POWER DISTRICT

Prepared For:

Gainesville Community Redevelopment Agency

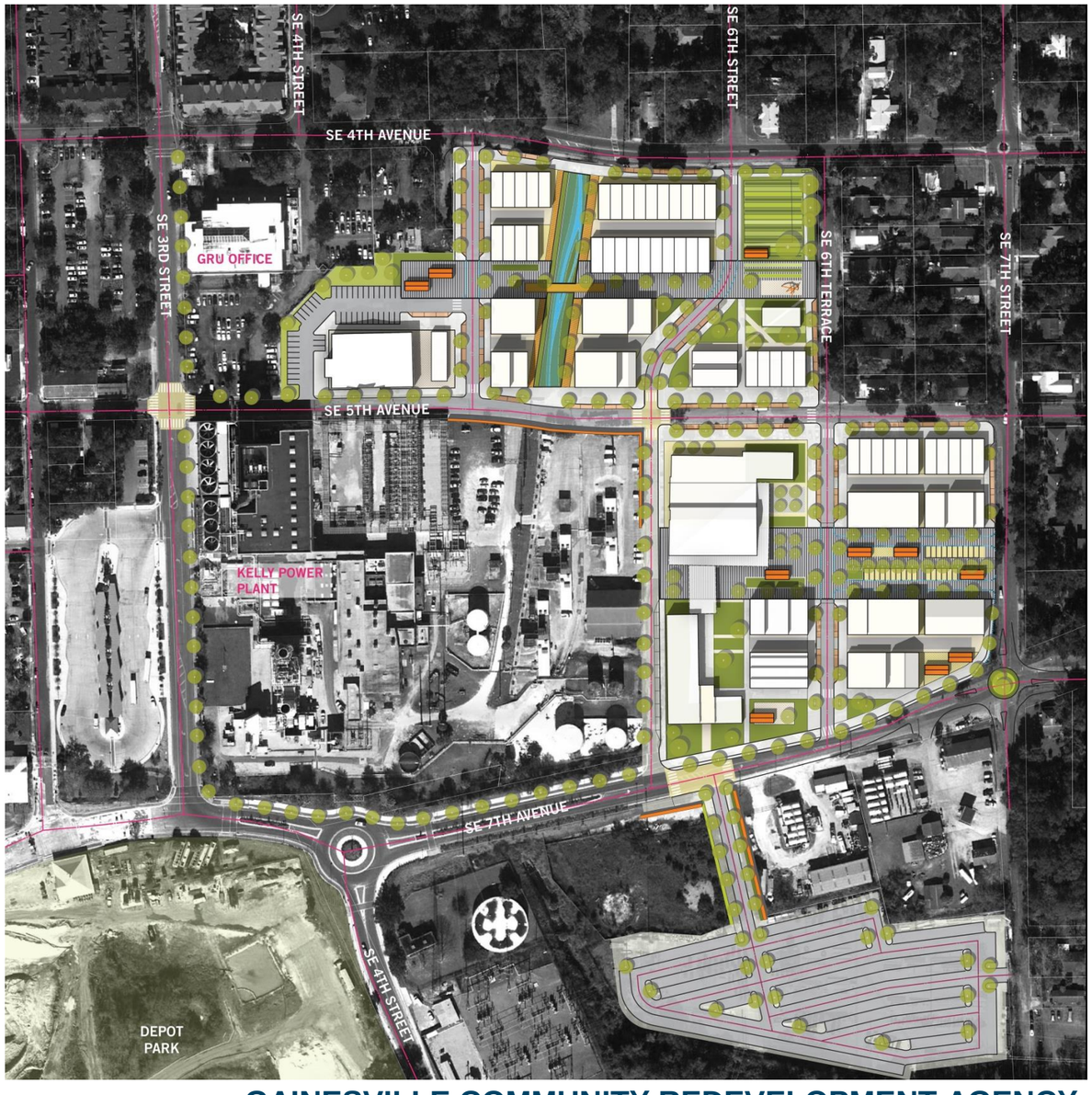
Prepared By:

JONES EDMUNDS

In Cooperation with:

CITY OF GAINESVILLE 1869 STATE OF FLORIDA

GRU



GAINESVILLE COMMUNITY REDEVELOPMENT AGENCY
POWER DISTRICT INFRASTRUCTURE ANALYSIS

Gainesville Community Redevelopment Agency | October 2015

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CREDITS

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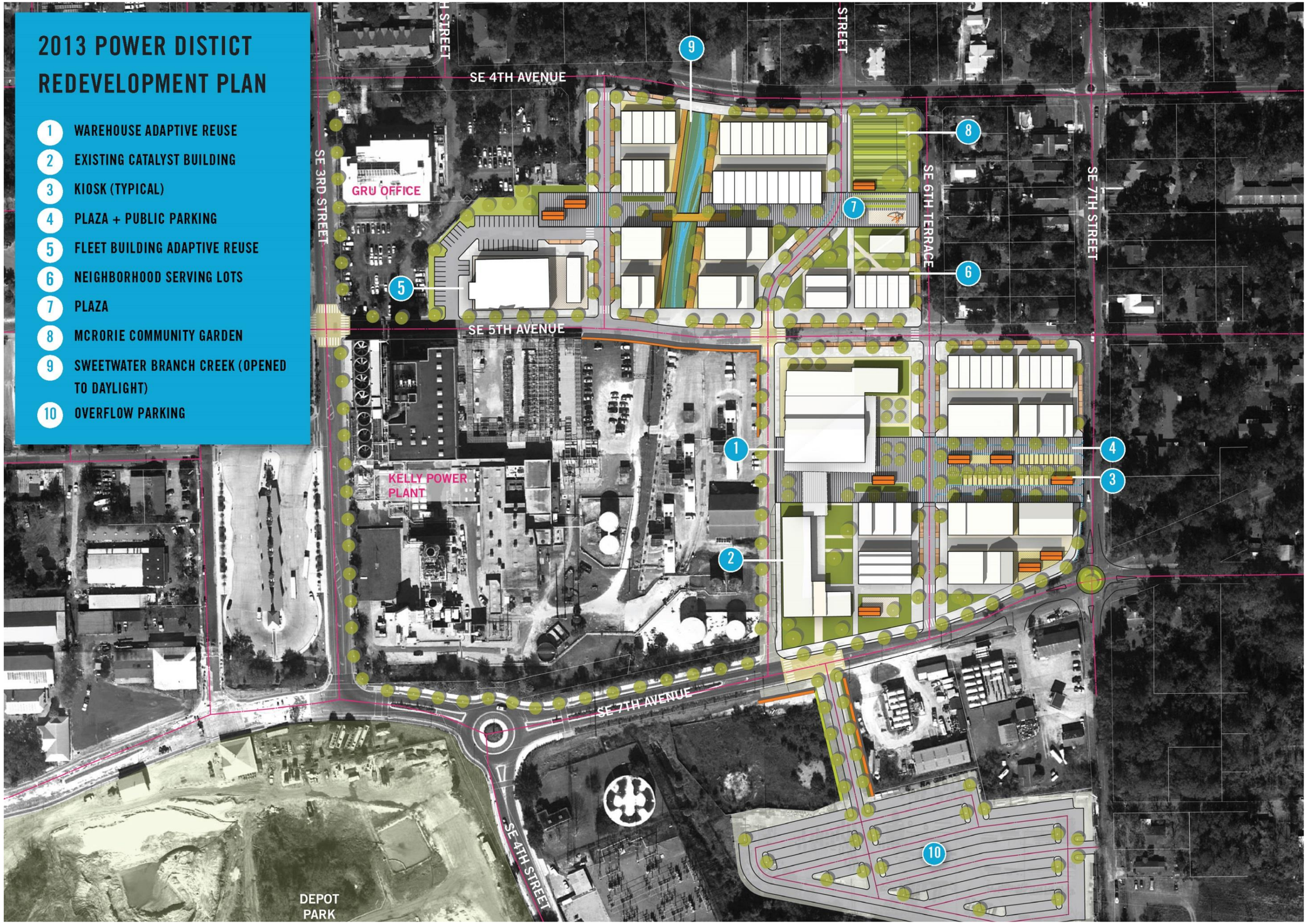


EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The *Power District Infrastructure Analysis* assesses and documents the existing infrastructure and identifies deficiencies, conflicts, planned projects, redevelopment constraints, and suggested improvements based on the 2013 *Power District Redevelopment Plan*. The purpose of this study is to assist in the positioning of the Power District as a viable and appealing redevelopment area by identifying potential barriers to private investment. As a result of the previous use of the site as a regional utility supplier, many existing utilities traverse parcels that would otherwise be suitable for development. This report synthesizes a significant amount of data into a single and comprehensive document which outlines the necessary actions required to fully capture the vision of the Power District.

The Power District is the area bounded by SE 4th Avenue on the north, SE 3rd Street on the west, SE 7th Street on the east, and Depot Avenue on the south. The Power District is adjacent to and east of the Gainesville Regional Utilities (GRU) JR Kelly Power Station on property owned by GRU. Recently, GRU relocated some operations from their Downtown campus to the Eastside Operations Center (EOC), thus vacating several buildings & parcels on the site.

Perkins and Will completed the *Power District Redevelopment Plan* for the Community Redevelopment Agency (CRA) in December 2013. This document was subsequently adopted by the City Commission serving as the CRA Board. Jones Edmunds & Associates, Inc. used Perkins and Will's conceptual building footprints and street layouts as the background for the figures presented in this report. The CRA, acting on behalf of the City of Gainesville (CoG) and GRU, is coordinating the implementation of the *Power District Redevelopment Plan* by facilitating the development of approximately 17 acres of properties and buildings previously occupied by GRU operations. The *Power District Redevelopment Plan* is flexible and the building location, size, and height as well as the circulation network may change to suit development, encourage investment, and fit within the existing context.

This *Power District Infrastructure Analysis* addresses multiple elements of the *Power District Redevelopment Plan* Implementation Strategy, including Implementation Strategy Elements 9 (stormwater treatment/mitigation assessment) and 11 (development demand and infrastructure capacity assessment). A companion report, *Sweetwater Branch Creek Daylighting Feasibility Study,* addresses Plan Elements 9 and 14. In May of 2015 the CRA completed a *Building Needs Assessment* study for eight formally occupied GRU buildings to give general information on the existing conditions of each structure and the level of investment that would be required to repurpose.

The Goals of the *Power District Infrastructure Analysis* are:

1. Collect, inventory, and synthesize existing data, codes, policies, planned projects, and programs.
2. Evaluate the existing conditions.
3. Assemble a working group of technical stakeholders to actively participate in the redevelopment of the Power District.
4. Identify the redevelopment conflicts, challenges, and opportunities concerning the existing site conditions and the proposed Power District project area redevelopment plan and the maximum potential build-out.
5. Provide a list of suggested projects, which includes financial implications, to coordinate short-term and long-term planning.

These reports (*Power District Infrastructure Analysis*, *Power District Redevelopment Plan*, and *Building Needs Assessment*) will be used as guides to help facilitate a coordinated and sequenced redevelopment strategy between multiple stakeholder entities related to specific tasks necessary to prepare the Power District for redevelopment investment. The reports will serve as an outline for projects needed to prepare the site for redevelopment. These reports will be used as an overall project planning tool and will assist with coordination with other CoG entities (e.g., City Commission, Public Works, GRU) to cooperatively work together on the Power District redevelopment.

Power District Conceptual Rendering

A list of development constraints, ongoing or planned projects, and suggested future projects was developed. These projects should be planned and coordinated between the CoG Departments (e.g., Public Works, Parks and Recreation), CRA, and GRU to optimize and leverage resources. The sequencing of the projects should be coordinated among the agencies to minimize duplicative work (e.g., overlaying a road and then constructing a new water main a year later) and to maximize (leverage) available funds.

REDEVELOPMENT CONSTRAINTS (RANDOM ORDER)

1. A 12-inch water main that runs north-south, east of Sweetwater Branch Creek (SWBC).
2. A 15-inch vitrified clay pipe (VCP) gravity sanitary sewer line that runs north-south, east of SWBC.
3. Buildings may need to be demolished.
4. The primary overhead electric lines that run north-south, east of SWBC, essentially in the same footprint at the 15-inch VCP.
5. The poor road condition of SE 5th Avenue between SE 3rd Street and SE 7th Street.
6. FEMA floodplains along SWBC between SE 4th Avenue and SE 5th Avenue.
7. The Power District is not included in the Deport Park Watershed Boundary.
8. Varying levels of environmental contamination clean-up.

Ongoing or Planned Projects

1. SE 4th Street Improvements from Depot Avenue to SE Williston Road. (Depot Ave. Segment 4)
2. SE 7th Avenue Street Improvements from SE 7th Street to SE 11th Street.
3. Maintenance and repair (i.e., mill, overlay, crack fill) of SE 5th Avenue, SE 6th Terrace, and SE 7th Street.

Suggested Projects (RANDOM Order)

These projects (Figure ES-1) will need to be evaluated and prioritized based on the established redevelopment strategy:

1. Relocate the existing 12-inch water main that runs north-south, east of SWBC. Three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of the SWBC. The preferred option is (1), which GRU has estimated to cost $100,000 to $150,000.
2. Relocate the existing 15-inch Vitrified Clay Pipe (VCP) sanitary sewer line that runs north-south, east of SWBC. Three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of the SWBC. The preferred option is (1), which GRU has estimated to cost $342,000. GRU estimated costs for options (2) and (3) to be $1,000,000 and $355,000, respectively.
3. Relocate the existing overhead electric lines east of SWBC between SE 4th Avenue and SE 5th Avenue. Three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 6th Terrace, and (3) along a new utility corridor adjacent and east of the SWBC. Option (1) is the preferred option, which GRU estimated the cost to be $80,000 for the overhead relocation and $232,000 for the underground relocation. GRU-estimated costs for Option (2) are $65,000 for the overhead relocation and $185,000 for the underground relocation and for Option (3) are $82,000 for the overhead relocation and $232,000 for the underground relocation.
4. Modify SJRWMD Depot Park Credit Basin permit to include the Power District Redevelopment area.
5. Conduct a Hydrologic and Hydraulic (H&H) study for the Sweetwater Branch Creek watershed to identify the upstream issues between SE 2nd Place and SE 4th Avenue including high velocities, erosion (water quality issues), short periods of flooding at SE 4th Avenue, and unsafe culvert conditions on the north side of SE 4th Avenue. This study should address the capacity of the existing drainage structures on the north and south sides of SE 4th Avenue. This study will need to be performed and decisions made to address issues upstream of SE 4th Avenue, before suggested project #9 can occur. The estimated cost for this study is $40,000.
6. Perform a structural analysis of SWBC culverts at SE 4th Avenue and SE 5th Avenue, as well as the box culvert between these two roads. The estimate cost of this analysis is $25,000.
7. Replace SE 4th Avenue and SE 5th Avenue SWBC culverts, if deemed necessary. If the SE 4th Avenue culvert is replaced, it should be replaced with a new culvert that can accommodate the 100-year flow rate, as long as no adverse impacts occur to the downstream 100-year floodplain. The estimated cost for replacing both culverts is $570,000 ($285,000 for each culvert crossing at SE 4th Avenue and SE 5th Avenue).
8. Design a stormwater system so that the GRU Administration Building stormwater pond can be used for development. The design will need to maintain an outflow/discharge for the building footer drain. The evaluation of the use of Depot Park for treatment, while also providing required rate attenuation, should be evaluated in the design. The estimated cost for the design is $40,000.
9. Perform a second H&H study to delineate the 100-year floodplain and submit a FEMA Letter of Map Revision (LOMR) for SWBC between SE 4th Avenue and Depot Avenue. This will facilitate removing Power District lands from the FEMA's 100-year floodplain. The estimated cost for the study and the LOMR process is $50,000.
10. Rebuild/streetscape SE 5th Avenue from SE 3rd Street to SE 7th Street. Mill and overlay work only is scheduled to occur within the CoG Public Works FY 2016–2018 paving plan.
11. Rebuild/streetscape SE 6th Terrace from SE 4th Avenue to SE 5th Avenue. Overlay work only is scheduled to occur within the CoG Public Works FY 2016–2018 paving plan.
12. Rebuild/streetscape SE 7th Street from SE 5th Avenue to SE Depot Avenue. Crack fill and double micro-surfacing work only is scheduled to occur within the CoG Public Works FY 2016–2018 paving plan.
13. Build/streetscape SE 6th Street extension from SE 4th Avenue to SE 5th Avenue.
14. Decommission the GRU fleet fueling facility.
15. Once an anchor tenant is identified, perform a Chilled Water Feasibility Analysis.
16. Evaluate the potential for relocating and/or upgrading GRUCom lines between SE 5th Avenue and Depot Avenue. This should be based on the redevelopment footprint and expected tenant demands.

Short-Term Development Opportunities

Based on the findings of this report, short-term redevelopment opportunities can occur with minimal improvement to existing utilities:

- Redevelop existing buildings based on the *Building Needs Assessment*.
- Redevelop blocks between SE 5th Avenue and Deport Avenue (Blocks B-1.1 to B-2.5). No existing primary utilities or flood plain impacts are within this area. Thus no major utility line relocations will occur, only service line connections.
- Redevelop Blocks A-1.1 and A-1.2 (former Fleet facility buildings and parcels) Figure 3-1 between SE 4th Avenue and SE 5th Avenue. No existing primary utilities and no flood plain impacts are within this area. Thus no major utility line relocations will occur, only service line connections.

Combined Suggested Project Map

The following figure (ES-1) is intended to conceptually demonstrate various infrastructure relocation alternatives. Any preferred alternative would require additional engineering analysis to verify the feasibility of possible routing. As originally envisioned within the 2013 Redevelopment Plan, the extension of SE 6th Street through the Power District would not only provide public connectivity but also an opportunity to consolidate utilities within a new public right-of-way corridor that would help preserve the development potential of the parcels to the west.

Figure ES-1 Combined Suggested Projects

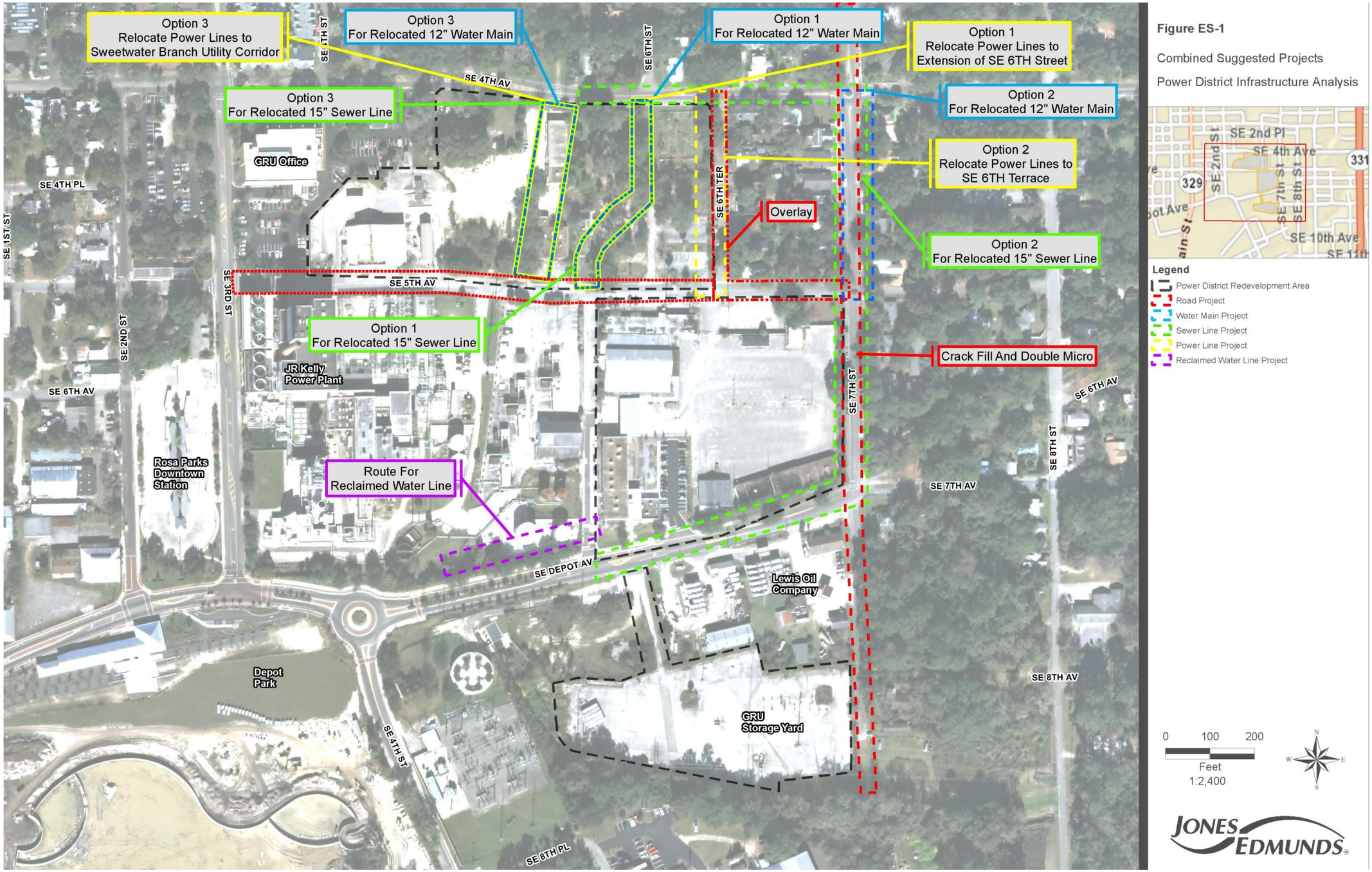


Figure ES-1

Combined Suggested Projects

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Road Project
- Water Main Project
- Sewer Line Project
- Power Line Project
- Reclaimed Water Line Project

0 100 200

Feet

1:2,400

JONES EDMUNDS

SECTION 1

INTRODUCTION

INTRODUCTION

1.1 BACKGROUND

Jones Edmunds & Associates, Inc. was contracted by the City of Gainesville (CoG) Community Redevelopment Agency (CRA) to prepare two reports: (1) *Power District Utility Infrastructure Analysis* and (2) *Sweetwater Branch Creek Daylighting Feasibility Study*. This document addresses the Infrastructure Analysis. As the CRA and its partners continue to identify obstacles to redevelopment, this report will serve as working document to identify tasks and projects to position the Power District for market investment.

For the *Power District Infrastructure Analysis*, the Power District is defined as the area bounded by SE 4th Avenue on the north, SE 3rd Street on the west, SE 7th Street on the east, and Depot Avenue on the south. The Power District is adjacent to and east of the Gainesville Regional Utilities (GRU) JR Kelly Power Station on property owned by GRU. The JR Kelly Power Plant is an active power plant that GRU plans to operate through 2051 and is integral to the character of the Power District.

CoG's *FY2015/FY2016 Strategic Plan* identifies eight goals that include Economic Development and Redevelopment with Initiative 2.2, Continue Implementation of the Strategic Redevelopment Plan for Depot Park and the Power District. The *Power District Infrastructure Analysis* will assist CoG in meeting that initiative. Suggested projects within this document for forthcoming budget cycles are based on the information gathered during the development of this document.

The CRA contracted with Perkins and Will to prepare an updated redevelopment plan for the Power District. Perkins and Will completed the *Power District Redevelopment Plan* in December 2013, which was subsequently adopted by the Commission, serving as the CRA board. Figure 1-1 is a schematic of the plan. Jones Edmunds used Perkins and Will's conceptual building footprints and street layouts as the background for the figures presented in this report. The Plan summarizes stakeholder engagement efforts, the planning process, core development principles, a Phase 1 Master Plan, and implementation steps.

The CRA, acting on behalf of the CoG and GRU, is the agency coordinating the implementation of the *Power District Redevelopment Plan* by facilitating the development of approximately 17 acres of properties and buildings previously occupied by GRU operations. Redevelopment of the Power District has the potential to initiate important infrastructure improvements and generate multiple economic development opportunities for the CoG, while serving as a community asset to the existing adjacent neighborhoods and greater Gainesville area.

The Plan identified 18 implementation or action items for redeveloping the Power District. This study addresses Plan Elements 9 (stormwater treatment/mitigation assessment) and 11 (development demand and infrastructure capacity assessment). The Daylighting Study addresses Plan Elements 9 and 14 (Sweetwater Branch Creek daylighting feasibility study).

The Plan identified Core Planning Principles that drive the redevelopment of the Power District:

- Build on what exists.
- Strengthen connections.
- Plan incrementally and build slowly.
- Make it unique.

Jones Edmunds prepared this report using these Core Planning Principles.

GRU has relocated most of its operations from their Downtown campus to the Eastside Operations Center (EOC), vacating several buildings on the site. In 2014, the CRA contracted with Walker Architects to perform a Building Needs Assessment on the buildings listed in Table 1.

Table 1 Power District Existing Buildings

Building	SF	Location
Fleet Garage	12,225	400 SE 5th Avenue
Fleet Building	1,600	405 SE 5th Avenue
Water & Wastewater Building	3,129	528 SE 5th Avenue
Field Services Building	5,179	532 SE 5th Avenue
Water & Wastewater Ready Room	5,633	528 SE 5th Avenue
Operations Center & Warehouse	36,660	555 SE 5th Avenue
Carpenter's Shop Building	3,917	SE Depot Avenue
Water Distribution Construction Building	8,640	SE Depot Avenue
Catalyst Building	22,000	606 SE Depot Avenue

Walker Architects analyzed the economics and constructability of renovating versus demolishing the existing buildings and replacing with new construction. The *Power District Building Needs Assessments* was completed in May 2015, and the final report is available. Based on the report no utility upgrades are required, if COG decides to proceed with renovating any of these buildings in the immediate future.

1.2 OBJECTIVES

The *Power District Infrastructure Analysis* assesses and documents the existing infrastructure locations and conditions and identifies deficiencies and needed improvements based on the proposed redevelopment of the Power District. Specific objectives are as follows:

1. Gather data – obtaining existing planning, utility, transportation, and environmental data.
2. Prepare existing conditions maps.
3. Identify existing infrastructure deficiencies.
4. Identify proposed infrastructure improvements.
5. Determine redevelopment infrastructure demands.
6. Determine required infrastructure improvements based on redevelopment demands.
7. Facilitate agency coordination.

1.3 DATA

The first step in the project was to research and gather existing infrastructure information within the Power District. Jones Edmunds obtained GIS maps and data, utility maps, stormwater maps and reports, easement information, land use and zoning maps, survey data, record plats, environmental overlays, and other relevant reports. The information was obtained primarily from GRU, CoG (e.g., Public Works, CRA, CoG Planning Department), Alachua County, the St. Johns River Water Management District (SJRWMD), and various utility companies (i.e., Cox, AT&T, Level 3, University of Florida, Traffic Monitoring Systems).

Information was gathered only for utilities within public rights-of-way or easements or on CoG property. The following sections present the results and evaluation of the data. Attachment A lists the data sources and contact information.

1.4 Power District Technical Advisory Team (TAT)

As part of the project, the CRA coordinated a Technical Advisory Team (TAT). The purpose of the TAT is to have a working group of technical stakeholders to actively participate in the redevelopment of the Power District. The TAT members reviewed the information collected as part of the *Infrastructure Analysis* and provided feedback on the day-lighting alternatives at three review meetings. The TAT members also provided written comments on the draft reports.

The TAT's mission is to review and provide feedback to Jones Edmunds and the CRA on the following tasks:

- Collect, inventory, and synthesize existing data, codes, policies, and programs.
- Evaluate the existing conditions.
- Identify the redevelopment conflicts, challenges, and opportunities concerning the existing site conditions and the proposed Power District project area redevelopment plan and the maximum potential build-out.
- Provide a list of suggested projects, which includes financial implications, to coordinate short-term and long-term planning.

An initial meeting with the TAT was held on October 22, 2014. The purpose of the meeting was to provide background to and coordination with interested parties regarding the proposed redevelopment of the Power District.

A second TAT meeting was held on January 22, 2015. The purpose of the meeting was to provide an update on the Infrastructure Report and Daylighting Report and to coordinate with interested parties regarding the proposed redevelopment of the Power District.

A third TAT meeting was held on July 23, 2015. The purpose of the meeting was to review the Final Draft of the Infrastructure Report and Daylighting Report, and to discuss the path forward on suggested projects.

Attachment A includes the final TAT contact list.

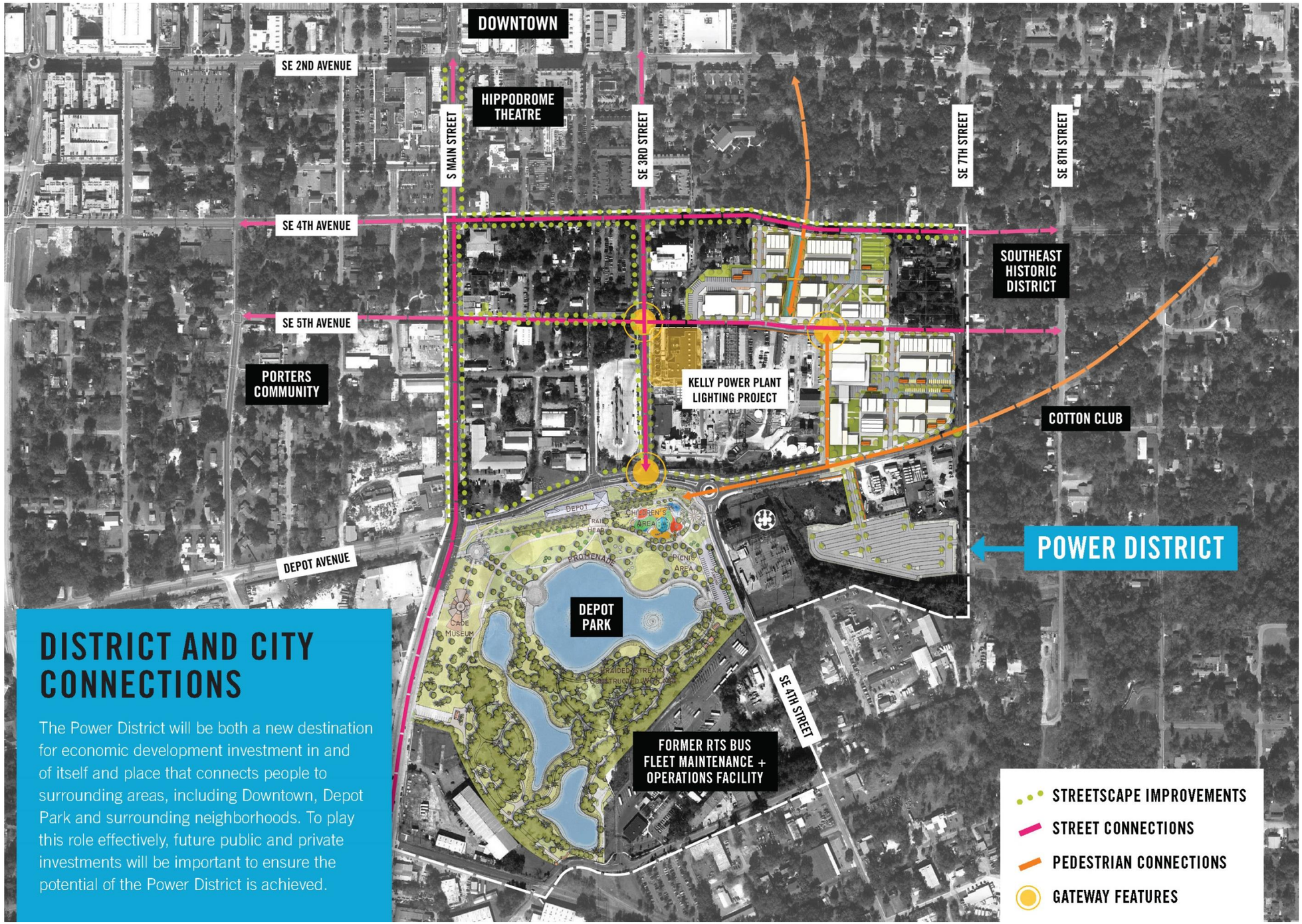
Jones Edmunds gathered existing infrastructure information within the Power District from the following:

- GRU Water & Wastewater
- GRU Gas
- GRUCom
- GRU Energy Delivery
- CoG Public Works
- CoG Planning and Development
- Alachua County Property Appraiser
- Alachua County Environmental Protection
- St. Johns River Water Management District (SJRWMD)
- Cox
- AT&T
- Level 3

The following utilities and concerns within the Power District were researched and analyzed:

- Potable water and fire protection
- Wastewater
- Electric
- Natural gas
- Telecommunications
- Chilled water
- Reclaimed water
- Lighting
- Stormwater facilities
- Federal Emergency Management Agency (FEMA) floodplain areas
- SJRWMD Environmental Resource Permit (ERP) Projects
- Transportation elements (capacity, condition, sidewalk, parking, transit)
- Environmental impacts

Figure 1-1 **Power District Context Map**



DISTRICT AND CITY CONNECTIONS

The Power District will be both a new destination for economic development investment in and of itself and place that connects people to surrounding areas, including Downtown, Depot Park and surrounding neighborhoods. To play this role effectively, future public and private investments will be important to ensure the potential of the Power District is achieved.

SECTION 2

PLANNING

2 PLANNING

2.1 EXISTING PARCEL INVENTORY

CoG provided the existing property information (parcel data) shown in Figure 2-1. GRU owns all property in the Power District, but CoG, with the CRA as the facilitating agency, is coordinating and facilitating the redevelopment process.

2.2 REDEVELOPMENT BLOCK PLAN

The Power District Redevelopment Plan divided the project area into blocks to assist in the redevelopment analysis. Figure 3-1 shows the Power District and the blocks. Blocks between SE 4th Avenue and SE 5th Avenue are identified as "A" blocks, and blocks between SE 5th Avenue and SE Depot Avenue are identified as "B" blocks. These blocks designations are used throughout this document.

2.2.1 LAND USE AND ZONING

CoG provided the existing land use and zoning information shown in Figures 2-2 and 2-3, respectively. The Power District's land use is a mix of Public and Industrial Facilities and Mixed Use High, and its zoning is a mix of Central City District (CCD), Urban and Mixed Use Level 2 (UMU-2), and Public Services and Operations District (PS).

