



Funding Reclaimed Water Projects Through Florida's State Revolving Fund Programs



Presented by Tim Banks P.E.



In the Beginning

- Reuse in Florida began in the 60s in Tallahassee
- Followed by St. Petersburg in the 70s
- Then Conserv II in the 80s





Recent Reuse Projects

- Agricultural
- Golf Course
- Nurseries
- Cooling Water for Power Plants
- Industrial
- Residential



Chapter 62-610 – Reuse Rule Summary

- Establishes permitting requirements for reuse systems:
 - Slow-rate restricted access (e.g. sprayfields);
 - Public access (irrigation of golf courses, residential properties, and edible crops; toilet flushing; fire protection, etc.);
 - Rapid-rate (e.g. RIBs and absorption fields);
 - Ground water recharge and indirect potable reuse; and
 - Industrial uses (e.g. cooling towers).
- Requirements are established for:
 - Treatment
 - Groundwater Monitoring
 - Storage
 - Hydraulic Loading Rates
 - Operator Staffing
 - Setback Distances
 - Reliability
 - Minimum System Size
 - Operating Protocols
 - Pathogen Monitoring
 - Cross-connection Control
 - Continuous Monitoring



Cape Coral

- **Wastewater Collection**
- **Reuse Distribution**
- **Drinking Water Distribution**
- **Approximately \$269 million total cost**



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City of Cape Coral

Reuse Supplementation & Expansion

2017 Utility of the Future Recipient



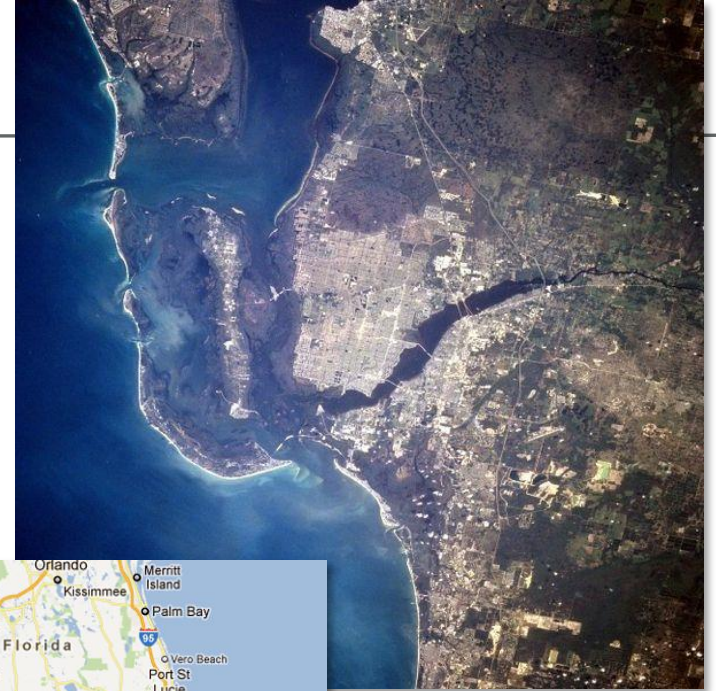
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Cape Coral

- Southwest Florida Coastal City
- 3rd Largest FL City in Land Area
- 10th Largest FL City in Population
- Peninsula Surrounded by Saltwater
- Longest Canal System in Florida
- 2000 Population - 102,286
- 2010 Population - 154,305
- 2020 Population Est. - 187,307
- (Source BEBR)
- Build-out Population Est. - 400,000



Cape Coral Reuse Program Considerations

- Recognition of limited water resource availability
- Early focus on “total water management”
- Consideration of all water sources and all water demands
- Elimination of wastewater surface water discharges
- Up to 50% municipal demand used for irrigation of lawns
- 400 miles of canals seen as a resource (but not to drink)
- Pre-platted residential community
- Minimal industry and agriculture base



