

Henrico County
Department of Public
Utilities

welcomes you to the

Communication Forum

Bill Mawyer
Assistant Director

 **WELCOME**

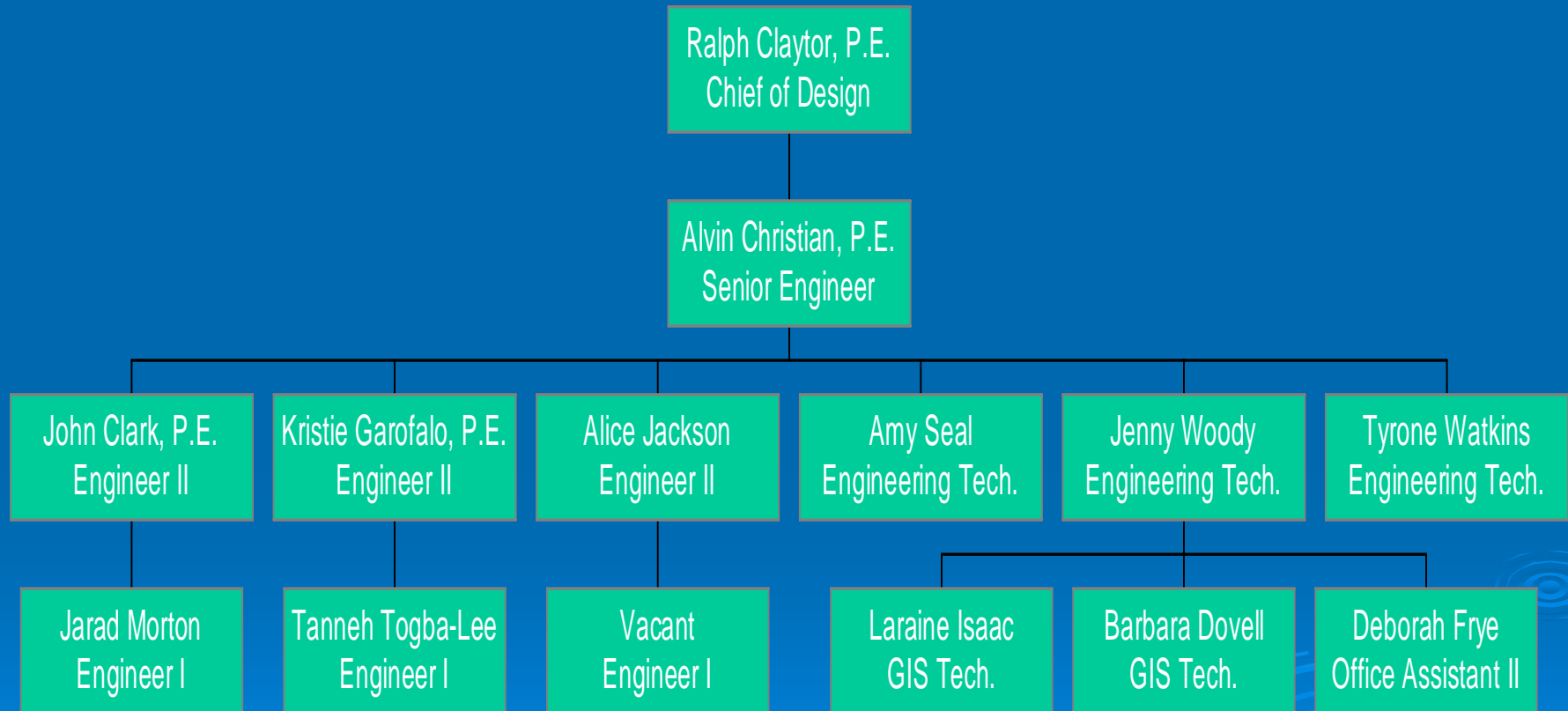
Forum Agenda

- **POD PROCESS**
 - **WEB COMMENTS**
- **CREDIT ORDINANCE**
 - **GIS UPDATE**
- **STANDARDS REVISION**

Updates

- POD process – January 8, 2007
- Subdivision process - committee still finalizing
- GIS update
 - Map conversion completed
 - As-built posting underway
 - Ongoing updates
 - Use for data on existing infrastructure
- Standards revisions underway

DPU Private Development Organization Chart



Public Utilities Web Site


Henrico County – Department of Public Utilities – Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop


Location: <http://www.co.henrico.va.us/utility/> What's Related

HENRICO COUNTY HOME | RESIDENT | BUSINESS | VISITOR | FAQs | CONTACT US | JOBS | SITE MAP

 Department of Public Utilities

Contact Us -
P.O. Box 27032
Parham & Hungary Spring Roads
Richmond, Virginia 23273-7032
Tel. (804) 501-4517, Fax (804) 501-4545
Email Billing Questions to: [Billing Inquiry](#)
Translate this page to [Spanish](#), [French](#),
[German](#), [Italian](#), [Portuguese](#)

Recycling Press Release -
[Exciting New Changes to CVWMA Drop-Off Recycling Program.](#)



Useful Links
[Keep Henrico Beautiful](#)
Solid Waste Services

What's New?
Due to the extreme drought, water restrictions are mandatory in Henrico County. See details on water use measures and how violations will be handled in the [Sept. 10, 2002 Emergency Water Ordinance](#).
See the [Governor's executive order on water restrictions](#) and the [Office of the Secretary of Natural Resources Drought Issues](#).
NOTICE on refurbishing lawns
Call **(804) 501-4275** or email to: wal13@co.henrico.va.us for water restrictions information, complaints and questions.

[Burning Leaf, Free Bagged Leaf Collection Services Map & Schedule Year 2002-2003](#)

Water and Sewer Links
[Chapter 23, Water & Sewer, Henrico Code of Ordinance](#)
[Water and Sewer Information For New Customers](#)
[Public Utilities Eastern Government Center](#)

County Services
County Agencies
Search Site go!

Public Utility Resources
[Director of Public Utilities](#) | [Directory](#)
| [Map Direction To Location](#) | [Other Locations](#) | [Rates](#) | [Connection Fees](#)
| [Water quality](#) | [Water & Sewer Ordinance](#) | [Water & Sewer Statistics](#) | [Engineering & Construction Standards](#) | [Application for Service](#)

Document: Done

Public Utilities Web Site

www.co.henrico.va.us/utility/

Items of Interest:

- Connection Fee information
- Water & Sewer Ordinance
- Statistics
- Engineering & Construction Standards
- Links
 - County home page
 - Henrico Development Assistance Site
 - Eastern Government Center

PLAN REVIEW PROCESS

PLAN OF DEVELOPMENT



Preliminary Plan

- Optional submittal – for comments only
- Can be incomplete plan
- Review due fifteen (15) business days from receipt
- E-mail comments to Planning
- Planning distributes comments

POD Plans – initial submittal

- **Complete construction plans**
- **Prior to PC approval**
- **Submit by scheduled PC deadline**
 - to Permit Center
- **Review Team (Planning, DPW, DPU)**
 - Determine if submittal is complete
 - Schedule for staff/developer conference
 - Provides minimum 10 business days for review

POD Plans – initial submittal

➤ Incomplete plans

- Not placed on the requested PC agenda
- Not reviewed until application is complete.

➤ Review Agencies

- Enter review comments into Tidemark and Filenet
- Comments to Planner
 - With approval recommendations

➤ Planning

- Comments available by 2 pm Monday before scheduled Staff/Developer conference
- Mail compiled comments to the owner/developer.

FCP for Signature

➤ After PC Approval

➤ Engineer Submit

- POD “Plans for Signature” application form
- Letter detailing all changes to plans
- Written response to previous review comments

➤ County Provides

- Comments within twelve (12) business days
 - Beginning first day after submission
- Indicate revisions required or no comments
 - Complete Tidemark and Filenet entries
- State if need revisions or submit for signing

Signature Process

- When plans not completely responsive, re-submittal required
- Resubmit all plans to Planning Department
 - DPU no longer accepts re-submittal of plans
- Submittals directly to Departments when
 - Minor comments
 - Requests for clarification
 - Request waiver to Standards
- When TECH MEMO written
 - Plans may be submitted for final signature
 - Cover sheet must have an original signature and date on the Engineer's seal.

