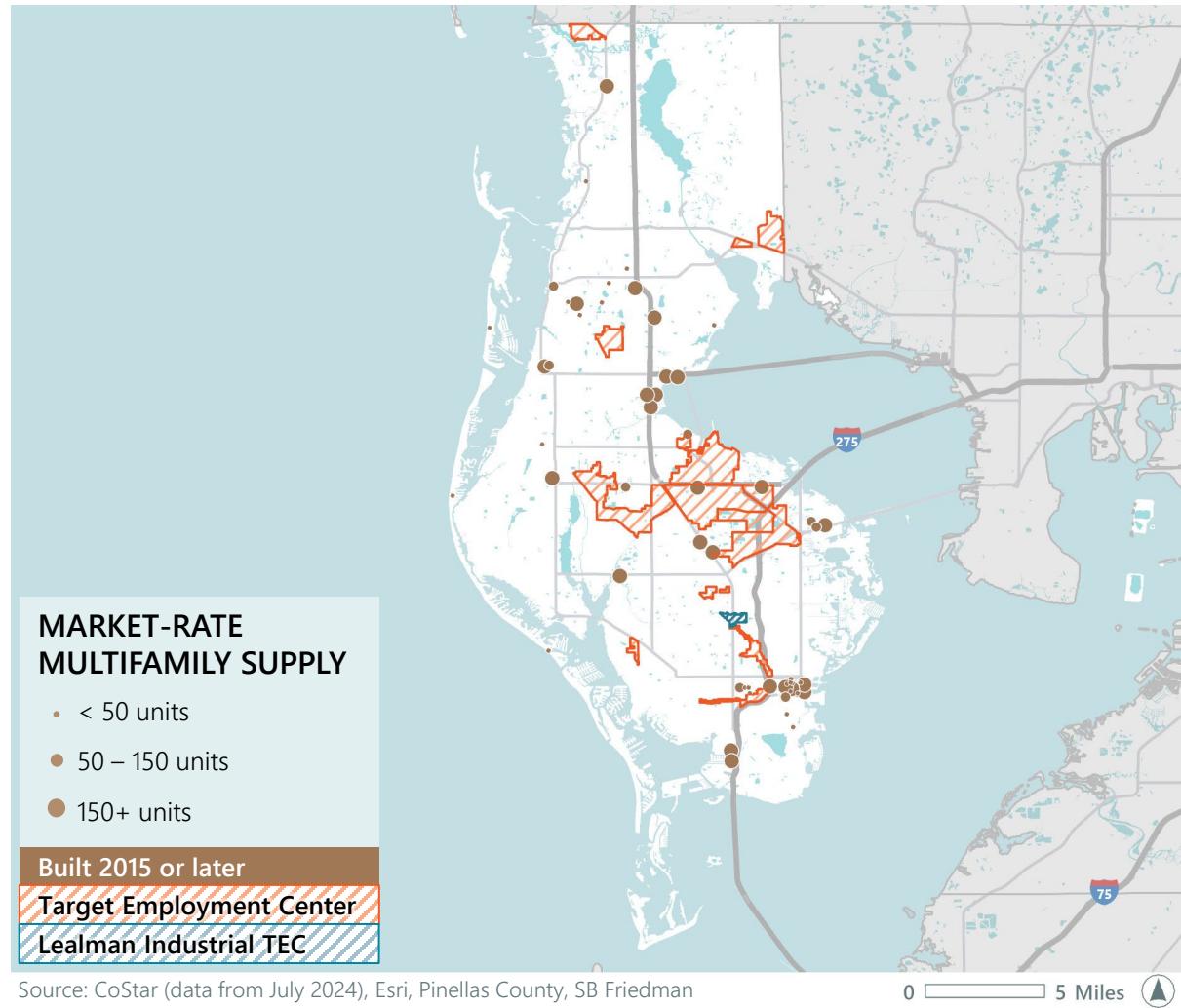
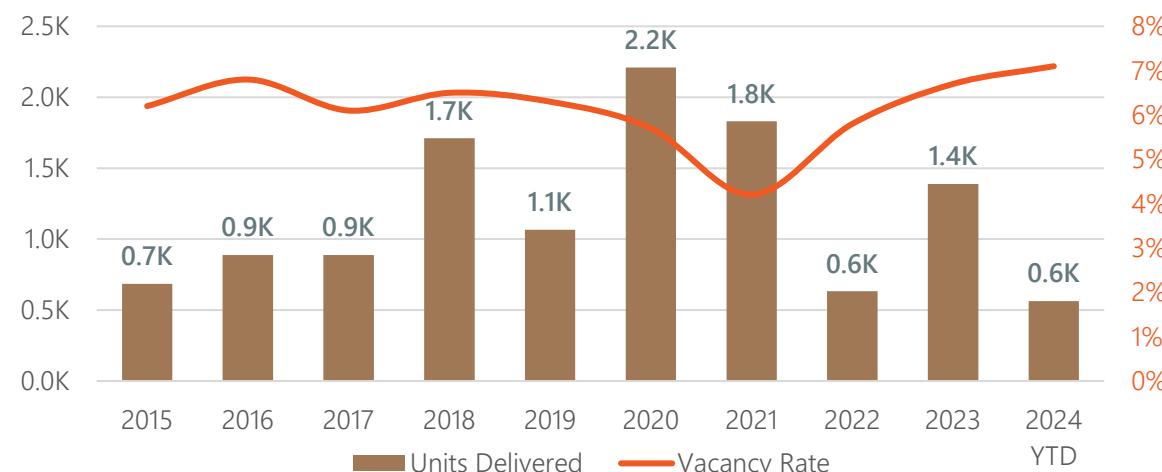


# PINELLAS COUNTY: RECENT MARKET-RATE MULTIFAMILY

## 12,000 market-rate units built since 2015, with an increase in average annual deliveries post-COVID

Almost 12,000 market-rate rental units, or about 15% of the county's market-rate multifamily inventory, have been built since 2015. Between 2015 and the beginning of the COVID-19 pandemic, an average of 1,050 new units were delivered annually. Following the COVID-19 pandemic, the average number of new unit deliveries increased to over 1,500 per year. Since 2023, vacancy rates have also increased as approximately 2,000 new units have been built and have yet to be leased.

### RECENT MARKET-RATE DELIVERIES AND VACANCY



# PINELLAS COUNTY: RECENT MARKET-RATE MULTIFAMILY

## Newer garden-style development requires a minimum of almost eight acres on average

Newer market-rate multifamily development tends to locate along major thoroughfares like US-19 or in mixed-use areas with nearby amenities. Newer investor-grade developments tend to require multiple acres to support the building scale, unit sizes, parking and amenity packages. The average market-rate multifamily development built since 2015 is located on 5.7 acres of land; recent garden-style developments have typically required a minimum of 7.7 acres while developments with 4 or more stories require 2.4 acres on average. Higher density buildings with structured parking, like Vantage in St. Petersburg, typically also require higher rents to support the higher construction and parking costs.



	Vue at Belleair	Vantage	Axio at Carillon	Cortland Bayside	Aventon Lana
Address	1551 Flournoy Circle W	160 16 <sup>th</sup> Street N	250 Carillon Parkway	19355 US-19 N	2031 Glass Loop
City	Clearwater	St. Petersburg	St. Petersburg	St. Petersburg	Clearwater
Number of Units	339	211	298	360	396
Year Built	2018	2020	2021	2020	2023
Average Rent per SF	\$2.37	\$3.58	\$2.51	\$2.28	\$2.42
Parking Type	Surface	Structured	Structured	Surface	Surface
Land Area (Acres)	15.6	1.90	5.2	17.1	22.0

# MULTIFAMILY IN TARGET EMPLOYMENT CENTERS

## Affordable development in TECs is growing more common since passage of the Live Local Act

Target Employment Center land use policies in the county have limited residential development in TECs. Since 2015, only three multifamily projects have been built within a TEC (one in Carillon, one in Gateway Central and one in Gateway Southern). Two of these developments, Waterview Echelon City Center and Pelican Lake, only offer market-rate units. Marlowe Gateway is the only multifamily development with affordable units to be built in a TEC in recent history, which may be a result of recent legislative changes. There are two multifamily developments proposed to be built in TECs: Fairfield Apartments in the Warehouse Arts TEC and Azalea Gateway in the Tyrone Square TEC. Both are partially or entirely affordable, and both are redevelopments of former industrial sites. However, the surrounding areas are not predominantly industrial in nature and include numerous supportive residential and commercial uses, which may make them more supportive of other residential uses.



	Watview Echelon City Center	Pelican Lake	Marlowe Gateway	Fairfield Apartments (Proposed)	Azalea Gateway (Proposed)
Address	100 Main St N	13200 49 <sup>th</sup> St N	2790 Grand Ave	3300 Fairfield Ave S	1501 72nd St N
City	St. Petersburg	Clearwater	St. Petersburg	St. Petersburg	St. Petersburg
Number of Units	226	183	412	264	1,000
Year Built	2021	2022	2024	N/A – Proposed	N/A – Proposed
Rent Type	Market Rate	Market Rate	Market/Affordable	Affordable	Affordable/Market Rate
TEC	Carillon	Gateway (Central)	Gateway (Southern)	Warehouse Arts	Tyrone Square
TEC Designation	TEC Suburban Industrial	TEC Suburban Industrial	TEC Urban	TEC Local	TEC Local

Source: CoStar (data from July 2024), Esri, Pinellas County, St. Pete Rising, SB Friedman

SB Friedman Development Advisors, LLC

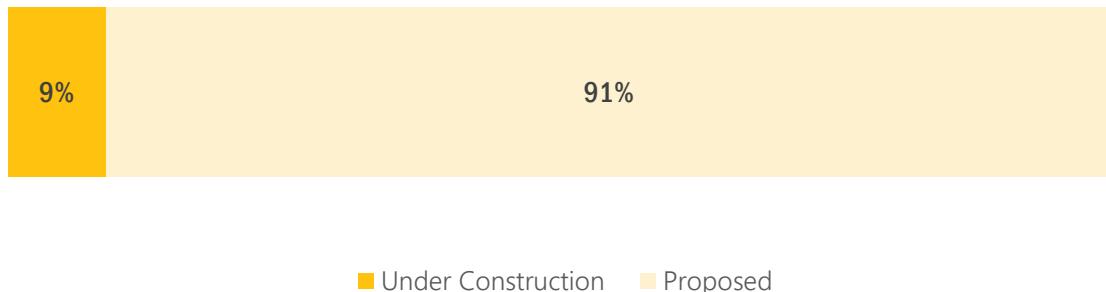
# PINELLAS COUNTY: UPCOMING MARKET-RATE MULTIFAMILY

There are 18,500 units under construction or proposed through 2029

There are almost 18,500 market-rate units in the county's development pipeline, with about 3,000 currently under construction and 15,500 proposed to be built through 2029, including units at Skytown and the proposed Gas Plant Redevelopment around Tropicana Field (as of November 2024). Most of the pipeline is concentrated in southern Pinellas County along I-275, I-75 and in downtown St. Petersburg.

There are currently no market-rate rental projects proposed or under construction in Target Employment Centers, including the Lealman Industrial TEC.

## UPCOMING MARKET-RATE MULTIFAMILY DEVELOPMENT



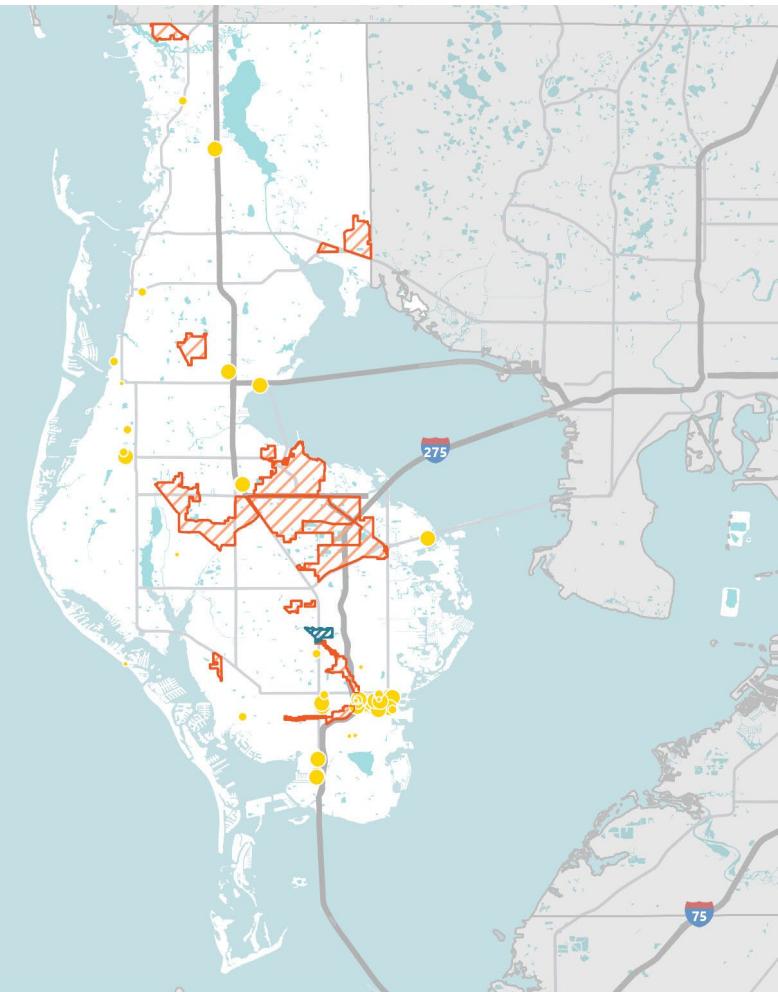
### MARKET-RATE MULTIFAMILY SUPPLY

- < 50 units
- 50 – 150 units
- 150+ units

### Pipeline

- Target Employment Center
- Lealman Industrial TEC

Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman



# LEALMAN INDUSTRIAL TEC: MULTIFAMILY SUBMARKET

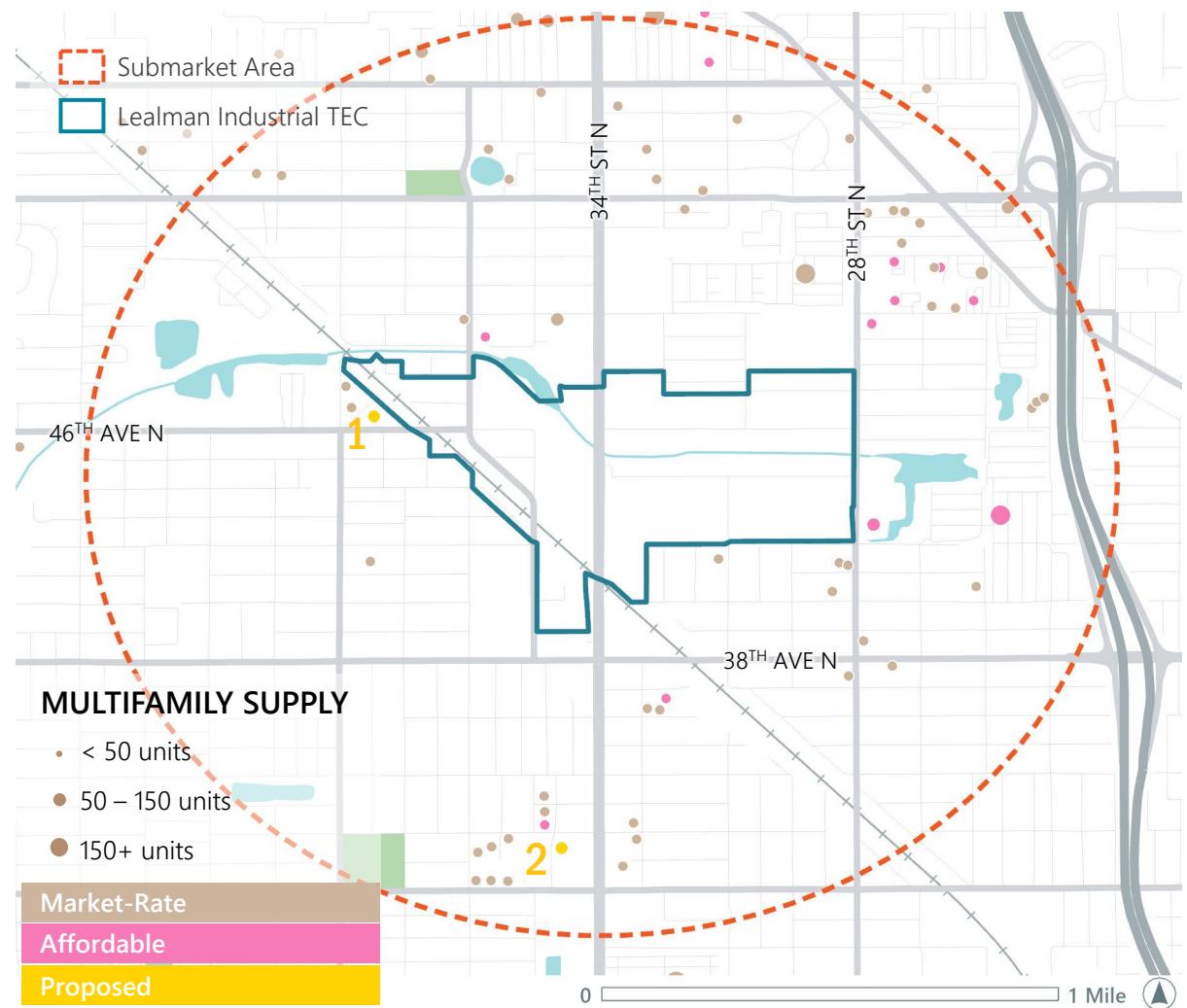
## No proposed market-rate development in submarket; two proposed affordable developments

The Lealman Industrial TEC submarket includes almost 770 market-rate multifamily rental units. There have been no recent projects constructed in the area since 2013, and the average unit was built approximately 60 years ago. Rents in the area have grown in recent years in line with countywide rent growth as population growth has spurred demand.

The Lealman Industrial TEC submarket also includes 830 affordable units. There are two affordable projects (112 units total) proposed nearby. The Point Apartments are proposed on 46<sup>th</sup> Avenue directly adjacent to the northwest corner of the Lealman Industrial TEC, and The Hartford is proposed to be built approximately 1-mile south of the Lealman Industrial TEC. Both will provide units to households at or below 60% AMI.



	1   The Point Apartments	2   The Hartford
Address	3901 46 <sup>th</sup> Ave N	3101 Hartford St N
City	St. Petersburg	St. Petersburg
Number of Units	17	95
Rent Type	Affordable	Affordable/Market Rate
Target Employment Center	No; near Lealman	No; near Lealman



[1] Submarket area is defined as 1-mile buffer from the center of the Lealman Industrial TEC (the intersection of 34<sup>th</sup> St N, or US-19, and 44<sup>th</sup> Ave N).

Source: CoStar (data from July 2024), Esri, Pinellas County, SB Friedman

# HOUSING AFFORDABILITY

## Additional rental and for-sale housing units needed to support households earning <120% AMI

Wages have increased recently in the region, but housing costs have risen faster.

- Within a 5-mile radius of the Lealman Industrial TEC, CoStar estimates there are 37,290 multifamily rental units. Of these, only 3,480 (approximately 9%) would be affordable for households earning up to 120% AMI<sup>[1]</sup>.
- The median home value in Pinellas County in 2023 was \$337,900, while the median household income for a homeowner was \$114,900. The total supportable home price for a household earning less than 120% AMI in 2023 was \$309,100.

Therefore, there is a deficit of both rental and for-sale housing units that are affordable to households earning incomes below 120% AMI, indicating a need for additional workforce housing in the area. According to SB Friedman's recently conducted (2023) Pinellas County housing demand analysis, there is demand for at least 12,000 workforce units countywide through 2035.

### TAMPA-ST. PETERSBURG-CLEARWATER, FL MSA 2023 MAXIMUM AFFORDABLE RENT LIMITS

AMI	<30%	30-60%	60-80%	80-120%	120%+
0/1-BR	\$489	\$978	\$1,305	\$1,957	>\$1,957
2-BR	\$587	\$1,174	\$1,566	\$2,349	>\$2,349
3-BR	\$678	\$1,356	\$1,808	\$2,712	>\$2,712

[1] Analysis reflects the number of units with chunk rents below the 120% AMI rent limit based on unit type and household size.  
Source: CoStar, Florida Department of Commerce, Florida Department of Revenue, Florida Housing Finance Corporation, Occupational Employment and Wage Statistics, SB Friedman

# PINELLAS COUNTY: MISSING MIDDLE HOUSING

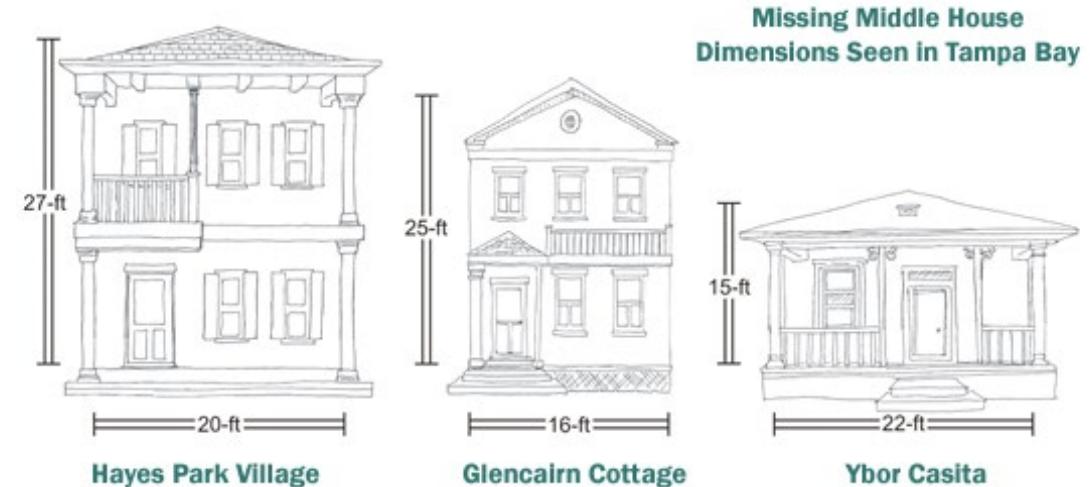
## Missing middle housing could be supported in transitional areas in the Lealman Industrial TEC

"Missing middle housing" is a term used to describe multi-unit low-density housing that falls between single-family homes and higher-density multifamily developments, and can include duplexes, triplexes, fourplexes, courtyard apartments, townhomes and live/work units. Missing middle housing units can be either for-rent or for-sale and typically offer a more affordable alternative to living in a single-family home or modern high rise.

Missing middle housing works well in walkable, urban areas or as a buffer adjacent to existing single-family neighborhoods or commercial corridors; it easily fits into existing neighborhoods due to its size, scale and aesthetic, making it a relatively achievable housing typology to develop, or redevelop, as infill.

According to Forward Pinellas, missing middle housing only accounted for approximately 13% of the County's housing stock (as of 2017) despite the region's rapidly growing population. Additionally, most households (77%) at the time had no children, yet over half of the housing stock was detached single-family. These trends, paired with the growing demand for walkable, mixed-use environments, lack of available developable land, and housing affordability challenges, indicate a high potential for missing middle housing development in the county.

Given the Lealman Industrial TEC's lack of parcels large enough to accommodate modern multifamily development and the need for workforce housing in the area, there could be demand for this housing typology in areas buffering existing housing or commercial uses if zoning allowed.



# MARKET-RATE MULTIFAMILY MARKET POTENTIAL

There is limited near-term potential for market-rate multifamily in the Lealman Industrial TEC



## LIMITED NEW CONSTRUCTION

Limited new construction in the submarket indicates limited demand for market-rate multifamily in the Lealman Industrial TEC.



## LOCATION

Newer market-rate multifamily development tends to locate in amenitized mixed-use areas. The Lealman Industrial TEC is an auto-oriented, industrial area with little retail options or services nearby.



## RENTS

It is unlikely the Lealman Industrial TEC could achieve market-rate multifamily rents to support new construction in the near-term.



## LAND AVAILABILITY

Newer garden-style development requires a minimum of almost 8 acres on average. Few parcels in the Lealman Industrial TEC are large enough to accommodate this type of development without significant reassembly. However, smaller parcels may be able to accommodate "missing middle" typologies.

## MULTIFAMILY MARKET POTENTIAL IN THE LEALMAN INDUSTRIAL TEC: LIMITED

Since 2015, approximately 1,050 market-rate multifamily units have been delivered annually on average throughout the County. According to research conducted by SB Friedman in 2024 (Pinellas County Housing Demand Projections), Pinellas County will need to add approximately 2,230 multifamily units per year through 2035 at a variety of different price points to accommodate projected household growth and changing demographic trends.

There has been no recent market-rate multifamily construction in the Lealman Industrial TEC submarket area. Average rents in the area are low relative to other submarkets in the county, and multifamily developers would likely not be able to achieve the market-rate rent required to support new construction. While the area is adjacent to major thoroughfares, there are limited nearby amenities that residents and developers typically seek. Additionally, parcels large enough to accommodate modern multifamily development are scarce. Missing middle housing, such as attached multifamily townhomes or smaller apartment buildings, could be supported, particularly in areas where there is a transition to single-family neighborhoods.

There is limited development potential for market-rate multifamily development in the Lealman Industrial TEC in the near-term. However, there is a need for additional multifamily units at affordable price points, particularly to provide workforce housing. Supporting such development may require significant land assembly and/or demolition of existing buildings, updated infrastructure to support the size of such a development, and financial assistance to close any financial gaps.

# RETAIL TYPOLOGIES

## Retail centers can be categorized into three major typologies based on several factors

The past decade has broadly been characterized as a period of contraction for the retail market nationally, as the rise of e-commerce has substantially impacted the market viability of brick-and-mortar retailers. To understand the retail market potential within the Lealman Industrial TEC, SB Friedman analyzed three primary indicators: existing retail composition, competitive centers, and overall visit trends among the local consumer base.

Retail clusters are categorized into three major typologies: Downtown Retail, Region-Serving and Community-Serving. Typologies differ based on scale, number and type of anchors, and size of trade area.

### DOWNTOWN RETAIL

#### DOWNTOWN / EXPERIENTIAL

- Mixed-use
- Ground-floor retail
- Walkable pedestrian environment
- *Size varies*

### REGION-SERVING

#### REGIONAL MALL / SUPER-REGIONAL MALL

- Anchored by 2+ full-line department stores
- ~500,000-1,000,000+ SF

#### LIFESTYLE CENTER

- Upscale national-chain specialty stores
- Dining/entertainment focus
- ~250,000-500,000 SF

### COMMUNITY-SERVING

#### POWER CENTER

- 2+ category-dominant freestanding anchors of ~100,000+ SF
- General merchandise, home improvement
- ~250,000-750,000 SF

#### COMMUNITY CENTER

- 1+ category-dominant freestanding anchors of ~100,000+ SF
- -- OR --
- 1+ grocer anchors of ~50,000+ SF and additional category dominant retailers
- ~100,000-250,000 SF

#### NEIGHBORHOOD CENTER

- +1 grocer anchors of ~50,000 SF or more
- Additional supporting retail
- ~75,000-150,000 SF

#### FREESTANDING / STRIP RETAIL

- Small convenience center with goods and services
- Limited trade area
- ~5,000-150,000 SF

# PINELLAS COUNTY: RETAIL SUPPLY

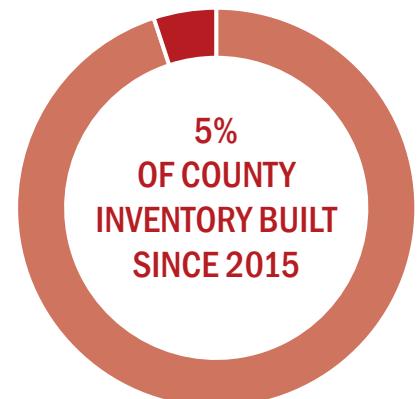
59M SF of retail space in county, 95% of which was built before 2015

There are approximately 59 million SF of existing retail space in Pinellas County. Most retail space in the county is located along major corridors and clustered in nodes at major intersections.

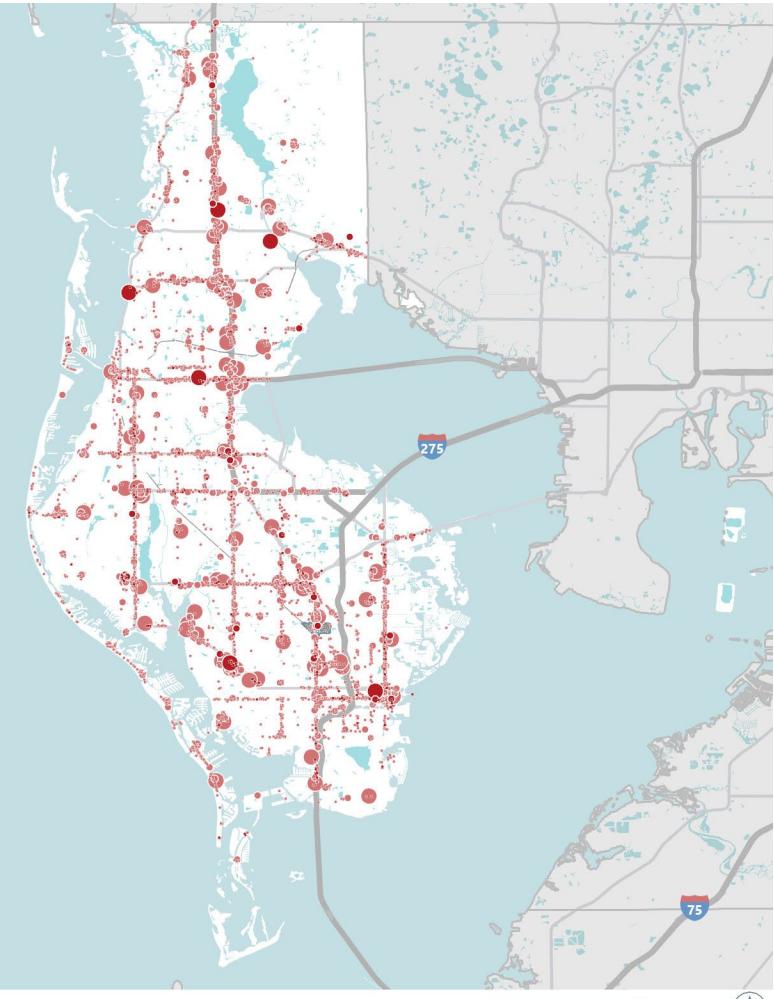
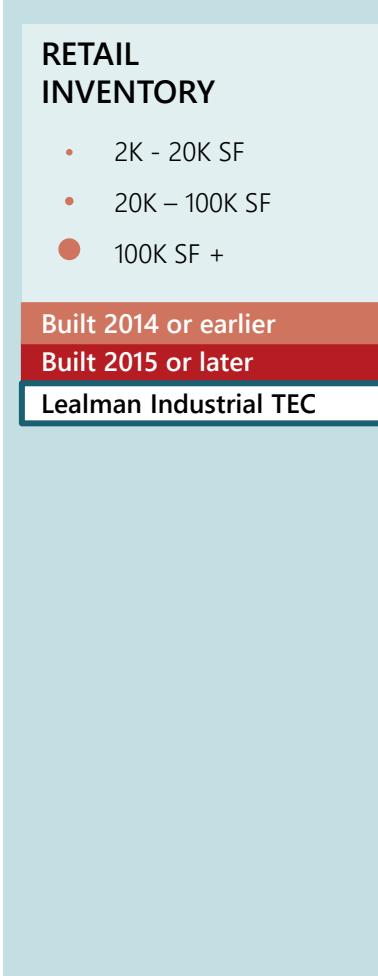
Since 2015, almost 3 million SF of new retail space has been constructed in the county, accounting for 5% of all inventory. Overall, vacancy is low at just under 4% and rents are strong at just over \$24/SF (NNN).

**59M**  
RETAIL SQUARE FEET  
IN INVENTORY

**\$24.10**  
AVERAGE RETAIL RENT  
(NNN)



**3.9%**  
OVERALL  
VACANCY RATE



[1] Retail points shown on map exclude developments under 2,000 SF.  
Source: CoStar (data from November 2024), Esri, Pinellas County, SB Friedman

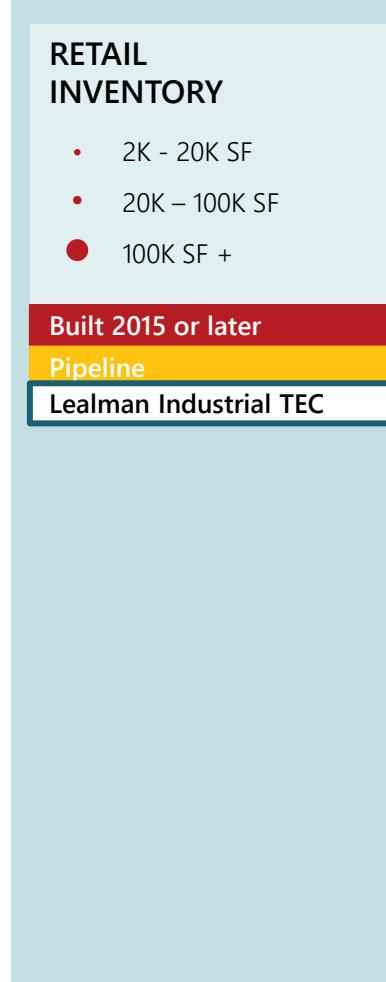
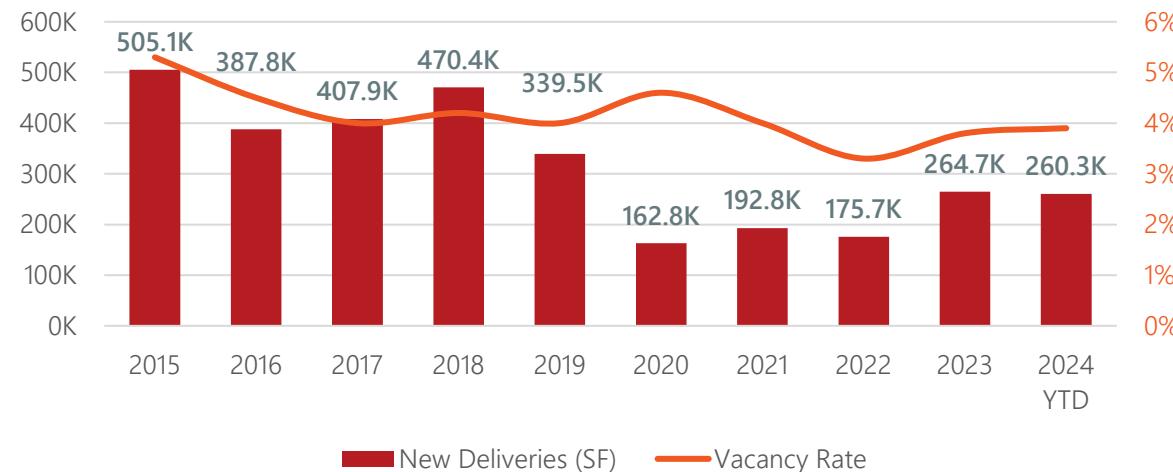
# PINELLAS COUNTY: RECENT & UPCOMING RETAIL

## Newly constructed retail yields average rents of \$32/SF

On average, almost 317,000 SF of retail space has been built annually in the county since 2015, and vacancy has declined despite construction of new buildings. New retail space, on average, yields rent premiums of \$7.50 per SF relative to older stock, with total average rents amounting to almost \$32 per SF (NNN).

There are an additional 1 million SF of retail space in the pipeline throughout the county. These developments will be located on main thoroughfares or near existing retail nodes to achieve visibility and accessibility to attract potential consumers.

### RECENT DELIVERIES AND VACANCY



[1] Retail points shown on map exclude developments under 2,000 SF.  
Source: CoStar (data from November 2024), Esri, Pinellas County, SB Friedman

0 5 Miles

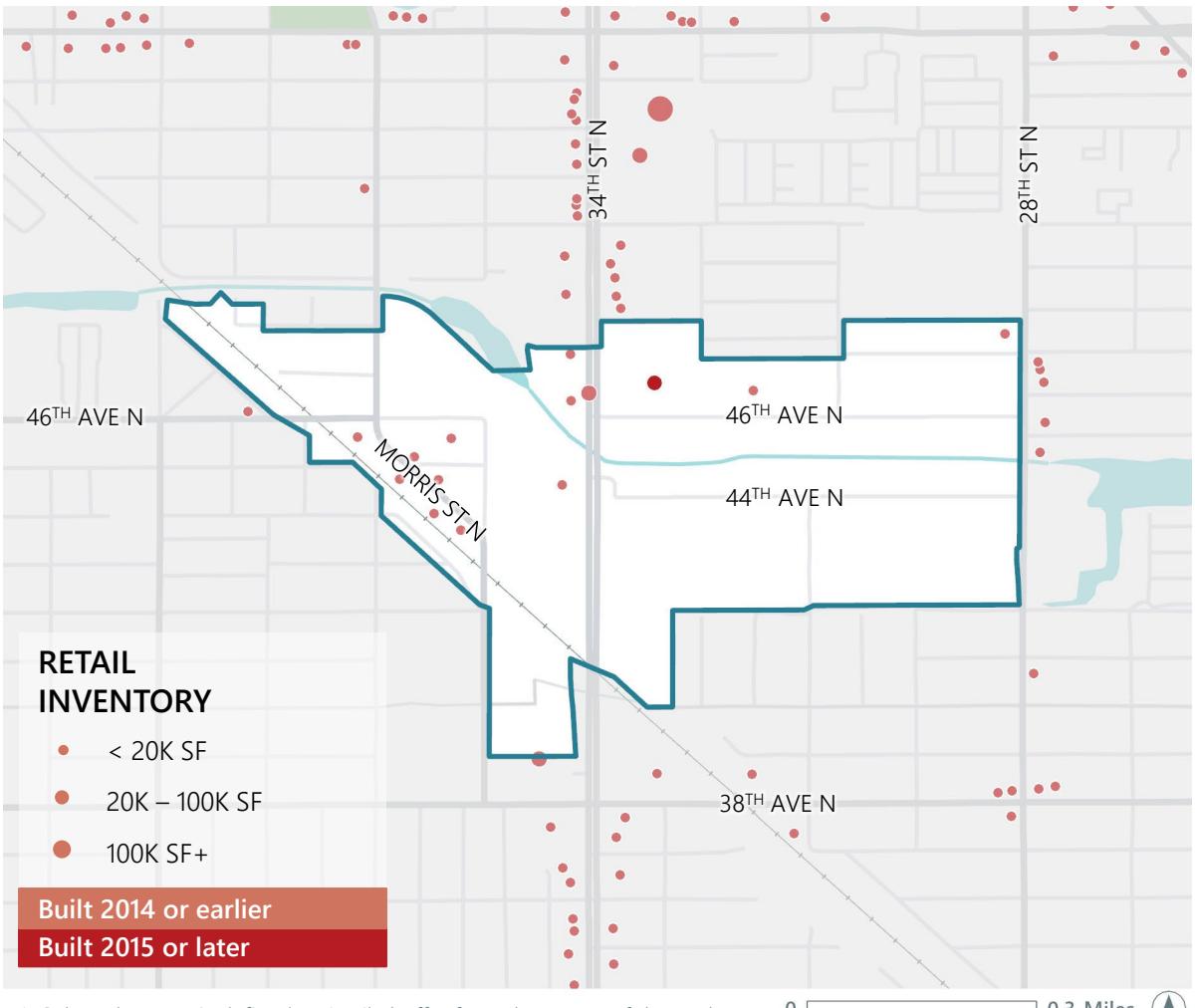
# LEALMAN INDUSTRIAL TEC: RETAIL SUPPLY

## TEC has almost 190K SF of retail, most of which is older and small-format

There are 187,650 SF of retail space in the Lealman Industrial TEC. Notably, the Tesla building constructed in 2023 accounts for 100,000 SF of all inventory. Remaining inventory is typically smaller, freestanding and strip retail, ranging from 300 to 27,000 SF (Pro Karting Experience), with an average size of approximately 5,000 SF. Most of these buildings were constructed in the 1960s, and many are auto-oriented retailers or service providers.

Vacancy in the submarket area<sup>[1]</sup> is low at 1.4% and rents are \$23/SF on average, approximately \$1/SF lower than the county average.

Additionally, numerous retail businesses have recently moved into the area and lease buildings that are not classified as retail space. For example, many personal and professional services have occupied industrial space, such as warehouses, in search of lower rents relative to the Pinellas County retail market.



[1] Submarket area is defined as 1-mile buffer from the center of the Lealman Industrial TEC (the intersection of 34<sup>th</sup> St N, or US-19, and 44<sup>th</sup> Ave N).  
Source: CoStar (data from November 2024), Esri, Pinellas County, SB Friedman

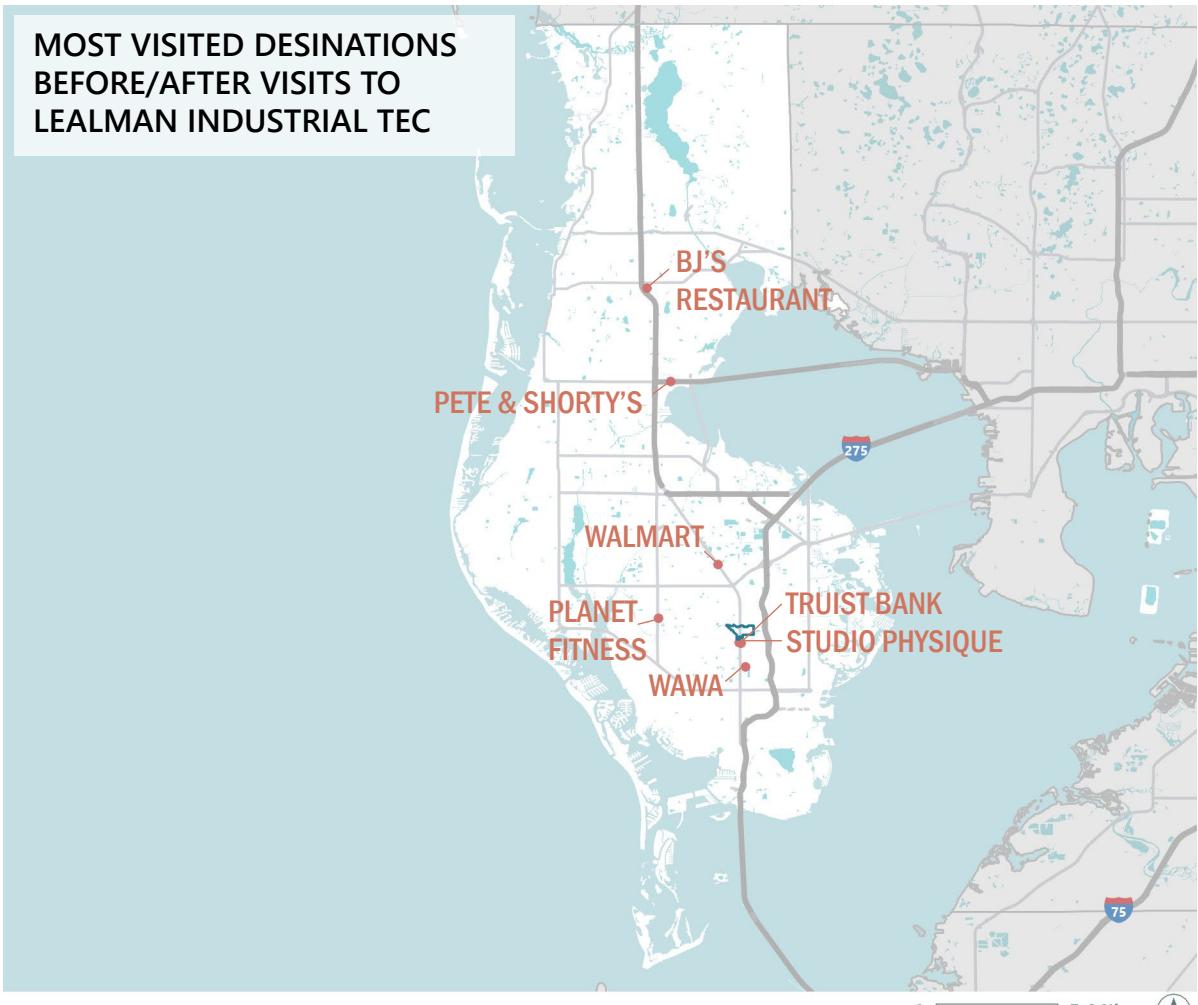
# COMMON VISITOR AND EMPLOYEE JOURNEYS

## Many visits are preceded or followed by dining, banking, grocery shopping or exercise

According to cell phone data, the Lealman Industrial TEC averages approximately 2,800 visits daily, over 40% of which are from employees, amounting to approximately 1 million visits annually.

