WBC Joint Utility Seminar

Panelists
Pepco
Stephen J. Park, P.E.
Verizon
Dave Gray
Washington Gas
Quinton Lewis-Diggs
DC Water & Sewer Authority
Chris Sandt, P.E.

Moderator – Bob Freas, Exponent

Presentation 9:00 to 11:00 a.m.
April 9, 2015
Seminar Sponsors

- Black & Veatch: Corporate Sponsor
- AISC: Steel Sponsor
- JBG Companies: Steel Sponsor
- Tishman: An AECOM Company, Steel Sponsor
- WCS Construction: Aluminum Sponsor
- Washington Building Congress: Concrete Sponsor
- D.C. Water is Life
- Pepco: Energy for a Changing World
- Verizon
- Washington Gas
Program Agenda

- 9:00  Welcome & Introductions
  Washington Gas Opening Remarks
- 9:15  Pepco Presentation and Q&A
- 9:40  Verizon Presentation and Q&A
- 10:05 Washington Gas Presentation and Q&A
- 10:30 DC WASA Presentation and Q&A
- 10:55 Closing Remarks
Electric Service Connection Process

WBC Joint Utility Seminar 2015

Presented by: Stephen J. Park, PE
April 9, 2015
Program Agenda

- Pepco Service Boundary

- Typical process for a new large commercial service connection within Pepco:
  - On-line application process for new and upgraded electric service connections
  - Developer’s Manual and Standards availability on Pepco’s website
  - Approved Switchgear List
  - Typical Design & Construction Duration

- Impact of DDOT Public Realm Design Manual

- Option for Customer to Build Pepco Structural Facilities in Public Space
Pepco Service Boundary
Typical Process for a New Commercial Service Connection Project

I. Initiation

II. Design

III. Pre-Construction Inspections

IV. Construction
Typical Process for a New Commercial Service Connection Project

I. Initiation:
   - Customer submits on-line Application for Electric Service Form
   - Or Visit
     WWW.PEPCO.COM
     CONNECT WITH US
     DOING BUSINESS WITH US
     Builders and Inspectors
     New or Upgrade Service
     Login or First Time User
Typical Process for a New Commercial Service Connection Project - Initiation

Apply for Service

Check Status
Typical Process for a New Commercial Service Connection Project - Initiation - Application Sample Page 1

Application for New or Upgrade Electric Service

* - Required Fields to submit  * - Required Fields to save for future submittal

Save  Submit  Return to Menu

Applicant Information

Except for Applicant Type, this section can only be modified through your profile.

Today's Date: 02/06/2015
Applicant's Name: Stephan Park  Applicant Type: Other

**If you have a "Doing Business As" (DBA) name please follow the following format
Business Name attn: Contact Name

Mailing Address: 9999 E Capitol St
City: Upper Marlboro  State: MD  Zip: 20772

Primary Phone #: 301-967-5810  Alternate Phone #:  
Fax Number #:  
Email Address: sjpark@pepco.com

Add another Contact

Primary Site Use

Residential:  Sub-Division:  Commercial/Multi-Use:  Industrial:

Address of Property to be Served

Project
### Typical Process for a New Commercial Service Connection Project - Initiation - Application Sample Page 2

#### Login

**Type of Service**

- Underground: *
- Overhead: *

**Voltage**

- Proposed Voltage *

*NOTE: Some voltages are not available at some locations. For heavy-ups, enter the existing voltage information in the Additional Comments field at the bottom of the application. Phase protection should be considered for three-phase service.*

#### Service Terminations

<table>
<thead>
<tr>
<th>Service</th>
<th>Service Equipment Type</th>
<th>Capacity (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Service</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #1</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #2</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #3</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #4</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #5</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>New Service #6</td>
<td>-----</td>
<td>----</td>
</tr>
</tbody>
</table>

#### Load Information

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Water Heating</th>
<th>Largest Motor</th>
<th>Air Conditioning</th>
<th>Elevators</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>KW</td>
<td>KW</td>
<td>HP</td>
<td>TON</td>
<td>EA</td>
<td>KW</td>
</tr>
<tr>
<td>TON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total HP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Typical Process for a New Commercial Service Connection Project - Initiation - Status Screen

**Project Address**

**WR Number**

**Contact Info**

**Job Status**
Typical Process for a New Commercial Service Connection Project - Initiation

- Application for Electric Service must contain:
  
