

Providing Water and Wastewater Service for Growth

Sam Mills, P.E.

Director of Infrastructure Planning

July 21, 2014

Policy & Planning Meeting



SAWS is responsible for:

- Providing sustainable, affordable water services
- Protecting public health
- Protecting the community's natural resources, especially the Edwards Aquifer and other water sources

Extending Service to New Customer

- SAWS will provide service to new customers when Developer Customer:
 - Designs & constructs all infrastructure needed to connect to SAWS existing available infrastructure
 - Pays applicable impact fees
- Must follow SAWS:
 - Utility Service Regulations (USR)
 - Specifications for Water and Sanitary Sewer Construction
 - Material Specifications
- Requirements designed to mitigate risk

Oversizing

- If a Developer builds infrastructure included in SAWS Master Plan CIP, SAWS pays to oversize Developer constructed infrastructure.
 - Board approval required
 - Ultimately paid with impact fees

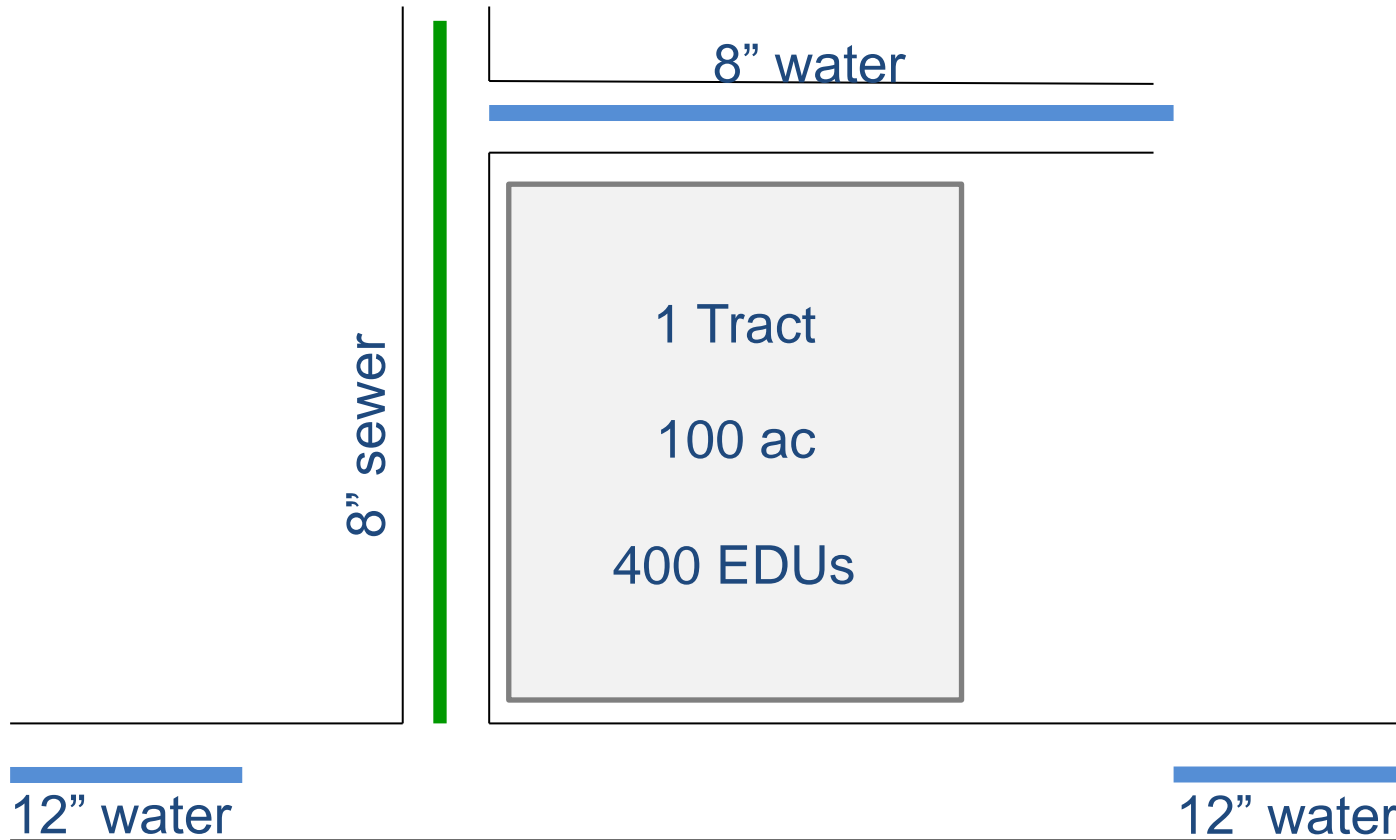
Utility Service Agreements

- Board approval of USAs is required for developments:
 - Greater than 50 acres
 - When SAWS will provide reimbursements for oversizing of developer constructed infrastructure
 - Over the Edwards Aquifer Recharge or Contributing Zone
 - Within the 5-mile Awareness Zone of Camp Bullis

