

Appendix C

Detailed Infrastructure Analysis



City of Orlando
Parramore Comprehensive Neighborhood Plan
Vision for a Healthy Community



City of Orlando Parramore Comprehensive Neighborhood Plan

EXISTING INFRASTRUCTURE

A detailed review including extensive data collection was performed in order to establish a baseline physical understanding of the existing public infrastructure in the Parramore area. This review included roadways, stormwater management systems, and public utilities (potable water distribution and sanitary sewer systems). The data collected was entered into the existing GIS system and exhibits were prepared to reflect the results of the inventory performed. Below is a detailed listing of the major infrastructure elements that were reviewed:

A. Roadways:

A detailed list of the roads included in the review was provided by the City on December 16, 2013. This list consisted of the following roads: Colonial Drive, Orange Blossom Trail, Gore Street, Robinson Street, Hughey Avenue, Division Avenue, Parramore Street, and Westmoreland Street, Terry Avenue, Anderson Street, South Street, Church Street, Central Street, Washington Street, Amelia Street, Livingston Street, Bentley Street. Extensive field and office reviews were conducted for each one of these roadways in order to collect the pertinent data including number of travel lanes, median treatment, pavement width, right-of-way width, bike lanes, sidewalks, lighting, and on-street parking. Table 1 below reflects the road list and associated data.

TABLE 1

Complete Street	Roadway Classification	# of Lanes	Divided	From Cross Street	To Cross Street	Pavement Width (ft)	ROW Width (ft)	Bike Lanes
Colonial Drive	Existing Arterial	5	NO	Orange Blossom Trail	Hughey Avenue	50	80	0
Gore Street	Existing Arterial	4	NO	Orange Blossom Trail	Division Avenue	40	70	0
Orange Blossom Trail	Existing Arterial	5	NO	Colonial Drive	Gore Street	60	80	0
Robinson Street	Existing Arterial	2	NO	Orange Blossom Trail	Hughey Avenue	30	60	0
Amelia Street	Existing Collector	4	NO	Orange Blossom Trail	Westmoreland Drive	45	60	0
Amelia Street	Existing Collector	3	NO	Westmoreland Drive	Parramore Avenue	30	60	2
Amelia Street	Existing Collector	4	YES	Parramore Avenue	Hughey Avenue	50	80	0
Anderson Street	Existing Collector	2	NO	Orange Blossom Trail	Westmoreland Drive	24	60	0
Anderson Street	Existing Collector	4	YES	Division Avenue	I-4 Off Ramp	60	100	0

**TABLE 1
(Continued)**

Complete Street	Roadway Classification	# of Lanes	Divided	From Cross Street	To Cross Street	Pavement Width (ft)	ROW Width (ft)	Bike Lanes
Anderson Street	Existing Collector	2	NO	Parramore Avenue	Division Avenue	24	40	0
Anderson Street	Existing Collector	2	NO	Slee Avenue	Parramore Avenue	24	60	0
Anderson Street	Existing Collector	2	NO	Westmoreland Drive	Slee Avenue	24	40	0
Bentley Street	Existing Collector	2	NO	Parramore Avenue	Livingston Street	45	60	2
Central Boulevard	Existing Collector	3	NO	Orange Blossom Trail	Hughey Avenue	40	60	0
Church Street	Existing Collector	3	NO	Orange Blossom Trail	Terry Avenue	30	60	0
Church Street	Existing Collector	2	NO	Terry Avenue	Hughey Avenue	24	60	0
Division Avenue	Existing Collector	4	NO	Church Street	Anderson Street	30	60	0
Division Avenue	Existing Collector	4	YES	I-4	Gore Street	50	90	0
Division Avenue	Existing Collector	3	NO	Washington Street	Church Street	30	60	0
Division Avenue	Existing Collector	4	NO	SR 408 Off Ramp	I-4	50	75	0
Division Avenue	Existing Collector	4	NO	Anderson Street	SR 408 Off Ramp	50	75	2
Hughey Avenue	Existing Collector	3	NO	Colonial Drive	South Street	36	60	0
Livingston Street	Existing Collector	2	NO	Bentley Street	Hughey Avenue	45	60	0
Parramore Avenue	Existing Collector	4	YES	Colonial Drive	Federal Street	40	100	2
Parramore Avenue	Existing Collector	2	NO	Oakwood Street	Gore Street	24	60	0
Parramore Avenue	Existing Collector	2	NO	Federal Street	Oakwood Street	20	60	2
South Street	Existing Collector	2	NO	Orange Blossom Trail	Hughey Avenue	24	60	1
South Street	Existing Collector	2	NO	Orange Blossom Trail	Hughey Avenue	75	115	0
Terry Avenue	Existing Collector	2	NO	Robinson Street	South Street	30	60	0