  • Project Location and Contact Information
  
  • Conditioned Space & Type of Use – Square Feet and/or Number of Units
  
  • Service Equipment Information – Type, Size & Voltage
  
  • Connected Load Information – Including Largest Motor
  
  • In-Service Date, Construction Start and Completion Date

- Some Required Information will vary with Type of Application
  
  • Example: Heavy up and New Service has different required information.
Typical Process for a New Commercial Service Connection Project - Initiation

- Pepco to send Response to Proposed Class of Service (Typically Within 3 Weeks)
  - Class of Service – e.g. 265/460V, 3 Phase, 4 Wire, 60 hertz
  - Available Fault Current and Starting Current Limitation
  - Point of Service – Pepco’s preferred service location
  - Customer owned structural facility requirements
  - Service cable to be provided and installed by Pepco
  - Specifies appropriate Pepco Standards and Conditions

- After receiving the Proposed Class of Service from Pepco, a meeting with Pepco’s design staff is highly recommended.
Typical Process for a New Commercial Service Connection Project - Initiation

- Customer submissions
  - Structural drawings for customer-built facilities located on private property
  - Building plans (site and utility, and 2nd basement through 2nd floor)
  - Pepco’s approval of customer’s structural drawings will be in writing and include:
    - Required Pepco inspection information including contact information for obtaining structural facility inspections
    - List of Stock Materials available for purchase from Pepco
  - **Pepco design of the service connection will **not **start until the required drawings are received and approved.**
Typical Process for a New Commercial Service Connection Project - Initiation

- See Commercial Design Manual and Standard Drawings on Pepco Website:
Typical Process for a New Commercial Service Connection Project – Design

II. Design Phases:

- Preliminary Engineering
- Field Investigation
- Final Engineering
  - For services over 1200 amps, the customer must submit plan and profile views of the electric room for Pepco’s review and approval.
  - For projects with multiple service terminations, the customers must submit a load breakdown per termination.
- Estimating
  - The customer is notified of the Service Connection Fee
- Permits
- Final Assembly of Construction Package

Total Project Design Duration – Typically 2 to 4 months
Typical Process for a New Commercial Service Connection Project – Pre-Construction Inspection

III. Pre-Construction Inspections:

Prior to scheduling Construction, the job site is inspected by Pepco to verify:

- Approved switchgear is mounted securely, including meter sockets and meter panels
- Structural facilities for electric service (i.e., manholes, conduit, transformer pads, poles, etc.) are properly installed on private property and/or in public space by agreement with Pepco
- Job site is cleared of debris and building material for Pepco access

All customer built conduit, transformer pads, manholes, and customer installed poles must be inspected by Pepco prior to any backfilling and/or pouring concrete.

Pepco requires a 48-hour notification to schedule inspection in DC, 1 week notification in Maryland.
Typical Process for a New Commercial Service Connection Project - Construction

IV. Construction:

- Pepco crews are scheduled upon:
  - Certification of customer built facilities
  - Payment of Service Connection Fee
  - Availability of appropriate permits

- Pepco construction time is dependent upon the scope of work, such as:
  - Number of transformers
  - Number of manholes
  - Distance and quantity of underground cable to be installed

The new service will not be energized until Pepco has received approval from the appropriate electrical inspectors’ office and the service connection fee is paid.

Total Construction Duration – Typically 2 to 3 Months
Impact of DDOT Public Realm Design Manual (Downtown Streetscape Regulations)

• **5.4.2.2 Placement and Covers Rule**
  
  “Vaults shall be located on private property whenever possible. If, for some compelling reason, a vault may not be located on private property a permit for placing a vault in public space may be granted if:

  1. The vault is located adjacent to ground floor retail in a commercial building and has a solid cover that is flush with the surrounding surface and matches the adjacent paving material
  2. The vault is located in the public parking zone adjacent to a residential building and is concealed on all sides facing the right-of-way by a landscaped buffer
  3. The vault is located in an alley and complies with building code requirements”

• As a part of obtaining preliminary streetscape review approval, DDOT may prohibit use of grated vaults in public space.

