



Charlotte County Utilities

Potable Water Service Program: Area 1 Preliminary Engineering Report

Prepared for:
The Charlotte County Board of Commissioners
18500 Murdock Circle
Port Charlotte, FL 33952

Prepared by:
Charlotte County Utilities
25550 Harborview Road
Port Charlotte, FL 33980

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Florida.

Terri Kesner, Interim Utilities Director
Charlotte County Utilities

Bruce R. Bullert P.E.
Date 3/19/10 License # 68658

March, 2010

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1 - INTRODUCTION

In June of 2009, Charlotte County Utilities (CCU) made a presentation to the Charlotte County Board of County Commissioners (BCC) providing an overview of a proposed centralized wastewater expansion initiative. The BCC recommended that, to further evaluate the feasibility of some form of a centralized wastewater solution, a Preliminary Engineering Report (PER) be completed to analyze various collection and treatment alternatives that address existing Onsite Treatment and Disposal Systems (OSTDS), primarily serving residential properties within the service area identified as Area 1.

According to Charlotte County's Comprehensive Plan's Goals, Objectives, and Policies (GOPs), it is required to extend water and wastewater services concurrently. To address this requirement, this report evaluates the feasibility of extending water service simultaneously with the wastewater program to those properties in Area 1 which do not have potable water service at this time.

2 - PROJECT DRIVERS

2.1 Water Service Expansion

One of Charlotte County's Comprehensive Plan's (COMP) goals is to extend water and wastewater service simultaneously. A proposal is under consideration to provide wastewater service to the entire Area as a result of a BCC directive which, if approved, would lead to the consideration of completing centralized water service to the remaining properties presently not served in Area 1. Approximately 4,000 properties in this area would also need an extension of potable water mains in order to be fully compliant with the COMP plan.

2.2 Cost Effectiveness

The most cost effective means to provide water service to Area 1 is to construct water mains at the same time as the wastewater service is constructed. While from a financial and legal standpoint, there will be separate water and wastewater Municipal Service Benefit Units, the simultaneous construction of water and wastewater mains minimizes costly duplication of restoration items through an economy of scale factor and even reduces overall installation costs for implementing the water service extensions. For example, CCU estimates show that through simultaneous extension of both water and wastewater services it would cost approximately \$2,650 per water service Equivalent Residential Unit (ERU). Implementing the water MSBU on its own would cost approximately \$4,000 per ERU. The savings realized is more than \$1,300 per water service ERU.

As a means of comparison, standard well construction is more expensive and does not eliminate the saltwater intrusion problem frequently encountered in these shallower land sites in the County.

3 - PROJECT PLANNING AREA

3.1 Location and Existing Infrastructure

The project planning area for water service is shown on Exhibit 1: Area 1 Water Service Program map which shows the areas where water service is currently available and where water service is required. The planning area coincides with the wastewater planning Area 1 and is generally the homes and businesses in the center of Charlotte

County south of 776, west of US 41, east of the Myakka River and most notably directly north of the Peace River and Charlotte Harbor Estuary. Some additional homes adjoining and/or between these areas are also in the project planning area.

Exhibit 2: Area 1 Potable Water Infrastructure and Exhibit 3: Central County Water Infrastructure provide an overview of the existing water facilities currently available within Area 1 and in Charlotte County as a whole. The current infrastructure shows the existing mains that provide service to Area 1 along with the location of booster stations in the vicinity that increase pressure and improve water quality for further distribution to the system. Exhibit 3 also provides the location of the Interconnects with Peace River Manasota Regional Water Supply Authority (PRMRWSA).

Exhibit 4: Domestic Wells and Exhibit 5: All Well Types show the location of domestic wells currently serving potable water where existing central water service is not available. Exhibit 5 shows the location of all wells in Area 1 including irrigation wells as well as potable wells.

3.2 Design Criteria

The water main system will be designed to meet water distribution pressure and quality according to the Ten State Standards, Florida Department of Environmental Protection (FDEP), and County fire code regulations. The infrastructure component of the project must be designed and constructed to account for all properties in Area 1 upon full build-out. The capacity component affecting the transmission system is directly related to the number of existing homes, the growth rate for the unoccupied lots, and the construction phasing schedule in accordance with the information provided in the corresponding Wastewater Service Preliminary Engineering Report.

3.3 Capacity

PRMRWSA provides water to Area 1 properties including those where water service would potentially be provided. There is adequate capacity to provide water service to all 4,000 properties that require central water service from the PRMRWSA.