The CRA rezoned approximately 13 acres within the Power District through CoG. A first reading of the rezoning changes was heard in October 2014, and a second reading occurred on December 18, 2014. The State approved the City's application for a Large Scale Land-Use Amendment. The Gainesville Land Development Code uses the UMU-2 zoning district to promote and encourage redevelopment of the existing urban commercial areas and neighborhoods near the University of Florida. The UMU-2 district is intended to encourage multimodal mobility and to allow uses and development compatible with one another and with surrounding residential areas and consistent with the land use policies of the CoG Comprehensive Plan. Furthermore, this district is intended to allow for establishments engaged in research and experimental development in the physical, engineering, or life sciences to facilitate technology transfer from institutions of higher learning to the marketplace. The objectives of this district are to:

1. Provide a mix of residential, commercial, and office/research uses that are complementary to the residential and mixed-use character of the district.
2. Encourage quality redevelopment and the renovation of existing structures.
3. Create high-quality urban streetscapes by using buildings, sidewalks, and street trees to form a pleasant, convenient, and safe environment designed for pedestrians, bicyclists, public transit, and automobiles.
4. Promote retail and office uses that serve the surrounding neighborhoods and enhance the viability of existing commercial areas by focusing new development in appropriate locations.
5. Promote office/research uses that serve the needs of the University of Florida and the community and enhance the development of the local economy.
6. Promote infill and redevelopment to improve the urban core and increase mobility and interconnectivity by creating a gridded street network and sidewalk connections.

2.3 UTILITY EASEMENTS AND SEPARATION REQUIREMENTS

GRU owns all land in the Power District; therefore, the utilities do not need easements to allow their lines to cross private property. In the future, CoG may sell the land for redevelopment but should retain easements for utility crossings and maintenance. Table 2 summarizes the typical easement and setback requirements for various utilities, structures, and adjacent properties. The information is based on the utility being centered on the easement. GRU and CoG provided data for the table. More than one utility or structure may be located within a single easement as long as all utility separation requirements (Exhibit 1) are maintained. Having multiple utilities within a single easement will increase the width of the easement based on the type of utility and the utility separation requirements.

Table 2 Typical Easement Requirements

Utility	Required Easement (feet)[1]
Electric – Overhead	20
Electric – Underground	20
GRUCom – Overhead	20
GRUCom – Underground	20
Sanitary Sewer Force Main	30
Sanitary Sewer Gravity Main	30
Potable Water Main	20
Reclaimed Water Main	20
Gas	10
Stormwater	15

[1] Assumes the utility is centered in the easement

In addition to easement requirements, each utility requires a separation from other utilities, trees, and structures. Appendix C of GRU's *Design Standards and Construction Details"* contains separation requirements (Exhibit 1). These requirements include minimum separation requirements from the Florida Department of Environmental Protection and the National Electric Safety Code.

Approximate easement for future maintenance of the roadway and stormwater infrastructure will be required. The CoG *Engineering Design and Construction Manual 2015* should be adhered to for future design, including but not limited to roadways, sidewalks, and drainage. A typical roadway cross-section showing separation requirements is provided in Exhibit 2. Required easements for existing utilities within the Power District are shown in Figures 2-4, 2-5, and 2-6.

Exhibit 1 Typical Utility Separation Requirements

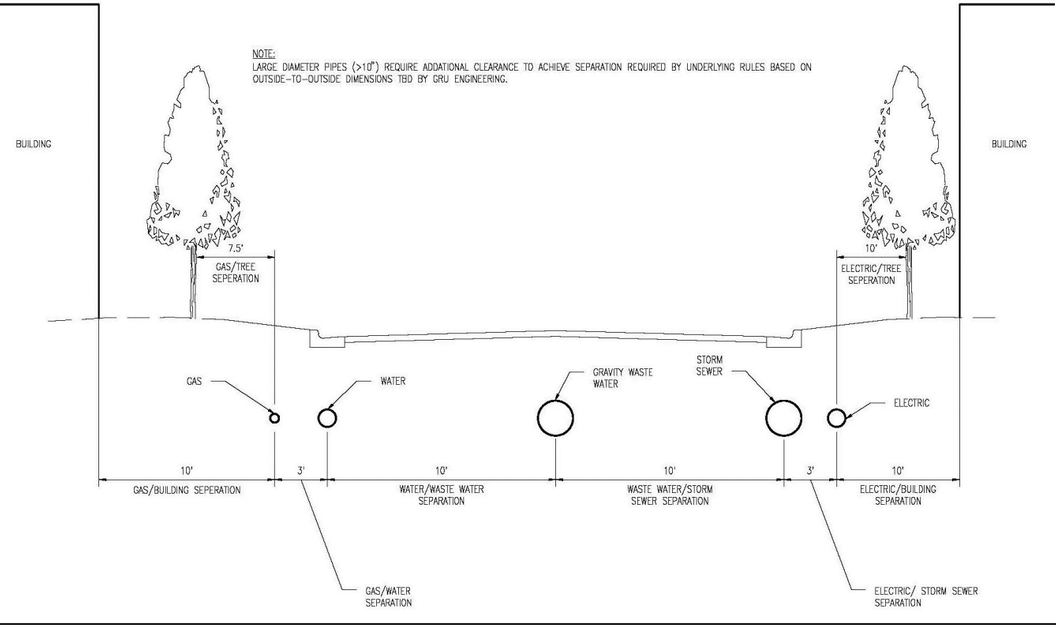


Exhibit 2 **GRU Utility Separation Requirements**

GAINESVILLE REGIONAL UTILITIES - UTILITY SEPARATION REQUIREMENTS (WITHIN GAINESVILLE CITY LIMITS)
EFFECTIVE FOR PLANS SUBMITTED ON OR AFTER SEPTEMBER 1, 2009

HORIZONTAL Separation Distances for PARALLEL Utilities and Perpendicular Clearance From Other Objects

	Electric Over Head	Electric Under Ground	GRUCom Over Head	GRUCom Under Ground	Gas Pipe	Water Main	WW Force Main	WW Gravity Main	Reclaimed Water Main	Trees[10]	Lift Station (Property Line)	Structure	Transformer	Fire hydrant	Water Meter	Street light	Storm Sewers	Other Underground Utilities
Electric Overhead	NA	-	NA	-	-	3	3	10	3	7.5[9]	10	NESC[7]	NA	-	-	NESC[7]	3	3
Electric Underground	-	1	-	1	2	3	3	10	3	10[11]	10	10	NA	3	3	None	3	3
GRUCom Overhead	NA	-	NA	-	-	3	3	10	3	7.5[9]	10	NESC[7]	NA	-	-	NESC[7]	3	3
GRUCom Underground	-	1	-	1	2	3	3	10	3	7.5[9]	10	10	NA	3	3	None	3	3
Gas Pipe	-	2	-	2	2	3	3	10	3	7.5[9]	10	5	None	3	3	3	3	3
Water Main	3	3	3	3	3	2	7	10	4	7.5[9]	10	≥ 10	3	None	None	3	4	3
WW Force Main	3	3	3	3	3	7	2	10	4	7.5[9]	10	≥ 10	10	7	7	3	4	3
WW Gravity Main	10	10	10	10	10	10	10	Depth[3]	10	10[9]	15	≥ 15	10	10	10	10	10	10
Reclaimed Water Main	3	3	3	3	3	4	4	10	2	7.5[9]	10	≥ 10	10	4	NA	3	4	3
Trees[10]	7.5[9]	10[11]	7.5[9]	7.5[9]	7.5[9]	7.5[9]	7.5[9]	10[9]	7.5[9]	NA	10[9]	NA	10	7.5[9]	7.5[9]	7.5[9]	-	7.5[9]
Lift Station (Property Line)	10	10	10	10	10	10	10	15	10	10[9]	NA	10	10	10	10	10	10	10
Structure	NESC[7]	10	NESC[7]	10	5	≥ 10	≥ 10	≥ 15	≥ 10	NA	10	NA	10	10	5	NA	10	10
Transformer	NA	NA	NA	NA	None	4	10	10	10	10	10	10	NA	10	5	NA	10	NA
Fire hydrant	-	3	-	3	3	None	7	10	4	7.5[9]	10	10	10	NA	5	5	3	3
Water Meter	-	3	-	3	3	None	7	10	NA	7.5[9]	10	5	5	5	NA	5	3	3
Street light	NESC[7]	None	NESC[7]	None	3	3	3	10	3	7.5[9]	10	NA	NA	5	5	NA	3	-
Storm Sewers	3	3	3	3	3	4	4	10	4	-	10	10	10	3	3	3	NA	3
Other Underground Utilities	3	3	3	3	3	3	3	10	3	7.5[9]	10	10	NA	3	3	-	3	1

Notes:
1. All Values are Distances in Feet - Measured Center-to-Center of pipes for typical cases.
2. Large diameter pipes (>10") require additional clearance to achieve separation required by underlying rules based on outside-to-outside dimensions to be determined by GRU Engineering
3. Separation from gravity sewer is dependent on the depth of the main, which varies with application
4. NA = Not Applicable
5. Measurements from buildings (structures) and above ground objects (hydrants, transformers, poles, etc.) are from the furthest external protrusion. (roof, wall, porch, foundation, stairway, etc.)
6. Vertical Separation is required for utilities crossing one another (not addressed here)
7. NESC - National Electric Safety Code - The separation from structures is based upon various criteria and must meet the NESC
8. Separations shown between utilities not owned and operated by GRU are for reference only
9. See Tree Separation Details W-10.9, WW-9.2 and 9.7, and RCW 9.5 for detailed tree separation information.
10. See GRU Plant Matrix Guide.

Revised: 3/24/2011

Figure 2-1 Parcels

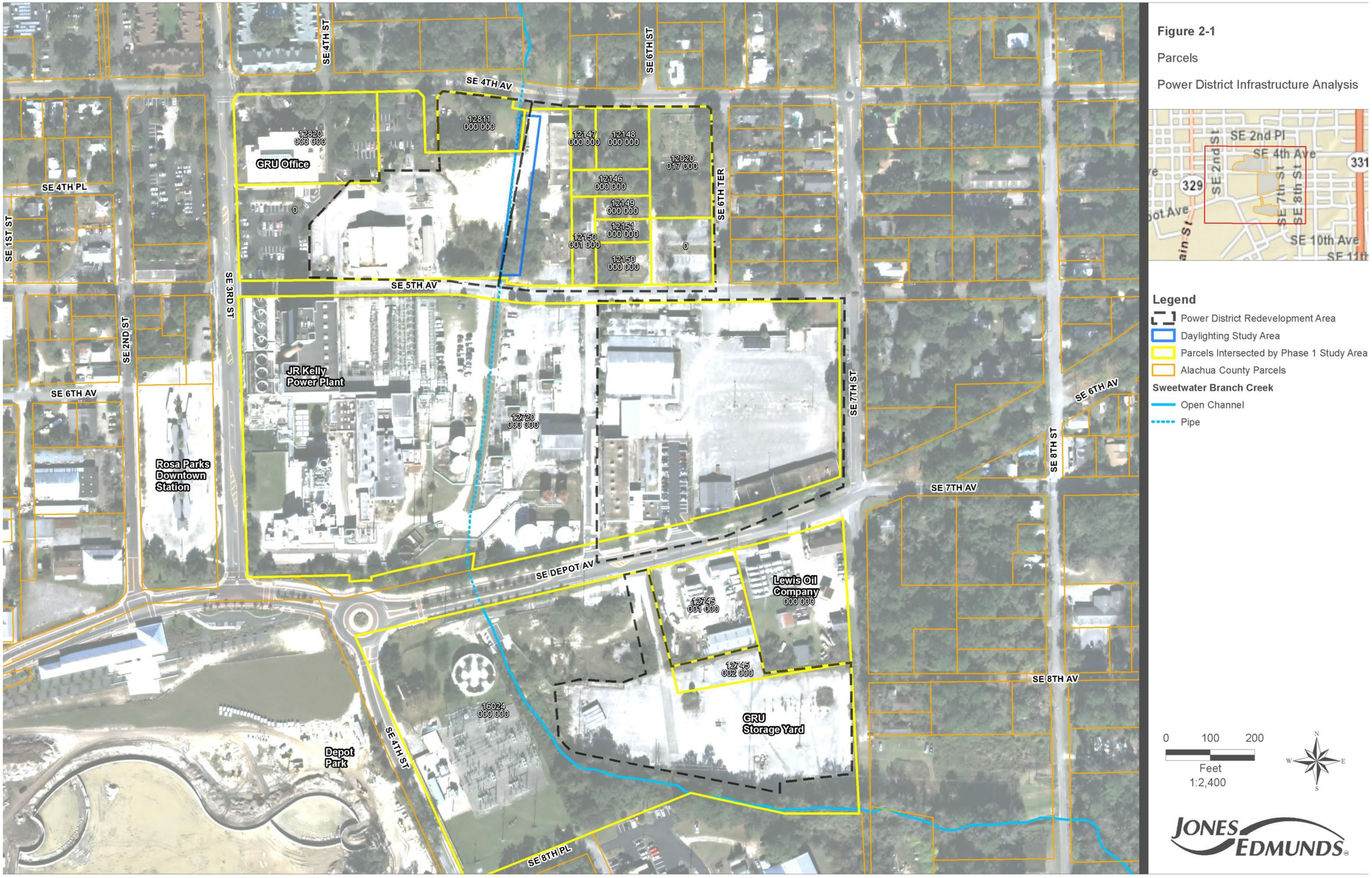


Figure 2-2 Existing Land Use

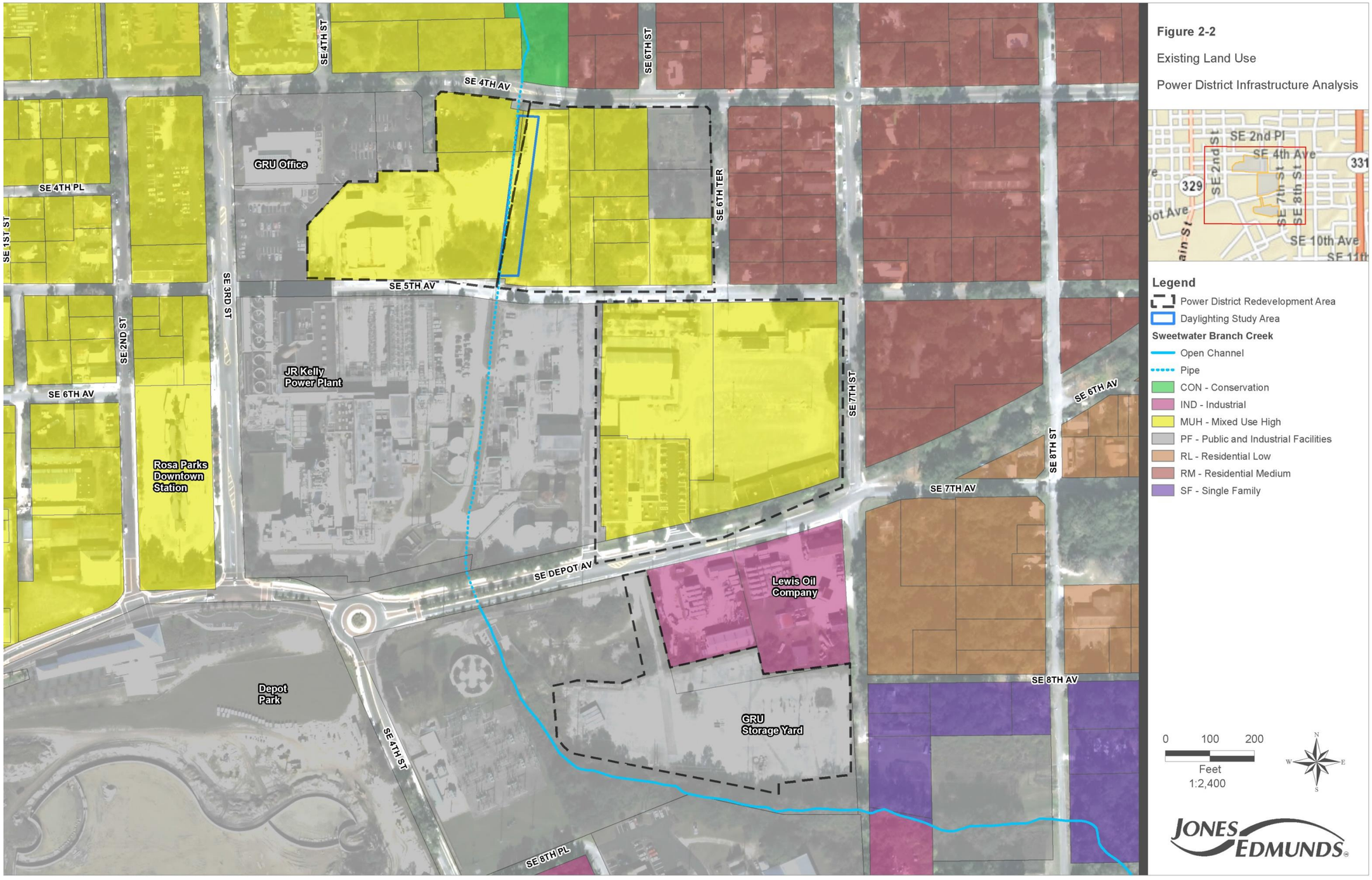


Figure 2-3 Existing Zoning

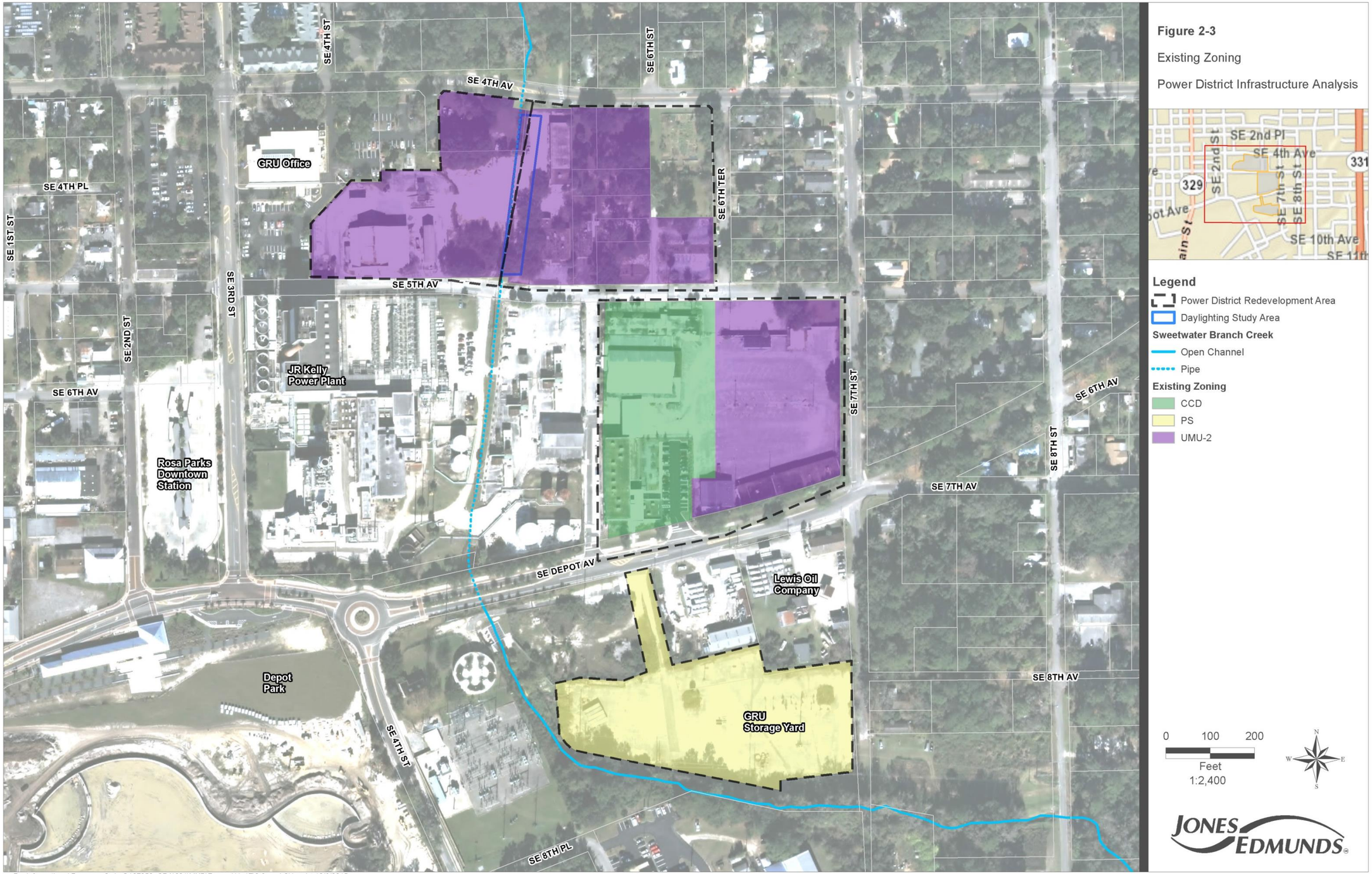


Figure 2-4 Utility Easements by Utility

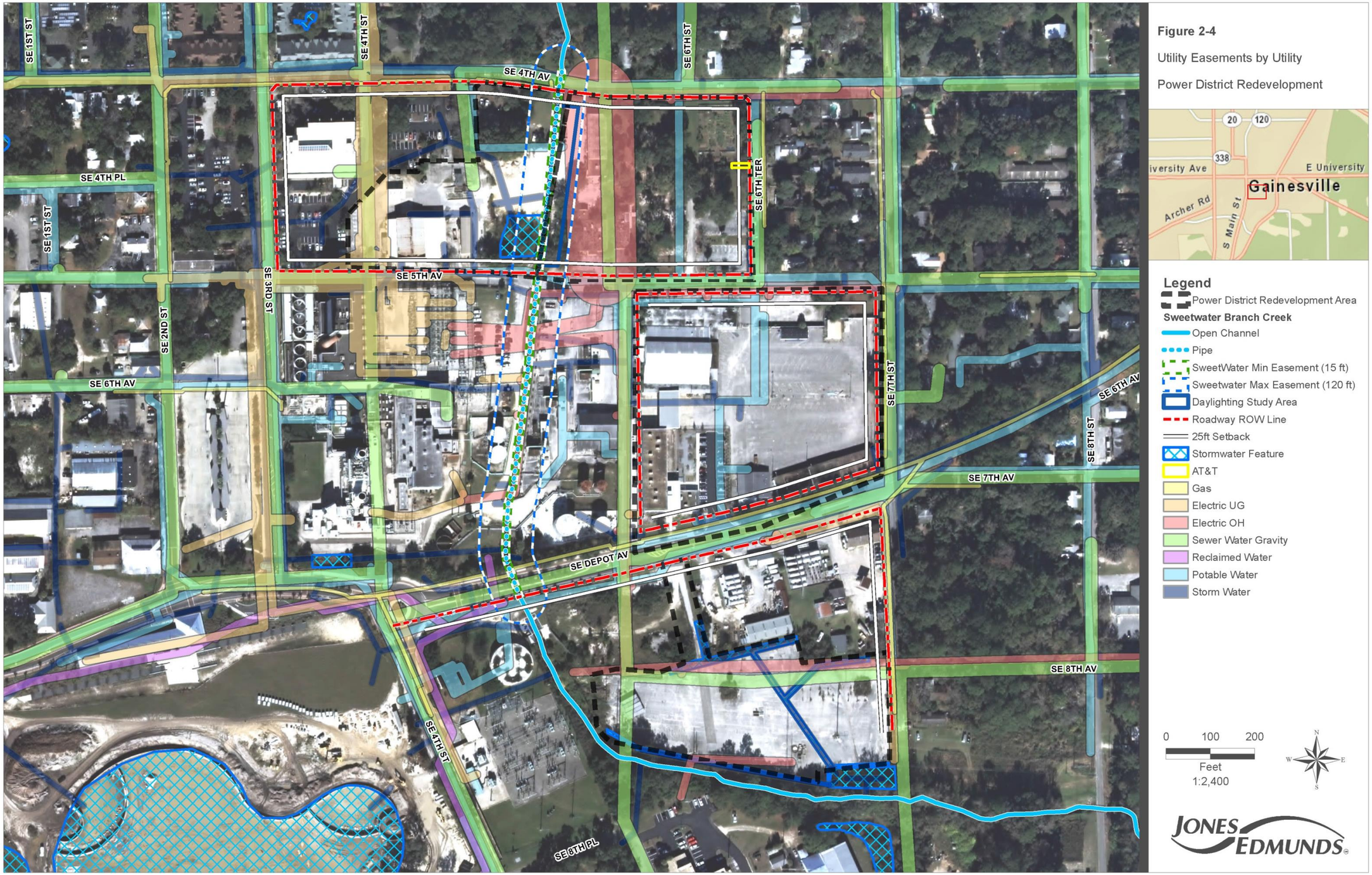


Figure 2-5 Utility Easements without Zoning

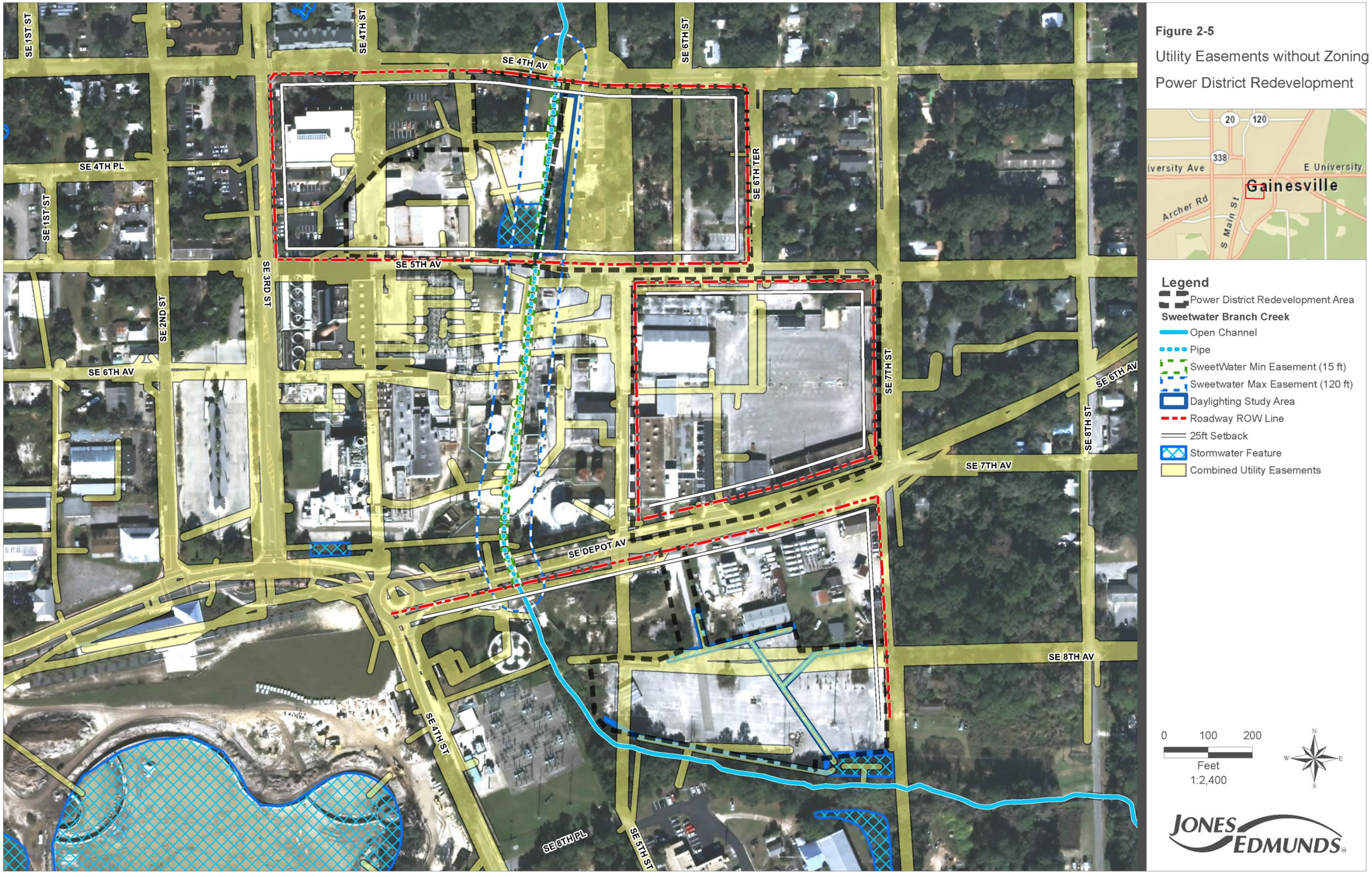
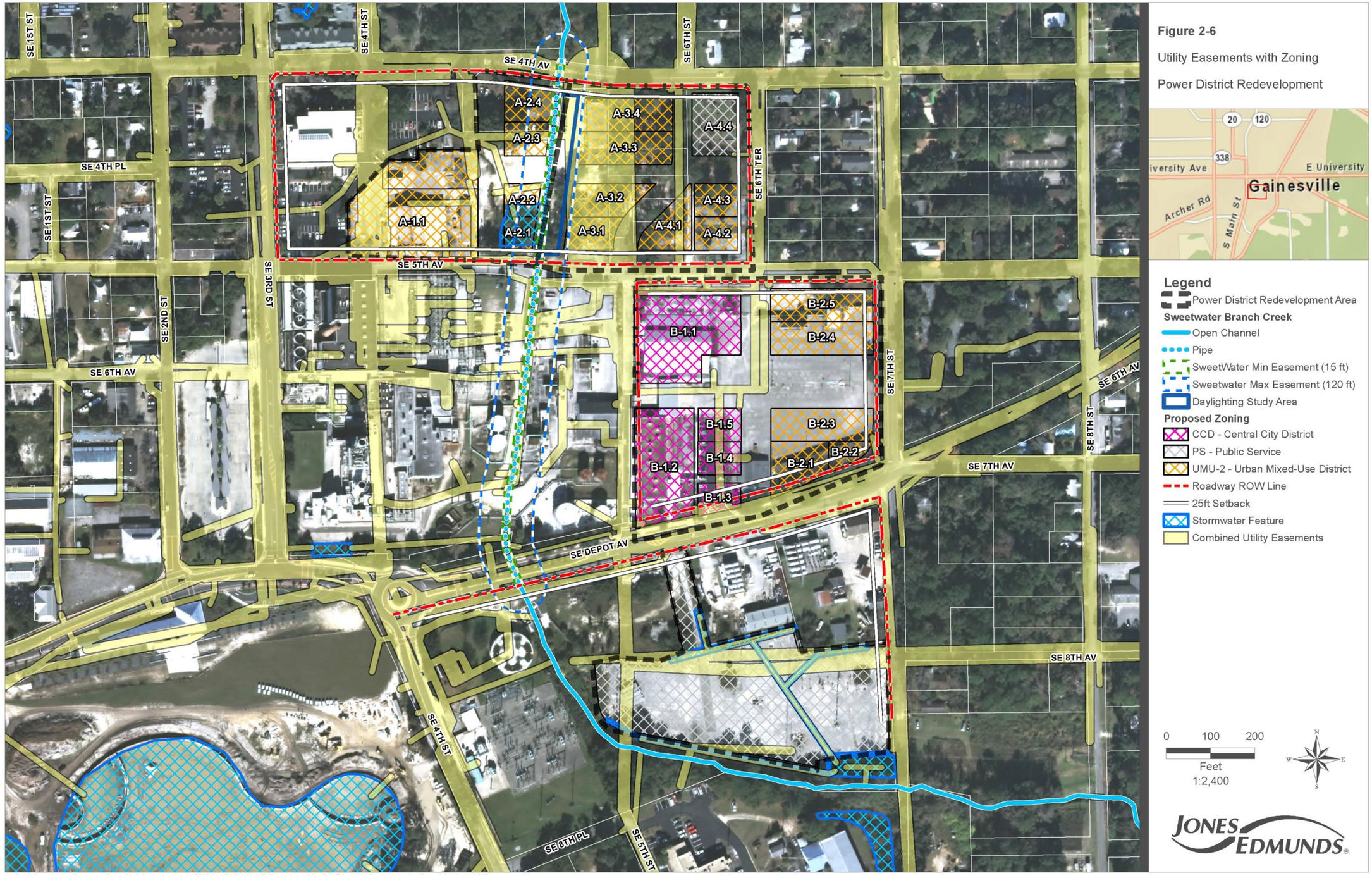


Figure 2-6 Utility Easements with Zoning



SECTION 3

UTILITY INFRASTRUCTURE ANALYSIS

3 UTILITY INFRASTRUCTURE ANALYSIS

As mentioned in Section 1, Jones Edmunds obtained utility, topographic, stormwater, flood hazard area, environmental and roadway data from GRU, AT&T, BellSouth, City Of Gainesville (CoG), Alachua County, Federal Emergency Management Agency (FEMA), and SJRWMD. We also met with the various utility providers to determine if there were any known utility deficiencies or planned projects. The following sections discuss this information along with redevelopment constraints and recommended improvements. The Redevelopment Block Plan (Figure 3-1) is used as the base map for the utility maps infrastructure maps.

3.1 POTABLE WATER AND FIRE PROTECTION

3.1.1 EXISTING POTABLE WATER AND FIRE PROTECTION SYSTEM

The GRU Water and Wastewater Engineering Division provided GIS data describing the existing potable water and fire protection infrastructure. The data included pipe diameter, pipe size, fittings (e.g., bends, tees, reducers), fire hydrants, service points, control valves, and system valves.

Figure 3-2 shows the existing potable water system. The existing water main network includes a 12-inch ductile iron pipe (DIP) main along SE 4th Avenue that cuts south across the Power District at SE 6th Street. This line ties to a 24-inch DIP main that runs west along SE 5th Avenue. The 24-inch DIP main continues south along the west side of the Power District to Depot Avenue (SE 7th Avenue) and then along Depot Avenue in both the west and east directions. A 12-inch DIP main runs along SE 3rd Street from SE 4th Avenue to SE 5th Avenue, and a 24-inch DIP main runs along SE 3rd Street from SE 5th Avenue to Depot Avenue.