• Pepco’s standard transformer installations rely on natural convection venting/cooling through manhole grates.
Impact of DDOT Public Realm Design Manual (Downtown Streetscape Regulations)

Pepco provides the following transformer installation options with prior approval from Engineering to cope with DDOT’s regulation:

- **Company Plan:**
  Pepco equipment in private property closest to Pepco’s available source

- **Preferred Options:**
  1. Pepco equipment in alternate location within the property
  2. Pepco equipment in non-vehicle accessible Public Space (DC Public Parking Area, Sidewalk, or Planting area) adjacent to property with grates
  3. Pepco equipment in public alleyway with grates

- **Other Options Available for Discussion & Approval:**
  4. Pepco equipment in public roadway with grates
  5. Pepco equipment in non-vehicle accessible Public Space (DC Public Parking Area, Sidewalk, or Planting area) adjacent to property with **forced ventilation thru parking garage**
  6. Pepco equipment in non-vehicle accessible Public Space (DC Public Parking Area, Sidewalk, or Planting area) adjacent to property with **air conditioning units**

Options 1 thru 6 will be subject to additional Company vs. Customer plan in the service cost.
Example of a Grated Manhole Roof with Customer Installed Brick Pavers
Option for Customer to Build Pepco Conduit Facilities in Public Space

Customers may request to build Pepco’s service connection structural facilities in public space.

• Benefits:
  – Reduces Service Connection Fees
  – Improves Coordination of Work

• Pepco Procedure Requirements:
  – Execute formal Agreement with Pepco
  – Use approved Pepco contractor. Customer must identify contractor and obtain approval prior to executing Agreement.
  – Participate in Pre-Construction meeting 2 weeks prior to starting work.
  – Build facilities per Pepco drawing under Pepco’s permit.
  – Permanent roadway resurfacing is typically excluded
Pepco Electric Service Connection Process

Key Message:

– Typical Pepco connection process: 4 to 7 months pending scope of work and type of service

– Start early in the project life cycle to work with Pepco on planning electric service connections for large commercial projects.
Verizon Communications

New Construction & Service Connection Planning
Agenda

- Preliminary Communication
- Planning Process
- Minimum Point of Entry / Rate Demarcation Point
- Structure / Diverse Entrances
- Telephone Room and Power Requirements
- Summary
- Verizon Contacts
Preliminary Communication

- Contact Verizon **early** during site design
- Provide to Verizon preliminary site plan showing proposed area of construction
- Verizon will provide approximate location of existing communications structures and cables in order to identify conflicts with proposed construction
- Special Construction Charges may apply in the event that existing Utilities must be relocated
Planning Process

- Requirements
  - Approved site plan
  - Specific location and addresses
  - Total number and types of units
  - Architectural drawings
  - Proposed construction start date
  - Planned completion and occupancy dates by phase
  - Contact names and numbers
Minimum Point of Entry/Rate Demarcation Point

- Applicable to non-FiOS installations
- Single Buildings
  - The RDP will be located at the minimum point of entry (MPOE) of the building, regardless of whether the building is single or multi-tenant
- Multi-Building, Single Tenant Campuses
  - The RDP for all service on the campus will be the MPOE of one building on the property as determined by Verizon.
Minimum Point of Entry/Rate Demarcation Point (cont.)

- Multi-Building, Multi-Tenant Campuses
  - Property owners will be offered three options
    - Verizon will install and maintain network cabling at the MPOE of the property or one building on the property as determined by Verizon. The property owner then builds, owns and maintains the cabling beyond the established RDP.
    - Verizon will install and maintain network cabling to a single point of interface at the MPOE of the property or one building on the property (regulated). The property owner then contracts with Verizon to design and install non-regulated cabling beyond the RDP (non-regulated). The property owner then owns and maintains the cabling beyond the RDP.
Minimum Point of Entry/Rate Demarcation Point (cont.)

- Multi-Building, Multi-Tenant Campuses (cont.)

  - Verizon will install and maintain network cabling (regulated) to the MPOE of each building on the property. The property owner then owns and maintains cabling beyond the MPOE of each building.
    - The property owner is required to provide structure throughout the campus.
Structure Requirements

- Owner/Developer to provide structure from the telephone room to the property line to meet Verizon facilities.
- Conduit requirements vary from 2 – 4” conduits to as many as 4 – 4” conduits.
- Verizon will review the proposed service requirements to determine the number of conduits needed and the optimum connection point.
Diverse Entrance Facilities

- Developers may opt to construct multiple, diverse entrance conduit into a building or campus.
- Provides structure to support diverse fiber facilities feeding Hi-Capacity Services (i.e., DS-3, OC-12 etc.).
- Diversified, redundant fibers provide increased survivability in the event of damage to either the main or protect fibers.
- Equipment at Verizon’s central office and the customer premise will continue to provide service on the non-damaged facility.
Telephone Room and Power Requirements

- Verizon will determine the space and power requirements within the building to support their equipment.
- The telephone room must be accessible, secure, lighted, climate controlled and kept free of debris.
- The telephone room must be equipped with ¾”, fire retardant plywood on at least one wall.
Telephone Room and Power Requirements (cont.)