Area 1 is mainly residential with some commercial businesses. There is no large scale or small scale industry within Area 1 that would impact water demand or flows above and beyond standard single family residential requirements. Area 1 is considered residential only for planning purposes.

4 - PROJECT COSTS

4.1 Project Costs and Financial Overview

The total project cost for extending water simultaneously with wastewater service is approximately \$2,650 per customer. It is estimated that approximately 4,000 properties require water service. Therefore, the total project cost is approximately \$10,600,000. See Table 4.1 for further detail. Along with connection fees, the cost to provide water service is \$5,672 per ERU or \$284 per year for twenty (20) years.

A potable water service MSBU will be created in order to provide the framework to construct the necessary central water service infrastructure for the approximate 4,000 properties.

Table 4.1 ERU Cost Summary For Water Service Program		
Item	Total \$	Per ERU Cost (4000 ERUs) ¹
Gross Estimated Project (Construction) Cost:	\$ 10,600,000	\$ 2,650
Connection Fees ²		\$ 3,022
Total Estimated MSBU Assessments:		\$ 5,672
Assessment (20 year collection window)		\$ 284
Monthly Per/ERU cost		\$ 24
Notes:		
1 - Estimated 4,000 ERUs will be Assessed for this Project		
2 - Based upon rates published October 1, 2009. AGRF is based upon Sep. 2011 amount which is the last available.		

5 - CONCLUSIONS AND RECOMMENDATIONS

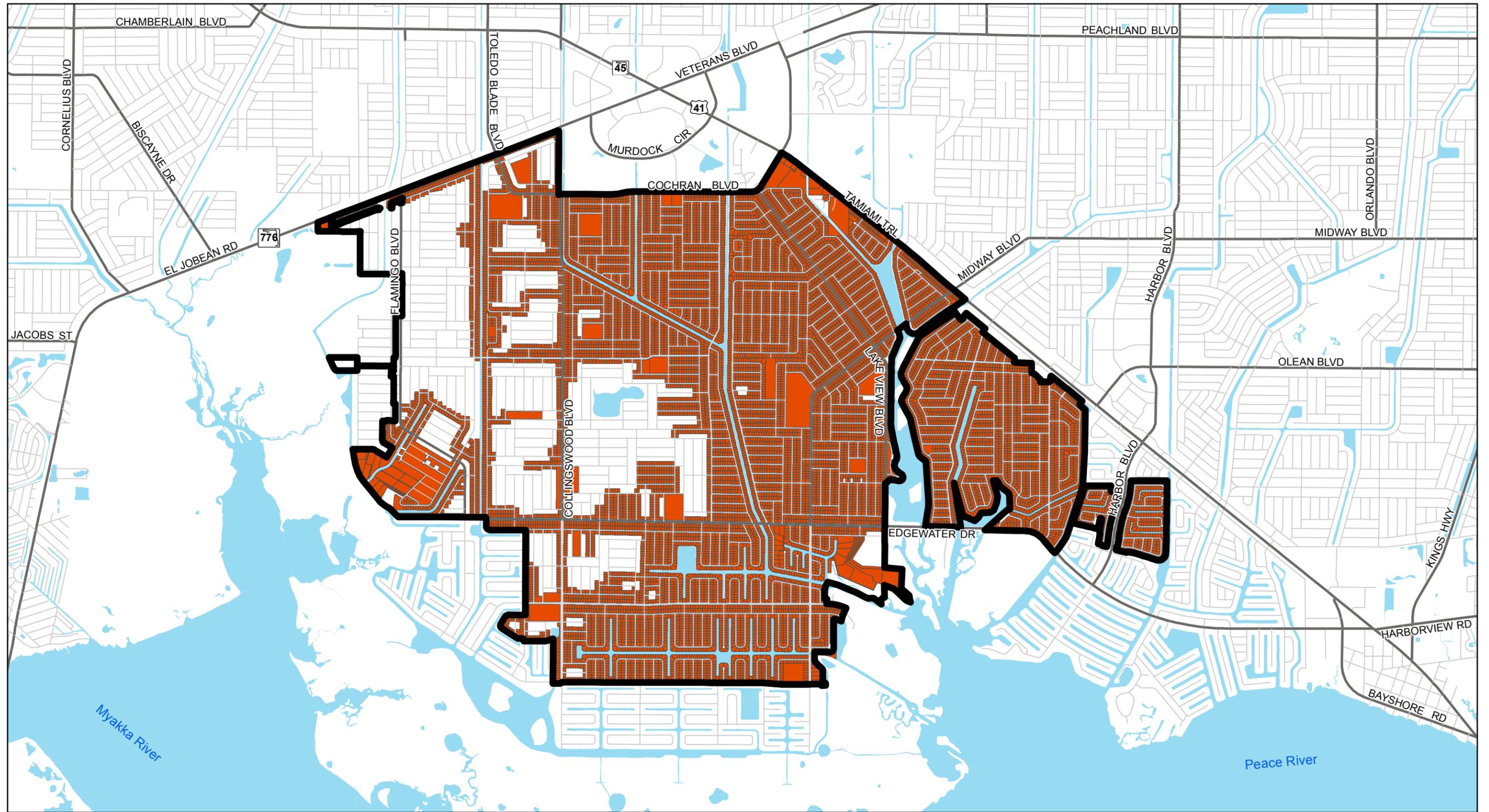
There will be significant cost savings realized by installing new water mains at the same time as wastewater infrastructure is constructed. Most notably, road and boulevard restoration items will be restored only once and the arterial pipe installation costs will also be reduced. Further, these are less than a normal well installation and reduce salt water intrusion to the area associated with the construction process; roads will be excavated and existing infrastructure disturbed only one time.

