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Adapting a Social Distancing Path Towards Water Quality Restoration

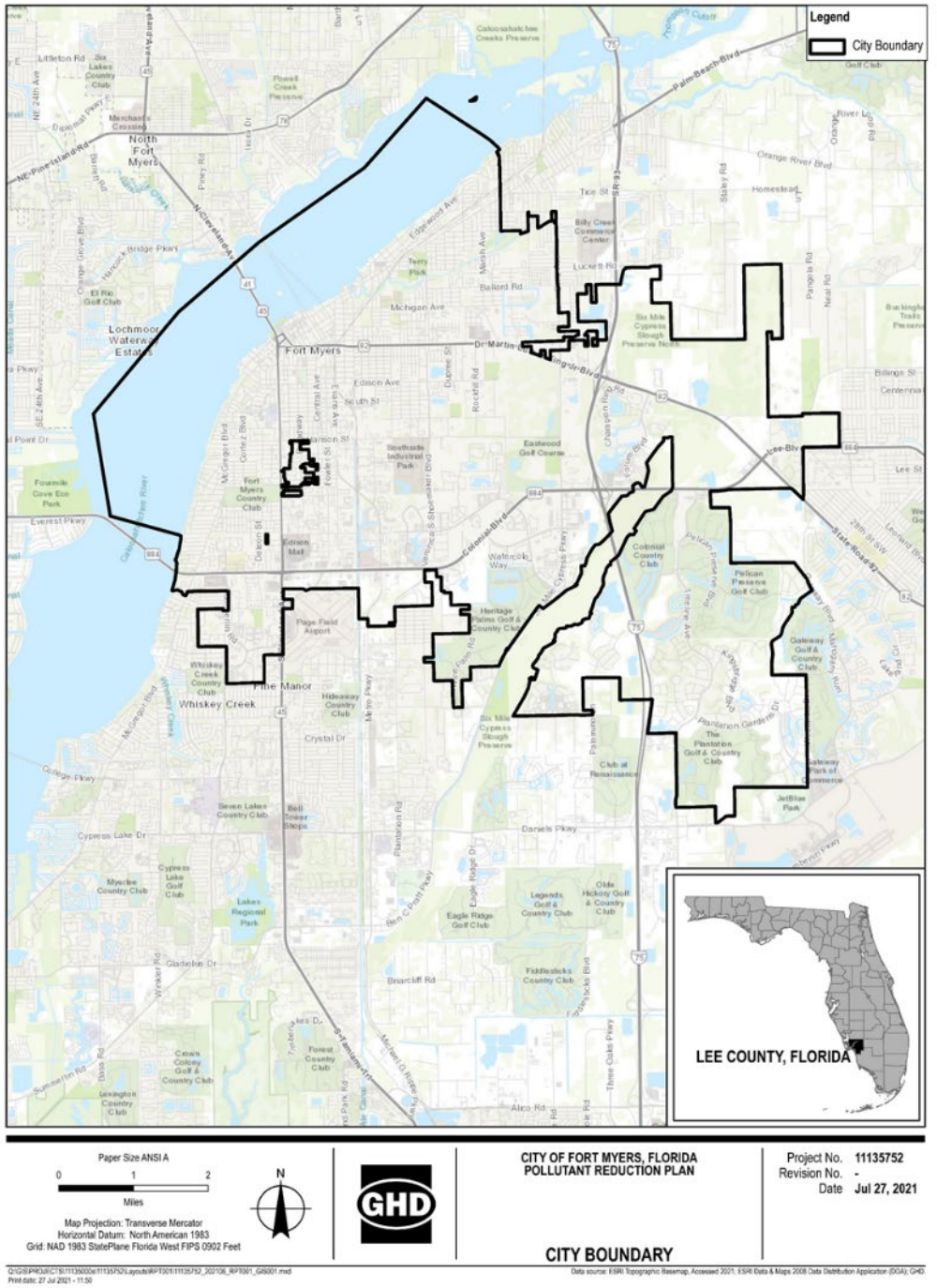
Welcome

Microbial Source Tracing

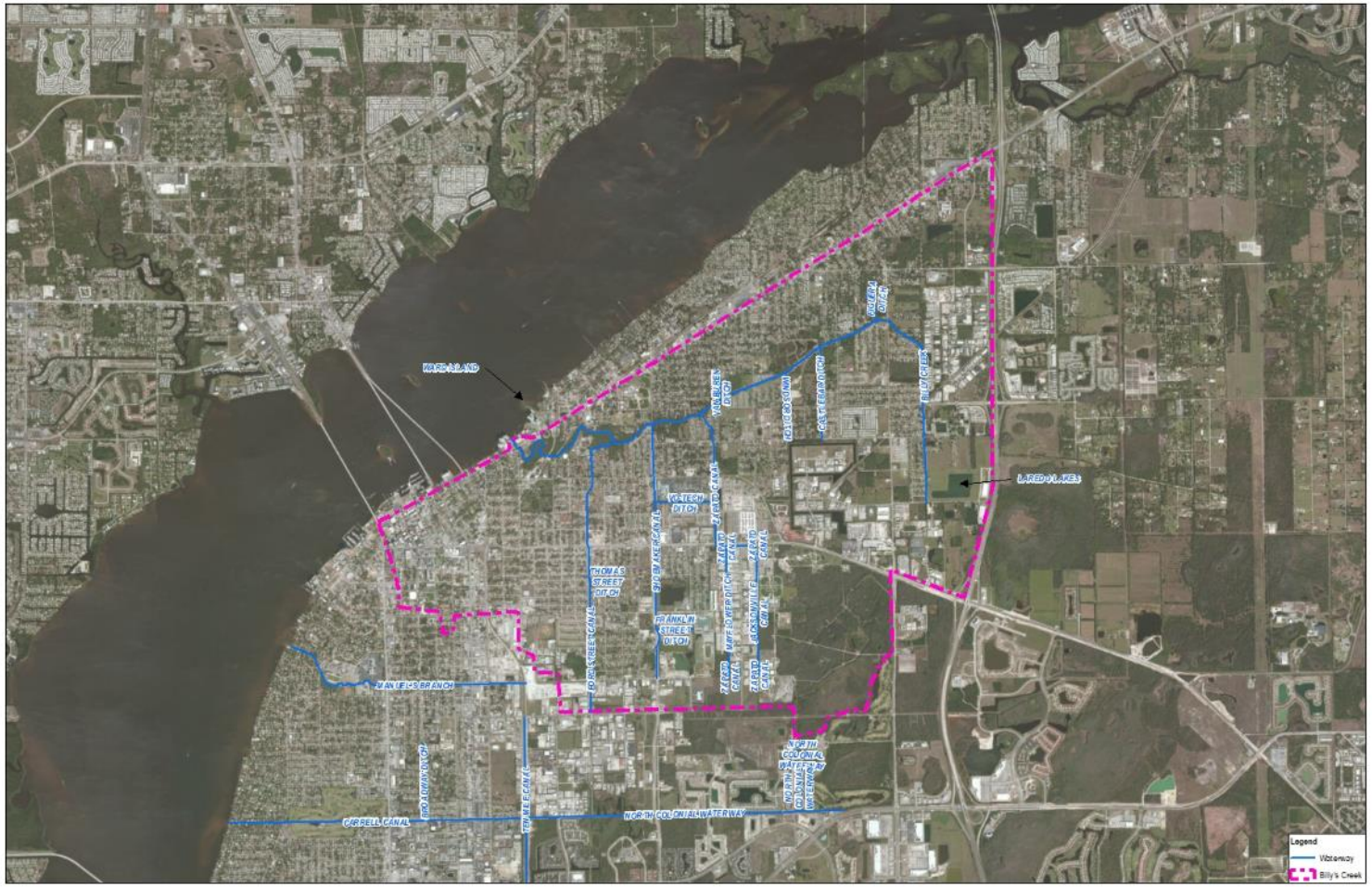
→ Billy Creek and Manuel Branch

The City of Fort Myers

- The population of the City of Fort Myers has increased by approximately 80.7% since 2000
- The City has taken a proactive approach to preventing pollution associated with the aging infrastructure and the anticipated increased demand on utilities due to population growth.