Re-submittal of Plans

- Engineer submits thru Permit Center to Planning the following
 - Plans for Signature application form
 - seven (7) sets of plans
 - written letter clearly identifying all changes since last revision
 - written response to all review comments
- Re-submittals handled “first come/first served”
- Except for “fast-track” plans
 - Status assigned by County Manager’s Office
- Re-submittals reviewed within 12 business days
 - Beginning first business day after submittal

Signature of plans

- Departments notify Planning that plans are ready for signature
 - When all technical requirements are satisfied
- Planning notifies the applicant
 - submit twenty-one (21) sets of plans
 - submit to Permit Center
- Two signature processes offered
 - ***Streamlined Signature Process***
 - ***Signature Process with Partial Permits***

Streamlined Signature Process

- **After Tech Memo issued**
- **Applicants certify**
 - **on Plans for Signature Application**
 - **that required administrative documents have been approved**
 - **except for Water and Sewer Agreements**
- **Plans approved in seven (7) business days**

Administrative documents

- Off-site Easement Plats
- E&S Bonds and Agreements
- Authorization from state and/or federal regulatory agencies for impacts to the Waters of the United States
- BMP / SWM Maintenance Agreements
- Funds to be escrowed
- Maintenance Agreements for placement of items within the right-of-way
- Environmental Fund Contribution

Plan Approval Letter

- Planning sends plan approval letter
- Site grading may proceed after a DPW preconstruction conference
- Utility work may proceed after a DPU preconstruction conference
- Joint preconstruction conference may be held if W & S Agreements executed

Signature Process with Partial Permits

- **Before TECH MEMO written**
 - All technical comments addressed
 - All administrative documents NOT approved
- **Follow standard review and signature process**

Standard Review/Signature Process

- Plans signed
 - all administrative documents approved
 - Work directly with responsible Department
 - except Water & Sewer Agreements
 - TECH MEMO from all Departments
- Partial building permits requested
 - footing and foundation
 - Requested in writing from the Building Official
 - before plans signed
 - administrative documents pending

Footings and Foundations Permit

- Utility Plans have been submitted
- PC has approved the project
- DPW received authorization for impacts to WOUS
- Off-site drainage easements approved
- E&S approved by DPW and Planning

Structural Framing Permit

- PC has approved the project
- DPW received authorization for impacts to WOUS
- Off-site drainage easements approved
- E&S approved by DPW and Planning
- Contributions to Environmental Fund received
- Utility Plans approved
- Water and Sewer Agreements executed

Miscellaneous

- **Plans do not require DPU approval**
 - fifteen (15) sets of plans for signature in lieu of twenty-one (21) sets
- **Ten-Day Expedited Signature Process**
 - First submittal after PC approval
 - Certify that all requirements complete
 - Signed plans in ten business days

Preconstruction Meeting

- After plan approval
- DPW notifies engineer
 - that pre-construction may be scheduled
 - Joint preconstruction with DPW/ DPU
 - if W & S Agreements executed
- **Owner's contractor contacts DPW Environmental**
 - **DPW coordinates with Planning and DPU Inspectors (if joint preconstruction)**

DPU Preconstruction

- **After water and sewer agreements executed**
- **Owner's contractor calls DPU Construction**
 - at least 48 hours before desired meeting
 - Contractor schedules DPW Environmental, if required
- **DPU Construction authorizes work to begin**

Minor Revisions

- to Approved Construction Plans
- Submit to department having primary responsibility for revision
- Twelve (12) sets of plans if only single agency approval
- Provide transmittal letter which describes the proposed revision
- Engineer sends copy of letter to Planning, DPU, and DPW
- Review agency coordinates with other County Departments, if necessary
- Engineer address all comments on revised plan before approval for construction
- Review Department sends approval letter
 - To the owner and engineer
 - Copy of letter to Planning, DPU and DPW

Minor Revisions cont.

- If scope of revisions requires complete review by other agencies
 - As determined by Planning
- Submit plans for review to Planning under the regular process
- Pay appropriate fees
- Example of significant changes
 - Impact proffered or otherwise required buffers
 - Requires additional clearing
 - Has significant revisions to grading or locations of site features
 - Affects items required by the Planning Commission.

Final project completion

- Engineer submits a statement to Planning
 - All construction conforms to POD
- Engineer sends copy to DPW and DPU
- Engineer coordinate inspections for final CO through BI
- DPU Construction issue TA
 - Water and sewer is complete and accepted for operation
 - Provides list of deficiencies
 - Issue FA when deficiencies corrected

POD Plan Distribution

➤ PUBLIC WORKS

- Two (2) Engineering and Environmental Services Division
- One (1) Construction (field)

➤ PLANNING

- One (1) Planning
- One (1) Zoning Enforcement Officer

➤ DEVELOPER

- Two (2) Building Permit Application
- Two (2) Contractor's On-site copies
- Two (2) Developer/Owner & Engineer

POD Plan Distribution cont.

- **PERMIT CENTER – One (1)**
- **EASTERN GOVERNMENT CENTER – One (1)**
- **DIVISION OF FIRE – One (1)**
- **PUBLIC UTILITIES**
 - One (1) Public Information
 - Two (2) Construction Inspector
 - One (1) Backflow Technician
- **UTILITY CONTRACTOR – Two (2)**

QUESTIONS ?



**Plan of Development Comments
on the World Wide Web**

http:// to be announced

Main Page: Right Column Menu

The screenshot shows the Henrico County website's 'Plan of Development Comments' page. The top navigation bar includes 'HENRICO COUNTY' and links for 'HOME', 'RESIDENT', 'BUSINESS', 'VISITOR', 'FAQS', 'CONTACT US', 'JOBS', and 'SITE MAP'. Below the navigation is a header with the Henrico County seal and the title 'Plan of Development Comments'. The main content area features a 'POD Number' search form and a 'Lookup POD Number by Street Address' form. On the right side, there is a vertical menu with several links. Three callout boxes with arrows point to specific links in this menu: a cyan box points to 'POD Comments Home', a light green box points to 'Complete Listing of PODs', and a yellow box points to 'View Description Codes'. The footer contains the text 'Proud of our progress; excited about our future' and copyright information for 1996-2007 Henrico County, Virginia, along with links to 'site_map', 'contact', 'FAQ', and 'privacy_policy'. A taskbar at the bottom shows an 'Internet' icon.

Takes you to Main Page – which is shown here.


Takes you to the Complete Listing of all current PODs.

Takes you to the Description Code reference page which identifies codes under the Description column.

Main Page: Search by POD Number

The screenshot shows the Henrico County website's search interface for Plan of Development (POD) comments. The page features a navigation bar at the top with links for HOME, RESIDENT, BUSINESS, VISITOR, FAQs, CONTACT US, JOBS, and SITE MAP. Below the navigation bar is a header section with the Henrico County seal and the text "Plan of Development Comments" next to a photo of two construction workers. To the right of the header is a sidebar with dropdown menus for "County Services" and "County Agencies", and a "Search Site" button with a "go!" button. The main content area contains two search forms. The first form is for searching by POD Number, with a text input field and a "Submit" button. Below this form is a large text prompt: "Enter the POD number and click on the Submit button". The second form is for looking up a POD Number by Street Address, with a text input field and a "Submit" button. To the right of the main content area is a sidebar with several links: "Building Inspections Home", "POD Comments Home", "Complete Listing of PODs", "General Information", "Residential Building Inspection Information", "Land Development Assistance", "Applications, Forms & Fees", "Contact Information", and "View Description Codes". At the bottom of the page, there is a footer with the text "Proud of our progress; excited about our future" and "Copyright 1996-2007 Henrico County, Virginia | site_map | contact | FAQ | privacy_policy". The browser's address bar shows "Internet".