**TABLE 1
(Continued)**

Complete Street	Roadway Classification	# of Lanes	Divided	From Cross Street	To Cross Street	Pavement Width (ft)	ROW Width (ft)	Bike Lanes
Terry Avenue	Existing Collector	2	NO	South Street	Anderson Street	15	25	0
Washington Street	Existing Collector	2	NO	Orange Blossom Trail	Terry Avenue	20	60	2
Washington Street	Existing Collector	2	NO	Division Avenue	Hughey Avenue	24	60	0
Washington Street	Existing Collector	2	NO	Orange Blossom Trail	Terry Avenue	20	45	2
Westmoreland Drive	Existing Collector	2	NO	Colonial Drive	Central Boulevard	20	60	2
Westmoreland Drive	Existing Collector	4	YES	Church Street	Carter Street	54	80	2
Westmoreland Drive	Existing Collector	3	NO	Carter Street	Gore Street	40	60	0
Westmoreland Drive	Existing Collector	3	NO	Central Boulevard	Church Street	30	60	2
Livingston Street	Future Collector	-	-	Parramore Avenue	Livingston Street	-	-	-
Terry Avenue	Future Collector	-	-	Amelia Street	Railroad	-	-	-

Additionally, aerial based exhibits were prepared to reflect the existing roadway inventory, and photos were taken for each road and entered into GIS. These exhibits are as follows:

- Photograph location – Exhibit R-1.
- Road classification – Exhibit R-2.
- Number of travel lanes – Exhibit R-3.
- Sidewalks – Exhibit R-4.
- Street Lighting – Exhibit R-5.
- On-street parking – Exhibit R-6.

B. Stormwater Management:

In an effort to ascertain the existing drainage characteristics, Pegasus Engineering staff reviewed the following documents:

- ❑ ***Orlando Urban Storm Water Management Manual (OUSWMM) – Phase I Inventory*** (prepared by Dyer, Riddle, Mills and Precourt, Inc., dated circa 1983)
- ❑ ***Technical Publication SJ97-1 ~ Surface Water Drainage Basin Boundaries St. Johns River Water Management District: A Reference Guide*** (prepared by St. Johns River Water Management District, dated 1997)
- ❑ ***Pine Street Drainage Study – Preliminary Engineering Report*** (prepared by WBQ Design and Engineering, Inc., dated April 2001)
- ❑ ***Reimbursement Study for Proposed Parramore Heritage Stormwater Management District*** (prepared by GAI Consultants, Inc., dated June 2003)
- ❑ ***Southeast Lakes Conceptual Improvements Project – Environmental Resource Permit*** (prepared by CDM Smith, dated July 2012)

In addition, Southeastern Surveying and Mapping Corp. (SSMC) has been retained by the City of Orlando Streets and Stormwater Division to perform a detailed inventory of the existing stormwater systems. SSMC, led by Mr. Brian Garvey, P.E., provided the digital GIS files of the work completed to date within the study area limits. In lieu of using the outdated 1983 OUSWMM drainage atlas maps, the current SSMC stormwater inventory data has been utilized to prepare Exhibit D-1. Exhibit D-1 is aerial based and also incorporates topographic LiDAR data provided by the Orange County Public Works Department (dated 2006, datum NAVD 88). More specifically, LiDAR data was provided for Sections 26, 27 and 35 of Township 22 South, Range 29 East. It is noted that LiDAR is not available for Section 34 which encompasses the area south of South Street and west of Westmoreland Drive within the study area.

In regard to the drainage basin limits, which are also depicted on Exhibit D-1, current basin boundaries were provided by the City of Orlando Engineering Services Division. It is noted that these basin limits vary slightly to those contained in the 1983 OUSWMM. Based on the drainage basin boundaries depicted on Exhibit D-1, the Parramore Study Area encompasses the following seven (7) drainage sub-basins:

Table 2
Summary of Drainage Sub-Basins

Sub-Basin Name	Sub-Basin Designation	Area (acres)	Percent Breakdown
Rock Lake	ORL-12	28.0	3.42%
Lake Dot	HB-29	312.3	38.11%
Lake Concord	HB-26	38.2	4.66%
Lake Lorna Doone	SC-13	28.7	3.50%
Lake Beardall	SC-12	22.5	2.75%
Clear Lake	SC-10	347.5	42.40%
Lake Lucerne	ORL-30	42.3	5.16%
Totals		819.5	100.0%