- A 6 AWG ground must be provided within the room connected to the building’s electrical service ground, a buss bar is preferred.
- A minimum of 1 – 110 volt duplex grounded outlet is required. Often, multiple 30 amp circuits are required to support electronics.
- Commercial power supplied to support communication facilities should be wired to the buildings uninterruptible power supply (UPS) if available.
Typical FiOS Requirements

- Premise Access License required to allow Verizon to install fiber cabling and equipment beyond MPOE within each building
- Owner/Developer provided structure from the main telephone room to the property line to meet Verizon facilities
- Conduit requirements vary from 2 – 4” conduits to as many as 4 – 4” conduits
- Builder provided vertical pathway within each building
FiOS Requirements Cont’d

- Adequate space provided on each floor and within each living unit to allow for placement of terminal, optical network terminal (ONT) and battery back-up.
- Electrical outlet available within each unit to power the ONT.
New Construction
Structured Wiring Interface

Structured Wiring Cabinet (Bldr Provided)

Microduct & Fiber Drop

Chase inside wall for x-conn

Suttle Interface Cabinet (VZ Provided, Bldr Installed)

110V Circuit (Bldr Provided)
Summary

- Early communication and coordination between the Designer, Builder and the Utilities is key to providing timely, quality service.
- Allow for realistic utility construction intervals within the overall project timeline.
Verizon Contacts

MD: VZ-Builder-Info-MD@verizon.com

DC: VZ-Builder-Info-DC@verizon.com
NAVIGATING WASHINGTON GAS

UNDERSTANDING THE NEW BUSINESS SUBMITTAL PROCESS

QUINTON LEWIS-DIGGS / APRIL 9, 2015
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

The Navigation – Today’s Presentation

• WHO – your “go to” Washington Gas new business teams

• WHAT – the clients services, information and submittals needed

• WHY – the importance of everything in the process

• HOW – understand the process; create efficiency in it

• RESULTS – natural gas energy provided, with ease
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

Sales Engineering Staff

• Jennifer Eugene, Manager, 28 years
  - Sales, Design and Construction, Equipment
  - (703) 750-4844 jeugene@washgas.com

• Robert Postell, Sr. Engineer, 26 years
  - Sales Design and Construction
  - (703) 750-4880 rpostell@washgas.com

• Heath Kalmanson, Sr. Engineer, 14 years
  - Sales, Design and Certified Energy Manager
  - (703) 750-4855 hkalmanson@washgas.com

• Quinton Lewis-Diggs, Engineer, 1 year
  - Sales, Design and Equipment
  - (703) 750-5694 qlewis@washgas.com
Mission – to Provide Your Energy Answers. Ask Us.

- Liaison for design and construction community
  - Engineering and Architect Professionals
  - Owners, Developers, General Contractors, Management Companies

- We are technical experts
  - Mechanical Engineers
  - Equipment, Design and Construction, Energy Management Experience

http://www.washingtongasliving.com/for-builders/plan-your-project
NAVIGATING THE PROCESS
Call an Engineering Sales Team Member

• Assist You with Planning your Project  
  -All jurisdictions – MD, DC, VA  
  -Assist you with your design of natural gas facilities  
  -Equipment Suggestions, Energy Discussions

• Initiate Your Request for Natural Gas Service  
  -Complete all the submittals and enter project in system  
  -Gather needed supporting documents

• Monitor the Progress of Your Project  
  -Maintain contact and answer follow-up questions

http://www.washingtongasliving.com/for-builders/plan-your-project
Planning Your Project

- Design Meter Room Layout
- Meter Location Options
- Required Submittals
- Gas Loads
- Gas Use, including Construction Heat Plans
- Gas Rates

Diagram:

- Generator Gas Meters:
  - Gas Meter: 1 - 7M rotary at 11,000 CFH
  - Gas Pressure: 2.000 PSI

- Generator Regulator and Relief Valve:
  - Diverter Demand: 11,644 CFH @ 3 psi
  - Regulator: 3/4" NPT (1.746 psi Capacity)
  - Relief Valve: "D" Rated Valve
  - Gas Vent Pipe: 2" Diameter Vertical Vent with 1" Vent Pipe

- Gas Vent Pipes Up And Hung Tight To Ceiling:
  - All vent pipes up at this location through slab & through sidewalk, 180 degree turn w/ screened goose neck 6" away from on grade bulkhead wall.