HENRICO COUNTY | HOME | RESIDENT | BUSINESS | VISITOR | FAQs | CONTACT US | JOBS | SITE MAP

 **Plan of Development Comments**

County Services
County Agencies
Search Site **go!**

POD Number: (i.e. POD2006-00001)

Enter the POD number and click on the Submit button

Lookup POD Number by Street Address

STREET NAME: (There are 184 streets with active PODs.)


[Building Inspections Home](#)
[POD Comments Home](#)
[Complete Listing of PODs](#)
[General Information](#)
[Residential Building Inspection Information](#)
[Land Development Assistance](#)
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Internet

After Entering POD # - - Comments Page

HENRICO COUNTY
[HOME](#) | [RESIDENT](#) | [BUSINESS](#) | [VISITOR](#) | [FAQS](#) | [CONTACT US](#) | [JOBS](#) | [SITE MAP](#)



Plan of Development Comments



County Services v

County Agencies v

go!

POD NUMBER: **POD2004-00118**

Parcel ID: 809-713-2028
1910 CHARLES CITY RD

Legal Description: NS CHARLES CITY RD AC 2 10 A2 27

Project Name: BFI OLD DOMINION LANDFILL

Issued Date:

Applicant: BROWNING-FERRIS INDUSTRS

Display Site Plan Reviews by:

Complete List of Plan Reviews v

Display Comments

Note: The County of Henrico is not responsible for any information placed in the "Comments" field by the public.

Comments posted are as of January, 2007

If you would like to view comments prior to January 2007, please contact the Planning Office at 804. 501. 4349.

Description	Submission Date	Due Date	Completed Date	Status	Reviewer
(A010) Application Received			AUG-04-2004		Ellis, Harold L.
▶ Comments: --					
(H003) L, L & Fence Plan-Initiated			AUG-05-2004		
▶ Comments: --					
(H122) Public Works Review-LLF	AUG-05-2004	AUG-23-2004			
▶ Comments: --					
(H125) Environmental Engineer Rev-LLF	AUG-05-2004	AUG-23-2004	AUG-13-2004	DONE	Hackett, Mike
▶ Comments: --					
(H130) Public Utilities Review-LLF	AUG-05-2004	AUG-23-2004	AUG-23-2004	DONE	Garofalo, Kristie Haddon
▶ Comments: West Broad Village 1st Review, June 16, 2006					
<p>Sheet C2.1 & Utility Plan Sheet</p> <p>1. Show and callout the existing 16" waterline in West Broad Street. Also, show all existing fire hydrants along West Broad Street. Also, show the waterline in Broad Street and the waterline in any entrance roads on Sheets C2.2, C2.3, and C2.4.</p> <p>Sheet C2.2 & Utility Plan Sheet</p> <p>2. Show and callout the casing pipe around the run of existing sanitary sewer between MH 6+41.45 and MH 7+93.40. Show the casing pipe around the sanitary sewer between MH 1+30.3 and MH 4+52.00 and between MH 72+00.11 and MH 73+05.81 on Sheet C2.3 as well.</p> <p>3. Show the utility easement around the existing sanitary sewer and/or waterline that extends through the shopping center and provide a callout with the size and the DB and PG of the easement. See Sheet C2.3 as well.</p> <p>Sheet C2.3 & Utility Plan Sheet</p>					

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Internet

Main Page: Look-up a Street Address

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 **Plan of Development Comments** 

County Services

County Agencies

Search Site

POD Number: (i.e. POD2006-00001)

Lookup POD Number by Street Address

STREET NAME: (There are 184 streets with active PODs.)

Lookup a street address – type the street name.

Example: Ridgefield Pkwy

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[POD Comments Home](#)

[Complete Listing of PODs](#)

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Internet

After Entering POD # - - Search Result

Click on the POD number link and this will take you to the Comments Page.

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Plan of Development Comments

Search results for "RIDGEFIELD PKWY"
Found 7 records

Address	POD Number	Legal Description
10720 RIDGEFIELD PKWY	POD2006-00023	RIDGEFIELD PKY AC 3.797 68 A2 24
11800 RIDGEFIELD PKWY	POD2004-00015	E OF RIDGEFIELD PWY AC 35 68 A2 27
11801 RIDGEFIELD PKWY	POD2004-00060	E OF RIDGEFIELD PWY AC 4.953 PAR 8 68 A2 26
11821 RIDGEFIELD PKWY	POD2005-00029	E OF RIDGEFIELD PWY AC 4.953 PAR 8 68 A2 26
9900 RIDGEFIELD PKWY	POD2004-00152	NR CHURCH RD AC 164.792 78 B2 4
9990 RIDGEFIELD PKWY	POD2005-00033	RIDGEFIELD PARKWAY AC 1.472 79 A1 17
9991 RIDGEFIELD PKWY	POD2003-00011	SL RIDGEFIELD PKWY AC 5.48 79 A1 28

Lookup POD Number by Street Address:

STREET NAME: (There are 184 streets with active PODs.)

POD Number: (i.e. POD2006-00001)


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Comments Page

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Plan of Development Comments



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Complete List of Plan Reviews

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County Services

County Agencies

Search Site

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[Complete Listing of PODs](#)

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
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Drop-down Menu

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Plan of

- Complete List of Plan Reviews
- Beginning Phase of Plan Reviews
- Final Const Plan- Original Submission
- Final Const Plan- Second Submission
- Final Const Plan- Additional Submission
- Final Const Plan- Final Submission
- Landscape, Lighting & Fence
- Clear, Grub & Grade
- Approved FCP- Revised
- Building Inspect Review
- Education Review
- Fire Review
- Health Dept Review
- Planning Review
- Police Review
- Public Utilities Review
- Public Works Review
- Rec & Parks Review
- VA Dept of Transport Review
- VA Power Review
- Other Dept Review

Complete List of Plan Reviews | Display Comments

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Description	Submission Date	Due Date	Completed Date	Status	Reviewer

County Services | County Agencies | Search Site | go!

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Done | Internet

View Description Code Page

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Plan of Development Comments

County Services
County Agencies
Search Site go!

print this page PDF

CODE REFERENCE		
A	Application	
	010	Application Received
B	Beginning Phase of Plan Reviews	
	005	POD- Original Review Initiated
	30	Building Inspection Review
	40	Fire Review
	70	Police Review
	115	Traffic Engineer Review
	120	Design Division Review
	125	Environmental Control Engineering Review

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For a printer-friendly page, click on this button. This is a PDF file and you need a PDF reader to open it.

If you don't have a PDF reader, go to <http://www.adobe.com/products/acrobat/readtep2.html> to get the current version.

Henrico County

Department of Public Utilities

Ordinance Pertaining to the Use of Utility Credits for Connection Fees

Chapter 23 Water and Sewer
Article IV. Fees, Charges and Assessments
Water and Sewer Service

Division 3. Connection Fees and Service
Charges

Section 23-311. Water Connection Fees

Section 23-312. Sewer Connection Fees

Utility Credits for Connection Fees as it pertains to Water and Sewer Extensions

- Current Ordinance adopted May 2004
 - (e) Off-site Credit
 - (f) Oversized Line Credit
 - (g) Off-site and Oversized Line Credit
 - (h) Credit Transfer
 - (i) Bonus Credit

Note: Sewer Credits are calculated in the same manner as Water Credits.

