

# 2010 WATER DEMAND STUDY

FINAL REPORT – MARCH 2011

PALM BAY, FLORIDA

PREPARED FOR:



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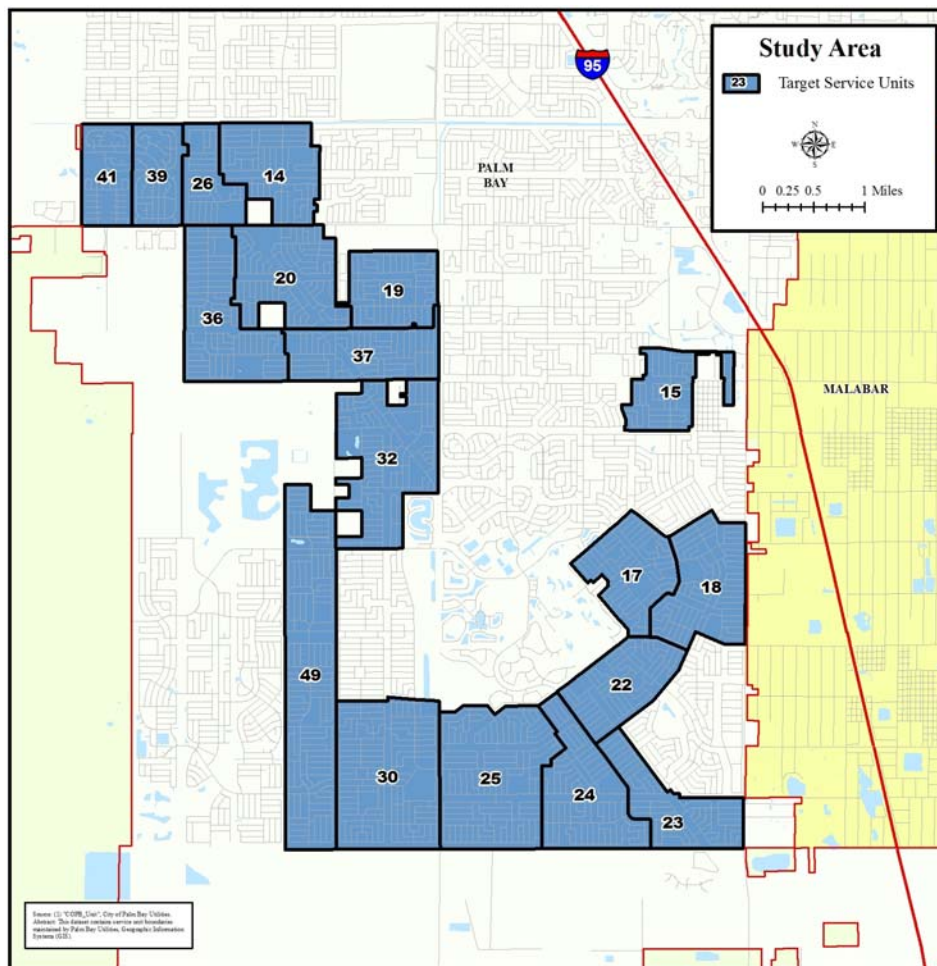
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## 0.0 EXECUTIVE SUMMARY

The City of Palm Bay is considering the expansion of its public potable water system to improve services to residents. Ultimately, it is the City’s desire for the public water system to be available for all citizens who desire to connect. However, with limited resources and mixed responses to previous attempts to expand the system, the City wants to focus the expansion efforts in those areas with the most property owners both interested in connecting and likely to connect should public water be made available. This study was commissioned by the City to assist them in determining where the expansion of the public water system is most economically feasible, through the means of a community survey, demographic analysis, and revenue projections.

The study area for the 2010 Water Demand Study included a total of 18 service units not presently served by public water, as identified by the City. This study area is illustrated in the graphic below.



## 0.1 *General Findings Summary*

### ***Water Demand Survey***

- The climate for water expansion has deteriorated significantly since 2006, as less than half of property owners express interest (42%) and less than one fourth (21%) indicate they would connect to City water if it were made available in their neighborhood.
- Connection intent, based on a total cost of \$7,000 plus monthly utility bills, begins at 22% and increases only slightly to 27% when financing options are presented.
- Cost (23%) and absence of plans to build on undeveloped unoccupied land (15%) are the top reasons cited for lack of interest to connect to an expanded City water system.
- A majority (greater than 50%) of those surveyed in Service Units 19, 22, 26 and 37 expressed an interest in connecting to City water.
- Driving interest and intent are quality of City water, enhanced property values, reduced expenses, convenience, improved reliability, improved fire safety, and in-turn lower insurance rates.
- Interest and intent are inversely related to age: as age increases interest and intent decrease.
- Interest and intent are inversely related to length of ownership: as tenure increases interest decreases.
- Interest and intent are correlated to income levels: as income increases so does interest.
- Those with children express greater interest than those without.
- Interest is generally greater among those with developed property.