Cape Coral Reuse Program Components

- Separation of inside and outside water uses
- RO treated brackish groundwater reserved for potable uses
- Reuse of treated wastewater for residential/commercial irrigation
- Stormwater harvesting of canals to supplement reuse
- 3 pipes to every house – W / WW / IQ
- Demand management - 2 days per week watering restriction



Results

- Continued recognition for progressive water management program
- 100% Alternative Water Supply
- 100% reuse of municipal wastewater
- Effective and robust stormwater harvesting program
- Delivery of >40 MGD Irrigation water during dry season
- Major reductions in stormwater discharges to estuaries
- No utility rate increase since 2013, no increases forecast until 2027





Financial Plan Parameters

Fund Annual O&M, Debt Service, Capital Improvements, and System R&R

Maintain Sufficient Operating Reserves

- Target: 6-month operating reserve
- Cover disruptions in revenue or unforeseen expenditures

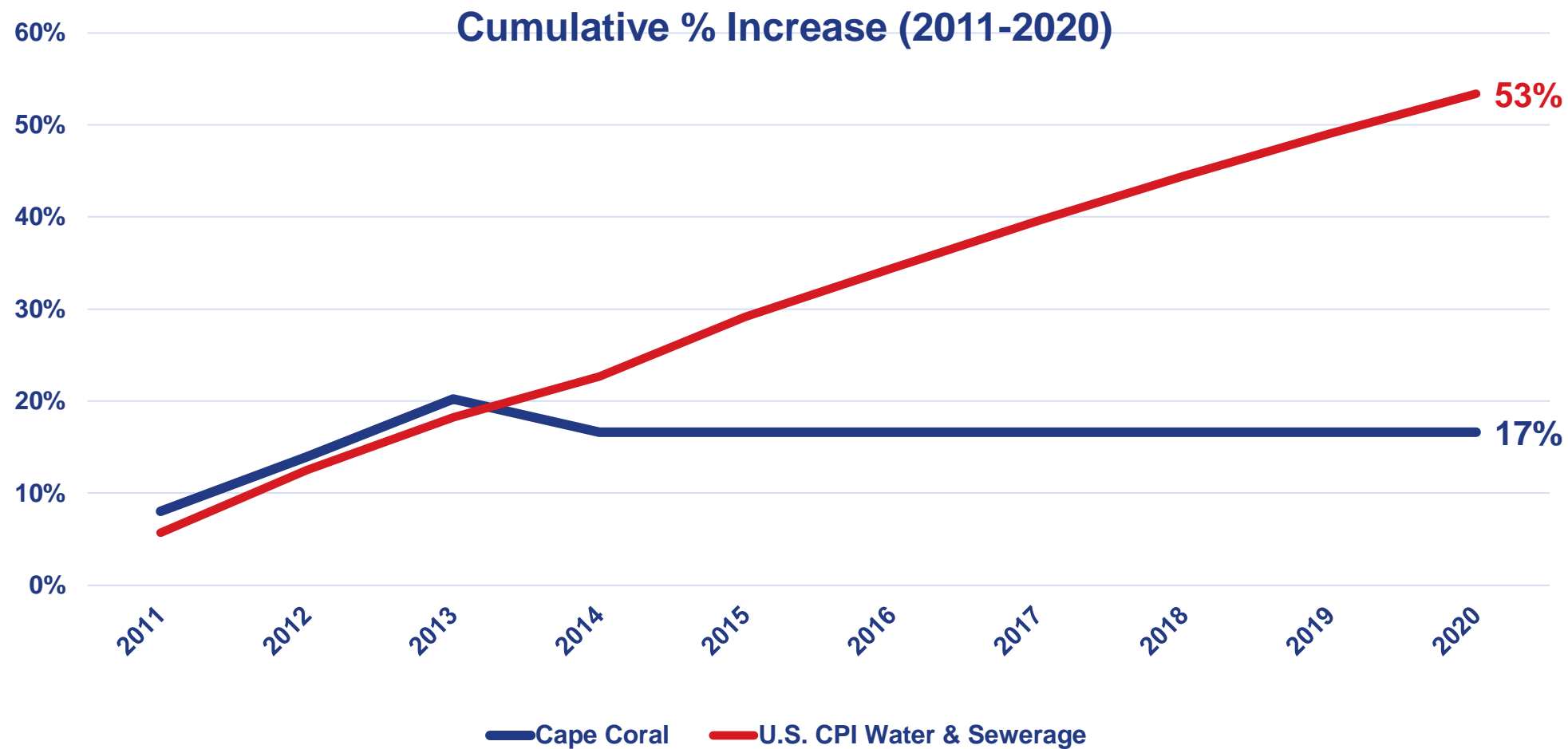
Maintain Sufficient Debt Service Coverage