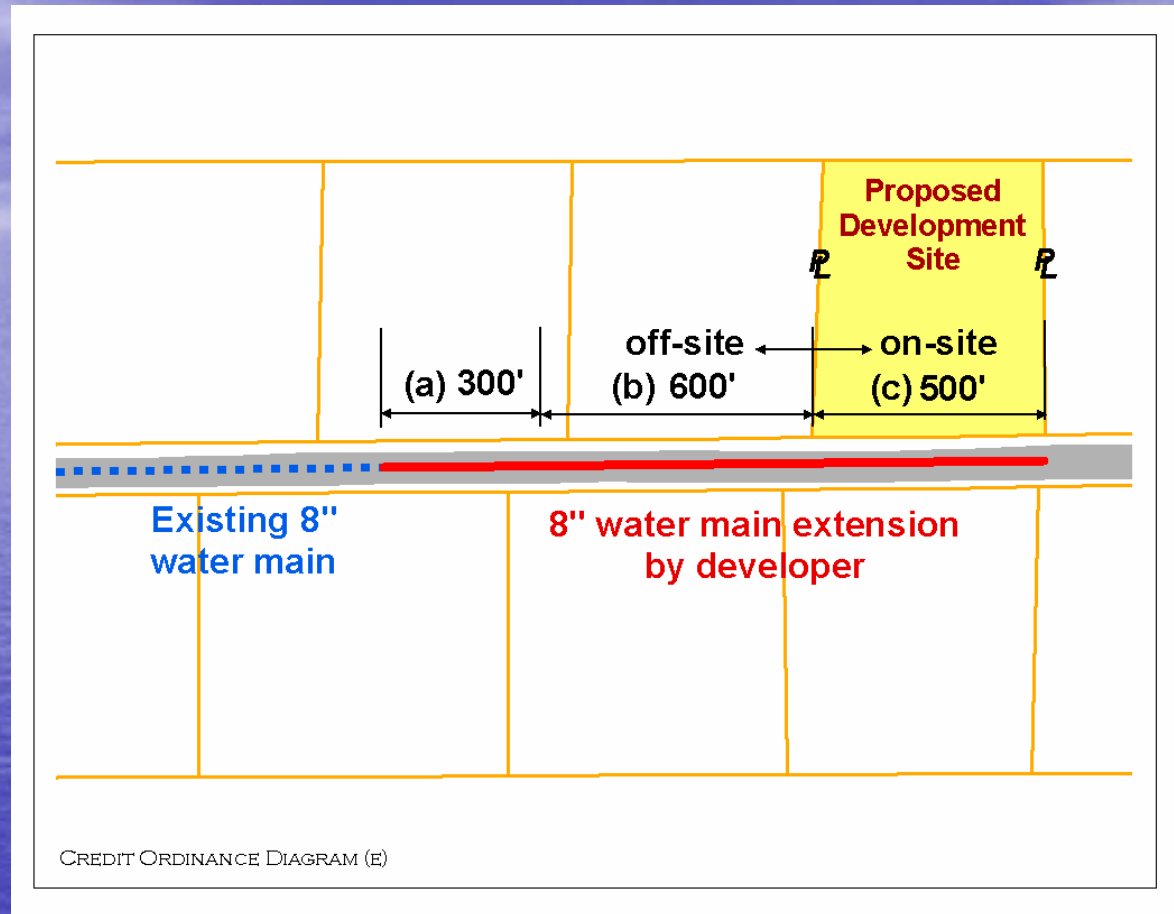
Section 23-311

(e) Off-site Credit

Off-site line credit policy. The director shall give a credit against the basic water connection fee for any off-site waterline extension in excess of 300 feet required to provide water service to the property. No credit shall be given for off-site extensions of less than 300 feet, and the amount of the credit shall be based upon the length of the extension greater than 300 feet. Credits for construction of the waterline extension will be computed based on unit prices taken from recent bids received by the county or arms' length bids received by the applicant, whichever are less.

Section 23-311

(e) Off-site Credit – Illustration



(e) Off-site Line Credit Policy - Sample Calculation:

(a) 300' off-site		0
(b) 600' off-site	$600' \times \$50/\text{ft} =$	30,000
(c) 500' on-site		0
	total credit	<u>\$30,000</u>

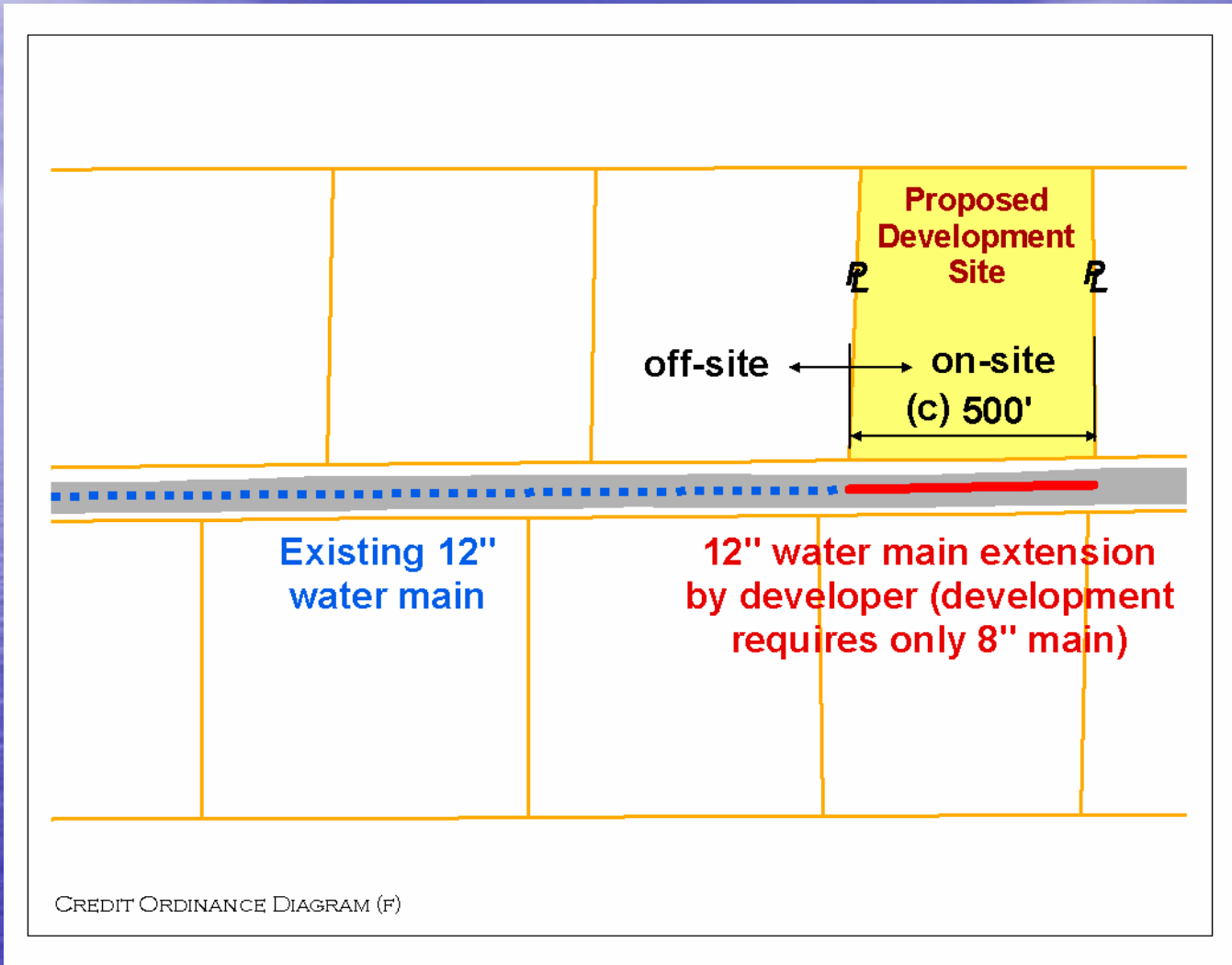
Section 23-311

(f) Oversized Line Credit

Oversized line credit. The director shall give a credit against the basic water connection fee for any waterline larger than necessary to adequately serve the property. The amount of the credit shall be the difference in the estimated cost between the oversized waterline provided and the waterline size necessary to adequately serve the property.