GRU indicated that based on the size and material the existing water pipes are less than 20 years old and are in good condition. The existing fire hydrants are in good condition and are adequately spaced to meet fire protection requirements. According to CoG Fire Rescue, the most recent hydrant fire flow tests are within in the last 5 years, and they expect current flows to be very similar.

In addition to the main lines described above, various service lines within the project area range from 2-inch to 6-inch, with pipe materials including cast iron pipe (CIP), polyvinyl chloride (PVC), and galvanized steel pipe (GSP). Typically during CoG or GRU capital improvement projects, GRU assesses the need to replace CIP and GSP with DIP or PVC. For private development, any required water main or fire protection upgrades are designed and constructed at the developer's expense.

3.1.2 EXISTING POTABLE WATER AND FIRE PROTECTION DEFICIENCIES

Based on discussion with GRU Water and Wastewater Engineering, the Power District has no known potable water or fire protection deficiencies. Based on the most recent water model for the area, no upgrades are required to supply existing customers.

3.1.3 PLANNED POTABLE WATER AND FIRE PROTECTION IMPROVEMENTS

The GRU Water and Wastewater Engineering Division does not currently plan to improve the potable water or fire protection system within the Power District. Typically GRU assesses the need to replace older lines or GSP and CIP lines when the City is constructing new roadway projects. During planning and design, GRU will determine if the water lines in the area need to be repaired or replaced.

3.1.4 REDEVELOPMENT CONSTRAINTS AND RECOMMENDED POTABLE WATER AND FIRE PROTECTION IMPROVEMENTS

Although the project area has no known potable water or fire protection deficiencies, we recommend that any older GSP or CIP services be replaced with DIP or PVC pipe. The service lines shown through Blocks A-2.3 and A-3.3 on Figure 3-1 should be relocated outside the building footprint during redevelopment.

The 12-inch DIP water main between SE 4th Avenue and SE 5th Avenue that runs through Block A-4.1 limits redevelopment potential. We recommend that the water main be relocated during redevelopment of Block A-4.1. Three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of the Sweetwater Branch Creek (SWBC). The preferred option is (1), which GRU has estimated to cost $100,000 to $150,000.

3.2 RECLAIMED WATER

3.2.1 EXISTING RECLAIMED WATER INFRASTRUCTURE SYSTEM

An existing 24-inch DIP main on Depot Avenue is just east of SE 4th Street. The line continues south on SE 4th Street and west on Depot Avenue. A new tie-in point for the Power District reclaimed water could be located near the valve on the north side of Depot Avenue. Figure 3-3 shows the existing reclaimed water lines.

3.2.2 EXISTING RECLAIMED WATER INFRASTRUCTURE DEFICIENCIES

Based on discussion with GRU Water and Wastewater Engineering Division, the Power District has no known deficiencies for reclaimed water.

3.2.3 PLANNED RECLAIMED WATER INFRASTRUCTURE IMPROVEMENTS

Based on discussion with GRU Water and Wastewater Engineering Division, no improvement projects are planned for reclaimed water within the Power District.

3.2.4 REDEVELOPMENT CONSTRAINTS AND RECOMMENDED RECLAIMED WATER INFRASTRUCTURE IMPROVEMENTS

Reclaimed water is typically used for irrigation or large parks, golf courses, or single-family residences. In a dense urban area such as the Power District, we doubt that the irrigation demand would be sufficient to justify the capital cost of providing reclaimed water. We suggest that the CRA encourage the developer to design the site to incorporate small attractively landscaped rain gardens, green roofs, and rainwater harvesting cisterns to supply supplemental irrigation.

If reclaimed water were to be used, a new line from the Depot Avenue SE 4th Street intersection would need to be constructed. This new line would run along Depot Avenue to the east and then run along the west side of Blocks B-1.1 and B-1.2 to SE 5th Avenue. From this point, service lines could be constructed to provide reclaimed water to the blocks between SE 4th Avenue and SE 5th Avenue.

3.3 WASTEWATER

3.3.1 EXISTING WASTEWATER INFRASTRUCTURE SYSTEM

The GRU Water and Wastewater Engineering Division provided GIS data for the existing wastewater collection system within the Power District. The data included pipe diameter, pipe size, lift stations, grease traps, manhole, force mains, and service lines, as shown in Figure 3-4.

GRU does not have lift stations in the Power District; all wastewater services are gravity lines. The main gravity line is a 15-inch vitrified clay pipe (VCP) that flows north-south east of SWBC between SE 4th Avenue and SE 5th Avenue. South of 5th Avenue the 15-inch VCP lies on the west edge of the project area. The main gravity line services the area north of the Power District, from approximately SE/NE 3rd Street to SE/NE 7th Street to NE 16th Avenue. All sewers in the area flow to the Main Street Water Reclamation Facility east of the Main Street and SE 16th Avenue intersection.

GRU indicated that it has no records on the age of the sewer pipes. However, based on the size and material, the pipes are likely greater than 20 years old. Within the last 5 years GRU has videotaped the sewer mains along

SE 7th Street, SE 6th Street, the extension of SE 6th Street (south of SE 5th Avenue), SE 5th Avenue, and SE 7th Avenue (Depot Avenue), which shows that the pipes are in good condition. The sewer main to the east of SWBC is scheduled to be videotaped by GRU. The 8-inch gravity main along SE 6th Terrace was recently slip lined.

3.3.2 Existing Wastewater Infrastructure Deficiencies

Based on discussion with GRU Water and Wastewater Engineering Division, the Power District has no known wastewater deficiencies.

3.3.3 Planned Wastewater Infrastructure Improvements

Based on discussion with GRU Water and Wastewater Engineering Division, no wastewater projects are planned within the Power District. The next project that GRU would likely perform is the slip lining of the 15-inch gravity main. However, this project is not currently scheduled to be performed.

3.3.4 Redevelopment Constraints and Recommended Wastewater Infrastructure Improvements

GRU evaluated the water and wastewater needs based on the Power District Conceptual Redevelopment Plan (CRP) and the Maximum Build-Out (MBO) Plan projections described in Section 7. GRU determined the 15-inch gravity sewer would be sufficient to handle the need projections for the Power District CRP.

The 15-inch VCP gravity main that flows north-south east of SWBC between SE 4th Avenue and SE 5th Avenue may constrain building construction (see Figure 3-2) for Blocks A-3.1 through A-3.4. We recommend relocating this line during redevelopment. To this end, three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of the SWBC. Option (1) is the preferred option, which GRU has estimated to cost $342,000. GRU estimated costs for Options (2) and (3) to be $1,000,000 and $355,000, respectively.

Any relocation of the 15-inch VCP would require constructing a new gravity main and manholes parallel to an existing sewer main on one of the adjacent north-south streets (e.g., SE 6th Terrace). This would also require rerouting any connections that tie into this main to the relocated section.

3.4 Electric

3.4.1 Existing Electric Infrastructure System

The GRU Energy Delivery Division provides electrical services to residential, commercial, and industrial development. Figure 3-5 shows data for existing electrical primary and secondary line. The primary overhead lines run east from the JR Kelly Power Plant and then both north and south. The south lines run to the east of Blocks B-1.1 and B1.2 to the GRU Storage Yard, and the north lines run through the middle of Blocks A-3.1 to A-3.4. The primary underground lines run west of the JR Kelly Power Plant to SE 4th Avenue, SE 5th Avenue, and Depot Avenue. A portion of these lines run under Block A-1.1. A typical power pole diagram is shown in Exhibit 3.

3.4.2 Existing Electric Infrastructure Deficiencies

Based on discussion with GRU Energy Delivery Division, the Power District has no known electrical power deficiencies.

3.4.3 Planned Electric Infrastructure Improvements

Based on discussion with GRU Electric, no electrical power projects are planned within the Power District.

3.4.4 Redevelopment Constraints and Recommended Electric Infrastructure Improvements

As expected, given the proximity to the JR Kelly Power Plant, ample electrical service is provided in the area to allow for redevelopment. Figure 3-5 shows the existing overhead power lines in the footprint of the proposed Buildings A-3.1 through A-3.4.

We recommend relocating these overhead lines or routing them underground during redevelopment. To this end, three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 6th Terrace, and (3) along a new utility corridor adjacent and east of the SWBC. Option (1) is the preferred option, which GRU estimated the cost to be $80,000 for the overhead relocation and $232,000 for the underground relocation. GRU-estimated costs for Option (2) are $65,000 for the overhead relocation and $185,000 for the underground relocation and for Option (3) are $82,000 for the overhead relocation and $232,000 for the underground relocation.

3.5 Natural Gas

3.5.1 Existing Natural Gas Infrastructure System

The GRU Gas Division provides gas services to residential, commercial, and industrial development. Figure 3-6 shows data for existing and abandoned gas mains and service lines. A 6-inch main runs along SE 4th Avenue west of SWBC and along Depot Avenue, and a 1.25-inch line runs along SE 7th Avenue.

The gas lines were constructed no later than 1990. GRU maintains an active system inspection as required by the Pipeline and Hazardous Materials Safety Administration (PHMSA). No leaks have been detected on gas lines within the Power District area.

3.5.2 Existing Natural Gas Infrastructure Deficiencies

Based on discussions with the GRU Gas Division, the Power District has no known deficiencies.

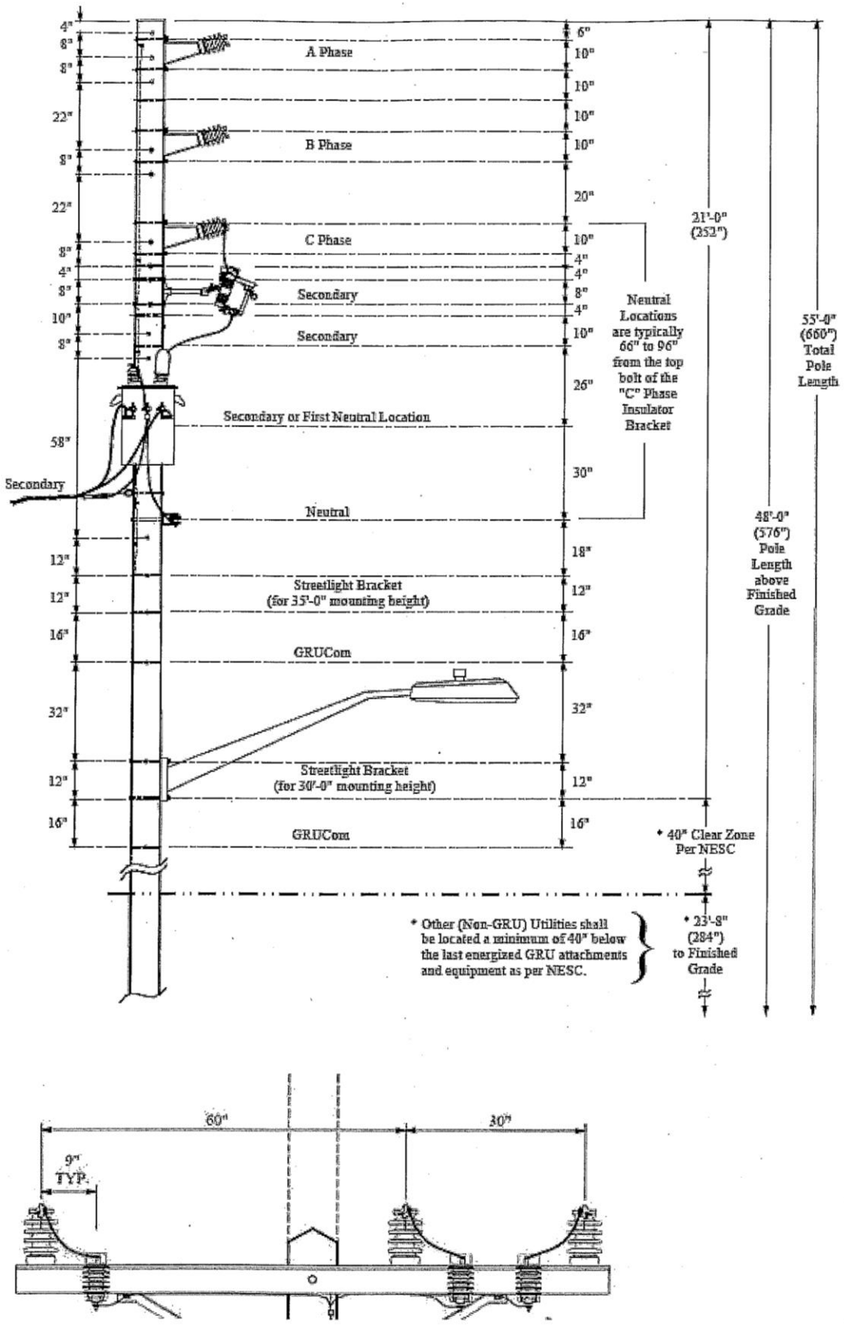
3.5.3 Planned Natural Gas Infrastructure Improvements

Based on discussions with the GRU Gas Division, no improvement projects are planned within the Power District. However, as new development and/or infrastructure improvements come online, new lines should be planned and constructed.

3.5.4 Redevelopment Constraints and Recommended Natural Gas Infrastructure Improvements

No constraints to redevelopment are present; however, GRU should continue its inspection program according to PHMSA guidelines.

Exhibit 3 Typical Overhead Power Lines



3.6 TELECOMMUNICATIONS

3.6.1 EXISTING TELECOMMUNICATIONS INFRASTRUCTURE SYSTEM

Jones Edmunds obtained telecommunications data from three entities: GRUCom, Cox, and AT&T. Level 3 was contacted to obtain data regarding their lines; however, they have been unresponsive. Data for GRUCom, Cox, and AT&T are shown in Figures 3-7, 3-8, and 3-9, respectively.

GRUCom lines are along SE 5th Avenue and between SE 5th Avenue and Depot Avenue south of SE 6th Terrace. GRUCom periodically inspects its lines; none in the Power District needed repair in the last 5 years. Cable serving the 5th Avenue Garage, GRU Field Services Building, and JR Kelly Power Plant is approximately 15 to 20 years old. Fiber cable along SE 5th Avenue with terminations in the JR Kelly Power Plant, GRU Administration Building, and running south to the Depot Substation is approximately 10 to 15 years old. Fiber cable along SE 5th Avenue and underground across the old GRU Warehouse yard to Prioria is approximately 5 to 10 years old.

The main Cox distribution lines are along SE 4th Avenue, SE 5th Avenue, and SE 7th Street.

The main AT&T lines are along SE 4th Avenue, SE 5th Avenue, and SE 7th Street, with additional underground lines along SE 6th Terrace and along a north-south corridor west of the McRorie Community Garden and Blocks A-4.2 and A-4.3. A 10-foot-x-40-foot AT&T easement is on the west side of SE 6th Terrace south of McRorie Community Garden. The easement is dedicated to AT&T as part of the Memorandum of Understanding between GRU and CoG for the creation of the McRorie Community Garden.

3.6.2 EXISTING TELECOMMUNICATIONS INFRASTRUCTURE DEFICIENCIES.

Based on discussions with GRUCom, Cox, and AT&T, the Power District has no known telecommunication deficiencies.

3.6.3 PLANNED TELECOMMUNICATIONS INFRASTRUCTURE IMPROVEMENTS

Based on discussions with GRUCom, Cox, and AT&T, no telecommunication improvements are planned in the Power District.

3.6.4 REDEVELOPMENT CONSTRAINTS AND RECOMMENDED TELECOMMUNICATIONS INFRASTRUCTURE IMPROVEMENTS

Telecommunications providers install lines as needed. Thus, during redevelopment of the Power District, we recommend that plans be provided to the telecommunications providers so that appropriate upgrades to the existing system can be constructed.

Existing GRUCom fiber terminations should not be a constraint to development. The fiber cable along SE 5th Avenue and the line east of the JR Kelly Power Plant may need to be adjusted during redevelopment. The GRUCom line between SE 5th Avenue and Depot Avenue south of SE 6th Terrace can be moved to accommodate redevelopment. Recommendations for improvements cannot be made until more detailed plans for redevelopment are completed.

3.7 CHILLED WATER

Chilled water is a commodity that can provide an additional revenue stream to GRU as well as an amenity for the tenant and the site developer. Chilled water allows the tenant to control the temperature in each room of a building without needing to provide separate air-conditioning units. An added benefit for developers is that chilled water eliminates the need for chillers and cooling towers on the property, thus allowing more usable space. As re-development occurs, GRU should continue to evaluate the costs and benefits of providing chilled water. GRU has indicated that existing space is available on the JR Kelly Power Plant site to construct a chilled water facility.

3.7.1 Existing Chilled Water Infrastructure System

Based on discussion with the GRU Energy Supply Division, the Power District has no chilled water infrastructure.

3.7.2 Existing Chilled Water Infrastructure Deficiencies

Based on discussion with the GRU Energy Supply Division, the Power District has no infrastructure to deliver chilled water to the Power District.

3.7.3 Planned Chilled Water Infrastructure Improvements

Based on discussion with the GRU Energy Supply Division, no chilled water infrastructure improvements are planned within the Power District.

3.7.4 Redevelopment Constraints and Recommended Chilled Water Infrastructure Improvements

No specific improvements for chilled water infrastructure within the Power District are recommended. However, GRU indicated a desire to provide chilled water if they can form a business case to provide it to the future redevelopment project.

3.8 Lighting

Existing lighting in the Power District is a mix of fixtures mounted to power poles and lights on decorative lamps. The GRU Administration Building at the intersection of SE 3rd Street and SE 4th Avenue has pole-mounted lights, and along SE 4th Avenue are power-pole-mounted lights on the south side of the road.

SE 5th Avenue has power-pole mounted-lights on the south side of the road. Lighting along Depot Avenue was recently updated during the Depot Park project construction.

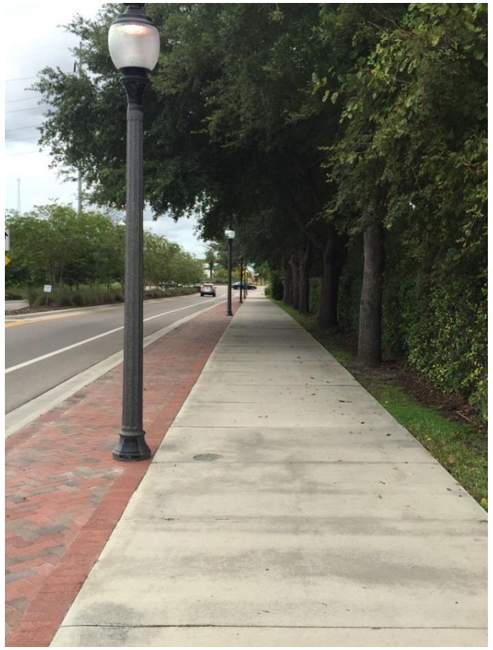
CCD zoning has a lighting policy, and UMU-2 has streetscape dimensions for “storefront streets” and “local or private streets” that are applicable for lighting. The lighting and other streetscape elements along SE 4th Avenue, SE 5th Avenue, SE 6th Street, and SE 6th Terrace should be improved as redevelopment occurs to reflect that these avenues transition to primary corridors within Downtown.

When lighting improvements are made and installed behind a meter (CoG-owned), as the Power District develops efforts should be made to ensure that the load centers are strategically located to power as many lights as possible.

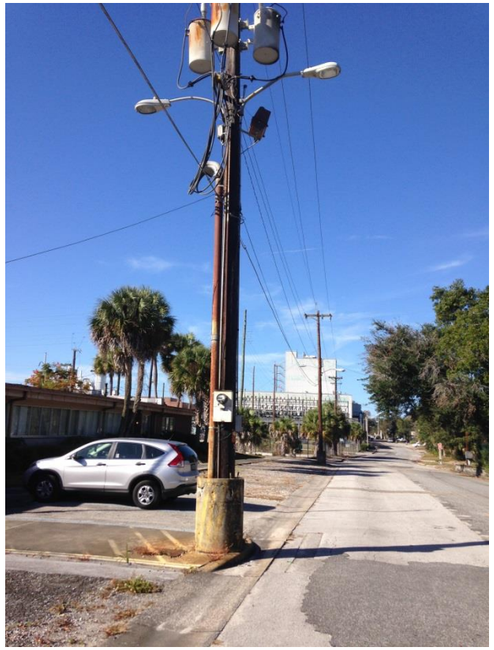
3.9 Summary

Since the Power District is located within a developed urban area, existing utilities are interspersed throughout the area. This section provided details for the existing utilities along with constraints to redevelopment. The constraints addressed in this section are based on the location of existing utilities, not their capacity. A synthesis map of all utilities in the Power District area is provided in Figure 3-10.

Pedestrian Lighting along SE 7th Street



Street Lighting along SE 5th Avenue



Street Lighting along SE 7th Street

Street Lighting along SE 5th Avenue

Figure 3-1 Redevelopment Block Plan

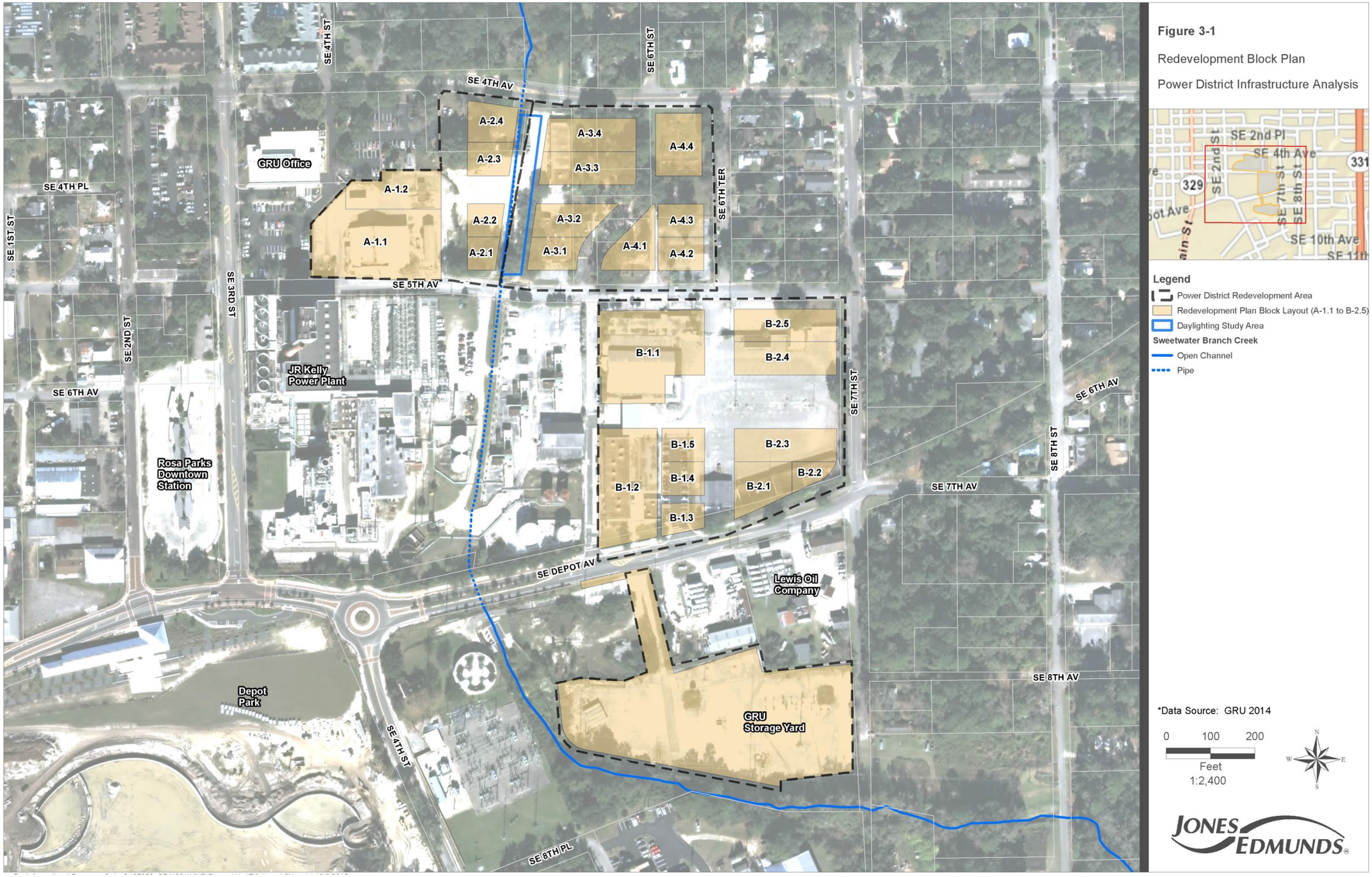


Figure 3-1

Redevelopment Block Plan

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

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Figure 3-2 Portable Water and Fire Protection