- Existing Restaurant Gas Meter:
  - Gas Meter: 1 - 3M rotary
  - Total Demand: 2,000 CFH
  - Gas Pressure: 2.000 PSI

- Future Restaurant Gas Meter:
  - Gas Meter: 1 - 3M rotary
  - Total Demand: 2,000 CFH
  - Gas Pressure: 2.000 PSI

- House Gas Meter:
  - Gas Meter: 1 - 3M rotary
  - Total Demand: 1,000 CFH
  - Gas Pressure: 2.000 PSI

- 4" - 20 Paig Gas Service Into Building D + Washington Gas:
  - 11,000 CFH Total Demand (Unmetered)
  - 61,000 CFH Service Capacity @ 100 PSI

- 4" - 20 Paig Gas Service To Split Riser By Washington Gas:
  - 18,550 CFH Total Demand (Unmetered)
  - 61,000 CFH Service Capacity @ 100 PSI

- 2" - 20 Paig Gas Service Into Building By Washington Gas:
  - 7,000 CFH Total Demand (Unmetered)
  - 17,175 CFH Service Capacity @ 100 PSI

- House & Restaurant Regulator:
  - Diverter Demand: 1,000 CFH @ 3 psi
  - Regulator: 5/8" NPT (110 PSI Capacity)
  - Relief Valve: "D" Rated Valve
  - Minimum Total Static Pressure: 0 psi Required: 1 psi

washingtongas.com | APRIL 9, 2015 | 47
Planning Your Project

- Locate Project Site
  - Gas Availability
  - Gas Pressure
  - Facilities Capacities
**Design Meter Location**

- Design Services
  - Service Location
  - Meter Room Layout
  - Meter Locations
  - Size Inside Gas Pipe and Layout to Meters
  - Meter Bank Design
  - Regulator Vent Pipe(s) Routes
  - Regulator Termination Location
    (pipe 12” above grade with screen and 90° turn downward)
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

Typical 30 Ct. Meter Bank
Planning Your Meter Location

- Gas Meter Location Options
  - DMR: Distributed Meter Rooms
    - Residential High Rise (≥5 story)
    - Central Stacked Closet(s) per floor
    - Individual gas meter per unit
  - Other Residential or Commercial Building
    - Outside
    - Just inside building into meter room/area
    - In a underground parking garage
    - In an above ground parking garage at grade level
Gas Regulator and Vents

- Typical Gas Regulator and Vent Design
  - Regulator Placement
  - Vent pipe size, routing and building exit point
  - Required Pad Size

- Typical Pad Size
  - 1.5M Rotary Meter (1,700 CFH Capacity) 24 in x 30 in
  - 11M Rotary Meter (12,300 CFH Capacity) 30 in x 36 in
  - 16M Rotary Meter (21,200 CFH Capacity) 48 in x 48 in*
  * Dual Regulators

- Vent Termination
  - Maintain 3-Feet from any operable door or window
  - Maintain 10-Feet from any fan-induced ventilation air intakes
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

Gas Vent Pipes Up And Tung Tight To Ceiling

Regulator Setup:
Demand: 16,800 CFH @ 2 PSIG
Required Project Submittals

- Service Information Request Form (SIR)
- Site Plan (electronic .dwg files)
- Building Plan for inside meter location(s) (electronic .dwg files)
- Sales Engineered WG Pipe Design Created
- Gas Riser Diagram (DMR)
- Secure FTP option
Required Project Submittals

- Service Information Request Form
  - Address is Required
  - New or Existing Building Site/Customer
  - New Equipment Rating/Pressure
  - Existing Equipment Rating/Pressure
  - Site Ready Date
  - Meter Installation Date
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

“Completing it is Painless”
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

List proposed equipment by type and BTUH input rating. Indicate the operating schedule of any process applications. List boilers by BTUH input rating and indicate if boilers are dual-fueled. List make-up air units by BTUH input rating and CFM supplied. List absorption air conditioning by BTUH input and tonnage supplied. List existing equipment that will continue to be utilized in the left columns. List new/added equipment in the right columns.

<table>
<thead>
<tr>
<th>QTY.</th>
<th>Existing Equipment Description</th>
<th>BTUH Input Rating</th>
<th>QTY.</th>
<th>New Equipment Description</th>
<th>BTUH Input Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RTU</td>
<td>700,000</td>
<td>3</td>
<td>Boilers (ea.)</td>
<td>2,000,000</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total BTUH Input (All Equipment-New and Existing): Total BTUH: 2,700,000

Important: Please include AutoCAD file of site plan and AutoCAD file of mechanical drawings showing location of water, sewer, and other underground utilities, and desired location of gas service line and meters. If meter(s) are located in underground parking garage or meter room, submit AutoCAD files that show dimensions of area.