- Target: net revenues at least 1.5X annual senior debt service
- Goal: No additional long-term borrowing outside of UEP in next 10 years

Financially healthy per rating agencies



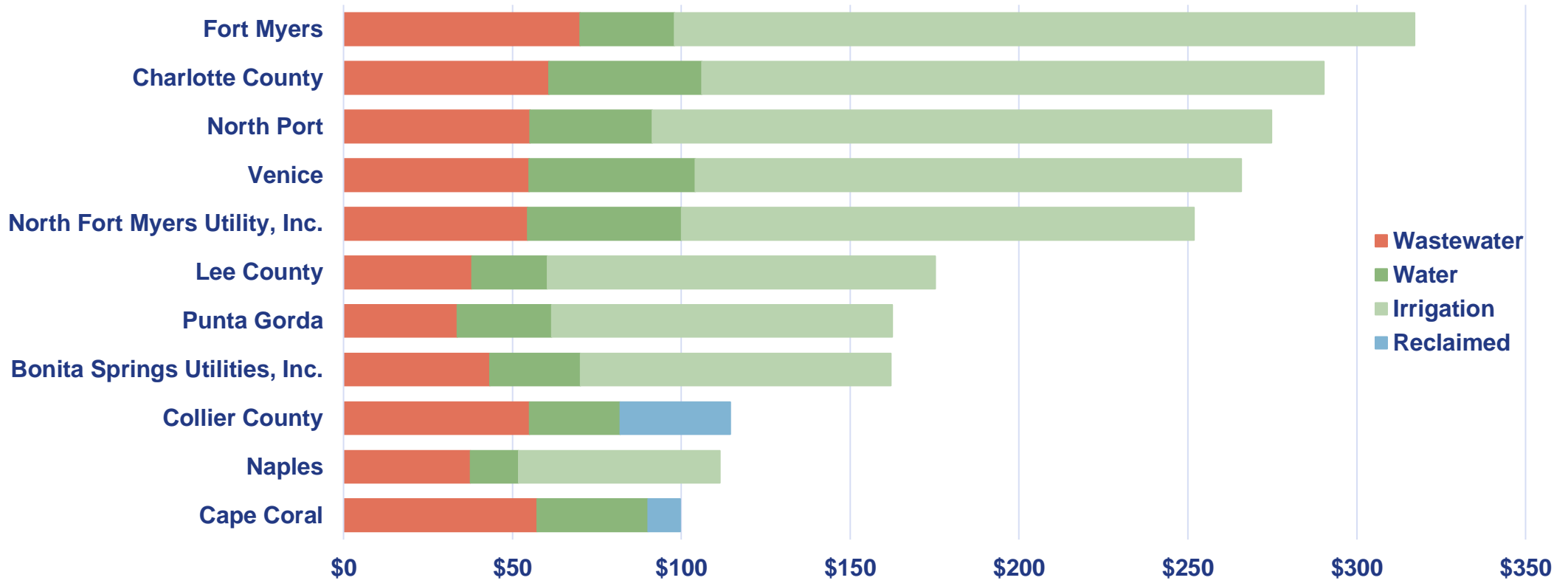
National Industry Cost Trends





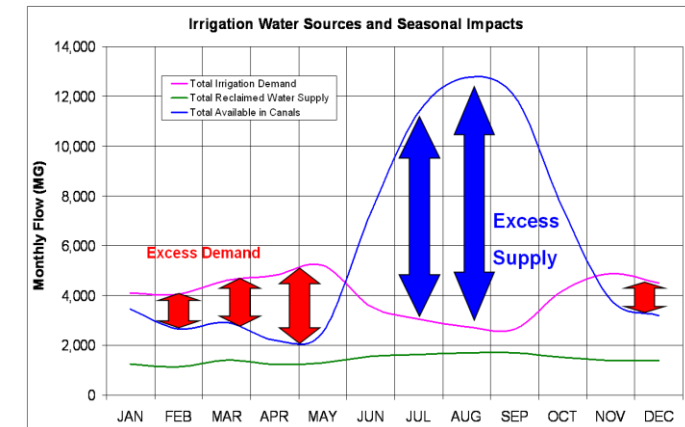
2020 Residential Monthly Utility Bill Comparison

Combined Water, Wastewater & Irrigation/Reclaimed Bill Survey
Water & Wastewater @ 4,000 Gallons Per Month
Irrigation or Reclaimed (where available) @ 20,000 Gallons Per Month