### ***Water Demand Demographic Analysis***

- Population growth data at the Traffic Analysis Zone (TAZ) level indicate that southwest Palm Bay will experience the greatest population growth through 2035. Additionally, portions of the southeast and northwest quadrants of the City will also experience significant growth in the long-term.
- Population growth data at the Census Block Group level indicate that west Palm Bay is projected to witness the largest population growth through 2015.
- On average, the population within the targeted service units is expected to grow by 14% through 2015.
- The largest number of households earning between \$50,000 and \$99,999 is located in southeast Palm Bay, while the greatest increase in households at this income level is expected to occur in northwest Palm Bay.

- The target service units are predominantly (approximately 50%) comprised of three-person or greater households.
- On average, approximately 79% of housing units within the targeted service units are owner-occupied.

### ***Water Demand Revenue and Cost Projections***

- The targeted service units that are projected to have the highest benefit to cost when discounted over a 30 year period are Service Units 14, 49 and 25, with benefit to cost ratios of 1.42, 1.41 and 1.33, respectively (where a ratio of 1.42 represents an estimated \$1.42 in revenue for each \$1.00 expended on line extensions).
- Using a 10 year forecast, the highest benefit to cost ratios are projected to occur in Service Units 14, 22 and 26 with ratios of 0.69, 0.57 and 0.56, respectively.

### ***0.2 Recommended Service Units***

The following pages highlight the consultant's recommendations for the top five service units which are most feasible for expansion of the City water system, based on the combined results of the survey, demographic analysis and revenue projections. The recommended service units are listed in no particular order. Although these five service units have been specifically highlighted because of their positive characteristics that would support expansion, they should not be regarded as the only service units worthy of consideration by the City. Ultimately, the decision to expand City water into a particular service unit would likely be based on a combination of the factors outlined in this study in addition to the financial resources available to the City at the time, the results of a detailed engineering study, and other opportunities and constraints not specifically identified in this study.

## Service Unit 14

### Service Unit Rankings (Out of 18)

Interest:	#6
Intent (\$7,000):	#2 TIE
Intent (Financing):	#3
Benefit to Cost Ratio (30 Yrs):	#1
Benefit to Cost Ratio (10 Yrs):	#1

