



**Henrico County
Department of Public Utilities**

welcomes you to the

Communication Forum



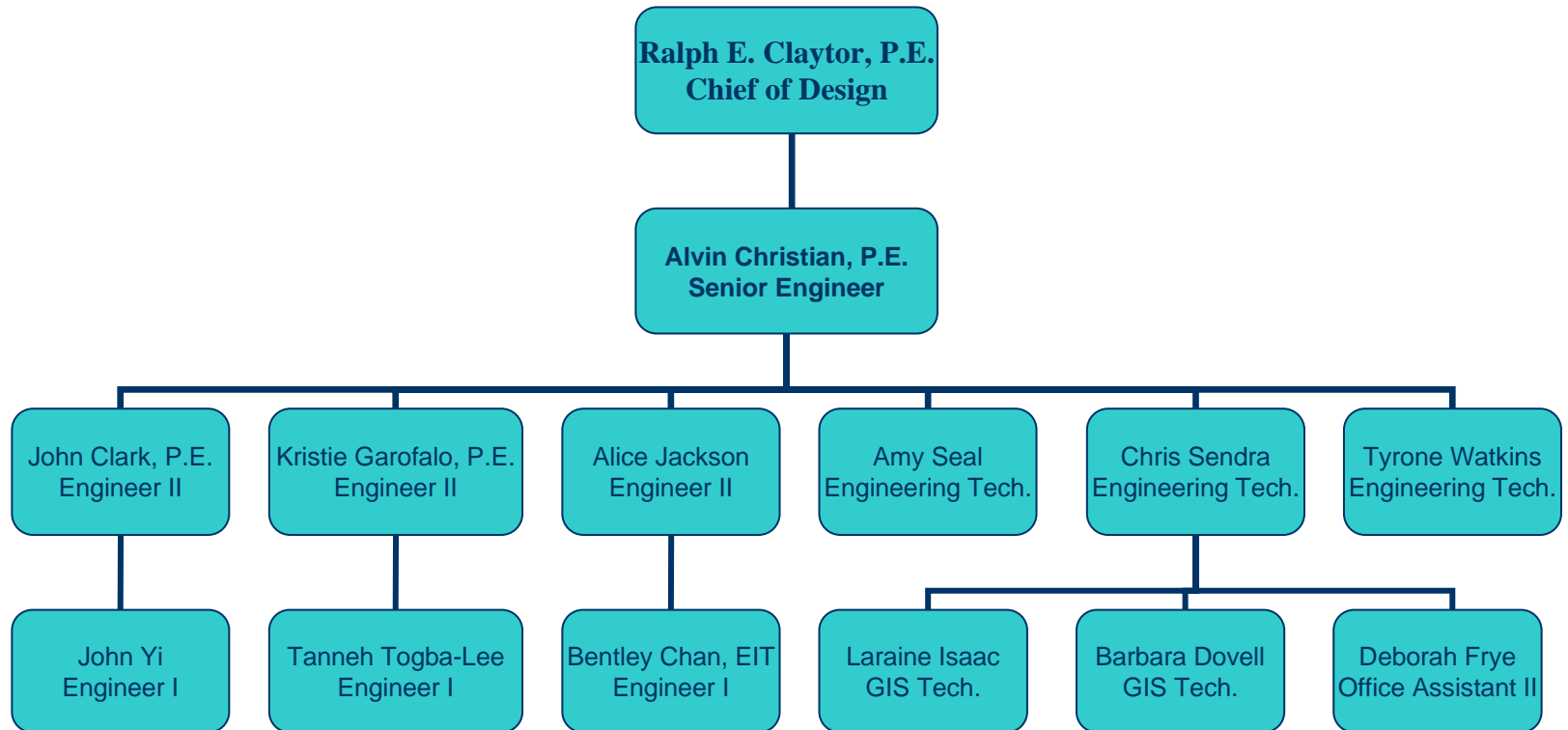
Bill Mawyer
Assistant Director

● **WELCOME**

Forum Agenda

- STANDARDS REVISION
- BACKFLOW PREVENTION
 - AGREEMENTS
 - EASEMENTS PLATS

DPU Private Development Organization Chart



Henrico DPU Standards

Department of Public
Utilities

County of Henrico,
Virginia



2009 STANDARDS

- New version – not addendum
- History of new version releases
 - 1968
 - 1979
 - 1997