As shown in Exhibit 1, Water Service Program, there are opportunities in Area 1 to simultaneously expand all services.

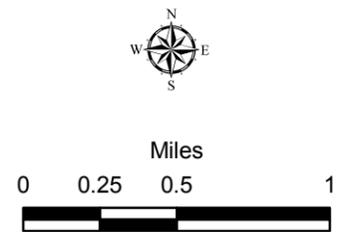
The project is feasible, cost effective and will benefit the properties served.

APPENDIX

Exhibit 1: Area 1 Water Service Program



Printing Date: Wednesday, March 17, 2010
 Title: WATER SERVICE AREA 1-FINAL
 Prepared By: Cain, David
 Coordinate System: NAD 1983 StatePlane Florida West FIPS 0902 Feet
 Operating System: Microsoft Windows XP Professional
 ArcMap Build Number: 9.3.1770
 COPYRIGHT © 2010 Charlotte County Utilities
 Disclaimer: This map is a representation of compiled information. It is believed to be an accurate and true depiction for the stated purpose. Charlotte County and its employees make no guarantees, implied or otherwise to the accuracy or completeness. We therefore do not accept any responsibility as to its use. This is not a survey nor is it to be used for design. No part of this map may be reproduced or transmitted by any means without the expressed written permission of Charlotte County Utilities.