Send Request to:

Jennifer Eugene, Sr. Mech. Eng, Engineered Sales
6801 Industrial Road
Springfield, Virginia 22151
Jeugene@washgas.com
(703) 750-4844 Office
(703) 750-5533 Fax
(703) 408-3758 Cell

* ALONG WITH THIS COMPLETED SUBMITTAL, SEND AutoCAD ELECTRONIC FILE OF SCALED SITE PLAN, A SCALED METER LOCATION PLAN, AND INCLUDE CONSTRUCTION SITE AVAILABLE DATE AND METER INSTALLATION DATE.
Understanding Submittals

- Be Prepared to Discuss
  - Multiple Boiler Operations
  - Are any boilers used for back up?
  - Requested Metering Pressure, why if greater than 2 psig
  - New or Existing Building
  - New or Existing Equipment
  - Generators

- Construction Heat
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

Project WMIS (Manages Tasks)

- Work Management System
  - All projects issued BCA#
  - Load is modeled in system
  - Tasks driven with status
  - Complete costs evaluation
  - Approval status generated
- WG Contractors tied into Web Portal
- In Sales Support Groups
- The Process – estimated 15-20 tasks
Key Considerations

• Main Extensions
  - Pressure/gas not immediately available
  - Involves more planning, costs, construction

• Service Installation
  - Washington Gas Contractors and Washington Gas coordination

• Inside Pipe
  - Engineered Sales design
  - Washington Gas Contractor installed
Key Considerations

- Final sign-off of design and permit completed after receipt of payment
- 1000’s of jobs in system
- Approval status needed
- Time to receive agency permits (3-4 months)
- Washington Gas Contractor scheduling
Key Considerations

• Service Information Request
  - Project Dates for phases, Meter Install Dates
  - Multi-Family
    - Number of Units, Boiler Use, Number of Meters, Heat Pump
    - Construction Heat Plans

• AutoCAD Scaled Site and Building Plans; Gas Riser Diagram
  - Streets and Building Identified
  - Service Entry Point
  - Meter Location, Dimensions
  - Vent and Regulator Locations
NEW BUSINESS – SALES ENGINEERING AND TECHNICAL

Sales Engineering Staff

- Jennifer Eugene  
  - (703) 750-4844 jeugene@washgas.com

- Robert Postell  
  - (703) 750-4880 rpostell@washgas.com

- Heath Kalmanson  
  - (703) 750-4855 hkalmanson@washgas.com

- Quinton Lewis-Diggs  
  - (703) 750-5694 qlewis@washgas.com

http://www.washingtongasliving.com/for-builders/plan-your-project
NEW BUSINESS – SALES SUPPORT AREA MANAGERS

Territories

• Pat Estrada-Palma – Virginia Territory
  - (703) 750-5657 PatEstrada-Palma@washgas.com
• Vera Fontana – NE, SE, SW District of Columbia
  - (703) 750-4317 VeraFontana@washgas.com
• Ann Kern – NW District of Columbia
  - (703) 750-4445 Akern@washgas.com
• Jack Higgins – Northern Maryland
  - (703) 750-7908 Ehiggins@washgas.com
• Michael Goffus – Southern Maryland
  - (703) 750-4881 MichaelGoffus@washgas.com
• Rick Gehr – Telesales – 703-941-Heat
  - (703) 750-4743 RichardGehr@washgas.com
Questions?
Connection Processes for Large Commercial Projects in the District of Columbia

Presented to:
Washington Building Congress (WBC)

April 9, 2015
Christopher J. Sandt, P.E.

Supervisor – Developer Engineering Review
DC Water Permit Operations Department
1100 4th Street SW, Suite 310
Washington, D.C. 20024

202-646-8623 (direct)
christopher.sandt@dcwater.com
Presentation Goals

• What is DC Water? What does DC Water do?
• Construction in the District: How does DC Water integrate with other agencies?
• What is a large commercial service connection?
• What, where, and how do I submit plans to DC Water?
• What are the fees and time frames associated with the DC Water plan approval and construction processes?
• What is needed for (streamlined) DC Water approval of new large commercial service connections?
Water Infrastructure

- 44,000+ valves
- 9,500+ fire hydrants
- 1,350 miles of pipe (average age = 77 years)
- 4 pumping stations, 5 storage reservoirs, 3 ESTs
- Pumping supply average of 110+ MGD
- approx. 95 million gallons of treated water storage
Sewer Infrastructure

- Blue Plains Advanced Wastewater Treatment Plant – largest facility of its kind in the world (150 acres)
- 370 MGD treatment capacity (1 BGD peak)
- 1,900 miles of sanitary and combined sewers
- 9 off-site pumping stations
- 22 flow meter stations
The District is Busy!