DRIVERS FOR CHANGE

- Customer Service Demands
- Regulations
- Experience
- Materials and Technology

Customer Service Demands

- Pressure
- Reliability
- Reduce shutdowns

REGULATIONS

- DEQ
 - Construction Permits
 - Environmental
- VDH
 - Water Line Crossings
 - Backflow Prevention
 - Construction Permits
- SCC
 - Miss Utility
 - As-Built Plans

REGULATIONS (cont.)

- EPA
 - SSO
- COE
 - Wetland Impacts
- COUNTY
 - POD and Subdivision Process
- TECHNICAL STANDARDS
 - AWWA
 - ASCE

EXPERIENCE

- Complete Plan Submittals
- Quality of Drawings
 - Legibility
 - Consistency
- Easement Recordation
- Miss Utility Requirements
- Location of Water and Sewer

EXPERIENCE

- Sewer Hydraulics
- Service Shutdowns
- Pressure Complaints
- Water Line Corrosion
- Damage to Water and Sewer Lines
- Conflicts with Other Utilities

EXPERIENCE (cont.)

- Industry Practice
- Accessibility of Water and Sewer
 - Trees
 - Structures
- SPS Design Requirements
- Hydrogen Sulfide Odors and Corrosion

MATERIALS AND TECHNOLOGY

- Industry Consolidation and Mergers
- New Materials
 - Product Review Committee

RESOURCES

- VDH Waterworks Regulations
- DEQ SCAT Regulations
- ASCE MOP 9 – Sewer Design and Construction
- AWWA Manuals of Water Supply Practice
- AWWA STANDARDS
- Pumping Station Design – Sanks
- National Hydraulic Institute Standards

RESOURCES (cont.)

- Local and Regional Standards
 - Ten State Standards
- 2026 Land Use Plan (draft)
- 2007 DPU Facilities Plan (draft)
- DPU Consultant Studies
 - Odor and Corrosion Study - Sewer
 - Wet Weather Plan Update
 - Water line corrosion (Pouncey Tract, Dabbs House, Nine Mile Rd)
 - Towne Center West Sewer Hydraulic Analysis

STANDARDS FORMAT AND CONTENT

- Reorganize and Renumber
- Add New Sections
- Modify Standard Forms
- Add Standard Drawings
- Redesign Older Standard Drawings
- Renumber Standard Drawings
- New Design and Construction Standards

SEWER DESIGN CHANGES

- Manhole Requirements
- Peak Factor
 - NOAA Storm (2.5) vs VDOT Storm (1.8)
 - Impact of 10-Year Storm
- Demand Factors
- Deflection Angles
- Critical Slope

WATER DESIGN CHANGES

- Demand Factors
- Fire Protection
 - AWWA M-31 Fourth Edition
- Corrosion Protection
 - Soils Tests for Design
 - DIPRA Guidelines
 - Valve Installation Requirements
- Redefine Looping Requirements
 - Minimize Dead Ends
 - Reliability and Redundancy
 - Minimize Shutdowns

WATER DESIGN (cont.)

- Meter Design
 - Setters thru 2" Meter
 - Manufactured Vaults
 - All combinations incl. dual meter sets
 - Pre-cast Vaults for Large Meters
- Valves
 - Minimum 2 at each Tee
 - Minimum 3 at each Cross
- Service Size
 - One Size Larger Than Meter

LOCATING OF LINES

- SCC Regulations
- Add Design and Construction Specs
- Need Final Determination of Method
 - Tracer Wire
 - Marker Balls
- Detector Tape

SEWAGE PUMP STATION CHANGES

- Update PER Requirements
- Update Facility Requirements
 - Wet Well Trench Design
 - Security Requirements
 - SCADA
 - Emergency Power

CHANGES TO FORMS

- Engineering Report with Plan Checklist
 - Required for Plan Submittal
 - Replaces Multiple Forms
 - Reduce Incomplete Plan Submittals
- Sewer Peak Factor
- Fire Flow Form
- Local Review Form
- Legal Agreement Application