### Short-Term Population Growth (2010-2015)

14.3% BG ID# 071333.3

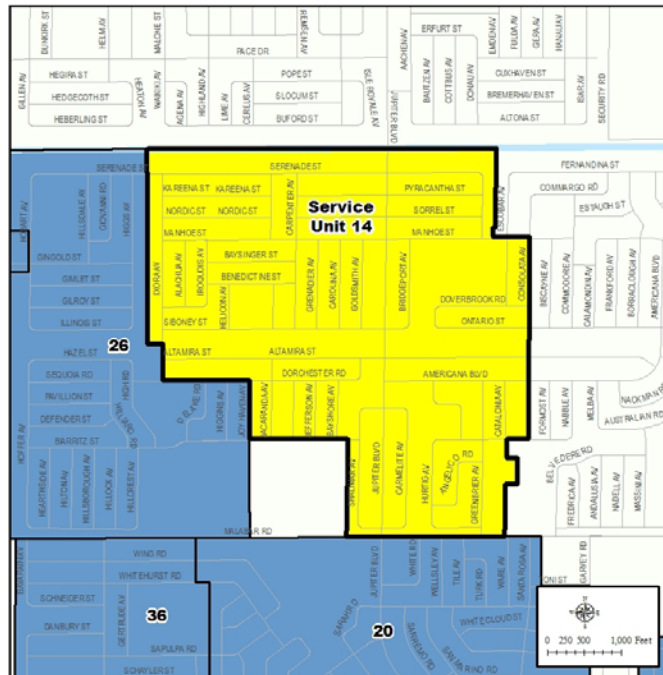
15.3% BG ID# 071334.2

### Long-Term Population Growth (2010-2035)

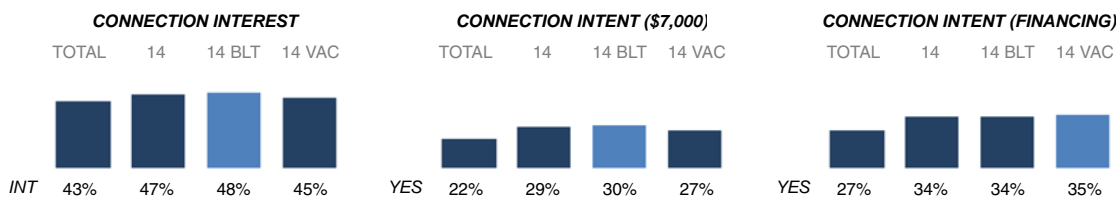
79.1% TAZ ID# 3320

47.6% TAZ ID# 3321

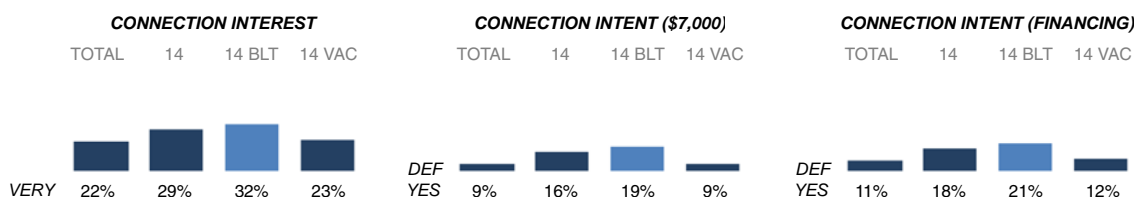
34.7% TAZ ID# 3322



### Comparison of Affirmative Responses for Interest and Intent to Connect to Municipal Water.



### Comparison of Strong Affirmative Responses for Interest and Intent to Connect to Municipal Water.



TOTAL = The combined response across all Units; BLT = Properties with existing structures; VAC = Properties not yet developed

## Service Unit 22

### Service Unit Rankings (Out of 18)

Interest:	#3
Intent (\$7,000):	#2 TIE
Intent (Financing):	#4 TIE
Benefit to Cost Ratio (30 Yrs):	#7
Benefit to Cost Ratio (10 Yrs):	#2

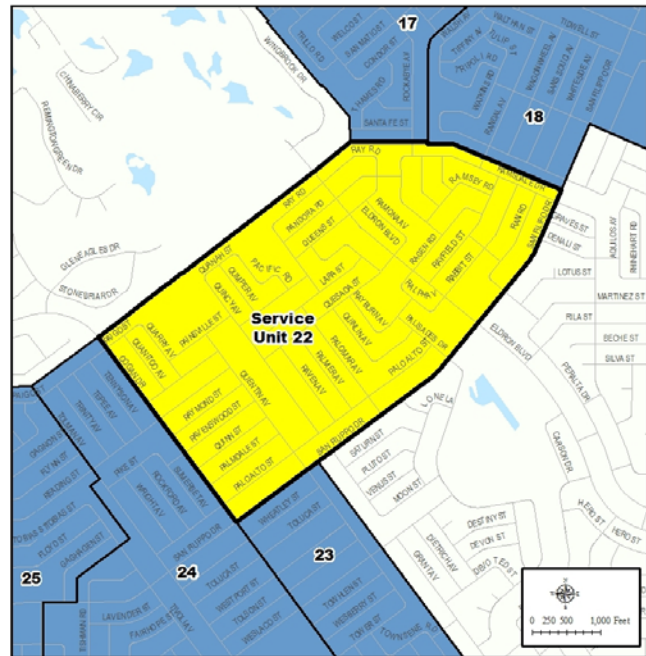
### Short-Term Population Growth (2010-2015)

13.7% BG ID# 071323.3

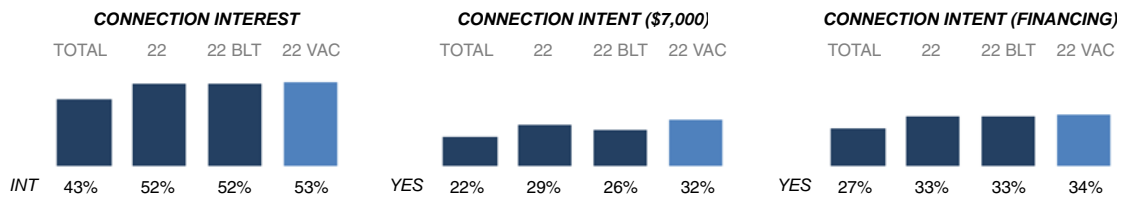
### Long-Term Population Growth (2010-2035)