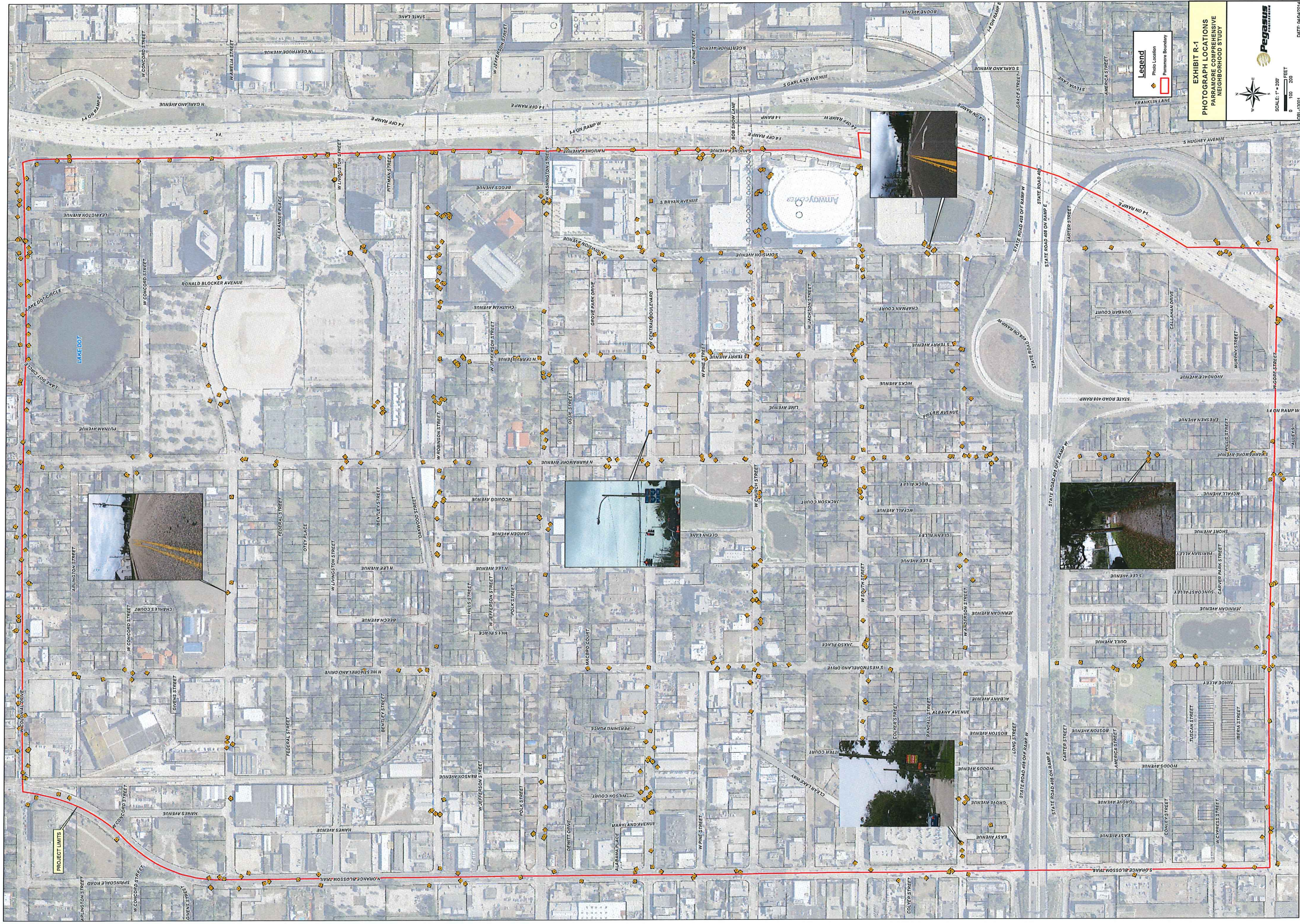
It is noted that drainage sub-basins Lake Lorna Doone, Lake Beardall, and Clear Lake are located within the Shingle Creek Regional Watershed; Lake Dot and Lake Concord are located within the Howell Branch Regional Watershed; and Rock Lake and Lake Lucerne are land-locked / closed basins.

With respect to existing problem areas, a coordination meeting was conducted with City staff on January 10, 2014 to discuss the existing stormwater related data and known deficiencies within the 819.5 acre study area. With the exception of repetitive flooding issues in the Pine Street area (located east of Orange Blossom Trail), there are no other known problem areas within the project limits that exhibit stormwater deficiencies.

C. Public Utilities:

1. Potable Water Distribution System: A detailed exhibit (Exhibit U-1) of the Orlando Utilities Commission (OUC) existing potable water distribution system in the study area has been prepared based on GIS data provided by OUC. Based on our discussions with OUC staff, they have verified that no deficiencies currently exist in their water distribution system in the study area.

2. Sanitary Sewer System: A detailed exhibit (Exhibit U-2) of the City of Orlando's existing sanitary sewer system in the study area has been prepared based on GIS data provided by the City's Wastewater Division. Based on our discussions with City of Orlando Wastewater Division staff, they have verified that no deficiencies currently exists other than routine scheduled replacement of certain older gravity sanitary sewers.