STANDARD DRAWING CHANGES

- Renumber Standard Drawings
- Add BFP Details (move from Forms)
- Meter Location Requirements
- Meter Design Drawings
- Add Details

METER DESIGN CHANGES

- Service 1 Size Larger Than Meter
- Meter Setters Thru 2" Meter
- Standard Box for 1 ½" and 2" Meters
- Redesign for Dual 1 ½" and 2 meters
 - Manufactured Vault
 - Piping Design
- Precast Vaults for Large Meter and Detector

WATER MAINS CROSS SEWER LINE

- VDH INTERPRETATION
- WATER UNDER SEWER
- PREVIOUS – 18” SEPARATION OK
- NOW – ACTION REQUIRED IN ALL CASES
- MINIMUM 18” SEPARATION
- SEWER MUST BE PRESSURE PIPE
- EXCEPTION REQUESTS TO VDH

NEXT STEPS

- Post Draft Standards on DPU Web Site
- Request Review Comments
- Engineers Provide e-mails addresses
- DPU Notify When Standards Posted
 - By May 15
- Each Firm Invited to Comment
 - Firm to Compile Comments Into 1 List
- Send Written Comments to Ralph Claytor

NEXT STEPS

- RAMCA will be provided comment opportunity
- Final Draft to VDH and DEQ
 - Approval Required
 - Incorporate Comments
- Publish New Standards
- Notification of Effective Date

Questions

Q!



Backflow Prevention



Backflow Prevention

- Regulated by the Virginia Department of Health (VDH)
- Water Works Regulations
- Cross Connection Control Section

Backflow Prevention cont.

- Henrico County program maintained by DPU Operations Division
- Provides protection to water system

Domestic Backflow Prevention

- Reduced pressure backflow preventer required in all applications requiring a backflow device
- Preferable location is directly after domestic meter

Domestic Backflow Applications

- Medical facilities
- Multi-use Office-Warehouse Buildings
- Multiple commercial buildings served by same meter
- Buildings with multi-use tenants

Domestic Applications Cont.

- Facilities with food processing/production
- Facilities with chemical processing
- Buildings with 4 or more stories

Fire Backflow Prevention

- Two types allowed by DPU for fire suppression systems
- Double Gate Double Check
- Reduced Pressure (high hazard applications)

Double Gate Double Check

- Typical for most fire suppression systems
- In ground installation allowed
- In building installation allowed

Fire System RPZ

- Must be installed above ground or in building installation
- Must not be subject to flooding
- Required in high hazard installations

High Hazard Installations

- Buildings with 4 or more stories
- Buildings with a chemical fire protection system
- Buildings with a wet-dry system

AGREEMENTS

Department of Public
Utilities

County of Henrico,
Virginia

Overview

- Definition and Purpose
- Agreement Process
- Agreement and POD/Subdivision/Utility Process

Definition and Purpose

- Legally Binding Document
- Between the legal property Owner and the County
- Allows the Owner to construct public utility facilities that will be maintained by the County

Agreement Process

- Information Sheet submitted
- Information is verified
- Information for Agreements must be coordinated with construction plans

Print

UTILITIES INFORMATION SHEET FOR LEGAL AGREEMENT
FOR COUNTY: ___ WATER ___ SEWER
(Please type or Print)

1. NAME OF PROJECT: _____
2. AGENT'S NAME: _____ PHONE: _____
ADDRESS: _____
FAX # _____ EMAIL: _____
3. PROPERTY OWNER: _____ PHONE: _____
ADDRESS: _____
4. ATTACH COPY OF DEED (DEED BOOK & PAGE NO. SHALL BE CLEARLY SHOWN)
DEED BOOK: _____ PAGE NO: _____
5. PROPERTY IDENTIFICATION (AS SHOWN ON COUNTY PROPERTY IDENTIFICATION MAPS): _____
6. ENCLOSE SEVEN (7) COPIES OF THE PROPERTY BOUNDARY DRAWING, NO LARGER THAN 24" BY 16"
7. ACREAGE: _____ ACRES
8. IF ONLY A PART OF THE ACREAGE IN NUMBER 7 WILL BE DEVELOPED AT THIS TIME THEN _____ ACRES WILL BE DEVELOPED AS PHASE _____ OR SECTION _____.
9. MAGISTERIAL DISTRICT: (CIRCLE OR CHECK ONE)
BROOKLAND ___ FAIRFIELD ___ THREE CHOPT ___ TUCKAHOE ___ VARINA ___
10. THE FOLLOWING WILL BE CONSTRUCTED:

RESIDENTIAL:

___ SINGLE FAMILY: _____ MULTI-FAMILY: _____
 # SUBDIVISION LOTS ON _____ TOWNHOUSE, # LOTS _____
 ACRES WILL BE DEVELOPED AS FOLLOWS: _____ CONDOMINIUM _____
 LOT NO. ___ THRU ___ INCLUSIVE, BLOCK ___; # OF STRUCTURES _____
 LOT NO. ___ THRU ___ INCLUSIVE, BLOCK ___; UNITS PER STRUCTURE _____
 LOT NO. ___ THRU ___ INCLUSIVE, BLOCK ___; APARTMENTS _____
 LOT NO. ___ THRU ___ INCLUSIVE, BLOCK ___; TOTAL UNITS, ___ CLUBHOUSE _____
 LOT NO. ___ THRU ___ INCLUSIVE, BLOCK ___;

COMMERCIAL:

___ OFFICE, TYPE: _____ HOSPITAL _____ # BEDS
 ___ RESTAURANT _____ NURSING HOME _____ # BEDS
 ___ MOTEL/HOTTEL _____ DORMITORIES _____ # BEDS
 # ROOMS _____ OTHER _____
 ___ RESTAURANT _____
 ___ MANAGER'S APT _____

INDUSTRIAL:

DESCRIBE THE TYPE OF INDUSTRIAL: _____

WILL THERE BE MANUFACTURING? IS SO SPECIFY: _____

11. IF THIS IS A NURSING HOME OR DORMITORY INCLUDE THE FOLLOWING: IS THIS A FACILITY PROVIDING PERMANENT HOUSING FOR ELDERLY OR HANDICAPPED PERSONS AND OPERATED BY CHARITABLE, NONSTOCK, NONPROFIT ORGANIZATIONS WHICH ARE EXEMPTED BY SECTION 501(c)(3) OF THE INTERNAL REVENUE CODE? IF SO, PROVIDE A COPY OF THAT DOCUMENTATION AND APPROVAL BY THE INTERNAL REVENUE SERVICE.

OF DWELLING UNITS _____

12. SIGNATURE PAGE INFORMATION:

SUBMIT A COPY OF YOUR SIGNATURE PAGE AND NOTARY CLAUSES

A. SPECIFY THE BUSINESS TYPE (ex. CORPORATION, LIMITED LIABILITY PARTNERSHIP, GENERAL PARTNERSHIP, LIMITED LIABILITY COMPANY): _____

B. STATE THE NAMES AND TITLES OF THE LEGALLY AUTHORIZED PERSONS TO SIGN THE AGREEMENTS BELOW:

NAME	TITLE
_____	_____
IF CORPORATION STATE THE ATTESTING NAME AND TITLE:	
NAME	TITLE
_____	_____

C. THIS BUSINESS WAS ORGANIZED IN THE STATE OF: _____

D. IS THIS BUSINESS AUTHORIZED TO DO BUSINESS IN THE STATE OF VIRGINIA? ___ YES ___ NO

13. PLEASE MAIL THIS AGREEMENT TO THE ADDRESS BELOW:

14. I CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT.

SIGNED: _____ (OWNER/AGENT) DATE: _____

FAXED OR EMAILED INFORMATION SHEETS WILL NOT BE ACCEPTED.