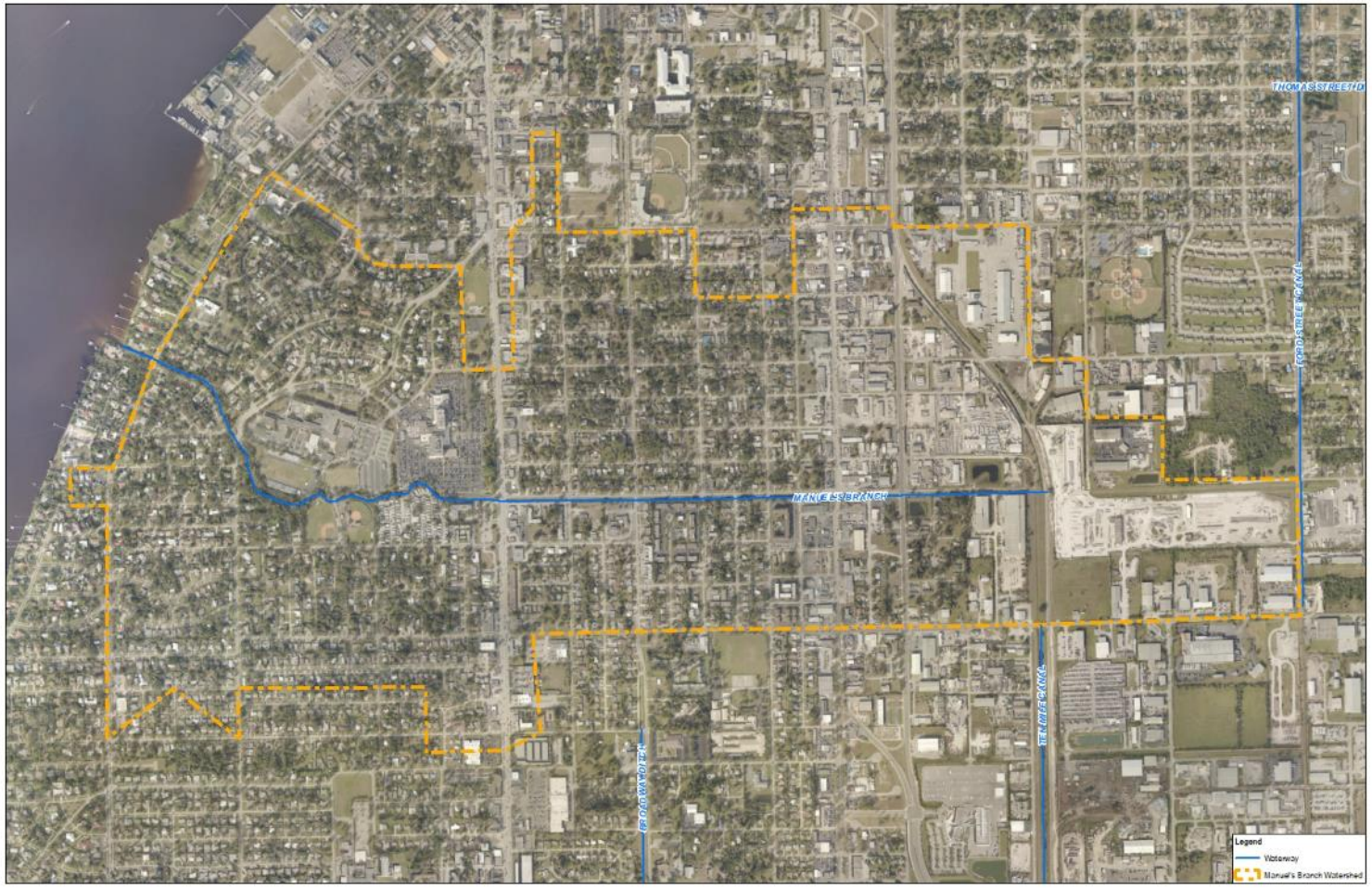


Billy Creek

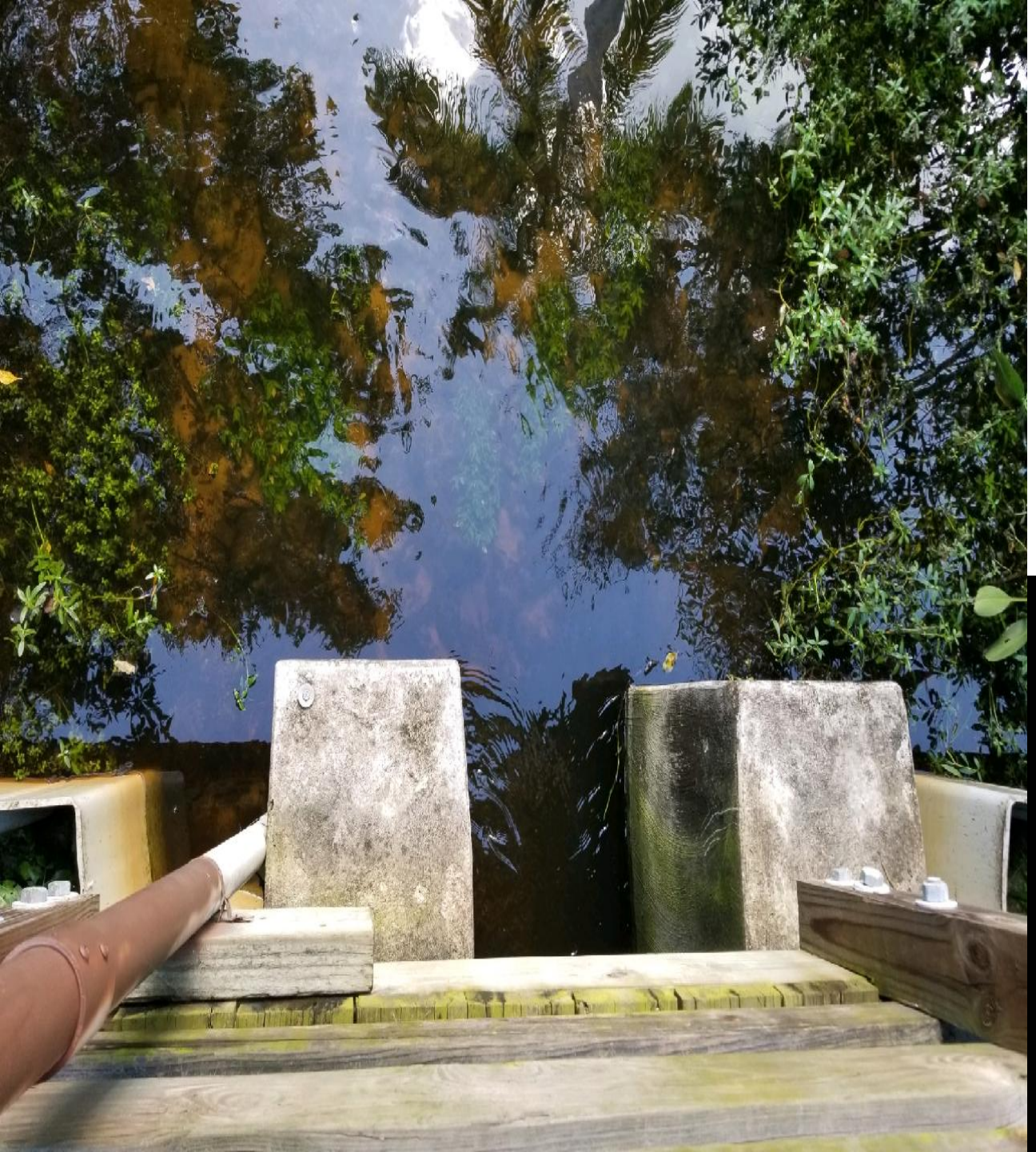


- Billy Creek's headwaters are located in Lee County and the creek discharges to the Caloosahatchee River
- Ford Street, Shoemaker, and Zapato Canals are tributaries of Billy Creek, which are located within the boundaries of the City of Fort Myers.
- Much of the land encompassed within the Billy Creek watershed are comprised of residential properties, parks, schools, and cemeteries.

Manuel Branch



- Extends westward from the southern extent of Ford Street canal to the Caloosahatchee River.
- The eastern portion of Manuel Branch consists of a mixture of industrial and commercial properties.
- The central and western portions of the watershed are developed with residential properties, a hospital, parks, and school properties