Legend

- Photo Location
- Perimeter Boundary

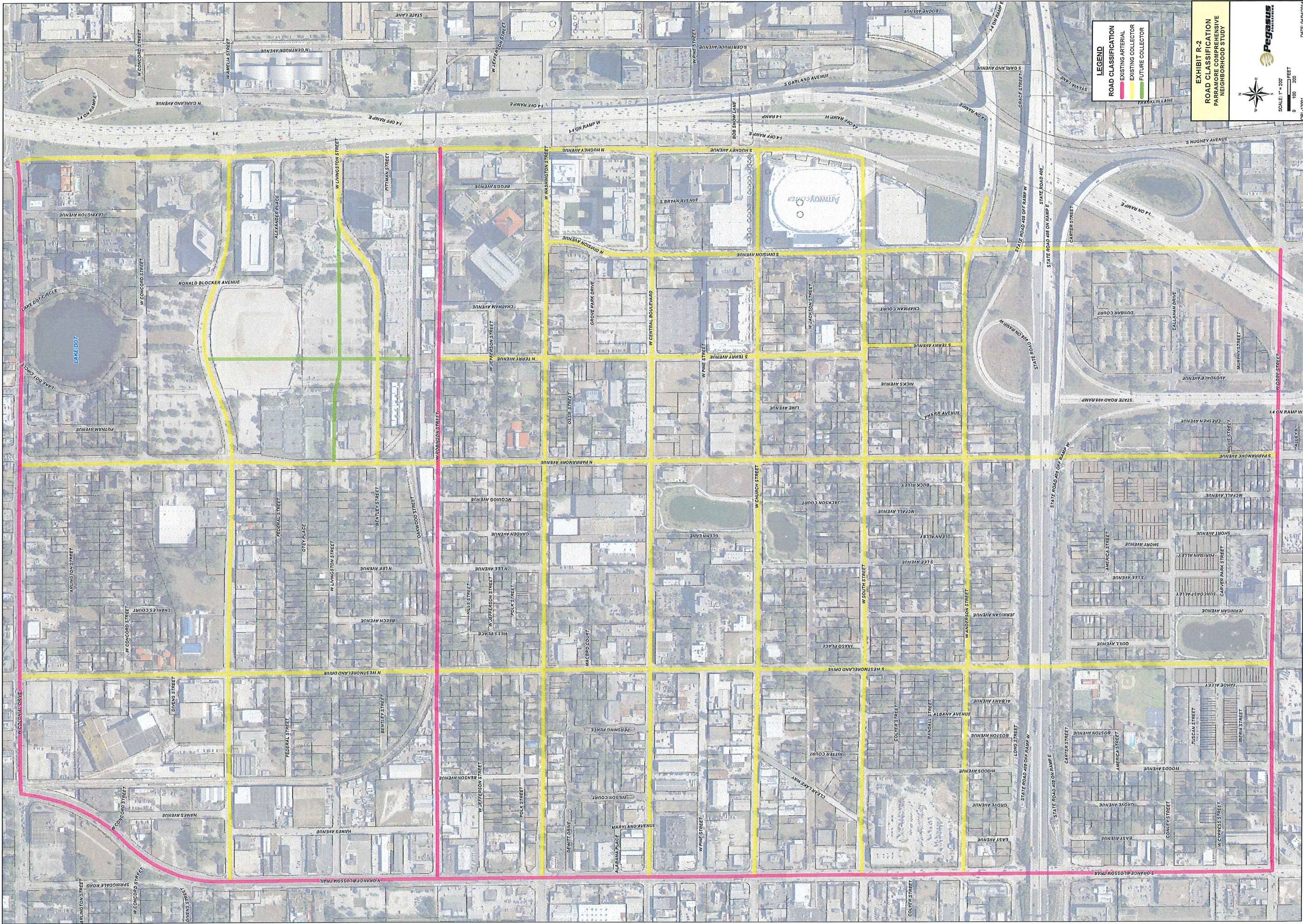
EXHIBIT R-1
PHOTOGRAPH LOCATIONS
 PARRAMORE COMPREHENSIVE
 NEIGHBORHOOD STUDY

SCALE: 1" = 200'
 0 100 200
 FEET

DATE: 04/02/2014

PROJECT LIMITS








LEGEND

ROAD CLASSIFICATION	
EXISTING ARTERIAL	Red line
EXISTING COLLECTOR	Yellow line
FUTURE COLLECTOR	Green line