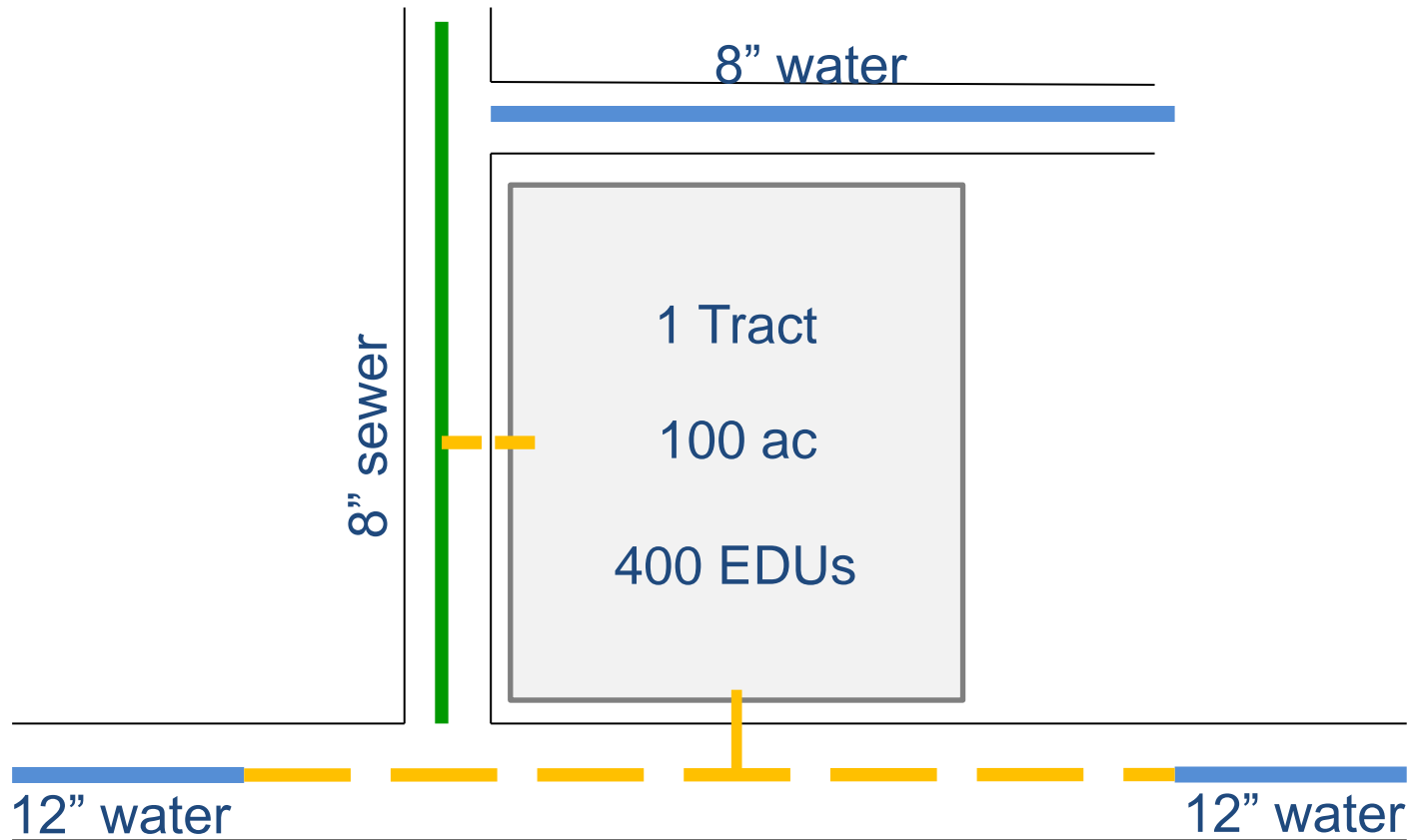
SAWS Role in Land Development through Plat Process

- Development Engineering Division
 - How will tract be served water and wastewater service
 - Water Wells and/or Septic Tanks
 - SAWS
 - Other Purveyors
- Aquifer Protection
 - Protecting public health
 - Protecting the community's natural resources, especially the Edwards Aquifer and other water sources
- Utility Service Agreements usually required for SAWS service
 - General Construction Permit
 - Counter Permit