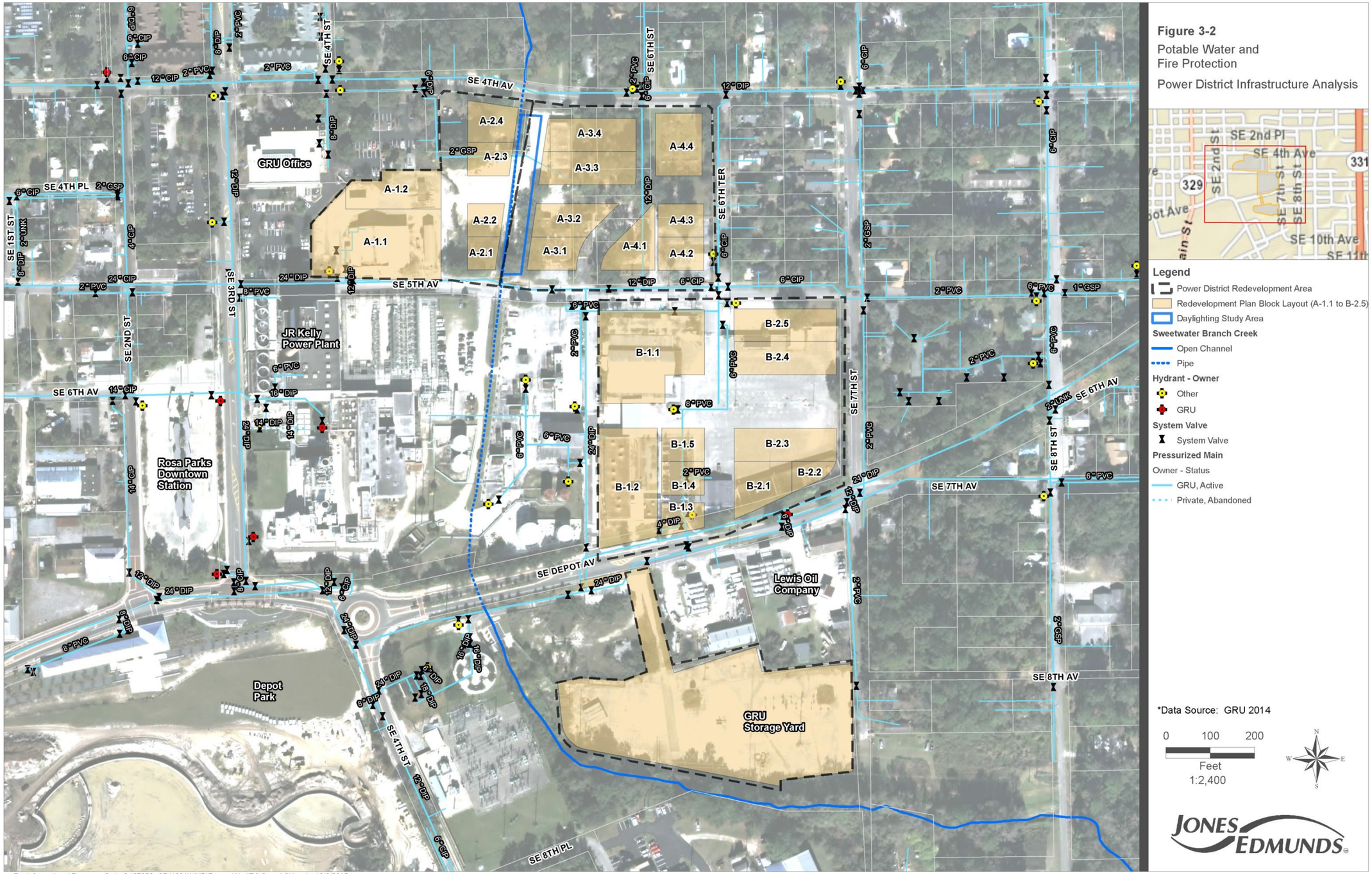

Figure 3-3 Reclaimed Water

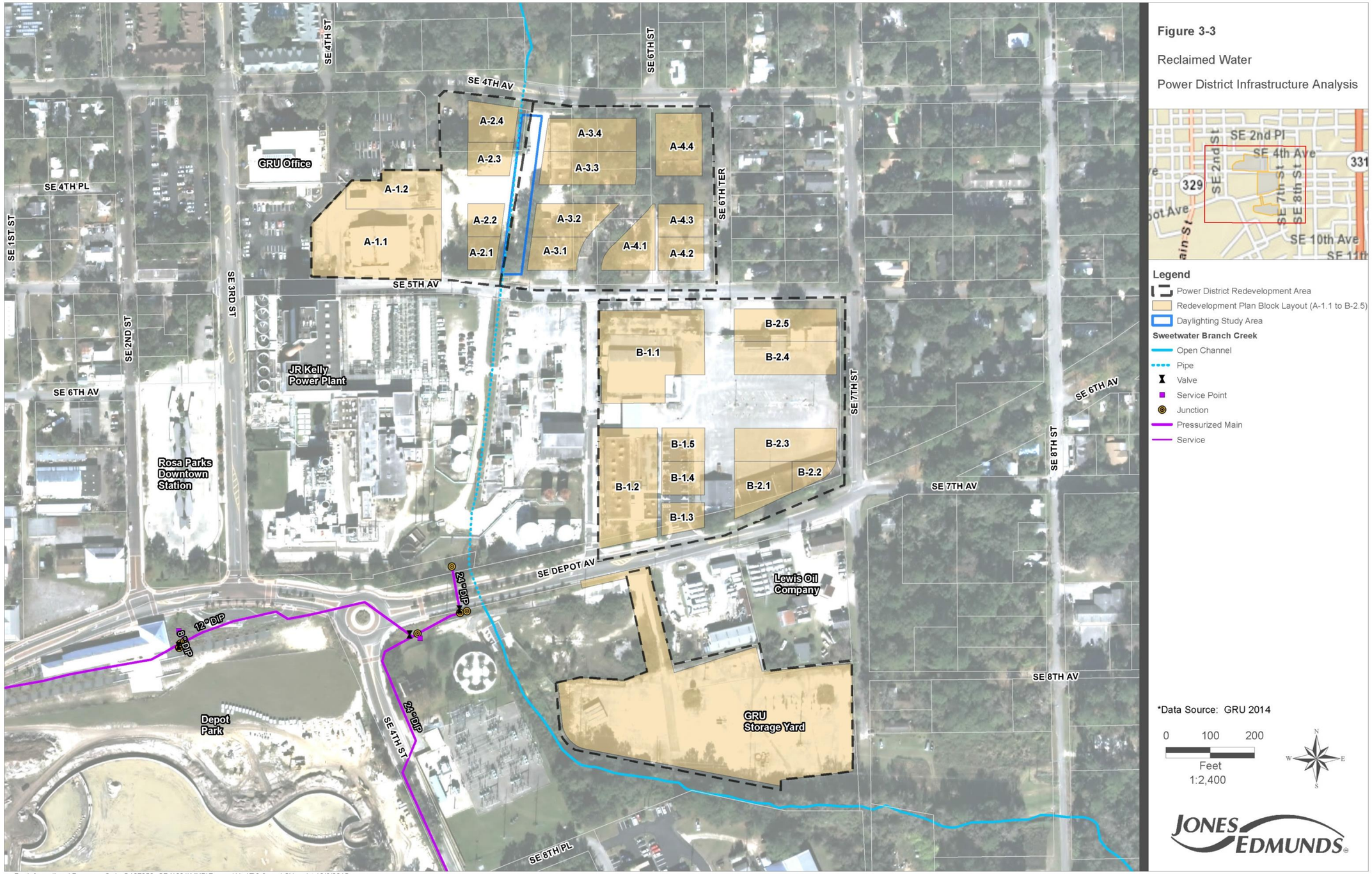

Figure 3-4 Wastewater Systems

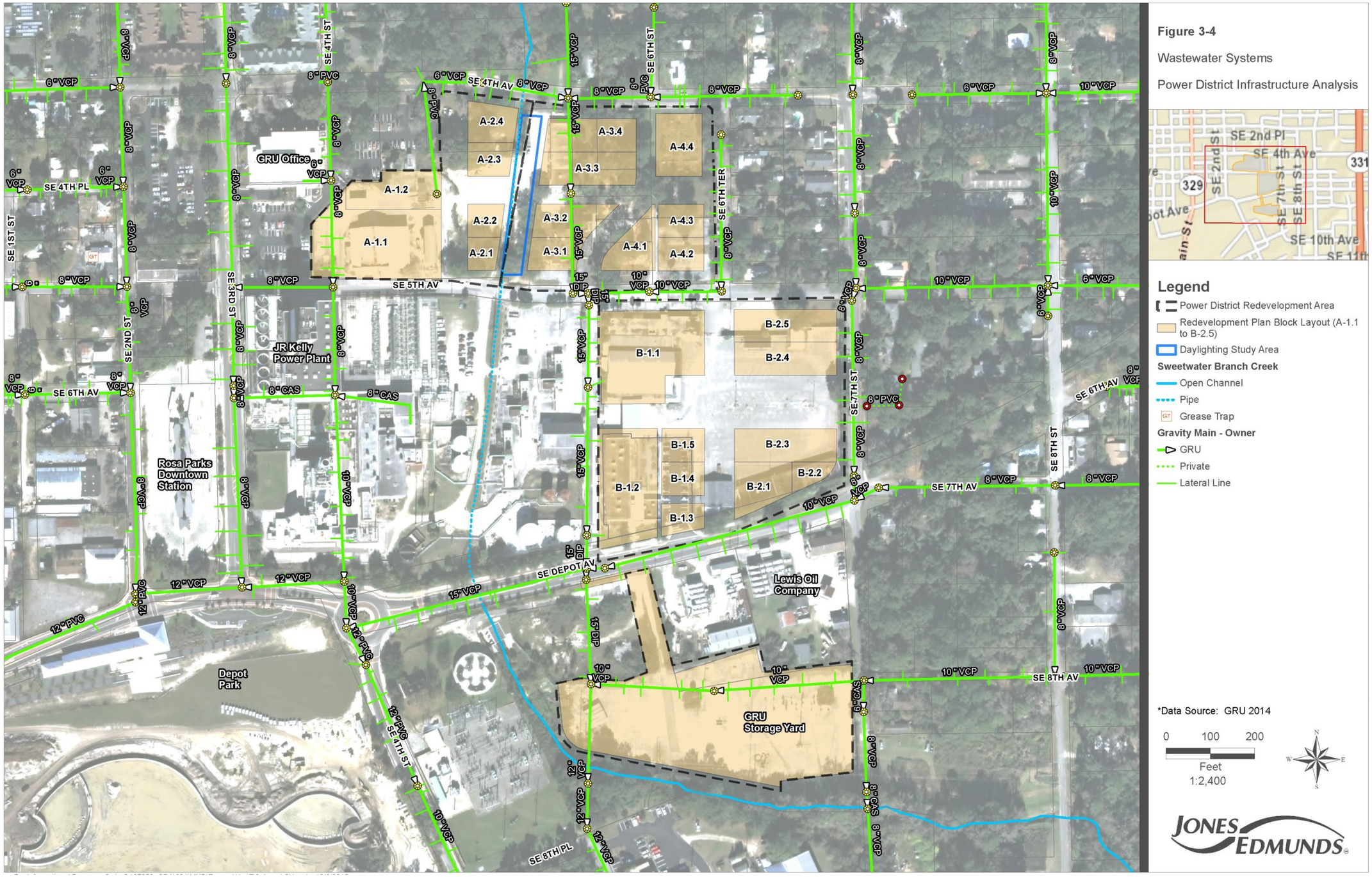

Figure 3-5 Electrical Systems

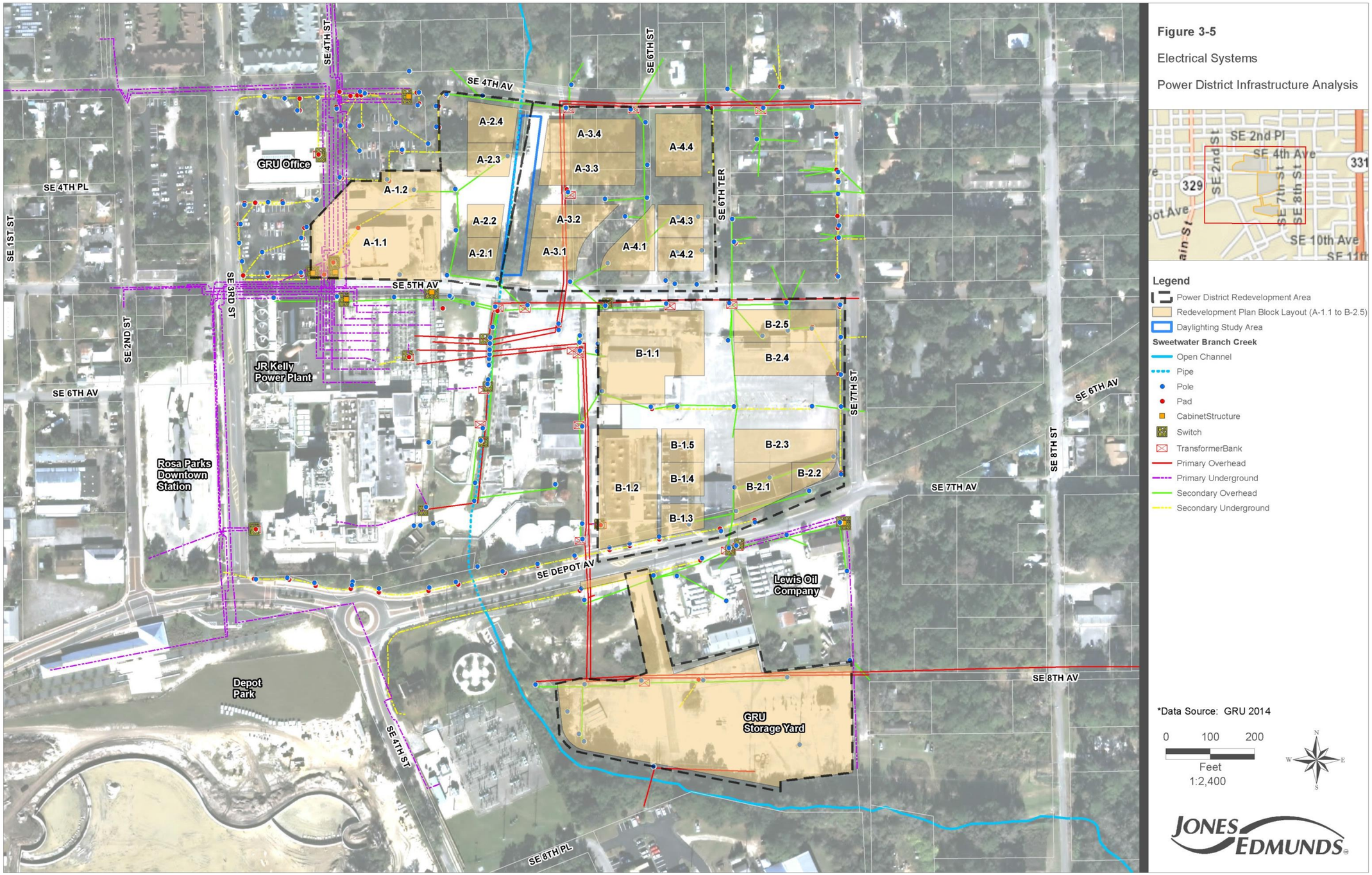

Figure 3-5

Electrical Systems

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Pole
- Pad
- CabinetStructure
- Switch
- TransformerBank
- Primary Overhead
- Primary Underground
- Secondary Overhead
- Secondary Underground

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

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Figure 3-6 Natural Gas System

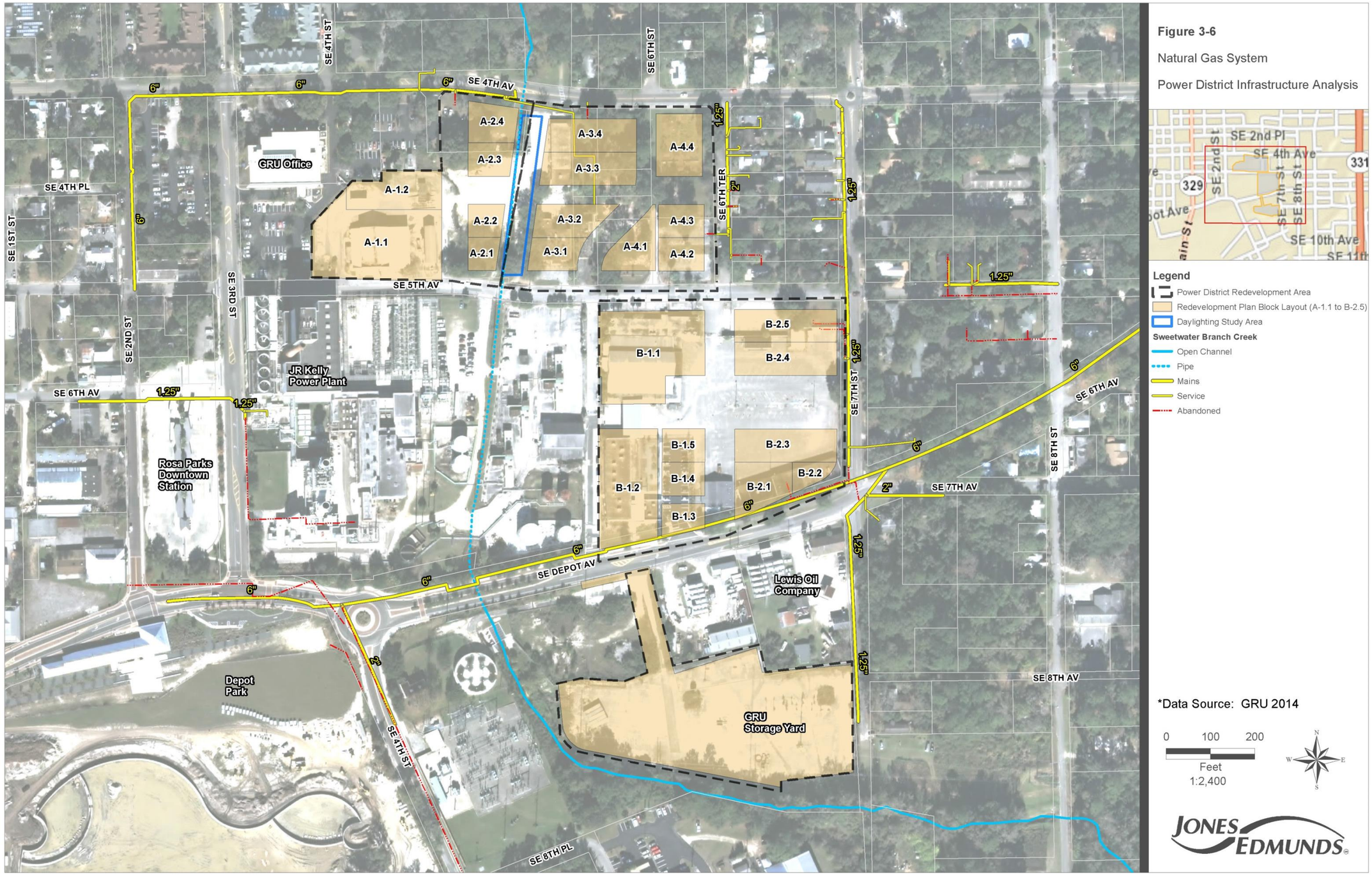


Figure 3-6

Natural Gas System

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Mains
- Service
- Abandoned

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

JONES EDMUNDS

Figure 3-7 GRUCom System

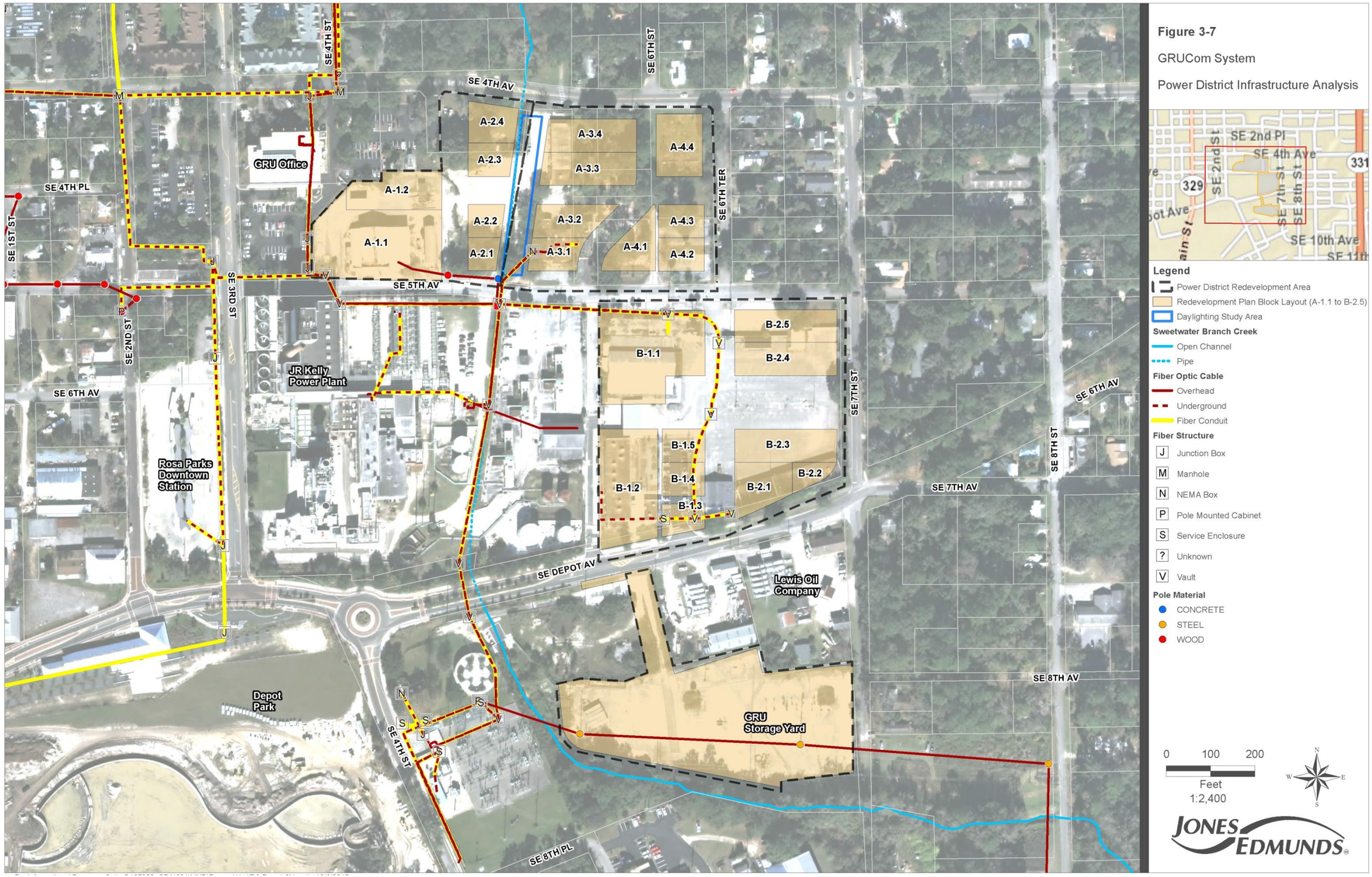


Figure 3-7

GRUCom System

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe

Fiber Optic Cable

- Overhead
- Underground
- Fiber Conduit

Fiber Structure

- J Junction Box
- M Manhole
- N NEMA Box
- P Pole Mounted Cabinet
- S Service Enclosure
- ? Unknown
- V Vault

Pole Material

- CONCRETE
- STEEL
- WOOD

0 100 200

Feet

1:2,400

JONES EDMUNDS

Figure 3-8 Cox Cable System

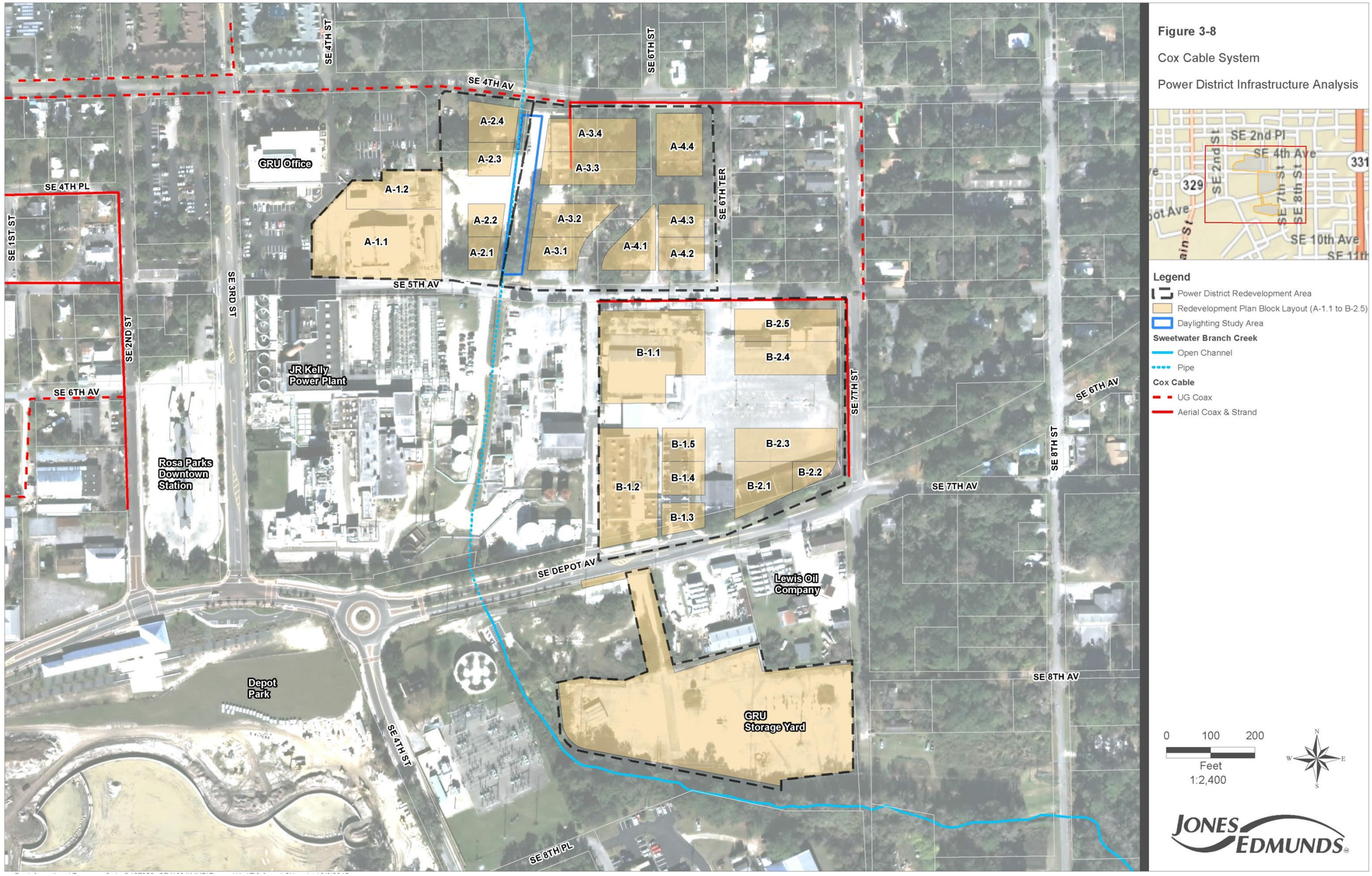


Figure 3-9 AT&T System

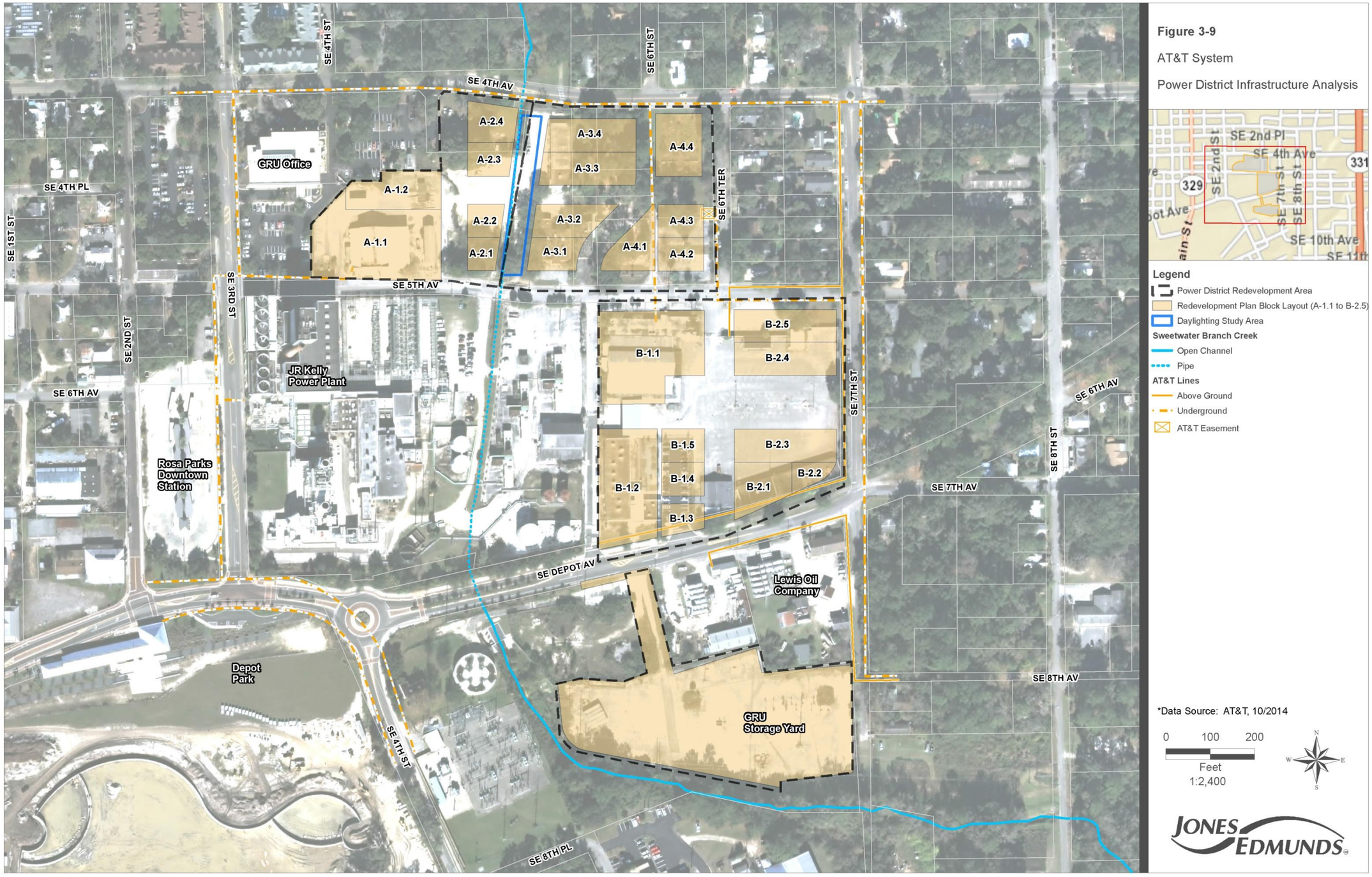
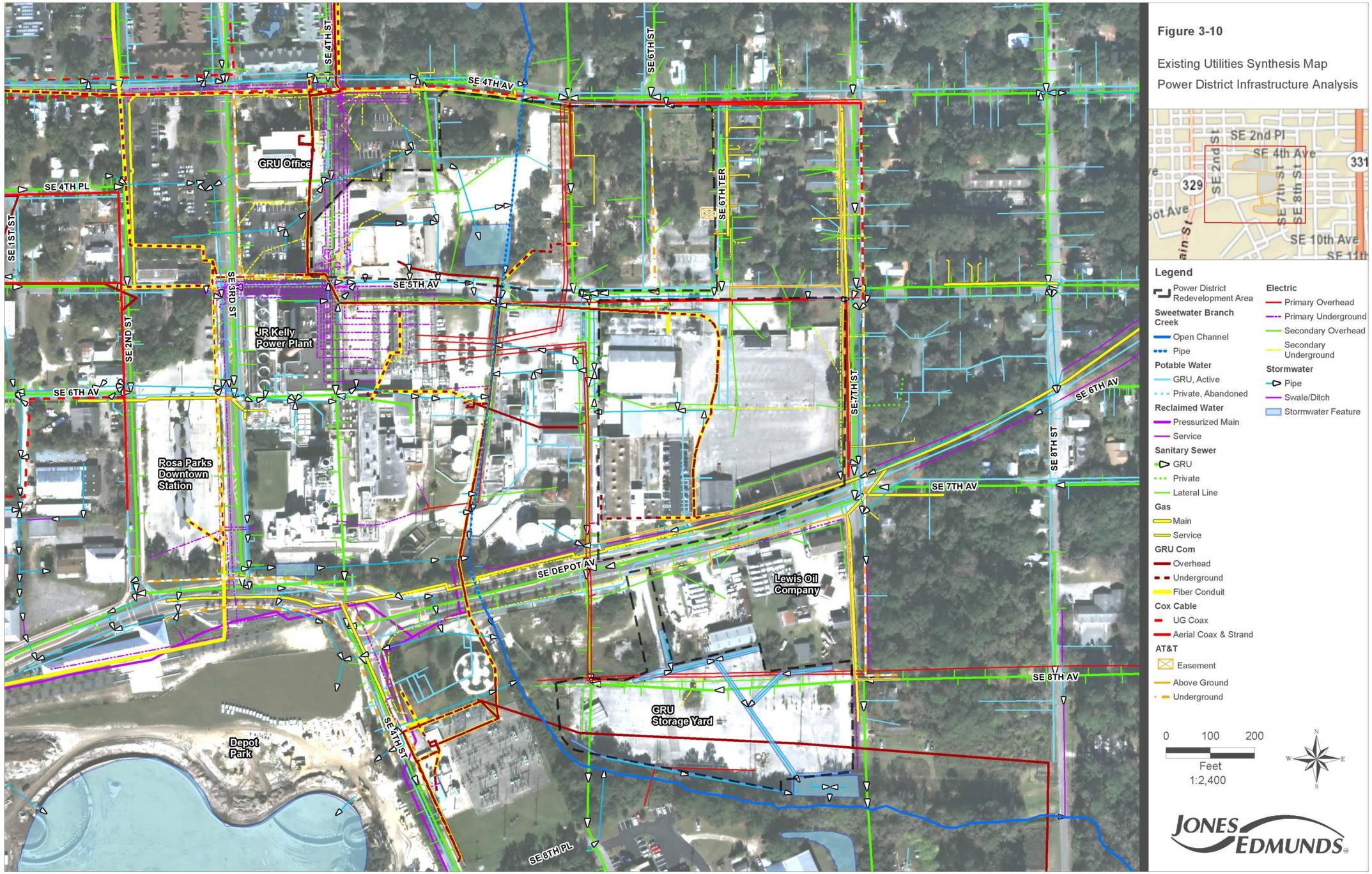


Figure 3-10 Existing Utilities Synthesis Map



SECTION 4

TRANSPORATION

4 TRANSPORTATION

4.1.1 EXISTING TRANSPORTATION INFRASTRUCTURE ANALYSIS

Jones Edmunds reviewed the following transportation elements: corridor capacity, roadway condition, sidewalks and bike lanes, infrastructure and signalization, parking, and transit. We used information obtained from CoG, Gainesville Metropolitan Transportation Planning Organization (MTPO), and limited site visits.

4.1.1.1 Corridor Capacity

The capacity of a corridor is determined by its ability to safely and effectively move vehicular and pedestrian traffic. The level of service (LOS) of a corridor and its transportation mode choices are a measure of flow rate and delay, with LOS A being very effective movement of traffic and LOS F being a highly congested condition. As indicated in Policy 1.1.1 of the Transportation Plan Element of CoG's Comprehensive Plan, the LOS minimum for roadways is LOS E.

As part of the 2014 Mobility Plan, the MTPO calculated the LOS for multiple modes of transportation (automobiles, bicycles, pedestrians, and transit) on several roadway corridors in the vicinity of the study area. Three studied corridors are within the Power District, and several others are nearby. Table 3 shows the LOS for the different transportation modes for these corridors. South Main Street is not included in this study.

Table 3 LOS Summary

Assigned Roadway Number	Roadway	From/To	LOS			
			Automobile	Bicycle	Pedestrian	Transit
S-19	SR 26/University Avenue	13th Street/Waldo Road	D	D	C	E
S-35	Southeast 16th Avenue	Main Street/Williston Road	C	B	D	C
G-20	South 4th Avenue	SW 13th Street/SE 15th Street	C	C	B	E
G-21	Depot Road-SE 7th Avenue	SW 13th Street/SE 15th Street	C	C	B	D
G-34	East 3rd Street	SE Depot Avenue/NE 2nd Avenue	C	C	B	A

Source: MTPO, 2014 Mobility Plan, Table 10 and 12, January 2014. (http://ncfrpc.org/mtpo/publications/GMACMP/MOBLPLANwebFULL.pdf)

Average Daily Traffic (ADT) counts for the study area were obtained from CoG. The CoG Public Works Department completes traffic count rotations for many roadways within the Urban Area. Table 4 provides counts for roadways within the Power District.

Table 4 Traffic Counts

Station	Street	Block	Year	ADT
5002	SE 4th Avenue	900	2014	2,354
5010	SW 2nd Avenue	100	2014	4,305
5012	SE 3rd Street	400	2013	3,373
5013	SE 4th Avenue	300	2014	3,400
5014	SE 5th Avenue	200	2013	444
5016	SE 2nd Avenue	600	2014	1,449

Source: CoG Public Works, Gainesville Urban Area, Traffic Counts, February 2012.

The Power District is within the Transportation Concurrency Exception Area (TCEA) Zone A of CoG's Transportation Mobility Program Area (TMPA), which is intended to promote redevelopment and infill in the east portion of the City. Development within Zone A is not required to meet LOS standards for concurrency but will be required to comply with Policies 1.1.4 of the Comprehensive Plan Concurrency Management Element. A traffic study for the Power District re-zoning application did not show a need for higher capacity roads.

4.1.1.2 Roadway Condition

The CoG Public Works Department routinely inspects roadways and evaluates pavement to determine the need for improvements or reconstruction. CoG Public Works staff assesses asphalt pavement conditions such as surface defects, deformation, cracks, patches, potholes, and ADA accessibility. These pavement condition data are entered into the MicroPAVER™ software system.

MicroPAVER™ was developed by the US Army Corps of Engineers to provide a uniform pavement assessment methodology. The software uses inspection data to calculate a pavement condition index (PCI™) rating from 0 (failed) to 100 (excellent). The PCI™ consistently describes a pavement's condition and can be used to predict its maintenance and repair needs into the future. A MicroPAVER™ rating of 0 to 45 indicates the roadway needs to be rebuilt or reconstructed/milled and resurfaced. A rating of 46 to 65 indicates an improvement consisting of mill and resurface or resurface only is needed. A rating of 66 to 80 indicates preventive maintenance is prescribed, meaning the roadway is in somewhat good condition and a chip seal or crack sealant, considered a minor improvement with an approximate life of 5 years, is the proper solution. A rating of 81 or higher indicates the roadway is in good condition and does not need any treatment at this time.

The CoG Public Works MicroPAVER™ ratings are shown on Figure 4-1. Table 5 lists the roads within the Power District and their rating. According to CoG, new readings will be repeated in 2015. CoG will update their paving plan after these readings are complete. Photograph 3 shows the condition of SE 5th Avenue, which a MicroPAVER™ rating of 0 to 45.

Table 5 MicroPAVER™ Ratings

Roadway	To/From	Rating
SE 4th Avenue	SE 3rd Street/SE 7th Street	81–00
SE 5th Avenue	SE 3rd Street/SE 6th Terrace	0–45
SE 5th Avenue	SE 6th Terrace/SE 7th Street	46–65
SE Depot Avenue	SE 3rd Street/SE 7th Street	81–100
SE 3rd Street	SE 4th Avenue/Depot Avenue	81–100
SE 6th Terrace	SE 4th Avenue/SE 5th Avenue	46–65
SE 7th Street	SE 4th Avenue/SE 5th Avenue	66–80
SE 7th Street	SE 5th Avenue/SE Depot Avenue	46–65

SE 5th Avenue Roadway Condition

4.1.1.3 Sidewalks and Bike Lanes

The existing sidewalk network on the local roads within the Power District includes SE 4th Avenue, SE 5th Avenue, SE Depot Avenue, SE 3rd Street, and SE 7th Street. The newly reconstructed Depot Avenue has bikes lanes and sidewalks that serve as a multi-use path. The Waldo Road Greenway – Depot Avenue Rail-Trail is on the north side of Depot Avenue. Figure 4-2 shows existing sidewalks, bike lanes, and bike racks.

4.1.1.4 Intersections and Signalization

The only traffic signal in the vicinity of the Power District is at the intersection of SE 4th Avenue and SE 3rd Street, as shown in Figure 4-3. The underground fiber connection for the signal runs north along SE 3rd Street away from the Power District. The intersection of Depot Avenue and SE 4th Avenue has a roundabout, and the intersection of SE 4th Avenue and SE 7th Street has a traffic circle. Other intersections within the Power District are two-way stop controlled.

4.1.1.5 Parking

Limited striped on-street parking is provided as shown on Figure 4-4. This on-street parking is along on SE 4th Avenue and SE 7th Street. Other areas of on-street parking are along SE 6th Terrace and SE 5th Avenue, which are not striped.

4.1.1.6 Transit

The Regional Transit System (RTS) provides bus service in Gainesville. The Rosa Parks Downtown Station is west of the Power District, north of Depot Avenue between SE 3rd Street and SE 2nd Street. RTS bus routes and schedules are available at http://go-rts.com/schedule.php. Table 6 shows the bus routes served by the Rosa Parks Downtown Station. Additional transit stops in the Power District area are along SE 4th Avenue (Route 24) and Depot Avenue (Route 17).

Table 6 Transit Routes Serving the Power District

Route Number	Route
1	Rosa Parks RTS Downtown Station To Butler Plaza
2	Rosa Parks RTS Downtown Station To NE Walmart Supercenter
3	Rosa Parks RTS Downtown Station To North Main Post Office
5	Rosa Parks RTS Downtown Station To Oaks Mall
6	Rosa Parks RTS Downtown Station To North Walmart Supercenter
7	Rosa Parks RTS Downtown Station To Eastwood Meadows
10	Rosa Parks RTS Downtown Station To Santa Fe
11	Rosa Parks RTS Downtown Station To Eastwood Meadows
15	Rosa Parks RTS Downtown Station To NW 13th Street
17	Beaty Towers To Rosa Parks RTS Downtown Station
24	Rosa Parks RTS Downtown Station To Job Corps/Airport
25A	UF Commuter Lot to Airport
25B	UF Cultural Plaza to Airport
26	Rosa Parks RTS Downtown Station to Airport
46	Reitz Union to Rosa Parks RTS Downtown Station
711	Rosa Parks RTS Downtown Station to Eastwood Meadows

4.1.2 Existing Transportation Infrastructure Deficiencies

4.1.2.1 Corridor Capacity

None of the roadways in or near the Power District are operating at an unacceptable LOS according to the *MTPO Mobility Plan Status Report.*

4.1.2.2 Roadway Condition

Table 7 shows the existing roadway condition deficiencies. Main Street, which is west of the project, is shown as a Rebuild Condition on CoG maps; however, it has been recently reconstructed.