EXHIBIT R-2
ROAD CLASSIFICATION
PARRAMORE COMPREHENSIVE
NEIGHBORHOOD STUDY

SCALE: 1" = 200' FEET
 0 100 200
 DATE: 04/04/2014
 DRG: 1001

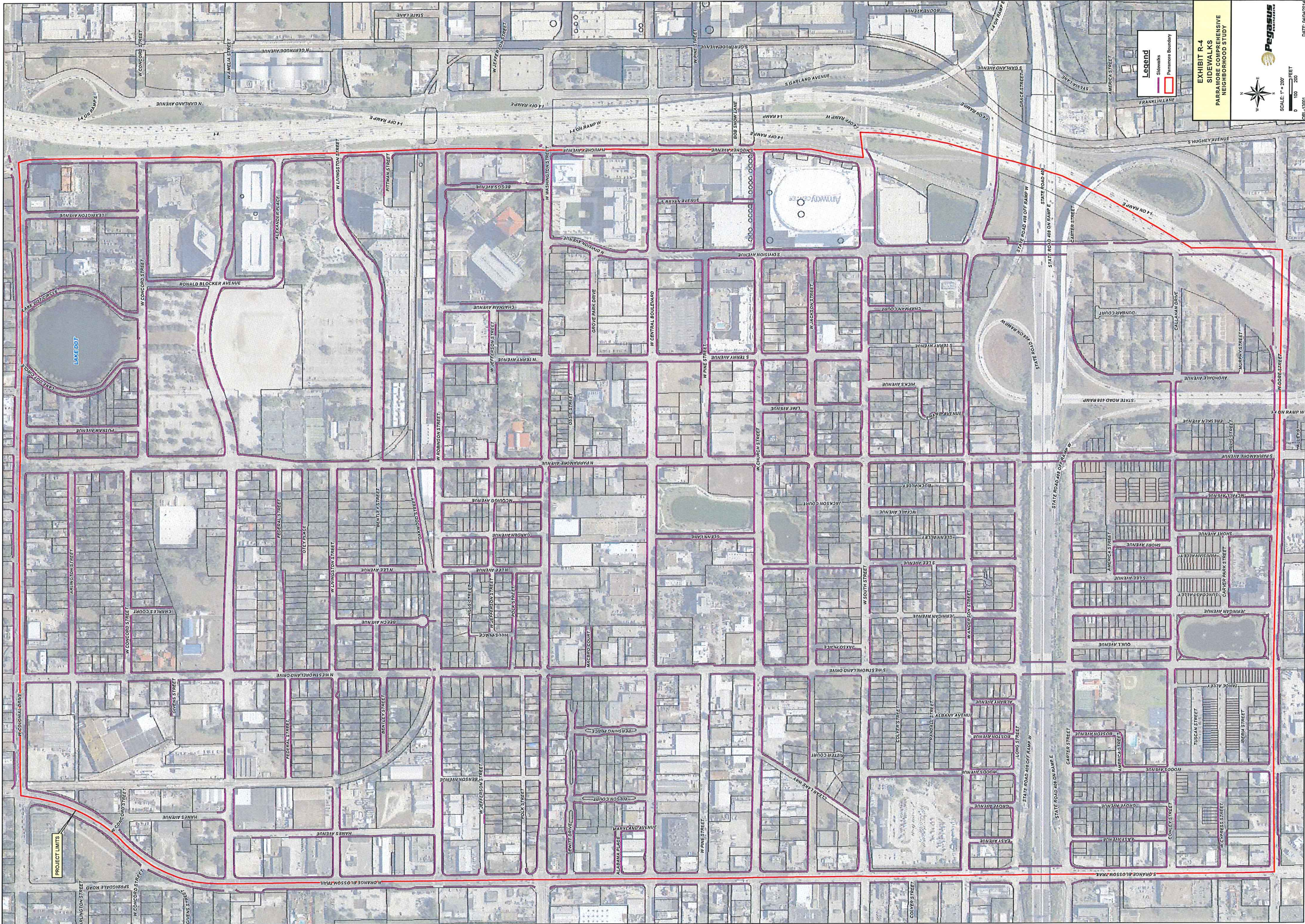


EXHIBIT R-4
SIDEWALKS
PARRAMORE COMPREHENSIVE
NEIGHBORHOOD STUDY

Legend
Sidewalks
Parish Boundary

PEPESIS
PLANNING ENGINEERING

SCALE: 1" = 200' FEET
0 100 200
0 100 200
DATE: 04/02/2014



EXHIBIT R-6
ON STREET PARKING
PARAMORE COMPREHENSIVE
NEIGHBORHOOD STUDY

Legend
 On Street Parking
 Paramore Boundary

Scale: 1" = 200'
 0 100 200 FEET
 NSR-1001

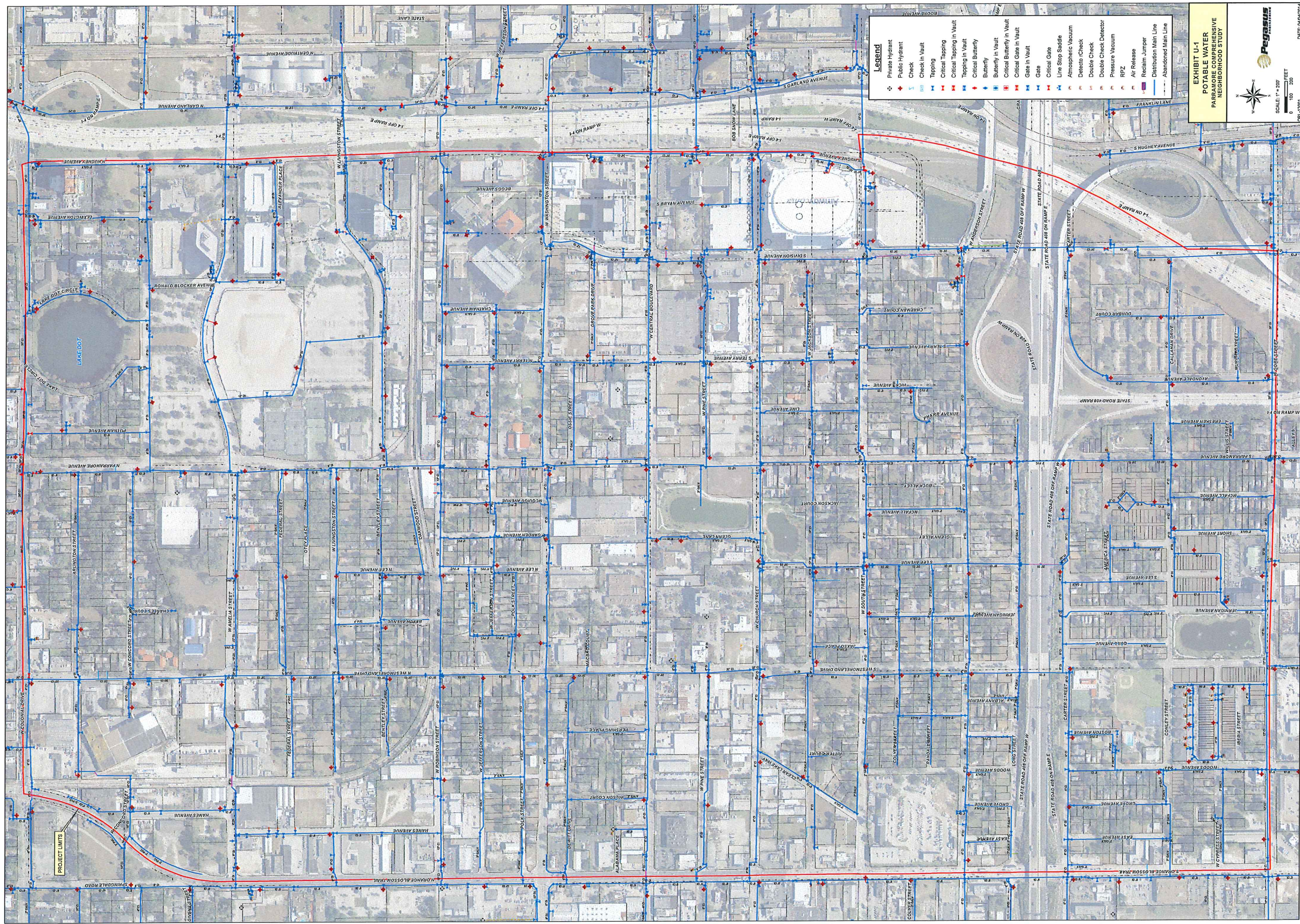
DATE: 04/02/14

PEREGO PARTNERS

PROJECT LIMITS

LAKE DOT

AmwayCenter



- Legend**
- Private Hydrant
 - Public Hydrant
 - Check
 - Check in Vault
 - Tapping
 - Critical Tapping in Vault
 - Tapping in Vault
 - Critical Buttery
 - Buttery
 - Buttery in Vault
 - Critical Buttery in Vault
 - Critical Gate in Vault
 - Gate in Vault
 - Gate
 - Critical Gate
 - Line Stop Saddle
 - Atmospheric Vacuum
 - Detecto Check
 - Double Check
 - Double Check Detector
 - Pressure Vacuum
 - RPZ
 - Air Release
 - Reclaim Jumper
 - Distribution Main Line
 - Abandoned Main Line

EXHIBIT U-1
POTABLE WATER
PARAMORE COMPREHENSIVE
NEIGHBORHOOD STUDY

SCALE: 1" = 200'
 0 100 200 FEET

DATE: 04/04/2014
 CR-15001

PROJECT LIMITS



Legend

- Wastewater Lift Station
- Wastewater Force Main
- Wastewater Gravity Lines

EXHIBIT U-2
SANITARY SEWER
PARRAMORE COMPREHENSIVE
NEIGHBORHOOD STUDY

SCALE: 1" = 200'
0 100 200 FEET

DATE: 04/04/2014



CITY OF ORLANDO

June 19, 2014

MEMORANDUM

TO: Paul Lewis, AICP, Chief Planning Manager

FROM: John K. Rhoades, Project Manager *John K. Rhoades*

RE: Parramore Comprehensive Neighborhood Plan – Existing Transportation Conditions

This memorandum documents the existing transportation related facilities that serve the properties within in the study area for the Parramore Comprehensive Neighborhood Plan. An extensive network of facilities for automobile, bus, bicycle, automobile, truck, and walking modes are in place throughout the study area. Some of these facilities have been in place for long periods of time and are in need of upgrades and maintenance, but the overall transportation system serving the area is well established and generally adequate to serve the basic multi-modal transportation needs of the community.