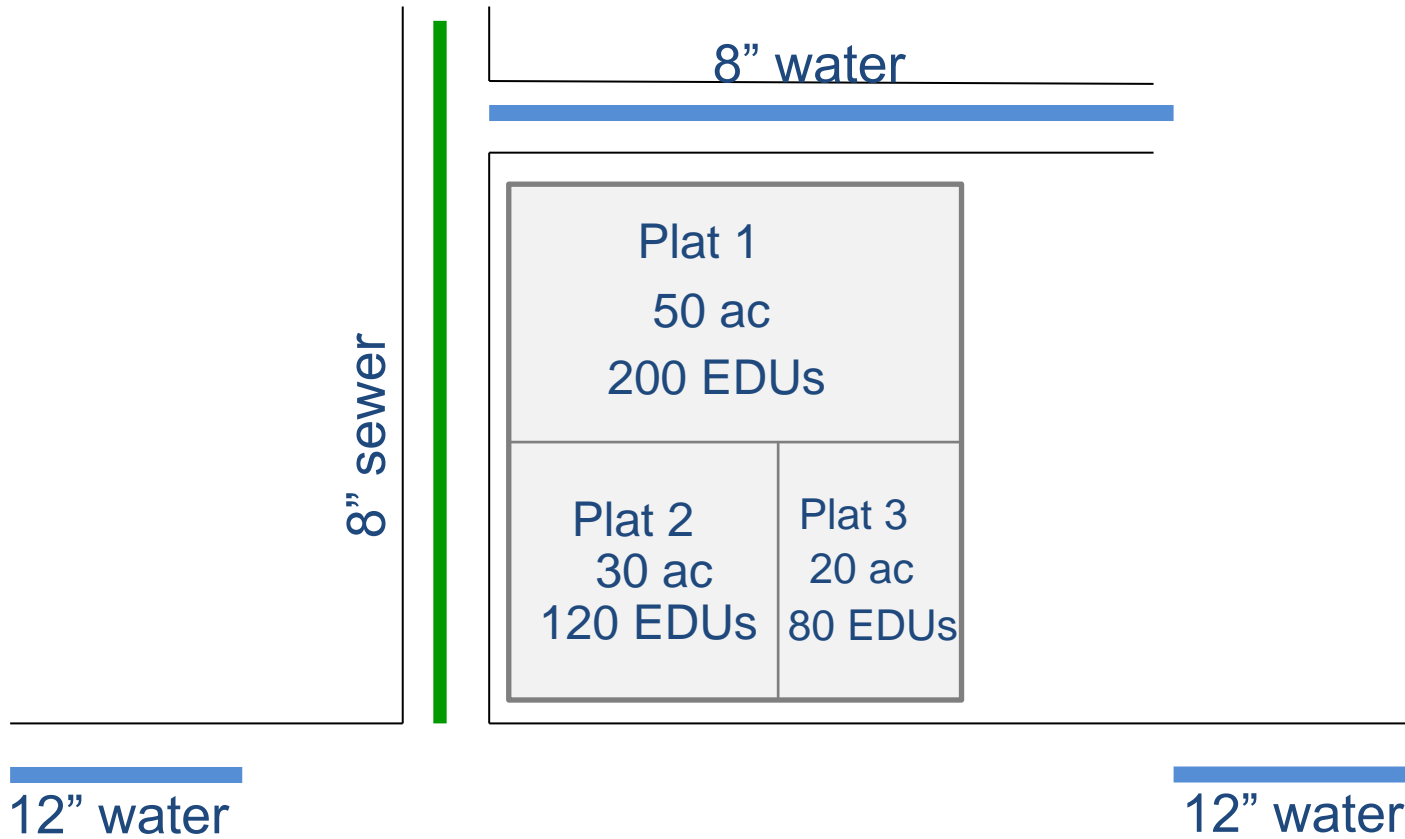
Utility Service Agreement Request



Single Tract Development

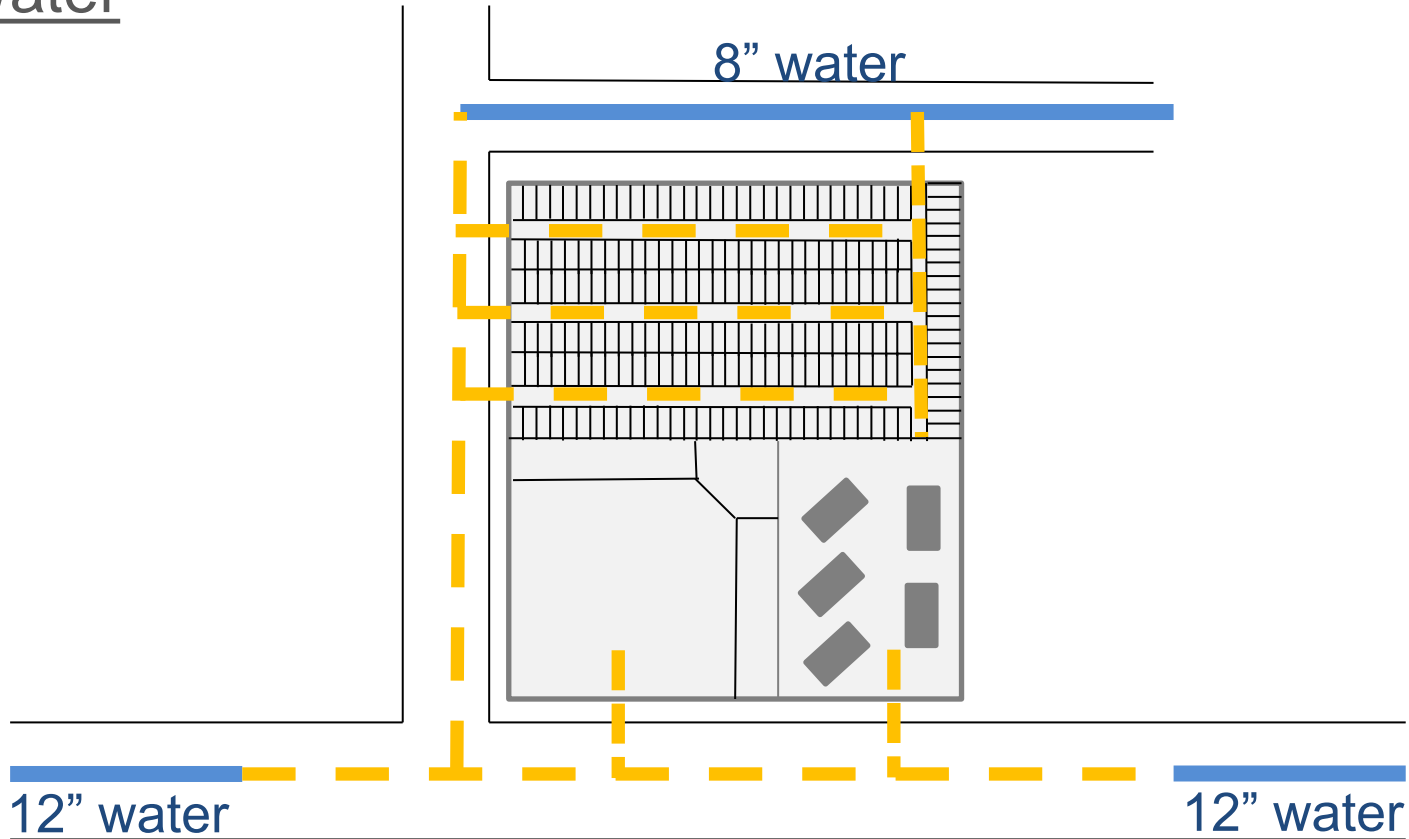


Mixed Development



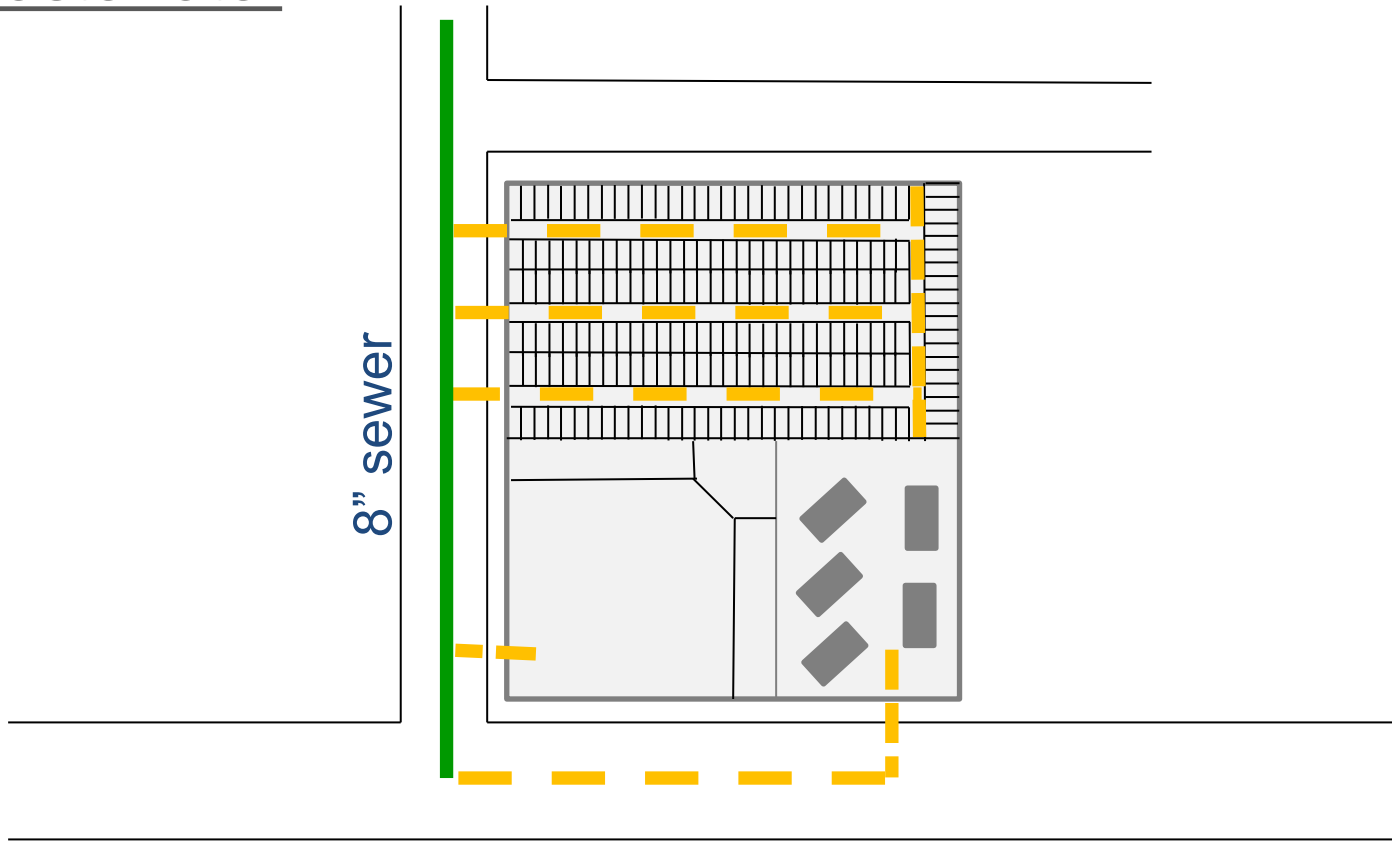
Mixed Development

Water



Mixed Development

Wastewater



Water Systems

Infrastructure Sizing

- Water pipe design based on:
 - Peak hourly domestic flow
 - Fire flow
 - Maximum flow to prevent main breaks
 - Required operating pressure