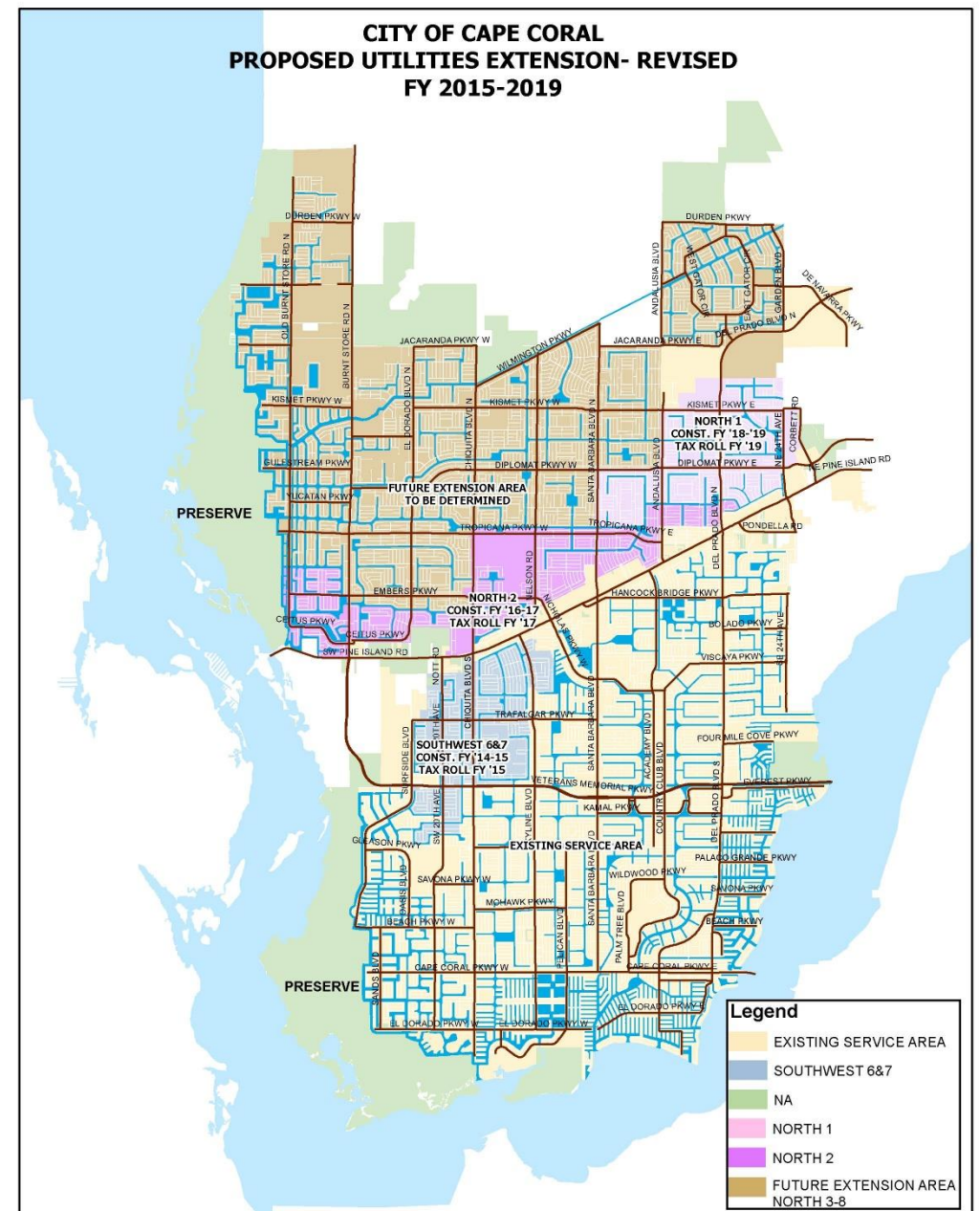
Future Plans

- Partnered with FGUA and City of Ft. Myers for reuse interconnects
 - City will receive up to 18 mgd of treated effluent for irrigation use
- Integrated Water Resource Management Program
- ASR storage being considered for excess reclaim and canal water
- Increased conservation measures and public education and awareness
- Continued Aggressive Utilities Extension Program (UEP) will add between 8,000 to 9,000 additional reuse customers by 2023

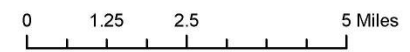


Utilities Extension Project (UEP)

- Citywide project constructed in phases
- Extension of potable water, sewer and irrigation infrastructure
- Environmental and economic benefits
- Eliminates individual potable water wells and septic systems
- Improves quality and reliability of service
- Expands customer base
- Mitigates need for future rate increases