In general, most visits to the Lealman Industrial TEC area are preceded by or followed by visits to home or work. Otherwise, many visitors are coming from or going to various retail services and grocery stores such as Truist Bank, Wawa, Planet Fitness, Studio Physique or Walmart. Additionally, many employees' journeys include dining such as BJ's Restaurant or Pete & Shorty's. Both restaurants are pub- or tavern-style dining establishments in Clearwater and located approximately a 20- to 25-minute drive away from the TEC. While employees may be visiting these establishments on their way home, this could also indicate that the area lacks dining options featuring both bars and full-service restaurants and that employees are willing to travel elsewhere for these offerings.

MOST VISITED DESTINATIONS  
BEFORE/AFTER VISITS TO  
LEALMAN INDUSTRIAL TEC



[1] All visits have durations of at least 10 minutes.

Source: Placer.ai (data from January 1, 2023 - December 31, 2023), Esri, SB Friedman

SB Friedman Development Advisors, LLC

# COMPETITIVE REGION- AND COMMUNITY-SERVING SUPPLY

Employees and residents often travel up to four miles away to popular retail centers

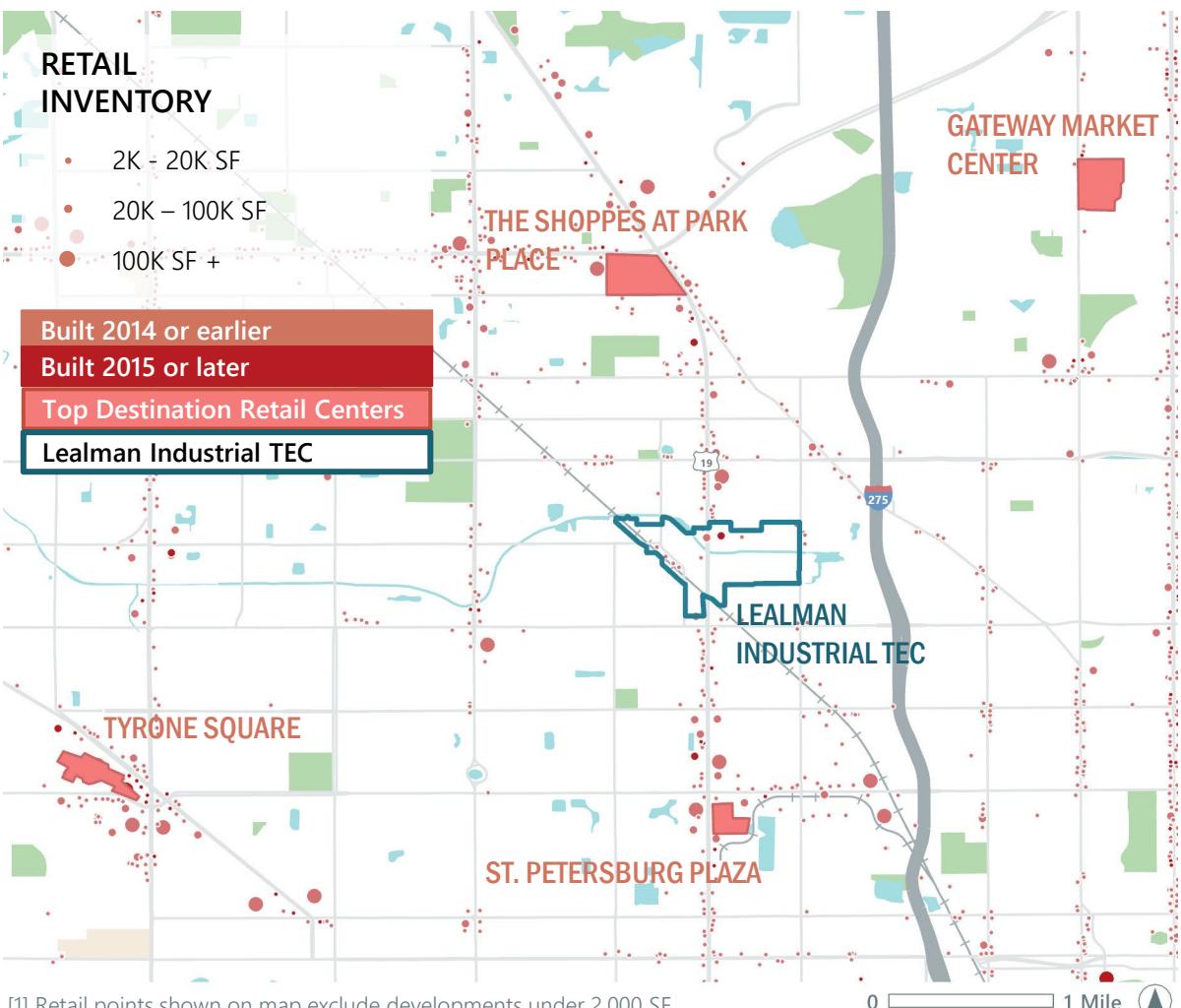
The Lealman Industrial TEC is surrounded by established regional and community retail centers. There are four primary retail centers that are among the most visited destinations for employees and residents in the Lealman Industrial TEC. They range in size from 143,000 SF to 960,200 SF and are located within one to four miles away from the TEC. These retail centers feature national chain tenants, major grocers, and popular dining establishments and attract anywhere from 2.5 to 6.1 million visitors annually.

	The Shoppes at Park Place	Tyrone Square	Gateway Market Center	St. Petersburg Plaza
Retail Typology	Lifestyle Center	Regional Mall	Power Center	Neighborhood Center
Total SF	359,600	960,200	340,000	143,200
Annual Visits	6.1M	5.7M	4.6M	2.5M
Select Tenants	Target, Chipotle, Regal Cinema	Macy's, Dick's Sporting Goods, Torchy's Tacos	Publix, Bealls, HomeGoods	Sam's Club, Winn-Dixie, Po Folks

[1] All visits have durations of at least 10 minutes.

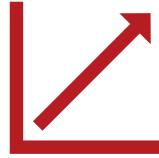
Source: Placer.ai (data from January 1, 2023 - December 31, 2023), Esri, SB Friedman

SB Friedman Development Advisors, LLC



# RETAIL MARKET POTENTIAL

Weak rents and location, with little recent development, indicates low potential for retail in near-term



## PERFORMANCE

The Lealman Industrial TEC achieves lower rents relative to newer development in the county.



## LIMITED RECENT CONSTRUCTION

Limited retail development has occurred in recent years in the Lealman Industrial TEC and submarket area.



## LOCATION

The Lealman Industrial TEC does not match retailers' site selection preferences to locate in mixed-use environments, near other major retail nodes, or in highly accessible and visible areas.



## POTENTIAL CONSUMER BASE

The low-density, residential neighborhoods of Lealman provide "built-in" market demand for retail, food and beverage, and consumer services. However, consistent with national trends, the market is likely too over-supplied to necessitate development of a new retail node without significant additional population growth.

## RETAIL MARKET POTENTIAL: LIMITED

While retail in the Lealman Industrial TEC submarket maintains low vacancy, rents are lower compared to newer construction in the County. Additionally, there has been limited investment in retail development in the Lealman Industrial TEC submarket over the past decade. Modern retail typically co-locates near strong existing retail nodes or in areas with strong potential consumer bases, such as residential hubs or mixed-use areas with high daytime populations

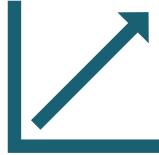
Despite limited retail development in recent years, several industrial spaces have recently become occupied by retail users seeking more affordable rents. With the average retail rent ranging from \$24-\$32/SF (NNN) countywide, obsolete industrial space in the Lealman Industrial TEC offers an approximate 50% discount.

The Lealman Industrial TEC is surrounded by established regional- and community retail centers that serve the area. Many residents and employees in the Lealman Industrial TEC often travel up to 4 miles away to other nearby retail centers. Employees, specifically, frequent restaurants up to a 25-minute drive away in Clearwater.

Overall, the potential for retail development in the Lealman Industrial TEC is limited in the near-term. While there could be some demand for small-format restaurants or services in the area, particularly to serve employees and the local neighborhoods, it would likely be challenging to attract prominent retailers in the near-term.

# MIXED-USE/ACTIVITY CENTER MARKET POTENTIAL

Low potential for individual land uses indicates limited to no potential for mixed-use in the near-term



## MARKET DEMAND

Proposed uses should garner market demand on their own and create synergy when combined.



## SITE

The site should be the appropriate size to support density, parking and stormwater management, and meet desired accessibility and visibility criteria. The site should also be attractive, walkable and create a sense of place.



## POLITICAL SUPPORT

The project may require public sector support to facilitate land assembly or secure financing or approval.



## FINANCING

Mixed-use developments are more difficult than single-use development due to complexities with construction phasing, deal structuring, leasing, and management. There is a higher risk for potential equity partners and higher construction costs associated with these projects.

## MIXED-USE MARKET POTENTIAL: LIMITED TO NONE

Mixed-use developments blend compatible land uses at various scales and intensities, often including a combination of revenue-producing residential and commercial space, as well as public open or recreational space. Mixed-use developments are highly desired by many communities as they typically increase a sense of place, decrease dependency on automobiles, and provide opportunities to live, work and play all in one area.

Tenant-driven development is fueled by existing owners and tenants who may want to diversify business or activate the area for longer periods of the day. Amenity-driven development is supported by the desire for additional amenities for existing residents or employees. Speculative development aims to achieve these goals, but without existing tenants or demand. While existing tenants may have the drive to pursue these strategies, each scenario faces a variety of challenges.

For example, the Lealman Industrial TEC retail market may not be strong enough to support rents for ground-floor commercial that would support the construction costs of multifamily housing above, or vice versa. In addition, there are limited sites available that meet the desired criteria for mixed-use development. Until market demand for individual land uses strengthens, mixed-use potential is limited in the near-term.

# MARKET SUMMARY

## Moderate pressure for industrial development in the Lealman Industrial TEC, limited for other uses

### INDUSTRIAL



The countywide industrial/flex market is strong, and the Lealman Industrial TEC offers an opportunity for small, niche warehousing and manufacturing users to establish themselves and grow. Rents in the Lealman Industrial TEC are affordable relative to new product throughout the county, and the Lealman Industrial TEC maintains access to locational advantages required for industrial users. Vacant parcels are not large enough for modern industrial users' needs without further land reassembly and many infrastructure improvements (utilities, transportation, etc.) will be required to attract major or modern development. Therefore, there is strong market pressure for continued industrial use throughout the area, but only moderate potential for new modern development.

### MARKET-RATE MULTIFAMILY RESIDENTIAL



Demand for residential space continues to increase in Pinellas County, with recent multifamily development typically prioritizing proximity to urban areas, amenities and access to transit. Limited multifamily development has occurred near the Lealman Industrial TEC over the past decade, and it is unlikely that the submarket area could achieve rents to support new construction in the near-term. However, two affordable developments are in the pipeline within a 1-mile radius. Additionally, interviews indicated a need for additional workforce and missing middle housing units at affordable price points.

### OFFICE



There is demand for Class A office space countywide, but limited office space of this caliber exists in the Lealman Industrial TEC. Additionally, office rents in the area are low and indicate weak demand for office in general. Given modern location trends for corporate users, it is unlikely the area will capture future Class A office development in the near-term. Additionally, the potential for attracting smaller professional operations is limited without additional retail and residential development nearby.

### RETAIL



There is limited potential for retail development in the near term. However, with the conversion of some industrial spaces to retail uses, and the absence of dining options and personal and professional services, there could be some demand for small-format retail in the area. In the long term, there could be additional demand for small-scale retail, especially with increased accessibility and nearby residential development.



70 W Madison St, Suite 3700  
Chicago, IL 60602  
312-424-4250 | [sbfriedman.com](http://sbfriedman.com)

VISION | ECONOMICS  
**MARKET ANALYSIS AND REAL ESTATE ECONOMICS**

STRATEGY  
**DEVELOPMENT STRATEGY AND PLANNING**

FINANCE | IMPLEMENTATION  
**PUBLIC-PRIVATE PARTNERSHIPS AND IMPLEMENTATION**



# APPENDIX B

# INFRASTRUCTURE

# ASSESSMENT

*Completed June 2025*



# APPENDIX B-1 STORMWATER ASSESSMENT

*Completed June 2025*

# Joe's Creek Master Plan

## Stormwater Infrastructure Assessment Technical Memorandum

Prepared for:

Pinellas County Housing and Community Development  
310 Court Street, 1<sup>st</sup> Floor  
Clearwater, FL 33756



Prepared by:

Kimley-Horn and Associates, Inc.  
200 Central Avenue, Suite 600  
St. Petersburg, FL 33701

**Kimley»Horn**

© Kimley-Horn and Associates, Inc.  
Registry No. 35106  
July 2025  
St. Petersburg, Florida  
145083017

*This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purposes and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.*

## List of Acronyms

<b>BMP</b>	Best Management Practices
<b>CFS</b>	Cubic Feet Per Second
<b>CN</b>	Curve Number
<b>CRA</b>	Community Redevelopment Area
<b>DCIA</b>	Directly Connected Impervious Areas
<b>DEM</b>	Digital Elevation Model
<b>EPA</b>	Environmental Protection Agency
<b>ERP</b>	Environmental Resource Permit
<b>FFE</b>	Finished Floor Elevation
<b>FLOS</b>	Flooding Level of Service
<b>GI</b>	Green Infrastructure
<b>HRT</b>	Hydraulic Retention Time
<b>LID</b>	Low Impact Development
<b>MF</b>	Membrane Filter
<b>MPN</b>	Most Probable Number
<b>PER</b>	Preliminary Engineering Report
<b>RSF</b>	Regional Stormwater Facility
<b>SWFWMD</b>	Southwest Florida Water Management District
<b>TIELS</b>	Target Employment and Industrial Land Study
<b>TMDL</b>	Total Maximum Daily Loads
<b>TN</b>	Total Nitrogen
<b>TP</b>	Total Phosphorus
<b>TSS</b>	Total Suspended Solids
<b>WBID</b>	Water Body Identification

## Table of Contents

List of Acronyms .....	2
List of Figures .....	4
List of Tables .....	4
List of Appendices.....	4
Introduction .....	5
Background.....	6
Data Collection.....	7
Data Gap Analysis .....	7
Previous Projects and Results .....	7
Lealman RSF.....	8
Joe's Creek RSF .....	9
Joe's Creek Restoration and Greenway Trail PER .....	10
Joe's Creek Master Plan Study Area.....	12
Water Quantity.....	12
Water Quality.....	16
Proposed Alum Treatment Concepts .....	18
Redevelopment Strategies.....	19
Cisterns .....	19
Green Roofs .....	19
Rain Gardens .....	20
Dry Floodproofing and Wet Floodproofing .....	20
Elevating Structures.....	21
Traditional Stormwater Management Strategies and Pipe Improvements .....	21
Conclusions .....	22
References .....	23

## List of Figures

Figure 1: Joe's Creek Study Area.....	5
Figure 2: Joe's Creek Land Use Changes from 1926 to 2025 .....	6
Figure 3: Joe's Creek Study Area.....	8
Figure 4: Alum Facility Candidate Sites Option #1 (Left) and Option #2 (Right).....	10
Figure 5: Existing Conditions and Alternative B Proposed Conditions 100-Year/24-Hour Floodplain Extents .....	11
Figure 6: Digital Elevation Model and Major Storage Areas.....	13
Figure 7: Joe's Creek Existing Infrastructure .....	14
Figure 8: Alternative B and Alternative B+40 Acres of Storage Proposed 100-Year/24-Hour Floodplain Extents .....	15
Figure 9: Brownfield Areas Map .....	17
Figure 13: Green Roof Example.....	20
Figure 14: Rain Garden Example .....	20
Figure 15: Deployable Dry Floodproofing Retrofit.....	21

## List of Tables

Table 1: Annual Average Gross and Net loads in pounds per year, and Percent Removed .....	9
Table 2: Joe's Creek RSF Top Five Flood Mitigation Alternatives .....	9
Table 3: FLOS Asset Violation Metrics .....	11
Table 4: Water Quality Impairments for Joe's Creek .....	16
Table 5: Total Maximum Daily Loads for Nutrients in Joe's Creek.....	17
Table 6: Total Runoff and Nutrient Loading in the Study Area.....	18
Table 7: Recommended Parcel Information .....	18
Table 8: Recommended Parcel Annual Nutrient Removal.....	18
Table 9: Summary of Key Recommendations .....	22

## List of Appendices

**APPENDIX A** – Total Runoff and Annual Nutrient Loading Calculation

**APPENDIX B** – Alum Facility Multi-Criteria, Weighted Matrix Evaluation

**APPENDIX C** – Preliminary Engineer's Opinion of Probable Construction Costs

## Introduction

Pinellas County (the County) contracted Kimley-Horn and Associates, Inc. (Kimley-Horn, the Consultant) for the Joe's Creek Industrial Park (JCIP) Master Plan under RFP 24-0461, effective June 25, 2024. The JCIP Master Plan is tasked with taking the recommendations of the Target Employment and Industrial Land Study (TIELS) and conducting a further analysis of the potential use and flexibility of the JCIP.

The Master Plan scope was amended to include a Stormwater Infrastructure Assessment Technical Memorandum to assess existing infrastructure needs, identify two viable alum treatment concepts, outline redevelopment strategies, and recommend attenuation strategies for the Joe's Creek Industrial Park (the study area). This technical memorandum evaluates the water quantity and quality challenges within the study area, considering the existing stormwater infrastructure.

The extents of the study area are shown in **Figure 1**.

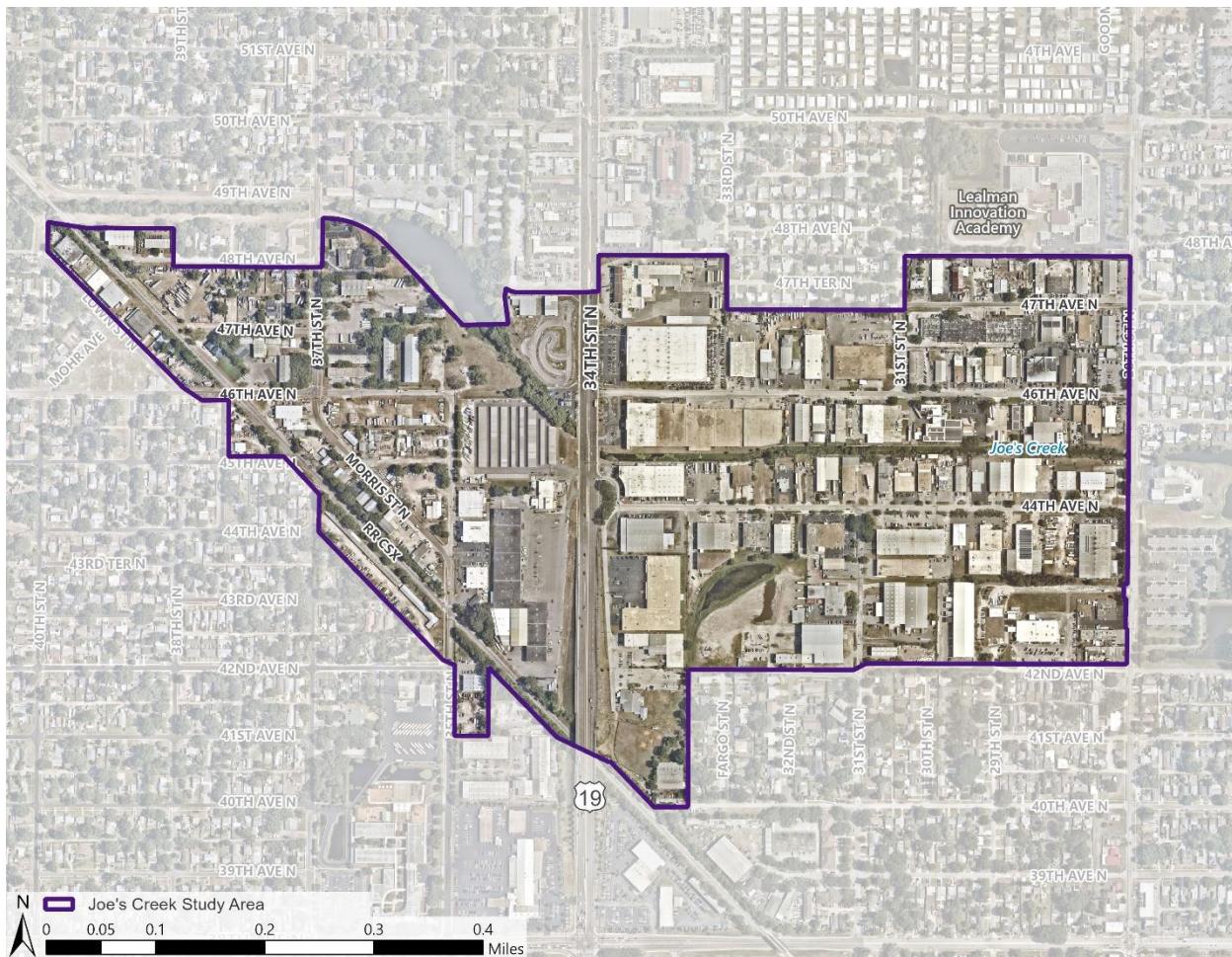


Figure 1: Joe's Creek Study Area

## Background

The headwaters of St. Joe's Creek were once a series of wetlands and natural scrub whose hydrology was characterized by naturally occurring storage areas. Many of the stormwater ponds present today in the Joe's Creek region have origins as these wetlands.

The creek outfalls into Cross Bayou approximately 5.8 miles downstream of the 37th Street crossing. The Joe's Creek region was historically used as agricultural land through the late 1800s and early 1900s, but as the population in Pinellas County grew throughout the late 50s and 60s, residential, industrial, and commercial land uses increased. Most of the wetlands have been replaced by impervious surfaces, leading to increased stormwater runoff through the years.

Land use changes in the study area throughout time can be seen in **Figure 2**.

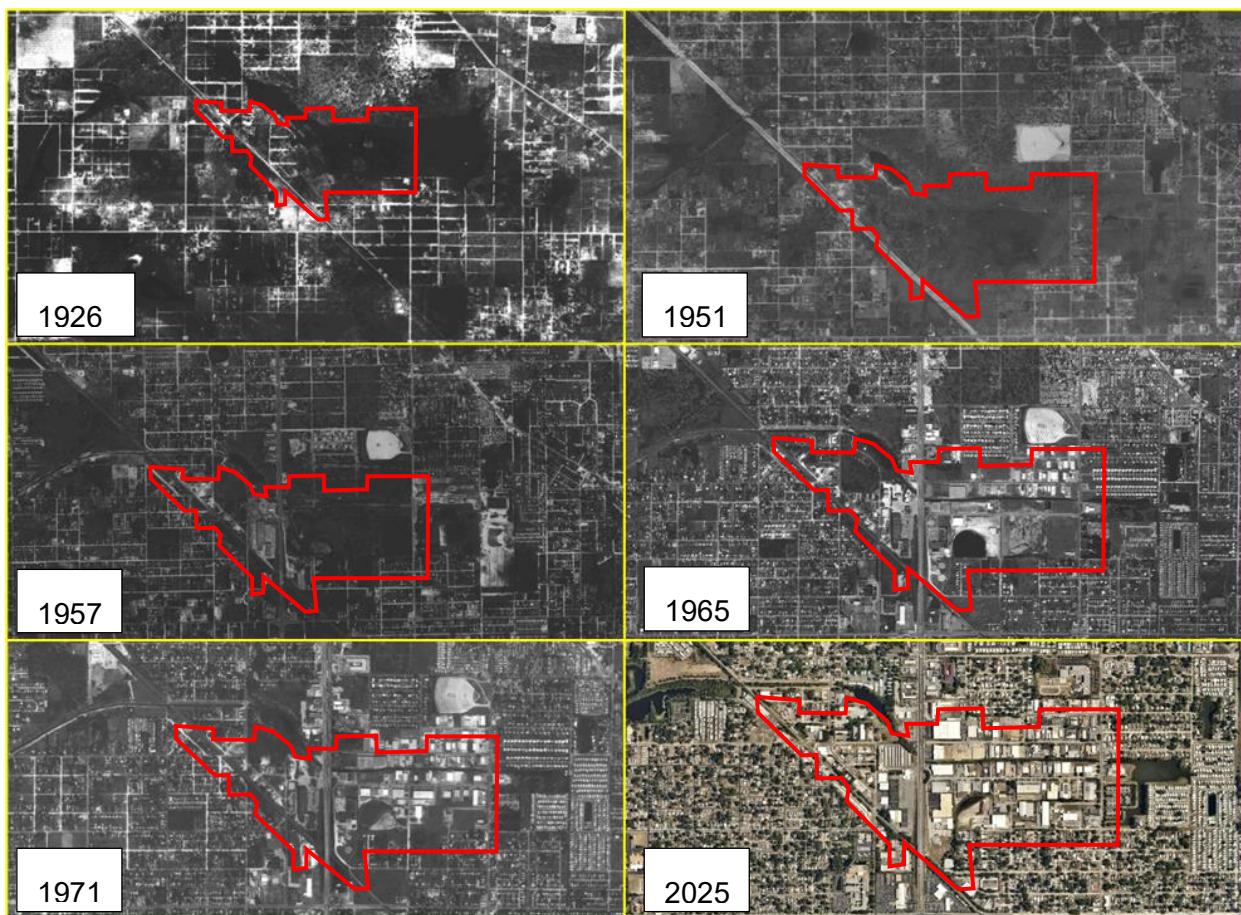


Figure 2: Joe's Creek Land Use Changes from 1926 to 2025

Despite the channelization and increase in runoff within the Joe's Creek watershed, the natural terrain has remained largely unchanged with low-lying areas that fill and spill over into one another. Closed conveyance systems with short times of concentration increase the rate at which these large depressional areas fill.

## Data Collection

Kimley-Horn collected and compiled a summary of previous work conducted in the Joe's Creek study area. Previous work reviewed includes:

- Lealman Regional Stormwater Facility (RSF)
- Joe's Creek RSF
- Joe's Creek Restoration and Greenway Trail Preliminary Engineering Report (PER)

The following data was collected and evaluated for use in the Stormwater Infrastructure Assessment:

- County Storm Sewer Network (REST)
- Joe's Creek TMDLs
- Joe's Creek water quality impairments
- Alum treatment facility metrics
- Pinellas County Property Appraiser Parcels
- County water quality data
- Current and future land uses
- Current and future rainfall trends (Joe's Creek PER)

Kimley-Horn conducted a data gap analysis to check the completeness and applicability of the collected data.

A field visit was conducted to identify stormwater inlets missing from the County REST service and to document the conditions of the inlets inside of the study area for future inventory.

## Data Gap Analysis

The previous work, along with the GIS data gathered for this assessment, was deemed sufficient for the current analysis.

Subsequent tasks aimed at designing and developing a stormwater treatment facility may require additional data related to specific design parameters not covered in this assessment. Further, surveying of selected parcels may be necessary to determine soil conditions and the depth to the water table, which are critical in designing a stormwater treatment facility.

All parcels in the project area are located within a Brownfield area, as identified by the Environmental Protection Agency (EPA). Soil investigations to confirm contamination will be required on any site selected for use as a stormwater treatment facility per Florida Statute Chapter 376.80.

Integration of stormwater treatment facility infrastructure into the existing conveyance network to pump water from the facility to Joe's Creek will require subsurface utility investigations to accurately locate existing utilities.

## Previous Projects and Results

Pinellas County has previously evaluated flood mitigation projects in the study including: the Joe's Creek Industrial Park, the Lealman Community Redevelopment Area (CRA), and the greater Joe's Creek Watershed. A location map of the study area is shown in **Figure 3**.

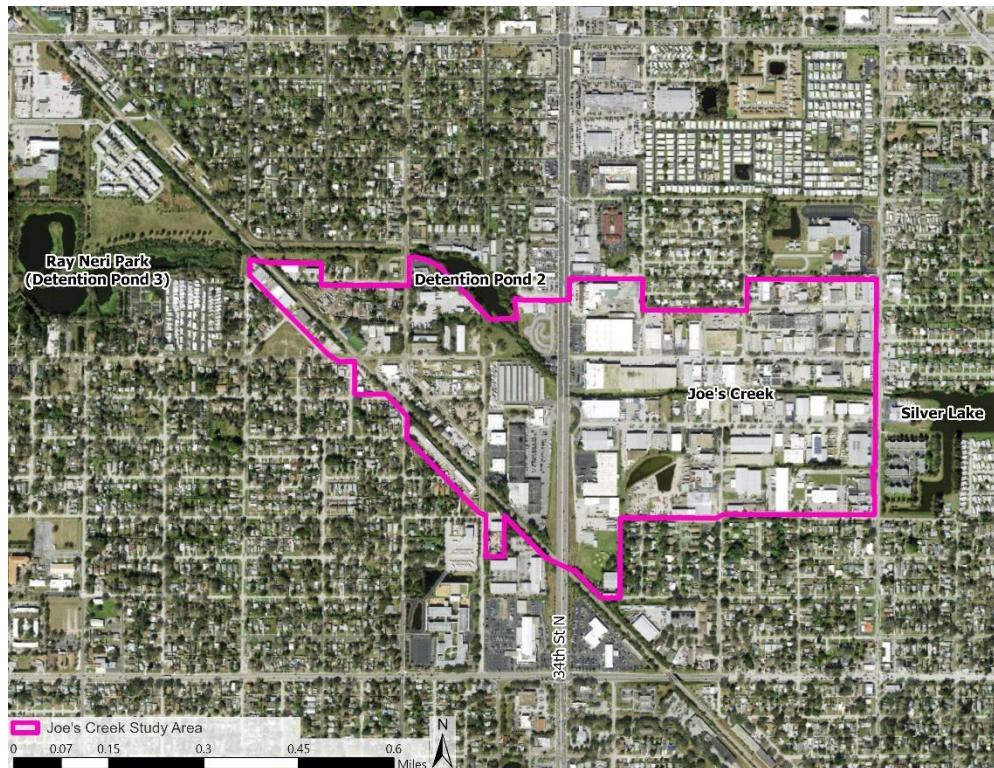


Figure 3: Joe's Creek Study Area

Flood mitigation solutions presented within past studies included:

- Adding storage upstream and downstream of the study area
- Improving the hydraulic conveyance capacity underneath 34<sup>th</sup> Street North
- Improving channel geometry downstream of 34<sup>th</sup> Street North
- Installing operable weirs at Silver Lake, Detention Pond 2, and Detention Pond 3

Water quality alternatives presented within past studies included:

- Floating wetlands
- Increased treatment volume at existing facilities
- Alum treatment of the base and peak flows.
- Low Impact Development (LID) and Green Infrastructure (GI)

#### Lealman RSF

In 2022, Kimley-Horn conducted a feasibility analysis for a regional stormwater facility in the Lealman CRA with the objective of creating a credit system to incentivize redevelopment in the surrounding area (Kimley-Horn, 2022). The evaluation included a review of existing nutrient loadings, potential nutrient removal and proposed RSF locations.

**Table 1** provides annual gross and net loads for the study area as well as the percentage of Total Nitrogen (TN), Total Phosphorus (TP), Biochemical Oxygen Demand (BOD), and Total Suspended Solids (TSS) removed annually.

Table 1: Annual Average Gross and Net loads in pounds per year, and Percent Removed

Load	TN	TP	BOD	TSS
Gross Load	37,696 (lb/yr)	8,217 (lb/yr)	162,094 (lb/yr)	1,089,827 (lb/yr)
Net Load	33,828 (lb/yr)	7,193 (lb/yr)	145,642 (lb/yr)	951,445 (lb/yr)
Percent Removed	10%	12%	10%	13%

Evaluation of the flood mitigation alternatives required merging four ICPR4 models together: the refined Lealman area, the City of St. Petersburg, the Kenneth City model, and the downstream legacy Joe's Creek model.

The Southwest Florida Water Management District (SWFWMD) noted that a RSF must be within the same Water Body Identification (WBID) as the developments in order to utilize the facilities credits. Since Lealman is split into two WBIDs, Joe's Creek and Sawgrass Lake, one RSF would not be able to serve the entire CRA. This created a need for a Joe's Creek RSF.

Key takeaways from the Lealman RSF project include:

- The Haynsworth Tract parcel was identified as a viable parcel to be leveraged as an RSF to incentivize development of County projects in the Sawgrass Lake watershed.
- Water quality credits are available to redevelop the Lealman CRA within the Sawgrass Watershed.
- The suggested credit system established developer credit costs of \$14,867 per acre of impervious area in 2021.
- There are limited options to resolve flooding in the upstream portion of Joe's Creek without significant investments in infrastructure and property acquisition.

### Joe's Creek RSF

The objective of the Joe's Creek RSF project (Kimley-Horn, 2023) was to recommend a water quality credit system for the portion of the Lealman CRA that falls within the Joe's Creek watershed. The project also included a flood mitigation sensitivity analysis, which further refined modeling efforts from the Lealman RSF

Kimley-Horn evaluated a total of 27 flood mitigation alternatives via ICPR4 modeling. The top five flood mitigation alternatives selected for further consideration during this study are shown in **Table 2**.

Table 2: Joe's Creek RSF Top Five Flood Mitigation Alternatives

Alternative	Description
10_10+8_1	An additional 40-Ac at Silver Lake with an additional 13-Ac and raised weir at Detention Pond 3, and the improved culvert underneath 34 <sup>th</sup> Street.
10	An additional 40-Ac at Silver Lake
10_6_2	An additional 13-Ac at Detention Pond 3, the improved culvert underneath 34 <sup>th</sup> Street, and a 30-Ac community asset on the SW corner of the industrial park
14	Diversion pipe from Alt 19 to just West of 49 <sup>th</sup> Street North including the improved culvert underneath 34 <sup>th</sup> Street
8_1	An additional 13-Ac at Detention Pond 3 and the improved culvert underneath 34 <sup>th</sup> Street

Alternative 10\_10+8\_1 resulted in the greatest number of structures removed from floodplains at 28 out of 51 identified using the refined Lealman ICPR4 model.

The Joe's Creek RSF project also proposed providing a water quality credit system for Joe's Creek with an alum treatment facility. When combined with pumps treating the base flow, the proposed alum system could provide a greater degree of nutrient removal on a per-acre basis

compared to wet ponds. This alum facility would also target the first-flush generated by the Industrial Park.

Several locations were identified as suitable alum facility sites that could potentially capture the baseflow and a percentage of the first flush, as shown in **Figure 4**.

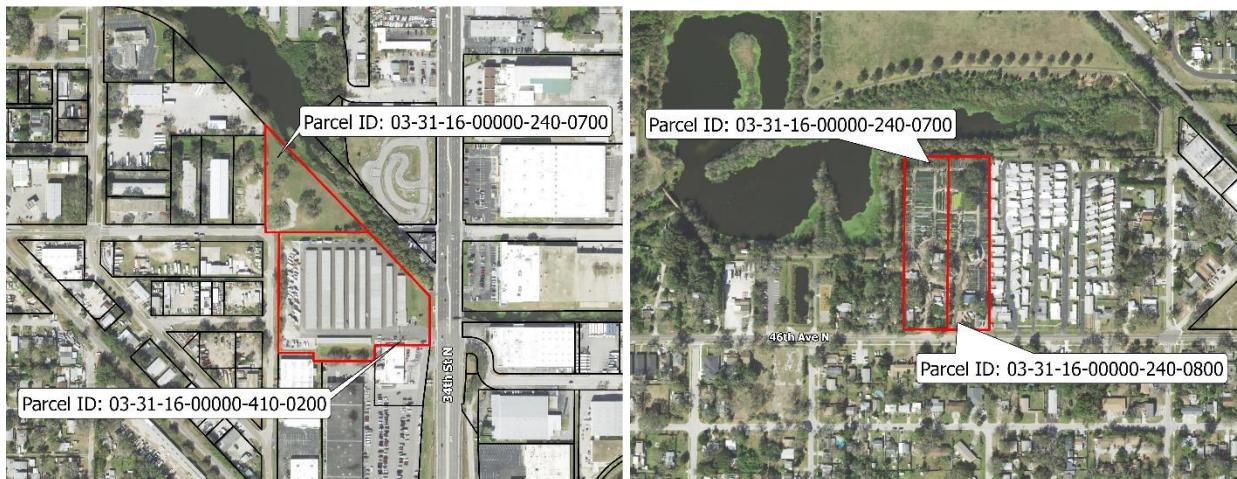


Figure 4: Alum Facility Candidate Sites Option #1 (Left) and Option #2 (Right)

Site options #1 and #2 were selected based on size, site flexibility, and consideration for future related projects. The County contacted the property owners for Parcels 03-31-16-00000-410-0200, 03-31-16-00000-240-0700, 03-31-16-00000-240-0800 for potential acquisition; however the asking price was initially deemed as expensive. Parcel ID: 03-31-16-00000-240-0700 is owned by the County but at present is conceptualized in the Joe's Creek Restoration and Greenway Trail PER as a storage area. Additionally, this parcel is restricted for development because it is currently used as a storage yard and debris management area.

#### Joe's Creek Restoration and Greenway Trail PER

The Joe's Creek Channel Restoration and Greenway Trail project evaluated flood mitigation, water quality improvement, and local mobility alternatives from Silver Lake to 54th Avenue (Jacobs, 2024). The Creek was divided into geomorphic reaches and two alternatives were then developed for most reaches.

The selected alternative, Alternative B, incorporated pre-treatment of runoff feeding Silver Lake, an operable weir at Silver Lake, upsizing the 34<sup>th</sup> Street Culvert, expansion to Detention Pond 2 coupled with an operable weir and wetland treatment, and an operable weir at Ray Neri Park (Detention Pond 3). The recommendations from Alternative B were in general alignment with the results and recommendations from the Joe's Creek RSF study (Alternative 10\_10+8\_1); with the exception being that the PER did not evaluate storage upstream of 34th Street.

The Pinellas County Flooding Level of Service (FLOS) utilizes the 100-Year, 25-Year, and 10-Year/24-Hour design storm events as a measurement of acceptable risk to assets in the study area. The FLOS is considered deficient if the flood water elevation exceeds the asset violation elevation during its design storm event.

Table 3: FLOS Asset Violation Metrics

Storm Event	Asset	Violation
10-Year	Non-arterial, non-evacuation route roadways	Flooding above the lowest point of roadway centerline
25-Year	Outfall Ditches, Major Channels, and Canals	Top of bank is exceeded
100-Year	Evacuation Routes and Structures	Flooding above the lowest point of roadway centerline, or above finished floor elevation (FFE)

75 of the 188 structures within the study area intersect with the alternative B proposed 100-Year/24-Hour floodplain. While this does not indicate the presence of structural damage for all 75 structures, flooding can inhibit access to or from these buildings, indicating a level of service deficiency. It should be noted that some parcels contain multiple buildings that were analyzed.

The floodplain extents of the existing conditions 100-Year/24-Hour event and the Alternative B proposed conditions 100-Year/24-Hour event are shown in **Figure 5**.