Section 23-311

(f) Oversized Line Credit – Illustration



(f) Over-sized Line Credit Policy - Sample Calculation:

$$\begin{aligned} \text{(c) 500' on-site} \quad & 500' \times (\$70 - \$50)/\text{ft} = \underline{10,000} \\ \text{total credit} \quad & \$10,000 \end{aligned}$$

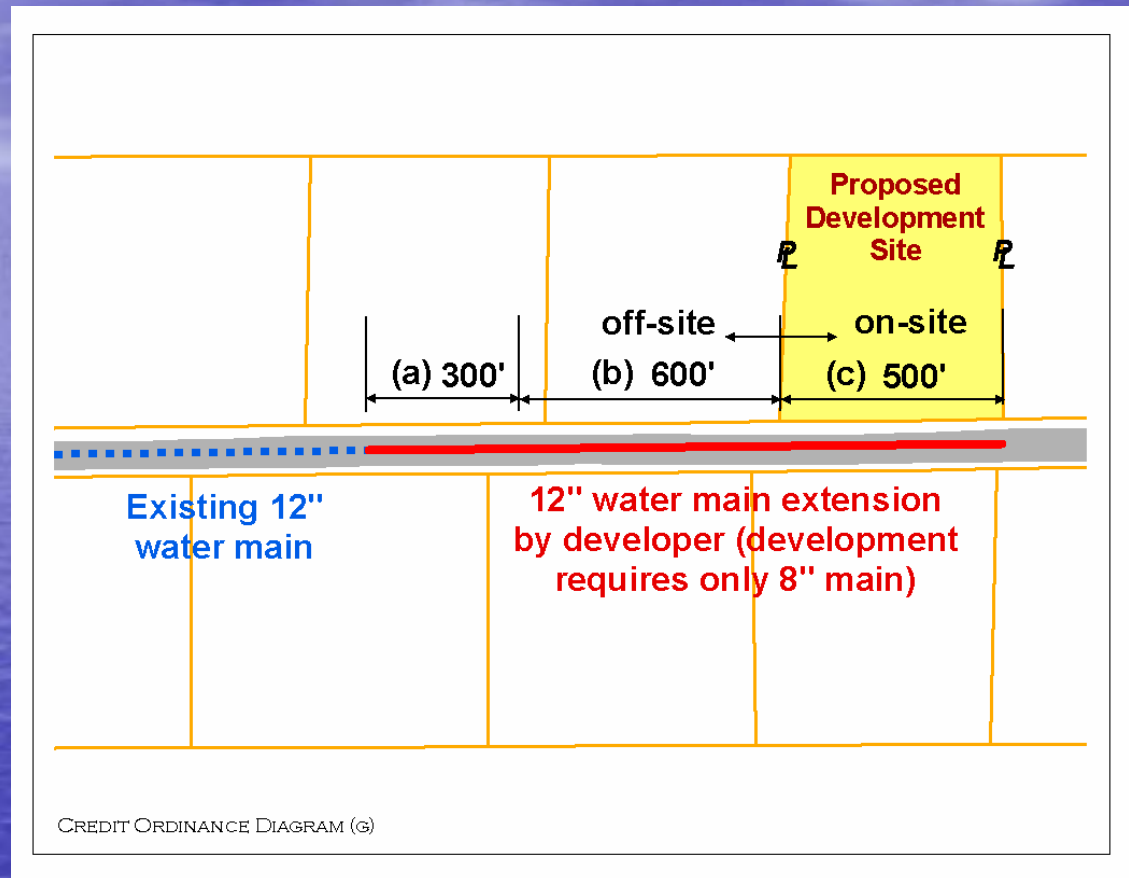
Section 23-311

(g) Off-site and Oversized Line Credit

Off-site and oversized line credit. When the waterline provided is both offsite and oversized as specified in subsections (e) and (f) above, the amount of the credit shall be the sum of (1) for the on-site extension and the first 300 feet of the off-site extension, the difference in cost between the waterline provided and the waterline necessary to adequately serve the property and (2) 100% of the cost of the off-site extension in excess of 300 feet.

Section 23-311

(g) Off-site and Oversized Line Credit— Illustration



(g) Off-site & Oversized Line Credit Policy - Sample Calculation:

(a) 300' off-site	$300' \times (\$70 - \$50)/ft =$	6,000
(b) 600' off-site	$600' \times \$70/ft =$	42,000
(c) 500' on-site	$500' \times (\$70 - \$50)/ft =$	<u>10,000</u>
	total credit	\$58,000

Section 23-311

(h) Credit Transfer

Credit transfer. If an applicant becomes entitled to credits for a waterline extension approved by the director after [effective date of ordinance] and such credits exceed the water connection fees required for the project, the applicant may submit written authorization for a transfer of credits to other properties that are under contract with the county for service. Each transferred credit shall be applied to the property specified by the applicant and may not be applied to another property.

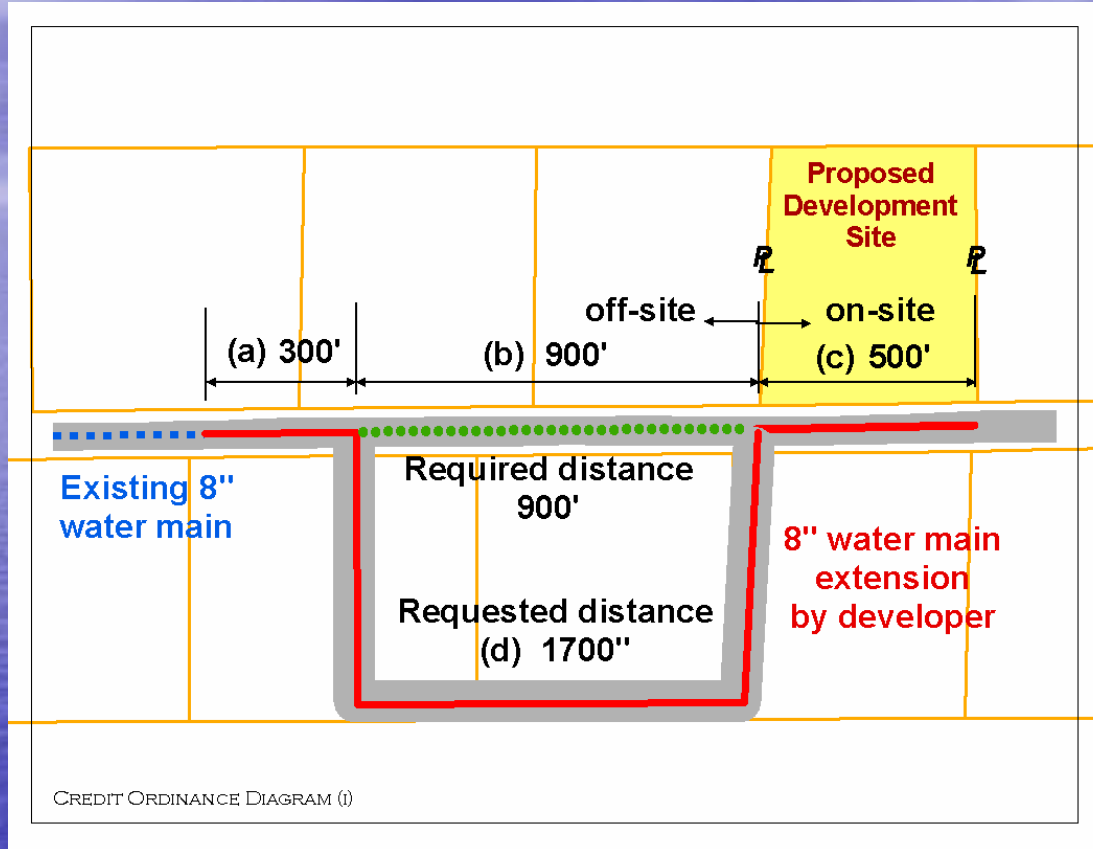
Section 23-311

i) Bonus Credit

Bonus credit. If the county requests off-site extension of a waterline for a distance greater than that required to provide water service to the property, and if the applicant provides the additional extension for the benefit of the county, the director shall give a bonus credit for the extension that exceeds the required distance. The amount of the bonus credit shall be 1.5 times the credit computed under subsections (e) - (g) for the portion that exceeds the required distance and shall be added to the credit given under subsections (e) - (g) for the required distance.