Fecal Indicator Bacteria

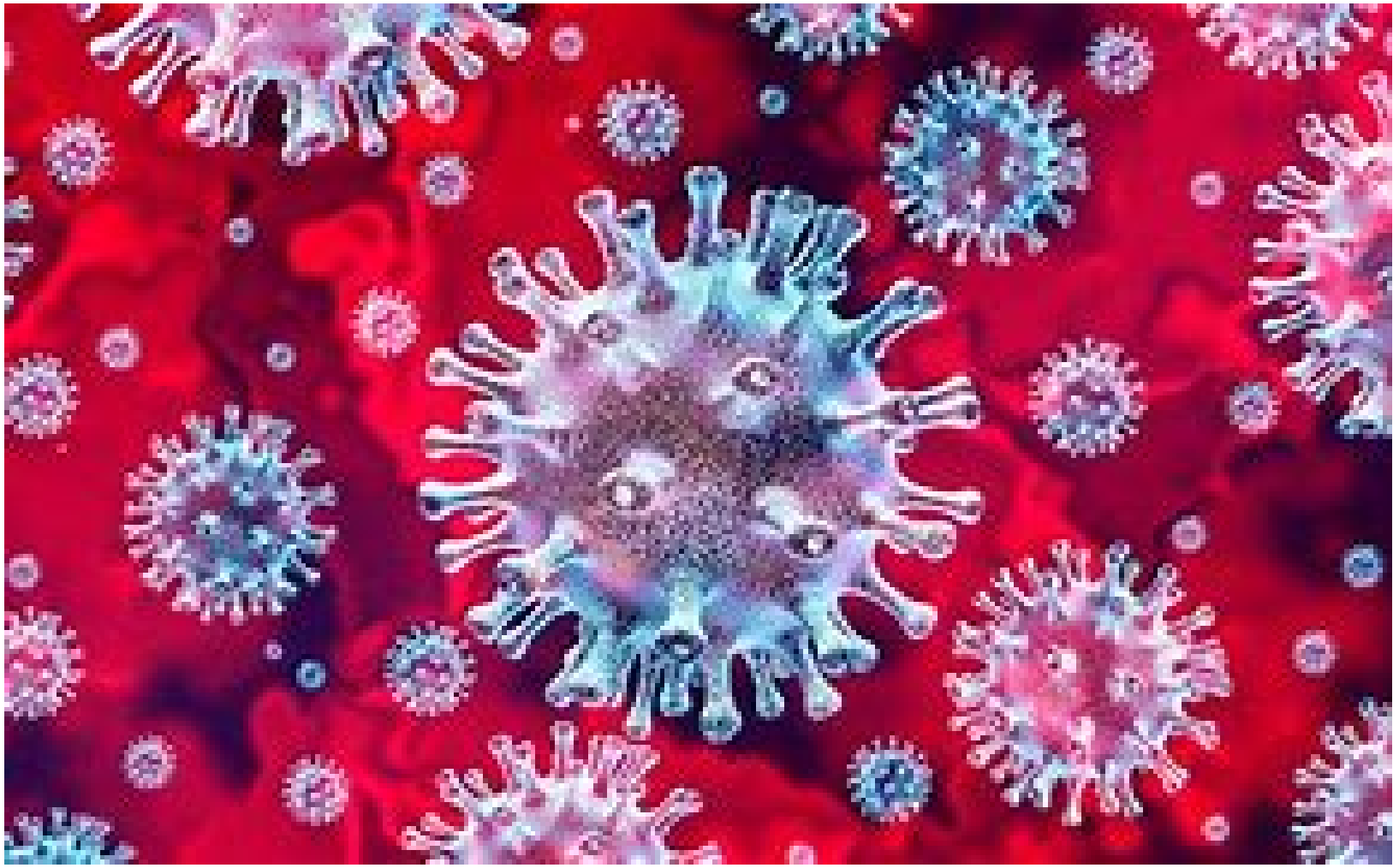
- Utilize guidance from 2018 FDEP “Restoring Bacteria-Impaired Waters: A Toolkit to Help Local Stakeholder Identify and Eliminate Potential Pathogen Problems (Toolkit).”

- Employs an iterative approach to identifying and managing/eliminating identified sources of FIB.

