



Islamorada, Village of Islands Preserving Florida's Ecosystem



 WADETRIM



Carysfort Reef 1975



Carysfort Reef 2004



Project Background

- Florida Law (99.395) mandates higher wastewater treatment and disposal standards for the Florida Keys
- Required to meet EPA/FDEP water quality standards for treatment (5:5:3:1)
- Effluent quality compliance with FDEP standards for reuse
- Mandatory compliance date of December 31, 2015 (originally 2010)

Islamorada's Service Area



Islamorada Stat Sheet

- Population of 6,900 with significant increase during peak tourism season
- 9,654 Equivalent Dwelling Units (EDUs) at build-out
- 1.1 MGD (AADF) of needed treatment capacity at build-out
- 0.355 MGD (MMADF) of existing treatment capacity

Initial Project Challenges

- Existing septic tank and package wastewater plant system
- Elevation “0” with high water table
- Hard coral substrate with fill
- Multiple channel crossings
- One way in and one way out
- Public acceptance
- Fluctuating population

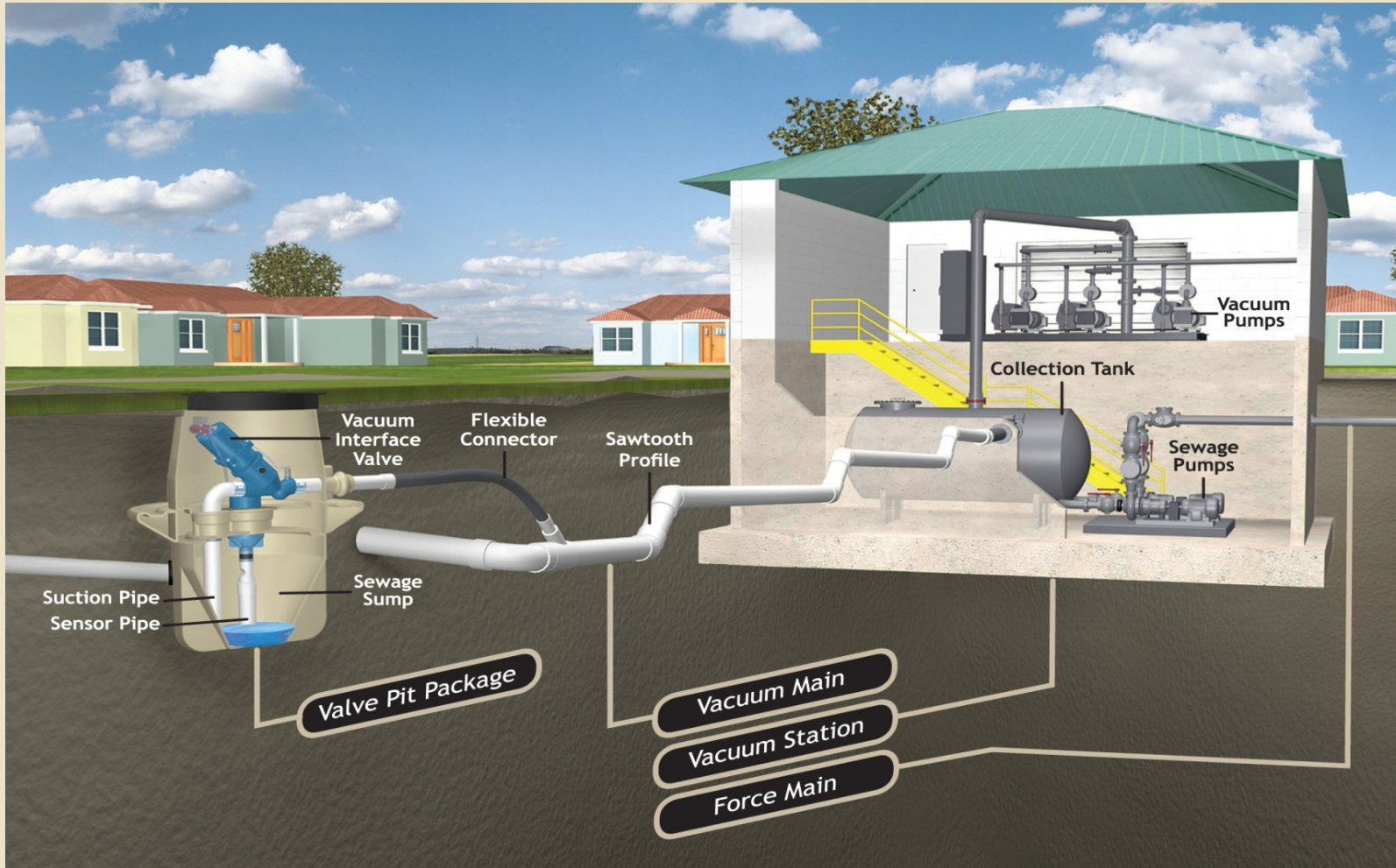


Collection System Technology

- Collection system technologies evaluated included:
 - Gravity with multiple lift stations
 - Low-pressure with residential grinder pumps
 - Vacuum collection with remote vacuum pump stations
- A hybrid system primarily based on vacuum technology supported by low-pressure



Vacuum Technology



Transmission Treatment System Evaluation

- Multiple treatment facilities – one on each island
- Single treatment facility – centrally located to serve all islands
- Convey sewage 10 miles north (28 miles total) to Key Largo's existing wastewater treatment facility



Inter-Local Agreement

- Purchased 1.104 MGD (AADF) of capacity
- Contributed to minor upgrades to the existing facility
- Negotiated a Volume Service Charge with an annual true-up provision
- Committed to certain influent water quality requirements
- 30-year renewable term

Transmission System

- Low-pressure force mains convey flow from deep properties to neighboring VPSs
- Vacuum mains convey vacuum system flows to neighboring VPSs
- Main line force main conveys flow from VPSs to Islamorada's northern limit, including channel crossings
- Re-pump station conveys flows to Key Largo for final treatment and disposal

Project Delivery & Implementation

- Village elected to deliver project using Design-Build-Operate method
 - Single point of responsibility
 - Expedite project delivery (one procurement)
 - Understand rate structure upfront for financing needs
- Reynolds Water Islamorada, LLC (Layne) successful proposer



Project Support

- Wade Trim, Inc., hired as Islamorada's Owner's Representative and Construction Manager
 - Design Criteria Consultant
 - Procurement assistance
 - Design reviews and design management
 - Construction management and full-time resident inspection
 - Establish Village wastewater policies and procedures

Village Wastewater Policy

- Items being addressed in the Wastewater Policy include:
 - Connection standards for residential hook-ups
 - Testing requirements for commercial connections
 - Package treatment plant decommissioning
 - Grease interceptor policy
 - Inflow and infiltration requirements
 - Coordination with the Key Largo Inter-local



Project Financing

- Current financing tools:
 - Assessments
 - SRF loans
 - Mayfield Grant
- Targeted financing tools:
 - Continue SRF loan program and State grants
 - USACOE



Project Status

- DBO contract amount - \$90.9 million (NTP 9/12)
- On-site wastewater systems are phased out of North Plantation Key
- Design has started for remaining service area
- Construction started in Middle Plantation Key and conveyance force main to Key Largo
- Project slightly ahead of schedule

In Pursuit of Goals

- The purpose of State Law 99-395 is to improve water quality in the Florida Keys by eliminating discharges of poorly treated wastewater into the surrounding environment
 - Quality of wastewater discharges to groundwater (package plants) are being improved by eliminating shallow wells
 - Near-canal discharges (septic tanks) are being eliminated as part of the sewer program