Table 7 Deficient Roadway Conditions

Roadway Segment	To/From	MicroPAVER™ Rating
SE 5th Avenue	SE 3rd Street/SE 6th Terrace	0–45
SE 5th Avenue	SE 6th Terrace/SE 7th Street	46–65
SE 6th Terrace	SE 4th Avenue/SE 5th Avenue	46–65
SE 7th Street	SE Depot Avenue/SE 5th Avenue	46–65

4.1.2.3 Sidewalks

The CoG Public Works Department evaluates locations within the City where sidewalks are feasible but are unfunded. CoG also identifies areas where sidewalks are not feasible due to right-of-way, trees, or similar space limiting issues. The Power District has sidewalk deficiencies along the north sides of SE 5th Avenue and SE 6th Street and the west side of SE 7th Street between Depot Avenue and SE 5th Avenue.

4.1.2.4 Transit

Based on the adjacent location of the Rosa Parks Downtown Station, the Power District has no known transit deficiencies.

4.1.3 Planned Transportation Infrastructure Improvements

4.1.3.1 Corridor Capacity

Current improvements to Main Street will include a roundabout at the intersection with Depot Avenue. Construction for improvements to Depot Avenue/SE 7th Avenue from SE 7th Street to SE 11th should begin in 2016. This project includes a traffic circle at the intersection of Depot Avenue and SE 7th Street.

CoG is in the design stage for improvements to SE 4th Street from Depot Avenue to Williston Road. The improvements include new pavement, lighting, sidewalks, and bike lanes. Construction for these improvements is expected to start at the end of 2015/early 2016.

4.1.3.2 Roadway Conditions

For the 2017 budget cycle, CoG is planning improvements to the following roadways (road section, type of improvement, estimated cost). These projects can be moved to FY 2018, if needed and beneficial to the Power District Redevelopment strategy.

- SE 5th Avenue from SE 3rd Street to SE 6th Terrace; mill and overlay; $127,500
- SE 5th Avenue from SE 6th Terrace to SE 7th Street; overlay; $41,200
- SE 6th Terrace from SE 4th Avenue to SE 5th Avenue; overlay; $20,000
- SE 7th Street from the south terminus to SE 1st Avenue: crack fill and double micro-surfacing; $43,100

These improvements should raise all roadway conditions within the Power District to a MicroPAVER™ rating of 80 or above, which is a “no treatment condition.” Note that, if needed for coordination with other Power District projects, these projects can be shifted to the FY18 budget cycle.

4.1.3.3 Parking

No parking projects are planned.

4.1.3.4 Sidewalks

No sidewalk projects are planned.

4.1.3.5 Transit

No transit projects are planned.

4.1.4 Redevelopment Constraints and Recommended Transportation Infrastructure Improvements

4.1.4.1 Corridor Capacity

All corridors should be brought up to current ADA standards.

Traffic-calming measures that could be incorporated into the redevelopment include raised intersections, raised crosswalks, traffic circles, and roundabouts. If the right-of-way is adequate, full-width bike lanes or multi-use paths should be constructed on all corridors.

Any improvements to the existing roadway network are required to meet the CoG Engineering Design Manual.

Before the submittal development plans are submitted, CoG will require a traffic study. The study must include the proposed new roadway connections, determine the operational and safety impacts to adjacent facilities and intersections, and recommend modifications to address such impacts. If the project will be phased, the study must describe the phasing and provide the analysis based on each phase and the total build-out scenario. A traffic study methodology meeting with CoG is required before the traffic study begins.

As indicated in Policy 1.1.1 of the Transportation Plan Element of the City’s Comprehensive Plan, the minimum automotive LOS for City-owned roadways is LOS E. The current LOS for City-owned roadways in the area is LOS C; state-owned E University Avenue operates at a LOS D (see the Multimodal Level of Service Report published by the MTPO at: http://www.ncfrpc.org/mtpo/publications/LOS/LOS14RPTGT_FTAnew.pdf).

As the area is redeveloped as a dense urban core with a mix of complementary uses, a high intensity of pedestrian, bicycle, and transit use is expected. Multimodal facilities should be provided to support the integration of modes and encourage multimodal transportation. Special attention should be given to the implementation of complete street elements including sidewalks, bike lanes, bicycle parking, pedestrian amenities, transit amenities, accessibility and connectivity. The bicycle infrastructure should also include connections to multiuse trails in the vicinity such as the Depot Avenue rail trail, the Sweetwater Park trail, and the bike boulevard system. Trail signage should be included to guide users of the system.

4.1.4.2 Roadway Conditions

SE 7th Street from SE Depot Avenue to SE 5th Avenue and SE 6th Terrace from SE 5th Avenue to SE 4th Avenue are in an “overlay” conditions. Additionally, SE 7th Street from SE 5th Avenue to SE 4th Avenue is in a “preventative” condition. CoG recommends that these corridors be milled and resurfaced during the redevelopment phase. As part of the milling and resurfacing project, any areas of roadway base failure and cracked curb and sidewalk should be repaired.

4.1.4.3 Parking

The GRU Storage Yard could be used for parking for the Power District and Depot Park. Additional parking may be included during the redevelopment based on the needs of the tenants.

4.1.4.4 Sidewalks

Pedestrian facilities should be incorporated into all redeveloped corridors. We recommend placing sidewalks as close as possible to the right-of-way adjacent to businesses and residences. This creates a safer pedestrian environment and allows the construction of a buffer planting area between pedestrians and the roadway. Placing the sidewalk away from the road encourages interaction among pedestrians. Benches, tables, and bicycle racks could be placed in these areas. The buffer planting area should include large canopy trees that in the future will provide a robust "ceiling" to the corridor and Low Impact Development (LID) opportunities for stormwater treatment. Additionally, a pedestrian corridor should connect the parking at the GRU Storage Yard with the Power District. These pedestrian facilities should be constructed as the Power District develops.

SE 5th Avenue & SE 6th Terrace Parking Lot

SE 5th Avenue & SE 6th Terrace Parking Lot

Rosa Parks Transit Station

Figure 4-1 Roadway Conditions

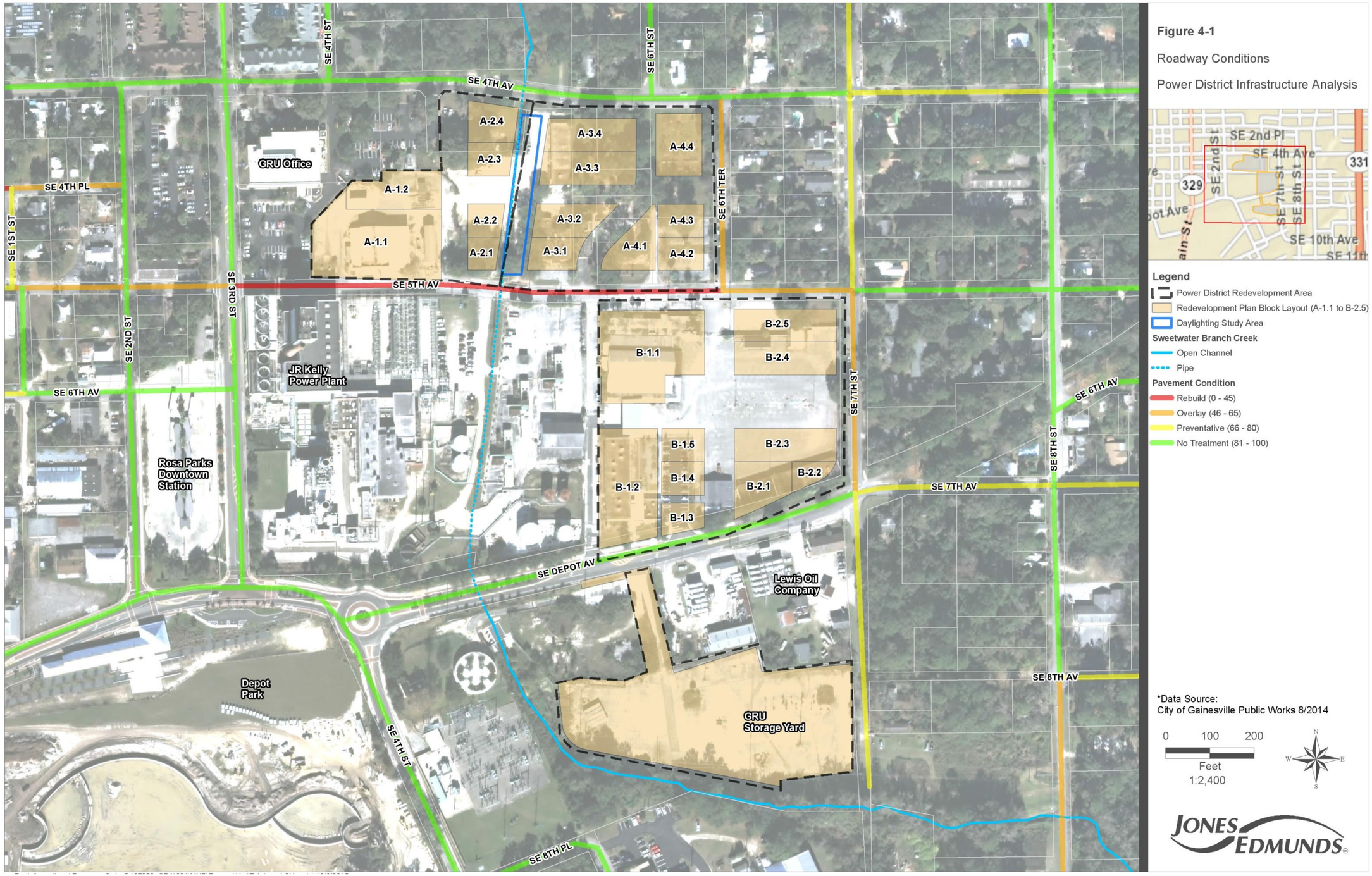


Figure 4-2 Sidewalk and Bike Lanes

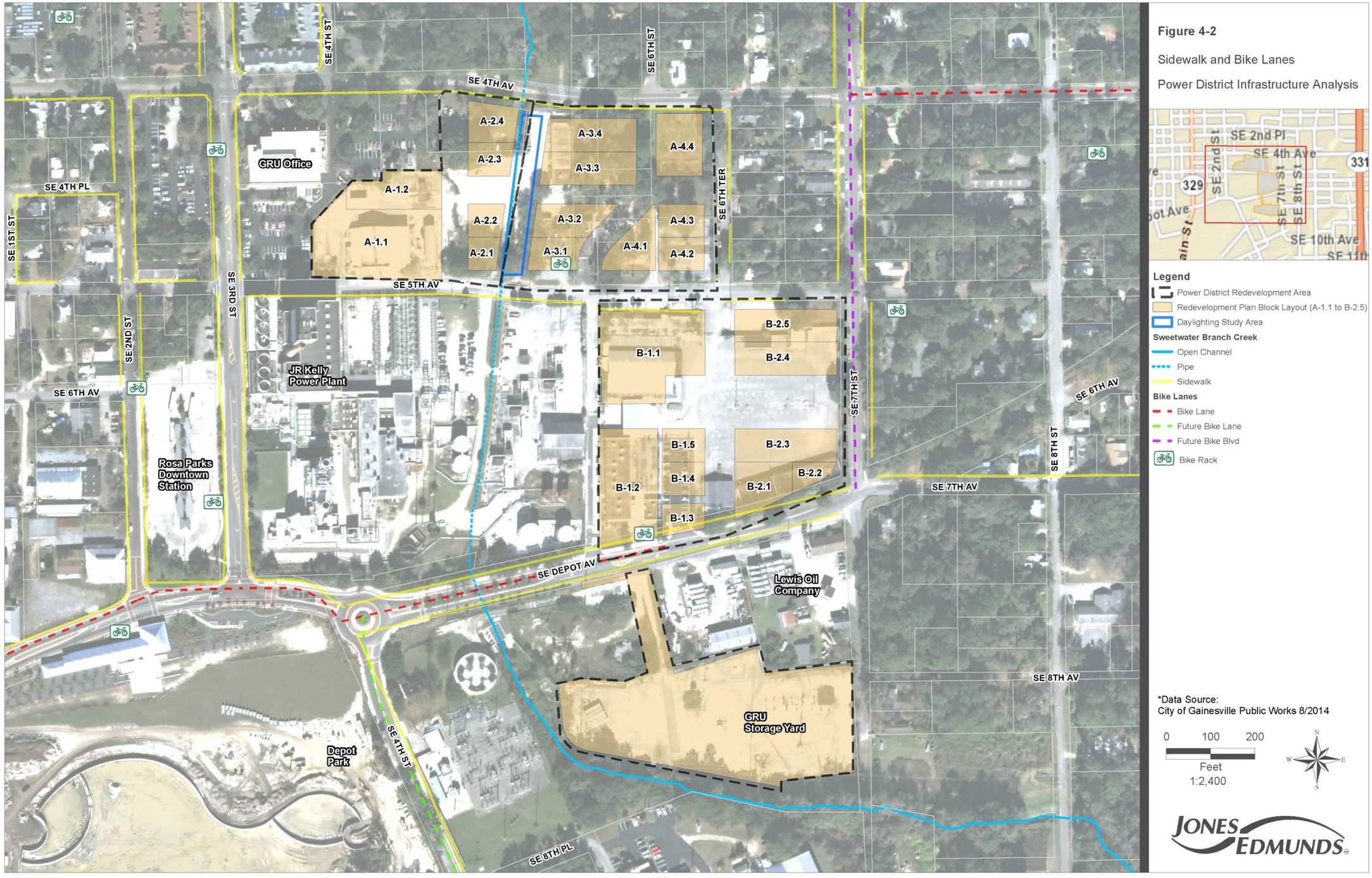


Figure 4-2

Sidewalk and Bike Lanes

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Sidewalk

Bike Lanes

- Bike Lane
- Future Bike Lane
- Future Bike Blvd
- Bike Rack

*Data Source:
City of Gainesville Public Works 8/2014

0 100 200

Feet
1:2,400

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Figure 4-3 Traffic Signals

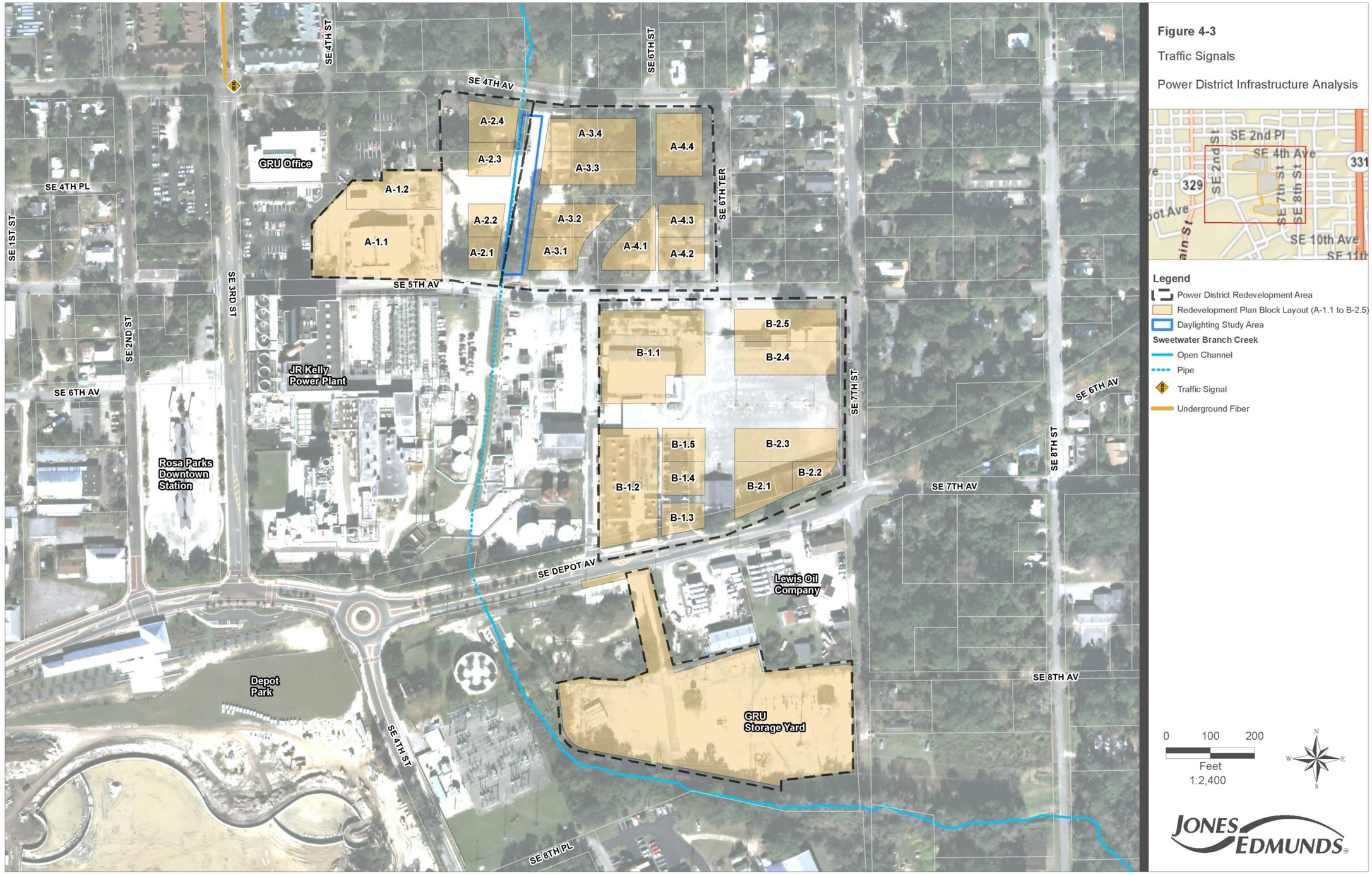

Figure 4-4 Street Parking

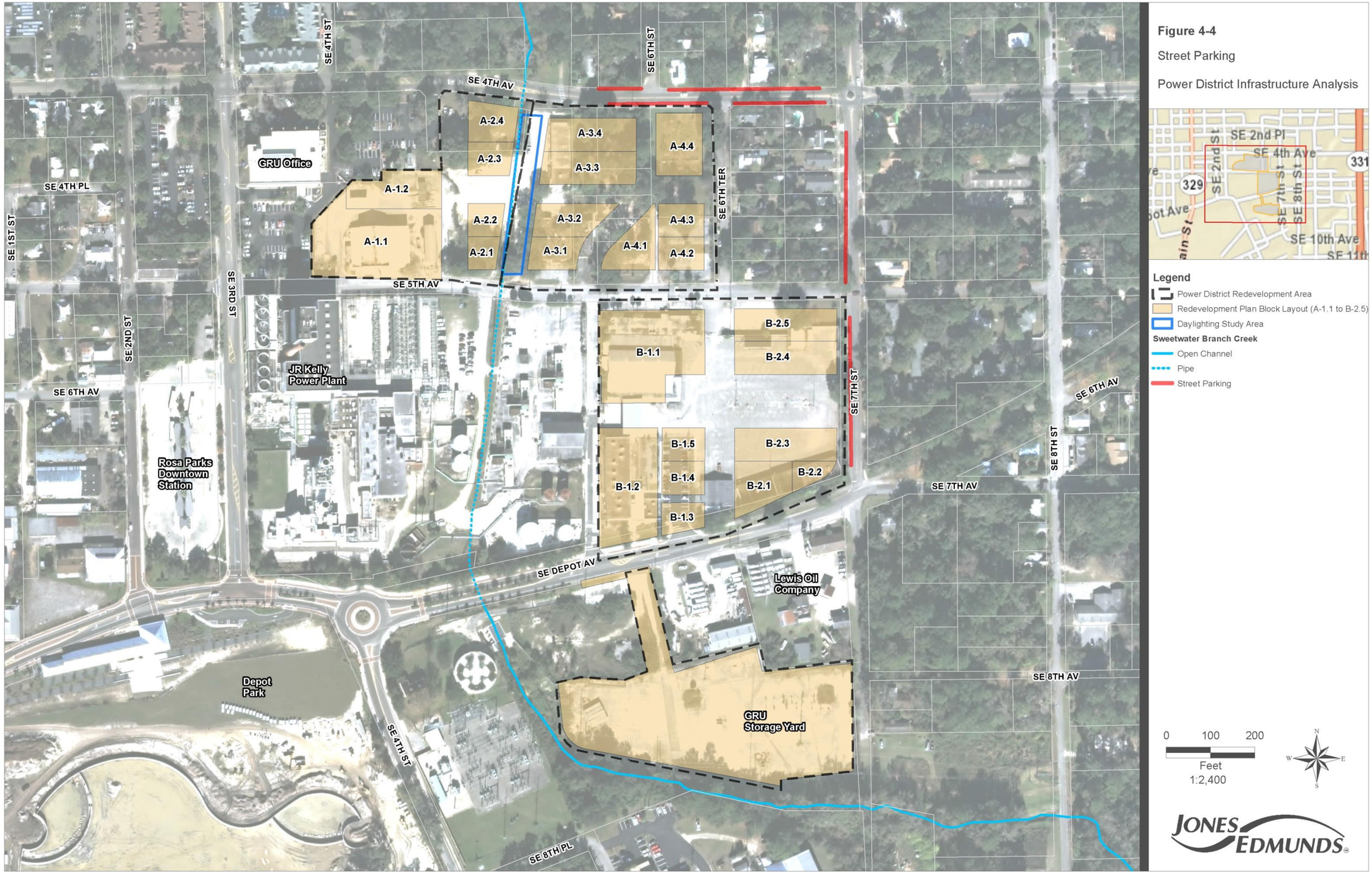

Figure 4-4

Street Parking

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Street Parking

0 100 200

Feet

1:2,400

N W E S

JONES EDMUNDS

SECTION 5

STORMWATER

5 STORMWATER

5.1 REGULATORY FRAMEWORK

CoG and GRU constructed facilities in the Power District area before stormwater regulations were developed. The main stormwater infrastructure consists of a network of culverts that route stormwater runoff into SWBC. The culverts were designed when good stormwater design was defined by the ability to quickly drain streets to avoid flooding; water quality was not considered. Now, stormwater regulations require development to not increase the peak rate or volume of stormwater entering a receiving stream and to provide water quality treatment.

Both SJRWMD and CoG regulate stormwater management. SJRWMD agreed that for any redevelopment in the Power District, the existing condition will serve as “pre-development” condition, which will make it fairly easy for a redevelopment to meet the requirement to not increase the peak rate or the stormwater volume. With regard to the regulatory requirement for water quality treatment, CoG has a water quality treatment credit basin program to promote redevelopment and improve water quality in the urban core. The program allows a developer to buy treatment credits from one of the CoG-owned regional stormwater treatment facilities such as the Depot Park Credit Basin, which borders the Power District to the south. CoG’s Land Development Code also allows infill projects to use an off-site stormwater management facility to meet the standards required by CoG’s Public Works Design Manual. The Power District area is within the Sweetwater Branch Watershed. The Depot Park Credit Basin watershed includes portions of Sweetwater Branch Watershed, but does not include the Power District.

The CoG will be modifying the Depot Park Credit Basin (DPCB) SJRWMD permit to include the Power District Redevelopment Area within the DPCB watershed basin area.

5.1.1 STORMWATER MANAGEMENT WITHIN THE POWER DISTRICT REDEVELOPMENT

The Power District Redevelopment Area is the former GRU headquarters site with associated GRU industrial buildings. The CRA is facilitating the CoG priority initiative to redevelop this urban infill area.

The land within the Power District has a large percentage of impervious area. Only a small percentage of the area is served by a stormwater management facility. This facility is a small pond that serves the GRU Administration Building and is north of SE 5th Avenue and west of the SWBC. This facility has Florida Department of Environmental Protection (FDEP) Environmental Resource Permit (ERP) permit #42-001-30982-1. If this facility is relocated, then compensating stormwater storage volume and treatment must be provided within the same sub-basin area. The outflow/discharge for the GRU Administration Building footer drain needs to be maintained. Infrastructure may already exist to convey stormwater for the GRU Administration Building to the Depot Park Credit Basin.

5.1.2 SJRWMD PERMITTING REQUIREMENTS

The Power District area not served by an existing stormwater management facility will fall under either of two scenarios outlined below. Scenario 1 discusses on-site stormwater treatment, and Scenario 2 discusses off-site stormwater treatment.

5.1.2.1 Scenario 1

This redevelopment will fall under 62-330.055, FAC and 62-330.450, FAC, (effective October 1, 2013). This rule is applicable to a county or municipality for activities occurring within urban infill and redevelopment areas or CRAs. Section 62-330.055, FAC, allows for a conceptual approval permit with a 20-year duration with a potential one-time extension for an additional 10 years. This conceptual permit does not authorize construction. The requirements in Section 62-330.055, FAC must be met to obtain the conceptual approval. Alternatively, net improvement of water quality can be demonstrated by providing a pollutant load analysis.

SJRWMD wants overall improvements to stormwater quality and maximization of on-site infiltration. SJRWMD looks favorably on incorporating LID methods throughout the redevelopment area to achieve an overall pollutant loading decrease. The University of Central Florida’s BMPTRAINS model is a generally accepted model to demonstrate net improvement of stormwater quality. However, SJRWMD does not accept BMPTRAINS results that demonstrate more than 38% of Total Nitrogen removal and more than 64.5% of Total Phosphorus removal for wet detention ponds.

The redevelopment area must be designed to maintain or decrease the pre-development peak runoff rates. As previously stated, the pre-development condition is the current condition. SJRWMD would review the maintenance requirements of the designed stormwater treatment or LID practice to ensure the facilities can function over time.

A timetable for redevelopment, including the requested duration of the conceptual approval permit, is required for conceptual approval. This construction can be for any phase of the conceptual plan. The 62-330.450, FAC (Environmental Resources) General Permit authorizes construction that is consistent with the conceptual approval permit and is valid for construction for 5 years.

5.1.2.2 Scenario 2

The water quality treatment requirements for the Power District Redevelopment Area can be purchased from the Depot Park Credit Basin after CoG modifies the permit to adjust the drainage basin boundaries to include the Power District Redevelopment Area. The CoG Public Works Department is pursuing a permit modification to include the entire Power District Redevelopment Area. After SJRWMD approves the permit modification, a developer may purchase credit from CoG to support their redevelopment project. The developer will need to submit their plan and request the number of water quality credits from CoG. Once CoG approves the plan and the purchase of the credits, the CoG Public Works Department will provide SJRWMD with a letter outlining the developer’s project and a calculation of the required water quality treatment credits. SJRWMD will use the letter from the CoG to modify the Depot Park Credit Basin the ERP permit #40-001-111266-6.

This scenario allows a developer to purchase water quality credits from CoG to satisfy the treatment requirement. As previously noted, the redevelopment design will also need to attenuate the peak stormwater runoff rate so that the post-development rates are less than or equal to the pre-development discharge rates for the 25-year, 24-hour storm event. SJRWMD agreed that the pre-development condition is the current condition. Permit applications must meet conditions and additional conditions for permit issuance pursuant to 62-330.301 and 62-330.302, FAC.

5.1.3 COG

All development, including the redevelopment of the Power District, will need to meet the stormwater requirements according to the revised CoG 2015 Engineering Design and Construction Manual. The return period for design storm events are 3-year, 10-year, 25-year, 50-year, and 100-year, with durations ranging from 10 minutes to 24 hours. The Manual describes the LOS for stormwater quantity based on facility type and has prescriptive storm frequency (return periods) and physical reference (hydraulic grade line or flood stage below gutter elevations, edge of pavement, top of bank, and structure finish floor elevations) requirements.

Regarding development adjacent to drainage ways, the Manual states "Open drainage ways (ditches) will not be permitted in or within 100 feet of any land designated as residential district as defined in the Land Development Code, Section 30-41 and any land in actual use or zoned for use as a school, unless it can be established to the satisfaction of the City Commission that the open drainage way will appear and function as a natural watercourse and will not require significant maintenance. Any permitted open drainage way shall be designed so as to present no unreasonable hazard to life, the health of the public and nearby property residents, and so as to be protected against scour and erosion.”

The Manual also dictates water quality standards similar to those for SJRWMD. However, we expect CoG will allow the developer of the Power District to purchase water quality credits from the Depot Park Credit Basin project.

5.2 EXISTING STORMWATER INFRASTRUCTURE ANALYSIS

The CoG Public Works Department provided GIS data for the existing stormwater infrastructure. The main feature in the Power District is SWBC, which is a small urban creek that flows north to south through the site and eventual-

ly discharges to the Sweetwater Wetlands Park and Paynes Prairie. In general, the land in the Power District slopes toward the Creek and from north to south as shown in Figure 5-1. North of the Power District, the Creek is an open channel. At SE 4th Avenue, it flows into a culvert and flows underground through the Power District. The Creek bisects the Power District between SE 4th Avenue and SE 5th Avenue and is west of the Power District between SE 5th Avenue and Depot Avenue. Table 8 describes the culverts, from upstream to downstream, that the Creek flows through from SE 4th Avenue until reaching the Depot Avenue Pump Station. Note that the culvert flow areas increase upstream of SE 5th Avenue, then decrease downstream of SE 5th Avenue.

Table 8 Sweetwater Branch Culvert Descriptions

Location Description	Culvert Description	Length	Slope (%)	Flow Area (ft^2)
SE 4th Avenue Cross-Drain	One 9-foot-X-4-foot Box Culvert, RCP	53.1 feet	0.5	36
SE 4th Avenue to SE 5th Avenue (Daylighting Study Area)	One 9-foot-X-7-foot Box Culvert, RCP	394.5 feet	0.7	45
SE 5th Avenue Cross-Drain	Two 72-inch-diameter RCP for SWBC	34.9 feet	0.4	56.5
GRU Campus North	One 9-foot-X-7-foot Box Culvert, RCP	470.8 feet	0.8	45
GRU Campus South	Two 66-inch-diameter (material not noted)	62.6 feet	0.8	47.5
Depot Avenue Crossing	Two 66-inch-diameter, RCP	137.4 feet	2	47.5

Figure 5-2 shows the existing stormwater infrastructure, including the culverts described in Table 8, which forms the main drainage system. The secondary stormwater collection system includes a 30-inch pipe along SE 4th Avenue from the west and an 18-inch pipe from the east that both flow into the Creek. An 18-inch pipe between SE 4th Avenue and SE 5th Avenue west of the Creek is tied to the box culvert. The storm sewer system along SE 5th Avenue includes 18-inch corrugated metal pipes (CMP) from both the west and east that flow into the box culvert. The GRU Campus between SE 5th Avenue and Depot Avenue includes an internal drainage system that eventually flows to the box culvert.

CoG does not have exact information on the age of the existing culverts, but the culverts under SE 4th Avenue and SE 5th Avenue were installed before 1963. The CoG Public Works Department maintains the area north of SE 4th Avenue and the Duck Pond section of SWBC. The maintenance includes biannual mowing and annual herbicide treatment.

Jones Edmunds reviewed the existing stormwater infrastructure and LiDAR topographic data to determine approximate drainage basins within the Power District (Figure 5-3). Estimated impervious area for each drainage basin was estimated using aerial photography and a field visits (Table 9). During redevelopment the drainage basin will need to be redefined based on the actual redevelopment plan.

Figure 5-4 shows the Environmental Resource Permit (ERP) data from SJRWMD and Florida Water Portal websites. Depot Park, a portion of SE 7th Avenue and SE 7th Street, a portion of Depot Avenue, and the GRU Storage Yard have an ERP. Jones Edmunds downloaded the ERP data on September 2, 2014. Jones Edmunds amended the data to include the ERP for the GRU Administration Building (#42-001-30982-1), which was provided by Kristie Williams.

Table 9 Drainage

Drainage Basin	Total Area (ac)	Impervious Area (ac)	Impervious Area (%)
A-1	0.98	.93	95
A-2	0.26	.25	95
A-3	0.25	.24	95
A-4	0.50	.13	25
A-5	0.09	.09	95
A-6	4.18	1.25	30
A-7	1.14	0.46	40
B-1	4.10	3.90	95
B-2	1.63	1.47	90
B-3	0.92	0.74	80
TOTAL	14.05	9.43	67

5.3 Existing Stormwater Infrastructure Deficiencies

The existing stormwater collection system is deficient in the area of SE 4th Avenue. This is discussed further in the following sections concerning the flood hazard areas.

The ERPs for the roadway improvements are recent permits. The GRU storage yard was permitted in 1993 with a small pond using an underdrain system. The Administration Building runoff is treated by the small pond shown under proposed Building A-2.1. The existing pond is smaller than the permitted pond, likely due to sediment and vegetation accretion, which indicates that it needs some maintenance. GRU agreed to clean and restore the pond to its original design condition.

5.4 Planned Stormwater Infrastructure Improvements

Jones Edmunds is analyzing several options to daylight SWBC. The planned improvements to the stormwater infrastructure depend on the results of this analysis. Any improvements to SWBC or other stormwater improvements are required to meet the CoG *Engineering and Design Construction Manual 2015* and SJRWMD ERP regulations.

5.5 Redevelopment Constraints and Recommended Stormwater Infrastructure Improvements

Jones Edmunds recommends that the CRA coordinate with GRU to determine if the Administration Building stormwater pond can be relocated to allow construction of proposed Building A-2.1. The outflow/discharge for the GRU Administration Building footer drain needs to be maintained.

The Administration Building and parking lot have a network of stormwater collection pipes that flow to the permitted pond. The CoG Public Works Department may want to add the pipes and the pond to their stormwater infrastructure network if they will be responsible for their maintenance.

The GRU Storage Yard has a network of stormwater collection pipes that flow to the permitted pond. The CoG Public Works Department should add the pipes and the pond to their stormwater infrastructure network if they will be responsible for their maintenance. GRU should evaluate the design plans and maintain the pond as needed, but this is not expected to change the plan to use the Storage Yard for parking.