12,000 … new housing units currently under construction.

1.8 million … SF of office space currently under construction.

28 … new grocery stores built since 2000.

-Washington, DC Economic Partnership (12/9/14)
Primary Agencies - Construction Permitting

DCRA – Dept. of Consumer and Regulatory Affairs
- New construction & renovations
- Private property

DDOE – Dept. of Environment
- EC & SWM
- Private property and public space

DDOT – Dept. of Transportation
- Construction in and occupancy of public space

DC Water (plan approval only – no permits issued)
- Water and sewer infrastructure in public space
What Permits are Needed?

• Raze Permit (DCRA)
• Erosion & Sediment Control and SWM Permit (DDOE)
• Support of Excavation (Sheeting and Shoring) Permit (DDOT)
• Public Space Excavation Permit (DDOT)
• Building Permit (DCRA)
Symbiotic Relationships

DCRA
Building Permit

DDOE
Step #2
E&S/SWM Permits

DDOT
Step #3
Public Space Permit

New Water or Sewer Service

DC Water
Step #1
Water and Sewer
Availability Certificate (WSAC)
Symbiotic Processes

Site Prep (RAZE, EC, SWM)

Excavation (SHEET, PUBLIC SPACE)

Building Construction (BUILDING PERMITS, UTILITIES)
Where Else Might I Encounter DC Water?

- Street Closing
- EISF Review
- Easements and Covenants (Mr. Kevin Harney)
- Information Requests
- Hydrant Flow Tests
- Test Shuts (water/sewer)
Water and Sewer - Who Owns What?

Water Main: District (DC Water maintains)
Water Meter and Strainer: District (DC Water maintains)
Water Service Line: Property Owner
Meter Vault: Property Owner
Service Line Valves: Property Owner

Sewer Line and Manholes: District (DC Water maintains)
Catch Basins: District (DC Water maintains)
Sewer Service Line: Property Owner
Sewer Cleanout: Property Owner
SWM Structures: Property Owner
What is a Service Connection?

- A privately owned line running from the PUBLIC water or sewer main to a PRIVATE lot
- Perpendicular to the property line
- Straight line from the main to the building, if possible
- Includes a shut-off valve or clean-out in public space
- Includes a meter in public place (water)
Service Connections

**Water Service Lateral** (Type K copper or DIP)

- Domestic Service (sized to # of fixture units)
- Fire Service (sized to NFPA Code)
- Combined Fire and Domestic (no longer done for >2”)

**Sewer Service Lateral** (PVC or RCP)

- Sanitary (sized to # of fixture units)
- Storm (sized to 15-year storm)
- Combined (sized to 15-year storm & sanitary)
Service Connections

- Storm to storm
- Sanitary to sanitary
- Clean-outs (4” & 6”)
- Clean-out MHs (>6”)
- Separate dom. & fire
- No combined water services > 2”
Service Connections - Who Does What?

DC Water maintains the service laterals in public space but does NOT own them

- If it breaks in public space, we fix it
- If you break or neglect it, you fix it
- If you build new or rehab, you install or replace it
- If you clog sewer, you clear using reasonable force
- If reasonable force does not clear it, we’ll clear it
- If it’s a sewer main or catch basin, we clean it
What is a “Large Commercial” Project?

- Domestic or fire service line over 2” diameter
- Tee connection, ductile iron pipe w/ restrained MJ fittings
- Water meter is in concrete vault (6’x6’) rather than a crock
- Minimum 6” water connection size at main (6” tee and 6” GV)
- Fire service line includes a BFPA w/ detector check meter
Water Service Abandonment

Before

After
New Large Water Service

Large Service

Main Offset
Where can I Find Water/Sewer Info?

- [www.dcwater.com](http://www.dcwater.com)  
  - Customer Care & Operations  
  - Permits

- DC Water Project Design Manual (website)  
  - Volume 3 – Infrastructure Design

- DC Water Standard Details & Design Guidelines (website)

- DC Water Counter Maps and Record Drawings (RFI)

- DCMR 12 & International Plumbing Codes
Request for Information

- Free service
- Form available on website
- Submit by e-mail or in person
- Counter maps
- Record drawings
- GIS records
- Letters in lieu of flow test
- General info
- Two (2) week turn-around
1100 4th Street SW, Washington, DC 20024 (Waterfront METRO)
What does Permit Operations do?

