

## **West Goodlette-Frank Road Area Joint Stormwater-Sewer Project**

**Project Design:** The WGF Joint Project has three main design components:

- Potable Water Line Relocation/replacement
- Sanitary Sewer Line Installation
- Stormwater System Reconstruction

**Water Lines:** The WGF Joint Project area is currently served with potable water by the City of Naples Utilities Department. The existing water lines are of various sizes and materials, some of which are very fragile. Knowing the susceptibility of those water lines to numerous breakages during any construction of sanitary sewer or stormwater facilities, the City opted to have new water lines designed/relocated and constructed at no additional costs to the residents. The new water lines will provide better reliability of volume and pressure by using larger pipes and looped interconnectivity along with better fire hydrant spacing in some locations.

**Sanitary Sewer Lines:** The design for the sanitary sewer lines utilizes a gravity flow collection system that conveys sewage to two new pump stations. The pump stations then pump the sewage through a force main to the existing force main collection system pipe along Goodlette-Frank Road that conveys the sewage to the City's sewage treatment plant facilities. The gravity line collection system will be located along the centerlines of the streets with service taps to the residences and businesses. The gravity collection system for the Ridge Street/Rosemary Lane area will flow to a sewage pump station (PS-132) near the western end of Ridge Street. The sewage will then be pumped north along 10<sup>th</sup> Street N to the second pump station (PS-133) at the corner of 10<sup>th</sup> Street N and Cooper Drive. The gravity collection system for the Hollygate Lane to Wisconsin Drive area will flow to PS-133. From PS-133 a force main will be constructed along the north side of Cooper Drive to 14<sup>th</sup> Street N, continue to Ohio Drive and then to Goodlette-Frank Road where it will then connect to the existing force main as previously mentioned. To ensure reliability when electricity is not available, PS-132 will have a quick-connect coupling to allow use of a portable generator when needed. PS-133 will have an on-site diesel fueled back-up pump installed.

**Stormwater System:** The design for the stormwater system utilizes roadside swales and storm drain piping. Water level control weirs are placed at strategic locations to prevent the over-drainage of the area and promote

groundwater storage. Generally speaking, one side of a street will be constructed with a 24" maximum depth roadside swale and driveway culverts while the other side of the street will be constructed with a 12" maximum depth swale underlain by a storm drain pipe. Both roadside swale systems are interconnected by cross drain pipes. Both swales function to provide temporary stormwater treatment and storage for the low intensity typical wet season thunderstorms common to the area. Once that capacity is exceeded the swales and cross drains convey the flow to the storm drain located under the shallow swale and the flow is then discharged eastward into the existing conveyance channel along the west side of Goodlette-Frank Road.