Currently the Power District is not included in the Depot Park Credit Basin; however, the CoG is modifying the Environmental Resource Permit (ERP) to include the Power District.

5.6 Effective FEMA Special Flood Hazard Area

Jones Edmunds downloaded the current, effective Special Flood Hazard Areas (SFHA) from FEMA through the online FEMA server. Jones Edmunds downloaded the data in September 2014, which is shown in Figure 5-5.

The area shown as the "100-year Floodplain" is designated by FEMA as Zone A, which means the base flood elevation (BFE) is not defined. The base flood is the flood with a 1% chance of being equaled or exceeded each year. The base flood is commonly referred to as the 100-year flood.

The Zone A areas include the SE 4th Avenue crossing, Daylighting Study area, and along both sides of the Creek south of Depot Avenue. The current floodplain includes the building footprints on both sides of the daylighting area.

5.6.1 Development in the Special Flood Hazard Area

In November 2014 the City Commission amended the Code of Ordinances relating to floodplain management. The new ordinance has not been codified in the Land Development Code but is expected to be before redevelopment of the Power District occurs. The new ordinance coordinates local floodplain management regulations with the Florida Building Code and the National Flood Insurance Program. The provisions of the ordinance apply to all development that is wholly within any SFHA, including but not limited to excavation, grading, filling, building, and utility installations.

Development within the SFHA will require a floodplain development permit, though another option is to leave the flood area as a designated open space. The open space may be used for hiking, biking, walking, picnics, gardens, play areas, and parking without a permit provided it contains no additional fill, buildings, or structures.

The ordinance outlines several paths for applying for a floodplain development permit. Jones Edmunds assumes that the CoG Public Works Department, acting as the floodplain administrator, will require the developer or the CRA to determine the BFE and apply for a FEMA Letter of Map Change or to assume that the BFE is 3 feet higher than the adjacent grade at the location of the development and to protect all building systems from flooding. As the CRA refines the development options, we will discuss all options with the floodplain administrator.

5.6.2 Estimated Flood Areas

In 2004, Jones Edmunds prepared an unsteady-state HEC-RAS model of SWBC for CoG. This model provides the available data at the time to estimate the BFE and the peak flow rate resulting from the 100-year event. The 10-year and 25-year return period storm events were also modeled (see Table 10 for the flood state and flow for the different return periods). Figure 5-6 shows the flood areas from the 2004 model, which are labeled as "estimated" because they are not approved FEMA SFHAs. Stormwater infrastructure in the area has changed since Jones Edmunds modeled SWBC in 2004 – specifically, the reconfiguration of SWBC in the Duck Pond area and the construction of Depot Avenue Park and its pump station. This may have changed the floodplains. Jones Edmunds is also evaluating several options to daylight SWBC, which may further alter the floodplain.

Table 10 Sweetwater Branch – Estimated Flood Stage and Peak Flow at SE 4th Avenue

Event	Flood Stage (feet NAVD 88)	Flow (cfs)
10-year	143.32	427
25-year	144.11	637
100-year	144.48	865

The 2004 model indicates that SE 4th Avenue floods in the 10-year event – the smallest event modeled. During the TAT meeting, we asked GRU employees if they had noticed flooding and they responded that they had not. However, based on the model, the staining on the concrete headwall, and photographs the CRA provided, we believe SE 4th Avenue frequently floods for short periods. The CRA photographed the headwall upstream of SE 4th Avenue in August 2014 before and during a storm. About 3.2 inches of rainfall was recorded near the Duck Pond for this storm event, starting at about 3:30 PM. The modeled 10-year event was 6 inches of rainfall. Photograph 1 shows the stream on August 11, 2014, before the storm and after several days without rain. Photograph 2 shows SWBC during the storm, and Photograph 3 shows the wrack line of storm debris almost to the top of the headwall.

5.6.3 Redevelopment Constraints and Recommended Floodplain Improvements

The current effective FEMA floodplain shows a large area of flooding through the Power District, including within the proposed building footprints in Blocks A-2.1 to A-2.4 and Blocks A-3.1 to A-3.4. The 2004 Jones Edmunds study indicated that only a portion of Block A-2.4 was within the floodplain.

The FEMA floodplain is an obstacle to development. CoG may reduce the obstacle by reducing the area planned for development. As noted by the Public Works Department during the TAT meeting, one option is to provide a linear park or open space designed for passive recreation and to allow flooding. This can be done with or without daylighting the creek. Another way to overcome this constraint is to complete a flood study to determine the BFE and potentially reduce the flood hazard area before design. CoG may also choose to incorporate the goal of reducing the BFE and the flood hazard area into the daylighting design.

Photo 1 - August 11, 2014 – Normal Flow

Photo 2 - August 14, 2014 at 5:40 PM

Photo 3 - August 14, 2014 Wrack Line

Photo 4 - Sweetwater Branch Creek Site Visit North of SE 4th Avenue

Photo 5 - Sweetwater Branch Creek Site Visit North of SE 4th Avenue

Figure 5-1 1-foot LIDAR Contours

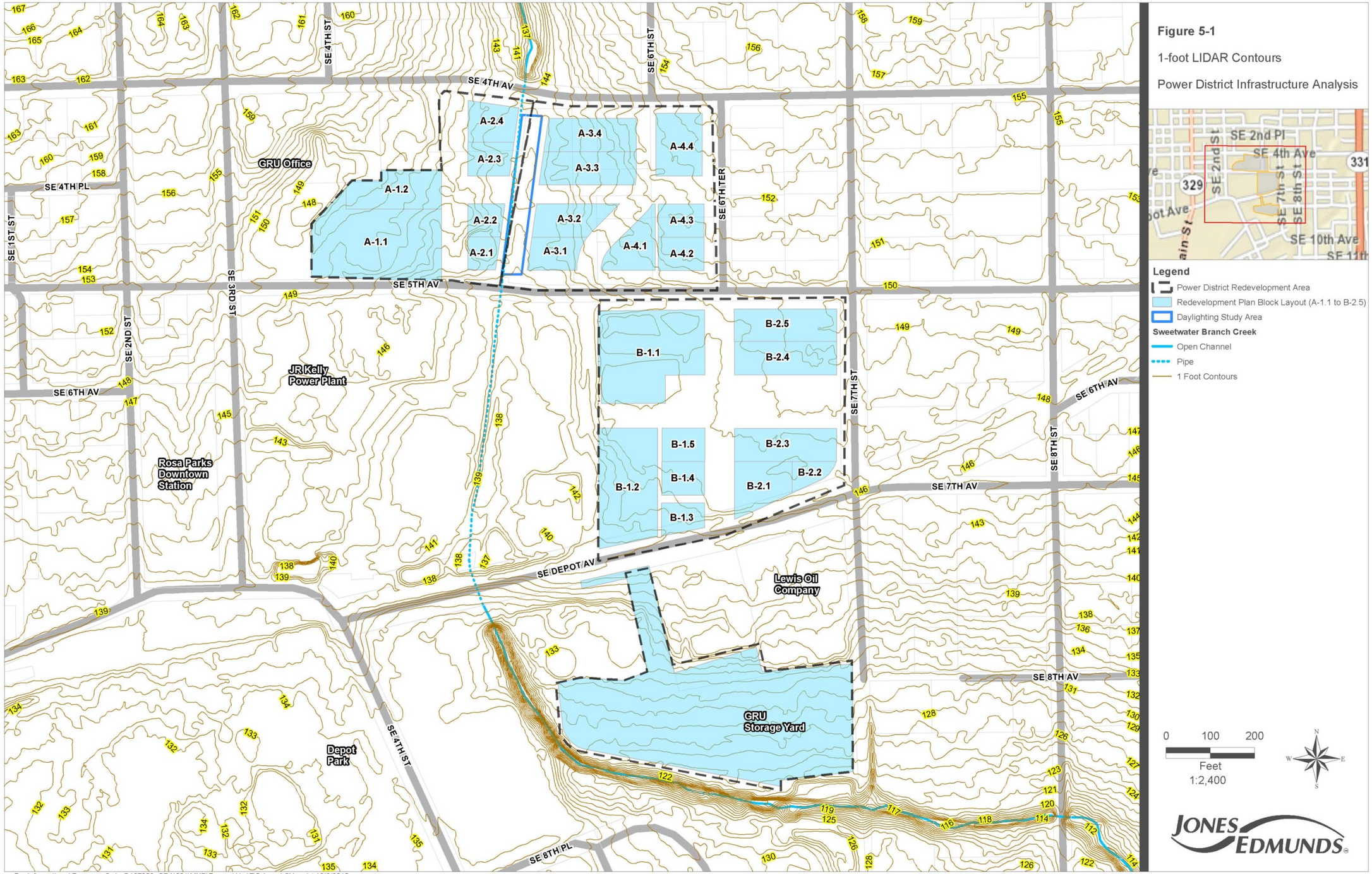

Figure 5-2 Stormwater Infrastructure

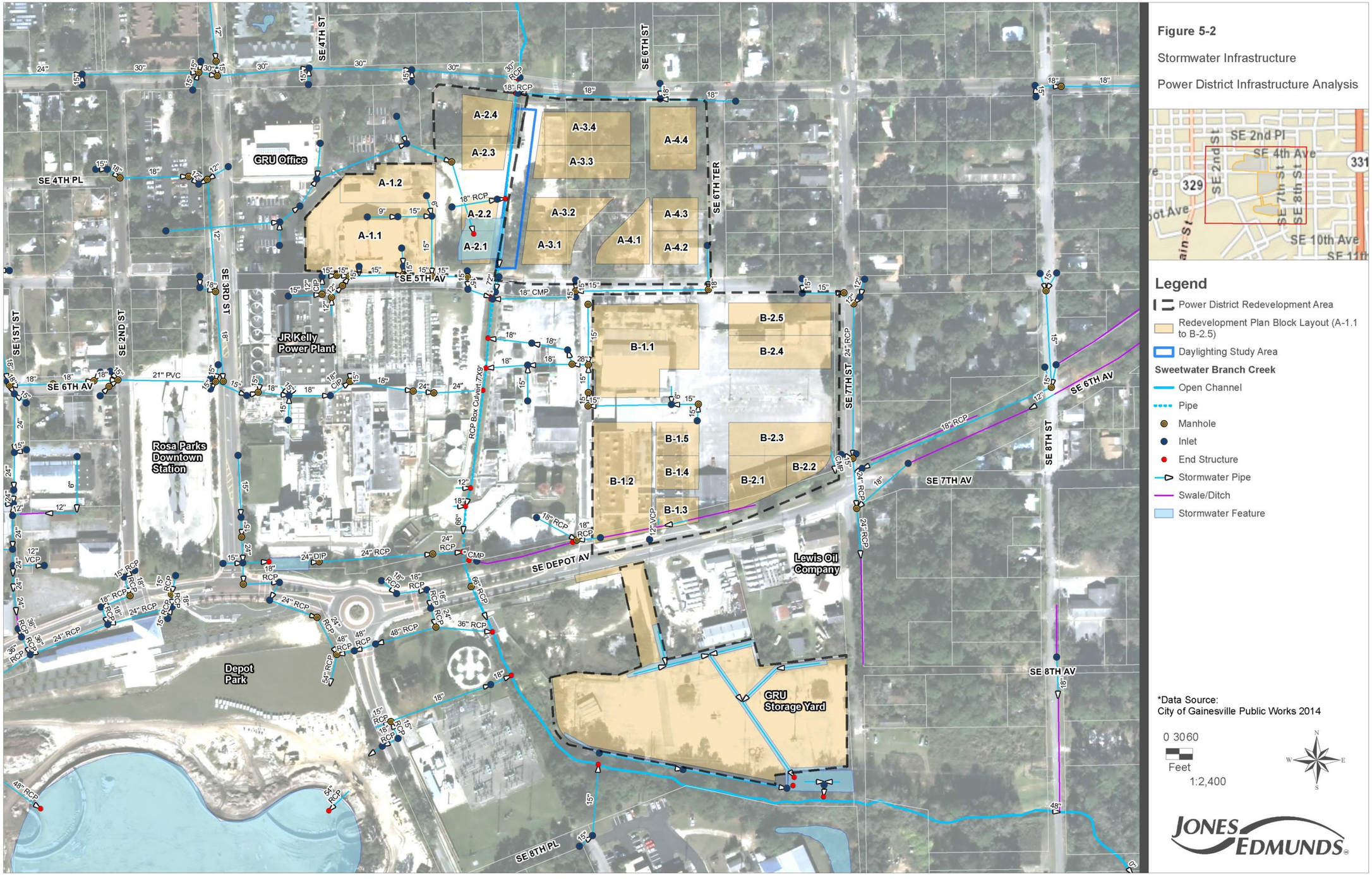

Figure 5-2

Stormwater Infrastructure

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Manhole
- Inlet
- End Structure
- Stormwater Pipe
- Swale/Ditch
- Stormwater Feature

*Data Source:
City of Gainesville Public Works 2014

0 30 60
Feet
1:2,400

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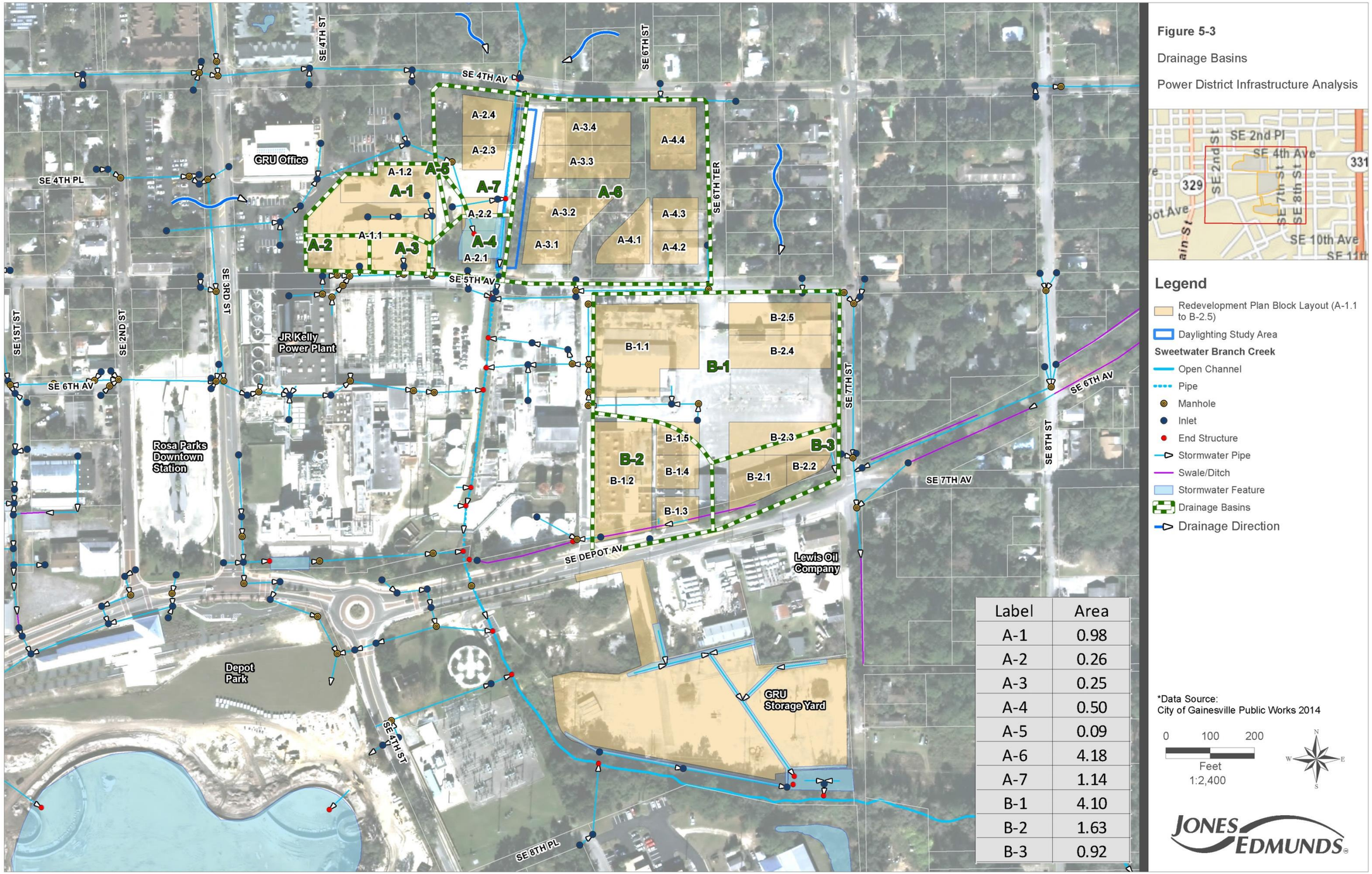
Figure 5-3 Drainage Basins



Label	Area
A-1	0.98
A-2	0.26
A-3	0.25
A-4	0.50
A-5	0.09
A-6	4.18
A-7	1.14
B-1	4.10
B-2	1.63
B-3	0.92

Figure 5-3

Drainage Basins

Power District Infrastructure Analysis

Legend

- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Manhole
- Inlet
- End Structure
- Stormwater Pipe
- Swale/Ditch
- Stormwater Feature
- Drainage Basins
- Drainage Direction

*Data Source:
City of Gainesville Public Works 2014

0 100 200
Feet
1:2,400

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Figure 5-4 Stormwater Permits

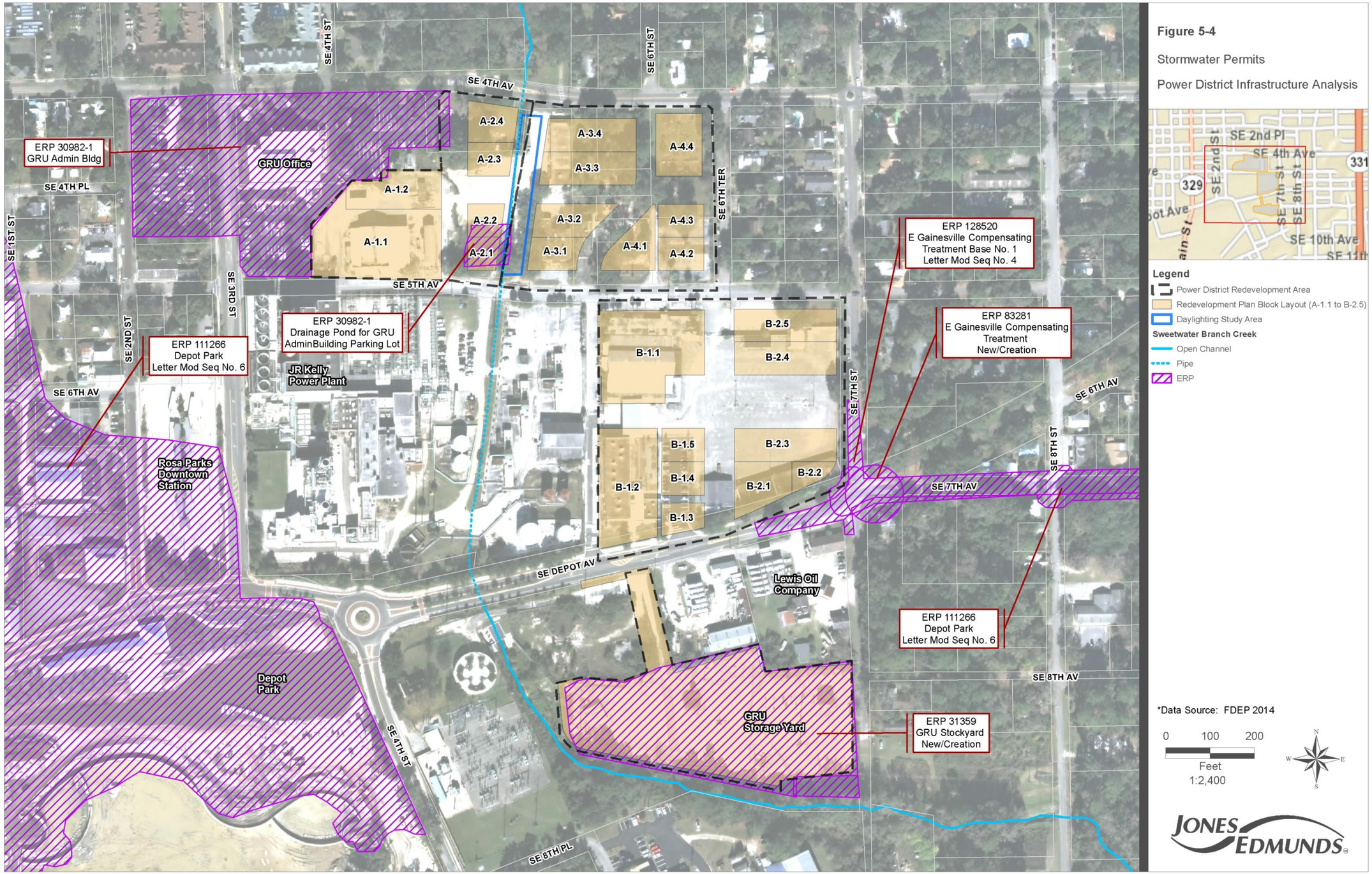

Figure 5-5 Effective FEMA Special Flood Hazard Areas

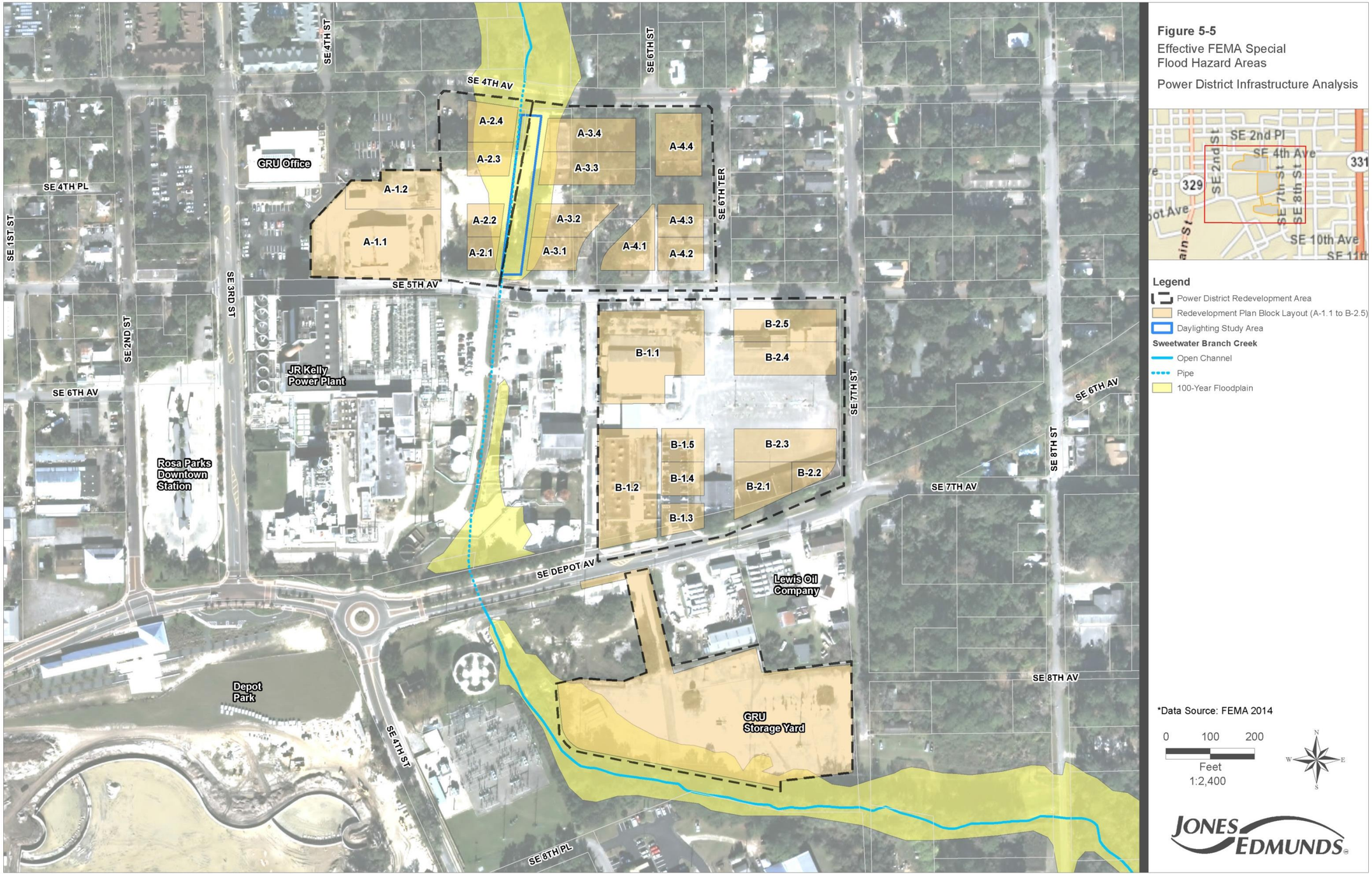

Figure 5-6 Estimated Floodplains

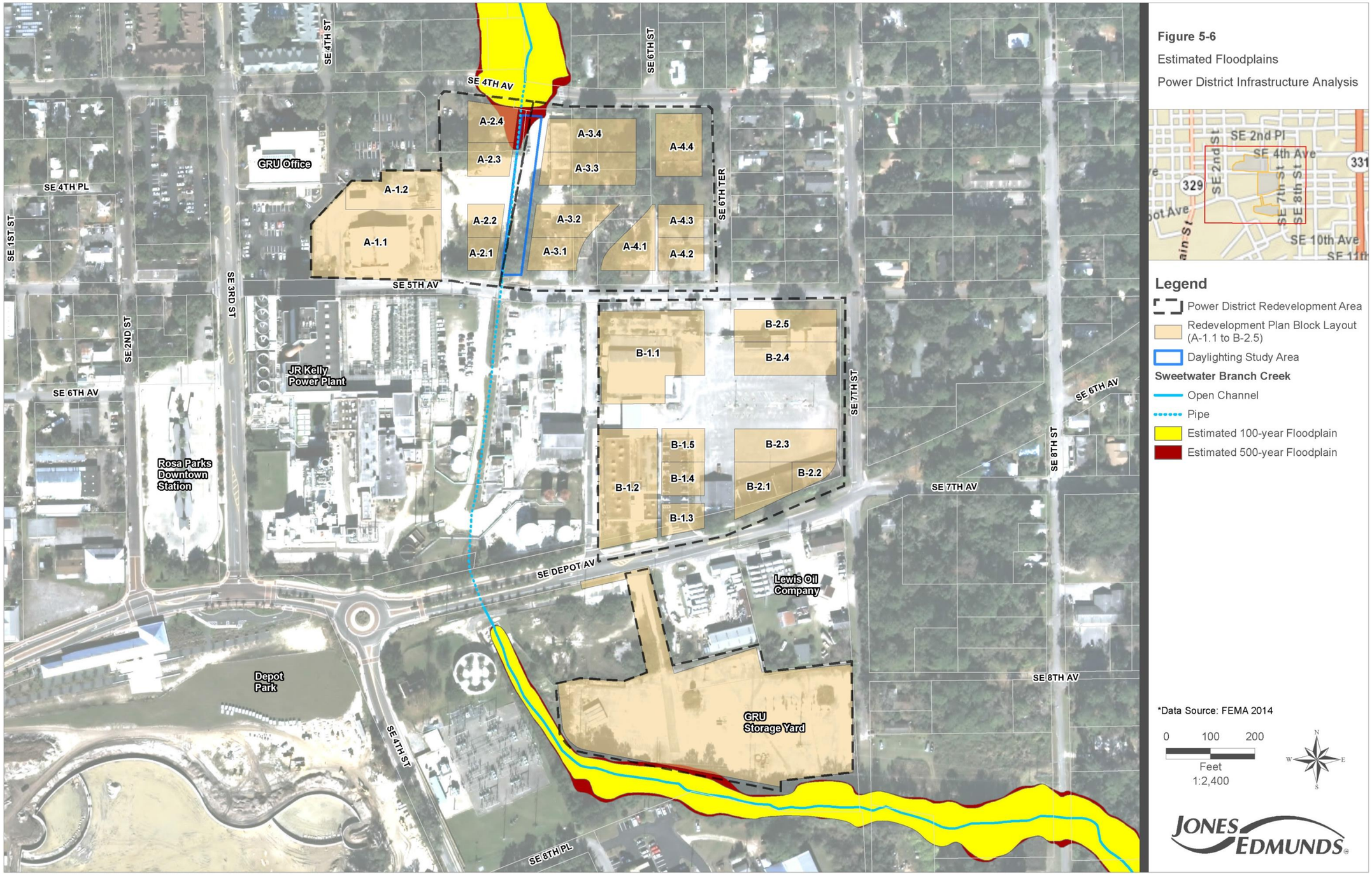

Figure 5-6
Estimated Floodplains
Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Estimated 100-year Floodplain
- Estimated 500-year Floodplain

*Data Source: FEMA 2014

0 100 200
Feet
1:2,400

N W E S

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SECTION 6

ENVIRONMENTAL ANALYSIS

6 ENVIRONMENTAL ANALYSIS

6.1 HISTORICAL ENVIRONMENTAL ISSUES AND CONSTRAINTS REVIEW

Environmental Consulting & Technology, Inc. (ECT) performed three Phase I (2007) and two Phase II (2011 and 2012) Environmental Site Assessments (ESA) for the Power District. They also performed a Phase I Site Assessment on the Former Fleet Maintenance Facility (2014) and Professional Services Industries, Inc. (PSI) performed a Phase II ESA for the former Fleet Maintenance facility (2015). The CRA provided Jones Edmunds with partial copies of the reports. ECT provided their CAD files and data used to prepare the reports. ECT and PSI provided Jones Edmunds with comments on the environmental analysis of this report. Those comments are incorporated within this report. Figure 6-1 shows the areas described on the ECT reports.

The ECT and PSI reports use the following terminology:

- Parcel 1 – Includes the area east of SWBC between SE 4th Avenue and SE 5th Avenue (Blocks A-3.1 to A-4.4).
- Parcel 2 – Includes the area between SE 5th Avenue and Depot Avenue and between SE 7th Street and the JR Kelly Power Plant (Blocks B-1.1 to B-2.5).
- Parcel 3 – Includes the GRU Storage Yard south of Depot Avenue.
- Parcel 4 – Includes the area west of SWBC between SE 4th Avenue and SE 5th Avenue (Blocks A-1.1 to A-2.4).

6.2 SUMMARY OF PREVIOUS ENVIRONMENTAL ASSESSMENT ACTIVITIES

6.2.1 PARCEL 1

The Phase I ESA report for Parcel 1 did not identify recognized environmental conditions (RECs) in accordance with Standard Practice ASTM E1527-13; however, the report identified possible mold on walls of the field services building and potential asbestos containing materials (ACMs) throughout the building. If the building is intended for future use, a mold survey is recommended to be performed by a Florida-licensed mold assessor (FLMA), and if confirmed the impacted materials may require removal. If not already prepared, a Lead and Asbestos Operations and Maintenance (O&M) Plan should be developed and implemented to maintain the lead-based paint (LBP) and ACMs documented in the Phase II ESA report. If the building is not intended for future use, ACMs identified by the asbestos survey may be required to be abated or demolished in place under wet conditions by a Florida-licensed abatement contractor before or during demolition. To evaluate costs associated with mold abatement, a mold survey would need to be completed first. To evaluate the costs associated with lead and asbestos O&M or abatement, additional information regarding the quantity and condition of each LBP and ACM would be necessary.

ECT performed Phase II ESA activities at the site in April 2011, including collecting eight soil samples and two groundwater samples for laboratory analysis. The Phase II ESA report for Parcels 1 and 2 identified the following:

- No test parameters were detected at concentrations above Chapter 62-777, FAC Soil Cleanup Target Levels (SCTLs) in the soil samples collected from Parcel 1.
- One polynuclear aromatic hydrocarbon (PAH) test parameter was detected at a concentration above its Chapter 62-777, FAC Groundwater Cleanup Target Level (GCTL) in the groundwater sample collected from Soil Boring SB-4. Benzo(a)anthracene was detected at 0.64 microgram per liter (µg/L), which exceeds the GCTL of 0.05 µg/L. The groundwater sample was collected from the northwest portion of the property.

Based on limited assessment data known for Parcel 1, no soil impacts have been identified that would require further assessment or remediation. The limited groundwater data indicate that the site groundwater may be impacted above Chapter 62-777, FAC GCTLs. However, the groundwater samples collected in 2011 were collected from temporary points. Therefore, PSI recommends initially installing a monitoring well using hollow-stem auger methods and sampling according to FDEP standard operating procedures (SOPs) to confirm the groundwater results in the vicinity of SB-4. If groundwater impact is confirmed in this area, PSI recommends additional groundwater assessment activities to evaluate the extent of the impact.

The Phase II ESA report also documented results of lead paint sampling and an asbestos survey performed at the site. Lead was detected in five of the material samples collected from Parcel 1, including one sample from the field services technician building and four samples from the wastewater building. Asbestos was identified in three of the samples collected from Parcel 1, including one sample from the wastewater building and two samples from the field services technician building.

Based on the 2011 Phase II ESA data, active groundwater remediation is unlikely to be required to achieve regulatory closure for Parcel 1.

6.2.2 PARCEL 2

The Phase I ESA report for Parcel 2 identified the following recognized environmental conditions (RECs): polychlorinated biphenyls (PCBs) were stored in a materials storage building that was not accessible during ECT's Phase I ESA site visit, and the adjoining northwest property had a petroleum discharge that had ongoing assessment and remedial activities since 1987. The report identified eight drums of used oil filters, rags, and trash outside the on-site warehouse in the southwest portion of the property as a de minimis condition. Additionally, the report identified possible mold on walls of the main office buildings and potential ACMs throughout the buildings. If the buildings are intended for future use, a mold survey is recommended to be performed by an FLMA, and if confirmed the impacted materials may require removal. If not already done so, a Lead and Asbestos operation and maintenance (O&M) Plan should be developed to maintain the LBP and ACMs documented in the Phase II ESA report. If the buildings are not intended for future use, ACMs identified by the asbestos survey may be required to be abated or demolished in place under wet conditions by a Florida-licensed abatement contractor before or during demolition. To evaluate costs associated with mold abatement, a mold survey would need to be completed first. To evaluate the costs associated with lead and asbestos O&M or abatement, additional information regarding the quantity and condition of each LBP and ACM would be necessary.