**Customer service, technical review and support**
- How does it affect our system? Do we have capacity?
- Can we meter it, sewer it, can it be built?
- Track and schedule in Maximo, store copies of plans

**Estimate and collect fees for DC Water inspection**
- Inspection of water and sewer in public space
- Document pre and post construction conditions
- Deposits against potential damages

**Validate customer info, set up work orders and schedule work**
- Obtain correct billing information
- Create new accounts (premises)
- Enter work orders into Maximo
Permit Operations Review Process

**Conceptual (CPR)**

Let's sit down and talk about it

**Preliminary (RAZE, HOME, SHEET, PPRS, PPRL)**

Now that you have plans suitable for review, let's see if it meets DC Water design standards. Need all DC Water forms.

**Final (WSAC, WSAL)**

Now that you have all necessary items on plans – payment of inspection fees and DDOE approvals – DC Water issues a Water and Sewer Availability Certificate (WSAC).
Why a Preliminary & Final Review?

• Preliminary Review gets plans ready
  – Inspection fees estimated

• Final Review sets up the work
  – Inspection fees are collected
  – DDOE approvals confirmed
  – Water and sewer accounts closed or initiated
  – Meter sets/removals are initiated
  – Work orders are issued

CERTIFICATES ARE ISSUED
Water and Sewer Availability Certificate (WSAC)

- Document that certifies your plans meet DC Water design requirements, that review and inspection fees have been paid and that the application can now be signed
  - Take the WSAC to DDOT and DCRA for permit approvals
  - Get DC Water rep to sign off on permit application

BUILDING PERMIT APPLICATION GETS SIGNED
Raze Permits

• Before DC Water will sign off on the Raze Permit application, the following things are needed:
  
  – Water and sewer bills paid

  – RAZE plans reviewed and approved by DC Water
    • Existing water meter to be removed/returned to DC Water
    • Existing services will be abandoned at the public main

RAZE APPLICATION GETS SIGNED
Public Space Permits

• Before DC Water will sign off on Public Space Permit applications, the following things are needed:

  – Permit is applied for at DCRA/DDOT and copy provided
  – Plans reviewed and approved by DC Water
  – Fees and deposits are calculated and collected
  – All DC Water forms are executed (e.g., covenants, esmts)
What will it Cost?

The fees paid to DC Water cover the following items:

• Flat fees for reviews
• Flat fees for certain services (hydrant flow test, etc.)
• Anticipated inspection cost – balance is refundable
• 40% deposit on damages that DC Water would need to repair – balance is refundable
• See DC Water website for fee schedule
How Long will it Take?

- Conceptual review – schedule meetings as needed
- Preliminary review – 2 to 4 weeks for DC Water comments (per plan package submission)
- Final approval – 3 to 6 months+

– *It’s really up to you!*
Why Does Plan Review Take So Long?

- Number of applications $\times$ types of applications
- Limited staff
- Quality of submittal
- Time to develop re-submittals*
- Unusual conditions (non-conforming) and waiver requests

*Frequent changes made during the review period as the design evolves…
How can I Speed up the Process?

• Get a review at the concept phase (CPR)
• Use the current counter maps and GIS records (RFI)
• Follow the DC Water project design manual (website)
• Use the DC Water standard details & forms (website)
• Use complete/correct address and contact info on all correspondence – don’t change mid-process

• GOOD DRAFTING – CLEAR AND LEGIBLE
What is Important to Design Review?

- Availability and Local Hydraulic Capacity
- Don’t build on top of DC Water utilities
- Separate fire and domestic water services
- Separate sanitary and storm services (unless combined)
- Domestic water services need meter in a public space
- Inside meter settings need sufficient room
- Straight services into a building or lot
- If the proposed building impacts DC Water utilities, plan to relocate the utility or the building
- Flows in excess of 100 GPM need to taken off a water main at least 8” diameter
- Fire pumps have to be tested at 150% of demand
LIDs and DC Water Utilities

DC Water Concerns:

- Sewer infiltration caused by LIDs (saturated soils);
- Promotion of root growth zones over water/sewer;
- Clearances (horizontal and vertical);
- Underdrain connections to sewers and/or catch basins;
- Restoration/repair of LIDs on top of water/sewer mains;
- Restoration/repair of LIDs for service connections
Thank you
The Washington Building Congress is a professional trade association made up of over 1,000 companies and individuals from a variety of disciplines, all with an active interest or involvement in the Washington metropolitan area real estate, design and construction community.

The WBC was established in 1937 as an “umbrella organization” to represent the collective interests of the industry, provide education and networking opportunities, and promote the professional advancement of our members.