Roadways

The area is bounded by Colonial Drive to the north, Hughey Avenue to the east, Gore Street to the south, and Orange Blossom Trail to the west. This rectangular area contains a nearly complete orthogonal grid system of roadways. The primary grid is created by collector streets spaced roughly 1,300 ft apart in the east-west direction and 650 feet apart in the north-south direction. South Street and Anderson Street operate as a one-way, east-west couplet in the southern third of the study area. All other collectors serving Parramore are operated as two-way streets. The roadways bounding the study area are classified as arterial and provide good connections into and out of the neighborhood. The East/West Expressway (SR 408), a limited access toll road, bisects the neighborhood approximately ¼ mile from its' southern border. The study area connects to SR 408 at Orange Blossom Trail. Local streets serve as a secondary grid within Parramore and are typically spaced at 600 ft in commercial areas and 200 to 300 ft in residential areas. Figure 1 provides the capacity availability for the collector roadways serving Parramore for 2013 based on peak hour projections.

Due to the proximity of Parramore to Orlando's Central Business District and event centers such as the Amway Center, the collector grid within the area serves an important role for accommodating commuter and special event traffic. Much of this traffic that passes through the neighborhood is contained on the east-west collectors such as Washington Street, Central Boulevard, and the South Street/Anderson Street couplet. Even with the high volume of traffic that moves through the area at peak commuting hours and before and after special events, roadway capacity is not a limiting factor to citizens' mobility or to the movement of freight to and from commercial properties.

Public Transit

Central Florida Regional Transit Authority, known as LYNX, operates the traditional bus system and two circulator routes through the Parramore study area. The LYNX Central Station is located less than ¼ mile to the east of Parramore between Amelia and Livingston Streets and is the terminus and transfer point for the majority of bus routes operated by LYNX. Eleven local LYNX routes operate on the collector grid through Parramore with typical headways of 30 mins on weekdays and 60 mins on weekends. Two additional local routes operate on the arterial roadways that border Parramore. The neighborhood is also served by the recently opened Grapefruit Line of LYNX's downtown circulator system known as

ECONOMIC DEVELOPMENT DEPARTMENT • TRANSPORTATION PLANNING DIVISION

CITY OF ORLANDO • 400 SOUTH ORANGE AVENUE • PO BOX 4990 • ORLANDO, FLORIDA 32802-4990

PHONE 407-246-2522 • FAX 407-246-3392 • <http://www.cityoforlando.net>

LYMMO. This system is operated without fares and operates during the day with 15 min headways. A third LYMMO line is currently in the final stages of design and is expected to begin operating in the northeastern portion of the neighborhood in early 2016. Figure 2 shows the LYNX bus routes currently operated in the Parramore study area.

The eastern boundary of Parramore is also within ¼ mile of two Sunrail commuter rail stations located between Garland Avenue and Orange Avenue. This rail system provides weekday service between south Orlando and Seminole and Volusia Counties to the north. Both major area hospitals and many employment centers can be easily reached from this 31 mile long rail corridor.

Bicycle Facilities

Over 3 miles of bike lanes and a ½ mile of signed, on-street bike routes currently exist in the Parramore Neighborhood study area. There are no off-street bike facilities in the neighborhood at this time. Per City Code, all commercial and public buildings within the area are required to provide bike parking racks when substantial improvements or redevelopment occurs. Many buildings within the area have such racks available.

Pedestrian Facilities

Sidewalks are the only existing pedestrian facilities within the Parramore neighborhood (Figure 3). The majority of streets have sidewalks on both sides of the street. 46 blocks of varying lengths have sidewalk on only one side of the street. Approximately 2 miles of local roadways do not have sidewalk on either side of the street. The condition of the sidewalks and location of specific sites needing maintenance or replacement is documented in the attached report provided by Hoke Design, Inc.

