Presenter:
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Project Management Group

- Oversight of private development projects.
- Planning, directing and executing the Capital Improvement Program (CIP).
- Inspection of all water and wastewater construction for both private development and CIP Projects.
- Building, editing and updating the Geographic Information System (GIS).
- Site Plan Review Committee member.
Private Development Oversight

• Primary pathway for the expansion of the ACSA utility system.
• Utility construction drawings submitted by developers’ consultants assigned to an engineer for review, comment and final approval.
• Assign project to a Construction Inspector.
• ACSA Engineer and Inspector hold pre-construction conference with contractor and developer.
• Monitor construction of utilities, help resolve conflicts and approve field adjustments where necessary.
• Reviews and approves legal documentation for final acceptance of water and wastewater facilities.
Capital Improvement Program (CIP)

- Identify CIP projects for inclusion in our ten-year schedule, including conceptual maps and cost estimates.
- Annually develop the CIP Budget with tentative schedule for design and construction components.
- Develop scopes of work of individual projects for assignment to term contract consultants.
- Participate in the design with the consultant, including review and approval of construction drawings and specifications (contract documents).
- Provide design services for CIP projects constructed by Maintenance Department.
• Directly negotiate acquisition of required easements or coordinate the acquisition of easements by a third party.
• Coordinate the scheduling of public advertisement of bids.
• Project execution mirrors the steps of private development with regard to assignment of inspector, pre-construction conference, approval of field adjustments and legal document review.
• Additional tasks for CIP projects include review and approval of monthly pay estimates, potential change orders and direct hands-on response to customer complaints.
Construction Inspection

• Review and become familiar with construction drawings for project assigned.
• Attend pre-construction conference with Contractor to answer questions, discuss issues specific to project and review potential problem areas.
• Verify materials to be used meet Approved Products List.
• Verify construction equipment is onsite to adequately complete the work.
• Ensure work is performed in accordance with the approved drawings and technical construction specifications.
• Coordinate with the Contractor to resolve problems during construction.
Construction Inspection (Continued)

- Quality control testing of all water and wastewater piping.
- Use Global Positioning System (GPS) technology to incorporate all new utility assets into GIS Map.
- Final inspection to verify all work satisfactorily completed.
- Review and approval of record drawings and determine need for revised or additional easements.
- Within one year of acceptance, re-inspect project to determine any items of work covered by one-year warranty.
Developer vs. CIP Projects

Since the ACSA fully funds CIP Projects, this requires that Inspector responsibilities be expanded to include:

• Assignment to project full-time depending upon size and scope;
• Review detailed contract specifications and unique product submittals;
• Direct communication and coordination with all property owners affected by the project;
• Maintain inventory of materials stored onsite versus materials installed;
• Location and marking of existing ACSA utilities;
• Verification of quantity of work completed for monthly pay requests from Contractor;
• Direct involvement to ensure property restoration, coordination of service interruptions and complaint resolution.
Geographic Information System (GIS)

- Developed and built the attribute framework, and the pipe network using a variety of software; now published utilizing the ESRI package.
- Update the GIS with new assets utilizing GPS data gathered by the Inspectors.
- Team effort with I.T. to edit existing GIS Map with data verified by Maintenance and Utility Locators.
- Continuous quality control of data.
- Powerful tool to analyze the utility system components, identify future CIP projects and incorporate development into long-range planning.
Site Plan Review

- ACSA Engineer assigned to sit on the County Site Plan Review Committee to represent our interests.
- Twice monthly meeting to provide comment on all new site plans, site plan amendments, subdivision plats, special use permits and zoning map amendments.
- Develop comments relative to ACSA utilities and review with Engineering Team prior to delivering comments.
- Attend County pre-application meetings weekly, as necessary, to provide ACSA utility information and policies to potential developers of specific parcels.
- Maintain a centralized database tracking status of all site plans, plats, special use permits and zoning map amendments.
Hydraulic Modeling Group

- Maintenance and calibration of the water and wastewater hydraulic models.
- Perform modeling scenarios for ACSA Engineers and RWSA, as requested.
- Conduct Sanitary Sewer Evaluation Surveys (SSES) for Infiltration/Inflow Reduction Program.
- Provide field testing and data collection for Engineering staff and public.
Hydraulic Models – Maintenance & Calibration

• Build the water and wastewater hydraulic models with data imported from the GIS.
• Troubleshoot and repair connectivity errors within the models.
• Perform field testing such as hydrant flow tests, pressure recordings, friction factor testing and hydraulic grade line tests to obtain data for model calibration.
• Utilize SCADA information from RWSA and ACSA to fine-tune hydraulic model operation.
• Update customer demand data periodically to maintain model accuracy and produce seasonal models.
Perform Modeling Scenarios

• Conduct modeling scenarios in either extended period or steady-state modes.

• Assist in the analysis of model results to determine their validity.

• Provide results in database, spreadsheet, or screen shot format with listed assumptions and scenario descriptions.