397.6% TAZ ID# 3377

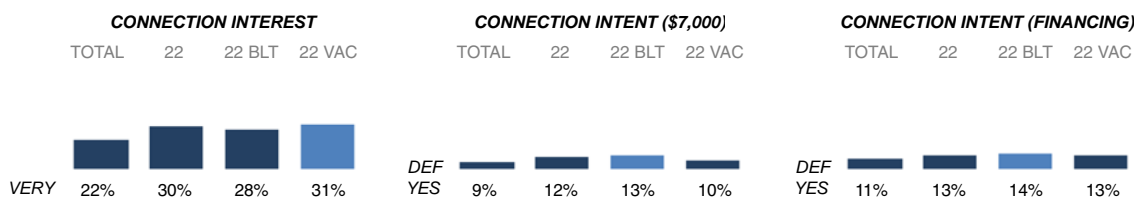
168.9% TAZ ID# 3378



### Comparison of Affirmative Responses for Interest and Intent to Connect to Municipal Water.



### Comparison of Strong Affirmative Responses for Interest and Intent to Connect to Municipal Water.



TOTAL = The combined response across all Units; BLT = Properties with existing structures; VAC = Properties not yet developed

## Service Unit 26

### Service Unit Rankings (Out of 18)

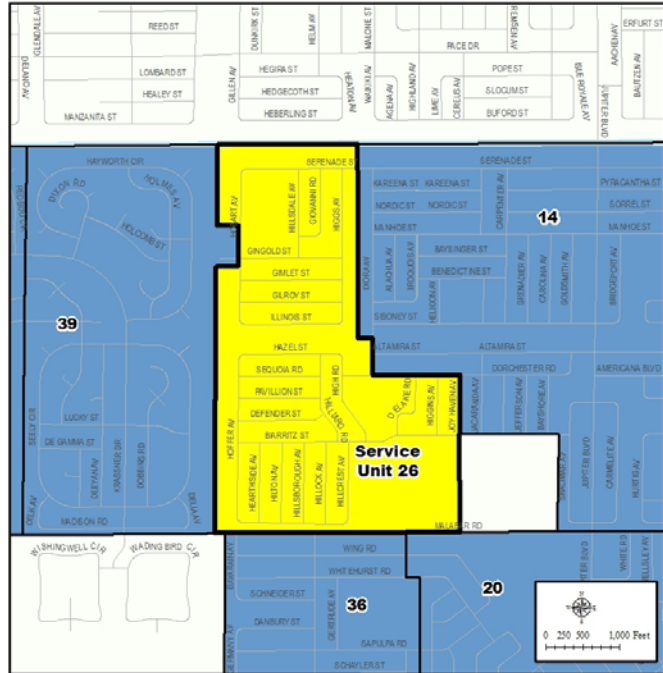
Interest:	#1
Intent (\$7,000):	#1
Intent (Financing):	#1
Benefit to Cost Ratio (30 Yrs):	#9
Benefit to Cost Ratio (10 Yrs):	#3