2012-2013 Capacity Availability Report - Selected Roadway Data

Roadway Segment	S or W End	N or E End	Demand (vph)	Capacity (vph)	Avail. Capacity
Amelia St	Orange Blossom Tl	Westmoreland Dr	880	1,548	0.43
Amelia St	Westmoreland Dr	Parramore Av	722	1,548	0.53
Amelia St	Parramore Av	Hughey Av	596	1,548	0.62
Anderson St	Orange Blossom Tl	Westmoreland Dr	106	1,858	0.94
Anderson St	Westmoreland Dr	Parramore Av	173	1,858	0.91
Anderson St	Parramore Av	Division Av	385	1,858	0.79
Anderson St	Division Av	Interstate 4	1,033	1,161	0.11
Central Bv	Orange Blossom Tl	Westmoreland Dr	391	774	0.49
Central Bv	Westmoreland Dr	Parramore Av	503	774	0.35
Central Bv	Parramore Av	Division Av	421	774	0.46
Central Bv	Division Av	Hughey Av	528	774	0.32
Church St	Orange Blossom Tl	Westmoreland Dr	231	1,548	0.85
Church St	Westmoreland Dr	Parramore Av	322	1,548	0.79
Church St	Parramore Av	Division Av	281	1,548	0.82
Church St	Division Av	Hughey Av	483	1,548	0.69
Colonial Dr	Orange Blossom Tl	Westmoreland Dr	2,370	1,870	-0.27
Colonial Dr	Westmoreland Dr	Parramore Av	2,137	1,870	-0.14
Colonial Dr	Parramore Av	Edgewater Dr	2,219	1,870	-0.19
Colonial Dr	Edgewater Dr	Hughey Av	2,216	1,870	-0.19
Division Av	Gore St	Anderson St	1,174	1,548	0.24
Division Av	Anderson St	South St	455	1,548	0.71
Division Av	South St	Church St	398	1,548	0.74
Division Av	Church St	Central Bv	159	1,548	0.9
Division Av	Central Bv	Washington St	95	1,548	0.94
Gore St	Orange Blossom Tl	Westmoreland Dr	915	1,720	0.47
Gore St	Westmoreland Dr	Parramore Av	817	1,720	0.53
Gore St	Parramore Av	Division Av	1,058	1,720	0.38
Hughey Av	South St	Church St	563	1,548	0.64
Hughey Av	Church St	Central Bv	1,352	2,787	0.51
Hughey Av	Central Bv	Washington St	916	2,787	0.67
Hughey Av	Washington St	Robinson St	1,285	2,787	0.54
Hughey Av	Robinson St	Livingston St	1,137	2,787	0.59
Hughey Av	Livingston St	Amelia St	1,228	2,787	0.56
Hughey Av	Amelia St	Colonial Dr	1,363	2,787	0.51
Livingston St	Parramore Av	Hughey Av	246	1,548	0.84
Orange Blossom Tl	Gore St	East-West Ex.	1,228	1,870	0.34
Orange Blossom Tl	East-West Ex.	Anderson St	1,258	1,870	0.33
Orange Blossom Tl	Anderson St	South St	1,224	1,870	0.35
Orange Blossom Tl	South St	Church St	1,337	1,870	0.28
Orange Blossom Tl	Church St	Central Bv	1,039	1,870	0.44
Orange Blossom Tl	Central Bv	Washington St	1,217	1,870	0.35
Orange Blossom Tl	Washington St	Robinson St	1,914	1,870	-0.02
Orange Blossom Tl	Robinson St	Amelia St	1,534	1,870	0.18
Orange Blossom Tl	Amelia St	Colonial Dr	1,378	1,870	0.26
Parramore Av	Gore St	East-West Ex.	246	774	0.68
Parramore Av	East-West Ex.	Anderson St	252	774	0.67
Parramore Av	Anderson St	South St	151	774	0.8
Parramore Av	South St	Church St	97	774	0.87
Parramore Av	Church St	Central Bv	57	774	0.93
Parramore Av	Central Bv	Washington St	191	774	0.75
Parramore Av	Washington St	Robinson St	123	774	0.84
Parramore Av	Robinson St	Livingston St	136	774	0.82
Parramore Av	Livingston St	Amelia St	296	774	0.62
Parramore Av	Amelia St	Colonial Dr	228	1,548	0.85
Robinson St	Orange Blossom Tl	Westmoreland Dr	471	860	0.45
Robinson St	Westmoreland Dr	Parramore Av	448	860	0.48
Robinson St	Parramore Av	Terry Av	461	860	0.46
Robinson St	Terry Av	Hughey Av	514	860	0.4
South St	Hughey Av	Division Av	139	774	0.82
South St	Division Av	Parramore Av	709	2,787	0.75
South St	Parramore Av	Westmoreland Dr	386	2,787	0.86
South St	Westmoreland Dr	Orange Blossom Tl	250	2,787	0.91
Terry Av	Anderson St	South St	162	774	0.79
Terry Av	South St	Church St	72	774	0.91
Terry Av	Church St	Central Bv	50	774	0.93
Terry Av	Central Bv	Washington St	66	774	0.91
Washington St	Orange Blossom Tl	Westmoreland Dr	304	774	0.61
Washington St	Westmoreland Dr	Parramore Av	279	774	0.64
Washington St	Parramore Av	Division Av	322	774	0.58
Washington St	Division St	Hughey Av	366	774	0.53
Westmoreland Dr	Gore St	East-West Ex.	642	774	0.17
Westmoreland Dr	East-West Ex.	Anderson St	639	1,548	0.59
Westmoreland Dr	Anderson St	South St	631	1,548	0.59
Westmoreland Dr	South St	Church St	592	1,548	0.62
Westmoreland Dr	Church St	Central Bv	666	774	0.14
Westmoreland Dr	Central Bv	Washington St	520	774	0.33
Westmoreland Dr	Washington St	Robinson St	697	774	0.1
Westmoreland Dr	Robinson St	Amelia St	633	774	0.18
Westmoreland Dr	Amelia St	Colonial Dr	901	774	-0.16

Figure 2