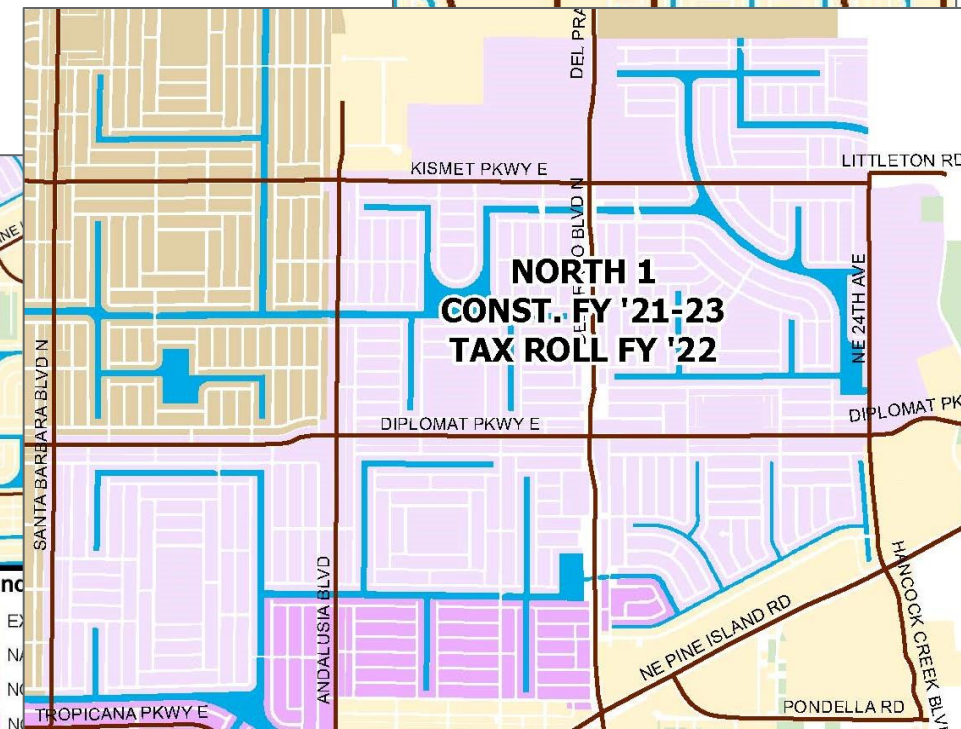
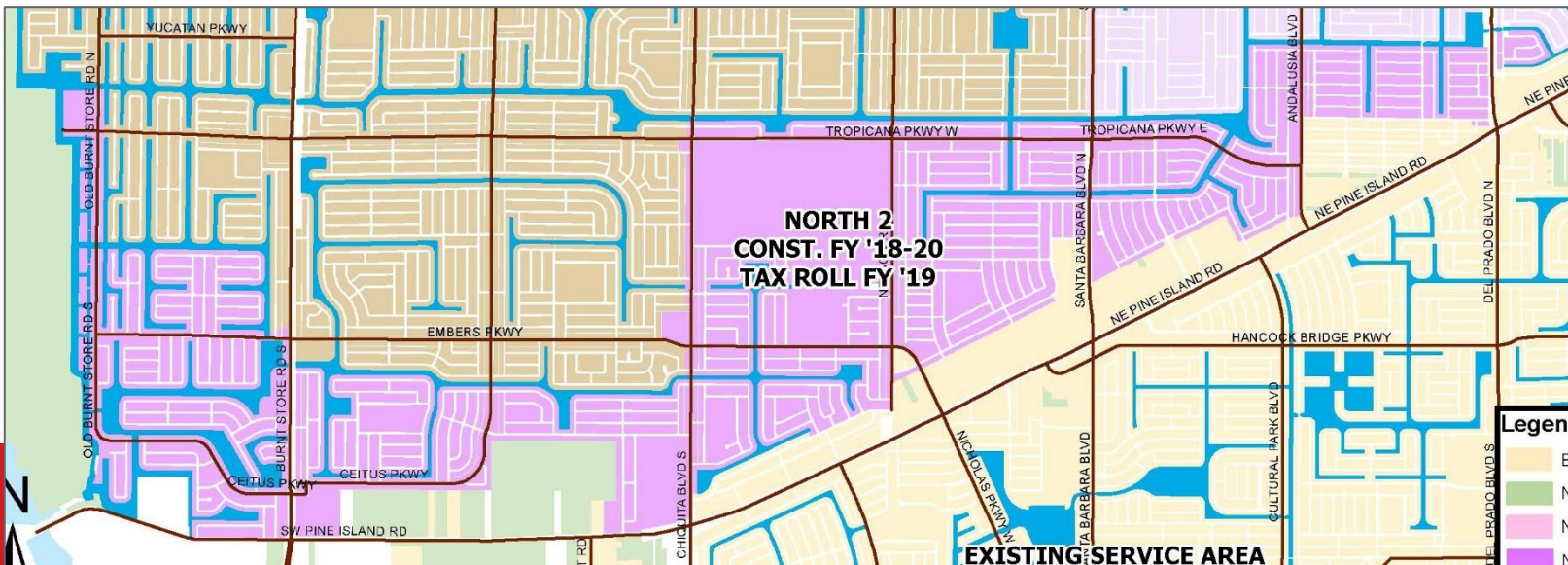