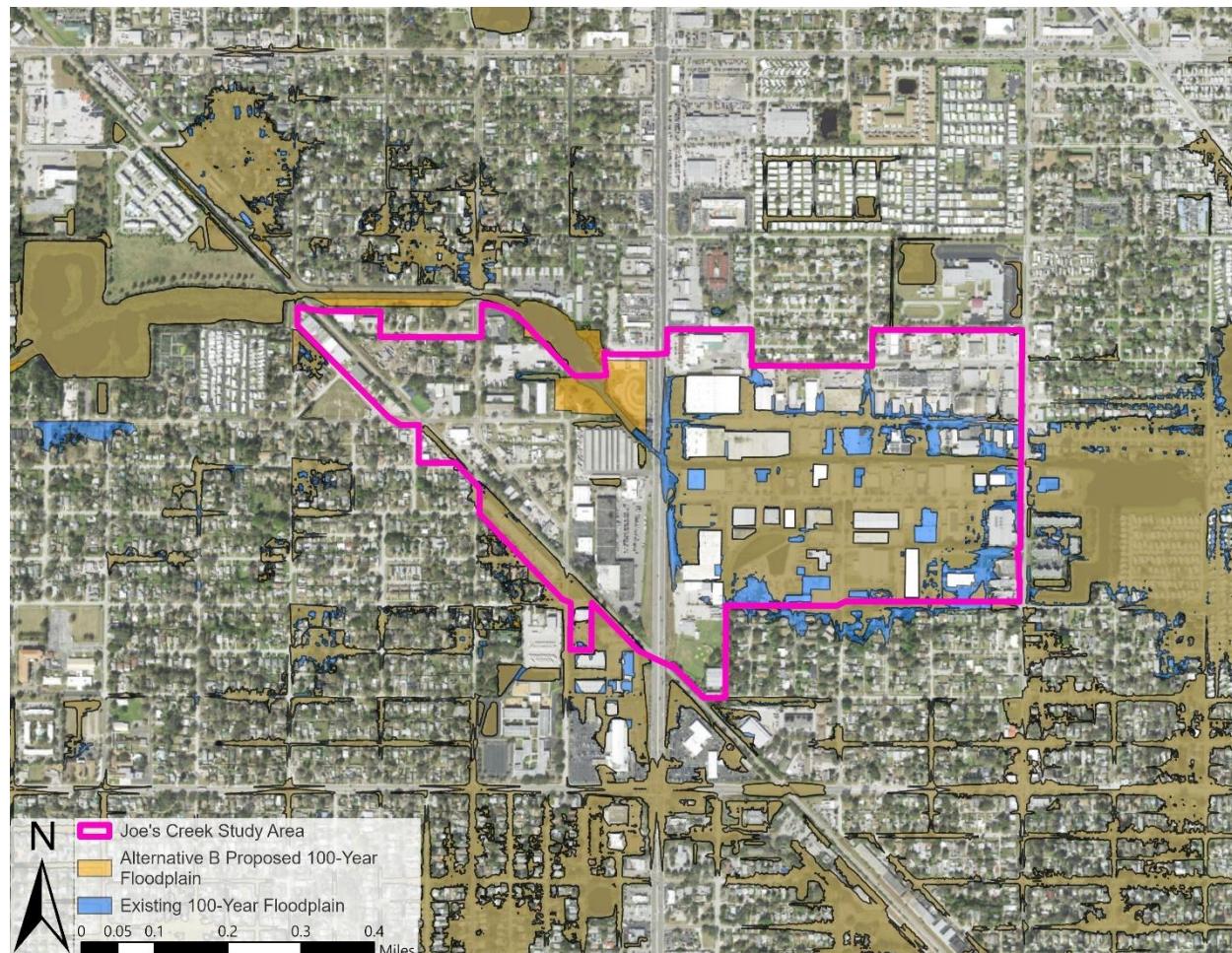


Figure 5: Existing Conditions and Alternative B Proposed Conditions 100-Year/24-Hour Floodplain Extents

The following water quality projects near the master plan study area were recommended.

- Silver Lake: conversion of Silver Lake into a treatment system with portions of shallow and deep marshes planted with wetland vegetation.
- 55th Street North: a water quality improvement bench in the 55th Street North channel to provide treatment.
- Raymond H. Neri: incorporating marsh communities and creating alternating land baffles to improve hydraulics.

Additionally, due to the extent of the developed land, relative lack of open spaces, and shallow groundwater conditions, LIDs and GI were recommended to improve the water quality.

## **Joe's Creek Master Plan Study Area**

Building on the results of the previous studies, Kimley-Horn conducted an evaluation to improve the existing flooding and water quality in the Joe's Creek Master Plan study area. This involved a parcel level review of existing constraints and opportunities for improvement as detailed in the following sections.

### **Water Quantity**

There are three major storage components within the Joe's Creek watershed directly impacting the study area: 1) Silver Lake east of the study area, 2) Detention Pond 2 northwest of the study, and 3) Ray Neri Park (Detention Pond 3) west of the study area. These elements provide flood mitigation, water quality enhancement, and green space to this section of the Joe's Creek corridor.

The three storage components are distinguishable from the Digital Elevation Model (DEM) shown in **Figure 6**.

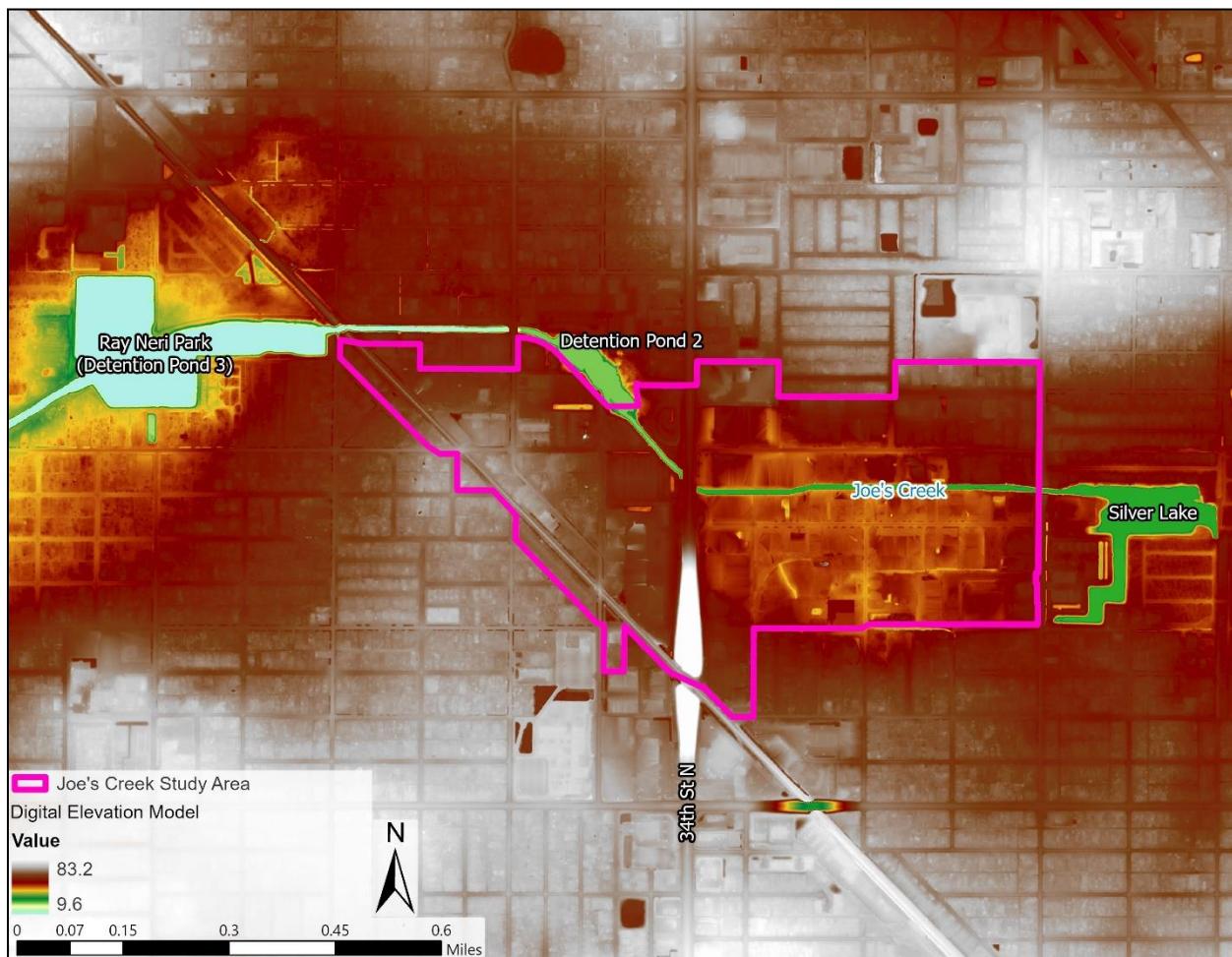


Figure 6: Digital Elevation Model and Major Storage Areas

Runoff within the study area is conveyed to Joe's Creek by a network of closed conduit and open swale systems. Subwatersheds were sourced from the existing conditions model of the Joe's Creek PER.

**Figure 7** highlights the existing stormwater infrastructure and subwatersheds contributing to the conveyance of stormwater runoff within the study area.

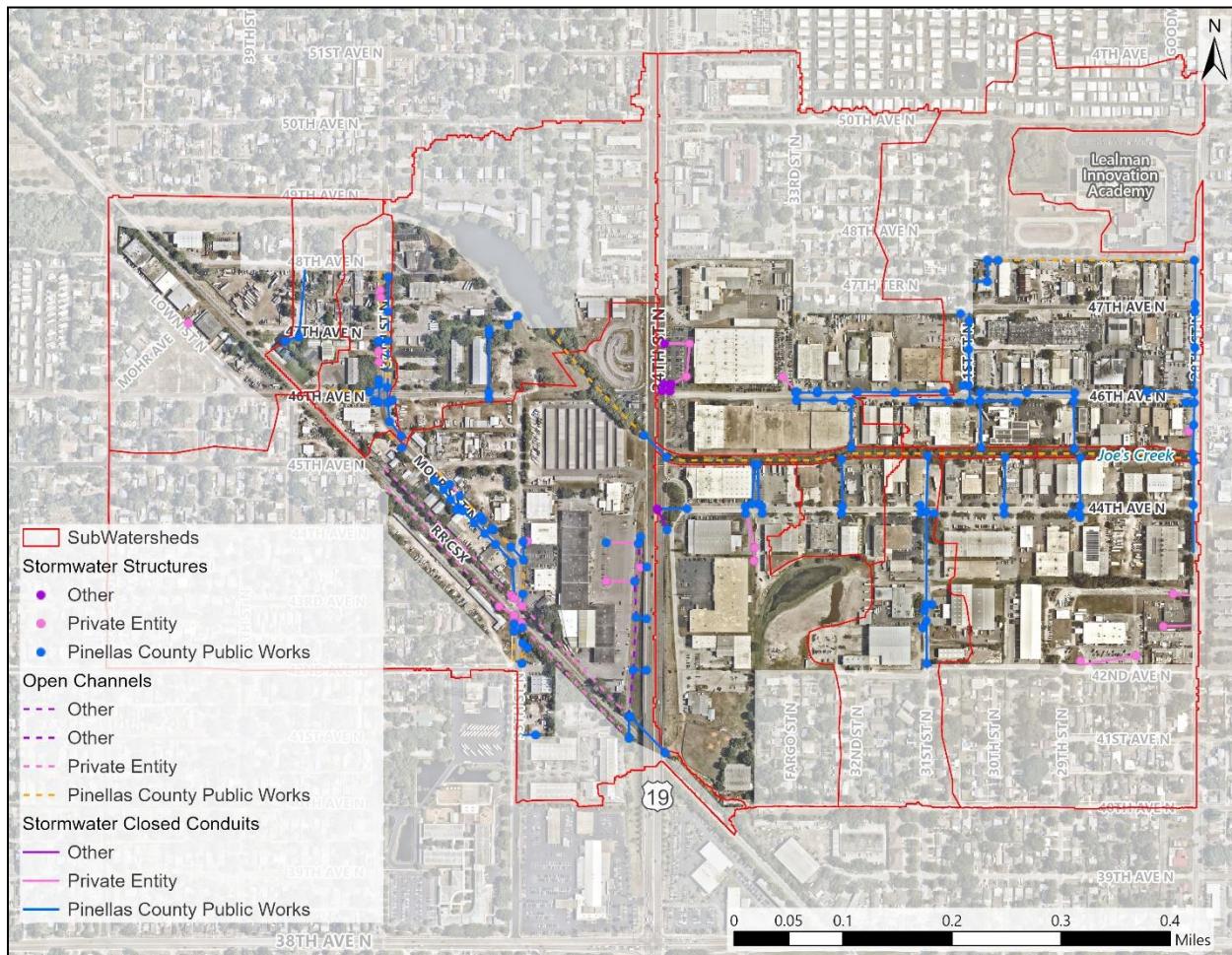


Figure 7: Joe's Creek Existing Infrastructure

A field visit was conducted to document the conditions of stormwater inlets and to identify missing stormwater inlets from the County REST service. A total of 103 structures within the study area were identified including grate inlets, curb inlets, and control structures. 22 of the identified grate and curb inlets were found to be missing from the REST service. The pipe sizes, material, and condition can be found in the Inlet\_Identification layer included in the separate geodatabase attachment, Joes\_Creek\_Stormwater.gdb.

The embankment along Joe's Creek within the study area is reinforced with sheet piling and/or bulkheads between 28<sup>th</sup> Street North and 34<sup>th</sup> Street North with significant sediment accumulation and overgrown vegetation. Additional information regarding the condition of the existing bulkheads can be found in the Joe's Creek Bulkhead Condition Assessment (Kimley-Horn, 2025).

The 100-year floodplain extents of Alternative B and Alternative B plus 40-acres of storage at Silver Lake is shown in **Figure 5**.

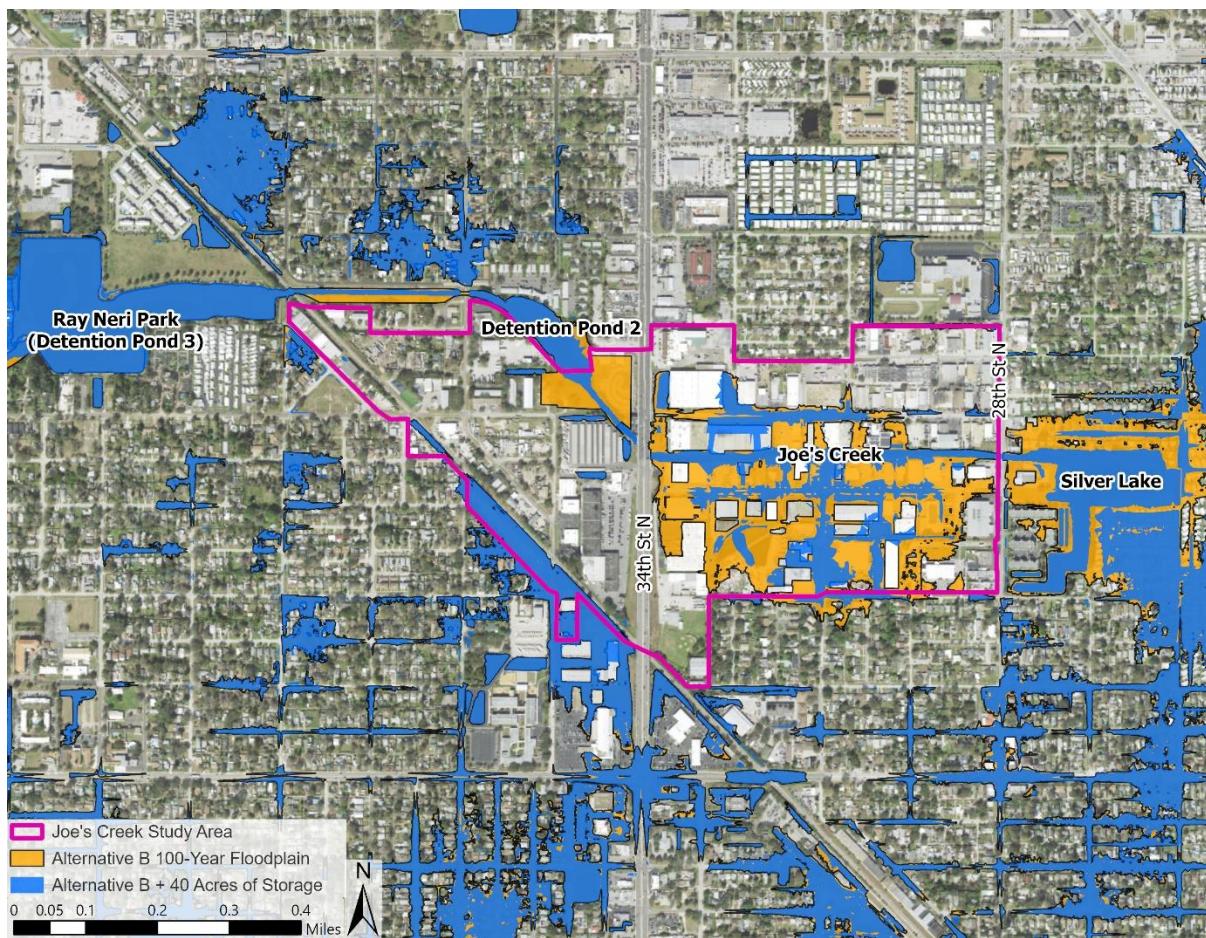


Figure 8: Alternative B and Alternative B+40 Acres of Storage Proposed 100-Year/24-Hour Floodplain Extents

The addition of 40 acres of storage in Silver Lake significantly reduced the 100-year floodplain and decreased the number of buildings within it from 75 to 31 out of the 188 structures in the study area. Further flood reduction efforts are limited to the parcel level due to challenges related to low-lying topography and site geometry. Interventions such as green roofs, rain gardens, dry and wet floodproofing, and cisterns can be utilized to mitigate flooding. Parcel-level intervention should be implemented regardless of whether the additional storage is added.

Since the existing land use is nearly 100% impervious, improvements to the current land use will result in a decrease in imperviousness and improve stormwater management within the Industrial Park. Any redevelopment must attenuate ensuring that post discharges will not exceed existing condition discharges. Improvements beyond attenuation will provide a benefit. As such, under the attenuation requirement the existing secondary drainage system is sufficient for the proposed future built out condition.

## Water Quality

This section evaluates the current water quality impairments of Joe's Creek, outlines Total Maximum Daily Loads (TMDLs), and examines pollutant runoff contributions from the study area to assess future water quality improvements.

Water quality impairments refer to the condition when water bodies fail to meet established water quality standards necessary to support their designated uses. Impairments can be caused by various pollutants, such as bacteria, nutrients, sediments, and toxic substances. Joe's Creek is in the Long Bayou Watershed, with the associated segment waterbody IDs (WBID): Joe's Creek (1668A), Pinellas Park Ditch No 5 (1668B), St Joe's Creek Tidal Section (1668E). The waterbody is considered impaired by the Florida Department of Environmental Protection (FDEP).

These impairments include elevated levels of *Escherichia coli* (E. coli), Enterococci bacteria, dissolved oxygen deficiencies, and excess nutrients, which contribute to algal blooms and reduced water quality. Florida also has a mercury impairment statewide.

**Table 4** details the specific water quality impairments identified in different segments of Joe's Creek.

Table 4: Water Quality Impairments for Joe's Creek

WBID	Name	Impairment
1668A	Joe's Creek	<i>Escherichia coli</i> (E. coli)
1668B	Pinellas Park Ditch No 5 (Bonn Creek)	<i>Escherichia coli</i> (E. coli) and Nutrients (Macrophytes)
1668E	St. Joe's Creek (Tidal Segment)	Dissolved Oxygen (Percent Saturation), Enterococci, and Nutrients (Chlorophyll-a)
State	Florida	Mercury

Additionally, the entire study area is classified as a Brownfield area due to the potential presence of a hazardous substance, pollutant, or contaminant. Brownfield areas can complicate development if a pollutant is identified because of the necessary environmental assessments, remediation efforts, and potential health risks.

A Brownfield area map of the study area is shown in **Figure 9**.

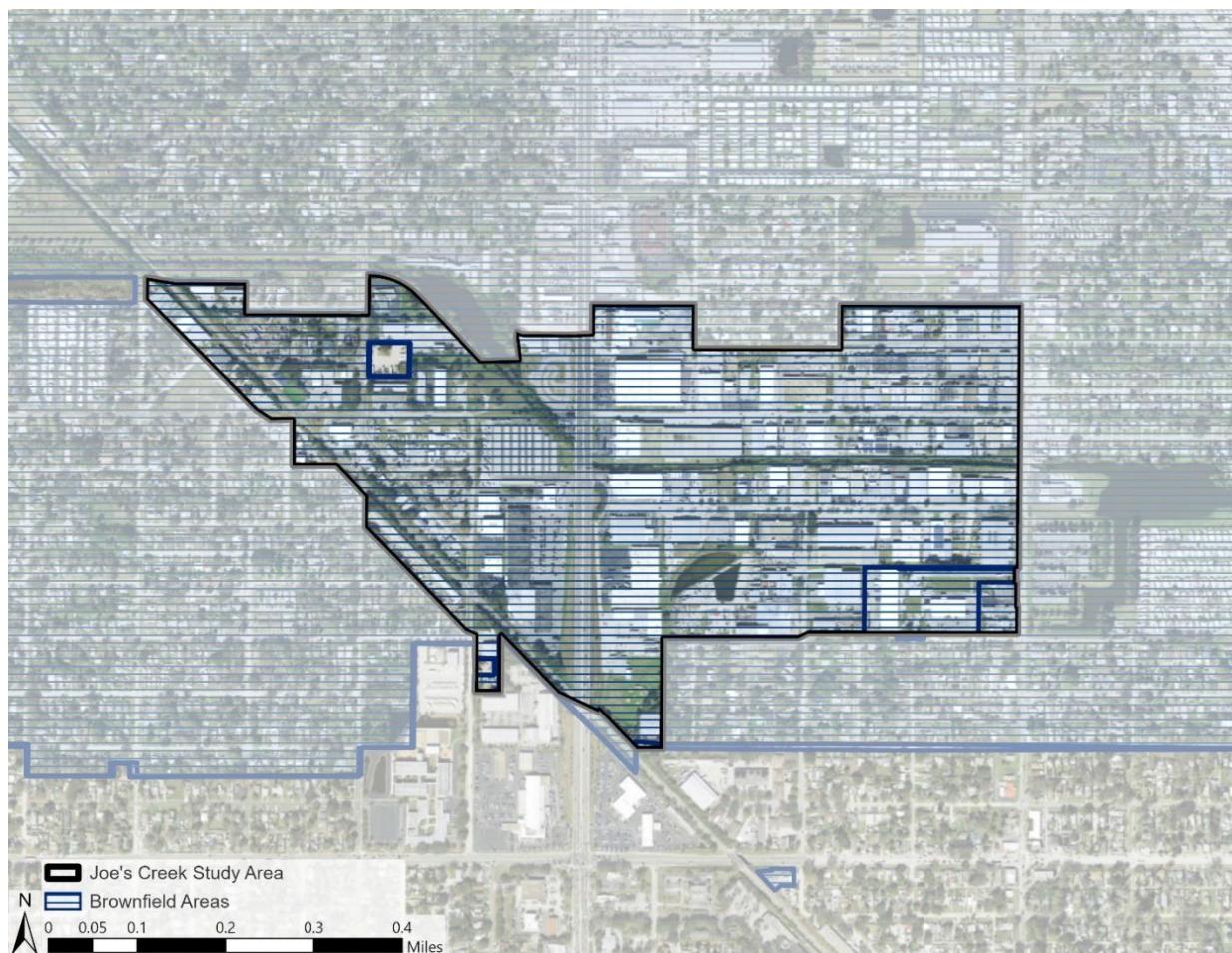


Figure 9: Brownfield Areas Map

TMDLs establish limits to ensure water quality standards are met, preventing human health risks and environmental impacts from contamination. To limit the pollutants entering Joe's Creek, the freshwater portion, WBID 1668A, has several TMDLs including nutrients (TN and TP), and biochemical oxygen demand (BOD). TMDLs effecting the study area are shown in **Table 5**.

Table 5: Total Maximum Daily Loads for Nutrients in Joe's Creek

WBID	Parameter	TMDL
1668A	TN	49%
	TP	49%
	DO	$\geq 5 \text{ mg/L}$
	BOD	$\leq 2.0 \text{ mg/L}$

In the study area, the majority of soils are poorly drained, and over 90% of the area is covered by impervious surfaces, significantly affecting drainage and infiltration. An analysis and calculation of the total runoff and annual nutrient loading based on the land use, hydrologic soils group, and annual rainfall can be found in **APPENDIX A**.

The total runoff and annual nutrient loading of the study area is shown in **Table 6**.

Table 6: Total Runoff and Nutrient Loading in the Study Area

Total Area (Ac)	Impervious Area (Ac)	Total Runoff (Ac-ft/yr)	TN (lb/yr)	TP (lb/yr)
192.1	176.9	636.2	2108.1	426.1

## Proposed Alum Treatment Concepts

Kimley-Horn composed a multi-criteria, weighted matrix evaluation to rank the viability of parcels to construct an alum treatment facility. Parcels inside of the study area and the surrounding downstream area were analyzed to identify two viable alum treatment concepts capable of meeting the water quality requirements. The methodology and analysis used to select viable parcels can be found in **APPENDIX B**.

A summary of the recommended parcels can be found in **Table 7**.

Table 7: Recommended Parcel Information

Parcel	Parcel ID	Size (Ac)	Land Value (\$)	Exposure (%)	Vacancy	Distance (ft)
Option #1	03-31-16-51012-027-0010	2.25	\$430,418	0%	Vacant	409
Option #2	03-31-16-0000-230-2500	0.68	\$ 142,530	0%	Occupied	250

The annual TN and TP the recommended parcels can remove from the study area is found in **Table 8**.

Table 8: Recommended Parcel Annual Nutrient Removal

Parcel	TN Removed (lb/yr)	TN Removed (%)	TP Removed (lb/yr)	TP Removed (%)
Option #1	1,545.10	73.3%	203.66	47.8%
Option #2	467.15	22.2%	61.57	14.5%

A preliminary engineer's Opinion of Probable Construction Costs for each of the recommended alum treatment facilities can be found in **APPENDIX C**.

Please note that based on the Lealman RSF recommendations for a wet detention facility, Detention pond 3 can still be leveraged, requiring a modification to the existing permit (flood control).

## Redevelopment Strategies

The Pinellas County Stormwater Manual (Pinellas County, 2024) outlines the goal of stormwater management as minimizing the adverse effects of urban development on communities, water bodies, and wetlands. The study area is highly urbanized, almost entirely characterized by impervious land use, and is largely impacted by the 100-Year/24-Hour Alternative B proposed floodplains. Future implementation of attenuation strategies that incorporate LID and GI techniques could help reduce peak flow discharge, while simultaneously enhancing water quality treatment. The reduction in runoff that these improvements will provide will reduce the quantity of nutrients that enter Joe's Creek.

Cisterns, green roofs, rain gardens, and dry floodproofing are recommended for anticipated implementation in the JCIP. The following sections outline the recommended redevelopment strategies.

### Cisterns

Cisterns are an effective strategy designed to alleviate stress from the existing system during high intensity storm events by storing water in tanks underground, or in other available spaces. The variability in the size, shape, and placement of cisterns offers flexibility in system design. By reducing runoff and storing rainwater, cisterns operate as small detention basins that can stagger the release of water to reduce peak flows.

Cisterns can also provide water quality benefits by allowing suspended solids to settle out of the water while it is being stored. Annual maintenance is required for inspections and to flush the collected solids from the detention system. Regular water treatment is also necessary to eliminate mosquito breeding problems.

### Green Roofs

Green roofs provide treatment by reducing runoff, collecting rainfall, decreasing peak flow in stormwater conveyance systems, and providing nutrient removal. The high quantity of large industrial buildings with flat roofs makes the JCIP a good location for green roofs. The plants and soil collect rainwater which reduces the volume of discharge and pollutant load coming from rooftop surfaces. In addition to surface water benefits, green roofs provide building insulation and a reduction in the urban heat island effect.

Green roofs have high installation and maintenance costs due to the complexity of their design and the requirements of the plants. Additional structural support for the roof may be needed to account for the added weight of the plants, soil, and collected water. The plants and irrigation system require regular inspection to maintain functionality.

An example of a green roof is shown in **Figure 10**.



Figure 10: Green Roof Example

### Rain Gardens

Rain gardens attenuate and treat water in small depressions filled with native plants. They collect stormwater runoff and allow it to infiltrate into the ground, pollutants contained in the runoff are treated by the garden rather than entering the Creek. Rain gardens are flexible in their design and placement on a property but can take up large areas. They will need to be maintained once per year to remove weeds, dead material, and replace mulch. Installation of rain gardens in JCIP would help reduce peak flow and provide nutrient treatment.

An example of a rain garden is shown in **Figure 11**.



Figure 11: Rain Garden Example

### Dry Floodproofing and Wet Floodproofing

Dry floodproofing involves the deployment of waterproof barriers before a storm event to prevent water from entering buildings. The configuration of dry floodproofing can be installed directly on a facility or deployed around the vicinity of a given structure. Wet floodproofing involves waterproofing the walls and floors of a building and moving mechanical equipment to a safe height. This system allows water to enter a building without causing damage. Wet floodproofing is good for non-residential buildings and will decrease cleanup costs after a building floods. Wet floodproofing requires regular maintenance and long-term exposure to floodwaters can cause structural concerns. Both dry and wet floodproofing are effective systems for protecting properties that experience frequent flooding.

Dry and wet floodproofing provides no water treatment or attenuation benefits; its primary purpose is to reduce flood damage to structures. While dry and wet floodproofing is a valuable solution for

properties vulnerable to frequent flooding, it should be complemented by other strategies that address storage and treatment needs for a comprehensive stormwater management approach.

An example of deployable and portable dry floodproofing is shown in **Figure 12**.



Figure 12: Deployable Dry Floodproofing Retrofit

### Elevating Structures

Properties undergoing complete redevelopment should consider elevating the structure to protect the building from flooding. Elevating structures consist of raising the finished floor elevation (FFE) above existing floodplains. Before properties are elevated, the drainage impacts on adjacent sites need to be assessed. Elevating structures does not provide water attenuation or treatment benefits. Other strategies should be used in combination to reduce flooding and improve water quality.

### Traditional Stormwater Management Strategies and Pipe Improvements

Traditional stormwater management strategies such as retention ponds, detention ponds, and treatment swales provide greater water storage capabilities than many BMPs but need sufficient space to be constructed. These strategies provide treatment through sedimentation, infiltration, and biological uptake, but these processes may be limited by poorly drained soils and geometric constraints.

These management strategies were considered for JCIP but ultimately deemed unfeasible due to the area's inability to meet minimum size requirements. Treatment swales were considered along 46th Avenue N, 44th Avenue N, and 31st Street N but the limited right-of-way was determined to not meet size requirements. However, these improvements could still work if the County purchased parcels with a large enough footprint for redevelopment.

## Conclusions

The combination of topography, poorly drained soils, channelization, and development has resulted in significant flooding issues and water quality problems within the study area. To improve water quality, two parcels have been selected as viable candidates for the installation of an alum treatment facility.

### Water Quality

The Environmental Resource Permit (ERP) Applicant's Handbook Volume 1 (FDEP, 2024) requires an 80% reduction of average annual loading of nutrients between pre and post development for watersheds that contain an impaired water. Additional information related to water quality requirements can be found in **APPENDIX B**.

Parcel option #1 (03-31-16-51012-027-0010) inside the JCIP and parcel option #2 (03-31-16-00000-230-2500) outside the JCIP are the recommended locations for an alum treatment facility. If both facilities were constructed, the TN generated by runoff within the study area could be reduced by 95.5%, and the TP could be reduced by 62.3%.

The minimum pond size requirement for the alum RSF is 0.50 acres to accommodate the 3 cfs baseflow of Joe's Creek and to achieve the recommended 3-hour Hydraulic Retention Time (HRT). The RSF must be accessible for sludge removal. Additionally, jar and flow rate testing will be necessary to determine the alum dosage and optimize hydraulic mixing efficiency during treatment.

In combination with the RSF, parcel-level BMPs such as green roofs, cisterns, and rain gardens installed with reduced footprints will help property owners meet treatment requirements.

### Water Quantity

The RSF as devised will only provide water quality benefits which would require property owners to provide attenuation. The maximum allowable discharge for new and redevelopments is limited to the peak rate of runoff from the parcel under existing site conditions for the 10-year and 25-year, 24-hour storm events according to the Pinellas County Stormwater Manual (Pinellas County, 2024).

The same parcel-level BMPs recommended to treat runoff will also reduce imperviousness and provide attenuation to aid property owners in maintaining existing site conditions. For property owners in areas in which the topography is low-lying and vulnerable to flooding, the integration of parcel-level redevelopment strategies such as elevating structures, and dry/wet-proofing would assist in providing flood protection.

Given the high degree of existing urbanization, nearly 100% impervious, post redevelopment flows should be achievable within the redevelopment tenets of the master plan (i.e. additional greenspace). Primary drainage reduction through the implementation of the Joe's Creek Restoration and Greenway Trail CIP, plus the upsizing of the 34th Street culvert crossing and additional storage upstream of 28th Street will significantly reduce flooding in the JCIP. A summary of key recommendations can be found in **Table 9**. The existing secondary drainage system is sufficient for the proposed future built out condition.

Table 9: Summary of Key Recommendations

Key Recommendations
Add floodplain storage upstream and downstream of the JCIP
Upsize the 34th Street culvert crossing
Implementation of the Joe's Creek Restoration and Greenway Trail CIP
Implement regional stormwater facility (water quality)

## References

1. Kimley-Horn (2022), "Lealman Regional Stormwater Facility."
2. Kimley-Horn (2023), "Joe's Creek Regional Stormwater Facility – Development of a Credit System"
3. Jacobs (2024), "Joe's Creek Model Update, Alternatives Analysis, and Feasibility Study Preliminary Engineering Report."
4. Kimley-Horn (2025), "Joe's Creek, St. Petersburg, FL – Bulkhead Condition Assessment."
5. Pinellas County (2024), "Stormwater Manual." Accessed at [https://pinellas.gov/wp-content/uploads/2021/11/Stormwater\\_Manual.pdf](https://pinellas.gov/wp-content/uploads/2021/11/Stormwater_Manual.pdf)
6. Harper, H.H. (2007), "Current Research and Trends in Alum Treatment of Stormwater Runoff." In Proceedings of the 9th Biennial Conference on Stormwater Research & Watershed Management. Orlando, FL
7. Florida Department of Environmental Protection (2024), "Environmental Resource Permit Applicant's Handbook Volume I (General and Environmental)." Accessed at [https://www.sfwmd.gov/sites/default/files/documents/swerp\\_applicants\\_handbook\\_vol\\_i.pdf](https://www.sfwmd.gov/sites/default/files/documents/swerp_applicants_handbook_vol_i.pdf)



## APPENDIX A

Total Runoff and Annual Nutrient Loading Calculation

According to the Event Mean Concentration (ECM) theory, the concentration of total nitrogen (TN) and total phosphorus (TP) in stormwater runoff is dependent on the type of land use present. TN ECMs for Light Industrial, Low-Intensity Commercial and Multi-Family are 1.18 mg/L, 1.20 mg/L, and 2.32 mg/L, respectively (Harper, 2007). TP ECMs for Light Industrial, Low-Intensity Commercial and Multi-Family are 0.260 mg/L, 0.179 mg/L, and 0.520 mg/L, respectively, as shown in **Figure 1**.

TABLE 4-17

**SUMMARY OF LITERATURE-BASED RUNOFF  
CHARACTERIZATION DATA FOR GENERAL LAND  
USE CATEGORIES IN FLORIDA**

LAND USE CATEGORY	TYPICAL RUNOFF CONCENTRATION (mg/l)						
	TOTAL N	TOTAL P	BOD	TSS	COPPER	LEAD	ZINC
Low-Density Residential <sup>1</sup>	1.61	0.191	4.7	23.0	0.008 <sup>4</sup>	0.002 <sup>4</sup>	0.031 <sup>4</sup>
Single-Family	2.07	0.327	7.9	37.5	0.016	0.004	0.062
Multi-Family	2.32	0.520	11.3	77.8	0.009	0.006	0.086
Low-Intensity Commercial	1.18	0.179	7.7	57.5	0.018	0.005	0.094
High-Intensity Commercial	2.40	0.345	11.3	69.7	0.015	--	0.160
Light Industrial	1.20	0.260	7.6	60.0	0.003	0.002	0.057
Highway	1.64	0.220	5.2	37.3	0.032	0.011	0.126
<u>Agricultural</u>							
Pasture	3.47	0.616	5.1	94.3	--	--	--
Citrus	2.24	0.183	2.55	15.5	0.003	0.001	0.012
Row Crops	2.65	0.593	--	19.8	0.022	0.004	0.030
General Agriculture <sup>2</sup>	2.79	0.431	3.8	43.2	0.013	0.003	0.021
Undeveloped / Rangeland / Forest	1.15	0.055	1.4	8.4	--	--	--
Mining / Extractive	1.18	0.15	7.6 <sup>3</sup>	60.0 <sup>3</sup>	0.003 <sup>3</sup>	0.002 <sup>3</sup>	0.057 <sup>3</sup>

1. Average of single-family and undeveloped loading rates
2. Mean of pasture, citrus, and row crop land uses
3. Runoff concentrations assumed equal to industrial values for these parameters
4. Value assumed to be equal to 50% of single-family concentration

Figure 1: Event Mean Concentrations

These concentrations can be used in conjunction with annual runoff estimates to determine the average annual nutrient loading for a specified area, however, determination of the annual runoff quantities requires additional parameters.

Total runoff generated is dependent on total yearly rainfall, directly connected impervious area (DCIA), non-DCIA curve number (CN), and wet pond area. Total annual rainfall for the project area is approximately 51 inches/year. The DCIA is estimated based on literature values (Harper, Baker, 2007). The non-DCIA CN is identified using the TR-55 method which considers the soil parameter and the hydrologic soil group (HSG). The soils and land use data for the project area are show in **Figure 2** and **Figure 3**, respectively.

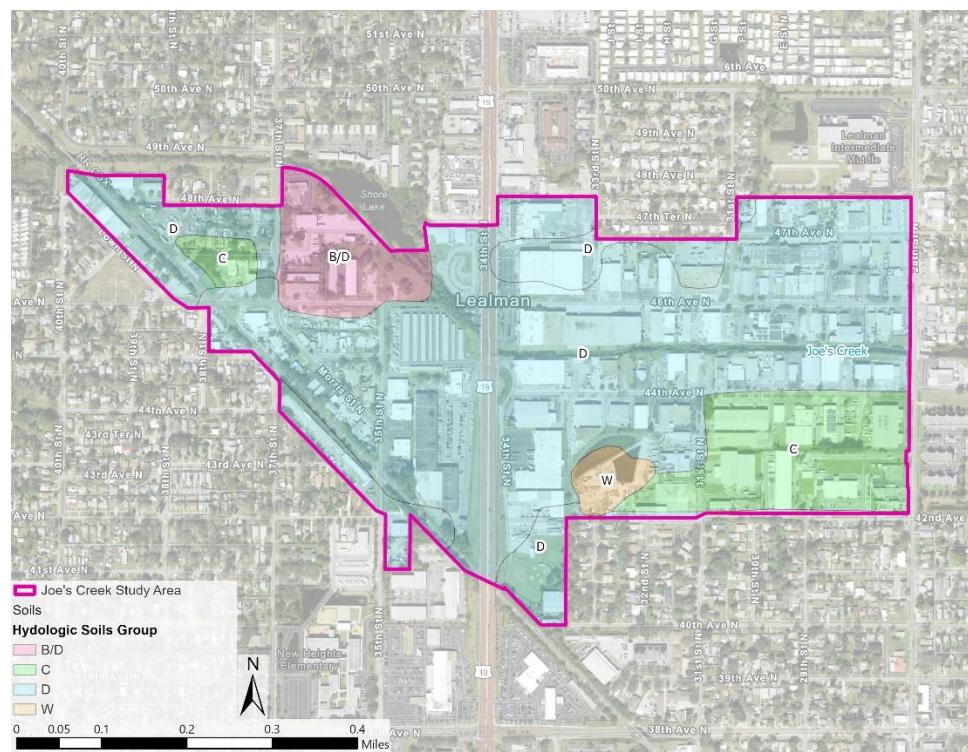


Figure 2: Soils and Hydrologic Soils Group

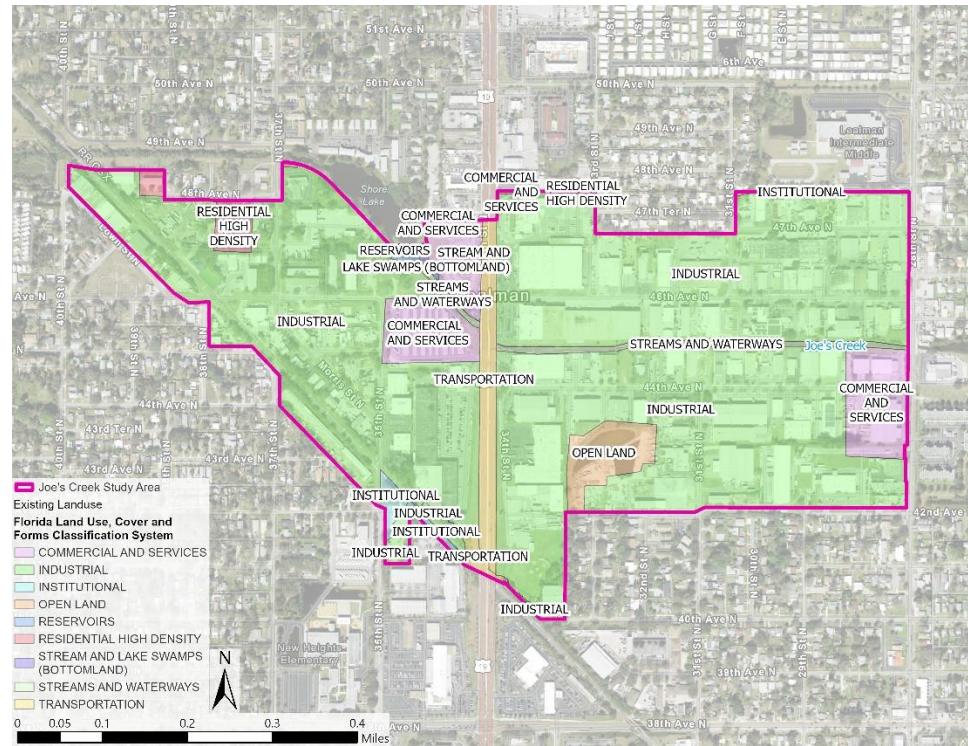


Figure 3: Hydrologic Land Use based on Florida Land Use, Cover and Forms Classification System (FLUCCS)

As the typical SCS curve number method is applicable only to single rainstorm events, inclusion of runoff coefficients to account for the probabilistic distribution of rainfall events over a given year is necessary. These were obtained from the BMP Trains technical reference developed by Harper, Baker, 2007.

**Table 3** indicates the existing land uses and their CNs, DCIA percent, and their annual runoff coefficient for the range of HSG's within the Study Area.

Table 1: Existing Conditions Curve Number

Curve Number	Hydrologic Soil Group (HSG)				DCIA %	Runoff Coefficient			
	B/D	C	D	W		B/D	C	D	W
Land Use									
INDUSTRIAL	93	91	93	100	95	0.791	0.788	0.791	0.823
COMMERCIAL AND SERVICES	95	94	95	100	90	0.759	0.754	0.759	0.823
INSTITUTIONAL	95	94	95	100	70	0.631	0.615	0.631	0.823
STREAMS AND WATERWAYS	100	100	100	100	100	0.823	0.823	0.823	0.823
STREAM AND LAKE SWAMPS (BOTTOMLAND)	100	100	100	100	100	0.823	0.823	0.823	0.823
OPEN LAND	84	79	84	100	0	0.182	0.13	0.182	0.823
RESIDENTIAL HIGH DENSITY	92	90	92	100	60	0.566	0.546	0.566	0.823
TRANSPORTATION	98	98	98	100	100	0.823	0.823	0.823	0.823
RESERVOIRS	100	100	100	100	100	0.823	0.823	0.823	0.823

Annual runoff can be determined by using the following formula:

$$\text{Annual Runoff} = \text{Annual Rainfall (in)}/12 * \text{Area (Ac)} * \text{Runoff Coefficient}$$

Total acreage for the study area is estimated to be 192.1 Acres, 176.9 of which is impervious. Total runoff for the study area is estimated to be 636.2 Ac-ft/year which results in annual TN and TP nutrient loads of 2108.1 lbs./yr and 426.1 lbs./yr, respectively. The total runoff and annual nutrient loading within the study area is shown in **Table 2**.