• Maintain an archive of modeling scenario requests and their results for future retrieval.
Infiltration/Inflow Reduction Program

- Deploy wastewater flow meters in smaller sub-drainage basins throughout ACSA sanitary sewer system.
- Maintain and calibrate rain gauges distributed throughout the sanitary sewer system and periodically download data.
- Utilize flow metering data during dry and wet weather, along with rain gauge data to produce hydrographs of storm events.
- Calculate infiltration and inflow quantities to identify problem areas and provide wastewater flow meter reports to summarize results.
- Review SSES projects by term contract consultant and deploy wastewater flow meters to gather post-rehabilitation data to determine effectiveness.
Field Testing & Data Collection

• Conduct fire hydrant flow testing at the request of Engineers and public to determine available fire flow.

• Deploy digital pressure recorders and collect data in support of Engineering investigations or in response to requests from public.

• Deploy odor sensors in the Powell Creek Trunk Sewer and periodically download data for odor control efforts at the North Fork Regional Pump Station.

• Provide rain gauge data to RWSA for comparison with their permanent sewer flow meters.
Utility Locating Group

• Manages the Virginia Utility Protection Service Program (VUPS), commonly known as Miss Utility, as mandated by state law.
• Reviews County permits issued by the Building Code Division of Community Development.
• Provide support for the GIS.
• Provide general support for Engineering Department data collection.
Manage Miss Utility Program

• Utility location request tickets are received via fax and email and distributed between two utility locators.

• Construction Inspectors receive tickets for their current active projects or when excessive ticket volume occurs.

• Routine tickets receive a response within 48-hours, excluding weekends and legal state holidays.

• Emergency tickets and 3-hour tickets require an immediate response made possible with locators’ cell phones capable of receiving email alerts.
Miss Utility Program (Continued)

- All tickets responded to are entered via computer on the VUPS website using numeric codes.
- Maintain an archive of hard copies of all location tickets for a period of one-year.
County Permit Review

• Visit County Office Building routinely to review Building Permits, Sign Permits, Demolition Permits and Zoning Clearances.

• Building & Sign Permits are reviewed to prevent encroachment of structures or obstructions into water and sewer easements.

• Meet with developer/builder and require surveying of building footprint relative to utility easement, as necessary.

• Demolition Permits are not approved where water and/or sewer connections exist until locator visually confirms the disconnection and capping of service lines from ACSA mains.

• Zoning clearances are reviewed for any proposed food preparation services and copies are provided to the ACSA Regulatory Compliance Specialist to verify the need for grease reduction devices or backflow prevention devices.
Support GIS & Engineering Data Collection

- During field location of ACSA water and wastewater assets, identify discrepancies between GIS and actual field location.
- Use computer tablet to create a red-line edit identifying true location within GIS map and submit to IT or Engineering for editing.
- Assist other Engineering staff with hydrant testing, pressure gauge deployment, sewer flow meter installations, surveying and planned water service disruptions, as needed.
Environmental Group

- Direct & manage the Fats, Oils and Grease (FOG) Reduction Program.
- Direct & manage the Backflow and Cross-Connection Prevention Program mandated by Virginia Department of Health (VDH) Waterworks Regulations.
- Manage and oversee the various water quality programs.
Fats, Oils & Grease (FOG) Reduction Program

• Issue FOG Waste Discharge Permits for all Food Service Establishments (FSE).

• Conduct routine inspections of grease traps and grease interceptors multiple times per year, including a review of permittees' cleaning schedules (grease traps) and service manifests (grease interceptors).

• Track all grease reduction devices with a FOG database that includes the results of inspection reports (currently 236 establishments).

• Generate Notices of Non-Compliance and Notices of Violation utilizing the database software.

• Direct the enforcement of violations of ACSA Rules & Regulations including the preparation of invoices for charges associated with various infractions.

• Organize and oversee the education of residential customers about FOG reduction through direct delivery of information kits, direct mailings, and advertisements on radio, news websites and in print media.
Backflow & Cross-Connection Prevention Program

- Track the status of all backflow prevention devices including the results of annual test reports. (currently over 3500 devices).
- Maintain a list of all certified backflow prevention device testers.
- Conduct site inspections of all non-residential customer classes to verify the installation of appropriate backflow prevention devices and the absence of cross-connections.
- Generate Notices of Non-Compliance and Notices of Violation utilizing the database software.
- Direct the enforcement of violations of ACSA Rules & Regulations, including the preparation of invoices for charges associated with various infractions and the recommendation of water service termination.
Backflow & Cross Connection Connection Prevention (Continued)

- Perform annual testing of ACSA owned backflow prevention devices on hydrant meters and upon their return prior to deployment.
- Inspect water hauling trucks for proper backflow prevention and flow control valves.
- Verify the disconnection of wells serving existing structures that are connecting to the ACSA water system.
- Investigate potentially unknown irrigation systems installed by “water only” customers to verify backflow prevention devices are installed.
Water Quality Program

• Direct and manage the Lead and Copper Sampling Program, including the identification of sampling sites, coordinating sample collection from customers and submitting samples for testing.
• Review, interpret and distribute to ACSA staff various water quality data provided by RWSA, including bacteriological, chlorine residual, disinfection by-products and assorted treatment plant data.
• Manage and schedule all required and optional testing for the Red Hill Waterworks and Camp Holiday Trails.
• Prepare and oversee the printing and distribution of the annual Consumer Confidence Reports (CCR) using data from RWSA.
• Respond to customers’ complaints, concerns and questions regarding water quality, and document complaints in a database.
• Review drinking water regulations and recommend operating and monitoring policies to achieve compliance schedules.