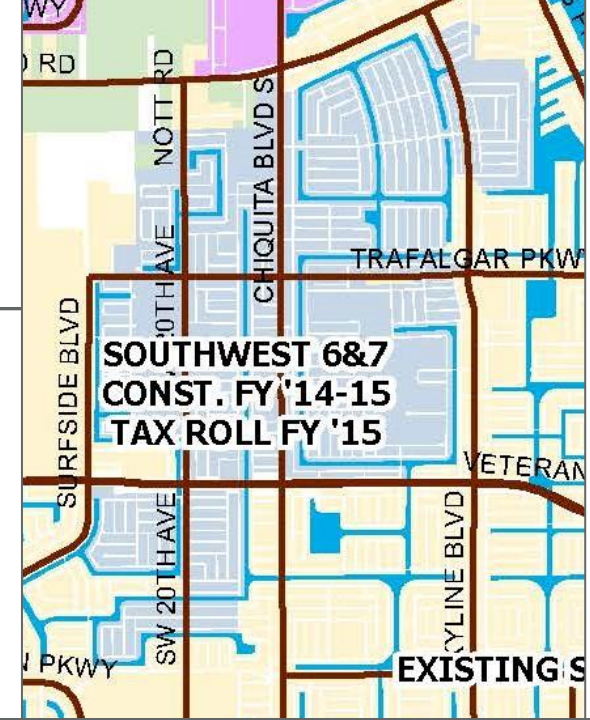