### Short-Term Population Growth (2010-2015)

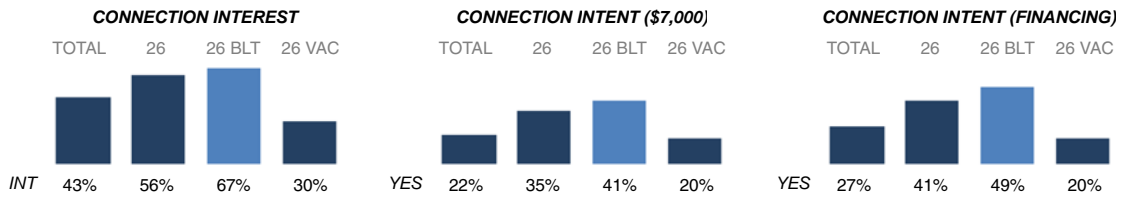
14.3% BG ID# 071333.3

### Long-Term Population Growth (2010-2035)

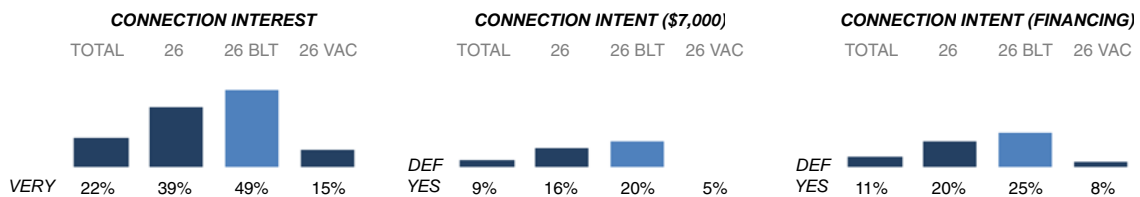
79.1% TAZ ID# 3320



### Comparison of Affirmative Responses for Interest and Intent to Connect to Municipal Water.



### Comparison of Strong Affirmative Responses for Interest and Intent to Connect to Municipal Water.



TOTAL = The combined response across all Units; BLT = Properties with existing structures; VAC = Properties not yet developed

## Service Unit 36

### Service Unit Rankings (Out of 18)

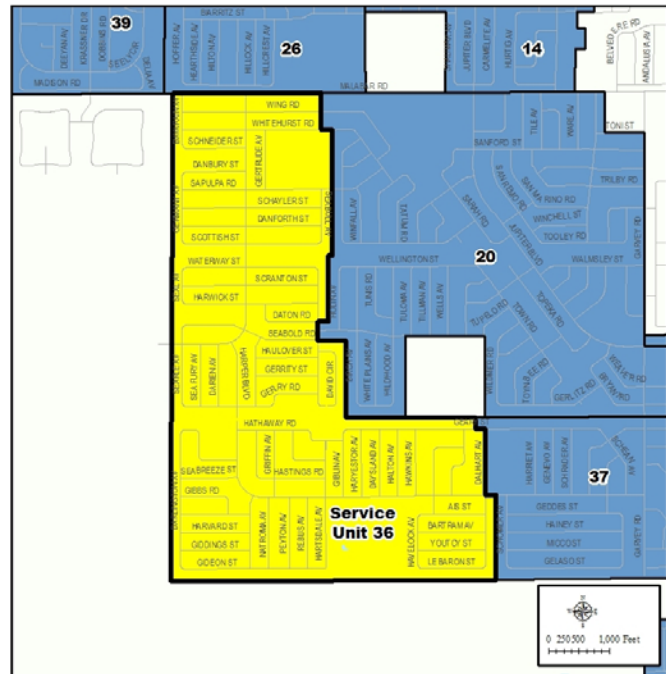
Interest:	#4
Intent (\$7,000):	#5
Intent (Financing):	#2
Benefit to Cost Ratio (30 Yrs):	#14
Benefit to Cost Ratio (10 Yrs):	#9

### Short-Term Population Growth (2010-2015)

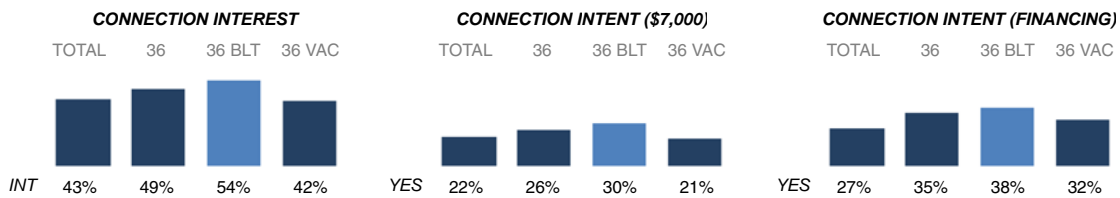
13.8%	BG ID# 071332.1
13.0%	BG ID# 071332.2

### Long-Term Population Growth (2010-2035)

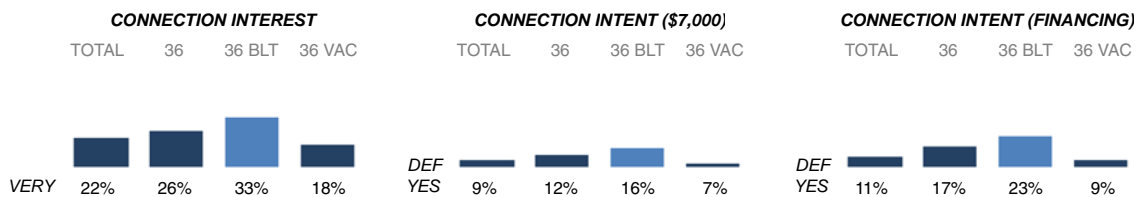
79.1%	TAZ ID# 3333
155.7%	TAZ ID# 3352



### Comparison of Affirmative Responses for Interest and Intent to Connect to Municipal Water.



### Comparison of Strong Affirmative Responses for Interest and Intent to Connect to Municipal Water.



TOTAL = The combined response across all Units; BLT = Properties with existing structures; VAC = Properties not yet developed