Table 2: Total Runoff and Nutrient Loading in the Study Area

Total Area (Ac)	Impervious Area (Ac)	Total Runoff (Ac-ft/yr)	TN (lb/yr)	TP (lb/yr)
192.1	176.9	636.2	2108.1	426.1



## APPENDIX B

Alum Facility Multi-Criteria, Weighted Matrix Evaluation

## Table of Contents

Table of Contents.....	1
List of Figures .....	1
List of Tables .....	1
Multi-Criteria Weighted Matrix Evaluation.....	2
Size.....	2
Land Value.....	3
Vacancy.....	3
Floodplain Exposure .....	3
Distance.....	4
Final Scoring.....	4

## List of Figures

Figure 1: Weighted Matrix Parcel Score Heatmap.....	5
Figure 2: Map of the Top Ten Ranked Parcels for an Alum Facility .....	7
Figure 3: Recommended Parcel Inside of the Study Area (Option #1).....	8
Figure 4: Recommended Parcel Outside of the Study Area (Option #2).....	8

## List of Tables

Table 1: Parcel Size Criteria.....	3
Table 2: Land Value Criteria.....	3
Table 3: Parcel Vacancy Criteria .....	3
Table 4: Floodplain Exposure Criteria .....	3
Table 5: Parcel Distance to Joe's Creek Criteria .....	4
Table 6: Weighting Matrix .....	4
Table 7: Top Ten Parcels for an Alum Treatment Facility.....	6
Table 8: Recommended Parcel for an Alum Treatment Facility Outside of the Study Area.....	6
Table 9: Recommended Parcel Information .....	9
Table 10: Recommended Parcel Characteristics and Nutrient treatment.....	9

## Multi-Criteria Weighted Matrix Evaluation

Using data from the Joe's Creek RSF as a baseline, obtained data from the Pinellas County Property Appraiser, and the Alternative B proposed 100-year, 24-hour floodplain from the Joe's Creek PER, Kimley-Horn composed a multi-criteria, weighted matrix evaluation to rank the viability of parcels to construct an alum treatment facility. Parcels inside of the study area and the surrounding downstream area were analyzed to identify two viable alum treatment concepts capable of meeting the water quality requirements.

The Environmental Resource Permit (ERP) Applicant's Handbook Volume I (FDEP, 2024) lists the minimum performance standards for stormwater treatment systems that contain an impaired water as meeting:

- An 80% reduction of average annual loading of TP and TN from the proposed project.
- A reduction in average annual loading of nutrients between pre and post development.

Additionally, the Pinellas County Stormwater Manual requires stormwater remediation to either:

- Reduce the post-development annual average stormwater TN load by at least 55% and the annual average stormwater TP load by at least 80%
- Reduce the post-development annual average stormwater TN and TP loads by 10% or more of the undeveloped or current annual discharge loads

Sufficient alum treatment of stormwater relies on providing a minimum of three (3) hours of hydraulic retention time (HRT). A site of sufficient size and shape is required to maximize the flow of water while meeting the HRT. HRT of 3 hours provides sufficient mixing and settling of more than 90% of flocs resulting in 40-50% TN removal and 70-90% TP removal. The minimum parcel size capable of achieving the recommended HRT with the Joe's Creek baseflow of 3 cfs is 0.25 acres.

Parcels were reviewed with the requirement that they meet the most stringent nutrient removal requirements and the three-hour HRT. One parcel within the study area and one parcel outside of the study area are recommended for use as an alum facility. The criteria used to rank the parcels are as follows:

- Size
- Exposure
- Cost
- Vacancy
- Distance

Each criteria was scored on a scale of 1 to 5, parcels with higher scores were found to have more favorable conditions for the construction of an alum facility. The criteria were then weighted based on importance and relevancy to alum facility viability.

The following subsections describe the evaluation process for these criteria and the scoring schema used to calculate final scores for each parcel.

### Size

The size of the parcel has the greatest influence on alum facility design. Large parcels will have greater treatment volumes and can accommodate higher flow rates while still achieving the required HRT. The scoring criteria for Parcel Size can be found in **Table 1**.

Table 1: Parcel Size Criteria

Classification	Score
Greater than 2.5 acres	5
Between 1 and 2.5 acres	4
Between 0.5 acres and 1 acre	3
Between 0.25 and 0.5 acres	2
Less than 0.25 acres	1

### Land Value

The land value of the parcel as listed on the Pinellas County Property Appraiser was used to estimate the cost of County acquisition. Less expensive parcels were prioritized for economic value. The scoring criteria for Land Value can be found in **Table 2**.

Table 2: Land Value Criteria

Classification	Score
Less than \$200,000	5
Between \$200,000 and \$300,000	4
Between \$300,000 and \$400,000	3
Between \$400,000 and \$500,000	2
Greater than \$500,000	1

### Vacancy

The Vacancy criteria was determined from the land use category gathered from the Pinellas County Property Appraiser parcel shapefile. Parcels labeled as vacant or vacant-industrial/vacant-commercial were classified as vacant while all other parcels were classified as occupied. The scoring criteria can be found in **Table 3**.

Table 3: Parcel Vacancy Criteria

Classification	Score
Vacant	5
Occupied	1

### Floodplain Exposure

Floodplain Exposure scores were calculated by measuring the percentage of area in each parcel that was inundated in the Alternative B Proposed 100-Year, 24-Hour floodplain. The total area of the parcel was divided by the flooded area of the parcel to calculate an inundation percentage that ranged from 0% to 100%. Parcels experiencing less inundation were prioritized. The scoring criteria for exposure can be found in **Table 4**.

Table 4: Floodplain Exposure Criteria

Classification	Score
0% inundated	5
Between 0% and 25% inundated	4
Between 25% and 50% inundated	3
Between 50% and 75% inundated	2
Greater than 75% inundated	1

## Distance

The Distance criteria referenced the distance needed to convey water to and from the alum facility. Parcels that are located closer to Joe's Creek were prioritized. To estimate the length, distance was calculated by measuring the length between the centroid of the parcel polygon and the centerline of the creek. It should be noted that the design distance will vary based on pond design and existing infrastructure. The scoring criteria can be found in **Table 5**.

Table 5: Parcel Distance to Joe's Creek Criteria

Classification	Score
Less than 200-ft	5
Between 200-ft and 400-ft	4
Between 400-ft and 600-ft	3
Between 600-ft and 800-ft	2
Greater than 800-ft	1

## Final Scoring

Once a score was assigned for each criterion, a final weighted score was calculated for each parcel. The maximum possible weighted score a parcel could achieve is "5". The percentage weights of each criterion can be found in **Table 6**.

Table 6: Weighting Matrix

Criteria	Weight
Parcel Size	30%
Land Value	25%
Vacancy	20%
Exposure	15%
Distance	10%
<b>Total</b>	100%

It should be noted that the weights assigned in the matrix are subjective to engineering judgement and were based on the intent of use for this assessment.

A parcel score heatmap containing the results of the weighted matrix parcel scores is shown in **Figure 1** where green parcels are more favorable and red parcels are less favorable. The ten most viable parcels for an alum treatment facility inside of the study area have been included in **Table 7**

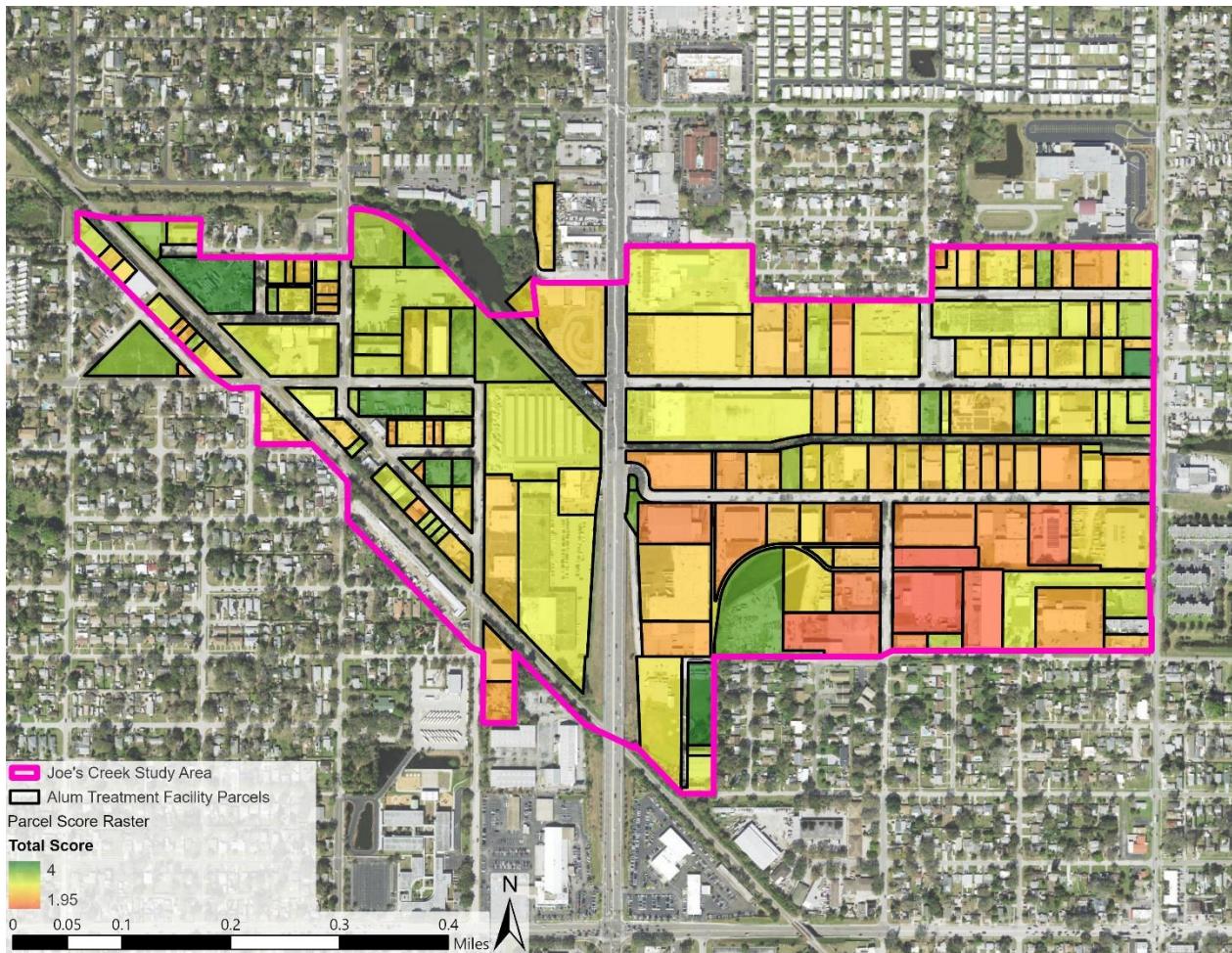


Figure 1: Weighted Matrix Parcel Score Heatmap

Table 7: Top Ten Parcels for an Alum Treatment Facility.

Rank	Parcel ID	Size (ac)	Size Score	Land Value Score	Exposure Score	Vacancy Score	Distance Score	Total
1	02-31-16-44082-000-0051	0.51	3	4	4	5	5	4
2	02-31-16-55314-001-0170	1.17	4	5	3	5	1	3.8
3	03-31-16-51012-027-0010	2.25	4	5	2	5	3	3.75
4	02-31-16-44100-000-0012	0.47	2	5	4	5	4	3.75
5	03-31-16-61722-001-0020	0.97	3	5	3	5	2	3.6
6	03-31-16-61722-002-0020	0.42	2	5	4	5	2	3.55
7	03-31-16-61722-002-0050	0.31	2	5	4	5	2	3.55
8	03-31-16-00000-140-1110	0.45	2	3	4	5	5	3.55
9	02-31-16-00000-320-0310	0.07	1	5	4	5	5	3.55
10	02-31-16-00000-320-0900	3.54	5	4	4	1	2	3.5

Several parcels located outside of the study area were previously evaluated by the County for suitability as a site for the alum treatment facility. These parcels were ultimately ruled out due to excessive cost. Among the remaining options outside of the study area, the selected parcel significantly outperformed all other reviewed parcels in terms of viability and overall scoring criteria, leading to its selection for further consideration.

The parcel outside of the study area recommended for an alum facility is shown in **Table 8**.

Table 8: Recommended Parcel for an Alum Treatment Facility Outside of the Study Area

Rank	Parcel ID	Size (ac)	Size Score	Land Value Score	Exposure Score	Vacancy Score	Distance Score	Total
17	03-31-16-00000-230-2500	0.68	3	5	4	1	4	3.25

A map containing the top ten ranked parcels for the alum treatment facility is shown in **Figure 2**. A maps of the recommended parcels, one inside and one outside of the study area, can be found in **Figure 3** and **Figure 4**.

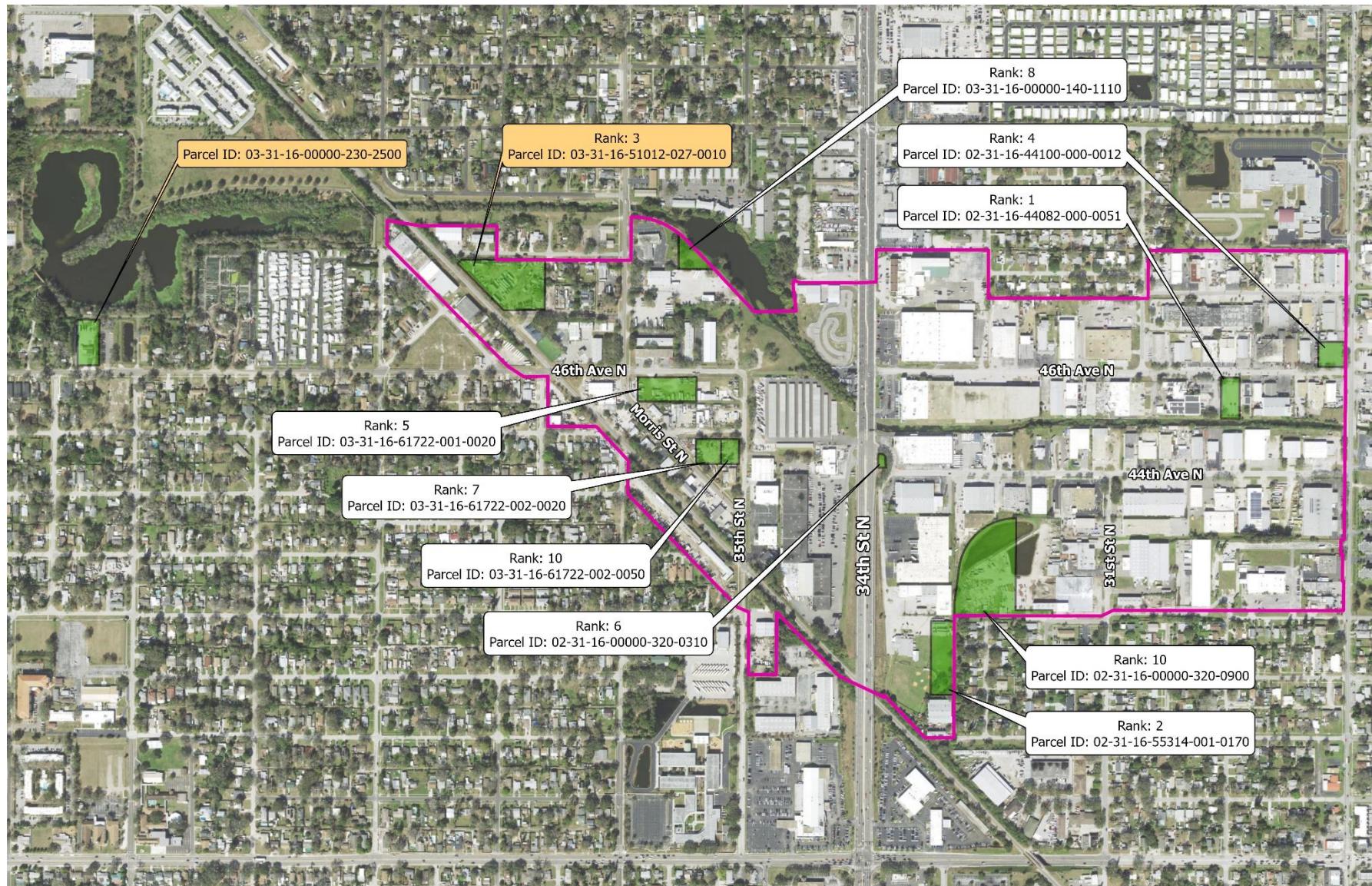


Figure 2: Map of the Top Ten Ranked Parcels for an Alum Facility



Figure 3: Recommended Parcel Inside of the Study Area (Option #1)



Figure 4: Recommended Parcel Outside of the Study Area (Option #2)

Further refined, option #1 is a 2.25 acre lot that is currently used to store old cars, trailers, and boats. It was the most expensive parcel that ranked in the top ten but its large size makes it justifiable. Based on the multi-criteria, weighted matrix, this parcel was found to be the third most viable location for an alum treatment facility within the study area. After reviewing the parcels that ranked first and second, they were determined to be less favorable based on the cost per acre (parcel ranked #1) and location (parcel ranked #2).

Option #2 is a 0.68 acre lot adjacent to the County owned Raymond H. Neri Community Park parking lot. The parcel is currently owned by Perry's Nursery Inc. and would need to be purchased by the County.

A summary of the data for the recommended parcels can be found in **Table 9**.

Table 9: Recommended Parcel Information

Parcel	Parcel ID	Size (Ac)	Land Value (\$)	Exposure (%)	Vacancy	Distance (ft)
Option #1	03-31-16-51012-027-0010	2.25	\$430,418	0%	Vacant	409
Option #2	03-31-16-0000-230-2500	0.68	\$ 142,530	0%	Occupied	250

For the purpose of this assessment, it was assumed that 80% of the total parcel area is taken up by the pond footprint with the remainder consisting of access, maintenance facilities, berms, and other incidentals required of municipal code. The pond is assumed to be 6-ft deep with a safety factor of 1.5 applied to ensure the HRT is met. The recommended HRT for an alum facility is three hours for a removal efficiency of 50% TN and 90% TP (Harper, 2007).

The parcel characteristics and approximate annual weight of nutrients removed from the study area while under 3 cfs baseflow conditions can be found in **Table 10**. The annual TN and TP removed is the percent of nutrients the alum facility is capable of treating from the entire study area.

Table 10: Recommended Parcel Characteristics and Nutrient treatment

Parcel	Pond Area (Ac)	Pond Volume (Ac-ft)	Max Flow (cfs)	TN Removed (lb/yr)	TN Removed (%)	TP Removed (lb/yr)	TP Removed (%)
Option #1	1.80	10.8	29.04	1,545.10	73.3%	203.66	47.8%
Option #2	0.54	3.26	8.78	467.15	22.2%	61.57	14.5%

For reference, to achieve similar treatment efficiencies to parcel option #1 at the 3 cfs flow rate, a wet detention facility would require approximately 2,680 Ac-ft of storage.

Additionally, the inclusion of a high-flow pump for when the Creek is above baseflow discharge conditions would increase the removal rate of nutrients.



## APPENDIX C

Preliminary Engineer's Opinion of Probable Construction Costs

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST					
Site Option #1 Water Quality Alum Pond					
ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	
<b>MISCELLANEOUS</b>					
1	Utility Locates	1	LS	\$4,750.00	\$4,750
2	Record Drawings and Project Closeout	1	LS	\$15,000.00	\$15,000
				<b>SUBTOTAL</b>	<b>\$19,750</b>
<b>PROPOSED IMPROVEMENTS</b>					
3	Clearing and Grubbing	2.25	AC	\$35,806.76	\$80,565.21
4	Regular Excavation	14413.33	CY	\$11.82	\$170,365.56
5	Soil Tracking Prevention Device	1	EA	\$3,470.72	\$3,470.72
6	Inlet Protection System	3	EA	\$152.19	\$456.57
7	Sediment Barrier	1,120	LF	\$2.49	\$2,788.80
8	Fencing, Special Type, 5.1-6.0', Special Features	1,120	LF	\$16.84	\$18,860.80
9	Tree Removal	5	EA	\$1,890.07	\$9,450.35
10	Landscape Complete - Small Plants	1	EA	\$111,384.00	\$111,384.00
11	Landscape - Wetland Plantings	4,392	SY	\$100.00	\$439,200.00
12	CMU Walls (including reinforcement & forming)	400	SF	\$15.00	\$6,000.00
13	Ultrasonic Level Indicating Transmitter	1	EA	\$5,000.00	\$5,000.00
14	ACH Duplex Chemical Metering Pump Skid	1	EA	\$28,420.00	\$28,420.00
15	500-Gallon ACH Double-Wall Chemical Storage Tank, Fill Lines, & Appurtenances	1	EA	\$12,000.00	\$12,000.00
16	Bulk Chemical Tank Ultrasonic Level Indicating Transmitter	1	EA	\$5,000.00	\$5,000.00
				<b>SUBTOTAL</b>	<b>\$892,962</b>
<b>SUMMARY</b>					
				<b>MISCELLANEOUS SUBTOTAL</b>	<b>\$19,750</b>
				<b>PROPOSED IMPROVEMENTS SUBTOTAL</b>	<b>\$892,962</b>
	General Conditions & Mobilization (10%)	1	LS	\$89,296.20	\$89,296
	Contingency for Unspecified Work (30%)	1	LS	\$267,888.60	\$267,889
				<b>CONSTRUCTION TOTAL</b>	<b>\$1,269,897</b>
Notes: Costs taken on 05/29/2025 from a combination of previous project costs, FDOT Historical Costs, and manufacturer estimates. Cost of land acquisition is not included in this estimation.					
<i>The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.</i>					

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST					
Site Option #2 Water Quality Alum Pond					
ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	
<b>MISCELLANEOUS</b>					
1	Utility Locates	1	LS	\$4,750.00	\$4,750
2	Record Drawings and Project Closeout	1	LS	\$15,000.00	\$15,000
				<b>SUBTOTAL</b>	<b>\$19,750</b>
<b>PROPOSED IMPROVEMENTS</b>					
3	Clearing and Grubbing	0.68	AC	\$35,806.76	\$24,348.60
4	Removal of Existing Concrete	3,291	SY	\$45.56	\$149,937.96
5	Regular Excavation	3,627	CY	\$11.82	\$42,867.24
6	Soil Tracking Prevention Device	1	EA	\$3,470.72	\$3,470.72
7	Inlet Protection System	6	EA	\$152.19	\$913.14
8	Sediment Barrier	640	LF	\$2.49	\$1,593.60
9	Fencing, Special Type, 5.1-6.0', Special Features	640	LF	\$16.84	\$10,777.60
10	Tree Removal	1	EA	\$1,890.07	\$1,890.07
11	Landscape Complete - Large Plants	1	EA	\$111,384.00	\$111,384.00
12	Landscape - Wetland Plantings	1,328	SY	\$100.00	\$132,800.00
12	CMU Walls (including reinforcement & forming)	400	SF	\$15.00	\$6,000.00
13	Ultrasonic Level Indicating Transmitter	1	EA	\$5,000.00	\$5,000.00
14	ACH Duplex Chemical Metering Pump Skid	1	EA	\$28,420.00	\$28,420.00
15	500-Gallon ACH Double-Wall Chemical Storage Tank, Fill Lines, & Appurtenances	1	EA	\$12,000.00	\$12,000.00
16	Bulk Chemical Tank Ultrasonic Level Indicating Transmitter	1	EA	\$5,000.00	\$5,000.00
				<b>SUBTOTAL</b>	<b>\$536,403</b>
<b>SUMMARY</b>					
				<b>MISCELLANEOUS SUBTOTAL</b>	<b>\$19,750</b>
				<b>PROPOSED IMPROVEMENTS SUBTOTAL</b>	<b>\$536,403</b>
	General Conditions & Mobilization (10%)	1	LS	\$53,640.29	\$53,640
	Contingency for Unspecified Work (30%)	1	LS	\$160,920.88	\$160,921
				<b>CONSTRUCTION TOTAL</b>	<b>\$770,714</b>
Notes: Costs taken on 05/29/2025 from a combination of previous project costs, FDOT Historical Costs, and manufacturer estimates. Cost of land acquisition is not included in this estimation.					
<i>The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.</i>					



# APPENDIX B-2 **BULKHEAD ASSESSMENT**

*Completed July 2025*



## TECHNICAL MEMORANDUM REPORT

To: Pinellas County Housing and Community Development  
From: Seth Schmid, P.E. (FL Reg. #54640)  
Kimley-Horn and Associates, Inc. (Registry #35106)  
Date: May 1, 2025, revised July 7, 2025  
Subject: Joe's Creek, St. Petersburg, FL – Bulkhead Condition Assessment

---

### Background

The subject property is the bulkhead on the north and south sides of Joe's Creek between 28<sup>th</sup> Street North and 34<sup>th</sup> Street North and between 44<sup>th</sup> Avenue North and 46<sup>th</sup> Avenue North in St. Petersburg, Florida, hereafter referred to as the "Property". Based on a review of Google Earth aerial images, the bulkhead on the north side of Joe's Creek extends approximately 2,340 feet east from 34<sup>th</sup> Street North and approximately 2,035 feet from 34<sup>th</sup> Street North on the south side for a total length of approximately 4,375 feet (refer to Figure 1). The Client provided several documents, including wall details, that indicated bulkheads have been in place along portions of the Property since 1957. It is our understanding based on conversations with the Client, Pinellas County, that the bulkheads along Joe's Creek are private structures that belong to the property owners along the creek.

It is our understanding that the Client is considering dredging the creek in the future and has requested a condition assessment of the visible, accessible, above water portions of the existing bulkheads.

### Observations

On April 11, 2025, Seth Schmid, P.E., Chris Niforatos, P.E. and John Gunvordahl of Kimley-Horn and Associates, Inc. ("Kimley-Horn") performed a field visit to the subject property.

The following summarizes Kimley-Horn's field observations (refer to Appendix A for referenced photographs and Figure 1 for photograph locations):

- Approximately 900 feet of the bulkhead that extended east from 34<sup>th</sup> Street North on both the north and south sides of the creek was accessible and able to be reviewed (1,800 feet total, refer to Figure 1). The southern portion of the bulkhead was visually reviewed from the vantage point along the northern bulkhead due to access restrictions along the southern bulkhead. This was approximately 40% of the total

length of the bulkhead. The remaining bulkhead was not accessible due to fences and/or vegetation.

- The portion of the bulkhead that was reviewed was constructed of approximately four-foot-wide precast concrete wall panels with a concrete cap on top. Joints were observed in the concrete cap at approximately 40-foot on-center. Tie rods consisting of #8 rebar were observed on either side of the wall cap joints and in isolated locations along the wall caps. Based on our observations, it was assumed the tie rods were spaced approximately 10.5-foot on-center along the wall caps (Photographs 1 through 3). Note that the construction of some sections of the bulkhead wall may differ from what was reviewed due to wall repairs over the life of the bulkhead.
- There were isolated depressions and erosion behind the bulkhead that aligned with the joints between the wall panels (Photographs 4 and 5). The isolated areas of depressions and erosion were observed behind the northern bulkhead within the 900 feet extending east from 34<sup>th</sup> Street North that was reviewed during our field visit.
- Vegetation was growing out of some of the bulkhead wall joints along the creek (Photograph 6).
- There were isolated spalls with no stains or exposed reinforcement along the edge of some of the wall joints (Photograph 7).
- Approximately 135 feet of bulkhead on the north side of the creek had a visible bow outward toward the creek. The visible bow started approximately 430 feet east of 34<sup>th</sup> Street North (Photograph 8). Within the limits of the bowed bulkhead, there was an approximate 3/4-inch vertical offset at a cap joint (Photographs 9 and 10). The vertical offset was located approximately 500 feet east of 34<sup>th</sup> Street North.
- There was a 4-inch horizontal offset in the bulkhead cap approximately 560 feet east of 34<sup>th</sup> Street on the north side of the creek. The cap was broken at the connection to the tie rod in this location and an apparent replacement tie rod was observed extending through the face of the bulkhead wall below the broken cap (Photographs 11 through 14).
- There was another large horizontal offset (4.5-inches) in the bulkhead cap and the cap was broken at the tie rod location approximately 750 feet east of 34<sup>th</sup> Street North on the north side of the creek (Photographs 15 and 16).
- Two smaller horizontal offsets were observed at joints in the wall cap with no cracks or breaks in the cap. These offsets were ½-inch and 7/8-inch and were observed

approximately 675 feet and 815 feet east of 34<sup>th</sup> Street North, respectively, on the north side of the creek (Photographs 17 through 19).

- The bulkhead panels on the north and south side of the creek near the western end at 34<sup>th</sup> Street North each had two 1.25-inch diameter holes near the top of the panels. The holes were approximately 4-inches deep and were located approximately 10-inches down from the top of the wall cap. Concrete or grout was observed at the ends of the holes (Photographs 20 and 21). The location of the holes near the top of the walls and presence of grout or concrete at the ends made the holes consistent with lifting points that were used during installation of the panels and not weep holes.
- Isolated locations of the sediment were probed along the northern bulkhead near the western end at 34<sup>th</sup> Street North. The depth of the sediment in the creek was measured to be at least 5-feet deep in these locations (the length of the field probe) and no creek bottom was observed within the limits of the length our 5-foot probe. Due to access limitations, no sediment depth measurements were taken near the center of the creek.



Figure 1. Bulkhead limits, limits of bulkhead field review, location of report photos.

## Discussion

In general, the concrete panels for bulkhead walls can have two typical methods of support. The first method, cantilevered wall, gets its support from the depth of embedment of the wall panel below the bottom of the adjacent channel. The soil on either side of the embedded portion of the wall counteracts the forces of the soil pushing on the wall above the bottom of the channel. The second method, anchored wall, gets its support from two sources: an anchor near the top of the wall and embedment of the bottom of the wall panel below the bottom of the adjacent channel. The anchor is typically constructed of a rod attached to the wall at one end and concrete at the other end. The anchor support near the top of the wall results in a shallower embedment at the bottom of the wall than the cantilever wall.

The observed anchor rods extending from the back of the bulkhead cap indicated that the bulkheads along Joe's creek were anchored walls. We were not able to determine the embedment depth of the wall panels below the bottom of the creek. However, because they are anchored walls, it is likely that the wall panel embedment is less than what would be required for a non-anchored wall system.

The observed bow in the bulkhead on the north side of the creek and the isolated horizontal offsets in the bulkhead cap were consistent with damage to the tie back system anchoring the wall. In two locations along the bulkhead, the cap was broken at the connection to the anchor rods and there were large offsets in the cap (approximately 4 inches). The lack of a resisting force at the damaged anchor caused the top of the wall to rotate toward the creek due to the soil forces on the backside of the wall.

Depressions and erosion were also observed in isolated locations behind the bulkhead wall that aligned with the joints in the wall panels. This indicated soil was migrating through the joints along with water draining through the joints. Vegetation was observed growing within many of the joints between the bulkhead wall panels. The vegetation contributed to widening the joints and exacerbated the soil and water passing through the joints. Additionally, as depressions formed behind the bulkhead at the joints, water draining across the ground was concentrated in the depressions which likely accelerated the migration of soil through the wall joints.

If the migration of soil through the bulkhead wall joints is not addressed, the subsequent erosion of soil will eventually reach a depth behind the wall that will impact the stability of the wall panels resulting in rotation of the panels and eventual failure of the bulkhead.

Isolated shallow spalls were observed in the face of the bulkhead wall panels near the edge of the panels at the wall joints. No stains or exposed reinforcement was observed which indicated the structural integrity of the wall panel was not adversely affected. The spalls were

likely consistent with expansion stresses between the adjacent wall panels and were typical of wear and tear of concrete wall panels of this age (60+ years).

### **Recommendations**

#### **Bulkhead Age / Damaged Bulkhead Anchors**

The concrete elements of the bulkhead wall appear to be in good condition with no cracks, corrosion stains or exposed, corroded reinforcement. We recommend that the isolated spalls near the bulkhead wall joints are cleaned and patched with an appropriate repair mortar to re-establish the protective concrete cover over the underlying reinforcement.

The areas of the bulkhead with a bow or offsets should be investigated for damage to the tie-back system anchoring the wall in these locations. Damage to the tie-back system should then be repaired accordingly (e.g. re-establishing a connection of the anchor to the wall cap, repairing or replacing cut or corroded anchor rods, replacing missing anchor blocks at the end of the anchor rods). As an alternative, new anchor systems such as soil nails or helical tie-back anchors can be installed through the face of the bulkhead walls. Existing utilities should be identified behind the wall panels prior to construction and the new anchor systems installed in a manner that avoids conflict with the utilities.

Given the age of the wall and the isolated wall offsets or bows, it is our opinion that deterioration of the existing wall anchors and subsequent rotation of isolated areas of the wall will be on-going. This will require continued periodic monitoring of the existing bulkhead wall for identification of areas needing repairs.

#### **Depressions / Erosion at Wall Joints**

We recommend all vegetation is removed from the bulkhead wall joints, including joints with no observed depressions or erosion behind the wall. We recommend that the wall joints with existing depressions and erosion are sealed with a polyurethane foam / grout and the depressions and erosion are backfilled to the top of the wall cap. The grade behind the bulkhead wall cap should be finished to establish positive drainage and eliminate water from collecting behind the wall.

#### **Dredging the Creek**

The depth of embedment of the existing bulkhead wall panels is not known but is likely shallow due to the anchored walls. During our site visit, isolated locations along the northern bulkhead near the western end were probed and the sediment depth was measured to be at least 5-feet deep, the length of the probe. No creek bottom was observed within the limits of the length of our probe. (Note that due to access limitations, the isolated sediment depth

measurements were limited to locations along the face of the bulkhead wall and not in the center of the creek.)

Prior to dredging, we recommend determining the original elevation of the bottom of the creek from historic surveys or permits, if available, or through geotechnical investigation. We recommend establishing the bottom of the wall panels using methods such as ultrasonic testing or possibly probing. Once the bottom elevation of the wall panels is established, a required depth of embedment can be calculated to establish the limits of dredging adjacent to the existing walls. The wall analysis should include a surcharge behind the wall for dredging activities such as dump trucks fully loaded with dredging spoils. We would also recommend that the spacing and construction of the existing bulkhead tie back system is field verified for the wall analysis in determining the minimum embedment depth.

It should be noted that the condition of the existing, buried tie backs is not well known or easily verified. The connections of a few of the tie rods to the bulkhead cap were visible during our field visit and appeared to be in good condition. However, the tie rods extend back behind the wall several feet below the adjacent private property and terminate in a deadman (anchor) that is also buried and not visible. Reviewing the condition of all tie backs would result in excavation behind the walls that could include parking lots, drive aisles, etc. of the adjacent properties. A few tie back failures were observed along the wall during our field visit which indicate that there could be other damaged tie backs, due to the age of the wall, that could potentially make sections of the bulkhead wall more susceptible to movement during or after dredging.

In addition to determining the limiting depth of dredging, consideration should be given to access and staging areas for dredging operations. Except for the right-of-way along the roads at either end of the creek, no points of public access were observed along the creek. Additionally, there were no apparent areas for stockpiling dredge spoils or areas to load dump trucks. The limited public access to the creek will require coordination with property owners along the creek for construction access.

## Limitations

The opinions and conclusions expressed in this report are based on the review of the noted material, as well as education, training, and experience of a licensed professional engineer. These opinions and conclusions are based on the information currently available and may be amended or supplemented should new information become available.

This report has been prepared in accordance with the professional standard of care based on the limited activities specifically set forth in this report. No other warranties, express or implied, are made or intended. This report was prepared solely for Kimley-Horn's Client for the purpose stated herein and should not be relied upon by any other party or for any other purpose. Actual repairs or construction of any kind should be done only pursuant to permitted plans and specifications prepared by licensed professionals.

The field measurements, observations, and other data Kimley-Horn analyzed are isolated data points which may not be representative of the conditions across the entire Property therefore, the conclusions in this report may not be completely indicative of all conditions present. Our observations and recommendations are based upon conditions visibly evident at the time of our site visit. The conclusions and recommendations do not reflect variations in conditions not visually apparent, or which exist in locations not observed, or which could exist in the future. It is possible that hidden damage or other unknown items of concern remain undiscovered. Kimley-Horn has no responsibility for damages or claims resulting from such hidden damage or unknown items.

## APPENDIX A:

## PHOTOS

**Joe's Creek - Bulkhead Condition  
Assessment**  
**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 1 of 11

Photo No. 1



Remarks: Typical bulkhead looking south.

Location: See Figure 1.

Photo No. 2



Remarks: Typical #8 rebar tie rods on either side of the wall cap joint (red arrows).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**  
**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.

Date: April 11, 2025

Page: 2 of 11

Photo No. 3



Remarks: Close up view of Photo 2 showing the tie rods attached to the bulkhead cap (red arrows).

Location: See Figure 1.

Photo No. 4



Remarks: Typical erosion behind the bulkhead that aligned with the joint between the wall panels.

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025

Page: 3 of 11

Photo No. 5



Remarks: Typical depression behind the bulkhead that aligned with the joint between the wall panels.

Location: See Figure 1.

Photo No. 6



Remarks: Typical vegetation growing out of the bulkhead wall joints (red outline).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 4 of 11

Photo No. 7



Remarks: Typical isolated spalls with no stains or exposed reinforcement along the edge of the joint between the bulkhead wall joint.

Location: See Figure 1.

Photo No. 8



Remarks: There was a visible bow in the north bulkhead near the western end (red arrow).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 5 of 11

Photo No. 9



Remarks: There was an approximate 3/4-inch vertical offset at a cap joint within the limits of the visible bow in the bulkhead shown in Photo 8 (red arrow).

Location: See Figure 1.

Photo No. 10



Remarks: Close up view of Photo 9 showing a vertical offset at the bulkhead cap joint.

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 6 of 11

Photo No. 11



Remarks: There was an approximate 4-inch horizontal offset in the bulkhead cap on the north side of the creek (red arrow).

Location: See Figure 1.

Photo No. 12



Remarks: Close up view of Photo 11 showing the offset bulkhead cap. Note the concrete cap is broken at the tie rod location (red arrow).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**  
**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 7 of 11

Photo No. 13



Remarks: The bulkhead cap shown in Photo 11 was offset horizontally approximately 4-inches.

Location: See Figure 1.

Photo No. 14



Remarks: There was an apparent replacement tie rod that extended through the face of the bulkhead wall below the broken cap (red arrow).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**  
**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 8 of 11

Photo No. 15



Remarks: There was an approximate 4.5-inch horizontal offset in the bulkhead cap on the north side of the creek (red arrow).

Location: See Figure 1.

Photo No. 16



Remarks: Close up view of Photo 15 showing the offset bulkhead cap. Note the concrete cap is broken at the tie rod location (red arrow).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 9 of 11

Photo No. 17



Remarks: Bulkhead cap joint with a 1/2-inch horizontal offset (red arrow).

Location: See Figure 1.

Photo No. 18



Remarks: Bulkhead cap joint with a 7/8-inch horizontal offset (red arrow).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**  
**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025  
Page: 10 of 11

Photo No. 19



Remarks: Close up view of Photo 18 showing horizontal offset at bulkhead cap joint.

Location: See Figure 1.

Photo No. 20



Remarks: Typical location of 1.25-in diameter holes near the top of the bulkhead panels on the north and south side of the creek near the western end at 34th Street North (red arrows).

Location: See Figure 1.

**Joe's Creek - Bulkhead Condition  
Assessment**

**Photograph Sheet**

KHA Job No.: 145083017  
KHA Rep.: Seth Schmid, P.E.  
Date: April 11, 2025

Page: 11 of 11

Photo No. 21



Remarks: Close up view of typical hole in the bulkhead wall shown in Photo 20. Note the grout or concrete at the end of the hole (red arrow).

Location: See Figure 1.



# APPENDIX B-3

# WATER/WASTEWATER

# ASSESSMENT

*Completed June 2025*

# Joe's Creek Master Plan

## Potable Water and Wastewater Infrastructure Assessment Technical Memorandum

Prepared for:

Pinellas County Housing and Community Development  
310 Court Street, 1<sup>st</sup> Floor  
Clearwater, FL 33756



Prepared by:

Kimley-Horn and Associates, Inc.  
200 Central Avenue, Suite 600  
St. Petersburg, FL 33701



© Kimley-Horn and Associates, Inc.  
Registry No. 35106  
June 2025  
St. Petersburg, Florida  
046089011

*This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purposes and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.*

## List of Acronyms

<b>CAS</b>	Cast Iron
<b>CIPP</b>	Cured in place pipe
<b>DI</b>	Ductile Iron
<b>DIP</b>	Ductile Iron Pipe
<b>FAC</b>	Florida Administrative Code
<b>FDEP</b>	Florida Department of Environmental Protection
<b>FY</b>	Fiscal Year
<b>GIS</b>	Geographical information systems
<b>GP</b>	Galvanized pipe
<b>GPD</b>	Gallons per day
<b>HDPE</b>	High density Polyethylene
<b>JCIP</b>	Joe's Creek Industrial Park
<b>MGD</b>	Million gallons per day
<b>PVC</b>	Polyvinyl chloride
<b>RCP</b>	Reinforced concrete pipe
<b>SCWF</b>	South Cross Bayou Advanced Water Reclamation Facility

## Table of Contents

List of Acronyms .....	2
List of Figures .....	4
List of Tables .....	4
List of Appendices .....	4
Introduction and Background .....	5
Data Collection .....	6
Existing Infrastructure Conditions .....	6
Potable Water Infrastructure .....	6
Potable Water Distribution System - City of St. Petersburg .....	6
Water Treatment Plant - City of St. Petersburg .....	6
Wastewater Infrastructure .....	7
Wastewater Collection System - Pinellas County Utilities .....	7
Septic Sewer System .....	8
Reclaimed Water Infrastructure .....	8
Infrastructure Service Needs Analysis .....	8
Future Land Use/Growth .....	8
Future Potable Water Demand .....	9
Infrastructure Mitigation Recommendations and Cost .....	10

## **List of Figures**

Figure 1: Joe's Creek Master Plan Study Area .....	5
Figure 2: Existing Pinellas County Utilities Sewer Infrastructure .....	7

## **List of Tables**

Table 1: Future Land Use -Area Projections.....	8
Table 2: Future Land Use – Population Projections.....	8
Table 3: Water Demand Projections.....	9
Table 4: Wastewater Demand Projections .....	9
Table 5: Demand Projections vs Existing Treatment Plant Capacities .....	9
Table 6: Preliminary Engineer's OPCC .....	11

## **List of Appendices**

**APPENDIX A**

**APPENDIX B**

**APPENDIX C**

## Introduction and Background

Pinellas County contracted with Kimley-Horn for the Joe's Creek Master Plan under 24-0461-RFP approved 6/25/2024. The Master Plan scope was amended to include a Potable Water and Wastewater Infrastructure Assessment Technical Memorandum to provide an analysis of the potable water and wastewater infrastructure within the Joe's Creek Industrial Park (JCIP) Study Area.