- Legend**
-  AREA 1
 -  EXISTING WATER AREAS

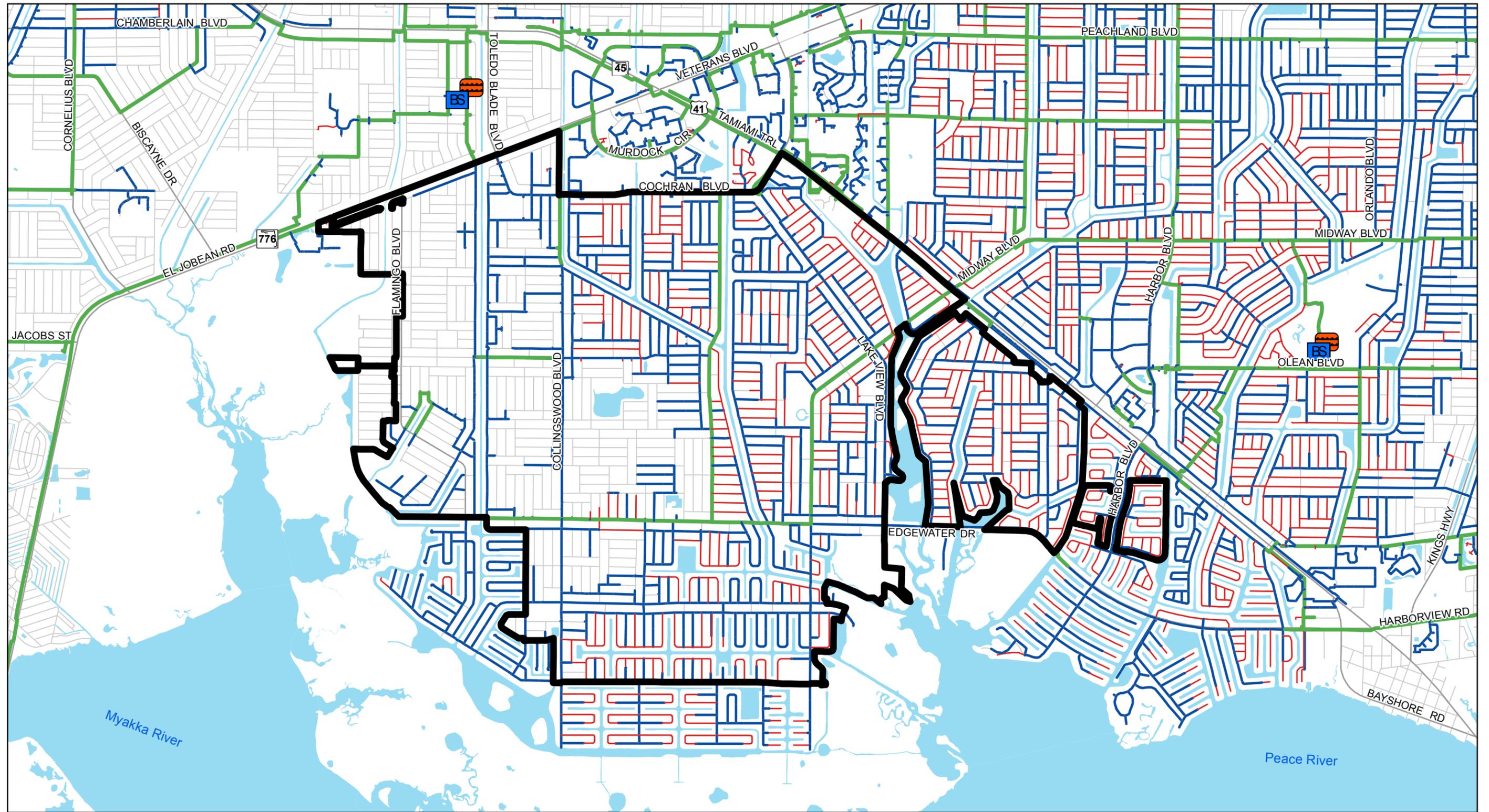


Exhibit 1 AREA 1

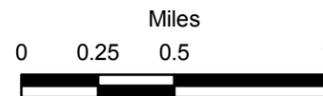
Water Service program

(Properties with existing County Central Water Service are to be excluded from assessments)

Exhibit 2: Area 1 Potable Water Infrastructure



Printing Date: Wednesday, March 17, 2010
 Title: POTABLE WATER INFRASTRUCTURE AREA 1-FINAL
 Prepared By: Cain, David
 Coordinate System:
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 Operating System: Microsoft Windows XP Professional
 ArchMap Build Number: 9.3.1770
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Legend

- AREA 1
- 12" Above
- 6" to 10"
- Less than 6"
- Booster Station
- Enclosed Storage Facility