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UEP Phasing

- Recent phases include Southwest 6/7, North 2 and North 1
- Southwest 6&7 complete (6,700 parcels)
- North 2 nearing completion (8,900 parcels)
- North 1 in design phase (7,400 parcels)
- 12- to 18-month design, bidding and assessment
- 24- to 30-month construction and plumber's connections

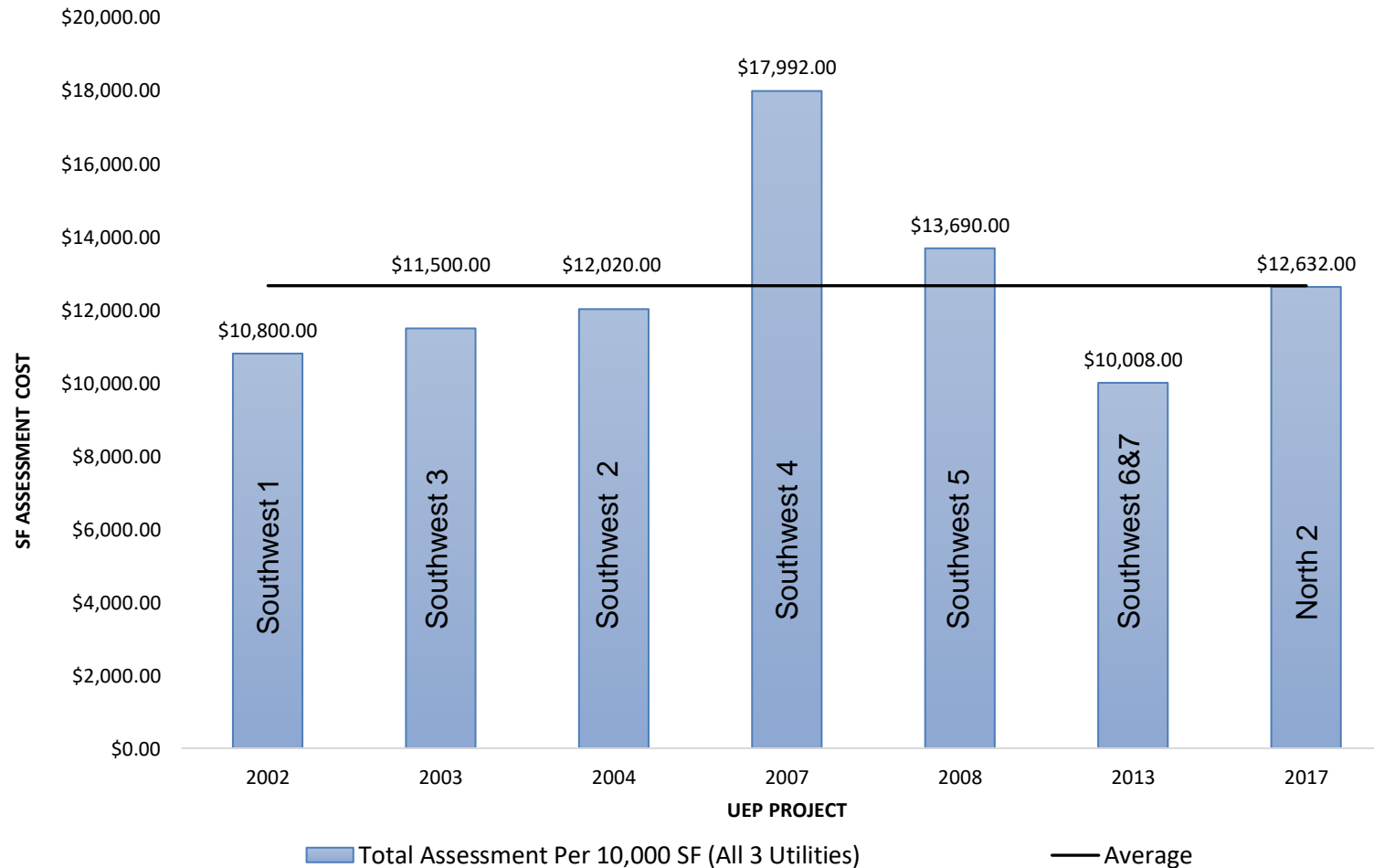


Utilities Extension Project (UEP)

- Primary funding source is Special Assessments
- Other City funding for paving and stormwater improvements
- Assessments paid in full or in annual installments on tax bill
- Financing through SRF Clean Water and Drinking Water loans
- Loans repaid with assessment revenues



UEP Assessment History



Average
Combined W-S-I
Assessments
\$12,663

Costs do not
include the \$6,750
CFEC

North 2 Estimated Costs

\$ 184 M – Utilities Construction

\$ 16 M – Facilities Construction (2 MPS, 1 CPS)

\$ 26 M – Storm Drains, Roads, Fiber Optics

\$ 226 M – Total Construction Cost

\$ 11 M – Construction Contingency

\$ 17 M – Construction Engineering and Inspection

\$ 15 M – Design, Survey, and Admin

\$ 269 M – Total Cost

North 2 Funding Sources

\$ 138.4 M – Water-Sewer-Irrigation Line Extension Assessments

\$ 100.5 M – Capital Facility Expansion Charge (CFEC) Assessments

\$ 14.3 M – Transportation (Gas Tax)

\$ 11.1 M – Stormwater (Stormwater Utility)

\$ 4.7 M – Water & Sewer (Utility Rates)

\$ 269 M – Total Project Cost

North 2 Financing

- Clean Water (CW) SRF Loan = \$136.0M – Funds Wastewater