ECT performed Phase II ESA activities at the site in April 2011, including the collection of 17 soil samples and three groundwater samples for laboratory analysis. The Phase II Environmental Site Assessment (ESA) report for Parcels 1 and 2 identified the following:

- Arsenic was detected in Soil Sample SB-13, collected from approximately 4 to 5 feet below land surface (bls) along the west boundary of Parcel 2, at a concentration above its Chapter 62-777, FAC Direct Exposure-Residential (DE-I) SCTL; however, below its Chapter 62-777, FAC Direct Exposure-Commercial/Industrial (DE-II) SCTL.
- Arsenic and the Benzo(a)pyrene Toxicity Equivalent (BaP TEQ, a PAH calculation) were detected in Soil Sample SB-19, collected from approximately 0.5 foot bls along the south boundary of Parcel 2, at concentrations above DE-I SCTLs; however, below DE-II SCTLs and Leachability SCTLs (LSCTLs).
- PAH test parameters and the BaP TEQ were detected in Soil Boring SB-21, collected from approximately 0.5 foot BLS along the east boundary of Parcel 2, at concentrations above DE-I SCTLs, DE-II SCTLs, and/or LSCTLs.
- Total petroleum hydrocarbons (TPH) and PAHs including the BaP TEQ were detected in Soil Sample SB-23, collected from approximately 6 to 8 feet bls in the south-central portion of Parcel 2, at concentrations above DE-I SCTLs and/or LSCTLs; however, below DE-II SCTLs.
- No test parameters were detected at concentrations above GCTLs in the groundwater samples collected from Parcel 2.

Based on limited assessment data currently known for Parcel 2, soil impacts were identified in four of the 17 soil samples collected. PSI recommends additional soil assessment activities in these areas to evaluate the extent of the impacts. No groundwater impacts have been identified that would require further assessment or remediation at this time.

However, the results of the recommended additional soil assessment activities may indicate that supplemental groundwater assessment will be required in targeted areas.

The Phase II ESA report also documented results of lead paint sampling and asbestos survey performed at the site. Lead was detected in 15 of the material samples collected from Parcel 2, including four samples from Warehouse #2, 10 soil samples from warehouse #1, and one soil sample from the operations center. Asbestos was identified in two of the samples collected from Parcel 2, both collected from the operation center/warehouse.

Based on the 2011 Phase II ESA data, active soil remediation is unlikely to be required, or only isolated soil removal activities will be required, to achieve regulatory closure for Parcel 2.

6.2.3 PARCEL 3

Parcel 3 includes the GRU storage yard and parking area south of Depot Avenue. This area was not included in the Power District rezoning efforts due to the magnitude of utilities traversing this area. There is not much reuse potential. Only a Phase I Environmental Site Assessment (ESA) was performed. Redevelopment efforts are being focused on Parcels 1, 2, and 4.

6.2.4 PARCEL 4

The Phase I ESA report for Parcel 4 identified the following Recognized Environmental Conditions (RECs): the subject property was listed as a Leaking Underground Storage Tank (LUST) facility with a reported historical petroleum discharge that impacted site soil and groundwater, as well as previous uses of various site structures including automotive repair, historical paint shop, car wash area, and underground sediment collection sump. The Phase I ESA did not discuss mold, LBP, or potential ACMs. No documents regarding lead or asbestos sampling have been provided to PSI for Parcel 4. If the site buildings are intended for future use, an LBP and asbestos survey should be performed. If either materials are identified, an O&M Plan should be prepared and implemented for the property.

The current site conditions related to the LUST designation were assessed by ECT in March through May 2015. No petroleum-impacted soil or groundwater was identified at concentrations above Chapter 62-777, FAC SCTLs or GCTLs by ECT in 2015. In their June 2015 Low-Scored Site Initiative (LSSI) Report, ECT concluded that the site met the qualifications for an LSSI No Further Action (NFA). The report also recommended that one additional groundwater sampling event be performed in August 2015 to achieve the NFA requirements. FDEP issued a July 28, 2015, comment letter regarding the July 2015 report. In the letter, FDEP agreed with ECT's recommendation to perform another groundwater sampling event. However, FDEP needs to issue a new work order to ECT so that they can perform the sampling activities. Therefore, when the groundwater sampling event will be scheduled is not known.

In June 2015, PSI performed Phase II ESA activities at Parcel 4 to address the RECs identified in ECT's October 2014 Phase I ESA report, with the exception of the former petroleum impacts associated with the LUST that are being addressed by ECT. PSI collected three soil samples and three groundwater samples for laboratory analysis. The Phase II ESA report for Parcel 4 identified the following:

- Tetrachloroethene (PCE, a chlorinated solvent) was detected in Soil Sample SB-1@1', collected inside the main maintenance building, at a concentration above the LSCTL; however, below the DE-I SCTL and DE-II SCTL.
- PCE was detected in the groundwater sample collected from Temporary Monitoring Well TMW-1, also inside the main maintenance building east of SB-1@1', at a concentration of 5.3 μg/L, which exceeds the GCTL of 3 μg/L.

Based on limited assessment data currently known for Parcel 4, soil and groundwater impacts above Chapter 62-777, FAC cleanup target levels were identified in one soil sample and one groundwater sample collected. PSI recommends additional soil and groundwater sampling activities to evaluate the extent of the site impacts. Since the groundwater sample collected in 2015 was collected from a temporary well, PSI recommends initially installing a monitoring well using hollow stem auger methods and sampling according to FDEP SOPs to confirm the groundwater results in the vicinity of TMW-1. If groundwater impact is confirmed in this area, PSI recommends additional groundwater assessment activities to evaluate the extent of the impact.

6.3 PLANNED ENVIRONMENTAL IMPROVEMENTS

No environmental improvements are currently planned for the Power District area.

6.4 REDEVELOPMENT CONSTRAINTS AND RECOMMENDED ENVIRONMENTAL ANALYSIS OR IMPROVEMENTS

Based on the ECT Phase I and Phase II ESA findings and conclusions, Jones Edmunds recommends the following:

- Re-assess the ACM occurrence and locations related to specific areas and specific materials before finalizing plans for remodeling or demolition.
- Conduct an asbestos survey of building exteriors before finalizing plans for remodeling or demolition. It appears that exterior materials were not sampled during the ECT asbestos survey.
- Conduct Phase II ESA investigations on the soil and groundwater associated with the former uses of the Fleet Maintenance Facility (specifically the automotive repair facility, paint shop, car wash area, underground collection sump, and underground fuel storage). The Phase II ESA investigation would supplement the ongoing groundwater remediation activities and monitoring.
- Re-assess the soil in the vicinity of SB-4 (SE 4th Avenue) and SB-13 (SE 5th Terrace) for BaP Equivalent and Arsenic, respectively.
- Develop a Remedial Action Plan.

Test Sampling in the Power District

Figure 6-1 Environmental Concerns and Studies

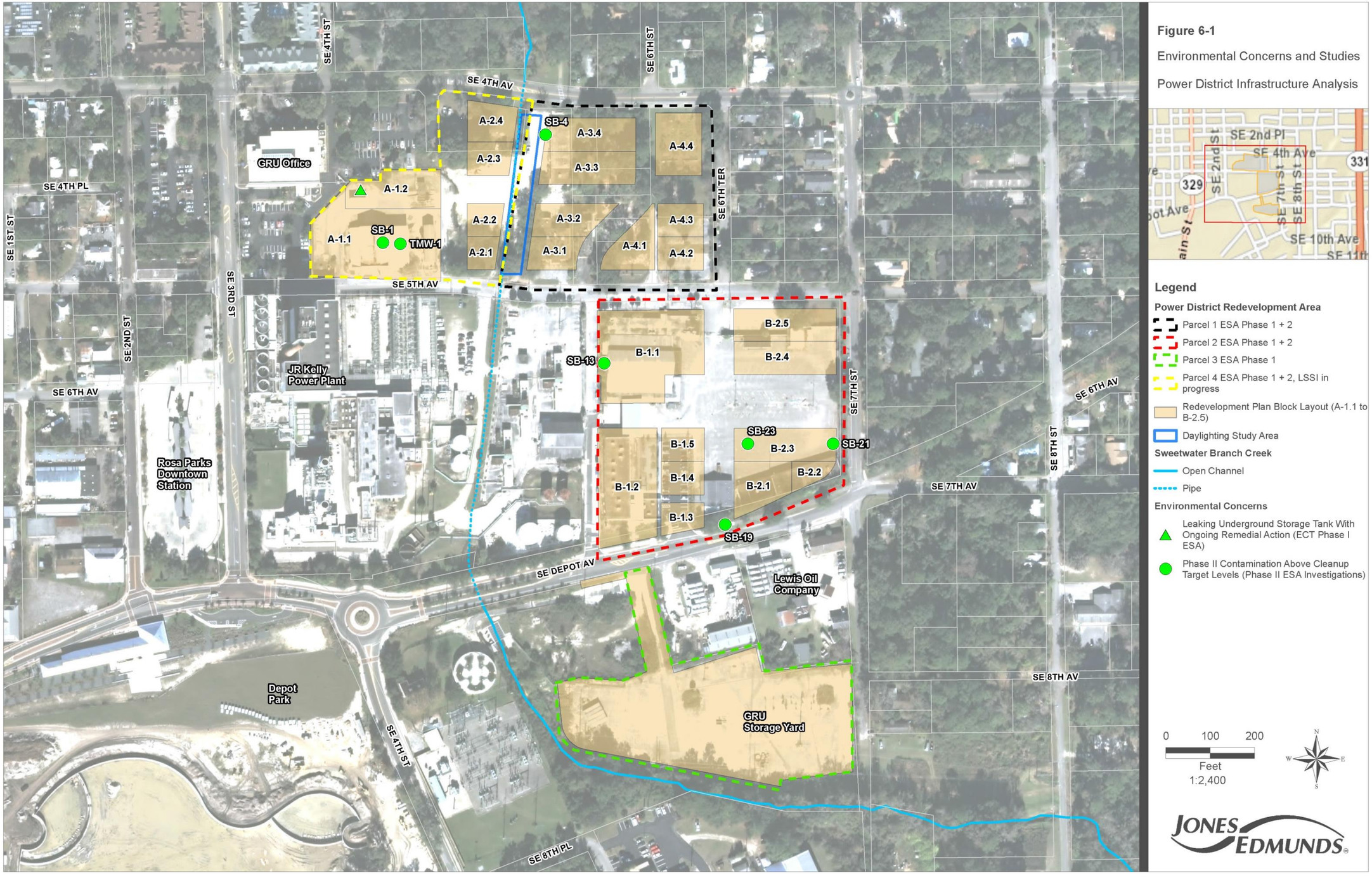

Figure 6-1

Environmental Concerns and Studies

Power District Infrastructure Analysis

Legend

Power District Redevelopment Area

- Parcel 1 ESA Phase 1 + 2
- Parcel 2 ESA Phase 1 + 2
- Parcel 3 ESA Phase 1
- Parcel 4 ESA Phase 1 + 2, LSSI in progress
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe

Environmental Concerns

- Leaking Underground Storage Tank With Ongoing Remedial Action (ECT Phase I ESA)
- Phase II Contamination Above Cleanup Target Levels (Phase II ESA Investigations)

0 100 200

Feet

1:2,400

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SECTION 7

REDEVELOPMENT PROJECTIONS

7 REDEVELOPMENT PROJECTIONS

The redevelopment and the supportive utility infrastructure of the Power District was analyzed under two scenarios. The first scenario is the Conceptual Redevelopment Plan (CRP) by the CRA and Perkins and Will, and the other is the (Maximum Build-Out (MBO) allowable based on the existing zoning. The CRP scenario is to identify any utility deficiencies under the current plan, and the MBO scenario is to identify utility deficiencies, including those off-site, if a developer wants to increase development above the Conceptual Redevelopment Plan (CRP). The Maximum Build-Out (MBO) scenario provides the highest demand scenario for performing utility improvements.

For ease of discussion, the Power District was divided into blocks – between SE 4th Avenue and SE 5th Avenue are "A" blocks and between SE 5th Avenue and Depot Avenue are "B" blocks. These areas were then further sub-divided as shown on Figure 7-1.

Four building use categories where applied to the blocks. Based on expected redevelopment and existing zoning, the use categories were assigned a percentage of the overall development (Table 11).

Table 11 Use Categories, Assigned Percentage, and Loading Rates

Use	Assigned Percentage	Water/Wastewater Loading Rate (Gallons/Day/Square Foot)
Multi-Family	20%	0.14
Office Building	40%	0.15
Commercial	20%	0.25
Laboratory	20%	0.30

To determine the square footage for each building use, a matrix was developed based on existing buildings, block square footage, and building height. In both the Redevelopment Plan and the MBO Plan, required zoning building height restrictions were adhered to. This information was provided to GRU and CoG to determine the expected infrastructure improvements for the Redevelopment Plan and the MBO Plan.

7.1 CONCEPTUAL REDEVELOPMENT PLAN

The Redevelopment Plan considered existing buildings and a maximum building height between three and six stories. According to the current zoning, properties adjacent to residential areas are limited to three stories with a 15-foot setback for each subsequent floor up to a maximum of six stories (see Figure 7-2). Table 12 shows the total building area based on Block ID.

Table 12 Conceptual Redevelopment Plan Total Building Area Based on Block ID

Block ID	Building No.	Base Building SF	Existing Building Area (SF)	3-Story Building Area (SF)	4-Story Building Area (SF)	5-Story Building Area (SF)	6-Story Building Area (SF)	Total Building Area (SF)
A-1.1	5 (Fleet Garage)	12,225	12,225					12,225
A-1.1	6 (Fleet)	1,600	1,600					1,600
A-1.2								
A-2.1	9	3,700					22,200	22,200
A-2.2	7	4,500					27,000	27,000
A-2.3	3	5,000					30,000	30,000
A-2.4	1	6,000		18,000	4,500	3,000	1,500	27,000
A-3.1	10	6,200					37,200	37,200
A-3.2	8	7,000					42,000	42,000
A-3.3	4	12,000					72,000	72,000
A-3.4	2	12,000		36,000	9,000	6,000	3,000	54,000
A-4.1	12	4,500					27,000	27,000
A-4.2	13	6,000		18,000	5,200	4,300	3,500	31,000
A-4.3	11	2,000		6,000	1,500	1,000	500	9,000
A-4.4								
B-1.1	14 (Warehouse)	36,660	36,660					36,660
B-1.2	Prioria	13,500	13,500					13,500
B-1.3								
B-1.4	22	6,000					36,000	36,000
B-1.5	19	6,000					36,000	36,000
B-2.1	23	7,000					42,000	42,000
B-2.2								
B-2.3	20	7,000					42,000	42,000
B-2.3	21	6,000		18,000	5,200	4,200	3,300	30,700
B-2.4	18	6,000		18,000	5,000	4,200	3,300	30,500
B-2.4	17	7,000					42,000	42,000
B-2.5	16	6,000		18,000	3,800	2,100	800	24,700
B-2.5	15	7,000		21,000	5,400	3,500	1,800	31,700
TOTAL		190,885	63,985	153,000	39,600	28,300	473,100	757,985

7.2 MAXIMUM BUILD-OUT PLAN

Recognizing that the future development pattern will be greatly influenced by market conditions, the MBO Plan models potential utility demands based on allowable building heights and densities per the UMU-2 zoning and a maximum building height of 12 stories for buildings in Blocks B-1.1 to B-1.5. Table 13 shows the total building area based on Block ID.

7.3 DISCUSSION

As Tables 12 and 13 show, the MBO allows approximately three times as much square footage as the CRP (2,545,815 versus 757,985 square feet). This indicates that the redevelopment of the Power District could be highly variable, with developers being able to tailor development to their needs. The tables were provided to GRU for analysis to determine the impacts to on-site and off-site utilities. The results of GRU's analysis is provided in Section 8. This information can be provided to potential developers so that they can determine their cost of development.

Table 13 **MBO Plan Total Building Area Based on Block ID**

Block ID	Zoning	Max Stories	Base Building Area (ac)	Building No.	Base Building Area (SF)	Stories 1-3 Building Area	Story 4 Build-ing Area	Story 5 Building Area	Story 6 Building Area	7-Story to 12-Story Building Area	Total Building Area
A-1.1	UMU-2	6	1.07	5 (Fleet)	46,609				279,655		279,655
A-1.2	UMU-2	6	0.39		16,988				101,930		101,930
A-2.1	UMU-2	6	0.12	8	5,227				31,363		31,363
A-2.2	UMU-2	6	0.13	7	5,663				33,977		33,977
A-2.3	UMU-2	6	0.17	3	7,405				44,431		44,431
A-2.4	UMU-2	3	0.22	1	9,583	28,750	8,115	6,764	5,530		49,158
A-3.1	UMU-2	6	0.20	10	8,712				52,272		52,272
A-3.2	UMU-2	6	0.27	8	11,761				70,567		70,567
A-3.3	UMU-2	6	0.37	4	16,117				96,703		96,703
A-3.4	UMU-2	6	0.35	2	15,246	45,738	13,394	11,658	10,038		80,828
A-4.1	UMU-2	6	0.25	12	10,890				65,340		65,340
A-4.2	UMU-2	6	0.19	13	8,276	24,829	6,912	5,665	4,536		41,941
A-4.3	UMU-2	6	0.18	11	7,841	23,522	6,513	5,302	4,210		39,547
A-4.4	PS										
B-1.1	CCD	12	1.01	14 (Warehouse)	43,996	131,987	43,771	43,546	43,321	259,924	522,547
B-1.2	CCD	12	0.79	Prioria	34,412					412,949	412,949
B-1.3	CCD	12	0.14		6,098					73,181	73,181
B-1.4	CCD	12	0.17	22	7,405					88,862	88,862
B-1.5	CCD	12	0.17	19	7,405					88,862	88,862
B-2.1	UMU-2	6	0.30	23	13,068				78,408		78,408
B-2.2	UMU-2	6	0.10		4,356	13,068	2,856	1,356			17,280
B-2.3	UMU-2	6	0.40	21	17,424	52,272	16,314	15,204	14,094		97,884
B-2.4	UMU-2	6	0.40	18	17,424	52,272	16,314	15,204	14,094		97,884
B-2.5	UMU-2	6	0.40	15	17,424	52,272	13,074	9,174	5,724		80,244
TOTAL					339,332	424,710	127,262	113,872	956,194		2,545,815

Figure 7-1 Redevelopment Plan Blocks

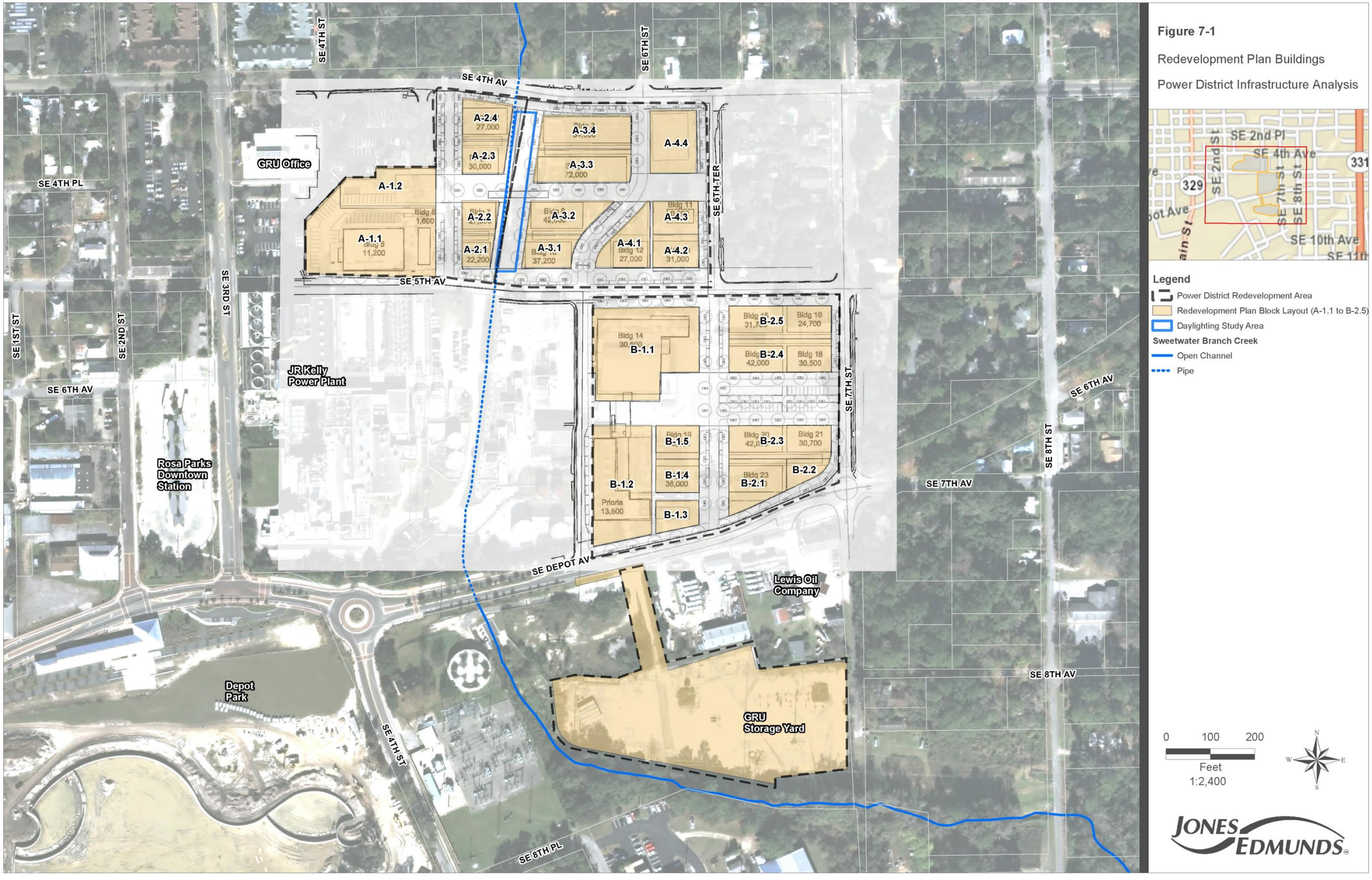
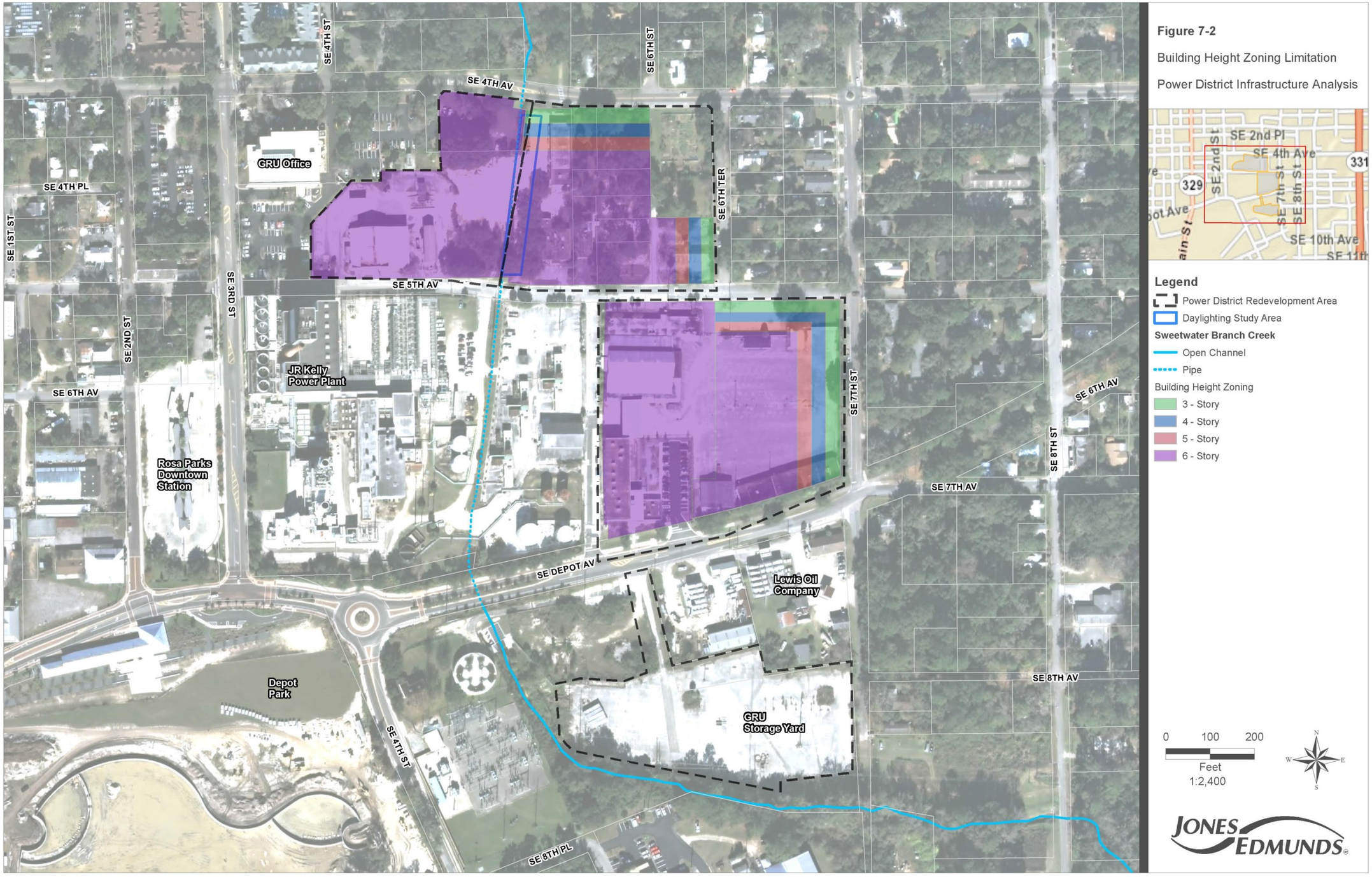


Figure 7-2 Building Height Zoning Limitation



SECTION 8

REDEVELOPMENT INFRASTRUCTURE IMPROVEMENTS

8 REDEVELOPMENT INFRASTRUCTURE IMPROVEMENTS

The matrix for the Conceptual Redevelopment Plan (CRP) and the Maximum Build-Out (MBO) Plan conditions was delivered to GRU and CoG for review and analysis. The following sections describe the suggested improvements that may be necessary due to future development demands.

8.1 POTABLE WATER AND FIRE PROTECTION

Based GRU's on review, the increased demand due to the CRP and MBO Plan do not trigger any improvements to existing water mains. However, GRU recommends that a few additional hydrants will be required. The locations of these hydrants will be determined during the redevelopment process. Figure 8-1 shows the suggested potable water projects.

As Section 3 mentions, the 12-inch DIP water main between SE 4th Avenue and SE 5th Avenue that runs through Block A-4.1 limits redevelopment potential. We recommend that the water main be relocated during redevelopment of Block A-4.1. Three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of SWBC. The preferred option is (1), which GRU has estimated to cost $100,000 to $150,000.

8.2 RECLAIMED WATER

Based on GRU's review, the increased demand due to the Redevelopment Plan does not trigger any improvements to existing reclaimed water mains. However, the nearest existing reclaimed water main is a 24-inch DIP line just east of the Depot Avenue\SE 4th Street intersection. Constructing a 12-inch DIP from this location to the center of the Power District on SE 5th Avenue at the northwest corner of Block B-1.1 (see Figure 8-2) would cost approximately $120,000 to $180,000.

8.3 WASTEWATER

Based on GRU's review, the increased demand due to the Conceptual Redevelopment Plan (CRP) does not trigger any improvements to existing wastewater mains within the Power District. However, the Maximum Build-Out (MBO) Plan will require upsizing downstream gravity sewer lines in two locations: along SE 4th Street from Depot Avenue to SE 11th Place and along SE 11th Place west to SE 3rd Street, for a total length of approximately 2,300 linear feet. The existing lines vary from 10 inches to 12 inches, and the pipe material is VCP and PVC. The new line would be 16 inches.

A second section of gravity line that needs upsizing is just upstream of the Main Street Water Reclamation Facility. An 880-linear-foot section of 18-inch pipe (VCP and PVC) would need to be upgraded to 24 inches. The total cost for upsizing these lines is approximately $1,200,000. See Figure 8-7 for GRU provided map showing these improvements.

CoG is designing improvements to SE 4th Street with construction expected to begin in later 2015/early 2016. The MBO sewer line improvements could be constructed during the roadway reconstruction. However, since the MBO is a long-term redevelopment, we do not recommend these improvements.

The analysis by GRU did not determine the "tipping point" for SE 4th Street sewer improvements, only that is will be required at MBO.

As Section 3 discusses, the 15-inch VCP gravity main that flows north-south east of SWBC between SE 4th Avenue and SE 5th Avenue may constrain building construction (see Figure 3-4) for Blocks A-3.1 through A-3.4. We recommend relocating this line during redevelopment. To this end, three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 7th Street, and (3) along a new utility corridor adjacent and east of the SWBC. Option (1) is the preferred option, which GRU has estimated to cost $342,000. GRU estimated costs for Options (2) and (3) to be $1,000,000 and $355,000, respectively.

Any relocation of the 15-inch VCP would require constructing a new gravity main and manholes parallel to an existing sewer main on one of the adjacent north-south streets (e.g., SE 6th Terrace). This would also require rerouting any connections that tie into this main to the relocated section (see Figure 8-3).

8.4 ELECTRICITY

Based on GRU's review, the increased demand due to the CRP or the MBO do not trigger any improvements to existing electrical lines. Given the proximity to the JR Kelly Power Plant, ample electrical service is provided in the area to allow for redevelopment.

However, existing electrical lines will need to be relocated to redevelop Blocks A-3.1 to A-3.4. We recommend relocating these overhead lines or routing them underground during redevelopment. To this end, three relocation options were developed: (1) along the conceptual extension of SE 6th Street between SE 4th Avenue and SE 5th Avenue, (2) along SE 6th Terrace, and (3) along a new utility corridor adjacent and east of the SWBC. Option (1) is the preferred option, which GRU estimated the cost to be $80,000 for the overhead relocation and $232,000 for the underground relocation. GRU-estimated costs for Option (2) are $65,000 for the overhead relocation and $185,000 for the underground relocation and for Option (3) are $82,000 for the overhead relocation and $232,000 for the underground relocation. Figure 8-4 shows these three options.

8.5 NATURAL GAS

Based on GRU's review, the increased demand due to the Redevelopment Plan does not trigger any improvements to existing gas mains. A ¾-inch gas service line runs through Blocks A-3.2, A-3.3, and A-3.4; however, this line does not need to be relocated until the redevelopment is designed.

8.6 TELECOMMUNICATIONS

Based on GRU's review, the increased demand due to the Redevelopment Plan does not trigger any improvements to existing GRUCom lines. However, an existing underground fiber line that runs through portions of Blocks B-1.1, B-1.2, B-1.3, B-1.4, and B-1.5 may need to be relocated during redevelopment. GRUCom estimated that relocating these lines will cost $90,000. Additionally, fiber cable along SE 5th Avenue may need to be adjusted or relocated based on the redevelopment plans.

8.7 CHILLED WATER

The large buildings that typically use chilled water for cooling will most likely develop within the inner portions of the Power District, not along the borders of the historic residential neighborhood. The areas along the east side of SE 5th Terrace, zoned CCD (Blocks B-1.1 to B-1.5), and the areas north of SE 5th Avenue, zoned UMU-2, are the most likely areas for this more dense development to occur.

The larger buildings with higher energy uses make the most financial sense to begin looking at the feasibility of installing a chilled water facility to serve the Power District Redevelopment Area. Laboratory, office, and light manufacturing uses are typically the best uses for chilled water. An anchor tenant with an adequate load could make a chilled water facility practical. Energy-dense laboratories, large office buildings, and manufacturing are typically good applications for chilled water. GRU recommends an anchor tenant with at least 100,000 square feet of building space to make a chilled water facility practical.

A chilled water facility can be located on the JR Kelly Power Plant property, with consideration to the location of the culverted section of SWBC. Plenty of space is available to use this portion of land for a future potential chilled water facility. No additional land will need to be preserved for future chilled water facility use outside the JR Kelly Power Plant area.

The feasibility of providing chilled water primary line sleeve installations needs to be examined and included in the redesign of SE 5th Avenue by CoG. The conceptual sleeve locations and the cost estimate for chilled water line sleeve installation can be determined during the conceptual design phase through coordination with GRU staff.

The benefits of chilled water cooling to building occupants are the avoidance of an initial large capital investment for cooling systems, additional building space that can be used to generate additional revenue, reduced noise and environmental hazards, and reduced operational and energy expenses.

8.8 LIGHTING

No specific lighting improvements are recommended at this time. As Section 3.6 discusses, existing lighting in the Power District is a mix of fixtures mounted to power poles and lights on decorative lamps. Upgrades to the lighting should follow CCD and/or UMU-2 streetscape dimensions and lighting elements. When lighting improvements are made and installed behind a meter (CoG owned), as the Power District develops, efforts should be made to ensure that load centers are strategically located to power as many lights as possible.

8.9 TRANSPORTATION

No specific roadway capacity improvements are recommended based on redevelopment. However, we recommend that the CRA coordinate with CoG and GRU on the roadway improvements to SE 7th Avenue and SE 4th Street. As mentioned in Section 8.3, the full build-out will require upsizing the gravity sewer line along SE 4th Street from Depot Avenue to SE 11th Place. CRA, CoG, and GRU should also coordinate of the maintenance and repair of various roads in the Power District. Figure 8-5 shows maintenance and repair plans for FY2016. These construction project are local and are not capacity improvement projects, thus they could be delayed based on redevelopment activity.

Before the development plans are submitted, CoG will require a traffic study. The study must include the proposed new roadway connections, determine the operational and safety impacts to adjacent facilities and intersections, and recommend modifications to address such impacts. If the project will be phased, the study must describe the phasing and provide the analysis based on each phase and the total build-out scenario. A traffic study methodology meeting with CoG is required before the traffic study begins.