Wastewater

Infrastructure Sizing

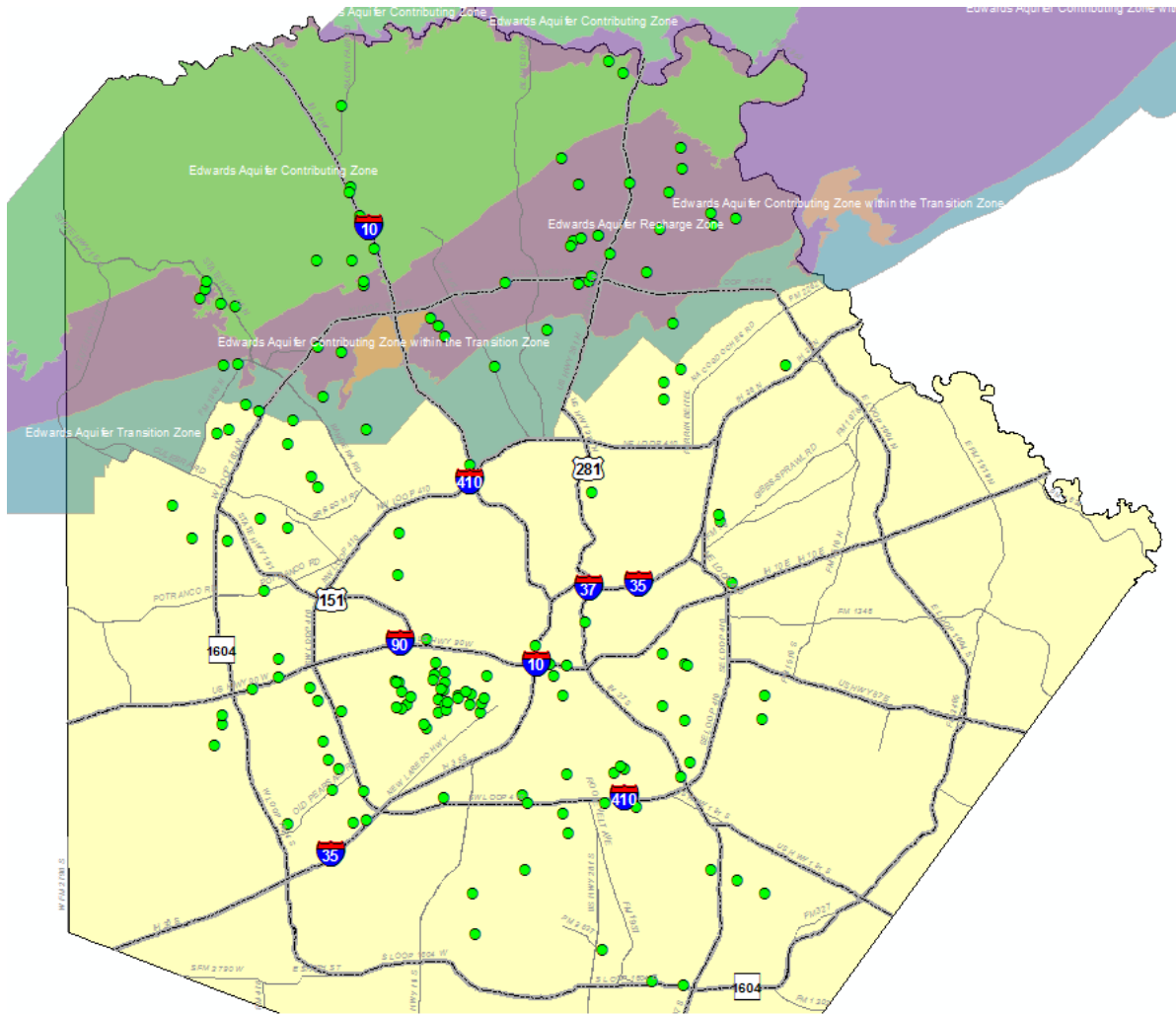
- Wastewater pipe designed to handle 3 times average daily flow.
- Requirements over the Edwards Aquifer Recharge Zone:
 - Heavy wall piping & coatings
 - 5 year televising, cleaning & smoke testing

Wastewater

Lift Stations and Force Mains

- Lift stations and force mains are discouraged and will be allowed only where gravity wastewater mains are not practical or economically feasible.
- The developer customer must:
 - fund the entire cost to design and construct the lift station/force main system, and
 - pay applicable maintenance charges in accordance with the lift station charge schedule (currently \$198,155)