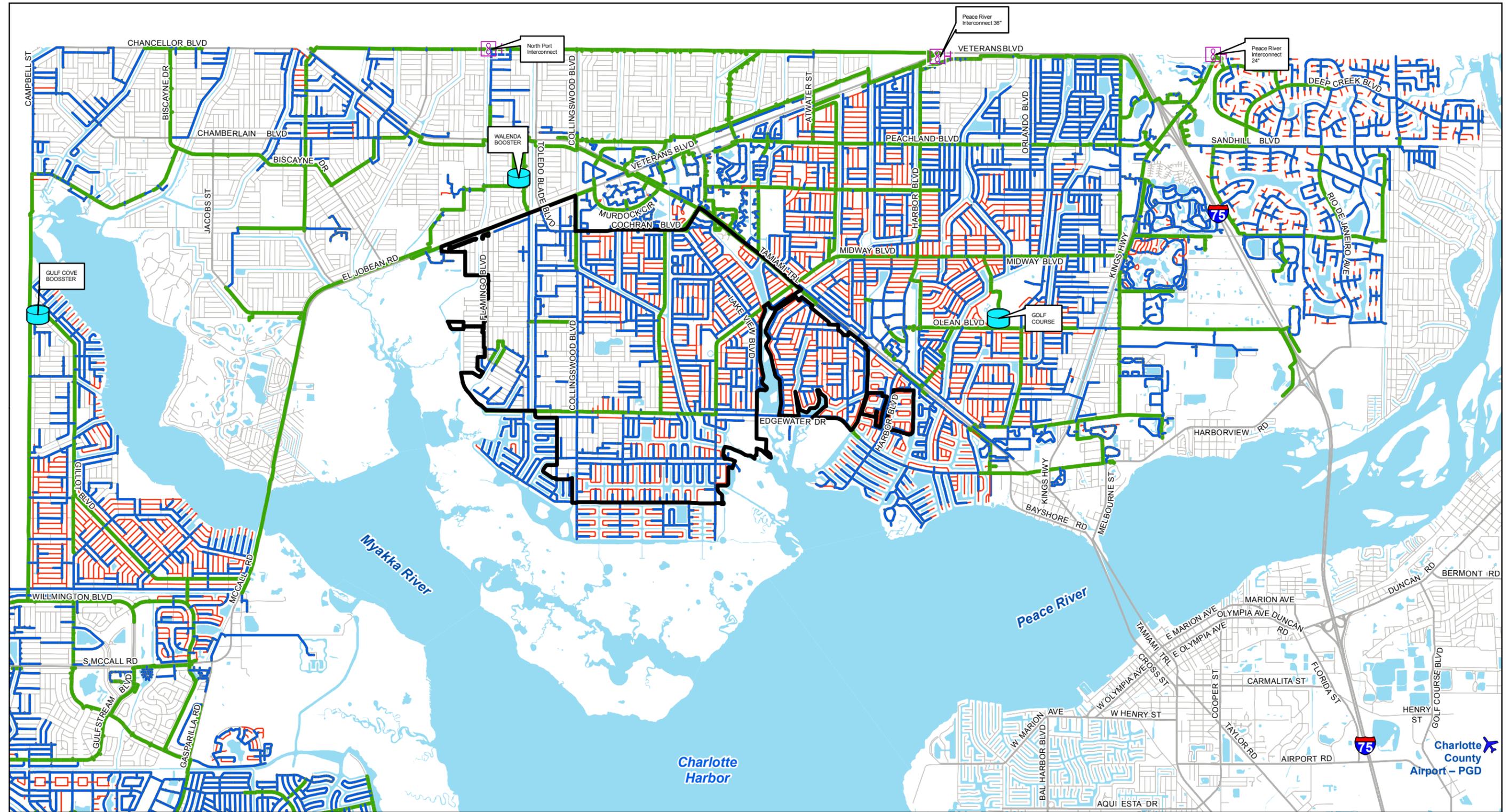


Exhibit 2 AREA 1

Potable Water Infrastructure

Exhibit 3: Central County Water Infrastructure

File Location: W:\Projects\ISBU_Future_Zones\AREA_1_PRESENTATION_MAPS\TX\TX_CENTRAL_COUNTY_WATER_INFRASTRUCTURE_AREA_1_FINAL.mxd | Designed by D. Cain, produced on 03/17/2010