FOR QUESTIONS ABOUT THIS INFORMATION SHEET PLEASE CONTACT:

AMY JO W. SEAL AT (804) 501-4993, OR EMAIL AT SEA05@CO.HENRICO.VA.US

TYRONE O. WATKINS AT (804) 501-7541, OR EMAIL AT WAT58@CO.HENRICO.VA.US

SUBMIT COMPLETED APPLICATION WITH THE REQUIRED ATTACHMENTS TO:

HENRICO COUNTY
 DEPARTMENT OF PUBLIC UTILITIES
 PO BOX 90775
 HENRICO, VIRGINIA 23273-0775

3. PROPERTY OWNER: _____

PHONE: _____

ADDRESS: _____

ATTACH COPY OF DEED (DEED BOOK & PAGE NO. SHALL BE CLEARLY SHOWN)

- Number 3: the Property Owner's name must match the Grantee name on the Deed
- Number 3: provide the complete property owner's mailing address

4. ATTACH COPY OF DEED (DEED BOOK & PAGE NO. SHALL BE CLEARLY SHOWN)

DEED BOOK: _____

PAGE NO: _____

5. PROPERTY IDENTIFICATION (AS SHOWN ON COUNTY PROPERTY IDENTIFICATION MAPS): _____

- Number 4: the Deed Book and Page Number must be shown on the first page of the Deed
- Number 5: provide the current GPIN

Common Mistakes Cont'd

12. SIGNATURE PAGE INFORMATION:

SUBMIT A COPY OF YOUR SIGNATURE PAGE AND NOTARY CLAUSES

A. SPECIFY THE BUSINESS TYPE (ex. CORPORATION, LIMITED LIABILITY PARTNERSHIP, GENERAL PARTNERSHIP, LIMITED LIABILITY COMPANY):

- Number 12A: verify the business entity type
example: Limited Liability Company, General Partnership, Corporation, etc...

B. STATE THE NAMES AND TITLES OF THE LEGALLY AUTHORIZED PERSONS TO SIGN THE AGREEMENTS BELOW:

NAME

TITLE

IF CORPORATION STATE THE ATTESTING NAME AND TITLE:

NAME

TITLE

- Number 12B: coordinate the names and titles of signatory authority with the business entity type

Common Mistakes Cont'd

- Do not use Planning Department's "Special Limited Power of Attorney", Form POF-005 as a power of attorney
- It is not legally binding for the Agreements

Comments and Re-submittal

- If discrepancies are found the Information Sheet Package will be returned for correction
- Information can change and does change
- Verify all information each time to prevent delays due to out-of-date information

Draft and Final Agreement

- A draft is sent to the County Attorney's Office for review
- The final form Agreement will be mailed to the Owner for signature
- For alternate mailing fill in number 13 on the Information Sheet

Return Agreements to Public Utilities

- A complete Agreement Package includes:
Land Record Instruments Cover Sheet,
triplicate originals of the signed and notarized
agreements, check for the recording fee
made payable to
“The Clerk of the Court”
- Only complete Agreement Packages will be
accepted

Return Agreements to Public Utilities, cont.

- The Land Record Instruments Cover Sheet is a requirement of the Clerk of the Court
- Allow time for processing
- All Agreement Packages are reviewed twice

Approval and Recordation

- Review 1: Public Utilities Staff
- Review 2: County Attorney's Office
- One original is sent to the Record Room for recordation, one original is maintained in Public Utilities and one original is mailed to the Owner

Agreements and PODs/Subdivisions/Utility Plans

- PODs/Subdivisions: cannot start construction until Agreements are executed
- Utility Plans: cannot be plans approved until Agreements are executed