The objective of this Infrastructure Assessment is to provide a high-level analysis of the condition of the existing potable water and wastewater facilities within the JCIP study area. This analysis includes the evaluation of the capacities of the existing treatment plants, and the location, ownership, sizing, material, and age of the existing collection, transmission, and distribution infrastructure mains around the study area. This technical memorandum serves as an evaluation of the existing water and wastewater infrastructure and assessment of anticipated future utility demands. **Figure 1** below shows the JCIP study area limits.

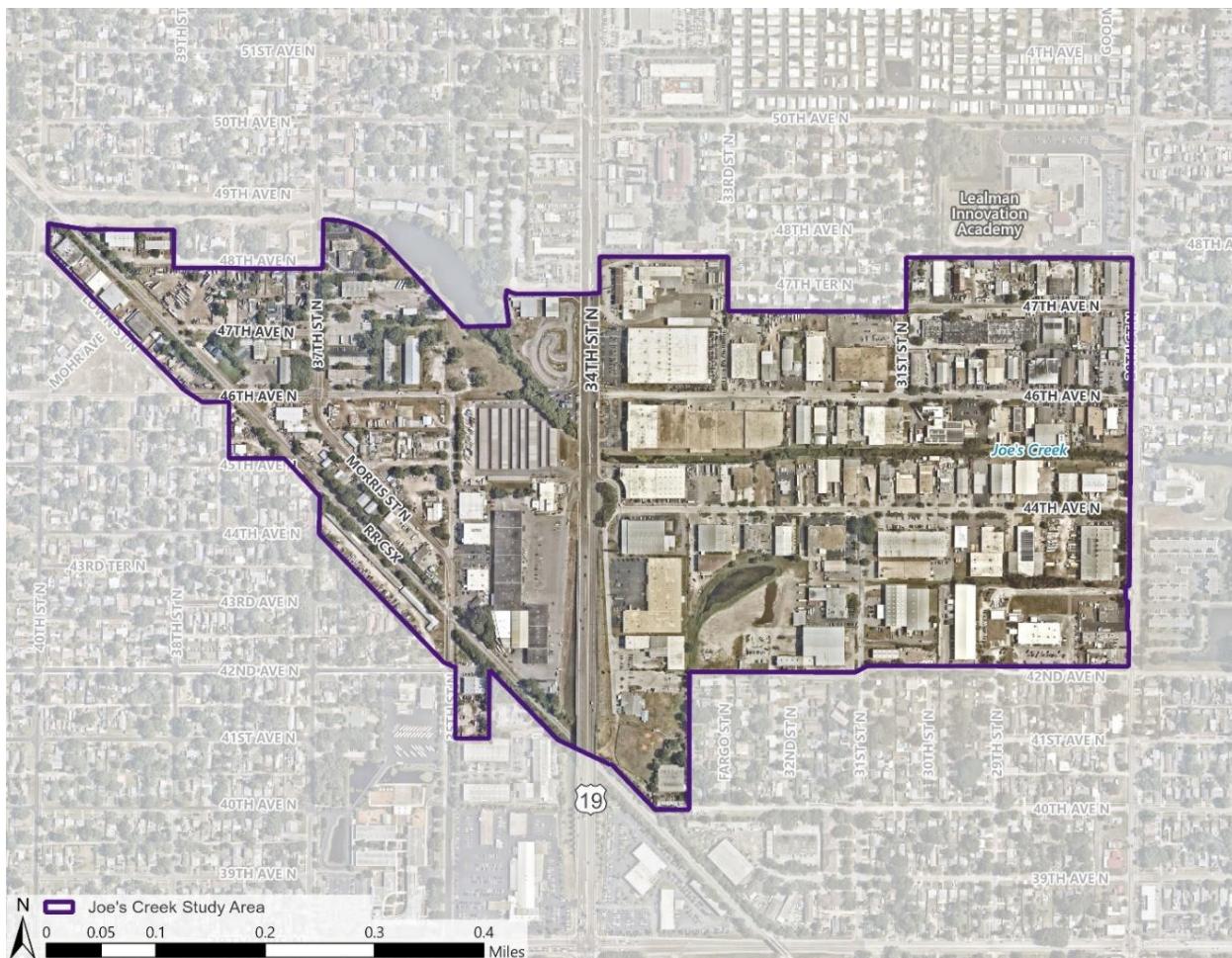


Figure 1: Joe's Creek Master Plan Study Area

## Data Collection

Kimley-Horn collected and evaluated the following data for use in the Potable Water and Wastewater Infrastructure assessment:

- Pinellas County GIS
- 2021 South Cross Bayou Advanced Water Reclamation Facility Master Plan
- Pinellas County FY 2024-2029 Six Year Capital Improvement Plan
- 2024 City of St. Petersburg Comprehensive Plan
- City of St. Petersburg GIS maps (Atlas Sheets J-24, J-26, K-24, and K-26)
- Florida Department of Environmental Protection (FDEP) permits
- PLANPinellas

## Existing Infrastructure Conditions

Pinellas County does not own or operate the potable or reclaimed water infrastructure within the JCIP study area. However, the County does own and maintain the wastewater infrastructure. The following subsections identify and summarize each one of these facilities.

### Potable Water Infrastructure

#### Potable Water Distribution System - City of St. Petersburg

The potable water distribution system within the JCIP study area consists of a series of pressurized distribution and transmission mains. Below is a summary of each main by size and material:

- 36-inch reinforced concrete pipe (RCP) as a transmission main
- 8-inch, 6-inch, and 3-inch cast iron (CAS) distribution pipe
- 8-inch, 6-inch, and 4-inch ductile iron (DI) distribution pipe
- 6-inch HDPE distribution pipe
- 2-inch Galvanized pipe (GP) distribution pipes
- GP and PVC service connections

GIS location data was not provided, in lieu, the City of St. Petersburg Water Distribution Atlas Map pages were used to approximate water main lengths. See **APPENDIX A** for the City of St. Petersburg Water Distribution Atlas Maps provided.

The existing 36-inch RCP water main is fed from the Washington Terrace Pumping Station on 66<sup>th</sup> Avenue North in St. Petersburg and is a major transmission main along 28<sup>th</sup> Street N that supplies the hydrants within the study area. However, the majority of the pressurized pipe material within the study area is DI or CAS which historically have a life span of 50-60 years. CAS pipe installation was phased out during the late 1970s - 1980s in favor of DI pipes, therefore, the existing CAS distribution mains within the area may be near the end of their useful service life. However, no installation dates were available nor provided for the City of St. Petersburg water main infrastructure, and remaining useful life was not assessed.

#### Water Treatment Plant - City of St. Petersburg

All water supplied to the JCIP study area is from the Cosme Water Plant in Odessa, FL and water is transmitted approximately 30 miles to the area. The plant is owned and maintained by the City of St. Petersburg and currently has a rated capacity of 68 MGD with an average monthly flow of 28.03 MGD from October 2024-January 2025. See **APPENDIX B** for the monthly operating reports for the Comse Water Plant from October 2024-January 2025.

## Wastewater Infrastructure

### Wastewater Collection System - Pinellas County Utilities

The wastewater collection system within the JCIP study area is owned and maintained by Pinellas County Utilities. Wastewater is collected via gravity sewer mains consisting of PVC, VCP, and Cured-In-Place Pipe (CIPP) lined VCP. The gravity sewer network connects to three lift stations throughout the area and wastewater is sent to treatment via manifolding CAS and DIP force mains. Please see **Figure 2** below for the location of the wastewater infrastructure in the JCIP study area per the provided Pinellas County GIS files.

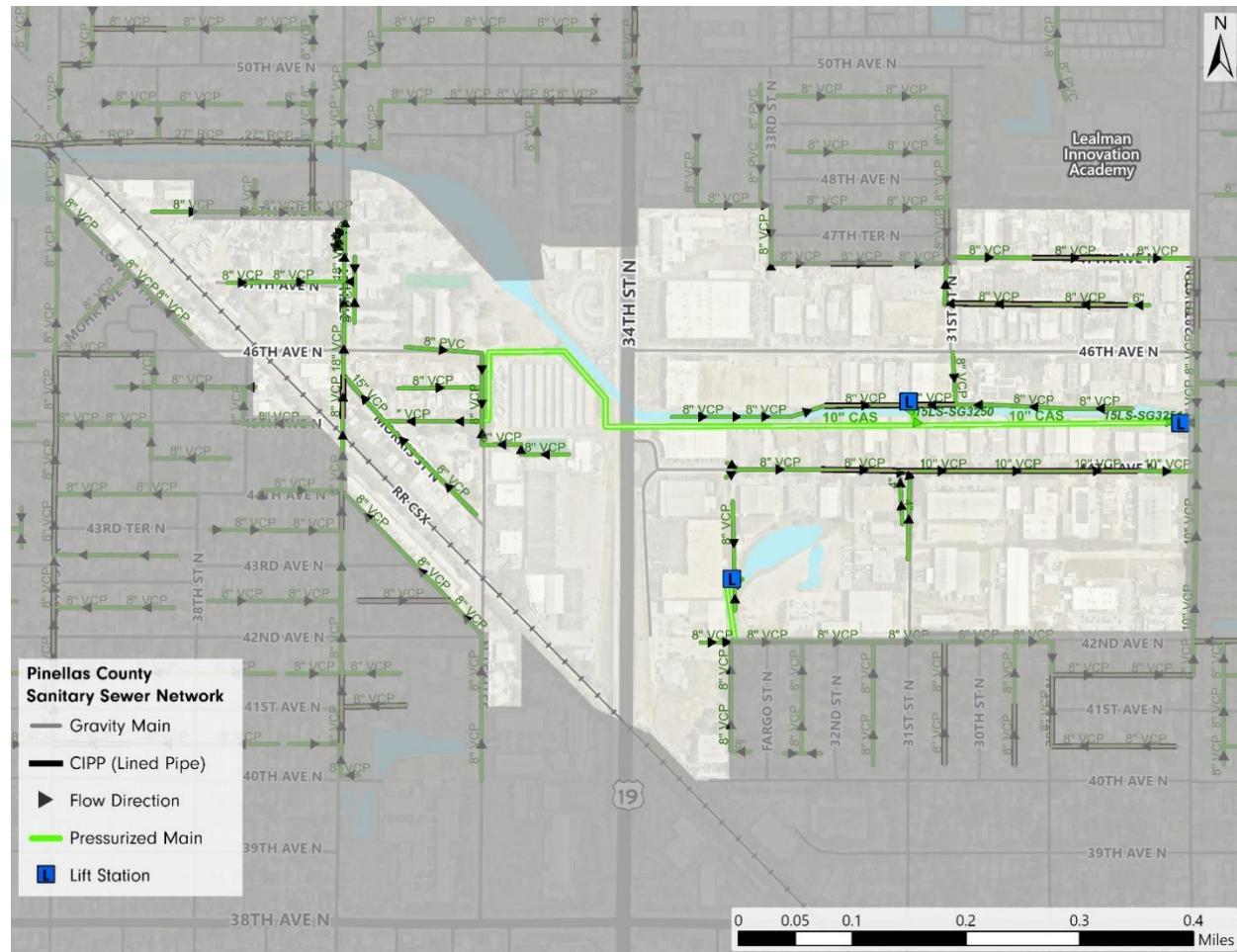


Figure 2: Existing Pinellas County Utilities Sewer Infrastructure

According to Pinellas County GIS the 10-inch and 4-inch CAS force main has an install date of June 1954 while the 6-inch DIP force main has an install date of June 1958. The CAS force mains have a service life of approximately 50-60 years while DIP force mains have a service life of approximately 75-100 years. Therefore, the existing CAS force mains within the area are near the end of their useful service life and may need to be replaced.

The PVC sewer pipes are more resilient and have an expected lifespan of around 100 years if maintained properly. VCP gravity mains can have a lifespan of over 100 years if maintained properly. However, VCP can be brittle under pressure or when subjected to impact, so these pipes need to be protected during any future construction. Approximately 24% of the existing VCP gravity mains, and approximately 35% of the existing DIP gravity mains shown in the figure above have been rehabilitated with CIPP liners. These liners can extend the lifespan of the existing pipe by approximately 50-60 years.

### Wastewater Treatment Plant - Pinellas County Utilities

The JCIP study area wastewater flows are sent and treated at the Pinellas County owned and maintained South Cross Bayou Advanced Water Reclamation Facility (SCWF). The plant currently has a rated capacity of 33 MGD and a monthly average discharge flow of 9.95 MGD from January 2025-March 2025. See **Appendix C** for the discharge monitoring reports for SCWF from January 2025-March 2025.

### Septic Sewer System

According to the Florida Water Management Inventory – Pinellas County Data, the Joe's Creek Study Area are classified as “Known Sewer”, “Likely Sewer”, or no service provided with the exception of one (1) property. Parcel number 16 31 02 00000 320 0910 was denoted as “Unknown”. No parcels in the study area have septic tanks or septic systems on the property.

### Reclaimed Water Infrastructure

There is no reclaimed water infrastructure within the study area that is known. Reclaimed water infrastructure is concentrated around the wastewater reclamation facilities per the County's GIS.

## Infrastructure Service Needs Analysis

The future potable water and wastewater infrastructure service demands were estimated from anticipated land usage changes. The future demands were compared to the existing infrastructure water and wastewater treatment plant capacities. To determine if the existing water and wastewater pipelines capacities within the defined service area are adequate or need to be upsized, a water hydraulic model and masterplan and wastewater hydraulic model and masterplan must be completed.

### Future Land Use/Growth

The JCIP Master Plan Land Use Analysis was used to help determine the area and population for the redevelopment within the study area. For the purpose of the infrastructure need analysis it was assumed up to 1/3 of the study area acreage could redevelop using a conservative approach to measure impact.

This redevelopment was estimated to add approximately 2,331,000 square feet (sf) of additional development space. This additional development was further broken down to be 42% residential space and 58% non-residential space within the JCIP study area. See **Table 1** below for a summary of the land use changes by area.

Table 1: Future Land Use -Area Projections

	Total Development (sf)	Non-Residential (sf)	Residential (sf)
Potential Redevelopment	2,331,000	1,351,980	979,020

Once the square footage of development area was determined it was assumed every 1,000 sf of residential area is equal to one (1) equivalent dwelling unit. Then population was derived by assuming an occupancy rate of 1.5 per EDU. See **Table 2** below for a summary of the land use changes by population.

Table 2: Future Land Use – Population Projections

	Total Development (sf)	ERU (count)	Population (count)
Added Residential	979,020	979	1,469

The subsections below take the redevelopment area square footage and population projections to estimate the future potable water and wastewater demand needs. Future demands were based on the expected redevelopment over the next 20 years.

### Future Potable Water Demand

The water demand from the added development was estimated by using the *PLANPinellas PW Policy 1.2.2, PW Strategy 1.2.2.1 Standard level of service chart* titled *Pinellas County Water Demand Planning Area*. This chart states that the water demand for the year 2025 is 115 GPD per capita. **Table 3** below summarizes the future average water demand per the population projection for the JCIP study area.

Table 3: Water Demand Projections

Land Use	Development Population (Count)	Level of Service (GPD/ERU)	Future Average Demand (GPD)
Added Residential	1,469	115	168,881

### Future Wastewater Demand

The estimated wastewater unit demand for each residential and non-residential land use was based on the recommendations of the Florida Administrative Code (FAC) in Rule 64-6.008 System Size Determinations. The FAC estimated daily sewage flow of 100 GPD per dwelling unit was used for residential redevelopment area. The non-residential redevelopment area is assumed to be mostly manufacturing and warehouse establishments, the FAC estimated daily sewage flow for warehouses is 15 GPD per employee per 8-hour shift. Non-fulfillment Warehouse operations typically have 1 employee per 1,500 to 3,000 square feet, while e-commerce fulfillment operations may require 1 employee per 700 to 1,000 square feet. This analysis will assume 1 employee per 1,500 square feet to remain conservative in our sewer flow estimate. **Table 4** below summarizes the future average wastewater demand per area for the JCIP study area.

Table 4: Wastewater Demand Projections

Land Use	Redevelopment	FAC Daily Use Factor	Future Average Demand (GPD)
Added Residential	979 ERU	100 GPD/ERU	97,900
Added Non-Residential	1,351,980 sf	0.01 GPD/sf	13,520
<b>Total:</b>			<b>111,420</b>

### Future Infrastructure Capacity

Given the future demand projections from **Table 3** and **Table 4** above, the existing treatment plant capacities were compared to determine if there is a need for plant expansions or mitigation projects. **Table 5** below provides the demands within the JCIP study area and the existing treatment plant capacities for both potable water infrastructure and wastewater infrastructure.

Table 5: Demand Projections vs Existing Treatment Plant Capacities

	JCIP Study Area Demand	Existing Treatment Plant Capacity		
		Future Demand Impact (GPD)	Existing Permitted Capacity (GPD)	Current Average Monthly Flow (GPD)
Potable Water	168,881	68,000,000	28,030,000	39,970,000
Wastewater	111,420	37,000,000	9,950,000	27,050,000

The Cosme Water Plant current available capacity of 39.97 MGD is much greater than the net impact of the future added potable water demand of 0.17 MGD. This indicates that the Cosme Water Plant is within capacity for the proposed rezoning in the JCIP study area.

The wastewater plant (SCWF) current available excess capacity of 23.05 MGD is much greater than the net impact of the future added wastewater demand of 0.11 MGD. This indicates that SCWF is within capacity for the proposed rezoning in the JCIP study area.

## Infrastructure Mitigation Recommendations and Cost

Listed below are wastewater infrastructure past and future projects identified by the Pinellas County Utilities Department and the Pinellas County 2024-2029 6-Year Plan that are located within the study area to help mitigate some of the infrastructure needs:

- Wastewater Lift Station Rehabilitations
  - Description: The two pump stations along Joe's creek (LS 122 and 123) have both been rehabbed for a 30-year improvement period
  - Status: LS 122 was completed in 2024. LS 123 was completed in 2023
- Cast Iron Force Main Replacement
  - Description: The 10" cast iron sewer force main running parallel to Joe's creek on the south-side and under US 19 and to the west side of the industrial park has been identified on the County's master plan to be replaced and upsized to a 12" pipe.
  - Status: Not currently funded in the 6-year CIP
- Sanitary Sewer CIPP Lining
  - Description: Sanitary sewer service laterals on the west side of the industrial park running along Morris Street between 46<sup>th</sup> Ave and 49<sup>th</sup> Ave are to be CIPP lined.
  - Status: Completed
- 2024-2029 CIP #002747I: Sanitary Sewer Interceptor Pipe Rehabilitation -Lealman
  - Description: Rehabilitation of gravity sewer interceptor main pipes and manholes in the Lealman area to extend useful service life.
  - Status: Scheduled to complete in FY23

Based on the findings of this Infrastructure Assessment, the following suggestions were identified to further mitigate potential future water and wastewater service demands within the study area.

- Complete a wastewater hydraulic model and masterplan of the JCIP study area to determine if the pipelines and lift stations have capacity to serve the additional flows
- Complete a water hydraulic model and masterplan of the JCIP study area to determine if the pipelines have capacity to serve the additional flows
- Continued maintenance from Pinellas County Utilities and the City of St. Petersburg for potable water distribution and wastewater collection/transmission systems.
- Replacement of CAS pipes within the JCIP study area as they are nearing the end of their remaining useful life.
- Rehabilitate and CIPP line the remaining VCP and DIP gravity sewer main pipes within the study area (approximately 76% of the VCP gravity mains and 65% of the DIP gravity mains).

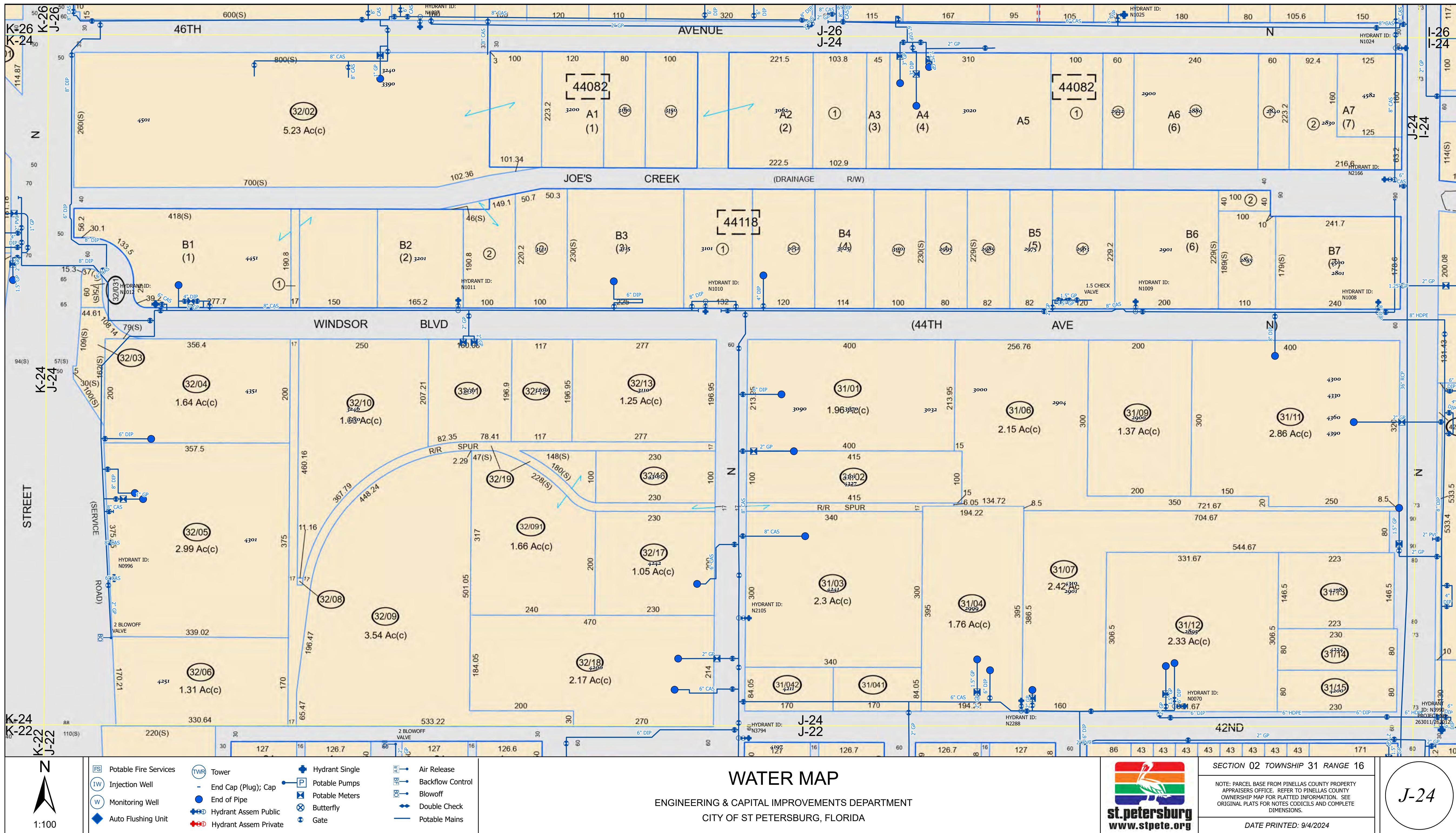
After the master plans are completed for water and wastewater additional projects for upsizing lift stations, water pipelines, and wastewater pipelines may be needed. The cost estimate does not include these projects. The preliminary AACE Class V Engineer's Opinion of Probable Construction Costs (OPCC) for replacing all CAS force mains and CAS water mains is outlined below in **Table 6**. The pipe lengths were tabulated based off Pinellas County GIS files and City of St. Petersburg Atlas Maps.

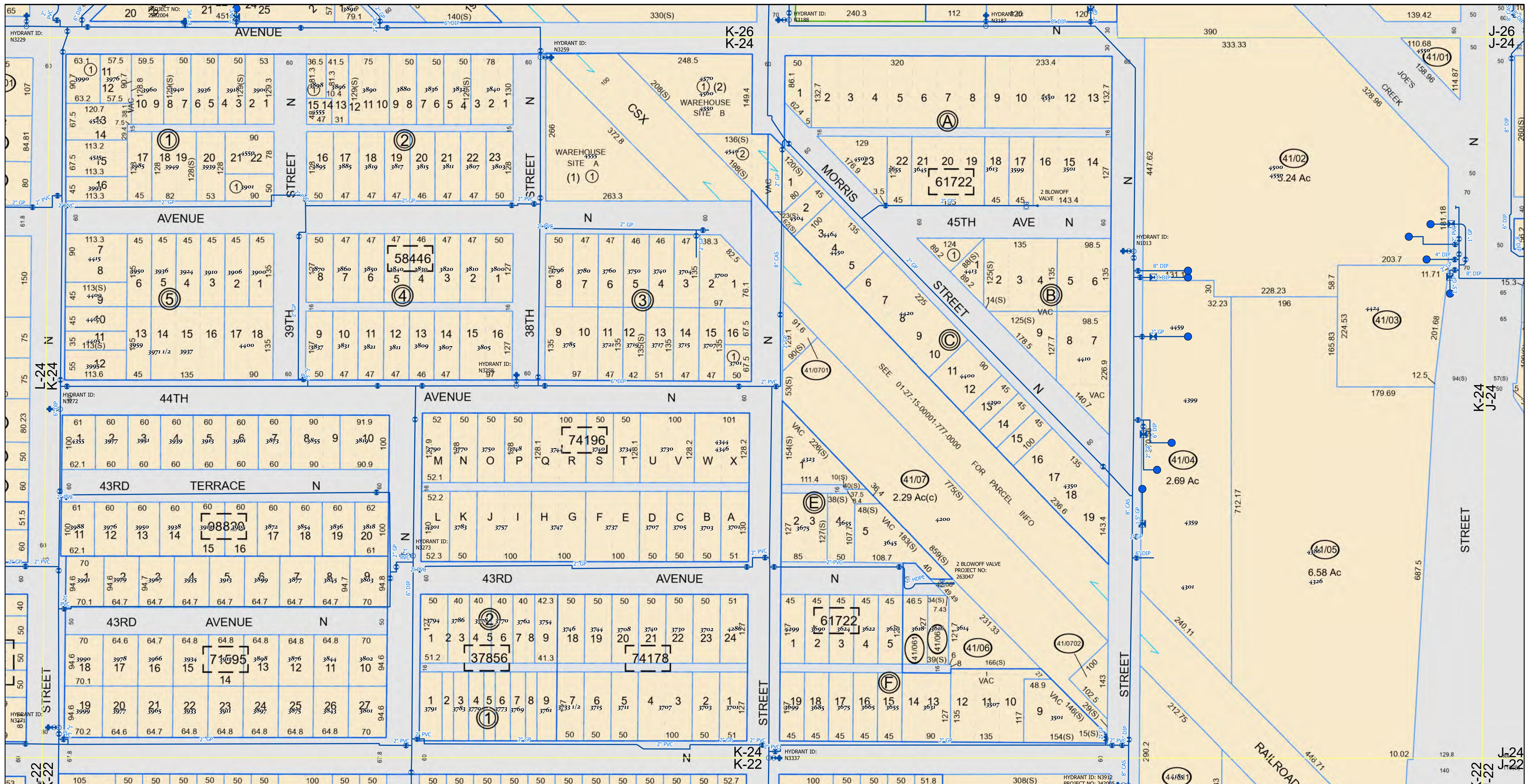
Table 6: Preliminary Engineer's OPCC

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
1	Mobilization (10%)	1	LS	\$674,316
2	Water Master Plan and Hydraulic Model	1	LS	\$250,000
3	Wastewater Master Plan and Hydraulic Model	1	LS	\$250,000
4	Replace 10" CAS Force Main	3,200	LF	\$480
5	Replace 4" CAS Force Main	300	LF	\$160
6	Replace 8" CAS Water Main	8,864	LF	\$320
7	Replace 6" CAS Water Main	2,539	LF	\$240
8	Replace 3" CAS Water Main	111	LF	\$120
9	CIPP Line Gravity Mains	16,000	LF	\$75
<b>SUBTOTAL</b>				<b>\$7,417,476</b>
10	\$1,829,243	1	LS	\$2,225,243
<b>TOTAL</b>				<b>\$9,642,719</b>
<p>The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to the Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinion of probable costs.</p>				

# **APPENDIX A**

WATER DISTRIBUTION ATLAS MAPS





## WATER MA

# ENGINEERING & CAPITAL IMPROVEMENTS DEPARTMENT

## CITY OF ST PETERSBURG, FLORIDA



SECTION 03 TOWNSHIP 31 RANGE 16

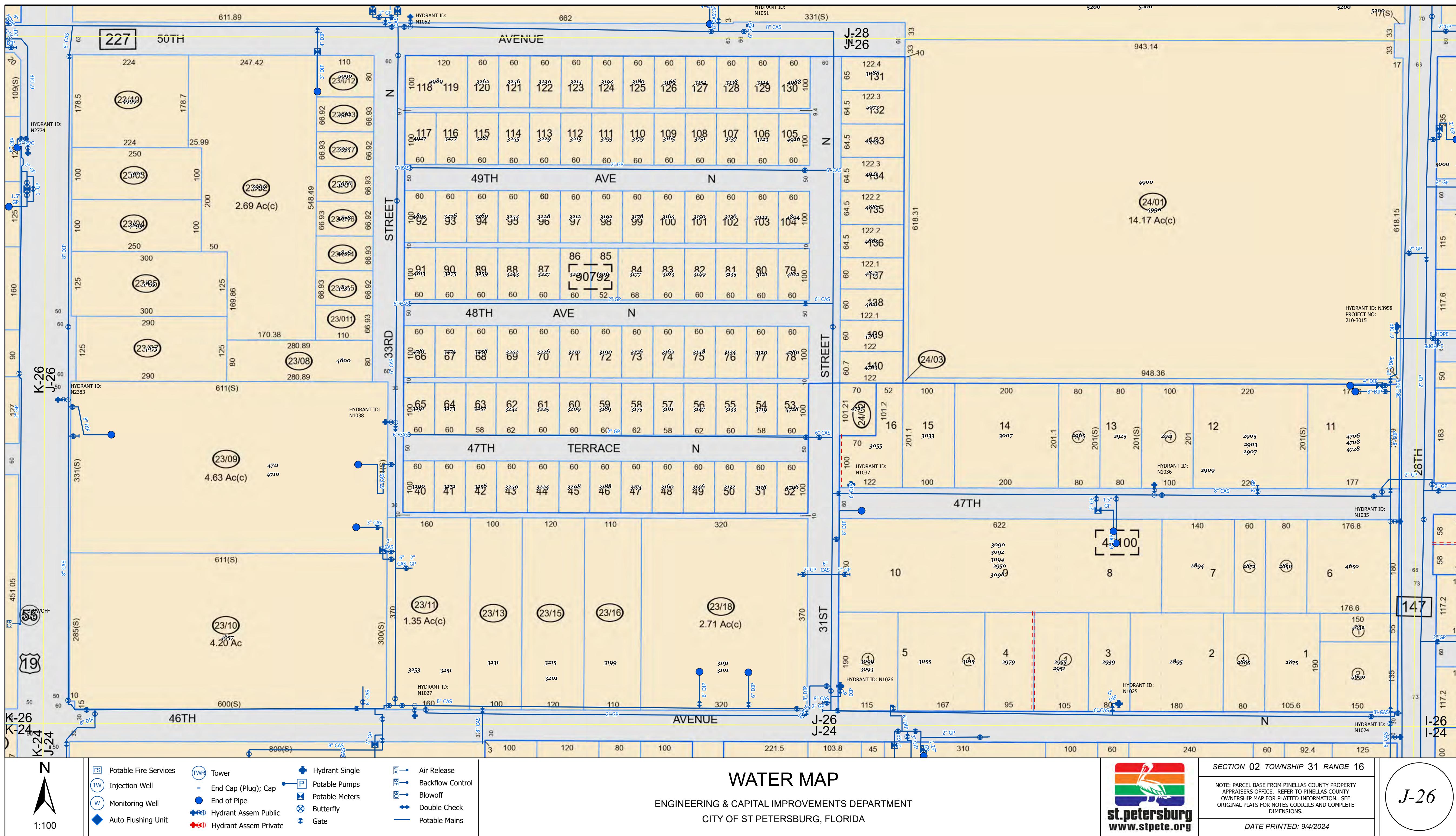
---

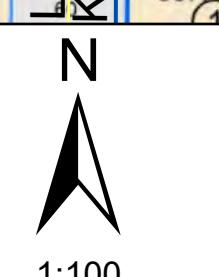
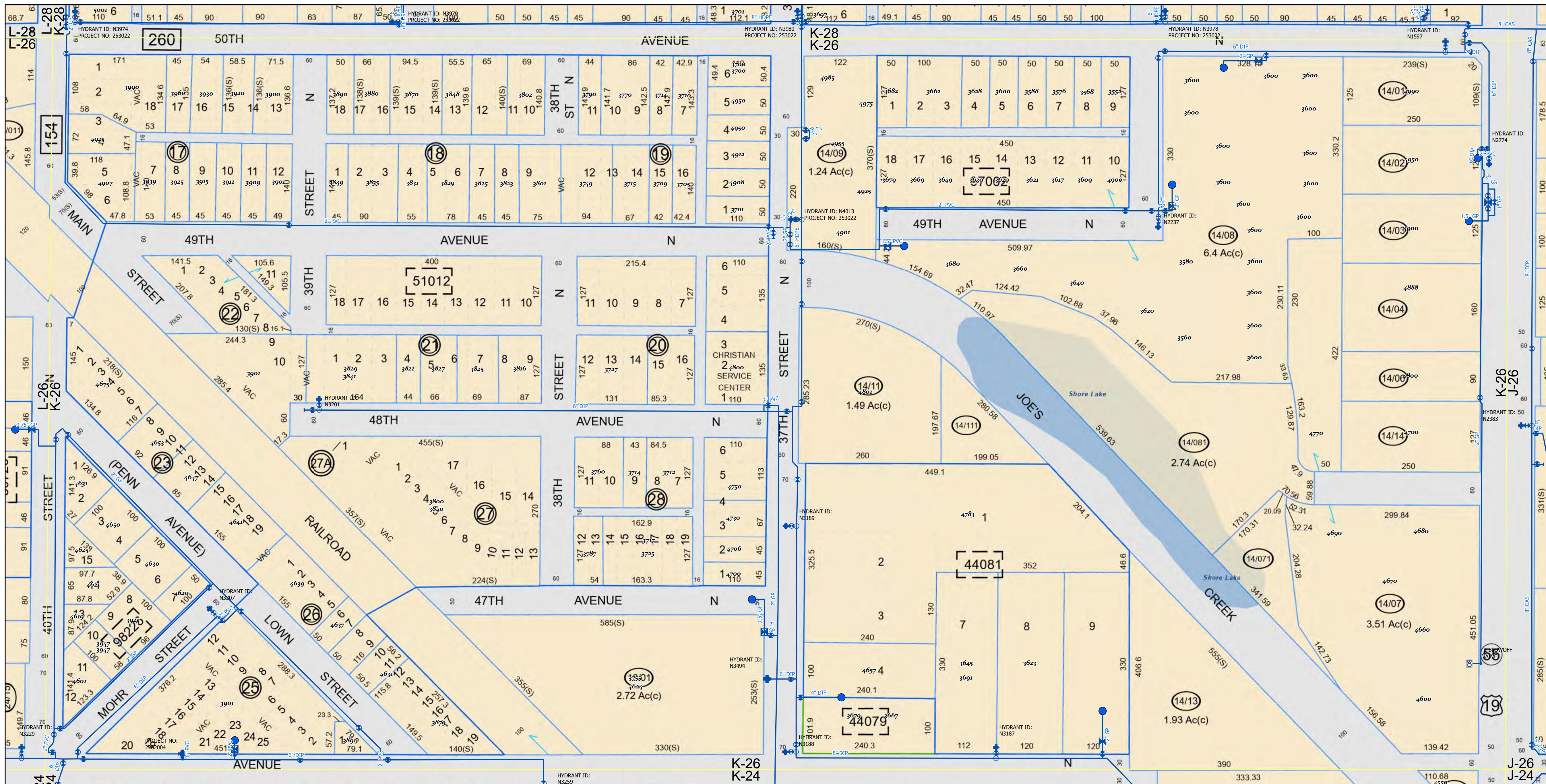
NOTE: PARCEL BASE FROM PINELLAS COUNTY PROPERTY APPRAISERS OFFICE. REFER TO PINELLAS COUNTY OWNERSHIP MAP FOR PLATTED INFORMATION. SEE ORIGINAL PLATS FOR NOTES CODICILS AND COMPLETE DIMENSIONS.

---

DATE PRINTED: 9/4/2024

K-24





1:1

-  Potable Fire Serv
-  Injection Well
-  Monitoring Well
-  Auto Flushing U

- es
-  Tower
- End Cap
-  End of P
-  Hydrant
-  Hydrant

drant Single  
able Pumps  
able Meters  
terfly  
e

- Air Release
- Backflow Control
- Blowoff
- ◆ Double Check
- Potable Mains

55

1000

# ENGINEERING C

# WATER G & CAPITAL IM- TY OF ST PETER

# MAP PROVEMENTS DE SBURG, FLORIDA

## WATER MAP

ENGINEERING & CAPITAL IMPROVEMENTS DEPARTMENT  
CITY OF ST PETERSBURG, FLORIDA



 st.petersburg  
[www.stpete.org](http://www.stpete.org)

**SECTION 03 TOWNSHIP 31 RANGE**

---

**NOTE: PARCEL BASE FROM PINELLAS COUNTY PROPERTY APPRAISERS OFFICE. REFER TO PINELLAS COUNTY OWNERSHIP MAP FOR PLATTED INFORMATION. SEE ORIGINAL PLATS FOR NOTES CODICILS AND COMPLETENESS DIMENSIONS.**

---

**DATE PRINTED: 9/4/2024**

DATE PRINTED: 9/4/2024

A large circle containing the text "K-26".

# **APPENDIX B**

COSME WATER PLANT  
MONTHLY OPERATION REPORTS



## MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

### I. General Information for the Month/Year of: 10/2024

#### A. Public Water System (PWS) Information

PWS Name: City of St. Petersburg	PWS Identification Number: 6521715		
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174		
PWS Owner: City of St. Petersburg			
Contact Person: Clyde E Church	Contact Person's Title: Chief Operator		
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110		
Contact Person's E-Mail Address: clyde.church@stpete.org			

#### B. Water Treatment Plant Information

Plant Name: City of St. Petersburg-Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759			
Plant Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556	
Type of Water Treated by Plant: <input checked="" type="checkbox"/> Raw Ground Water <input checked="" type="checkbox"/> Purchased Finished Water				
Permitted Maximum Day Operating Capacity of Plant, gallons per day: 68,000,000				
Plant Category (per subsection 62-699.310(4), F.A.C.): 68,000,000	Plant Class (per subsection 62-699.310(4), F.A.C.): A			
Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Clyde Church / Waunda Henry (Mgr)	A/A	23835 / 20966	
	John Zdrodowski /	A/	4288 /	
	Caleb Rine / JP Van Horn	A/A	22938 / 22483	
	Victor Johnson / Devin Eads	A/A	25364 / 25206	
	Chris Mantilla / Jarrod Sheppard	B/B	26980 / 21265	
	Elijah Garcia / Andrew Karlesky	B/C	28672 / 28999	
	Terry Costello / Martell Sydnor	C/C	8080 / 27763	
	Raymond Kraus / Nicole Kleiman	C/C	50068 / 28667	
	Wilson Badillo / Dathan Wood / Malia Walker	C/C/C	29544 / 29491 / 29754	

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records.

owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date

11/4/24

Clyde Church

Printed or Typed Name

23835

RECEIVED

License Number

11-04-2024

# MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 6521715

Plant Name: City of St. Petersburg- Cosme Water Treatment Plant

## III. Daily Data for the Month/Year of: 10/2024

Means of Achieving Four-Log Virus Inactivation/Removal: \*  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide  Ozone  Ultrafiltration  
 Nanofiltration  Reverse Osmosis  UV Light Disinfection  Conventional Filtration, Including Lime Softening  Other (Describe):

Type of Disinfectant Residual Maintained in Distribution System:  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*		Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, mg/L	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, mg/L	Disinfection Segment 1	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
				Lowest Residual Disinfectant Concentration at End of Disinfection	Segment 1, mg/L				
1	X	24	28910000	5.50	5.50				2.0
2	X	24	32570000	5.44	4.11				2.0
3	X	24	32250000	5.31	5.18				1.8
4	X	24	32780000	5.61	5.37				1.9
5	X	24	32310000	5.73	5.54				2.2
6	X	24	30480000	5.40	5.33				2.1
7	X	24	29490000	5.15	5.18				3.0
8	X	24	24920000	5.06	5.28				2.1
9	X	24	17290000	5.41	5.41				1.5
10	X	24	21190000	4.91	3.86				1.8
11	X	24	33860000	5.24	5.08				2.0
12	X	24	30080000	5.71	5.58				2.5
13	X	24	27440000	5.84	5.82				2.4
14	X	24	27640000	5.46	5.54				2.8
15	X	24	31800000	5.50	5.49				2.9
16	X	24	32960000	5.12	5.25				3.2
17	X	24	33750000	5.08	4.88				3.3
18	X	24	31930000	5.32	4.93				2.5
19	X	24	29280000	5.26	5.11				2.3
20	X	24	28520000	5.04	5.14				2.1
21	X	24	28900000	5.09	5.06				2.4
22	X	24	29480000	5.34	5.11				2.6
23	X	24	31570000	4.52	4.46				2.7
24	X	24	31290000	3.83	3.55				2.4
25	X	24	30840000	5.11	5.50				2.5
26	X	24	29370000	5.59	5.35				2.5
27	X	24	29420000	5.39	5.22				2.6
28	X	24	29750000	5.37	5.21				2.8
29	X	24	29420000	5.70	4.87				2.4
30	X	24	30120000	5.17	3.18				2.4
31	X	24	30270000	4.73	4.29				2.5
Total				919880000					
Average				29673548.397096774					
Maximum				33860000					

\* Only plants providing DEP-approved 4-log virus treatment must provide this information.

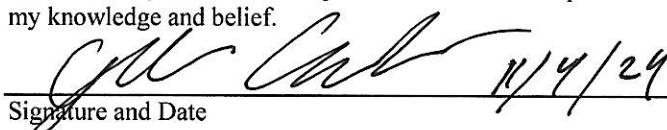


## MONTHLY OPERATION REPORT FOR CONSECUTIVE SYSTEMS THAT RECEIVE PURCHASED FINISHED WATER FROM A SUBPART H SYSTEM

See Page 2 for Instructions.