Printing Date: Wednesday, March 17, 2010
 Title: CENTRAL COUNTY WATER INFRASTRUCTURE AREA 1-FINAL
 Prepared By: Cain, David
 Coordinate System:
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 Operating System: Microsoft Windows XP Professional
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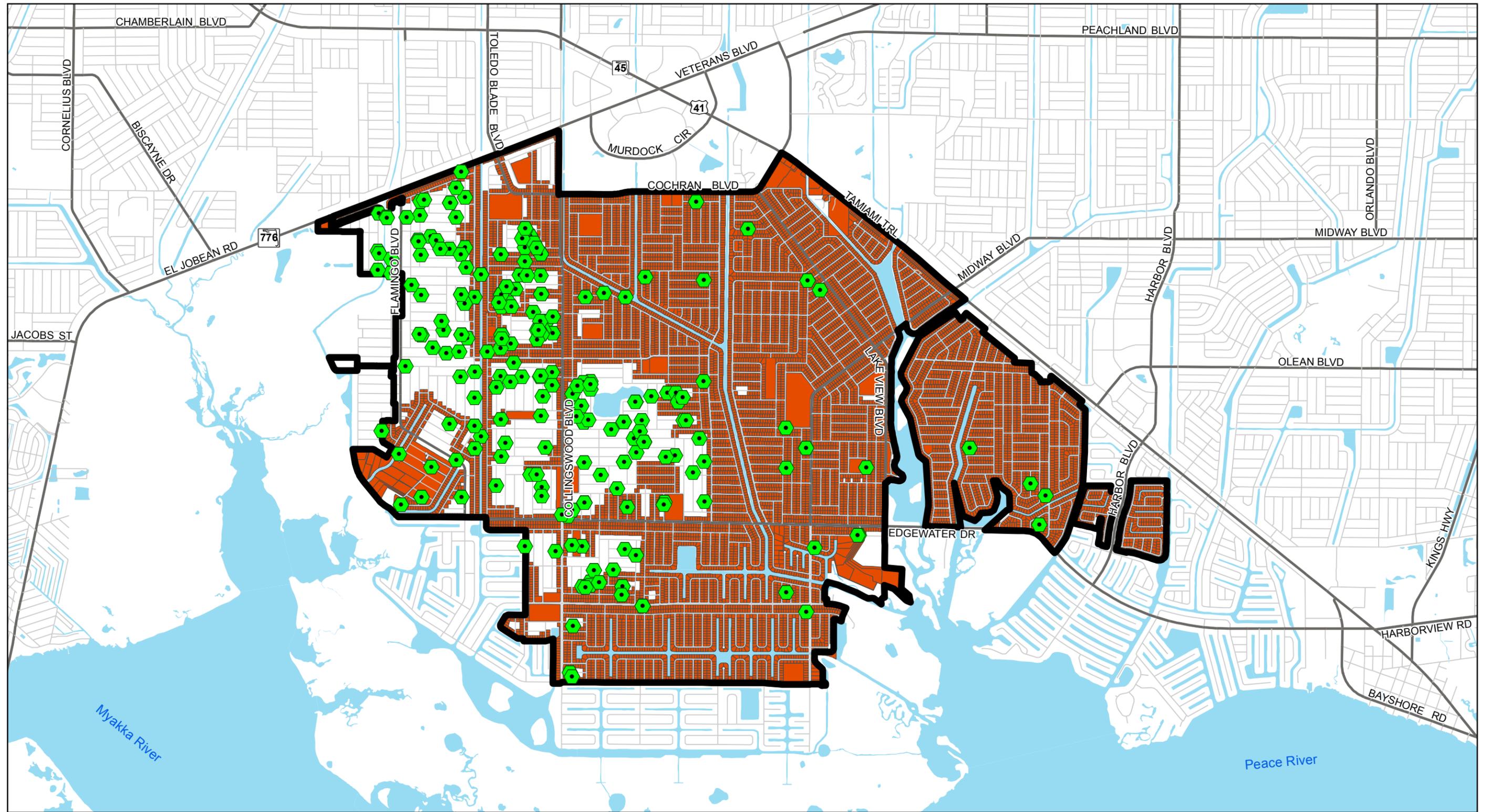
Legend

- AREA 1
- BOOSTER STATION
- INTER-LOCAL CONNECTIONS
- WATER MAIN
Diameter
12" and Above
- 6" to 10"
- Less than 6"

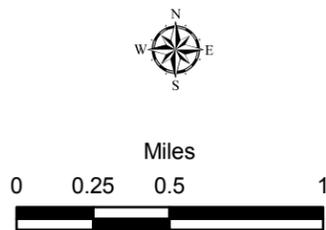


Exhibit 3
AREA 1
 Central County
 Water Infrastructure

Exhibit 4: Area 1 Domestic Wells



Printing Date: Wednesday, March 17, 2010
 Title: WATER SERVICE AREA 1-DOMESTIC WELLS-FINAL
 Prepared By: Cain, David
 Coordinate System:
 NAD 1983 StatePlane Florida West FIPS 0902 Feet
 Operating System: Microsoft Windows XP Professional
 Archkapp Build Number: 9.3.1770
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Legend