Section 23-311

(i) Bonus Credit – Illustration



(i) Bonus Credit Policy - Sample Calculation:

	(a) 300' off-site		0
Req'd distance	(b) 900' off-site	$900' \times \$50/\text{ft} =$	45,000
Bonus distance	(d) 800' off-site	$(800' \times \$50/\text{ft}) \times 1.5 =$	60,000
	(c) 500' on-site		0
		total credit	<u>\$105,000</u>

Example of Credit Use

- 40 lot subdivision
- Water connection fee per lot = \$1,545
- Total connection fees owed: $40 \times \$1,545 = \$61,800$

Total credits:	\$105,000
Applied credit:	- <u>\$61,800</u>
Available credits	\$43,200

Examples of Credit Transfer

The credit amount can be transferred to another property specified by the applicant if that property has a signed water agreement with the County.

Conversion from credits to single family lots:

$$\$43,200 \div \$1,545 = 28 \text{ lots}$$

Conversion from credits to commercial:

2" meter water connection: \$43,770

\$43,770

- \$43,200

Balance due \$ 570



Questions ?

Geographic Information System (GIS) - Update -

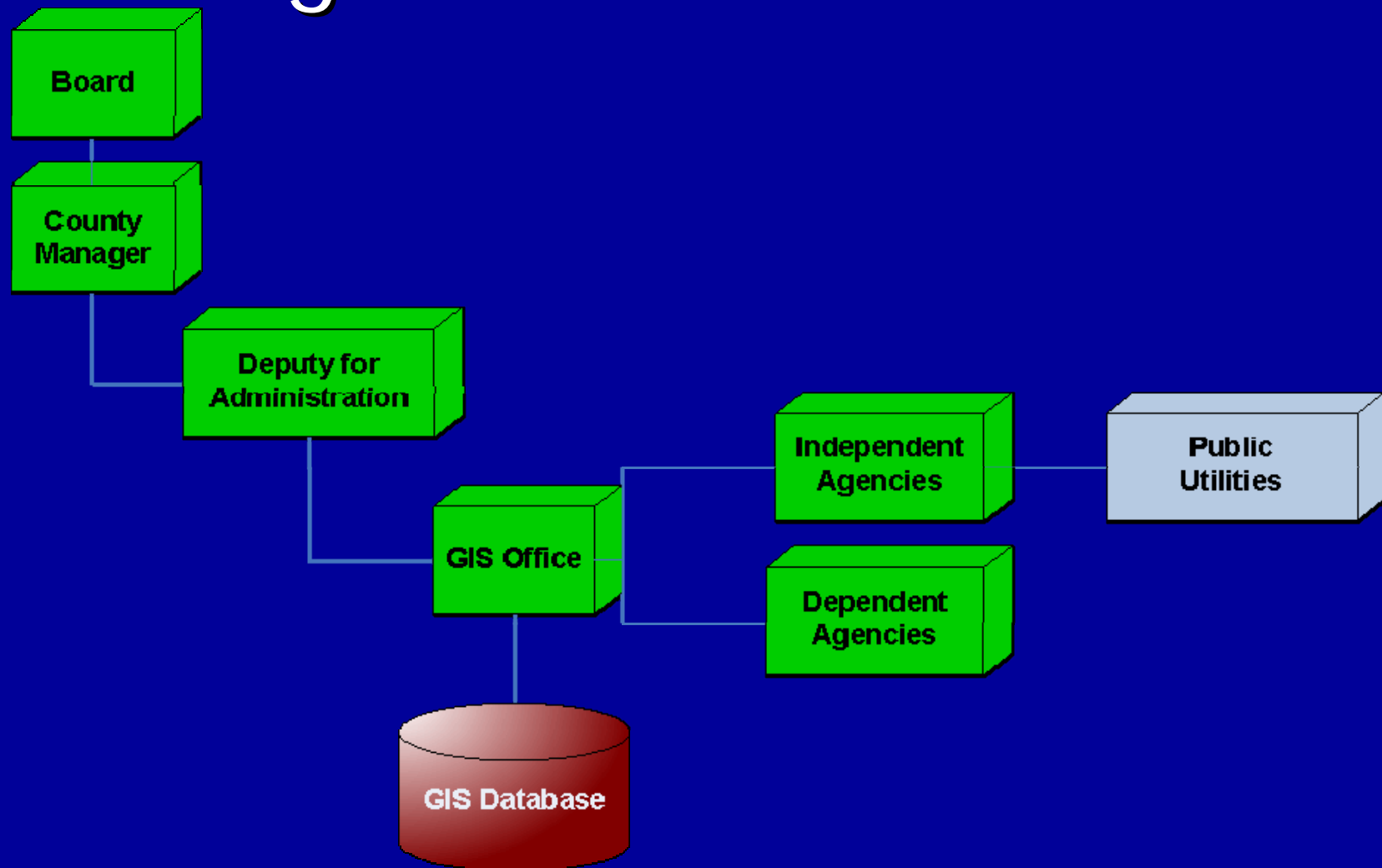
Henrico County
Department of Public Utilities

Presenter: Jay Cummins

Presentation Summary

- Henrico County GIS Organization
- Enterprise GIS
- DPU GIS Data Model
- Asset Identification
- Additional GIS Data Information

GIS Organization



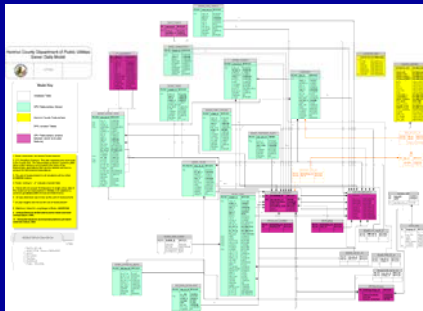
Enterprise GIS

- County's GIS Data is contained in an ArcSDE Geodatabase.
 - ArcSDE 9.1 (Service Pack 1)
 - Oracle Database 10g EE, 10.1.0.3.0
 - Geodatabase is versioned.
 - VA State Plane NAD83/NAVD88

New DPU GIS Data Model

- › Implemented in April 2006
- › Facilitates system integrations and interfaces.
- › As-Built posting
- › 28 asset feature classes.

DPU GIS Data Model



Graphic Data Models



Data Dictionary
Domains



Change Log



Data Dictionary

Asset Identifiers

- Database field names:
 - › Old Data Model: HANSENID
 - › New Data Model: UNITID

Asset Identifiers – Previous format

264SE054 (manhole)

264SE054-264SE046 (sewer main)

Asset Identifiers

New Format for new GIS Features

SMH000173 (manhole)

SMH000173-SMH000172 (sewer
main)

Two, Three, or Four character prefix
concatenated with a six digit
number.

New Asset Identifiers

HY000001 (Hydrant)

SND000001 (Sewer Node)

WV000001 (Water Valve)

SSL000001 (Sewer Lateral)

WMTR000001 (Water Meter)

Communication Forum #4 - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:805

Editor Task: Create New Feature Target: Labeling

- Sewer Layers
 - Sewer Pumpstations
 - Sewer Tanks
 - Sewer Valves
 - Sewer Fittings
 - Manholes
 - Sewer Laterals
 - Sewer Laterals (Sub-36)
 - Sewer Laterals
 - Sewer Pipes
 - Sewer Pipes (Sub-36)
 - <all other values
 - Status, Type of
 - ABANDONED, <M
 - ABANDONED, FC
 - IN SERVICE, <N
 - IN SERVICE, FOF
 - Sewer Pipes
 - Sewer Pipe Casings
 - Sewer Easements
 - SPS_Basin_Boundaries
 - water_sewer_quads
- KCK Public Utility Layers 2

Display Source Selection

Drawing Arial 9.75 B I U

11756405.65 3765664.22 Feet

start 2 M... Doc... Mic... Inde... Com... My Recent Documents My Recent Documents 3:27 PM

The screenshot displays the ArcMap interface with a sewer network map. The map shows several sewer lines with labels such as '6 inch WM', '8 inch SS', '8 inch WM', '24 inch FM', and '8 inch WM'. Manholes are represented by blue squares with 'M' labels. The layer list on the left is expanded to show 'Sewer Pipes' with sub-categories for 'ABANDONED' and 'IN SERVICE' status. The Windows taskbar at the bottom shows the 'start' button, several open applications, and the system clock at 3:27 PM.