I. General Water System Information for the Month/Year of:		10/2024
System Name: City of Saint Petersburg		PWS Identification Number: 6521715
System Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community		
Number of Service Connections at End of Month: 94208		Total Population Served at End of Month: 344174
System Owner: City of St. Petersburg		
Contact Person: Clyde E. Church		Contact Person's Title: Chief Operator
Contact Person's Mailing Address: 16015 Racetrack Road		City: Odessa State: Florida Zip Code: 33556
Contact Person's E-Mail Address: clyde.church@stpete.org		Contact Person's Telephone Number: 727-551-3714

I, the undersigned lead/chief operator or authorized representative of this consecutive system, certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

 11/4/24 Clyde Church 23835  
Signature and Date Printed or Typed Name License Number or Title

II. Daily Distribution System Disinfectant Residual Data for the Month/Year of:		10/2024										
Type of Disinfectant Residual Maintained in Distribution System: Free Chlorine Combined Chlorine (Chloramines)												
Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL	Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL	
1	22		0			17						
2	18		0			18						
3	20		0			19						
4						20						
5						21	40		0			
6						22	40		0			
7						23	40		0			
8						24						
9						25						
10						26						
11						27						
12						28						
13						29						
14						30						
15						31						
16						Total	180	0	0	0	0	
V = percentage of samples in which disinfectant residual is undetectable = $(c+d+e)/(a+b) \times 100 = \%_0$												
For previous month, V = %												



## MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

### I. General Information for the Month/Year of: 10/2024

#### A. Public Water System (PWS) Information

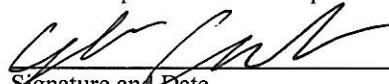
PWS Name: City of Saint Petersburg, Public Drinking Water System	PWS Identification Number: 6521715		
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174		
PWS Owner: City of Saint Petersburg			
Contact Person: Clyde Church	Contact Person's Title: Chief Operator		
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110		
Contact Person's E-Mail Address: Clyde.Church@stpete.org			

#### B. Water Treatment Plant Information

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759		
Plant Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

 11/4/24

Signature and Date

Clyde Church

23835

Printed or Typed Name

License Number

### III. Check Sample Results for the Month/Year of: \* 10/2024

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution System Sample 1	060	0.79	0.693
Distribution System Sample 2	069	0.79	0.694

\* Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.

# MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: 6521715

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant

## IV. Daily Fluoridation Data for the Month/Year of: 10/2024

Type of Fluoride Chemical Used:  Sodium Fluoride  Sodium Fluosilicate (Silicofluoride)  Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = 23.89

Day of the Month	Hours Plant in Operation	Net Quantity of Finished Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24	28910000	106	0.44	0.72
2	24	32570000	129	0.48	0.78
3	24	32250000	122	0.46	0.80
4	24	32780000	104	0.38	0.80
5	24	32310000	102	0.38	0.71
6	24	30480000	103	0.41	0.71
7	24	29490000	105	0.43	0.69
8	24	24920000	99	0.50	0.78
9	24	17290000	75	0.53	0.79
10	24	21190000	71	0.40	0.73
11	24	33860000	102	0.37	0.72
12	24	30080000	120	0.48	0.75
13	24	27440000	108	0.48	0.81
14	24	27640000	99	0.44	0.72
15	24	31800000	115	0.45	0.72
16	24	32960000	124	0.45	0.71
17	24	33750000	126	0.46	0.74
18	24	31930000	126	0.47	0.71
19	24	29280000	119	0.50	0.77
20	24	28520000	102	0.43	0.78
21	24	28900000	96	0.41	0.70
22	24	29480000	108	0.45	0.68
23	24	31570000	106	0.41	0.74
24	24	31290000	105	0.40	0.74
25	24	30840000	98	0.39	0.70
26	24	29370000	96	0.40	0.75
27	24	29420000	97	0.40	0.73
28	24	29750000	96	0.40	0.69
29	24	29420000	96	0.40	0.72
30	24	30120000	87	0.36	0.73
31	24	30270000	103	0.41	0.77
Total		919880000	3245		
Average		29673548.387096774	104.6774193548387		0.7383870967741935



## MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

<b>I. General Information for the Month/Year of:</b> 12/2024				
<b>A. Public Water System (PWS) Information</b>				
PWS Name: City of St. Petersburg PWS Identification Number: 6521715				
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive				
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174			
PWS Owner: City of St. Petersburg				
Contact Person: Clyde E Church	Contact Person's Title: Chief Operator			
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa State: Florida Zip Code: 33556			
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110			
Contact Person's E-Mail Address: clyde.church@stpete.org				
<b>B. Water Treatment Plant Information</b>				
Plant Name: City of St. Petersburg-Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759			
Plant Address: 16015 Racetrack Road	City: Odessa State: Florida Zip Code: 33556			
Type of Water Treated by Plant: <input checked="" type="checkbox"/> Raw Ground Water <input checked="" type="checkbox"/> Purchased Finished Water				
Permitted Maximum Day Operating Capacity of Plant, gallons per day: 68 000,000				
Plant Category (per subsection 62-699.310(4), F.A.C.): 68 000,000	Plant Class (per subsection 62-699.310(4), F.A.C.): A			
Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Clyde Church / Waunda Henry (Mgr)	A/A	23835 / 20966	
	John Zdrodowski /	A/J	4288 /	
	Caleb Rine / JP Van Horn	A/A	22938 / 22483	
	Victor Johnson / Devin Eads	A/A	25364 / 25206	
	Chris Mantilla / Jarrod Sheppard	B/B	26980 / 21265	
	Elijah Garcia / Andrew Karlesky	B/C	28672 / 28999	
	Terry Costello / Martell Sydnor	C/C	8080 / 27763	
	Raymond Kraus / Nicole Kleiman	C/C	50068 / 28667	
Wilson Badillo / Dathan Wood / Malia Walker	C/C/C	29544 / 29491 / 29754		

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records.

owner can retain them, together with copies of this report, at a convenient location for at least ten years.

1/6/25

Signature and Date

Clyde Church

Printed or Typed Name

RECEIVED

01-06-2025

23835

License Number

DIVISION OF WATER  
RESOURCE MANAGEMENT

# MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 6521715

Plant Name: City of St. Petersburg-Cosme Water Treatment Plant

## III. Daily Data for the Month/Year of: 12/2024

Means of Achieving Four-Log Virus Inactivation/Removal: \*  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide  Ozone  Ultrafiltration  
 Nanofiltration  Reverse Osmosis  UV Light Disinfection  Conventional Filtration, Including Lime Softening  Other (Describe):

Type of Disinfectant Residual Maintained in Distribution System:  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*		Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, mg/L	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, mg/L	Disinfection Segment 1	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mg/L
				Segment 1, mg/L	Segment 2, mg/L				
1	X	24	24790000	4.84	4.35				1.7
2	X	24	26210000	4.83	4.72				2.3
3	X	24	28640000	4.91	4.50				2.2
4	X	24	28490000	4.81	4.39				2.2
5	X	24	28840000	4.85	4.78				2.1
6	X	24	28820000	4.06	4.12				2.3
7	X	24	28280000	4.88	4.82				2.6
8	X	24	28390000	4.71	2.92				2.7
9	X	24	28460000	2.88	4.73				2.5
10	X	24	28730000	4.90	4.72				2.5
11	X	24	29380000	4.93	4.44				2.5
12	X	24	28590000	4.73	4.61				2.4
13	X	24	30120000	4.70	4.58				2.4
14	X	24	27850000	4.75	4.78				2.5
15	X	24	27940000	4.19	4.34				2.8
16	X	24	28410000	4.47	4.78				2.5
17	X	24	28110000	4.69	4.53				2.6
18	X	24	26050000	4.55	4.44				2.4
19	X	21	24880000	4.21	3.01				2.2
20	X	24	27700000	2.92	3.01				2.2
21	X	24	29280000	4.40	4.29				2.0
22	X	24	28540000	4.08	4.08				2.3
23	X	24	28840000	3.69	3.86				2.2
24	X	24	26650000	4.72	4.04				2.5
25	X	24	24680000	4.20	4.60				2.2
26	X	24	24350000	4.83	4.64				2.5
27	X	24	25250000	4.59	4.56				2.2
28	X	24	25790000	4.69	4.51				2.5
29	X	24	28920000	4.78	4.59				2.6
30	X	24	28610000	4.50	4.50				2.5
31	X	24	28680000	4.67	4.64				2.9
Total			659870000						2.7
Average			27737741.93548387						
Maximum			30120000						

\* Only plants providing DEP-approved 4-log virus treatment must provide this information.

## MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 6521715

Plant Name: City of St. Petersburg Cosme Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year: *		
A. Is any polymer containing the monomer <u>acrylamide</u> used at the water treatment plant? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, and the polymer dose and the acrylamide level in the polymer are as follows:		
Polymer Dose, ppm = .012	Acrylamide Level, % <sup>†</sup> = .009	
B. Is any polymer containing the monomer <u>epichlorohydrin</u> used at the water treatment plant? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, and the polymer dose and the epichlorohydrin level in the polymer are as follows:		
Polymer Dose, ppm =	Epichlorohydrin Level, % <sup>†</sup> =	
C. Is any iron or manganese sequestrant used at the water treatment plant? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, and the type of sequestrant, sequestrant dose, etc., are as follows:		
Type of Sequestrant (polyphosphate or sodium silicate):		
Sequestrant Dose, mg/L of phosphate as PO <sub>4</sub> or mg/L of silicate as SiO <sub>2</sub> =		
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO <sub>2</sub> =		

\* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

<sup>†</sup> Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certification.

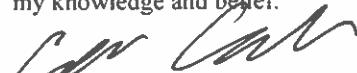


## MONTHLY OPERATION REPORT FOR CONSECUTIVE SYSTEMS THAT RECEIVE PURCHASED FINISHED WATER FROM A SUBPART H SYSTEM

See Page 2 for Instructions.

I. General Water System Information for the Month/Year of: 12/2024		PWS Identification Number: 6521715
System Name: City of Saint Petersburg.		
System Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community		
Number of Service Connections at End of Month: 94208		Total Population Served at End of Month: 344174
System Owner: City of St. Petersburg		
Contact Person: Clyde E. Church		Contact Person's Title: Chief Operator
Contact Person's Mailing Address: 16015 Racetrack Road		City: Odessa State: Florida Zip Code: 33556
Contact Person's E-Mail Address: clyde.church@stpete.org		Contact Person's Telephone Number: 727-551-3714

I, the undersigned lead/chief operator or authorized representative of this consecutive system, certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

 1/6/25  
Signature and Date

Clyde Church

Printed or Typed Name

23835

License Number or Title

II. Daily Distribution System Disinfectant Residual Data for the Month/Year of: 12/2024											
Type of Disinfectant Residual Maintained in Distribution System:			Free Chlorine			Combined Chlorine (Chloramines)					
Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL	Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL
1						17	23		0		
2						18	6		0		
3	20		0			19	20		0		
4	20		0			20					
5	20		0			21					
6						22					
7						23	20		0		
8						24					
9	10		0			25					
10	8		0			26					
11						27					
12	12		0			28					
13						29					
14						30					
15						31					
16	21		0			Total	180	0	0	0	0

V = percentage of samples in which disinfectant residual is undetectable =  $(c+d+e)/(a+b) \times 100 = \%_0$

For previous month, V = %



## MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

### I. General Information for the Month/Year of: 12/2024

#### A. Public Water System (PWS) Information

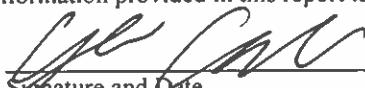
PWS Name: City of Saint Petersburg, Public Drinking Water System	PWS Identification Number: 6521715		
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174		
PWS Owner: City of Saint Petersburg			
Contact Person: Clyde Church	Contact Person's Title: Chief Operator		
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110		
Contact Person's E-Mail Address: Clyde.Church@stpete.org			

#### B. Water Treatment Plant Information

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759		
Plant Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

 1/8/25

Clyde Church

23835

Printed or Typed Name

License Number

### III. Check Sample Results for the Month/Year of: \* 12/2024

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution System Sample 1	060	0.83	0.647
Distribution System Sample 2	069	0.83	0.660

\* Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.

## MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: 6521715

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant

IV. Daily Fluoridation Data for the Month/Year of: 12/2024

Type of Fluoride Chemical Used:  Sodium Fluoride  Sodium Fluosilicate (Silicofluoride)  Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = 23.89

Day of the Month	Hours Plant in Operation	Net Quantity of Finished Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
					% = 23.89
1	24	24790000	80	0.39	0.74
2	24	26210000	73	0.34	0.78
3	24	28640000	80	0.34	0.75
4	24	28490000	77	0.33	0.73
5	24	28840000	79	0.34	0.69
6	24	28820000	98	0.41	0.71
7	24	28280000	91	0.38	0.75
8	24	28990000	92	0.39	0.76
9	24	28460000	86	0.36	0.71
10	24	28730000	92	0.39	0.74
11	24	29380000	91	0.37	0.74
12	24	29590000	92	0.36	0.76
13	24	30120000	93	0.38	0.83
14	24	27850000	84	0.36	0.81
15	24	27940000	62	0.27	0.72
16	24	28410000	64	0.27	0.70
17	24	28110000	68	0.29	0.66
18	24	26050000	70	0.33	0.75
19	21	24880000	61	0.29	0.69
20	24	27700000	75	0.32	0.70
21	24	29280000	77	0.33	0.76
22	24	28540000	78	0.33	0.74
23	24	28840000	78	0.33	0.74
24	24	26650000	74	0.33	0.74
25	24	24680000	75	0.37	0.74
26	24	24350000	71	0.35	0.77
27	24	25250000	77	0.35	0.77
28	24	25790000	74	0.34	0.68
29	24	28920000	89	0.38	0.73
30	24	28610000	88	0.37	0.68
31	24	28680000	90	0.37	0.64
Total		859870000	2479		
Average		27737741.93548387	79.96774193548387		0.7325806451612901



## MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

### I. General Information for the Month/Year of: 01/2025

#### A. Public Water System (PWS) Information

PWS Name: City of St. Petersburg	PWS Identification Number: 6521715		
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174		
PWS Owner: City of St. Petersburg			
Contact Person: Clyde E Church	Contact Person's Title: Chief Operator		
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110		
Contact Person's E-Mail Address: clyde.church@stpete.org			

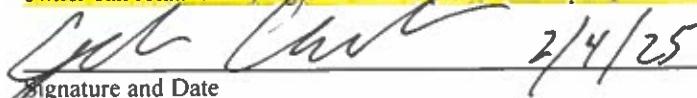
#### B. Water Treatment Plant Information

Plant Name: City of St. Petersburg-Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759		
Plant Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Type of Water Treated by Plant: <input checked="" type="checkbox"/> Raw Ground Water <input checked="" type="checkbox"/> Purchased Finished Water			
Permitted Maximum Day Operating Capacity of Plant, gallons per day: 68,000,000	Plant Class (per subsection 62-699.310(4), F.A.C.): A		
Licensed Operators	Name	License Class	License Number
Lead/Chief Operator:	Clyde Church / Waunda Henry (Mgr)	A/A	23835 / 20966
	JP Van Horn /	A/	22483 /
	Caleb Rine /	A/	22938 /
	Victor Johnson / Devin Eads	A/A	25364 / 25206
	Chris Mantilla / Jarrod Sheppard	B/B	26980 / 21265
	Elijah Garcia / Andrew Karlesky	B/C	28672 / 28999
	/ Martell Sydnor	I/C	/ 27763
	Raymond Kraus /	C/	50068 /
	Wilson Badillo / Dathan Wood / Malia Walker	C/C/C	29544 / 29491 / 29754

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records.

owner can retain them, together with copies of this report, at a convenient location for at least ten years.

  
Signature and Date  
2/4/25

Clyde Church  
Printed or Typed Name

RECEIVED  
02-04-2025

23835  
License Number

DIVISION OF WATER  
RESOURCE MANAGEMENT

# MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 6521715

Plant Name: City of St. Petersburg- Cosme Water Treatment Plant

## III. Daily Data for the Month/Year of: 01/2025

Means of Achieving Four-Log Virus Inactivation/Removal: \*  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide  Ozone  Ultrafiltration  
 Nanofiltration  Reverse Osmosis  UV Light Disinfection  Conventional Filtration, Including Lime Softening  Other (Describe):

Type of Disinfectant Residual Maintained in Distribution System:  Free Chlorine  Combined Chlorine (Chloramines)  Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*		Emergency or Abnormal Operating Conditions, Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
				Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, mg/L	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, mg/L	
1	X	24	26250000	3.53	3.16	2.8
2	X	24	24500000	4.67	4.63	2.5
3	X	24	24900000	4.22	4.16	2.4
4	X	24	24180000	4.71	4.51	2.3
5	X	24	29960000	4.91	4.46	2.5
6	X	24	30440000	4.73	4.80	2.5
7	X	24	26080000	4.98	4.91	2.6
8	X	24	24160000	4.84	4.83	2.6
9	X	24	24730000	5.05	4.67	2.3
10	X	24	25650000	4.82	3.82	2.7
11	X	24	30220000	4.63	4.57	2.6
12	X	24	28050000	4.90	4.75	2.4
13	X	24	24250000	4.79	4.66	2.9
14	X	24	25960000	4.76	4.48	3.0
15	X	24	28580000	4.98	4.19	2.8
16	X	24	28790000	4.93	4.57	2.6
17	X	24	28740000	4.89	4.60	2.9
18	X	24	26130000	4.86	4.64	2.7
19	X	21	25330000	4.97	4.38	2.9
20	X	24	24420000	4.90	4.63	2.5
21	X	24	25130000	4.89	4.54	2.6
22	X	24	25630000	4.77	4.49	2.8
23	X	24	28320000	4.71	4.62	3.0
24	X	24	28410000	4.80	4.56	3.0
25	X	24	27370000	4.82	4.73	2.9
26	X	24	25140000	4.63	4.55	3.0
27	X	24	24570000	4.91	4.63	3.4
28	X	24	27800000	4.89	4.83	3.5
29	X	24	27900000	4.57	4.56	3.5
30	X	24	28630000	4.85	4.71	3.6
31	X	24	26810000	4.95	4.61	3.3
Total			827030000			
Average			26878307 (68774184)			
Maximum			30440000			

\* Only plants providing DEP-approved 4-log virus treatment must provide this information.

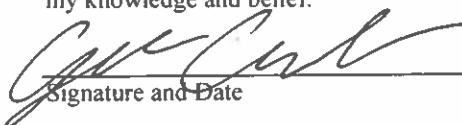


## MONTHLY OPERATION REPORT FOR CONSECUTIVE SYSTEMS THAT RECEIVE PURCHASED FINISHED WATER FROM A SUBPART H SYSTEM

See Page 2 for Instructions.

I. General Water System Information for the Month/Year of: 01/2025		PWS Identification Number: 6521715	
System Name: City of Saint Petersburg		System Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community	
Number of Service Connections at End of Month: 94208		Total Population Served at End of Month: 344174	
System Owner: City of St. Petersburg		Contact Person's Title: Chief Operator	
Contact Person: Clyde E. Church		Contact Person's Mailing Address: 16015 Racetrack Road	
Contact Person's E-Mail Address: clyde.church@stpete.org		City: Odessa	State: Florida Zip Code: 33556
		Contact Person's Telephone Number: 727-551-3714	

I, the undersigned lead/chief operator or authorized representative of this consecutive system, certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

  
Signature and Date

2/4/25 Clyde Church

Printed or Typed Name

23835

License Number or Title

II. Daily Distribution System Disinfectant Residual Data for the Month/Year of: 01/2025											
Type of Disinfectant Residual Maintained in Distribution System:				Free Chlorine		Combined Chlorine (Chloramines)					
Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL	Day of the Month	a = No. of Sites Where Disinfectant Residual Was Measured	b = No. of Sites Where Disinfectant Residual Not Measured but HPC Measured	c = No. of Sites Where Disinfectant Residual Not Detected and HPC Not Measured	d = No. of Sites Where Disinfectant Residual Not Detected and HPC > 500/mL	e = No. of Sites Where Disinfectant Residual Not Measured and HPC > 500/mL
1						17					
2						18					
3						19					
4						20					
5						21					
6	20	0				22					
7	20	0				23					
8	20	0				24					
9	20	0				25					
10						26					
11						27	20		0		
12						28	20		0		
13						29					
14	20	0				30					
15	20	0				31					
16	20	0				Total	180	0	0	0	0
V = percentage of samples in which disinfectant residual is undetectable = (c+d+e)/(a+b) x 100 = %											
For previous month, V = %											



## MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

### I. General Information for the Month/Year of: 01/2025

#### A. Public Water System (PWS) Information

PWS Name: City of Saint Petersburg, Public Drinking Water System	PWS Identification Number: 6521715		
PWS Type: <input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive			
Number of Service Connections at End of Month: 94208	Total Population Served at End of Month: 344174		
PWS Owner: City of Saint Petersburg			
Contact Person: Clyde Church	Contact Person's Title: Chief Operator		
Contact Person's Mailing Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556
Contact Person's Telephone Number: 727-551-3714	Contact Person's Fax Number: 813-926-9110		
Contact Person's E-Mail Address: Clyde.Church@stpete.org			

#### B. Water Treatment Plant Information

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant	Plant Telephone Number: 727-551-3759		
Plant Address: 16015 Racetrack Road	City: Odessa	State: Florida	Zip Code: 33556

### II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

3/4/25

Signature and Date

Clyde Church

23835

Printed or Typed Name

License Number

### III. Check Sample Results for the Month/Year of: \* 01/2025

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution System Sample 1	060	0.77	0.632
Distribution System Sample 2	069	0.81	0.639

\* Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.

## MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: 6521715

Plant Name: City of Saint Petersburg, Cosme Water Treatment Plant

### IV. Daily Fluoridation Data for the Month/Year of: 01/2025

Type of Fluoride Chemical Used:  Sodium Fluoride  Sodium Fluosilicate (Silicofluoride)  Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = 23.89

Day of the Month	Hours Plant in Operation	Net Quantity of Finished Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24	26250000	79	0.36	0.73
2	24	24500000	70	0.34	0.76
3	24	24900000	74	0.36	0.74
4	24	24180000	73	0.35	0.75
5	24	29960000	85	0.34	0.69
6	24	30440000	97	0.38	0.66
7	24	26080000	86	0.40	0.69
8	24	24160000	74	0.37	0.71
9	24	24730000	75	0.37	0.71
10	24	25650000	79	0.37	0.71
11	24	30220000	103	0.41	0.74
12	24	28050000	92	0.41	0.72
13	24	24250000	88	0.43	0.68
14	24	25960000	85	0.39	0.74
15	24	28580000	96	0.40	0.76
16	24	28790000	90	0.38	0.73
17	24	28740000	94	0.40	0.74
18	24	26130000	84	0.38	0.66
19	24	25330000	79	0.39	0.65
20	24	24420000	82	0.40	0.65
21	24	25130000	82	0.43	0.73
22	24	25630000	91	0.42	0.69
23	24	28320000	106	0.45	0.70
24	24	28410000	113	0.48	0.69
25	24	27370000	115	0.50	0.72
26	24	25140000	95	0.47	0.67
27	24	24570000	93	0.46	0.74
28	24	27800000	98	0.42	0.69
29	24	27900000	112	0.47	0.73
30	24	28630000	113	0.48	0.75
31	24	26810000	108	0.49	0.74
Total		827030000	2811		
Average		26678387.096774194	90.6774193548387		0.7119354838709677

# **APPENDIX C**

SOUTH CROSS BAYOU ADVANCED WATER  
RECLAMATION FACILITYDISCHARGE  
MONITORING REPORTS

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Jan 01, 2025 To: Jan 31, 2025

Facility: South Cross Bayou AWRF

Flow MGD (D-001)	BOD, Carbonaceous 5 day, 20C (mg/L)	Solids, Total Suspended mg/L	Nitrogen, Total mg/L	Phosphorus, Total (as P) mg/L	Solids, Total Suspended mg/L	pH s.u. (Min)	pH s.u. (Max)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)	
Code	50050	80082	00530	00600	00665	00530	00400	00400	74055	74055	74055
Mon. Site	FLW-01	EFA-01	EFA-01	EFA-01	EFA-01	EFB-01	EFD-01	EFD-01	EFA-01	EFA-02	EFA-03
1	10.15	0.50	<1	1.68	0.20	<1	7.3	7.6	<1	ANC	ANC
2	9.56	<0.5	<1	1.67	0.25	<1	7.3	7.7	<1	ANC	ANC
3	9.63	4.40	<1	1.44	0.28	<1	7.1	7.5	<1	ANC	ANC
4	10.59	0.50	<1	1.91	0.26	<1	7.1	7.6	<1	ANC	ANC
5	10.37	0.50	<1	2.02	0.25	<1	7.2	7.6	<1	ANC	ANC
6	9.46	<0.5	<1	1.57	0.27	<1	7.2	7.6	<1	ANC	ANC
7	9.40	<0.5	<1	1.54	0.23	<1	7.3	7.7	<1	ANC	ANC
8	11.32	0.50	<1	1.55	0.19	<1	7.3	7.6	<1	ANC	ANC
9	7.03	3.20	<1	1.63	0.23	<1	7.3	7.5	<1	ANC	ANC
10	9.01	0.50	<1	1.68	0.32	<1	7.2	7.6	<1	ANC	ANC
11	8.79	<0.5	<1	1.58	0.52	<1	7.3	7.6	<1	ANC	ANC
12	11.05	<0.5	<1	1.57	0.63	<1	7.3	7.6	<1	ANC	ANC
13	10.09	0.50	<1	1.37	0.69	<1	7.3	7.6	<1	ANC	ANC
14	6.56	<0.5	<1	1.33	0.52	<1	7.3	7.6	<1	ANC	ANC
15	4.47	0.50	<1	1.40	0.50	<1	7.3	8.0	<1	ANC	ANC
16	7.25	<0.5	<1	1.41	0.63	<1	7.4	7.5	<1	ANC	ANC
17	8.70	0.50	<1	1.52	0.72	<1	7.4	7.6	<1	ANC	ANC
18	9.94	<0.5	<1	1.59	0.74	<1	7.3	7.6	<1	ANC	ANC
19	13.82	<0.5	<1	1.40	0.74	<1	7.2	7.6	<1	ANC	ANC
20	12.31	<0.5	<1	1.60	0.66	<1	7.1	7.6	<1	ANC	ANC
21	11.86	<0.5	<1	1.78	0.51	<1	7.3	7.6	<1	ANC	ANC
22	16.17	0.50	<1	1.86	0.55	<1	7.2	7.4	<1	ANC	ANC
23	1.02	0.50	<1	1.94	0.59	<1	7.1	7.4	<1	ANC	ANC
24	12.35	0.50	<1	1.84	0.47	<1	7.1	7.5	1	ANC	ANC
25	15.13	0.50	<1	2.36	0.37	<1	7.1	7.5	<1	ANC	ANC
26	14.61	0.50	<1	2.00	0.19	<1	7.1	7.4	<1	ANC	ANC
27	11.53	<0.5	<1	1.96	0.19	<1	7.1	7.5	<1	ANC	ANC
28	6.55	0.50	<1	3.44	0.23	<1	7.3	7.6	<1	ANC	ANC
29	9.96	0.50	<1	2.92	0.15	<1	7.1	7.5	<1	ANC	ANC
30	8.73	<0.5	<1	2.29	0.12	<1	7.1	7.6	<1	ANC	ANC
31	11.28	2.90	1.00	2.38	0.15	<1	7.1	7.4	<1	ANC	ANC
Total	308.69	21.25	16.00	56.23	12.35	15.50	223.58	234.25	16.00		
Mo Avg	9.96	0.69	0.52	1.81	0.40	0.50	7.21	7.56	0.52		

PLANT STAFFING:

Day Shift Operator Class: A Certificate No: 0019779  
 Evening Shift Operator Class: A Certificate No: 17782  
 Night Shift Operator Class: A Certificate No: 24498  
 Chief Operator Class: A Certificate No: 0023904

Name: Christopher Campbell  
 Name: Bun Taing  
 Name: Jason Cleland  
 Name: Ivan Izquierdo

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Jan 01, 2025 To: Jan 31, 2025 Facility: South Cross Bayou AWRF

	Chlorine, Total Residual (For Disinfection) mg/L	Chlorine, Total Residual (For Dechlorination) mg/L	Enterocci #/100mL	Enterocci #/100mL	Enterocci #/100mL	Oxygen, Dissolved (DO)	Flow MGD	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Transmittance Percent
Code	50060	50060	31639	31639	31639	00300	50050	61938	61938	51043
Mon. Site	EFA-01	EFD-02	EFA-01	EFA-02	EFA-03	EFD-01	FLW-04	PPI-01	PPI-02	PPI-01
1	1.2	0.00	1	ANC	ANC	8.7	0.00	ANC	ANC	ANC
2	2.0	0.00		ANC	ANC	6.9	0.00	ANC	ANC	ANC
3	2.1	0.00		ANC	ANC	9.4	0.00	ANC	ANC	ANC
4	1.7	0.00		ANC	ANC	6.9	0.00	ANC	ANC	ANC
5	2.3	0.00		ANC	ANC	7.9	0.00	ANC	ANC	ANC
6	2.5	0.00	1	ANC	ANC	8.6	0.00	ANC	ANC	ANC
7	1.5	0.00	1	ANC	ANC	7.6	0.00	ANC	ANC	ANC
8	2.3	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
9	2.6	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
10	1.8	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
11	2.7	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
12	1.7	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
13	1.5	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
14	1.8	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
15	1.5	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
16	1.8	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
17	2.0	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
18	1.4	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
19	1.6	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
20	1.8	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
21	1.0	0.00	1	ANC	ANC	9.9	0.00	ANC	ANC	ANC
22	1.7	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
23	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
24	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
25	1.4	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
26	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
27	1.4	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
28	1.1	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
29	1.0	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
30	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
31	1.3	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
Total	51.29	0.00	12.00			295.90				
Mo Avg	1.65	0.00	1.00			9.55				

PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo

## DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Jan 01, 2025 To: Jan 31, 2025 Facility: South Cross Bayou AWRF

	Ultraviolet Light Intensity mW/cm2	Ultraviolet Light Intensity mW/cm2	Turbidity, NTU	Flow MGD	BOD, Carbonaceous 5 day, 20C (Influent)	Solids, Total Suspended (Influent)	Flow MGD	pH s.u. Min.	pH s.u. Max.
Code	49607	49607	00070	50050	80082	00530	50050	00400	00400
Mon. Site	PPI-01	PPI-02	EFB-01	FLW-03	INF-01	INF-01	FLW-02	EFA-01	EFA-01
1	ANC	ANC	1.58	15.76	120	190	9.41	6.7	7.0
2	ANC	ANC	0.85	16.28	120	86	10.07	6.7	7.0
3	ANC	ANC	0.45	16.56	210	182	9.97	6.8	7.1
4	ANC	ANC	1.33	14.09	180	184	9.70	6.8	7.1
5	ANC	ANC	1.26	15.84	160	208	10.32	7.0	7.1
6	ANC	ANC	0.33	16.18	150	270	10.00	7.0	7.1
7	ANC	ANC	1.11	16.16	150	166	9.92	7.0	7.1
8	ANC	ANC	1.36	16.10	160	194	10.26	7.0	7.2
9	ANC	ANC	1.33	15.99	160	192	10.30	7.0	7.1
10	ANC	ANC	0.53	15.83	77	186	10.90	7.0	7.2
11	ANC	ANC	1.25	16.03	110	216	10.99	7.1	7.1
12	ANC	ANC	1.34	15.68	170	166	9.34	7.0	7.1
13	ANC	ANC	1.32	15.93	170	176	11.02	7.0	7.1
14	ANC	ANC	0.48	13.66	200	244	10.05	7.0	7.1
15	ANC	ANC	1.60	15.29	130	132	9.62	6.9	7.2
16	ANC	ANC	1.25	15.58	130	156	10.13	7.1	7.2
17	ANC	ANC	1.46	15.59	120	216	10.44	7.1	7.2
18	ANC	ANC	1.54	16.04	140	226	10.00	7.1	7.2
19	ANC	ANC	0.50	17.50	130	208	8.19	7.0	7.2
20	ANC	ANC	0.34	17.31	140	184	7.21	6.8	7.2
21	ANC	ANC	0.44	13.84	100	56	9.30	7.1	7.3
22	ANC	ANC	0.89	19.97	140	154	8.55	7.0	7.1
23	ANC	ANC	0.96	20.75	140	148	8.40	6.7	7.3
24	ANC	ANC	0.59	22.91	120	172	7.97	6.9	7.2
25	ANC	ANC	0.71	21.56	91	150	8.49	6.9	7.1
26	ANC	ANC	1.34	19.39	100	120	8.03	6.8	7.1
27	ANC	ANC	1.12	14.15	110	136	8.20	6.5	7.1
28	ANC	ANC	1.62	14.06	130	188	11.80	6.6	6.9
29	ANC	ANC	0.36	16.73	180	204	10.46	6.5	6.8
30	ANC	ANC	0.20	17.99	72	228	10.34	6.5	6.9
31	ANC	ANC	0.46	17.93	120	212	10.02	6.5	6.8
Total			29.90	516.68	4,230.00	5,550.00	299.40	212.71	219.82
Mo Avg			0.96	16.67	136.45	179.03	9.66	6.86	7.09

## PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Feb 01, 2025 To: Feb 28, 2025

Facility: South Cross Bayou AWRF

	Flow MGD (D-001)	BOD, Carbonaceous 5 day, 20C (mg/L)	Solids, Total Suspended mg/L	Nitrogen, Total mg/L	Phosphorus, Total (as P) mg/L	Solids, Total Suspended mg/L	pH s.u. (Min)	pH s.u. (Max)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)
Code	50050	80082	00530	00600	00665	00530	00400	00400	74055	74055	74055
Mon. Site	FLW-01	EFA-01	EFA-01	EFA-01	EFA-01	EFB-01	EFD-01	EFD-01	EFA-01	EFA-02	EFA-03
1	0.00	3.00	<1	1.92	0.13	<1	7.3	7.6	<1	ANC	ANC
2	10.46	2.30	<1	1.60	0.10	<1	7.1	7.6	<1	ANC	ANC
3	11.18	0.50	<1	1.37	0.10	1.0	7.1	7.5	2	ANC	ANC
4	10.59	<0.5	1.00	1.82	0.11	1.0	7.2	7.5	<1	ANC	ANC
5	8.25	0.50	<1	1.31	0.10	<1	7.3	7.5	<1	ANC	ANC
6	9.89	8.60	<1	1.18	0.13	<1	7.3	7.5	<1	ANC	ANC
7	5.74	2.10	<1	1.22	0.15	<1	7.3	7.6	<1	ANC	ANC
8	13.40	2.30	<1	1.09	0.29	<1	7.2	7.6	<1	ANC	ANC
9	9.76	2.20	<1	0.92	0.34	<1	7.3	7.6	<1	ANC	ANC
10	9.36	0.50	<1	0.87	0.36	<1	7.3	7.5	<1	ANC	ANC
11	7.36	0.50	<1	0.90	0.41	<1	7.3	7.6	<1	ANC	ANC
12	8.33	0.50	<1	0.95	0.42	<1	7.4	7.6	<1	ANC	ANC
13	10.18	0.50	<1	0.94	0.49	<1	7.3	7.6	<1	ANC	ANC
14	13.11	0.50	<1	1.10	0.57	<1	7.3	7.5	<1	ANC	ANC
15	10.11	2.40	<1	0.99	0.59	<1	7.3	7.6	<1	ANC	ANC
16	12.14	0.50	<1	0.97	0.64	<1	7.3	7.6	<1	ANC	ANC
17	9.69	0.50	<1	0.96	0.70	1.0	7.3	7.5	<1	ANC	ANC
18	5.47	0.50	<1	0.98	0.66	<1	7.3	7.7	<1	ANC	ANC
19	7.35	0.50	<1	1.05	0.58	<1	7.5	7.7	<1	ANC	ANC
20	6.80	0.50	<1	1.06	0.62	<1	7.4	7.6	<1	ANC	ANC
21	12.10	0.50	<1	1.10	0.61	<1	7.4	7.7	<1	ANC	ANC
22	13.33	0.50	<1	1.36	0.75	<1	7.3	7.6	<1	ANC	ANC
23	7.56	2.10	<1	1.44	0.94	<1	7.2	7.6	<1	ANC	ANC
24	13.82	0.50	<1	1.05	1.08	<1	7.2	7.5	<1	ANC	ANC
25	16.76	2.20	<1	1.02	0.99	<1	7.2	7.5	<1	ANC	ANC
26	6.51	0.50	<1	0.90	0.66	<1	7.2	8.3	<1	ANC	ANC
27	13.58	0.50	<1	1.07	0.54	<1	7.4	7.6	<1	ANC	ANC
28	11.32	0.50	<1	1.57	0.43	<1	7.4	7.5	<1	ANC	ANC
Total	274.15	36.45	14.50	32.71	13.49	15.50	204.28	212.54	15.50		
Mo Avg	9.79	1.30	0.52	1.17	0.48	0.55	7.30	7.59	0.55		

PLANT STAFFING:

Day Shift Operator      Class: A      Certificate No: 0019779  
 Evening Shift Operator      Class: A      Certificate No: 17782  
 Night Shift Operator      Class: A      Certificate No: 24498  
 Chief Operator      Class: A      Certificate No: 0023904

Name: Christopher Campbell  
 Name: Bun Taing  
 Name: Jason Cleland  
 Name: Ivan Izquierdo

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Feb 01, 2024 To: Feb 28, 2025

Facility: South Cross Bayou AWRF

	Chlorine, Total Residual (For Disinfection) mg/L	Chlorine, Total Residual (For Dechlorination) mg/L	Enterocci #/100mL	Enterocci #/100mL	Enterocci #/100mL	Oxygen, Dissolved (DO)	Flow MGD	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Transmittance Percent
Code	50060	50060	31639	31639	31639	00300	50050	61938	61938	51043
Mon. Site	EFA-01	EFD-02	EFA-01	EFA-02	EFA-03	EFD-01	FLW-04	PPI-01	PPI-02	PPI-01
1	1.1	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
2	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
3	1.2	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
4	1.5	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
5	1.4	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
6	2.2	0.00		ANC	ANC	5.8	0.00	ANC	ANC	ANC
7	2.1	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
8	2.6	0.00		ANC	ANC	8.9	0.00	ANC	ANC	ANC
9	2.1	0.00		ANC	ANC	9.9	0.00	ANC	ANC	ANC
10	3.1	0.00	1	ANC	ANC	9.5	0.00	ANC	ANC	ANC
11	1.2	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
12	2.9	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
13	3.1	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
14	3.2	0.00		ANC	ANC	8.9	0.00	ANC	ANC	ANC
15	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
16	1.5	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
17	1.5	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
18	1.2	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
19	1.5	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
20	1.6	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
21	2.3	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
22	1.7	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
23	1.8	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
24	1.3	0.00	1	ANC	ANC	9.4	0.00	ANC	ANC	ANC
25	2.8	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
26	2.6	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
27	2.3	0.00		ANC	ANC	9.9	0.00	ANC	ANC	ANC
28	1.3	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
				ANC	ANC			ANC	ANC	ANC
				ANC	ANC			ANC	ANC	ANC
				ANC	ANC			ANC	ANC	ANC
Total	53.39	0.00	12.00			272.30				
Mo Avg	1.91	0.00	1.00			9.73				

PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo

## DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Feb 01, 2025 To: Feb 28, 2025 Facility: South Cross Bayou AWRF

	Ultraviolet Light Intensity mW/cm2	Ultraviolet Light Intensity mW/cm2	Turbidity, NTU	Flow MGD	BOD, Carbonaceous 5 day, 20C (Influent)	Solids, Total Suspended (Influent)	Flow MGD	pH s.u. Min.	pH s.u. Max.
Code	49607	49607	00070	50050	80082	00530	50050	00400	00400
Mon. Site	PPI-01	PPI-02	EFB-01	FLW-03	INF-01	INF-01	FLW-02	EFA-01	EFA-01
1	ANC	ANC	0.81	17.66	140	208	10.71	6.6	6.8
2	ANC	ANC	0.49	17.47	140	202	9.49	6.5	6.8
3	ANC	ANC	0.41	17.67	120	216	8.77	6.5	6.9
4	ANC	ANC	0.38	17.75	150	212	11.45	6.6	6.8
5	ANC	ANC	0.77	16.14	99	130	11.38	6.8	6.8
6	ANC	ANC	0.57	17.42	130	182	11.01	6.8	6.9
7	ANC	ANC	0.92	17.55	140	176	10.47	6.8	7.0
8	ANC	ANC	1.02	17.69	190	240	10.41	6.8	6.9
9	ANC	ANC	0.93	16.27	150	228	9.41	6.8	6.9
10	ANC	ANC	0.89	17.55	160	196	8.89	6.8	6.9
11	ANC	ANC	0.58	17.82	120	190	13.03	6.8	6.9
12	ANC	ANC	0.62	17.86	140	200	10.94	6.8	7.0
13	ANC	ANC	0.66	16.15	140	176	11.00	6.8	7.0
14	ANC	ANC	1.14	18.55	160	190	11.67	6.8	6.9
15	ANC	ANC	0.81	17.14	170	200	11.10	6.8	6.9
16	ANC	ANC	0.78	17.25	250	220	9.24	6.8	7.0
17	ANC	ANC	0.66	17.11	150	194	9.52	6.8	6.9
18	ANC	ANC	0.51	17.15	170	244	12.97	6.8	7.0
19	ANC	ANC	0.40	17.68	110	116	10.35	6.9	7.0
20	ANC	ANC	0.65	17.88	160	188	9.22	6.8	7.0
21	ANC	ANC	0.61	17.44	100	210	9.29	7.0	7.0
22	ANC	ANC	0.42	17.49	160	232	10.63	6.9	7.1
23	ANC	ANC	0.85	18.02	200	230	10.03	6.8	7.0
24	ANC	ANC	0.49	21.07	230	204	7.88	6.8	6.9
25	ANC	ANC	0.51	21.51	160	200	9.27	6.8	6.9
26	ANC	ANC	0.62	20.24	140	170	9.39	6.7	7.0
27	ANC	ANC	0.41	19.79	150	184	10.37	6.8	6.9
28	ANC	ANC	0.93	19.42	130	188	10.63	6.8	7.0
	ANC	ANC							
	ANC	ANC							
	ANC	ANC							
Total			18.84	502.74	4,259.00	5,526.00	288.52	189.35	194.16
Mo Avg			0.67	17.96	152.11	197.36	10.30	6.76	6.93

## PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Mar 01, 2025 To: Mar 31, 2025

Facility: South Cross Bayou AWRF

	Flow MGD (D-001)	BOD, Carbonaceous 5 day, 20C (mg/L)	Solids, Total Suspended mg/L	Nitrogen, Total mg/L	Phosphorus, Total (as P) mg/L	Solids, Total Suspended mg/L	pH s.u. (Min)	pH s.u. (Max)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)	Coliform, Fecal (#/100ml)
Code	50050	80082	00530	00600	00665	00530	00400	00400	74055	74055	74055
Mon. Site	FLW-01	EFA-01	EFA-01	EFA-01	EFA-01	EFB-01	EFD-01	EFD-01	EFA-01	EFA-02	EFA-03
1	16.93	0.50	<1	1.45	0.65	<1	7.3	7.5	<1	ANC	ANC
2	9.74	0.50	<1	1.46	0.51	<1	7.3	7.6	<1	ANC	ANC
3	8.93	0.50	<1	1.43	0.47	<1	7.2	7.5	<1	ANC	ANC
4	12.35	0.50	<1	1.66	0.40	<1	7.2	7.4	<1	ANC	ANC
5	10.67	0.50	<1	1.39	0.43	<1	7.2	7.4	<1	ANC	ANC
6	15.51	0.50	<1	1.47	0.52	<1	7.2	7.4	<1	ANC	ANC
7	12.56	<0.5	<1	1.39	0.49	<1	7.2	7.4	<1	ANC	ANC
8	15.34	0.50	<1	1.36	0.52	<1	7.2	7.4	<1	ANC	ANC
9	13.63	0.50	<1	1.48	0.44	<1	7.2	7.4	<1	ANC	ANC
10	11.35	<0.5	<1	1.68	0.48	<1	7.2	7.5	<1	ANC	ANC
11	7.64	0.50	<1	1.56	0.49	1.0	7.3	7.5	<1	ANC	ANC
12	6.08	0.50	<1	1.61	0.50	<1	7.3	7.5	<1	ANC	ANC
13	8.05	0.50	<1	1.67	0.57	<1	7.3	7.5	<1	ANC	ANC
14	10.63	2.80	<1	1.68	0.59	<1	7.2	7.4	<1	ANC	ANC
15	9.05	3.00	<1	1.48	0.65	<1	7.3	7.5	<1	ANC	ANC
16	4.39	2.40	<1	1.70	0.67	<1	7.2	7.9	<1	ANC	ANC
17	11.77	2.30	<1	1.66	0.76	<1	7.2	7.5	<1	ANC	ANC
18	10.70	0.50	<1	1.55	0.62	<1	7.2	7.4	<1	ANC	ANC
19	9.90	0.50	<1	1.94	0.58	<1	7.2	7.5	<1	ANC	ANC
20	10.93	<0.5	<1	1.50	0.58	<1	7.3	7.5	<1	ANC	ANC
21	9.92	<0.5	<1	1.53	0.54	<1	7.3	7.4	<1	ANC	ANC
22	9.81	<0.5	<1	1.42	0.46	<1	7.2	7.5	<1	ANC	ANC
23	9.81	0.50	<1	1.20	0.34	<1	7.3	7.5	<1	ANC	ANC
24	8.89	0.50	<1	1.62	0.33	<1	7.3	7.5	<1	ANC	ANC
25	7.77	0.50	<1	1.51	0.35	<1	7.3	7.5	1	ANC	ANC
26	8.08	<0.5	<1	1.57	0.28	<1	7.3	7.5	<1	ANC	ANC
27	7.90	0.50	<1	1.55	0.42	<1	7.3	7.6	<1	ANC	ANC
28	7.20	0.50	<1	1.94	0.49	<1	7.4	7.6	<1	ANC	ANC
29	5.57	4.90	<1	2.17	0.50	<1	7.4	7.6	<1	ANC	ANC
30	11.77	2.20	<1	2.00	0.56	<1	7.2	7.6	<1	ANC	ANC
31	9.93	0.50	<1	2.07	0.63	<1	7.3	7.6	<1	ANC	ANC
Total	312.80	28.60	15.50	49.70	15.82	16.00	224.96	232.52	16.00		
Mo Avg	10.09	0.92	0.50	1.60	0.51	0.52	7.26	7.50	0.52		

PLANT STAFFING:

Day Shift Operator      Class: A      Certificate No: 0019779  
 Evening Shift Operator      Class: A      Certificate No: 17782  
 Night Shift Operator      Class: A      Certificate No: 24498  
 Chief Operator      Class: A      Certificate No: 0023904

Name: Christopher Campbell  
 Name: Bun Taing  
 Name: Jason Cleland  
 Name: Ivan Izquierdo

# DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Mar 01, 2021 To: Mar 31, 2025

Facility: South Cross Bayou AWRF

	Chlorine, Total Residual (For Disinfection) mg/L	Chlorine, Total Residual (For Dechlorination) mg/L	Enterocci #/100mL	Enterocci #/100mL	Enterocci #/100mL	Oxygen, Dissolved (DO)	Flow MGD	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Dosage mW-s/sqcm	Ultraviolet Light Transmittance Percent
Code	50060	50060	31639	31639	31639	00300	50050	61938	61938	51043
Mon. Site	EFA-01	EFD-02	EFA-01	EFA-02	EFA-03	EFD-01	FLW-04	PPI-01	PPI-02	PPI-01
1	2.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
2	1.6	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
3	1.2	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
4	2.2	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
5	1.8	0.00	1	ANC	ANC	10.0	0.00	ANC	ANC	ANC
6	1.2	0.00		ANC	ANC	10.0	0.00	ANC	ANC	ANC
7	2.0	0.00		ANC	ANC	10.9	0.00	ANC	ANC	ANC
8	1.7	0.00		ANC	ANC	8.6	0.00	ANC	ANC	ANC
9	1.4	0.00		ANC	ANC	7.9	0.00	ANC	ANC	ANC
10	2.0	0.00	1	ANC	ANC	8.0	0.00	ANC	ANC	ANC
11	1.7	0.00	1	ANC	ANC	10.8	0.00	ANC	ANC	ANC
12	1.1	0.00	1	ANC	ANC	8.2	0.00	ANC	ANC	ANC
13	1.7	0.00		ANC	ANC	9.9	0.00	ANC	ANC	ANC
14	1.1	0.00		ANC	ANC	8.9	0.00	ANC	ANC	ANC
15	1.2	0.00		ANC	ANC	8.4	0.00	ANC	ANC	ANC
16	1.5	0.00		ANC	ANC	8.1	0.00	ANC	ANC	ANC
17	1.4	0.00	1	ANC	ANC	8.5	0.00	ANC	ANC	ANC
18	1.5	0.00	1	ANC	ANC	11.2	0.00	ANC	ANC	ANC
19	1.4	0.00	1	ANC	ANC	11.1	0.00	ANC	ANC	ANC
20	1.6	0.00		ANC	ANC	11.2	0.00	ANC	ANC	ANC
21	2.6	0.00		ANC	ANC	11.5	0.00	ANC	ANC	ANC
22	2.0	0.00		ANC	ANC	11.6	0.00	ANC	ANC	ANC
23	1.9	0.00		ANC	ANC	11.1	0.00	ANC	ANC	ANC
24	2.2	0.00	1	ANC	ANC	11.2	0.00	ANC	ANC	ANC
25	1.2	0.00	1	ANC	ANC	10.9	0.00	ANC	ANC	ANC
26	1.6	0.00	1	ANC	ANC	10.8	0.00	ANC	ANC	ANC
27	1.5	0.00		ANC	ANC	11.0	0.00	ANC	ANC	ANC
28	1.2	0.00		ANC	ANC	10.7	0.00	ANC	ANC	ANC
29	1.7	0.00		ANC	ANC	10.6	0.00	ANC	ANC	ANC
30	1.5	0.00		ANC	ANC	10.6	0.00	ANC	ANC	ANC
31	2.0	0.00	1	ANC	ANC	10.5	0.00	ANC	ANC	ANC
Total	50.86	0.00	13.00			312.20				
Mo Avg	1.64	0.00	1.00			10.07				

PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo

## DAILY SAMPLE RESULTS - PART B - R001

Permit Number: FL0040436-024-DWF/MM  
 Monitoring Period: From: Mar 01, 2025 To: Mar 31, 2025 Facility: South Cross Bayou AWRF

	Ultraviolet Light Intensity mW/cm2	Ultraviolet Light Intensity mW/cm2	Turbidity, NTU	Flow MGD	BOD, Carbonaceous 5 day, 20C (Influent)	Solids, Total Suspended (Influent)	Flow MGD	pH s.u. Min.	pH s.u. Max.
Code	49607	49607	00070	50050	80082	00530	50050	00400	00400
Mon. Site	PPI-01	PPI-02	EFB-01	FLW-03	INF-01	INF-01	FLW-02	EFA-01	EFA-01
1	ANC	ANC	0.94	16.26	160	184	11.06	6.8	7.0
2	ANC	ANC	0.81	18.14	160	196	9.54	6.8	6.9
3	ANC	ANC	0.52	18.77	140	174	9.51	6.8	7.0
4	ANC	ANC	0.26	17.75	160	182	12.30	6.9	7.0
5	ANC	ANC	1.04	19.00	190	88	9.97	6.9	7.0
6	ANC	ANC	0.99	15.98	180	188	9.23	6.8	7.2
7	ANC	ANC	0.70	19.45	150	176	10.40	6.9	7.0
8	ANC	ANC	0.24	18.95	130	182	10.12	6.9	7.0
9	ANC	ANC	0.30	18.29	160	154	9.02	6.9	7.0
10	ANC	ANC	0.25	18.45	180	192	8.56	6.9	7.1
11	ANC	ANC	0.32	18.06	160	178	11.46	6.9	7.1
12	ANC	ANC	0.26	17.83	140	60	12.96	6.9	7.1
13	ANC	ANC	0.23	17.80	150	164	12.16	7.0	7.1
14	ANC	ANC	0.35	17.54	180	162	11.67	6.9	7.1
15	ANC	ANC	0.36	17.71	200	182	11.03	7.0	7.1
16	ANC	ANC	0.86	18.69	200	166	9.70	6.9	7.2
17	ANC	ANC	1.22	19.14	210	184	8.64	6.9	7.1
18	ANC	ANC	0.79	18.45	160	182	11.31	6.9	7.1
19	ANC	ANC	1.10	18.00	140	180	11.47	6.9	7.1
20	ANC	ANC	0.69	17.93	130	178	10.74	7.0	7.1
21	ANC	ANC	0.58	17.55	130	188	10.96	6.9	7.1
22	ANC	ANC	0.72	17.45	100	92	11.16	7.0	7.1
23	ANC	ANC	0.65	16.93	160	190	10.41	6.9	7.2
24	ANC	ANC	0.12	17.39	170	190	10.43	6.9	7.1
25	ANC	ANC	0.38	17.38	210	230	12.76	6.8	7.1
26	ANC	ANC	0.86	17.29	210	222	12.02	7.0	7.1
27	ANC	ANC	0.26	17.02	170	190	11.95	7.0	7.2
28	ANC	ANC	0.60	16.91	210	180	12.90	7.0	7.2
29	ANC	ANC	0.23	16.50	96	324	11.93	7.0	7.2
30	ANC	ANC	0.21	16.52	150	178	10.57	7.1	7.2
31	ANC	ANC	0.29	17.11	170	192	10.29	7.1	7.2
Total			17.13	550.24	5,056.00	5,528.00	336.23	214.39	219.90
Mo Avg			0.55	17.75	163.10	178.32	10.85	6.92	7.09

## PLANT STAFFING:

Day Shift Operator	Class: A	Certificate No: 0019779	Name: Christopher Campbell
Evening Shift Operator	Class: A	Certificate No: 17782	Name: Bun Taing
Night Shift Operator	Class: A	Certificate No: 24498	Name: Jason Cleland
Chief Operator	Class: A	Certificate No: 0023904	Name: Ivan Izquierdo



# APPENDIX C

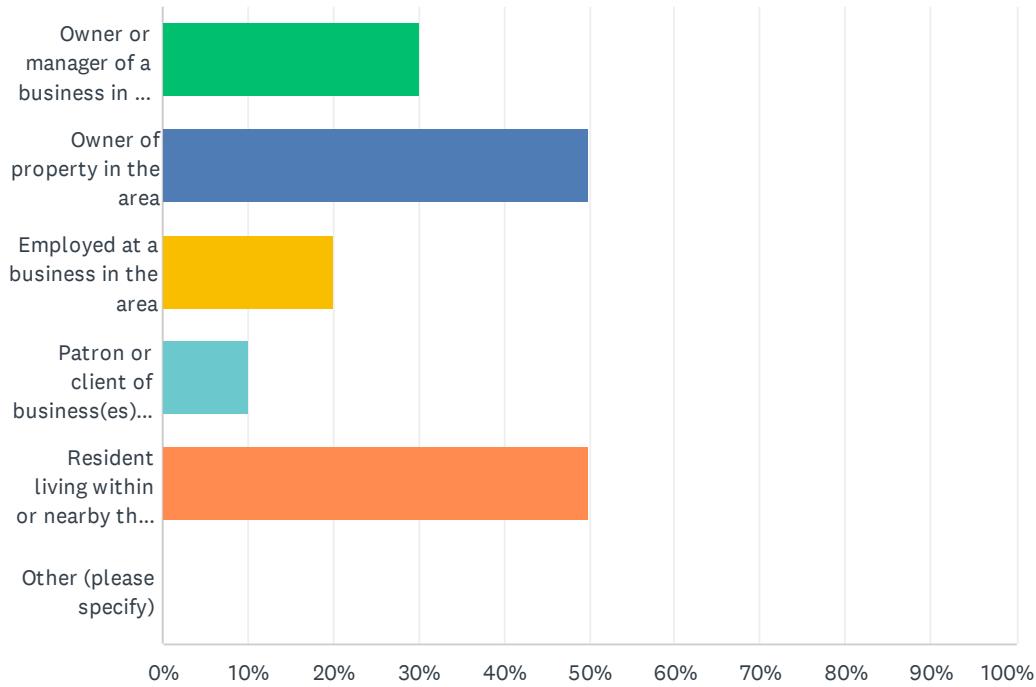
# STAKEHOLDER

# ENGAGEMENT

*Completed June 2024*

## Q1 Which of the following best describes your relationship to the JCIP study area? (Select all that apply)

Answered: 20 Skipped: 1



ANSWER CHOICES		RESPONSES	
Owner or manager of a business in the area		30.00%	6
Owner of property in the area		50.00%	10
Employed at a business in the area		20.00%	4
Patron or client of business(es) operating in the area		10.00%	2
Resident living within or nearby the study area		50.00%	10
Other (please specify)		0.00%	0
Total Respondents: 20			

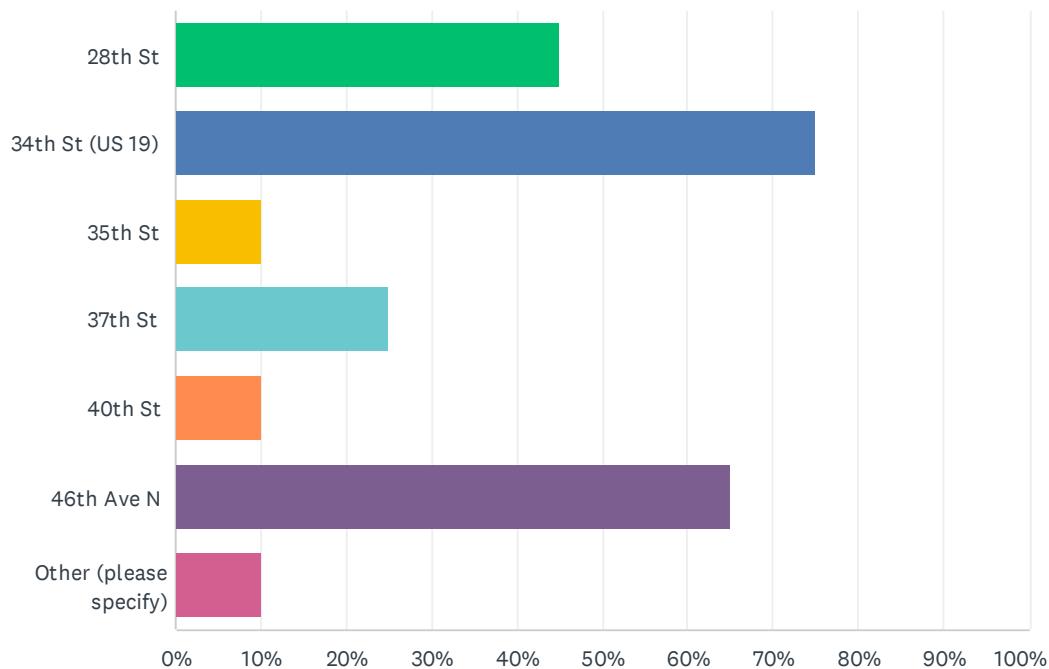
#	OTHER (PLEASE SPECIFY)	DATE
There are no responses.		

Q2 Please indicate the location you most frequently visit within the JCIP study area by clicking on the below map.

Answered: 16 Skipped: 5

### Q3 What roadways do you use to travel to/from the locations you visit in the area? (Select all that apply)

Answered: 20 Skipped: 1



ANSWER CHOICES	RESPONSES	
28th St	45.00%	9
34th St (US 19)	75.00%	15
35th St	10.00%	2
37th St	25.00%	5
40th St	10.00%	2
46th Ave N	65.00%	13
Other (please specify)	10.00%	2
Total Respondents: 20		

#	OTHER (PLEASE SPECIFY)	DATE
1	38th Ave N	2/28/2025 1:05 PM
2	54th Ave N	1/13/2025 2:21 PM

## Q4 (Optional) What zip code do you live in?

Answered: 16    Skipped: 5

#	RESPONSES	DATE
1	33714	3/25/2025 1:58 PM
2	33714	3/16/2025 12:37 PM
3	33714	3/1/2025 8:54 AM
4	33714	3/1/2025 8:06 AM
5	33714	2/28/2025 7:12 PM
6	33714	2/28/2025 3:14 PM
7	33708	2/28/2025 2:39 PM
8	33714	2/28/2025 2:30 PM
9	33714	2/28/2025 1:05 PM
10	33714	2/28/2025 11:31 AM
11	33714	1/13/2025 12:20 PM
12	33706	1/8/2025 11:06 AM
13	33782	1/7/2025 10:46 AM
14	33714	1/7/2025 9:56 AM
15	33714	1/7/2025 9:54 AM
16	33706	11/5/2024 11:55 AM

## Q5 In a few words, how would you describe the JCIP area today? What strengths and opportunities do you see that contribute to its economic potential?

Answered: 10    Skipped: 11

#	RESPONSES	DATE
1	I see a lot of potential growth for the entire area. Upgrading property instead of having to build new. Cheaper lease/rent	3/16/2025 12:49 PM
2	Strengths are it is shedding its past of being the drug dealing area of Pinellas Co.	3/1/2025 8:18 AM
3	The area seems like it's improving but still has a lot more that can be done. I am excited to see safe sidewalks and a park that can be used for more than just transients and addicts.	2/28/2025 7:32 PM
4	I would currently describe the area as an unsafe urban heat island due to massive amounts of traffic in and out of the area and a disproportionately high amount of commercial and industrial land use. The area needs redevelopment for modes of transportation other than car, and it needs more tree canopy. As a resident of the area (1 block outside of the JCIP) I find that most of the businesses are irrelevant to my needs and because of traffic issues I avoid going to the area and instead drive elsewhere for my needs. The area, however, has massive economic potential. It is centrally located on the lower half of the Pinellas peninsula, with high elevation, and a clear watershed, that with proper stormwater mitigation, makes this one of, if not the most, the lowest risk areas around St. Pete to own and develop property in terms of severe tropical weather. Because it is located just outside of St. Pete's downtown, and a short drive to Tampa, northern Pinellas, and the beaches, it is a great place to attract more residents and businesses. This geographic reality gives us the opportunity to establish a thriving community here. But we need more businesses that actually serve our needs, like grocers, restaurants, and retail. If we can convert some of the dealership and motel lots to those types of businesses and housing we will be on our way! Also, if we could partner with CSX to establish biking and pedestrian trails along the railroad, that would naturally spur investment in locally oriented businesses along that corridor. I would also look at expanding Neri park and/or establishing more park spaces to reduce the urban heat island effect and make this area more livable and have more permeable surface for stormwater management. We also need to invest more in the area schools so families with children will actually want to live in the area.	2/28/2025 1:30 PM
5	The area today is a sitting jewel for Lealman. With the right investment, it can become the walkable district that Lealman lacks.	2/28/2025 11:39 AM
6	Access to major highways, US 19 & I275. However, Hoe's Creek has been deteriorated greatly. It has not been cleaned or maintained properly. Over-grown.	1/13/2025 2:38 PM
7	On track to be a vibrant multi disciplinary business area.	1/8/2025 11:16 AM
8	Jowe creek needs to be cleaned, our property got flooded because it is overgrown with trees	1/7/2025 12:38 PM
9	Lots of small businesses giving employment to many people.	11/13/2024 11:43 AM
10	Joes creek needs to drain properly	11/5/2024 12:01 PM

## Q6 What would you change about the area? What challenges or obstacles might be hindering its potential?

Answered: 10    Skipped: 11

#	RESPONSES	DATE
1	Lots of old housing with asbestos siding will be a challenge to remove and restore. Low wage area, building codes not consistent	3/16/2025 12:49 PM
2	Clean up the drug dens. Over by the Gateway Motel has always been an issue.	3/1/2025 8:18 AM
3	The biggest challenge is the hotels on 34th st that house the drug dealers, addicts and prostitutes that are using it as home base as they run the neighborhood. The houses across from the hotels that rent to dealer after dealer. Also, the storm drains not working properly or being maintained properly. Complaints not being acknowledged.	2/28/2025 7:32 PM
4	Better roads	2/28/2025 2:42 PM
5	I mentioned that in my answer to question number 5.	2/28/2025 1:30 PM
6	I think a big challenge will be rain and storm issues. I worry about its current state, but also with any developments, we need to be practical about what is built there and reinstating green space and trees to help with the soaking up of rain water. More pavement = more problems.	2/28/2025 11:39 AM
7	Proper cleaning of Joe's Creek. Work with property owners on maintenance / repair of Seawall. Improve properties structure and appearance.	1/13/2025 2:38 PM
8	Joe's Creek (the actual creek) must to be able to handle flood waters.	1/8/2025 11:16 AM
9	The community east of 28th St. use 46th Ave. to walk to 34th St. The lighting has been an ongoing issue for many years. Having 46th Ave. as a main thoroughfare for traffic from 28th St. to 34th St. lighting improvement would be nice.	1/7/2025 10:20 AM
10	If we keep flooding the area is not desirable	11/5/2024 12:01 PM

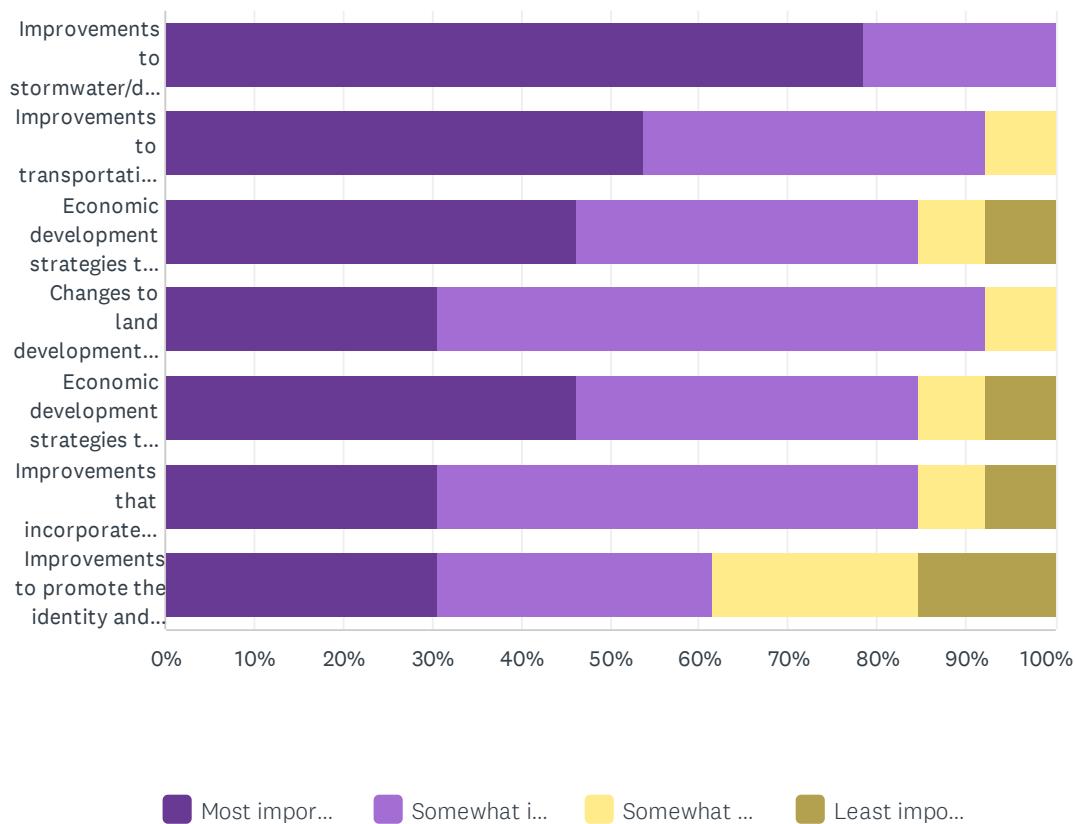
**Q7 What do you envision for JCIP's future? What does a thriving employment center/economic hub look like to you? What types of new businesses, industries, or activities do you want to see in the area to support its economic growth and long-term success?**

Answered: 9    Skipped: 12

#	RESPONSES	DATE
1	non-environmental growth, ie, software, AI development. Possible 'villages' type development. More family friendly areas.	3/16/2025 12:49 PM
2	Bowling alley/family friendly place	3/1/2025 9:03 AM
3	They need to turn this into a PEOPLE friendly area. They talk about walking paths and amenities that are more suited to affluent areas. Plant fruit trees and make community garden areas. If you do it all along Joe's Creek, land you can't really use for much else, it could be big enough to sell fresh produce to local restaurants and stores and support the community and pay for people to work it. That is the kind of things we need. Things that actually HELP people. People that live here are low income and need help from our community.	3/1/2025 8:18 AM
4	I answered this in question number 5.	2/28/2025 1:30 PM
5	I would love to see mixed use - keep some of the factories there, but would love to see retail, cafe's, brewery's, art and dance studios, etc. I want to see a connective soulful tissue between the shops on 54th and 28th St and the JCIP. Rising tide raises all ships.	2/28/2025 11:39 AM
6	Freshly looking buildings, professionally paved and landscaped surroundings.	1/13/2025 2:38 PM
7	A thriving hub needs to be able to trust the infrastructure will be stable and safe. Additional interdisciplinary businesses that can provide services for each other would be fantastic.	1/8/2025 11:16 AM
8	It already IS a thriving employment hub. Lots of small businesses employing lots of local people.	11/13/2024 11:43 AM
9	A blend of manufacturing, light industrial and service providers	11/5/2024 12:01 PM

## Q8 Which of the following are most important to you to be addressed?

Answered: 14 Skipped: 7

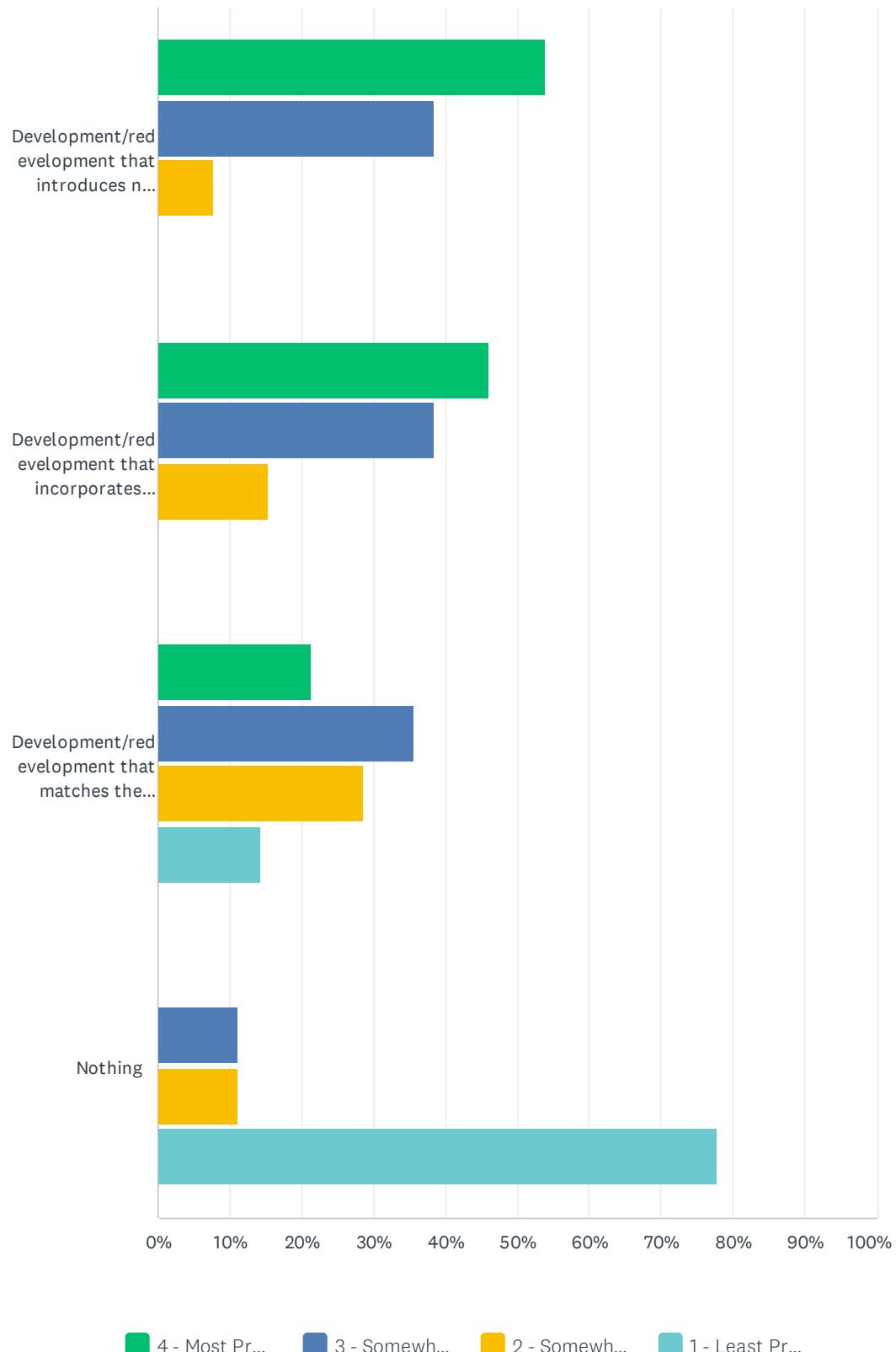


**Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey**

	<b>MOST IMPORTANT</b>	<b>SOMEWHAT IMPORTANT</b>	<b>SOMEWHAT UNIMPORTANT</b>	<b>LEAST IMPORTANT</b>	<b>TOTAL</b>	<b>WEIGHTED AVERAGE</b>
Improvements to stormwater/drainage infrastructure for flood mitigation and erosion control	78.6% 11	21.4% 3	0.0% 0	0.0% 0	14	3.79
Improvements to transportation infrastructure (e.g., roadways, sidewalks, bicycle facilities, bus stops, bridges, etc.)	53.8% 7	38.5% 5	7.7% 1	0.0% 0	13	3.46
Economic development strategies to support the retention and expansion of existing businesses	46.2% 6	38.5% 5	7.7% 1	7.7% 1	13	3.23
Changes to land development regulations to promote new development and redevelopment of vacant/underutilized properties	30.8% 4	61.5% 8	7.7% 1	0.0% 0	13	3.23
Economic development strategies to attract new businesses/industries to the area	46.2% 6	38.5% 5	7.7% 1	7.7% 1	13	3.23
Improvements that incorporate green infrastructure, sustainable building practices, heat mitigation, and additional green spaces	30.8% 4	53.8% 7	7.7% 1	7.7% 1	13	3.08
Improvements to promote the identity and appeal of the area (e.g., public realm improvements such as landscaping, signage, and public art)	30.8% 4	30.8% 4	23.1% 3	15.4% 2	13	2.77

## Q9 What do you want to see happen on vacant/underutilized lots?

Answered: 14 Skipped: 7



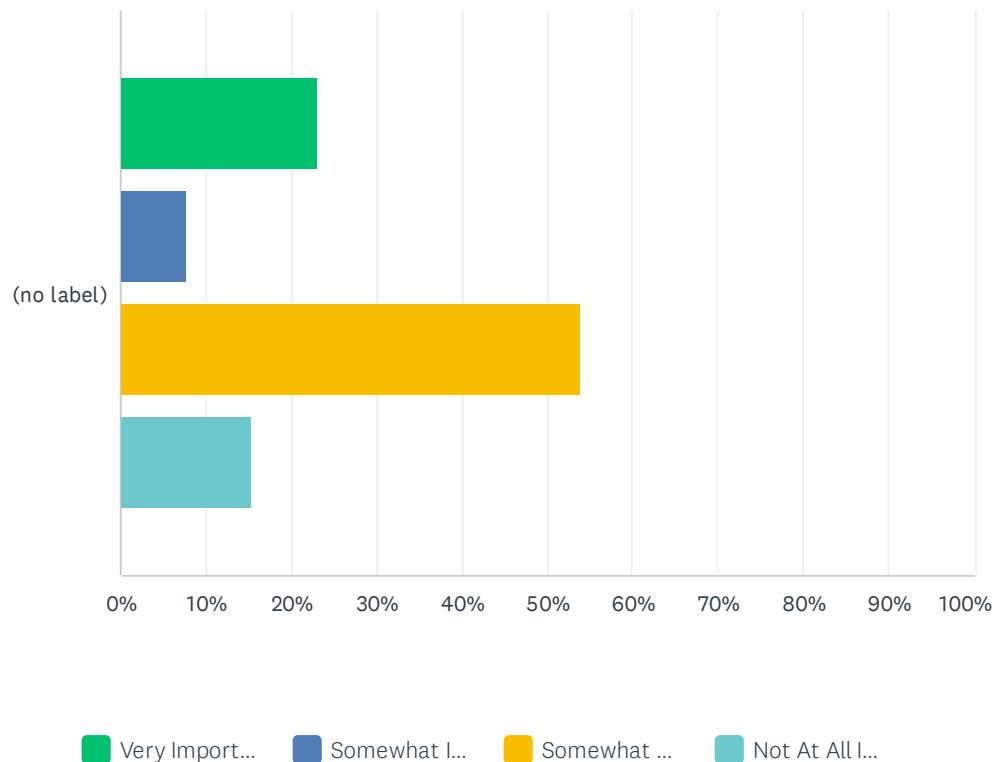
4 - Most Preferred   3 - Somewhat Preferred   2 - Somewhat Preferred   1 - Least Preferred

**Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey**

	4 - MOST PREFERRED	3 - SOMEWHAT PREFERRED	2 - SOMEWHAT NOT PREFERRED	1 - LEAST PREFERRED	TOTAL	WEIGHTED AVERAGE
Development/redevelopment that introduces new uses/activities to the area	53.85% 7	38.46% 5	7.69% 1	0.00% 0	13	3.46
Development/redevelopment that incorporates both industrial and new uses	46.15% 6	38.46% 5	15.38% 2	0.00% 0	13	3.31
Development/redevelopment that matches the existing industrial character of the area	21.43% 3	35.71% 5	28.57% 4	14.29% 2	14	2.64
Nothing	0.00% 0	11.11% 1	11.11% 1	77.78% 7	9	1.33

**Q10 How important is it to preserve industrial land in the area? Select the answer choice that most closely represents your point of view or write in a response.**

Answered: 13    Skipped: 8

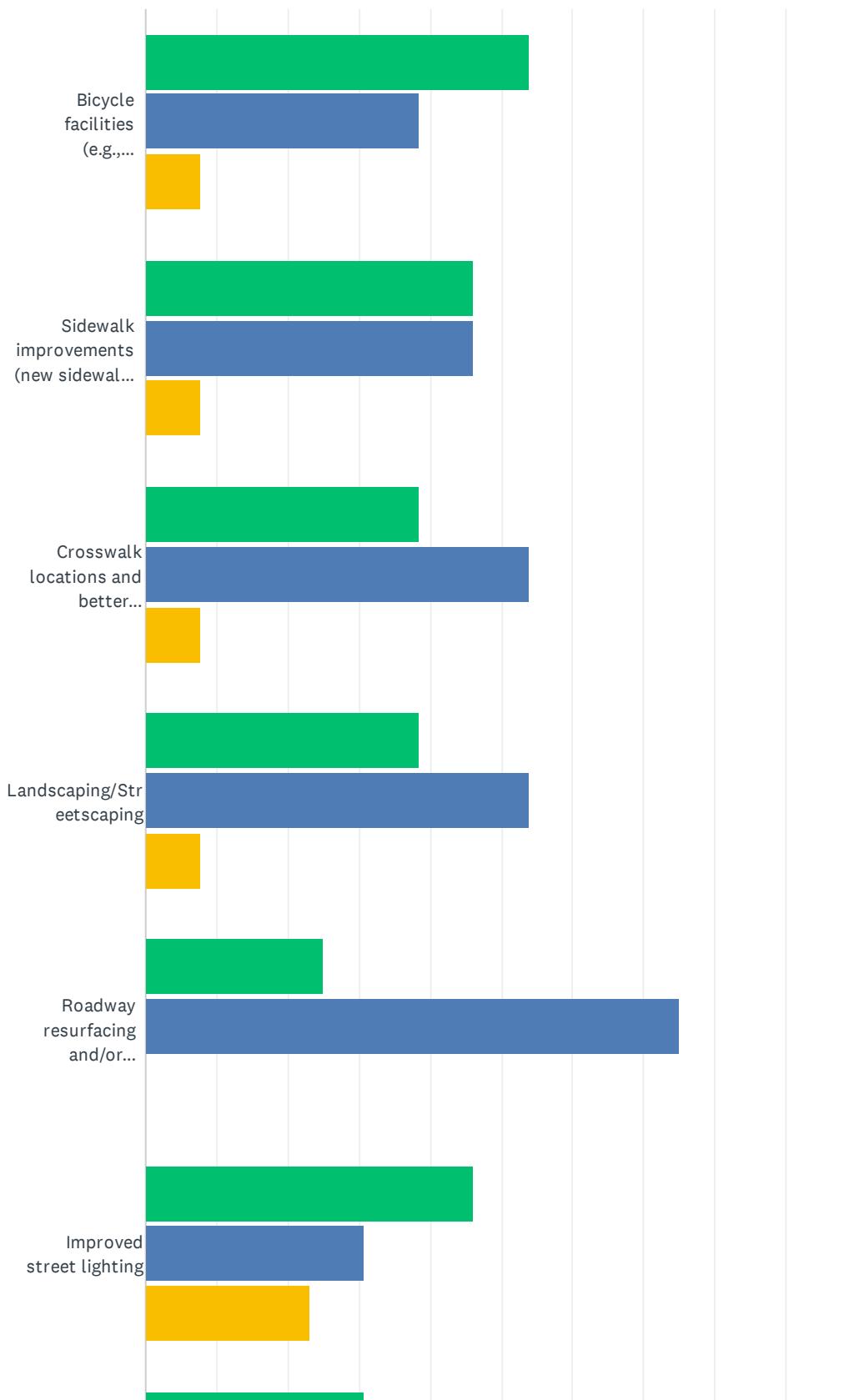


	VERY IMPORTANT - PRESERVING INDUSTRIAL LAND IN THE AREA SHOULD BE A TOP PRIORITY.	SOMEWHAT IMPORTANT - THE AREA SHOULD MOSTLY REMAIN INDUSTRIAL BUT SOME NEW ACTIVITIES/USES ARE OKAY.	SOMEWHAT UNIMPORTANT - THE AREA SHOULD BE A MIX OF INDUSTRIAL AND OTHER LAND USES.	NOT AT ALL IMPORTANT - A MORE DIVERSE MIX OF USES IS PREFERRED TO PRESERVING INDUSTRIAL LAND.	TOTAL	WEIGHTED AVERAGE
(no label)	23.08%	7.69%	53.85%	15.38%	13	2.38

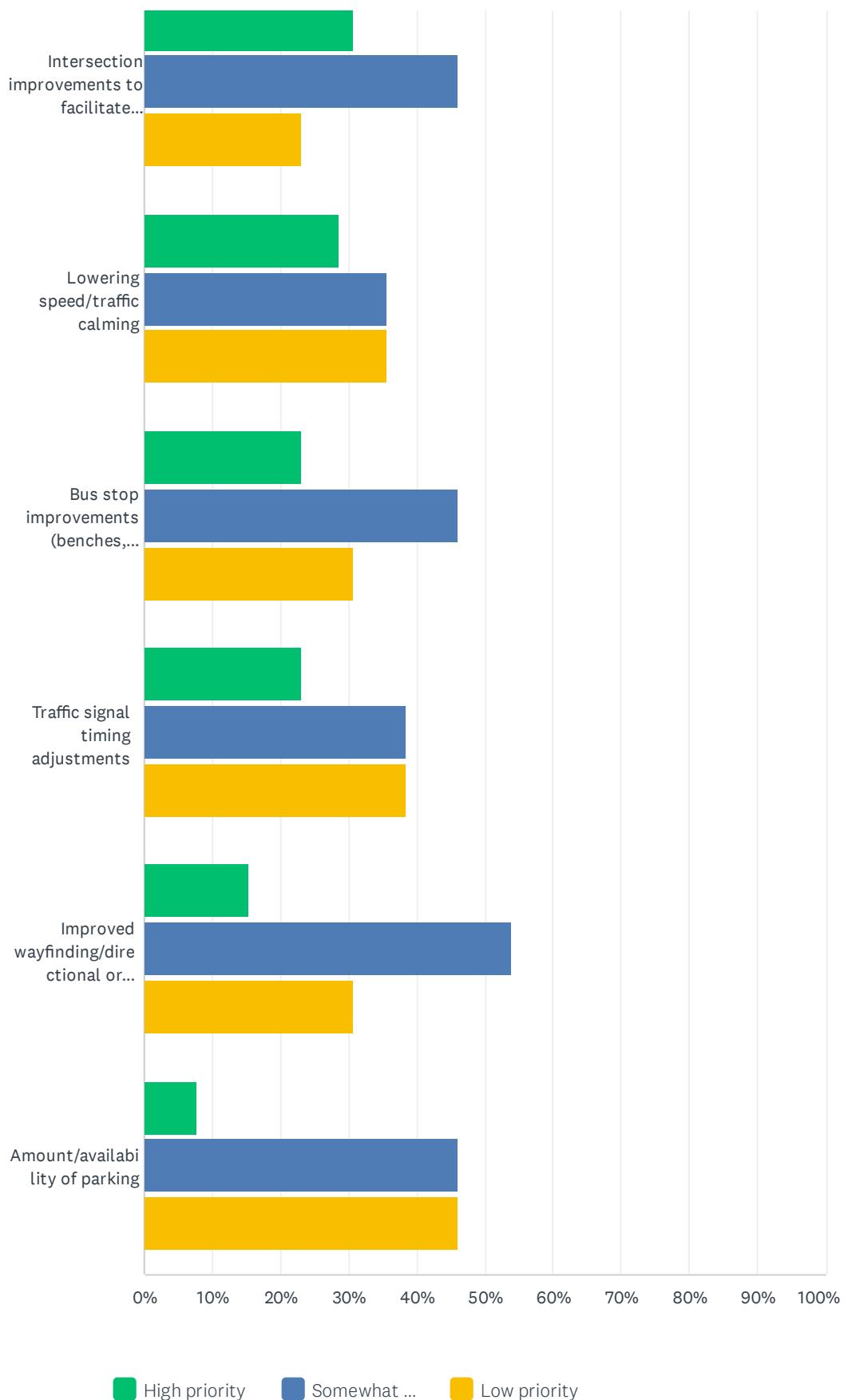
#	OTHER (PLEASE SPECIFY)	DATE
1	Being on 46th Ave. between 34th St. and 28th St. for more than 30 years. The area is mostly occupied at this time 30 years ago. It wasn't.	1/7/2025 10:20 AM