-  AREA 1
-  DOMESTIC POTABLE WELLS **
-  EXISTING WATER AREAS

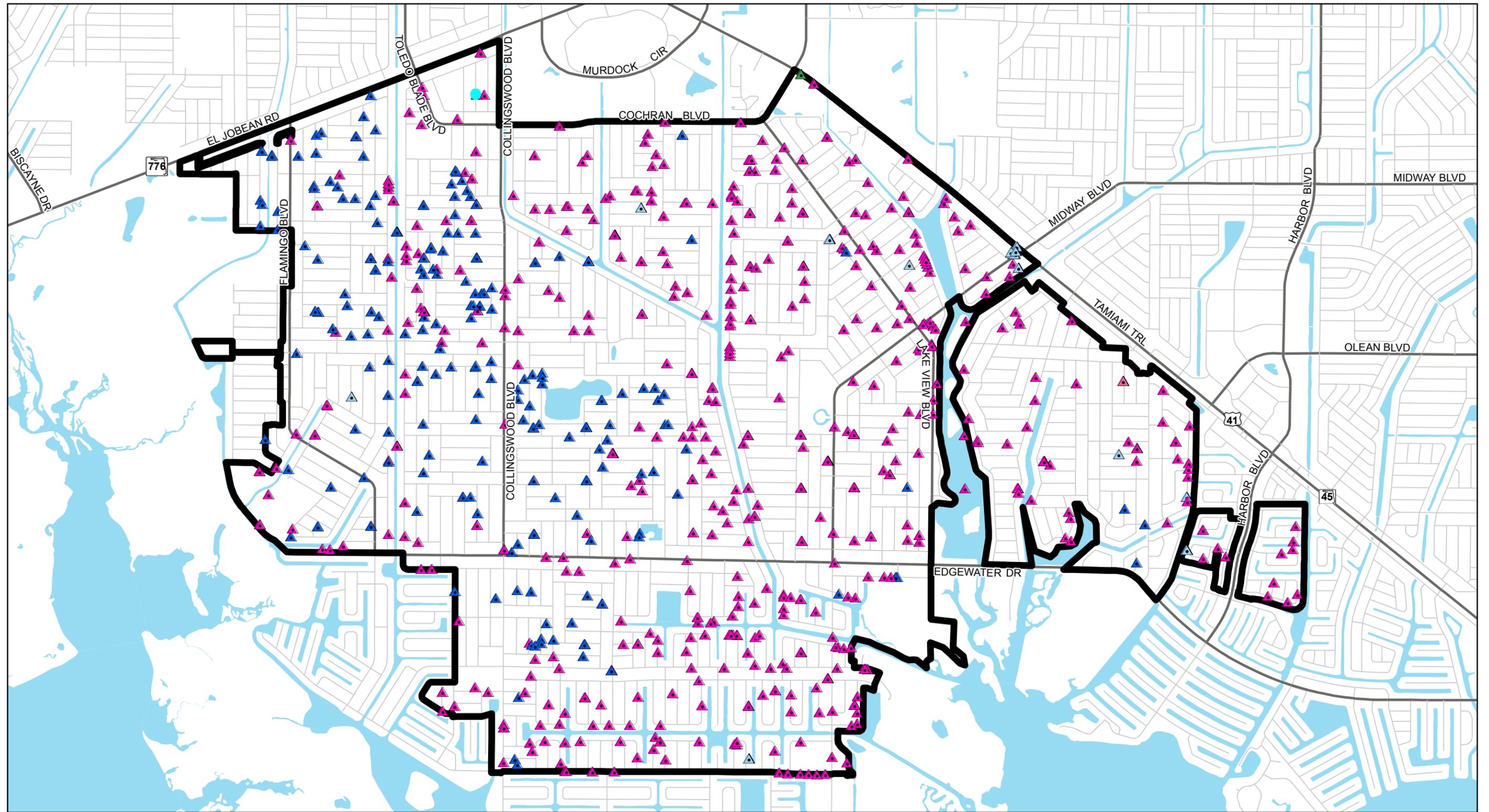
** Data for Domestic wells was obtained from SWFWMD



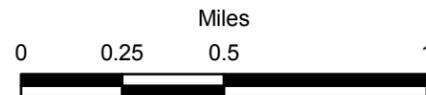
Exhibit 4 AREA 1 Domestic Wells

(Properties with existing County Central Water Service are to be excluded from assessments)

Exhibit 5: Area 1 All Well Types



Printing Date: Wednesday, March 17, 2010
 Title: PUBLIC WELLS AREA 1-FINAL
 Prepared By: Cain, David
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Legend

 AREA 1
AREA 1- PUBLIC WELLS

- TYPE OF USE**
-  AIR SPARGING
 -  DOMESTIC
 -  IRRIGATION
 -  OBSERVATION OR MONITOR WELL
 -  RECOVERY OF CONTAMINANTS



Exhibit 5
AREA 1
All Well Types