Communication Forum #4 - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:805

Editor Task: Create New Feature Target:

Layers

- Public Utility Layers
 - Water Layers
 - Water Valves
 - Hydrants
 - Use Type
 - Fire Hydrant
 - Flushing Hydrant
 - Water Meters
 - Meter Type
 - Detector Check
 - Dual Meter
 - Exclusion Meter
 - Irrigation Meter
 - Meter
 - Unknown
 - Water Fittings
 - Water Service Lines (Wa
 - Water Pipes
 - Status
 - ABANDONED
 - BUILT - NOT IN SERV
 - IN SERVICE
 - REMOVED
 - Water Easements
 - Water Pressure Zones

Attributes of Water Pipes

Primary Key	Material*	Size	Installation	Asbuilt ID
476288	DUCTILE IRON PIPE	16	1/1/1994	93-151
476289	POLYVINYLCHLORIDE	12	1/1/1988	87-143
476290	POLYVINYLCHLORIDE	6	1/1/1992	89-176
476291	DUCTILE IRON PIPE	6	1/1/1987	86-176
476292	POLYVINYLCHLORIDE	6	1/1/1984	83-152
476294	DUCTILE IRON PIPE	12	1/1/1988	88-11
476295		8	1/1/1900	2002-026

Record: 0 Show: All Selected Records (1 out of 1)

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Communication Forum #4 - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:103

Editor Task: Create New Feature Target:

Layers

- Public Utility Layers
 - Water Layers
 - Water Valves
 - Hydrants
 - Use Type
 - Fire Hydrant
 - Flushing Hydrant
 - Water Meters
 - Meter Type
 - Detector Check
 - Dual Meter
 - Exclusion Meter
 - Irrigation Meter
 - Meter
 - Unknown
 - Water Fittings
 - All Other Values
 - Fitting Type
 - PRESSURE REDUCIN
 - AIR RELIEF VALVE
 - Detector Check
 - Reducer
 - CAP; End; PLUG
 - Cross Fitting
 - ANGLE

Attributes of Hydrants

Installati	Hydrant Type*	PressureZ	UNITID
1/1/1972	NON BREAK AWAY	TCCN	258SE018H
1/1/1992	BREAK AWAY	TCCN	490SW010H
1/1/1988	BREAK AWAY	TCCN	489SE007H

Record: 0 Show: All Selected

Attributes of Water Valves

Unique Ide	Valve Type*	Diameter
586334	Gate Valve	6
586335	DOUBLE DISK G	6
586336	Gate Valve	6

Record: 0 Show: All

6 inch GAT valve

6 inch WM

FH# 490SW010H

8 inch WM

6 inch WM

6 inch DDGV valve

8 inch DDGV valve

8 inch DDGV valve

Display Source Selection

Drawing Verdana 10 B I U

11756721.16 3765692.08 Feet

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Communication Forum #4 - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:4,908

Editor Task: Create New Feature Target:

Layers

- Public Utility Layers
 - Water Layers
 - Water Valves
 - Hydrants
 - Use Type
 - Fire Hydrant
 - Flushing Hydrant
 - Water Meters
 - Water Fittings
 - Water Service Lines (Wa
 - Water Pipes
 - Status
 - ABANDONED
 - BUILT - NOT IN SERV
 - IN SERVICE
 - REMOVED
 - Water Easements
 - Water Pressure Zones
 - Water Pipe Casings
 - Sewer Layers
 - water_sewer_quads
- KCK Public Utility Layers 2
 - CIP Projects
 - Water Layers
 - Sewer Layers
 - water_sewer_quads
 - Public Utility As-Built Bounda
- KCK group layer

Display Source Selection

Drawing Verdana 10 B I U

11773227.37 3747686.42 Feet

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kckStart - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:870

Task: Create New Feature Target: Communication_Forum_-_sewer_

Public Utility Layers

- Water Layers
- Sewer Layers
 - Sewer Pumpstations
 - Sewer Tanks
 - Sewer Valves
 - Sewer Fittings
 - Manholes
- Sewer Laterals
 - Sewer Laterals (Sub-360)
 - Sewer Laterals
- Sewer Pipes
 - Sewer Pipes (Sub-360)
 - <all other values
 - Status, Type of
 - ABANDONED, <F
 - ABANDONED, FC
 - IN SERVICE, <N
 - IN SERVICE, FOF
 - Sewer Pipes
 - Sewer Pipe Casings
 - Sewer Easements
 - SP5_Basin_Boundaries

Attributes of Sewer Pipes (Sub-360)

Diameter	Material	Pipe Len	Upstream Inv	Downstream Inv	Hansen Attribute	Installation	Slope	Asbuilt ID
8 inch (8.0)	DI - DUC	181.09	247.910004	245.679993	408099	<Null>	1.23	2001-209
8 inch (8.0)	PVC	215	244.289993	243.089996	52868	1/1/1989	0.005	1988-219
8 inch (8.0)	PVC	180	236.619995	230.479996	52908	1/1/1983	0.034	1982-103
8 inch (8.0)	T - ASBE	150	290.269989	282.670013	43206	1/1/1978	0.050	1977-167
8 inch (8.0)	UNKNO	130	291.320007	282.769989	43204	1/1/1900	0.06	

Record: 0 Show: All Selected Records (1 out of 37438 Selected.) Options

11755354.90 3764622.33 Feet

start 3 Mic... kckStart... Docume... Microsof... My Recent Documents My Recent Documents 12:32 PM

kckStart - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:870

Editor Task: Create New Feature Target: Communication_Forum_-_sewer_ Labeling

Public Utility Layers

- Water Layers
- Sewer Layers
 - Sewer Pumpstations
 - Sewer Tanks
 - Sewer Valves
 - Sewer Fittings
 - Manholes
 - Sewer Laterals
 - Sewer Laterals (Sub)
 - Sewer Laterals
 - Sewer Pipes
 - Sewer Pipes (Sub-36)
 - <all other values
 - Status, Type of
 - ABANDONED, <f
 - ABANDONED, FC
 - IN SERVICE, <N
 - IN SERVICE, FOF
 - Sewer Pipes
 - Sewer Pipe Casings
 - Sewer Easements
 - SPS_Basin_Boundaries