Tasks Completed To Date

- Completed GIS and update as new data is available
- Completed Maps on Table with identified stakeholders
- Completed Walk the Watershed with key stakeholders
- Monthly sampling has been performed at select locations since April 2021 in Billy Creek and Manuel Branch watersheds
- Pollutant Reduction Plan was completed and has been approved by the EPA as an alternative restoration approach in advance of TMDL development
- Quarterly reports submitted to the FDEP

COVID-19



- Stakeholder events commenced in Spring 2021
- Mask mandates in effect
- In-person meetings were banned or were on a case-by-case basis for many organizations

Stakeholders Involved

- City of Fort Myers
- GHD
- Florida Department of Transportation (FDOT)
- Florida Department of Environmental Protection (FDEP)
- Florida Department of Health (FDOH)
- South Florida Water Management District (SFWMD)
- Lee County
- Calusa Waterkeepers
- Lee County Department of Human & Veterans Resources

Maps on Table

- A virtual event was held to solicit input from stakeholder groups with knowledge of potential sources of fecal bacteria in the watersheds.
- Utilized Microsoft Teams breakout rooms for smaller interactive sessions.
- Were able to plot those concerns live on a GIS layer specific to each group.
- A list of locations was made for the subsequent Walk the Watershed.
- Additional areas were identified for further investigation.

Project Team

One (1) Project Manager

Technical Content Leader

One (1) Platform Technical Host

Producer/Timekeeper

Two (2) Facilitators

Breakout Discussion Leaders

Three (3) GIS Technicians

Real Time GIS Updates

One (1) Backup Facilitator

One (1) Backup GIS Technician

Virtual Maps on Table

Virtual Maps on Table

Process

- Prior to Event Practice Timing & Test Technology (practice, practice, practice)
- Start MS Teams & Ensure Participant Access
- Greeting & Set Event Expectations/Protocols
- Group Presentation
- Breakout Discussions & Collect GIS Data
- Reconvene Audience & Recap Discussions
- Information on Follow Up and WTW

Pros

- No travel time for participants
- GIS data collected in real-time
- Break-out rooms in MS Teams allows for small group discussion
- Stakeholders can text messages through the chat feature
- Takes less time than a typical in-person event
- Option for recording ensures that you can capture all comments

Cons

- Labor intensive & need for redundancy
- Requires a lot of pre-planning and practice
- Requires user training for platform
- Interruptions in internet service can be challenging
- Call-in participants cannot see presentations
- Requires audience monitoring & technical assistance
- Camaraderie of a live event is not the same

Walk the Watersheds

- Passenger van was utilized to ensure safe distancing
- Some participants used their own vehicle
- Hand sanitizer provided
- Masks were available and were worn by some participants
- Lunch was eaten outside at Shady Oaks Park

Walk the Watersheds

- One (1) Tour guide (PM)
- Two (2) Technicians
- One (1) Runner

- Tour guide led the group focusing on areas of interest identified during the MOT
- Each participant had field forms to complete
- Utilizing ArcGIS Collector, the group was able to collect photographs and data pertaining to observations
- Technicians updated the GIS database in real time
- Runner picked up and delivered lunch, transported late-comers & early departers

WTW Findings

1. Litter and trash
2. Pet waste
3. Illegal dumping
4. Illicit discharges
5. Fats, Rags, Oils, and Greases (FROG)

ARCGIS Storymap

- Why Water Quality is Important
- The Watersheds: Billy Creek/Manuel Branch
- Next Steps
- Community Engagement
- News
- Resources
- Reports
- Data

Community Engagement

- GHD assisted the City in obtaining a grant through the EPA's Gulf of Mexico Trash Free Waters Program.
- The City will be kicking off an environmental campaign with a water quality component in Spring 2022!

Community Service

- September 2021 Manuel's Branch clean-up with Keep Lee County Beautiful
- Revitalization of the City's Adopt a Canal Program
- February 2022 clean-up event conducted with Keep Lee County Beautiful and the PALs Program

Billy Creek Update

- E. Coli in Billy Creek generally appears to be relatively stable or trending downward, with concentrations at many locations below the action trigger category levels.
- Continued monitoring was recommended to further identify/confirm trends, particularly where recent increases have been noted
- While fluctuating trends of E. Coli associated with the disturbance of potential naturally formed bacteria in sediment are expected during Billy's Creek Restoration Project, it is anticipated that the restoration project will serve to further decrease concentrations of E. Coli in the Creek.
- Concentrations of HF-183 and acetaminophen were not detected over a one-year monitoring period.

Manuel Branch Update

- Concentrations within Manuel Branch remain elevated at a downstream location.
- Delineation soil sampling has identified a private lift station at a trailer park as an apparent source, with at least one unreported discharge.
- The City is working with the owners of the trailer park to construct a secondary containment structure to detain any future discharges, so they do not reach the Branch.

Questions?