8.10 STORMWATER

For both the Redevelopment Plan and MBO Plan, the existing stormwater facility on the west side of SWBC will need to be relocated or accounted for in the Depot Park Stormwater Pond. The stormwater could be re-routed to the west to SE 3rd Street and then flow south to Depot Park Stormwater Pond. Any re-design of the existing stormwater system would require approval from SJRWMD.

Other stormwater improvements will be guided by the results and subsequent direction from the Sweetwater Creek Daylighting Study.

8.11 SUMMARY

Based on the redevelopment analysis, the Conceptual Redevelopment Plan (CRP) does not require any utility upgrades due to capacity issues. The Maximum Build-Out (MBO) only requires off-site upgrades to sanitary sewer system. However, as mentioned water, sewer and electrical lines east of SWBC will impact redevelopment. Three options were developed for the relocation of these utilities, with the preferred option being to relocate these utilities to the SE 6th Extension between SE 4th Avenue and SE 5th Avenue. Figure 8-6 combines these utility options on a single map. This corridor is part of the original redevelopment plan layout.

Additional future work includes incorporating the Power District within the Depot Park Credit Basin, perform an Hydraulic and Hydrology (H&H) analysis on the SWBC, and perform a structural analysis of the two existing culverts between SE 4th Avenue and Deport Avenue. This work could be done in conjunction with work on any daylighting of the Sweetwater Branch Creek.

Based on the findings of this report, short-term redevelopment opportunities can occur with minimal improvement to existing utilities:

- Redevelop existing buildings based on the *Building Needs Assessment*.
- Redevelop blocks between SE 5th Avenue and Deport Avenue (Blocks B-1.1 to B-2.5). No existing primary utilities or flood plain impacts are within this area. Thus no major utility line relocations will occur, only service line connections.
- Redevelop Blocks A-1.1 and A-1.2 between SE 4th Avenue and SE 5th Avenue. No existing primary utilities or flood plain impacts are within this area. Thus no major utility line relocations will occur, only service line connections.

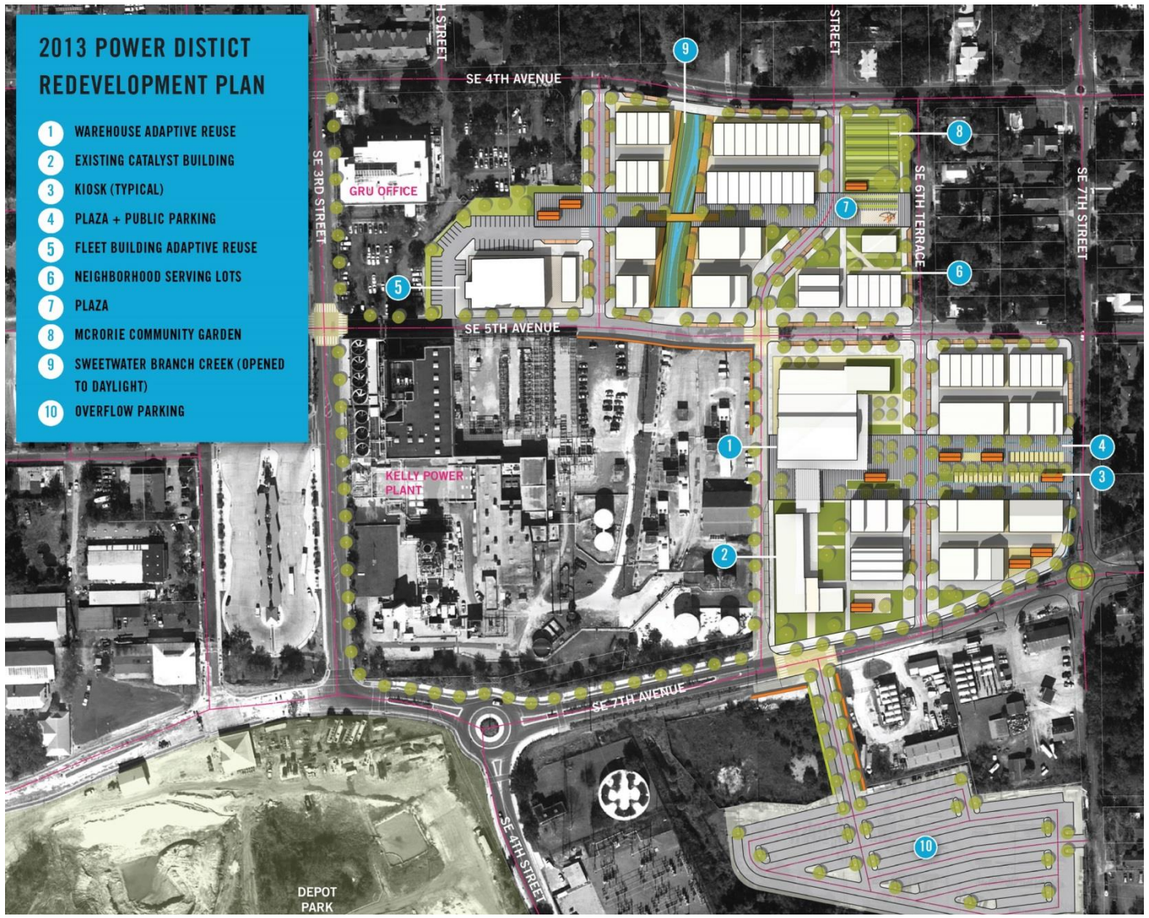


Figure 8-1 Potable Water Suggested Projects

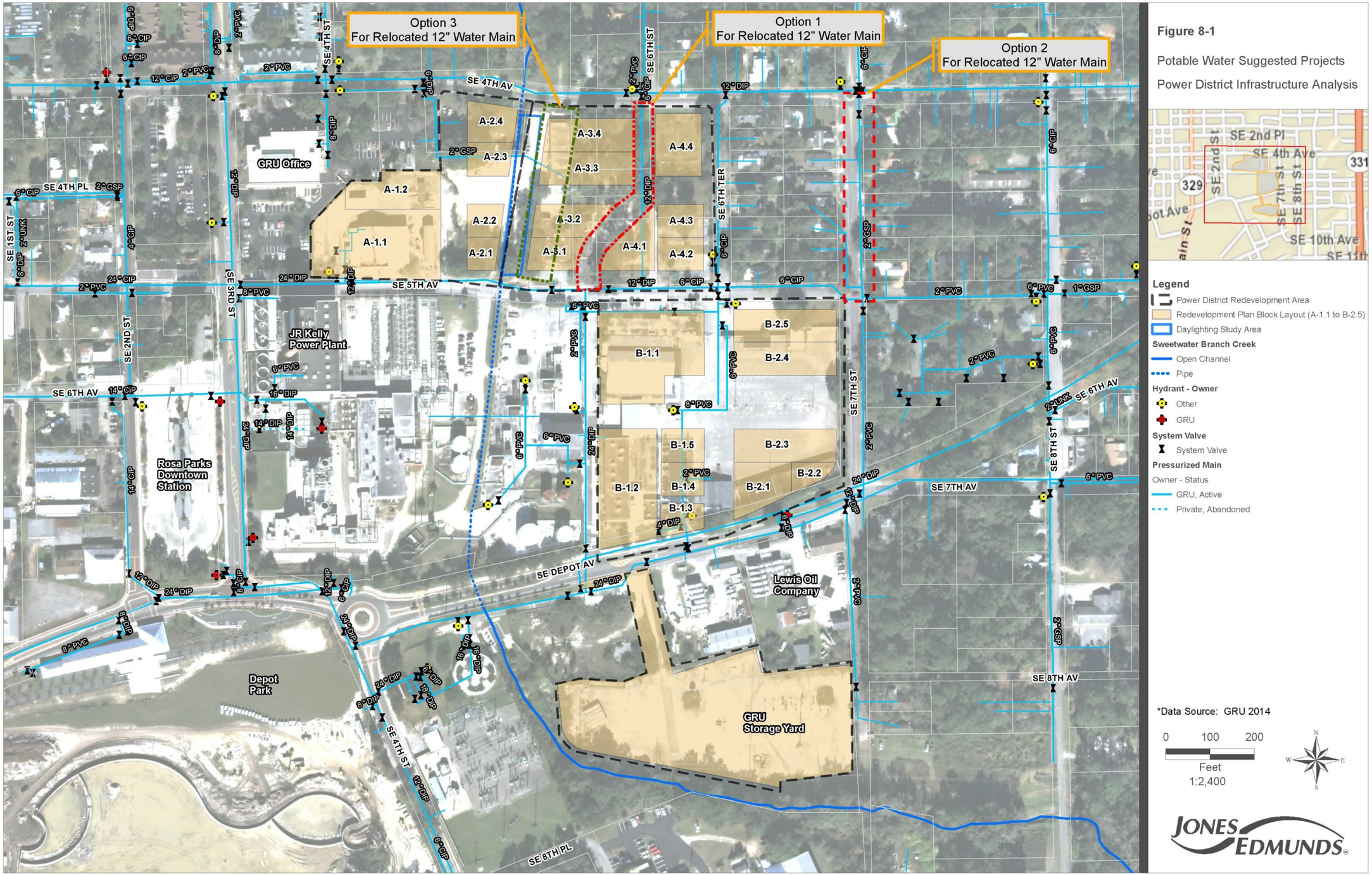


Figure 8-1

Potable Water Suggested Projects

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe

Hydrant - Owner

- Other
- GRU

System Valve

- System Valve

Pressurized Main

Owner - Status

- GRU, Active
- Private, Abandoned

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

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Figure 8-2 Reclaimed Water Suggested Projects

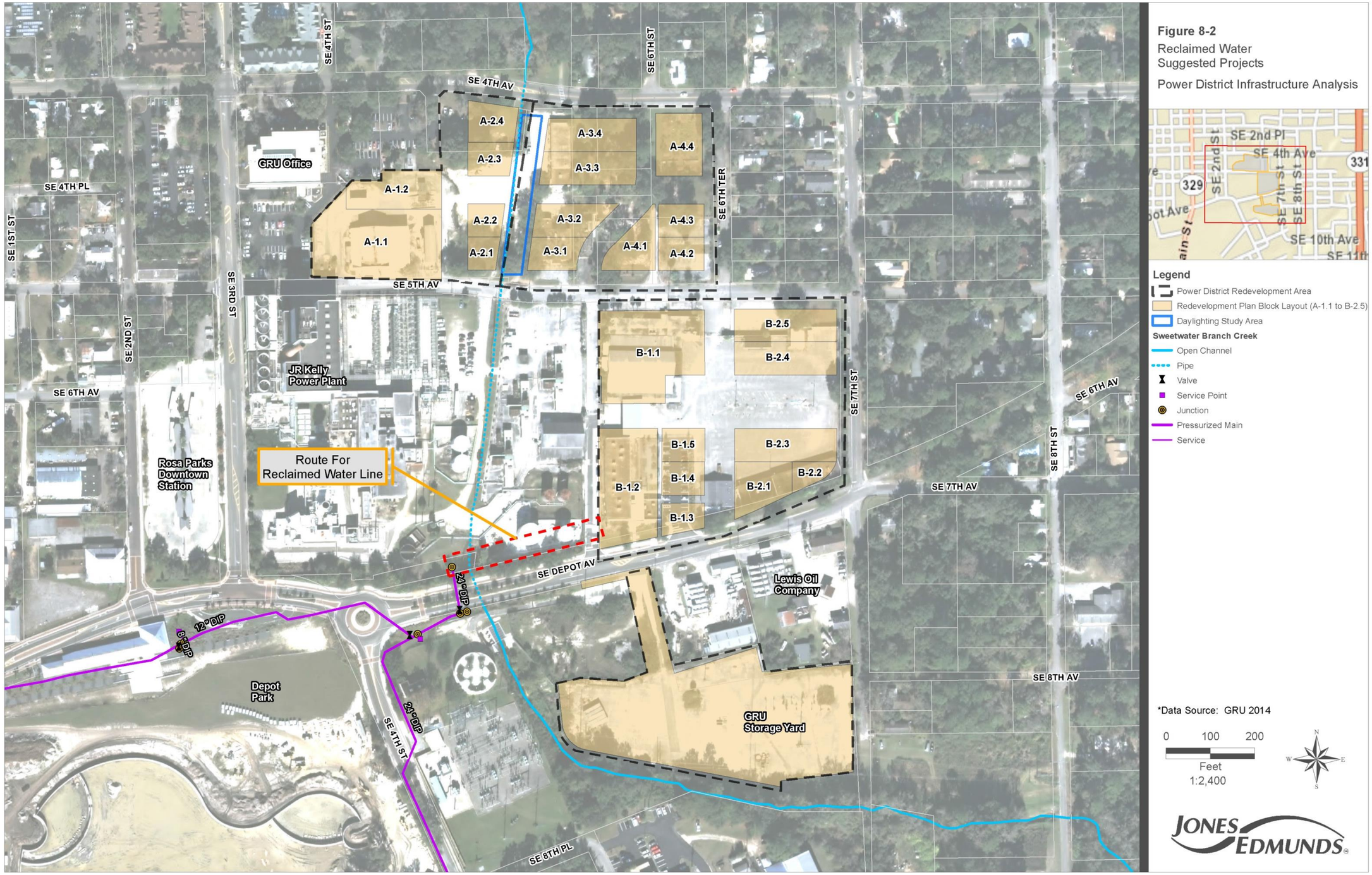


Figure 8-3 Wastewater Suggested Projects

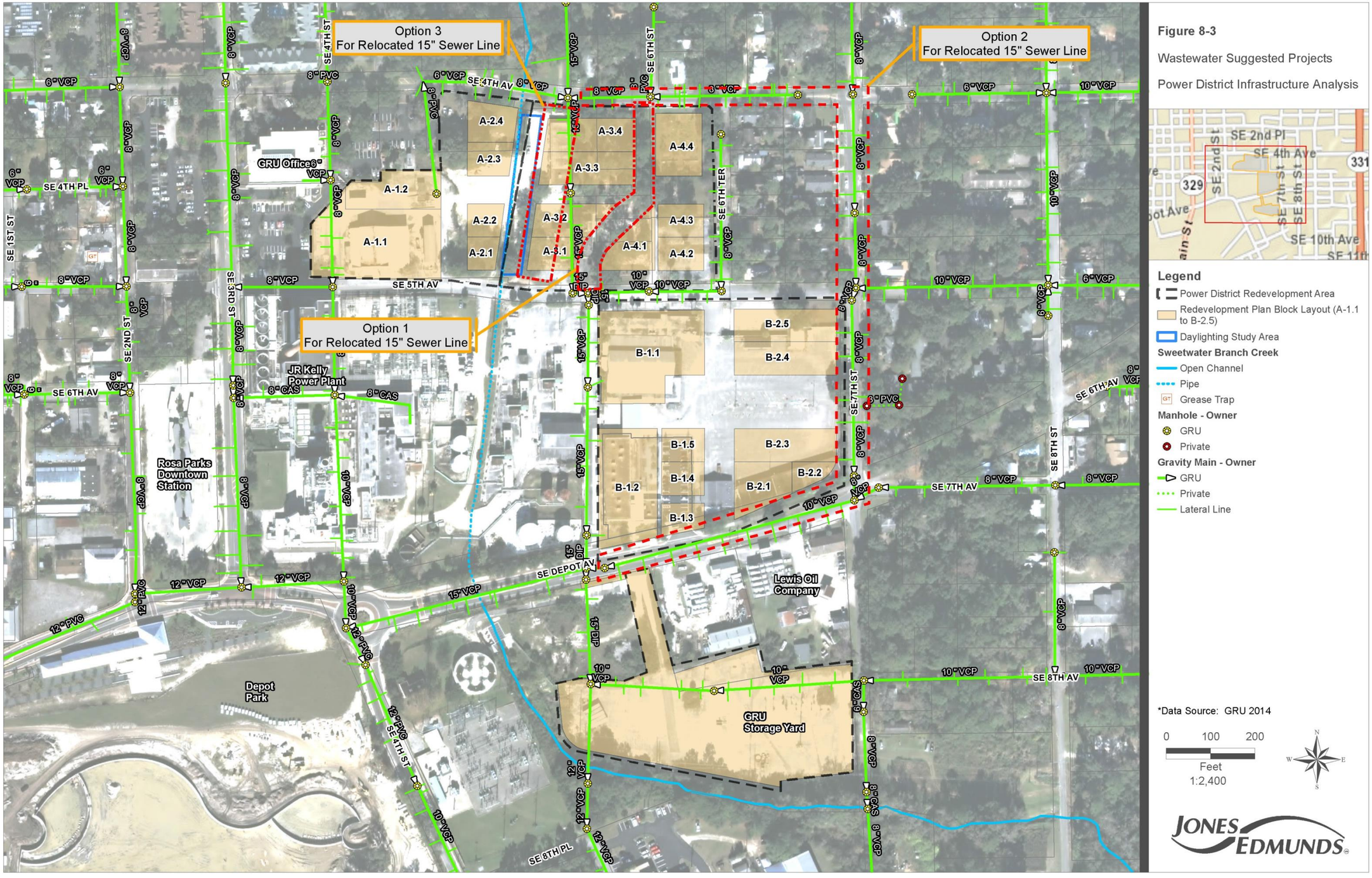


Figure 8-3

Wastewater Suggested Projects

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Grease Trap

Manhole - Owner

- GRU
- Private

Gravity Main - Owner

- GRU
- Private
- Lateral Line

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

JONES EDMUNDS

Figure 8-4 Electrical Suggested Projects

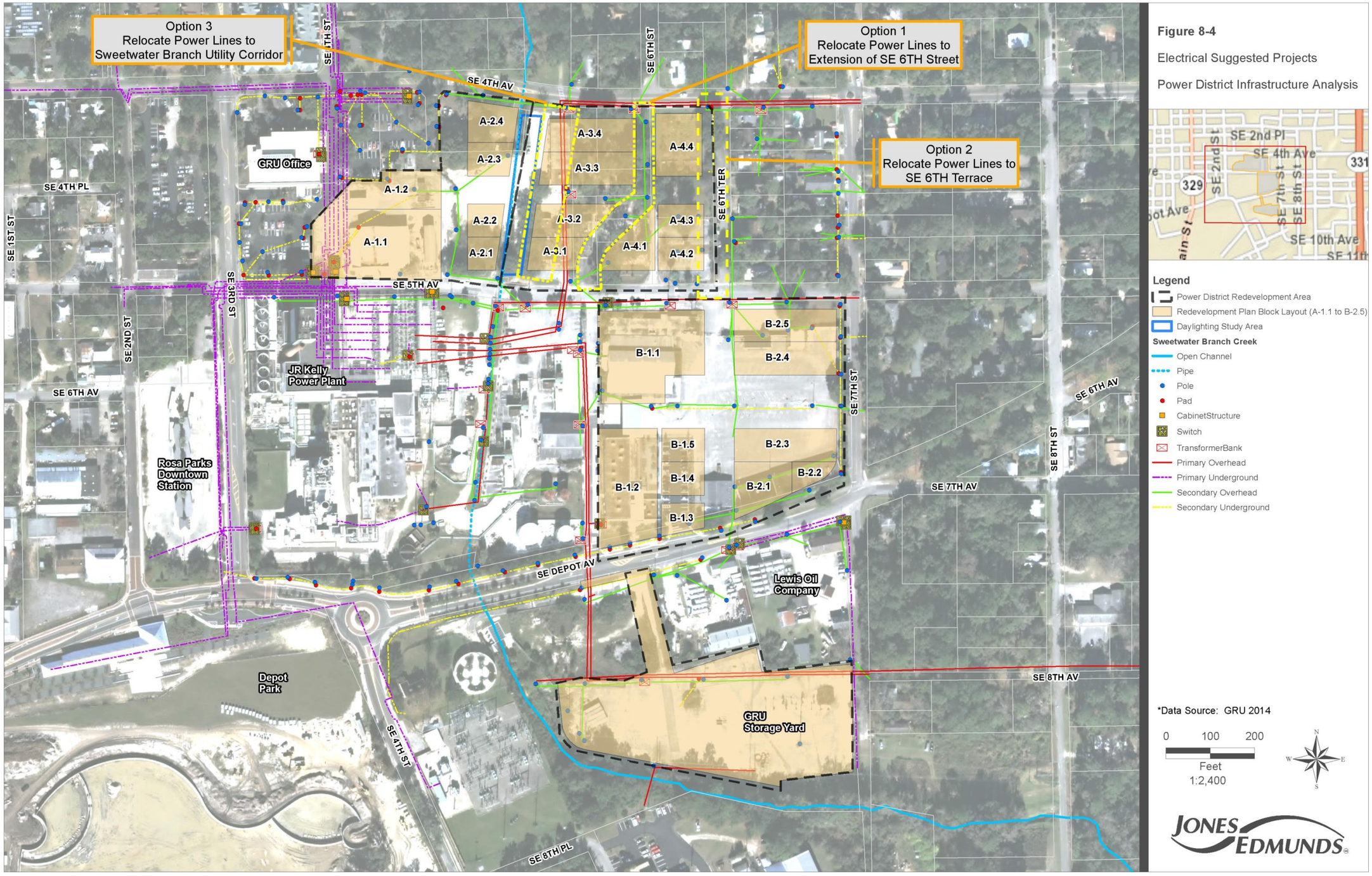


Figure 8-4

Electrical Suggested Projects

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe
- Pole
- Pad
- CabinetStructure
- Switch
- TransformerBank
- Primary Overhead
- Primary Underground
- Secondary Overhead
- Secondary Underground

*Data Source: GRU 2014

0 100 200

Feet

1:2,400

JONES EDMUNDS

Figure 8-5 Roadway Suggested Projects

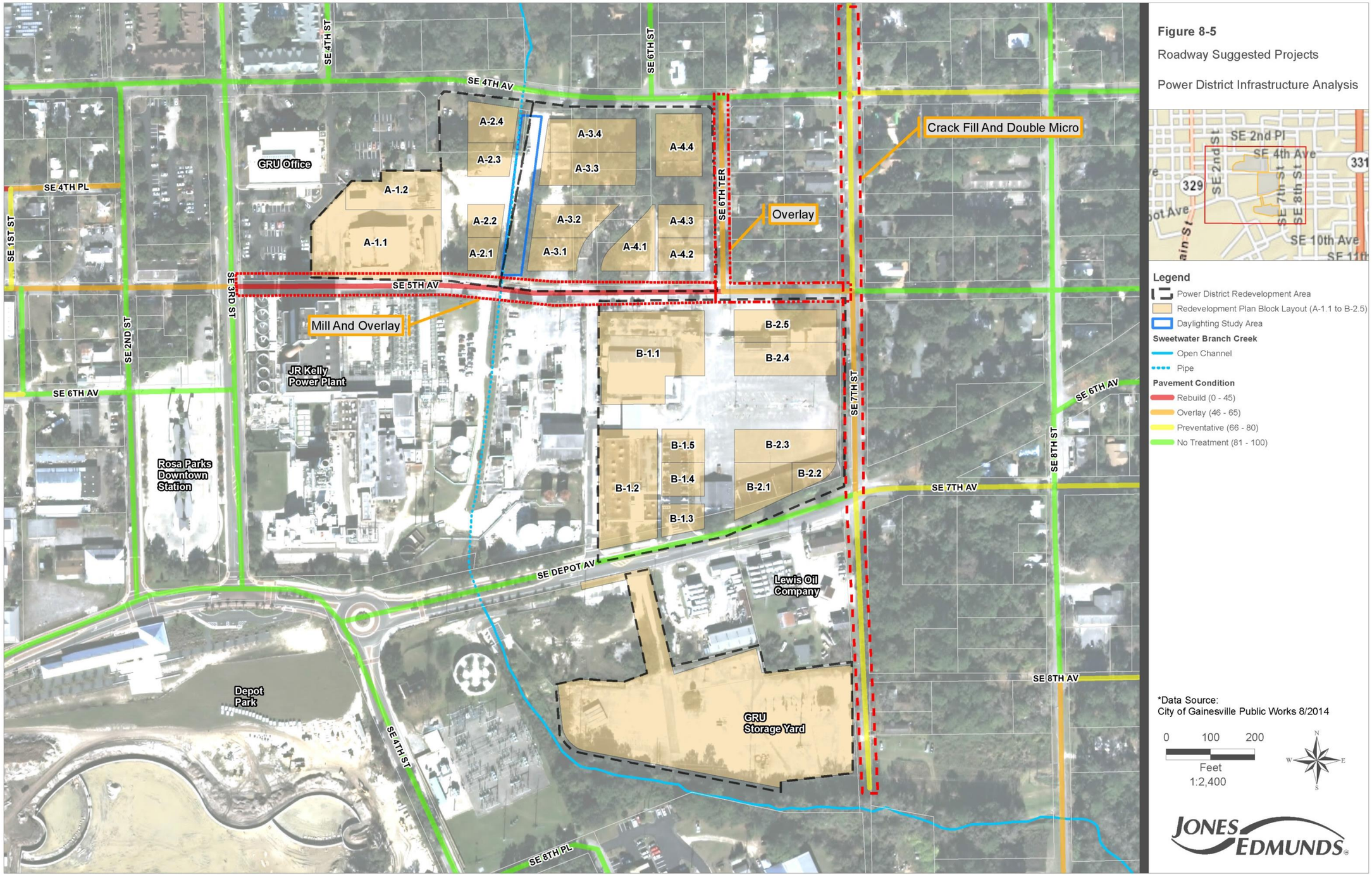


Figure 8-5

Roadway Suggested Projects

Power District Infrastructure Analysis

Legend

- Power District Redevelopment Area
- Redevelopment Plan Block Layout (A-1.1 to B-2.5)
- Daylighting Study Area

Sweetwater Branch Creek

- Open Channel
- Pipe

Pavement Condition

- Rebuild (0 - 45)
- Overlay (46 - 65)
- Preventative (66 - 80)
- No Treatment (81 - 100)

*Data Source:
City of Gainesville Public Works 8/2014

0 100 200

Feet

1:2,400

JONES EDMUNDS

Figure 8-6 Combined Suggested Projects

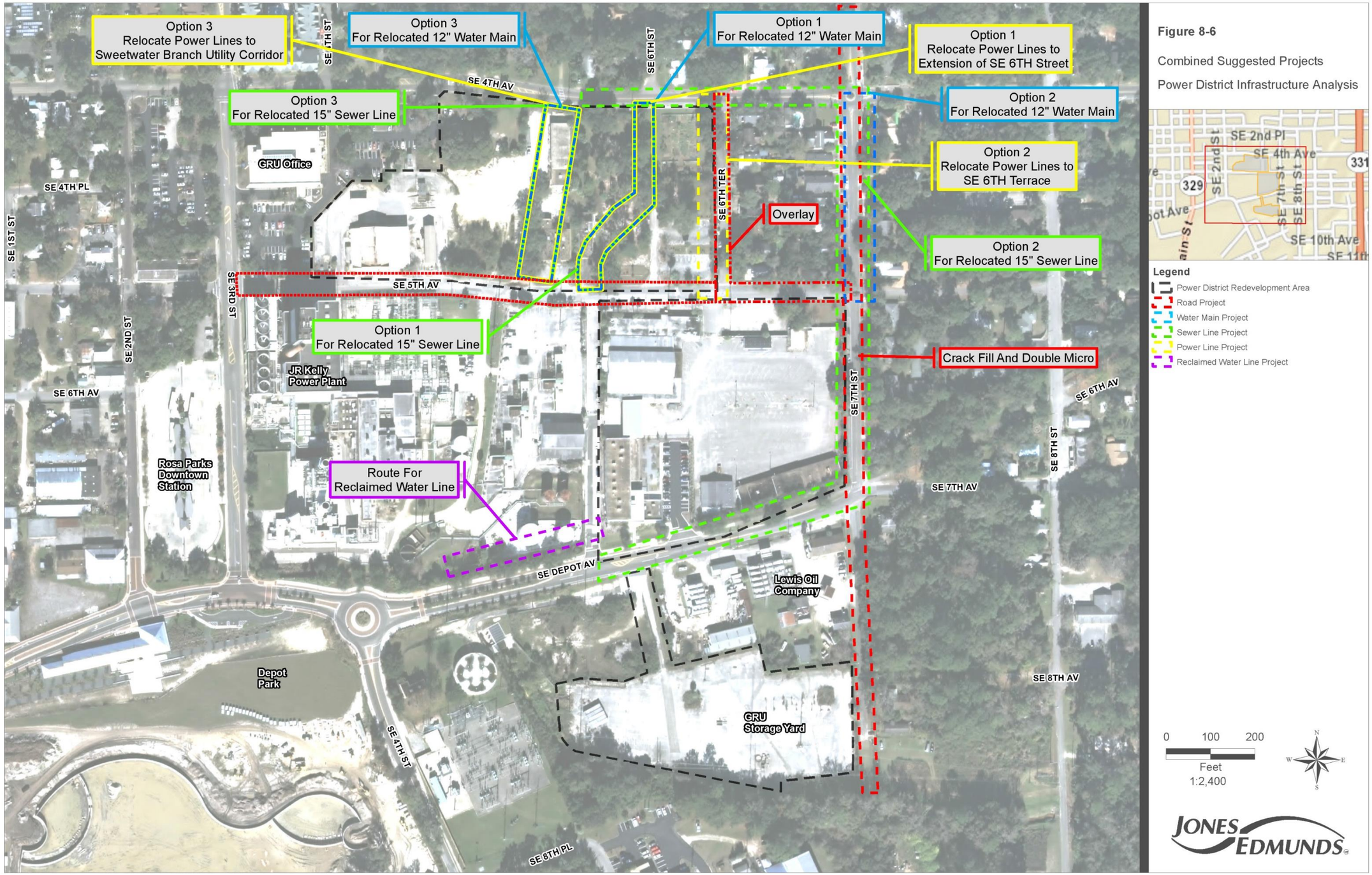


Figure 8-6

Combined Suggested Projects

Power District Infrastructure Analysis

Legend

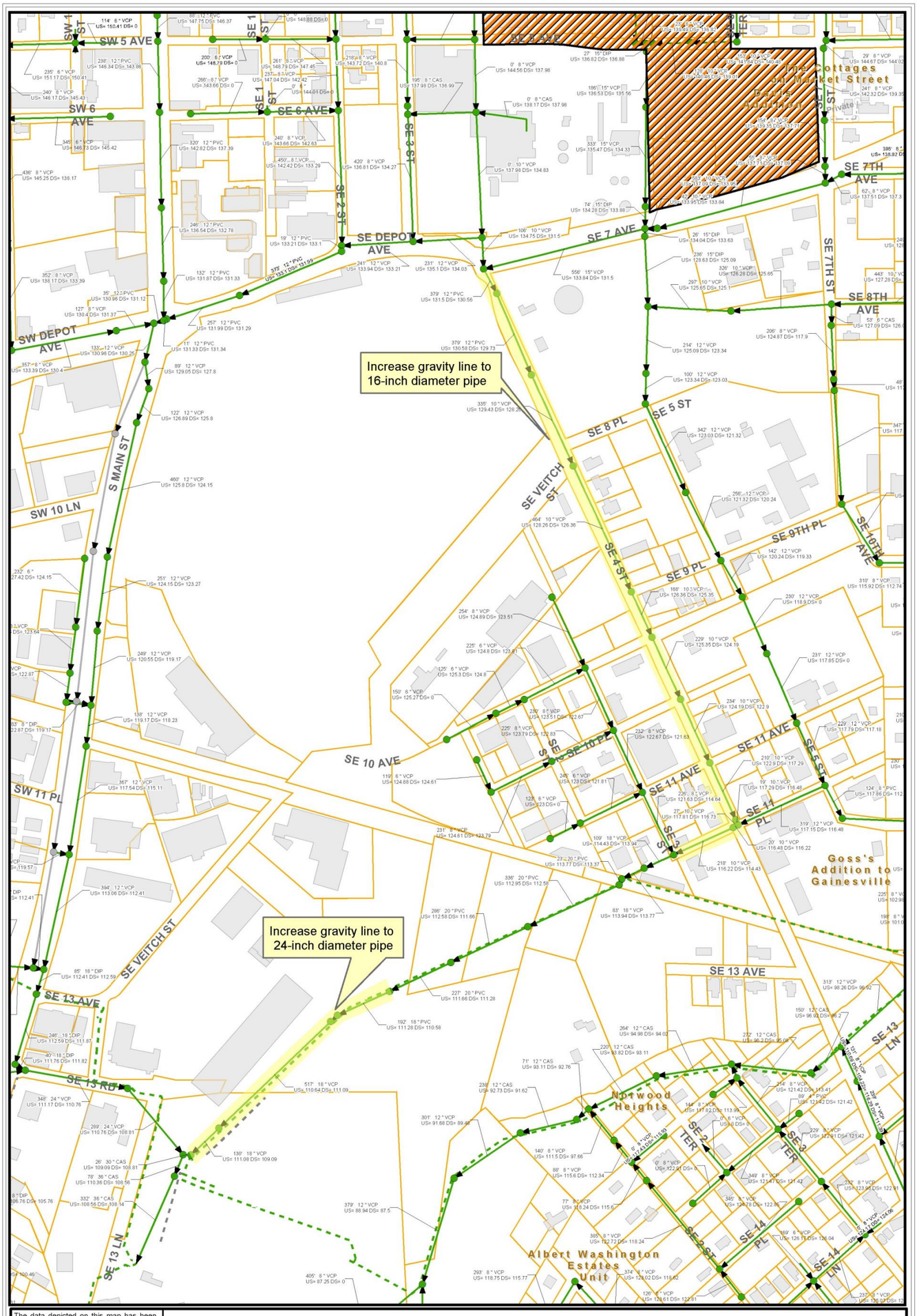
- Power District Redevelopment Area
- Road Project
- Water Main Project
- Sewer Line Project
- Power Line Project
- Reclaimed Water Line Project

0 100 200

Feet

1:2,400

JONES EDMUNDS



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater Engineering Division by calling (352) 393-1653.

Legend

Power District

Power District Improvements
(Maximum Allowable Build Out)

N

1 inch = 300 feet

GRU℠
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Figure 8-7 Maximum Build-Out Utility Upgrades

ATTACHMENT A

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