- Drinking Water (DW) SRF Loan = \$106.5M – Funds Potable & Irrigation Water
- 20 Year SRF loan financing rates presently < 2 %
- Cash flow considerations due to 5-year SRF loan disbursement period
- First SRF Loan payment due 6 months after completion of Construction

North 2 Assessments

Water and Irrigation Distribution and Wastewater Collection	Estimated Water	Estimated Sewer	Estimated Irrigation	Estimated Total
Assessment Component Costs	\$29,824,340	\$82,648,392	\$25,956,786	\$138,429,518
Land Area Assessment Per 1 EP = 10,000 SF	\$3,021	\$7,457	\$2,154	\$12,632
Capital Facility Expansion Charge	Estimated Water	Estimated Sewer	Estimated Irrigation	Estimated Total
Assessment Component Costs	\$10,792,079	\$26,821,305	\$19,540,585	\$57,153,969
System Demand Units Per 1 ERU (5/8" meter, receiving all three utilities)	\$1,320	\$3,112	\$2,318	\$6,750

North 2 Assessments

Assessment Amount After 8/1/18	Estimated Water	Estimated Sewer	Estimated Irrigation	Estimated Total
Equivalent Parcel (1 EP = 10,000 SF)	\$3,346	\$8,245	\$2,385	\$13,976
CFEC (1 ERU) (NO 20% PREPAYMENT DISCOUNT)	\$1,320	\$3,112	\$2,318	\$6,750
Estimated Annual Installment Amounts - All 3 Utilities	Years 1-6 Annual Amount *	Years 7-20 Annual Amount *	Estimated Total Paid Over Term	
EP Interest Rate: 5.0%	\$1,202	\$1,202	\$24,040	
CFEC Interest Rate: 4.08%	\$1,383	N/A	\$8,298	

*Annual payment includes principal, interest, collection costs and statutory discount recovery costs.

1. A Hardship Program is available based on income qualification and must qualify annually.



▪ Questions & Discussion