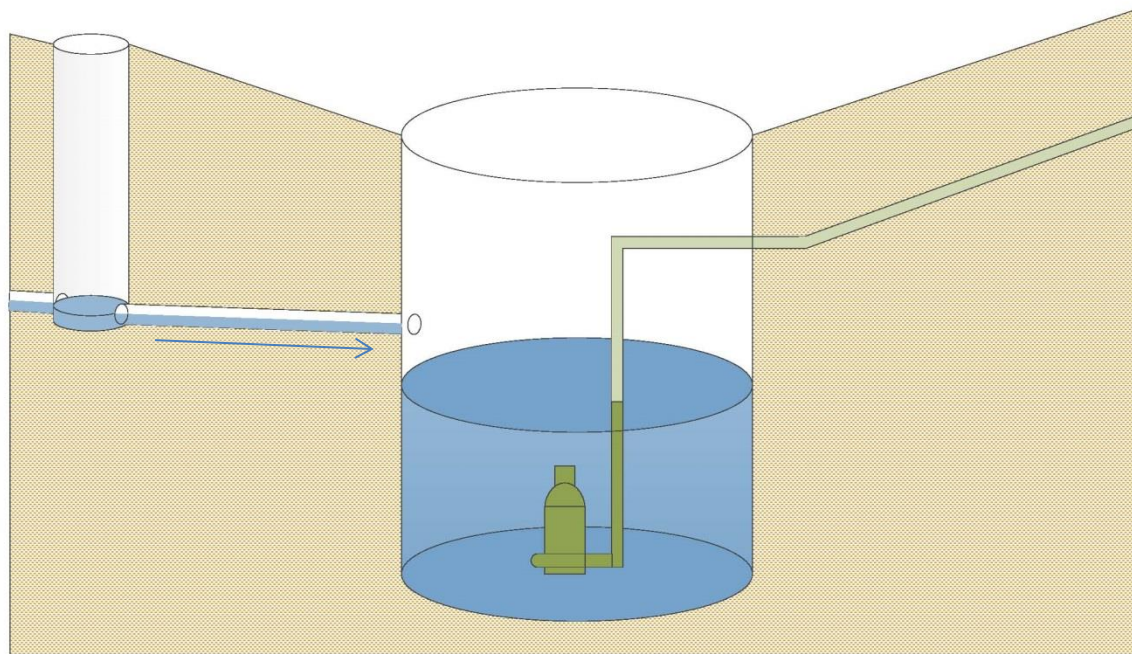
Lift Stations



155 Existing Lift Stations

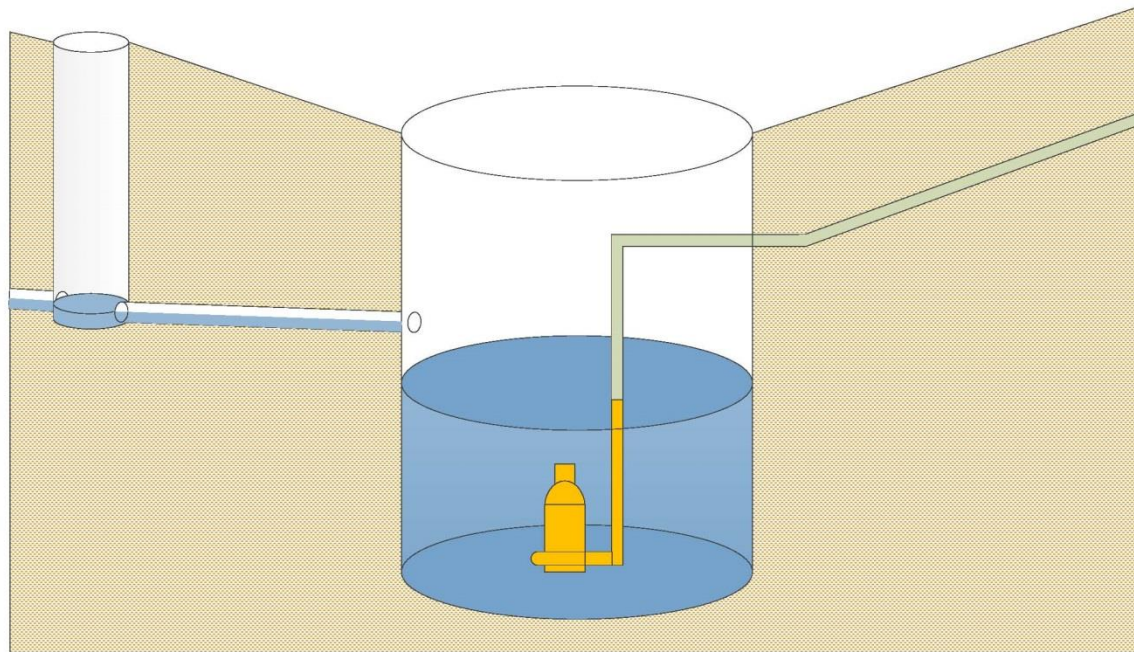
Lift Stations

Incoming flows from higher elevations are collected in the wetwell

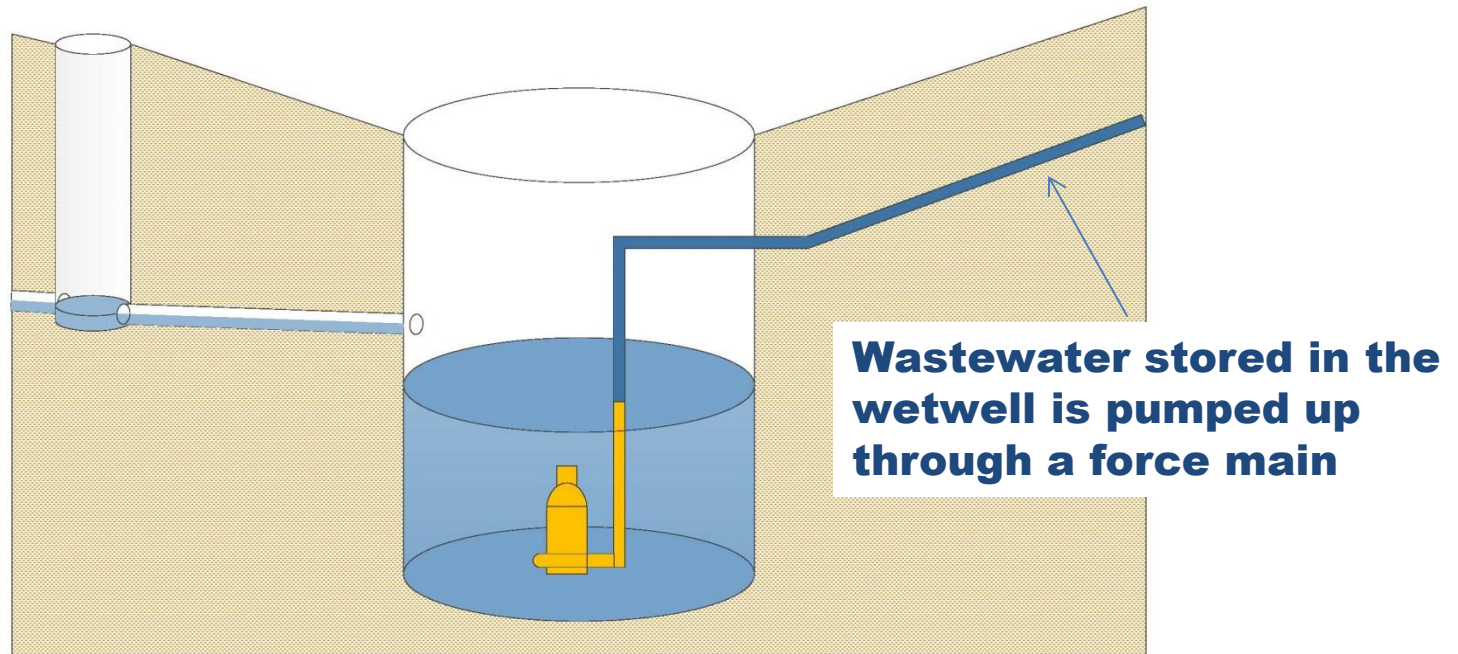


Lift Stations

Level sensors activate the pump

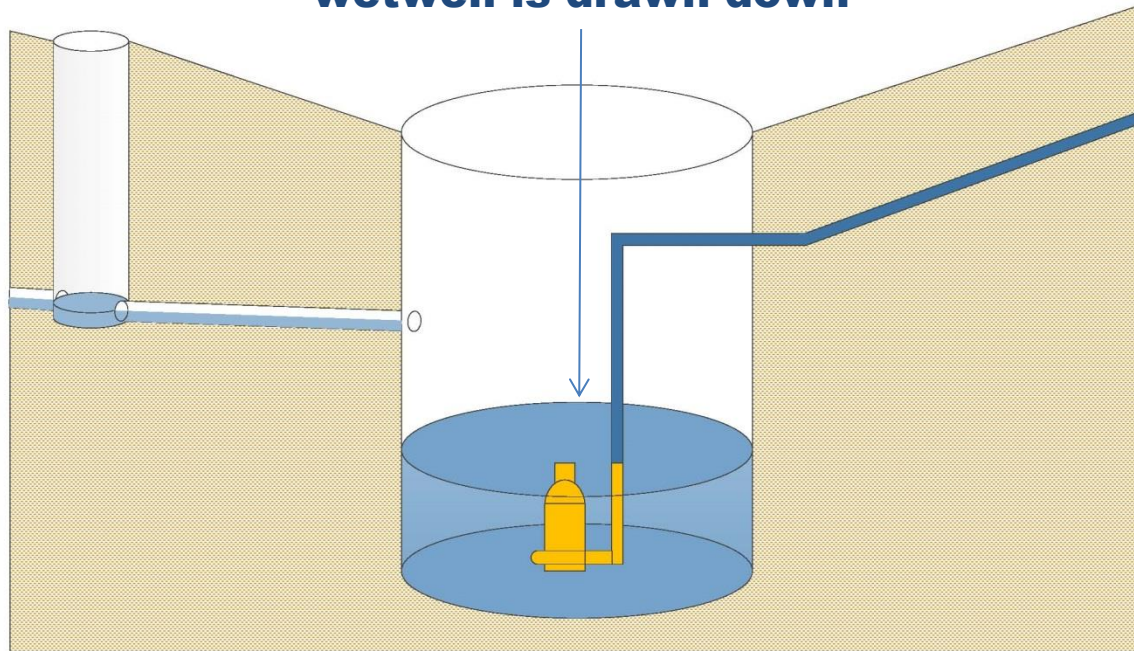


Lift Stations



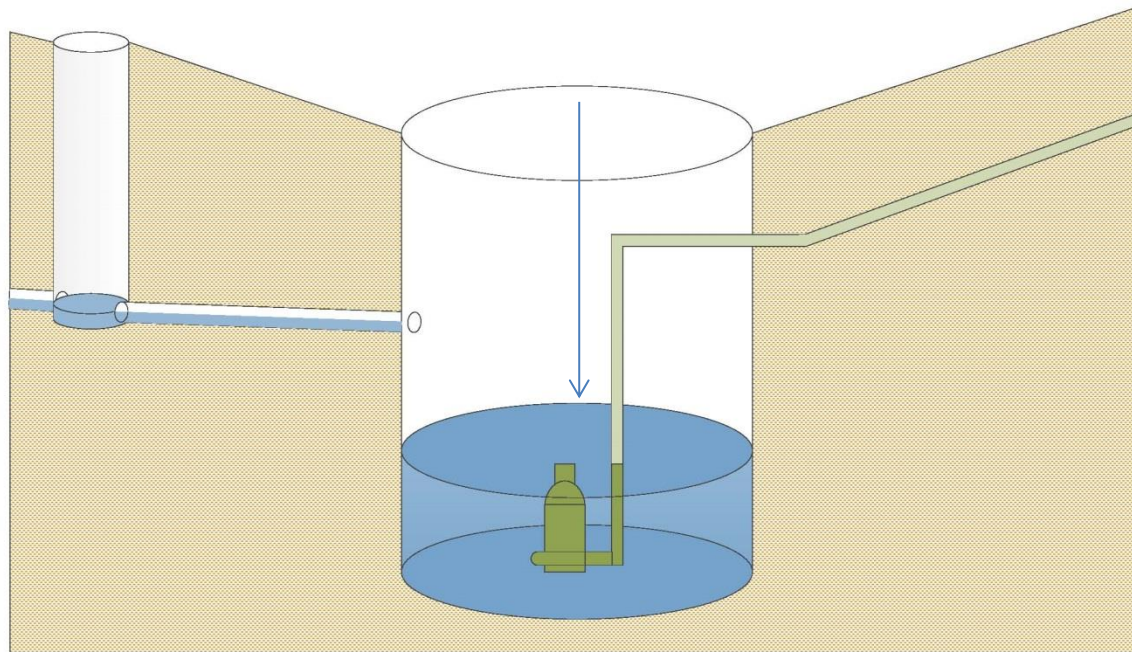
Lift Stations

Water level in the wetwell is drawn down



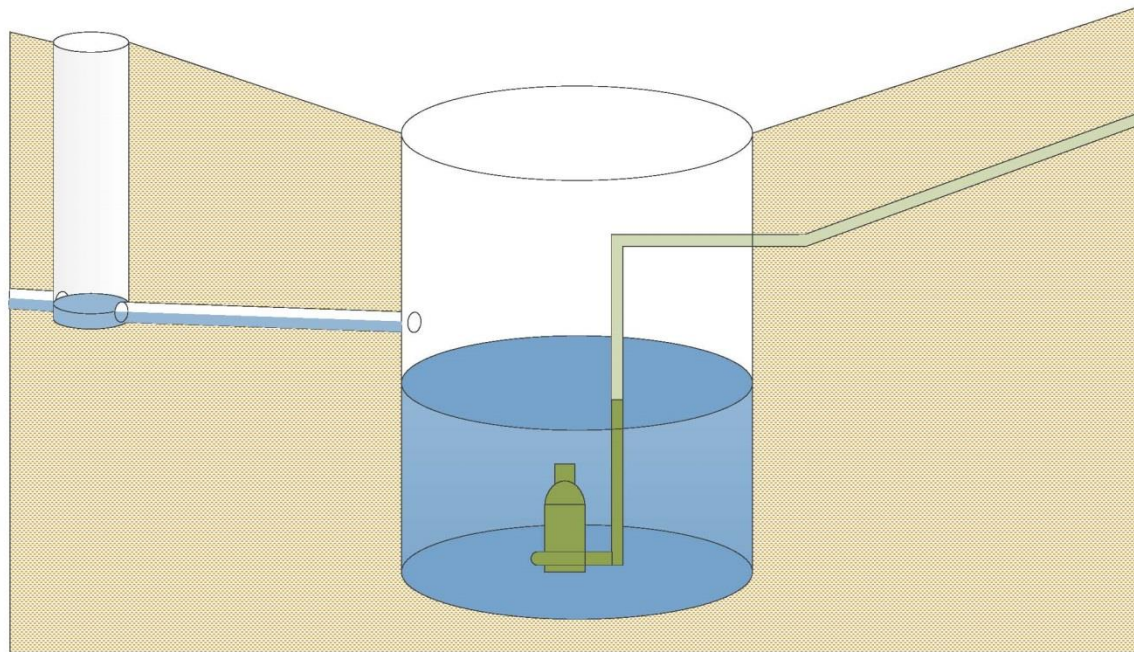
Lift Stations

Water level drops below the low level sensor and the pump shuts off