## Q11 Which mobility/roadway improvements do you feel are a top priority?

Answered: 14    Skipped: 7



## Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey



High priority      Somewhat ...      Low priority

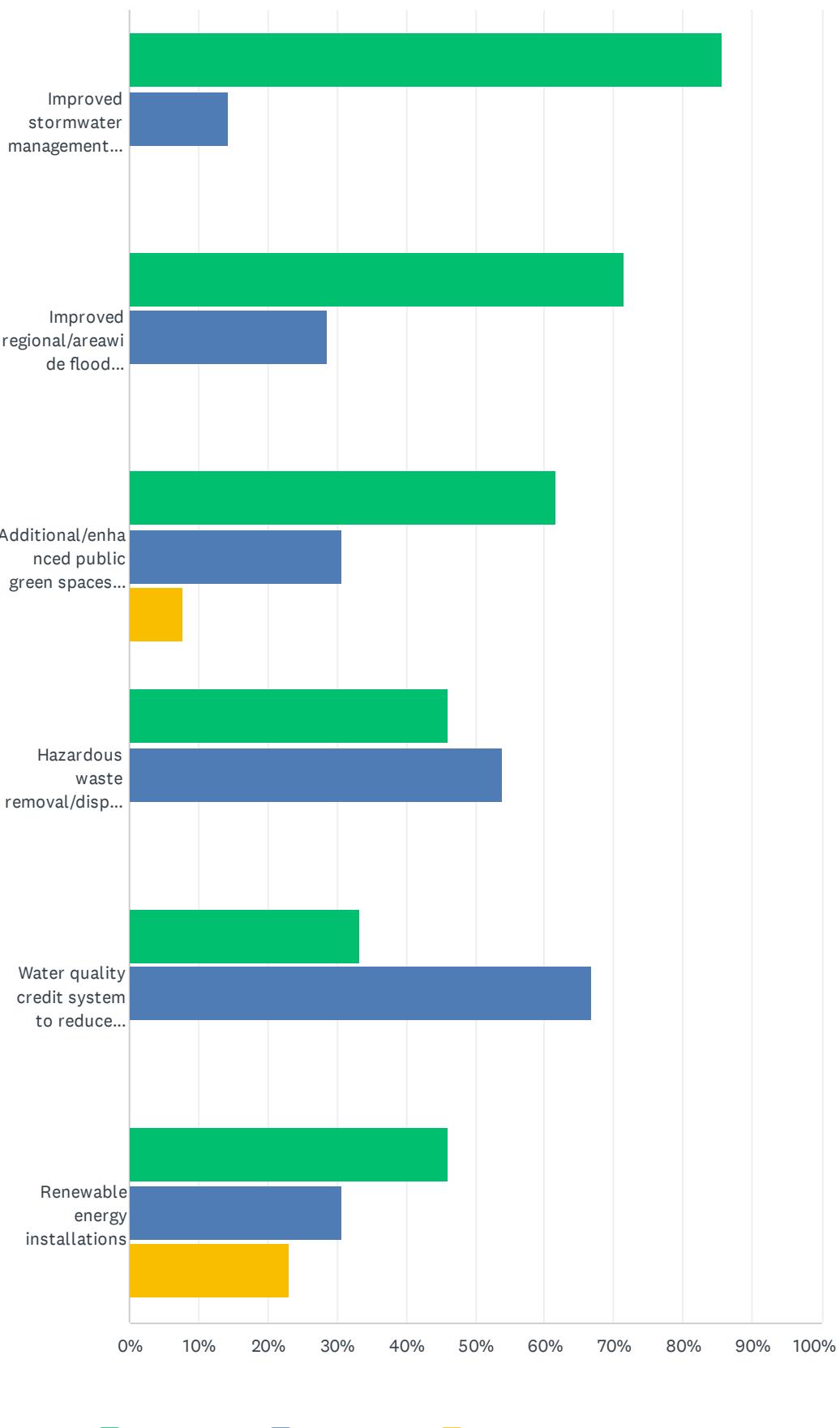
**Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey**

	HIGH PRIORITY	SOMEWHAT A PRIORITY	LOW PRIORITY	TOTAL	WEIGHTED AVERAGE
Bicycle facilities (e.g., protected bike lanes, shared-use paths/trails)	53.85% 7	38.46% 5	7.69% 1	13	2.46
Sidewalk improvements (new sidewalks and repair)	46.15% 6	46.15% 6	7.69% 1	13	2.38
Crosswalk locations and better visibility at intersections	38.46% 5	53.85% 7	7.69% 1	13	2.31
Landscaping/Streetscaping	38.46% 5	53.85% 7	7.69% 1	13	2.31
Roadway resurfacing and/or restriping	25.00% 3	75.00% 9	0.00% 0	12	2.25
Improved street lighting	46.15% 6	30.77% 4	23.08% 3	13	2.23
Intersection improvements to facilitate safer turning movements (turn lanes, curb radii)	30.77% 4	46.15% 6	23.08% 3	13	2.08
Lowering speed/traffic calming	28.57% 4	35.71% 5	35.71% 5	14	1.93
Bus stop improvements (benches, shelters, lighting, etc.)	23.08% 3	46.15% 6	30.77% 4	13	1.92
Traffic signal timing adjustments	23.08% 3	38.46% 5	38.46% 5	13	1.85
Improved wayfinding/directional or street signage	15.38% 2	53.85% 7	30.77% 4	13	1.85
Amount/availability of parking	7.69% 1	46.15% 6	46.15% 6	13	1.62

#	OTHER (PLEASE SPECIFY)	DATE
1	Ever since the storm they changed the traffic light timing and it causes long backups all along 34th Street North at all the major intersections	3/1/2025 8:18 AM
2	On the east side of 28th there isn't a through line of a sidewalk, which hurts walkability in the area.	2/28/2025 11:39 AM

## Q12 Which environmental improvements/resiliency strategies do you feel are a top priority?

Answered: 14    Skipped: 7



■ High Priority   ■ Somewhat ...   ■ Low Priority

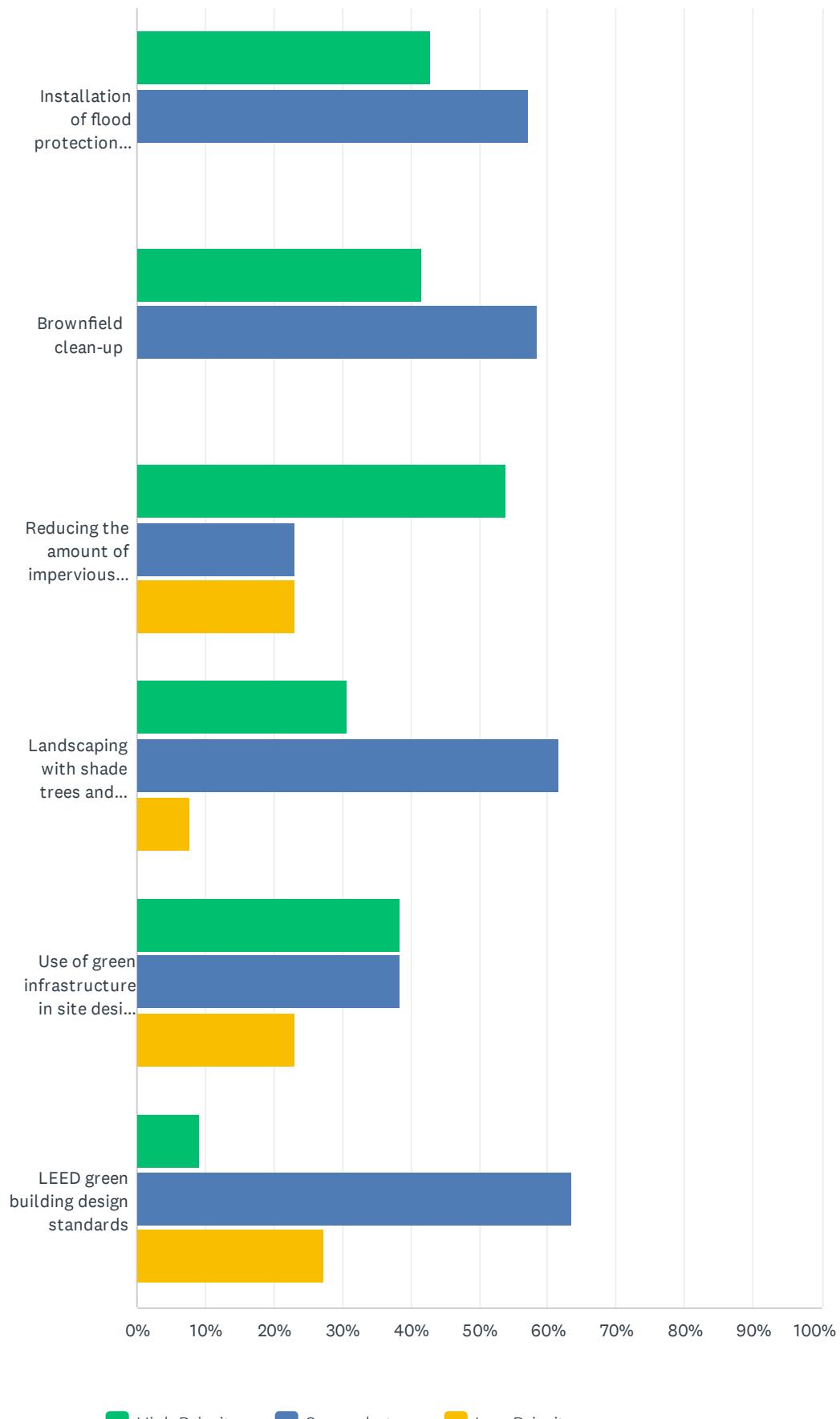
**Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey**

	HIGH PRIORITY	SOMEWHAT A PRIORITY	LOW PRIORITY	TOTAL	WEIGHTED AVERAGE
Improved stormwater management infrastructure and drainage systems	85.71% 12	14.29% 2	0.00% 0	14	2.86
Improved regional/areawide flood mitigation	71.43% 10	28.57% 4	0.00% 0	14	2.71
Additional/enhanced public green spaces, landscaping with native species, and planting of shade trees along roadways to reduce the urban heat island effect	61.54% 8	30.77% 4	7.69% 1	13	2.54
Hazardous waste removal/disposal program	46.15% 6	53.85% 7	0.00% 0	13	2.46
Water quality credit system to reduce pollution and compliance costs	33.33% 4	66.67% 8	0.00% 0	12	2.33
Renewable energy installations	46.15% 6	30.77% 4	23.08% 3	13	2.23

#	OTHER (PLEASE SPECIFY)	DATE
1	These are all high for me - I have lived in Florida my entire life, and we need to make peace with a place that doesn't want us, necessarily. We must be gracious with the land we use because it will come back for us if we are not careful.	2/28/2025 11:39 AM

**Q13 If properties are to redevelop, which sustainable/resilient building practices do you feel are a top priority?**

Answered: 14    Skipped: 7



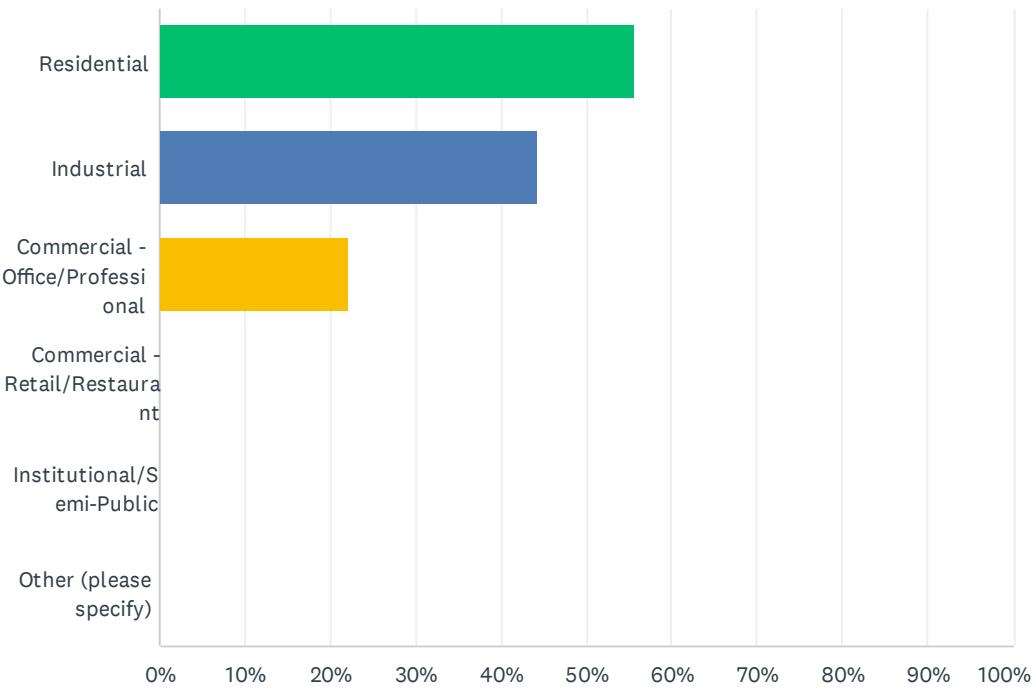
■ High Priority   ■ Somewhat ...   ■ Low Priority

**Joe's Creek Industrial Park Master Plan - Stakeholder Input Survey**

	HIGH PRIORITY	SOMEWHAT A PRIORITY	LOW PRIORITY	TOTAL	WEIGHTED AVERAGE
Installation of flood protection systems (e.g., raised buildings, retaining walls, temporary flood barriers, etc.)	42.86% 6	57.14% 8	0.00% 0	14	2.43
Brownfield clean-up	41.67% 5	58.33% 7	0.00% 0	12	2.42
Reducing the amount of impervious surface/pavement on-site to reduce the urban heat island effect and stormwater run-off	53.85% 7	23.08% 3	23.08% 3	13	2.31
Landscaping with shade trees and native plantings	30.77% 4	61.54% 8	7.69% 1	13	2.23
Use of green infrastructure in site design (e.g., rain gardens, parking island bioretention cells, permeable/pervious pavement, green roofs, tree wells, etc.)	38.46% 5	38.46% 5	23.08% 3	13	2.15
LEED green building design standards	9.09% 1	63.64% 7	27.27% 3	11	1.82

## Q14 What type of property do you own in the JCIP area? (Select all that apply)

Answered: 9    Skipped: 12

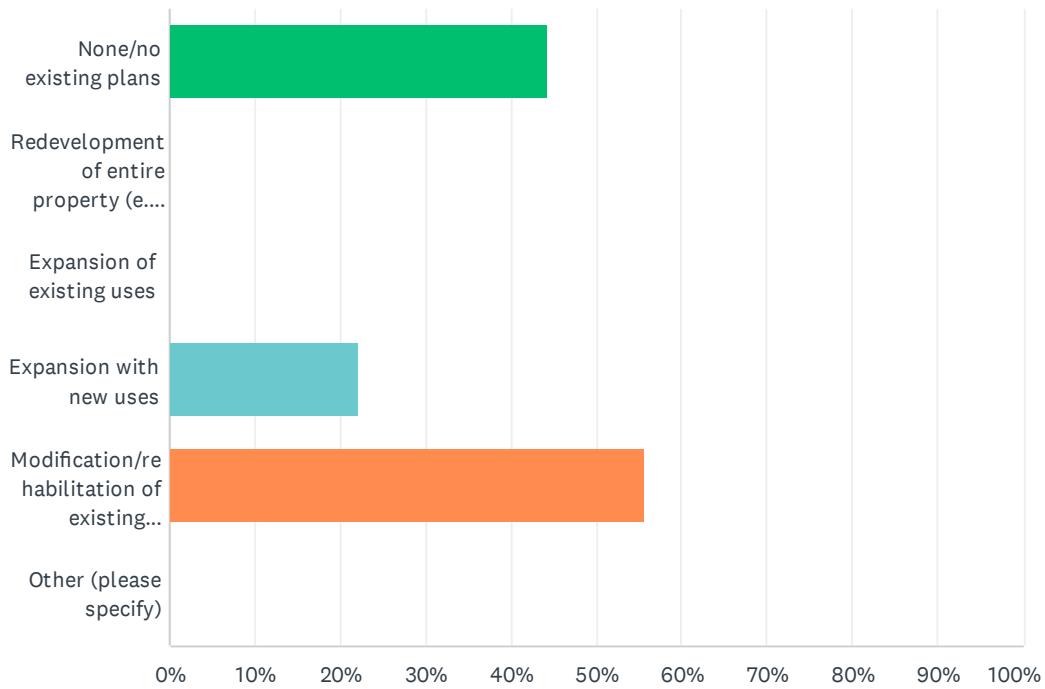


ANSWER CHOICES	RESPONSES
Residential	55.56%
Industrial	44.44%
Commercial - Office/Professional	22.22%
Commercial - Retail/Restaurant	0.00%
Institutional/Semi-Public	0.00%
Other (please specify)	0.00%
Total Respondents: 9	

#	OTHER (PLEASE SPECIFY)	DATE
There are no responses.		

## Q15 What future use, if any, do you see for your property? (Select all that apply)

Answered: 9 Skipped: 12



ANSWER CHOICES		RESPONSES	
None/no existing plans		44.44%	4
Redevelopment of entire property (e.g., demolition of existing buildings and new construction)		0.00%	0
Expansion of existing uses		0.00%	0
Expansion with new uses		22.22%	2
Modification/rehabilitation of existing buildings		55.56%	5
Other (please specify)		0.00%	0
Total Respondents: 9			

#	OTHER (PLEASE SPECIFY)	DATE
There are no responses.		

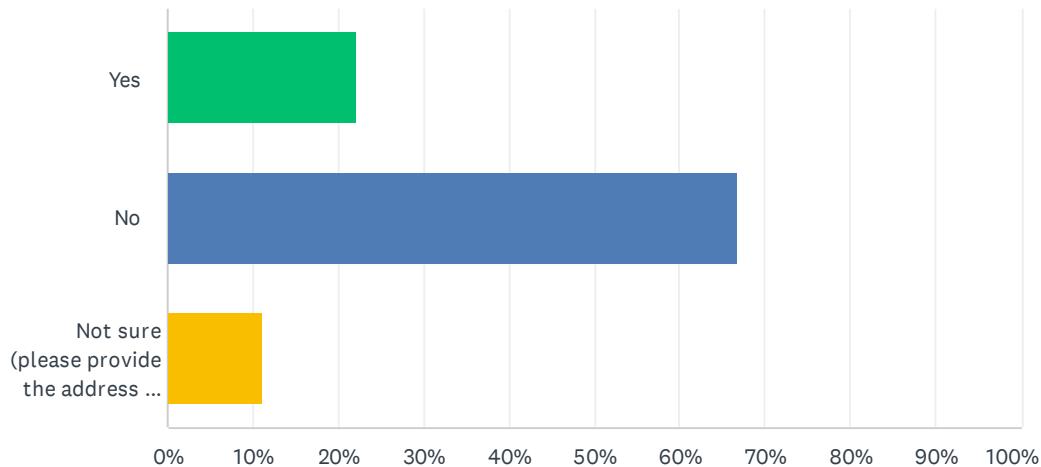
**Q16 Is there anything you would like to do with or on your property that you cannot currently do because of existing regulations? For example, are there uses that you cannot have on your property, or building form or style that you cannot build?**

Answered: 2    Skipped: 19

#	RESPONSES	DATE
1	This might be a pipe dream in Florida due to building code but I would really like to see for my residential property and for larger scale developments the ability — and an incentive — to create green roofs to combat the urban heat island effect and reduce energy costs & demand.	2/28/2025 1:32 PM
2	Bo	1/13/2025 2:39 PM

## Q17 Does your property back up to a seawall/sheet pile retaining wall along Joe's Creek?

Answered: 9    Skipped: 12

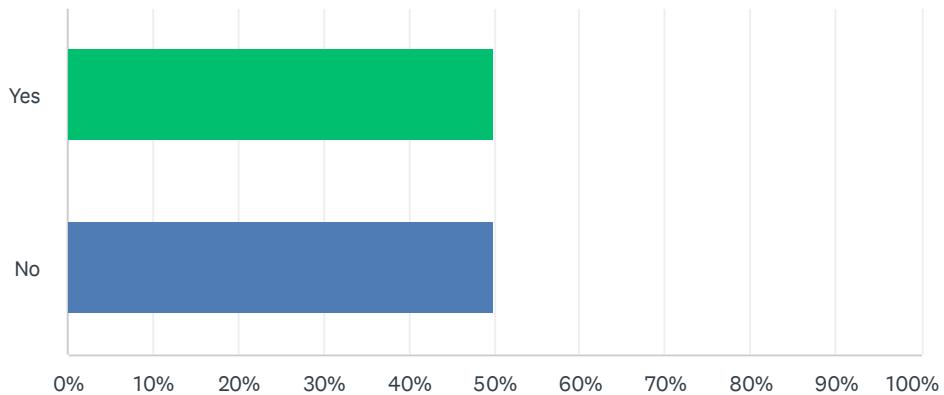


ANSWER CHOICES		RESPONSES	
Yes		22.22%	2
No		66.67%	6
Not sure (please provide the address of your property and email address so a member of the project team can reach out to you with more information)		11.11%	1
TOTAL			9

#	NOT SURE (PLEASE PROVIDE THE ADDRESS OF YOUR PROPERTY AND EMAIL ADDRESS SO A MEMBER OF THE PROJECT TEAM CAN REACH OUT TO YOU WITH MORE INFORMATION)	DATE
1	4097 46th ave n	2/28/2025 3:19 PM

## Q18 Are you aware that you own your seawall?

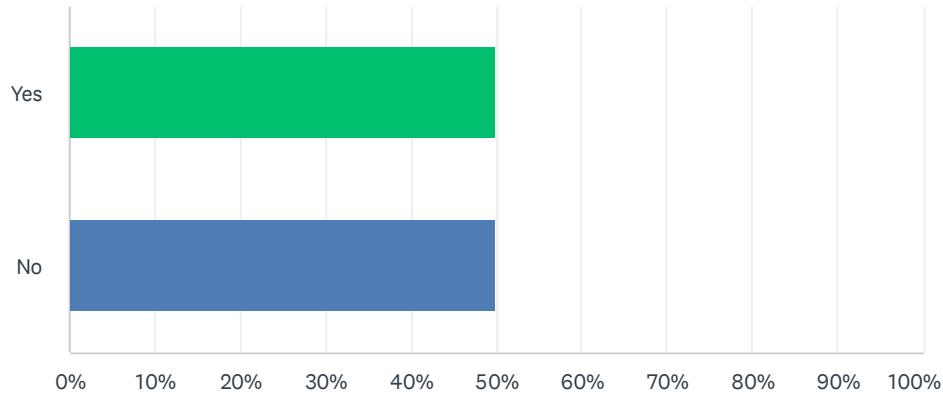
Answered: 2    Skipped: 19



ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	50.00%	1
<b>TOTAL</b>		<b>2</b>

## Q19 Are you aware that individual property owners are responsible for maintaining their seawall?

Answered: 2 Skipped: 19



ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	50.00%	1
TOTAL		2

## Q20 (Optional) Please indicate your property's address.

Answered: 2    Skipped: 19

ANSWER CHOICES	RESPONSES	
Street address	100.00%	2
Street address line 2	0.00%	0
City	0.00%	0
State	0.00%	0
Zip code	100.00%	2
Country	0.00%	0

#	STREET ADDRESS	DATE
1	3120 46th Ave N	1/13/2025 2:40 PM
2	3160 46 ave north	1/7/2025 12:48 PM
#	STREET ADDRESS LINE 2	DATE
	There are no responses.	
#	CITY	DATE
	There are no responses.	
#	STATE	DATE
	There are no responses.	
#	ZIP CODE	DATE
1	33714	1/13/2025 2:40 PM
2	33714	1/7/2025 12:48 PM
#	COUNTRY	DATE
	There are no responses.	

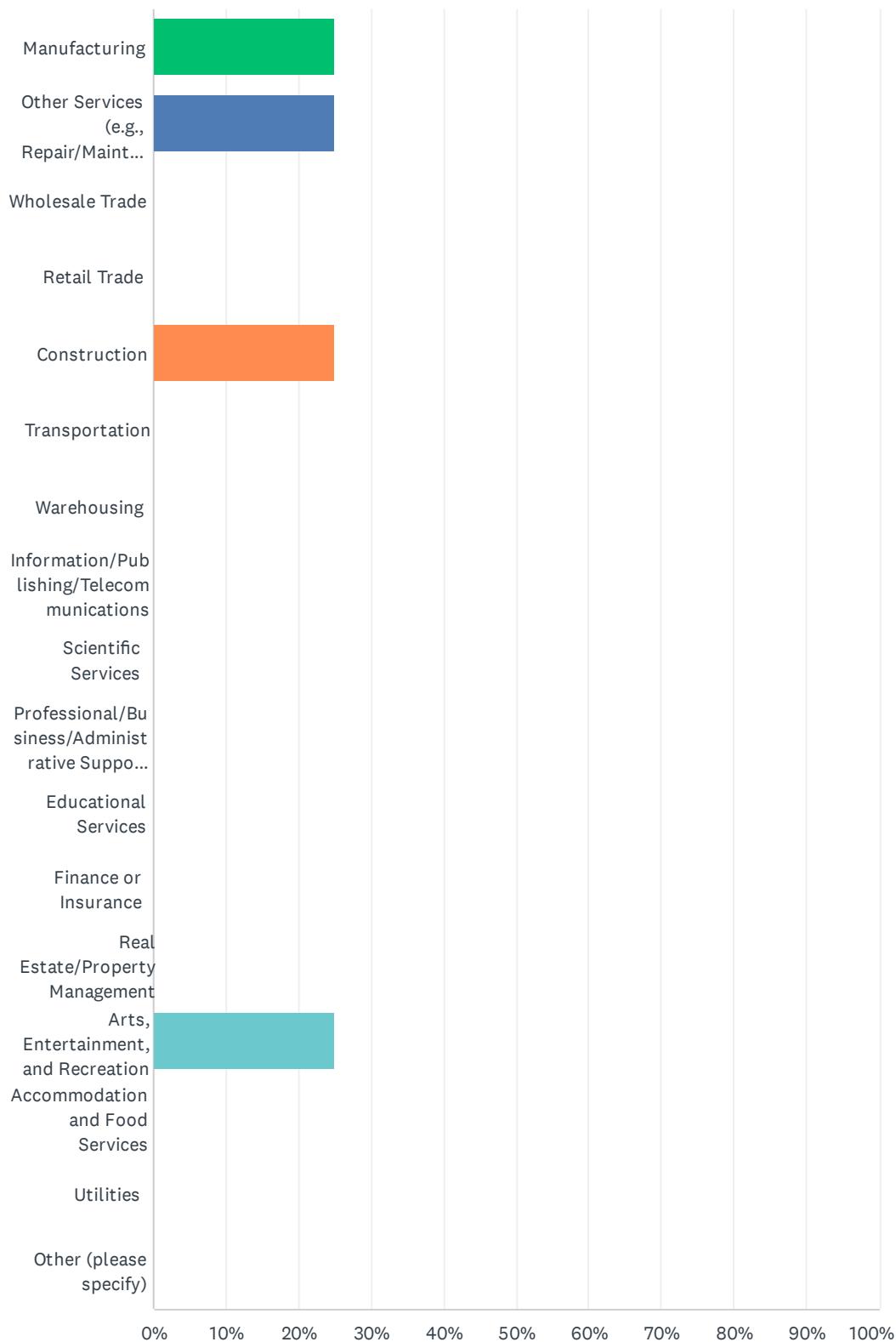
**Q21 If possible, please upload pictures of the seawall/sheet pile wall on your property.**

Answered: 0    Skipped: 21

#	FILE NAME	FILE SIZE	DATE
There are no responses.			

## Q22 Which of the following industries best represents your business?

Answered: 4    Skipped: 17



ANSWER CHOICES	RESPONSES	
Manufacturing	25.00%	1
Other Services (e.g., Repair/Maintenance, Personal Services, Religious/Civic Organizations)	25.00%	1
Wholesale Trade	0.00%	0
Retail Trade	0.00%	0
Construction	25.00%	1
Transportation	0.00%	0
Warehousing	0.00%	0
Information/Publishing/Telecommunications	0.00%	0
Scientific Services	0.00%	0
Professional/Business/Administrative Support Services	0.00%	0
Educational Services	0.00%	0
Finance or Insurance	0.00%	0
Real Estate/Property Management	0.00%	0
Arts, Entertainment, and Recreation	25.00%	1
Accommodation and Food Services	0.00%	0
Utilities	0.00%	0
Other (please specify)	0.00%	0
<b>TOTAL</b>		<b>4</b>

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

**Q23 Briefly describe the nature of your business and, if comfortable, provide the name of your business.**

Answered: 4 Skipped: 17

#	RESPONSES	DATE
1	Silverlakes Property Managemebt. Main tenant is Commercial Stone & Cabinet Fabricators.	1/13/2025 2:44 PM
2	Manufacturing equipment design/ build / support. Farmer Mold & Machine Works	1/8/2025 11:22 AM
3	Kellogg's Kennel Inc. is a boarding and grooming facility for dogs and cats.	1/7/2025 11:55 AM
4	Manufacturing OEM machinery Audio recording and production	11/5/2024 12:06 PM

## Q24 Approximately how long has your business been located in the JCIP area?

Answered: 4    Skipped: 17

#	RESPONSES	DATE
1	Since 1999.	1/13/2025 2:44 PM
2	45 years	1/8/2025 11:22 AM
3	Kellogg's Kennel Inc. has been in business for 30 years. The facility has been here since the 60s.	1/7/2025 11:55 AM
4	45 years	11/5/2024 12:06 PM

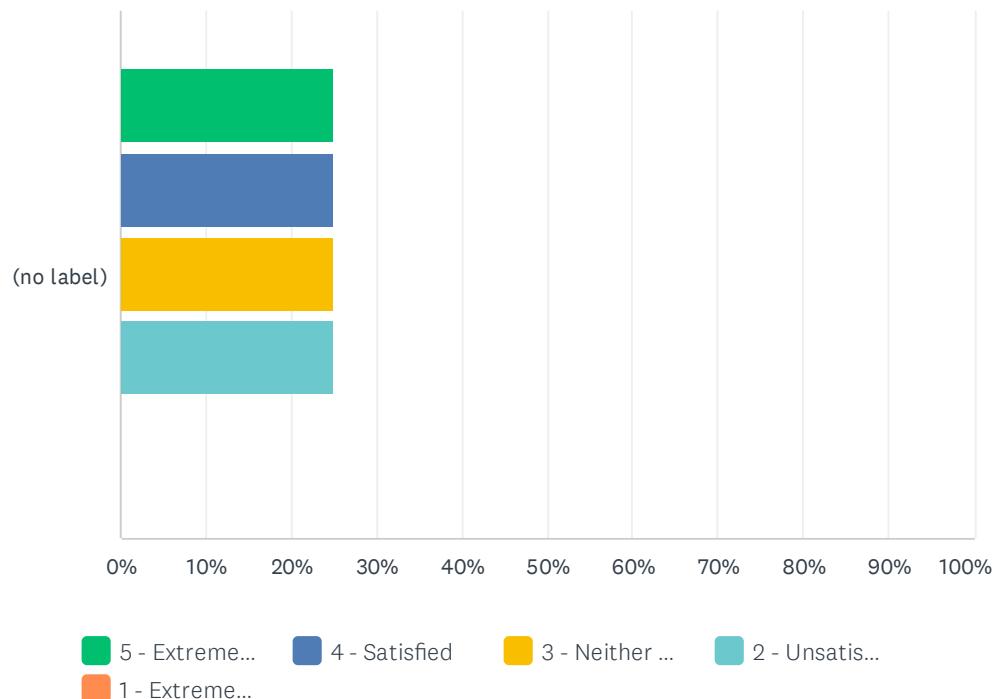
## Q25 Approximately how many people do you employ?

Answered: 4    Skipped: 17

#	RESPONSES	DATE
1	15	1/13/2025 2:44 PM
2	20	1/8/2025 11:22 AM
3	3-5	1/7/2025 11:55 AM
4	20	11/5/2024 12:06 PM

## Q26 How satisfied are you with owning/operating your business in the JCIP area?

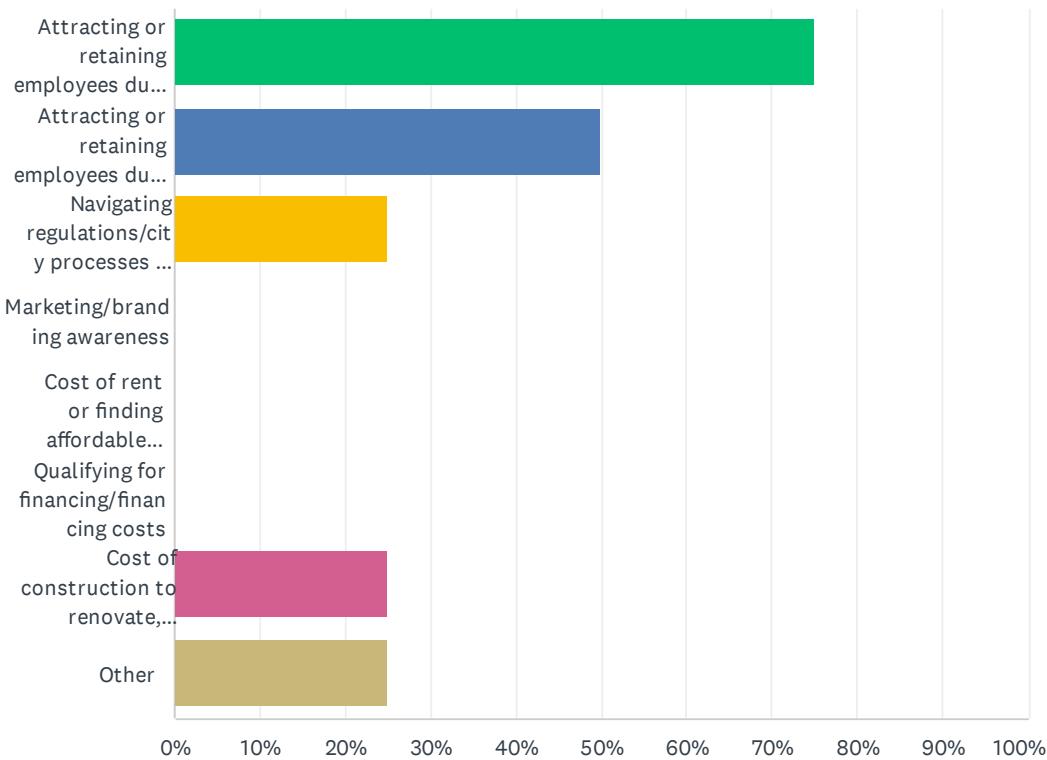
Answered: 4    Skipped: 17



	5 - EXTREMELY SATISFIED	4 - SATISFIED	3 - NEITHER SATISFIED NOR DISSATISFIED	2 - UNSATISFIED	1 - EXTREMELY UNSATISFIED	TOTAL	WEIGHTED AVERAGE
(no label)	25.00%	1	25.00%	1	25.00%	1	0.00%

## Q27 What types of challenges, if any, do you face in running your business? (Select all that apply)

Answered: 4 Skipped: 17

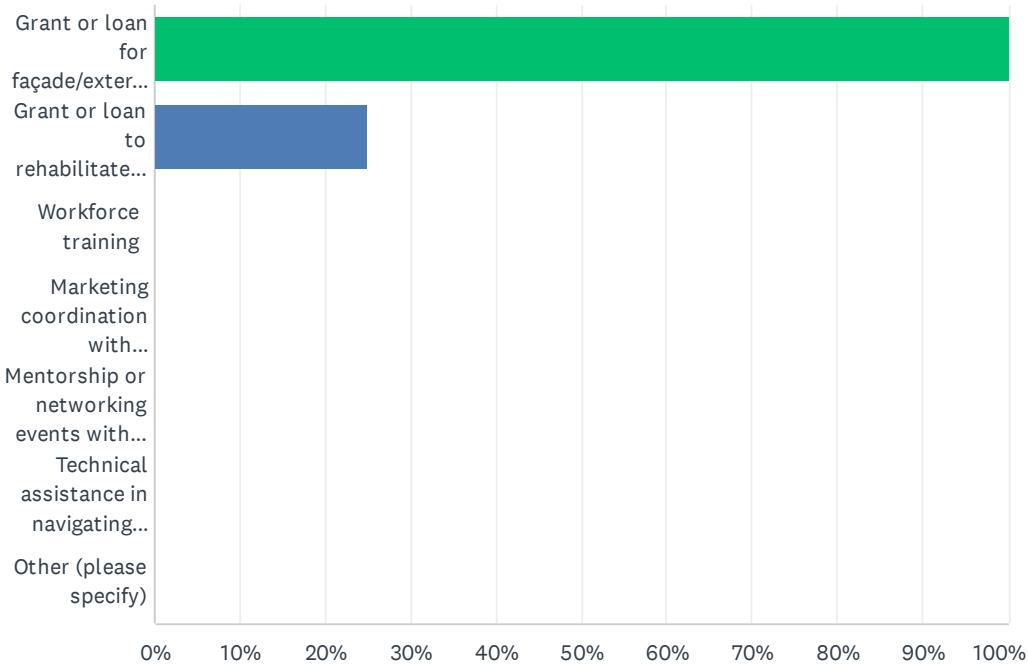


ANSWER CHOICES		RESPONSES	
Attracting or retaining employees due to skills gaps/qualifications		75.00%	3
Attracting or retaining employees due to housing or transportation challenges		50.00%	2
Navigating regulations/city processes to grow, expand, or improve your business		25.00%	1
Marketing/branding awareness		0.00%	0
Cost of rent or finding affordable leasable space		0.00%	0
Qualifying for financing/financing costs		0.00%	0
Cost of construction to renovate, expand, or redevelop your business/property		25.00%	1
Other		25.00%	1
Total Respondents: 4			

#	PLEASE EXPLAIN YOUR SELECTION(S)	DATE
1	Floods	11/5/2024 12:06 PM

## Q28 What types of information or support would be helpful to you and/or your employees? (Select all that apply)

Answered: 4 Skipped: 17



ANSWER CHOICES	RESPONSES	
Grant or loan for façade/exterior improvements (e.g., painting, architectural/decorative details, window replacement, landscaping, exterior lighting, irrigation, installation of benches or bike racks, etc.)	100.00%	4
Grant or loan to rehabilitate/renovate property to bring it up to current County Code standards	25.00%	1
Workforce training	0.00%	0
Marketing coordination with community-wide events and advertising initiatives	0.00%	0
Mentorship or networking events with other local business owners	0.00%	0
Technical assistance in navigating regulations/County processes	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 4		

#	OTHER (PLEASE SPECIFY)	DATE
There are no responses.		

**Q29 Are there any new businesses or industries that you would like to see recruited to the area or would be complementary to your business?**

Answered: 2    Skipped: 19

#	RESPONSES	DATE
1	Not particularly	1/13/2025 2:44 PM
2	Arts & entertainment	1/8/2025 11:22 AM

**Q30 Do you have any ideas related to workforce training? Are there specific skill gaps you are noticing in job applicants?**

Answered: 1    Skipped: 20

#	RESPONSES	DATE
1	No	1/13/2025 2:44 PM

**Q31 Do you have any special needs for your building or work space? For example, do you need tall ceilings for equipment, special ventilation systems, larger loading/service areas, greater distance between buildings for life safety/noise/odor, outdoor storage space, event or gallery space, etc.?**

Answered: 3    Skipped: 18

#	RESPONSES	DATE
1	Large loading dock.	1/13/2025 2:44 PM
2	Larger clear span space, 3 phase electric	1/8/2025 11:22 AM
3	3phase power	11/5/2024 12:06 PM

**Q32 If you would like to receive emails about upcoming project events, please provide your email below.**

Answered: 10    Skipped: 11

ANSWER CHOICES		RESPONSES	
Name		100.00%	10
Email		100.00%	10

#	NAME	DATE
1	Frank	3/1/2025 8:18 AM
2	Ann Hassett	2/28/2025 7:34 PM
3	Traci Schunk Kolb	2/28/2025 3:20 PM
4	Natalie Schultz-Henry	2/28/2025 1:33 PM
5	Dominic Howarth	2/28/2025 11:39 AM
6	Lisa Maddux	1/13/2025 2:44 PM
7	Jim Gilmour	1/8/2025 11:22 AM
8	Lina Vilkialis	1/7/2025 12:48 PM
9	Jeff Kellogg	1/7/2025 11:56 AM
10	Jim Gilmour	11/5/2024 12:06 PM

#	EMAIL	DATE
1	Fmatowitz@gmail.com	3/1/2025 8:18 AM
2	Ladyagent777@gmail.com	2/28/2025 7:34 PM
3	traci_kolb@yahoo.com	2/28/2025 3:20 PM
4	nschultzhenry@gmail.com	2/28/2025 1:33 PM
5	Misterwebs317@aol.com	2/28/2025 11:39 AM
6	Lisa@cscfusa.com	1/13/2025 2:44 PM
7	Jgilmour@farmermold.com	1/8/2025 11:22 AM
8	vilkialis@gmail.com	1/7/2025 12:48 PM
9	Jeffkellogg6965@1791.com	1/7/2025 11:56 AM
10	Jgilmour@farmermold.com	11/5/2024 12:06 PM