## Service Unit 37

### Service Unit Rankings (Out of 18)

Interest:	#2
Intent (\$7,000):	#7
Intent (Financing):	#4 TIE
Benefit to Cost Ratio (30 Yrs):	#10
Benefit to Cost Ratio (10 Yrs):	#7

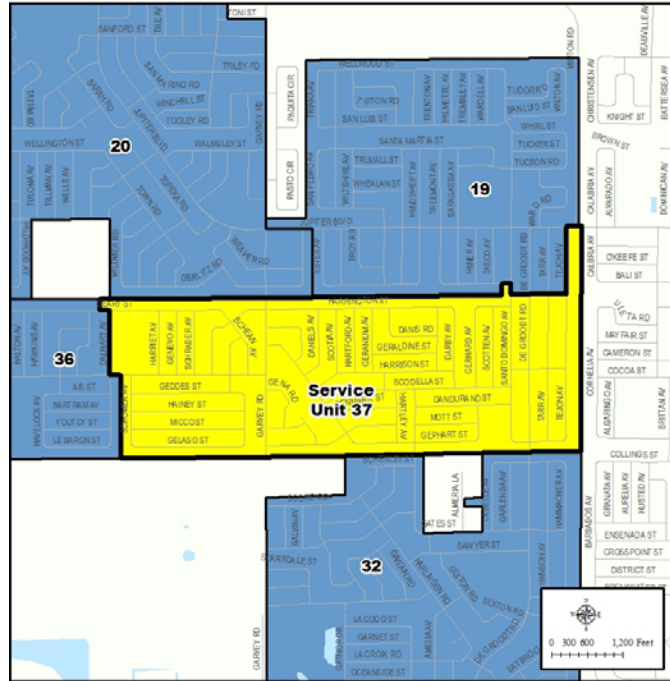
### Short-Term Population Growth (2010-2015)

13.0% BG ID# 071332.2

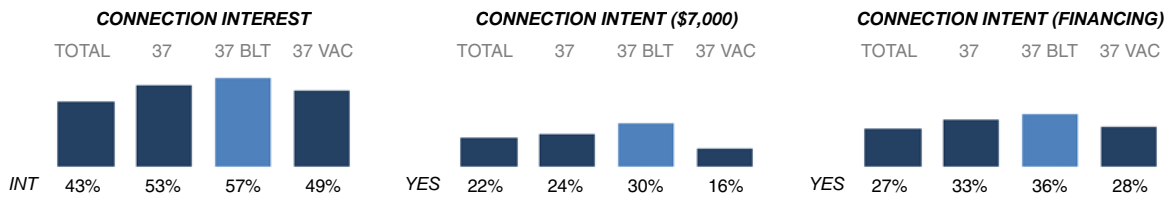
### Long-Term Population Growth (2010-2035)

164.9% TAZ ID# 3353

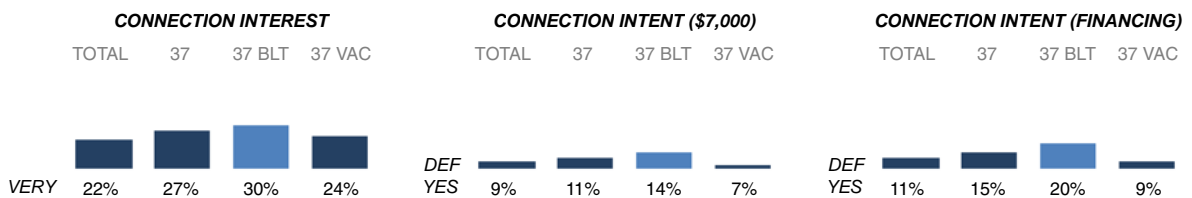
56.2% TAZ ID# 3354



### Comparison of Affirmative Responses for Interest and Intent to Connect to Municipal Water.



### Comparison of Strong Affirmative Responses for Interest and Intent to Connect to Municipal Water.



TOTAL = The combined response across all Units; BLT = Properties with existing structures; VAC = Properties not yet developed