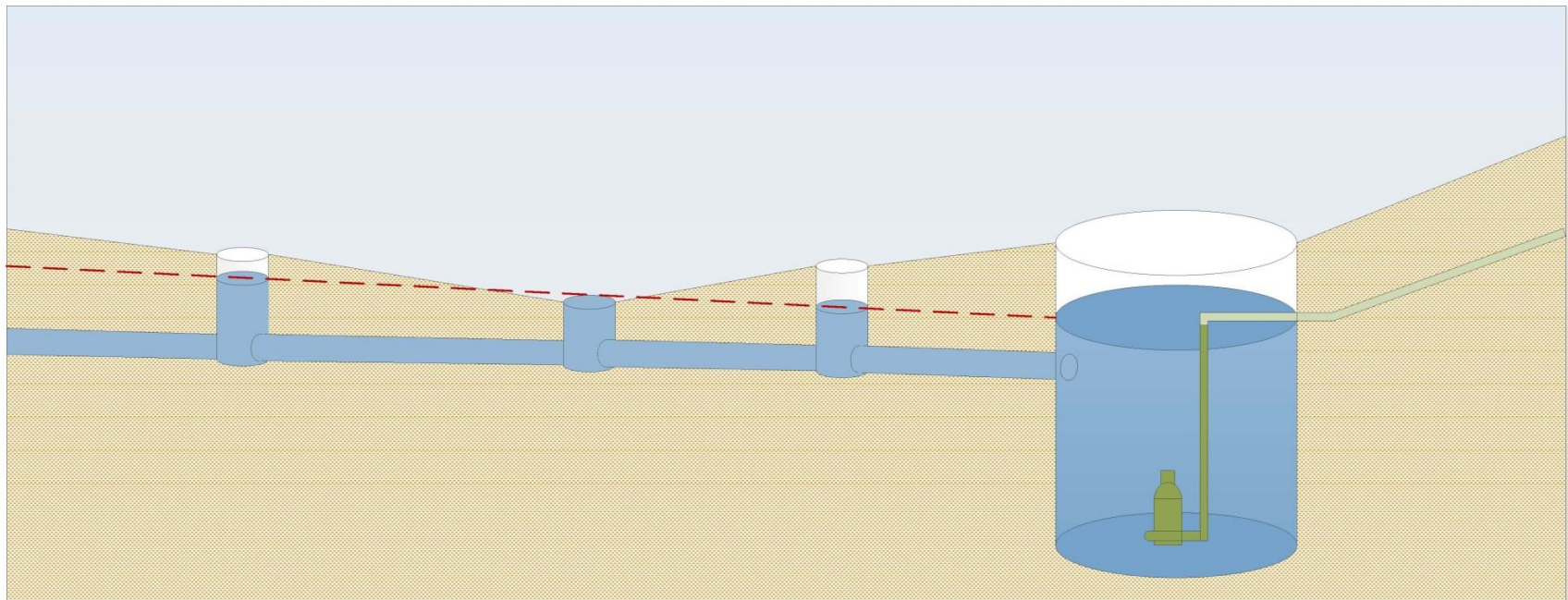


Lift Stations

Incoming wastewater fills the wetwell again and the cycle repeats



Lift Stations



Wastewater

Lift Stations and Force Mains

- The design of the lift station shall:
 - Incorporate a wet well sized for the ultimate capacity of the watershed
 - Adhere to the standard design requirements of SAWS and TCEQ
 - Supervisory and Control Data Acquisition (SCADA)
 - Backup generator
 - Public lift stations will only be permitted when serving more than one customer
- Dual force mains required for sensitive areas
- Cost Benefit Analysis:
 - Cost of lift station & force main plus 30 years of operation and maintenance expense must be less than the cost of gravity main

Requirements Designed to Mitigate Risk

- Providing sustainable, affordable water services
- Protecting public health
- Protecting the community's natural resources, especially the Edwards Aquifer and other water sources

Providing Water and Wastewater Service for Growth

Sam Mills, P.E.

Director of Infrastructure Planning

July 21, 2014

Policy & Planning Meeting