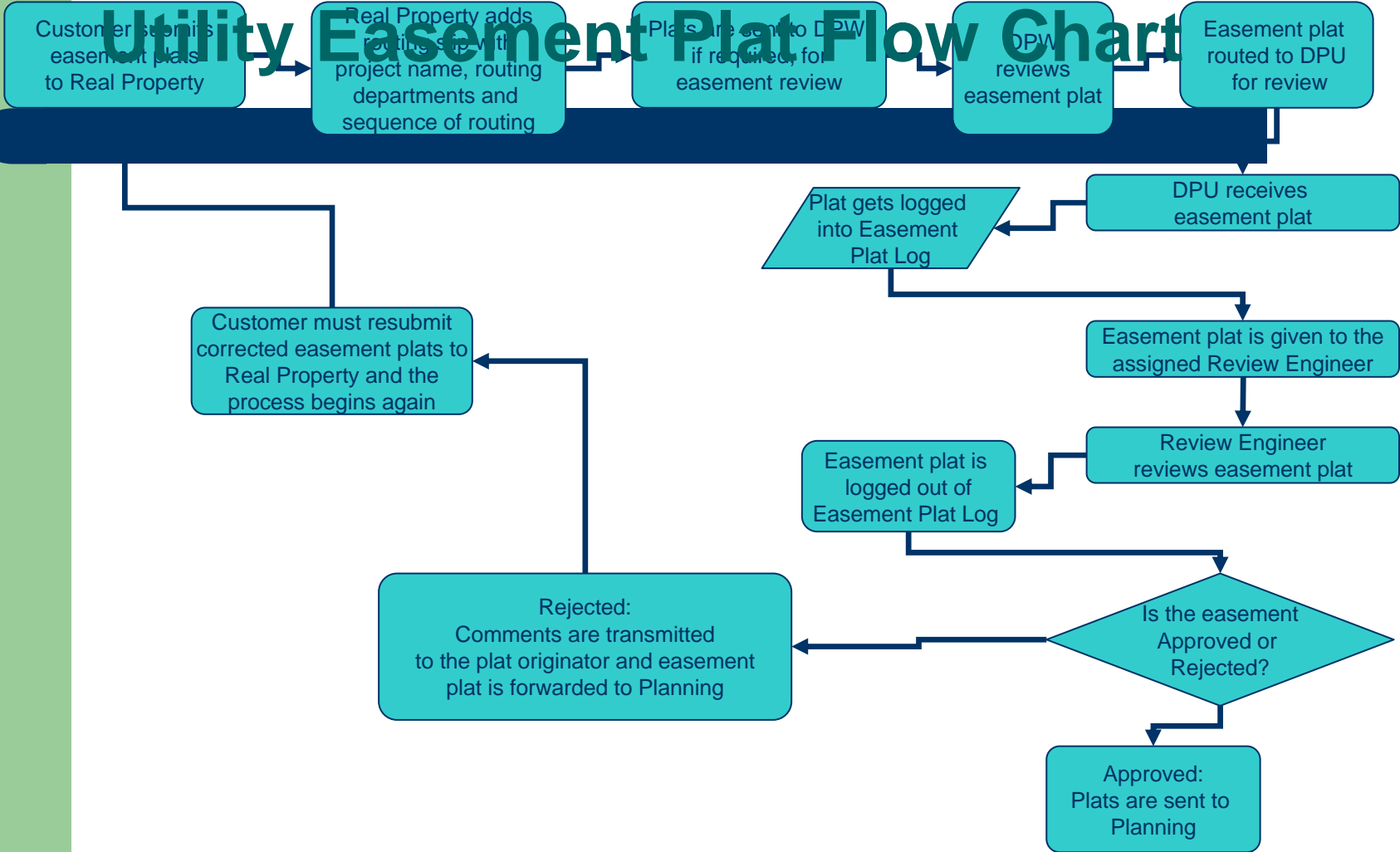
Utility Easement Plats



Easement Plats

- Identify the related construction plans
- Suggestion: Put the title of the construction plans in the title of the easement plat or somewhere on the easement plat as a reference back to the construction plan

Utility Easement Plat Flow Chart



Easement Plat Work Flow

- Customer submits easement plats to Real Property
- Real Property adds routing slip with project name, routing departments and sequence of routing
- Plats are sent to DPW, if required, for easement review

Easement Plat Work Flow, cont.

- DPW reviews easement plat
- Easement plat routed to DPU for review
- DPU receives easement plat
- Plat gets logged into Easement Plat Log

Easement Plat Work Flow, cont.

- Easement plat is given to the assigned Review Engineer
- Easement plat is logged out of Easement Plat Log
- Is the easement Approved or Rejected?

Approved Easement Plats

- Approved: Plats are sent to Planning

Rejected Easement Plats

- Rejected: Comments are transmitted to the plat originator and easement plat is forwarded to Planning
- Customer must resubmit corrected easement plats to Real Property and the process begins again

Questions

Q! Q!