Attributes of Manholes

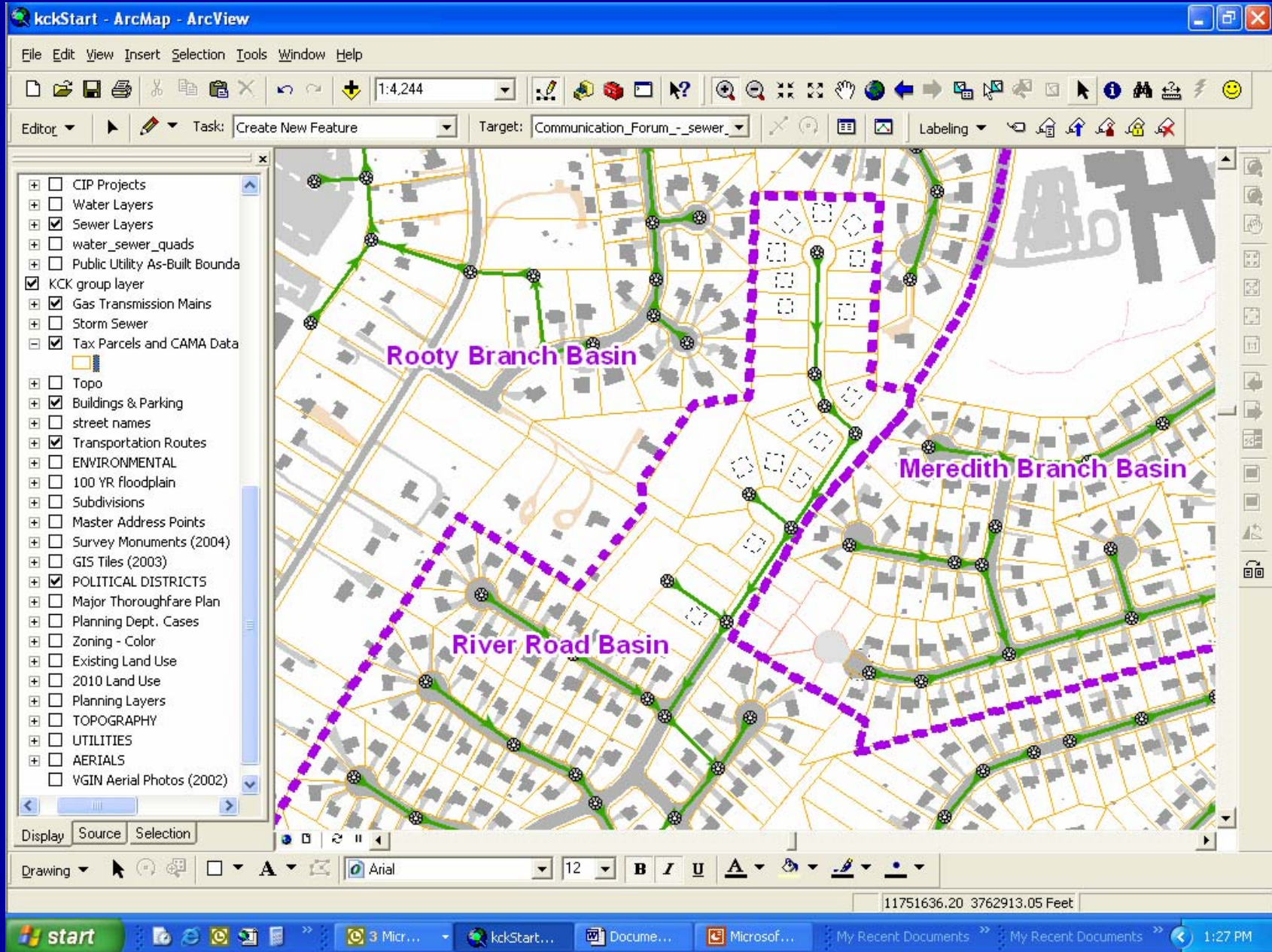
Unique Id	Type of Manhole*	Rim Elevation	Manhole Cover Type	Asbuilt ID
89019	Standard Manhole	158.83	STANDARD (A TOP) D-110	196838-7
89020	Standard Manhole	242	STANDARD (A TOP) D-110	1982-103
89021	Standard Manhole	234.72	STANDARD (A TOP) D-110	<Null>
89023	Standard Manhole	255	STANDARD (A TOP) D-110	U-247

Record: 0 Show: All Selected Records: (1 out of 35608 Selected.)

Number of features selected: 1

11755107.31 3764737.82 Feet

start 3 Micr... kckStart... Docume... Microsof... My Recent Documents My Recent Documents 1:08 PM



How to obtain GIS Data The Permit Center

- › 4301 East Parham Road
Richmond, Virginia 23228
- › Mailing Address:
The Permit Center
County of Henrico
P.O. Box 27032
Richmond, Virginia 23273-7032
- › **Phone:** 804-501-7280
FAX: 804-501-4815
Email: permitcenter@co.henrico.va.us

GIS Metadata

- <http://www.co.henrico.va.us/devsite/gispdfs/index.htm>
- Metadata is distributed with GIS data.

GIS Data Distribution

"This GIS layer has been produced on Henrico County's Geographical Information System using the best data available to the County. This layer is to be used for reference purposes only and the County of Henrico makes no warranty as to its completeness or accuracy. Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination."

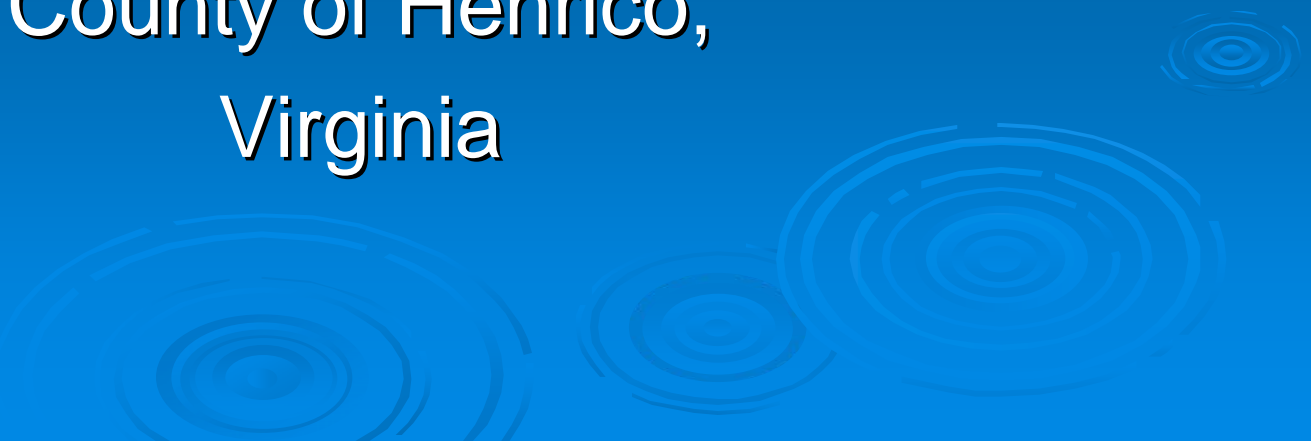
Geographic Information System (GIS) - Update -

Henrico County
Department of Public Utilities

Presenter: Jay Cummins
- End -

STANDARDS

Department of Public Utilities
County of Henrico,
Virginia



Purpose and General Information

- Latest Revision – 2002
- Developed for use by:
 - Consultants
 - County Reviewers
- Proposed Revision – 2007
 - Revision Study - 2006

Overview of Existing Standards

- These standards have been developed for use by consultants working on water and sewer utility projects within Henrico County and for County personnel who review those projects.

Overview of Existing Standards

- The standards are not intended as a regulation but should be used as a guide which will establish a degree of uniformity for drawings and specifications for all water and sewer utility projects.

Overview of Existing Standards

- Consultants should strive for designs which show consideration of details presented herein. However, these details are secondary to good engineering judgment.

Overview of Existing Standards

➤ Include Virginia Regulations

- Waterworks Regulations
 - Memorandum of Understanding
 - Local Review Form
 - County approval up 16" lines
 - VDH Construction Permit for larger lines
 - SCAT Regulations
 - DEQ Construction Permit
 - Required for design greater than 400 persons

Overview of Existing Standards

- Section 1 General Design Standards
- Section 2 Design Standards for Gravity Sanitary Sewers
- Section 3 Design Standards for Sewage Pumping Stations and Force Mains
- Section 4 Design Standards for Water Distribution Facilities
- Section 5 Standard Forms and Notes
- Section 6 Standard Drawings
- Section 7 General Construction Standards
- Section 8 Site Clearing
- Section 9 Trenching & Backfilling
- Section 10 Seeding
- Section 11 Water Distribution System
- Section 12 Sanitary Sewer System
- Section 13 Miscellaneous

Scope of the Revision Study

- Develop understanding of:
 - The content of the “*Standards*”
 - How the “*Standards*” are used
 - Updating needs, and
 - Justifications for the updates

User Groups and Uses

- County Personnel
 - Engineering Division
 - Construction Division
 - Operations Division
 - Non-County Users
 - Developers' Engineers
 - County's Consulting Engineers
 - Contractors
- 


Identified Uses

- Guide for review of proposed development plans
- General guideline for inspection in the different CIP and private projects
- Basis for design for in-house design of small water and sewer extensions
- Specific procedures for the testing of pipelines on developer projects and in-house projects,
- Used as reference on consultant-designed CIP projects
- Include requirements of Waterworks Regulations and SCAT Regulations
- Define drafting (CADD) standards

Identified Uses

- “Standards” use by developers’ engineers:
 - Engineers refer to Standard Drawings during design
 - Refer to “Standards” in computing design flows
- Used as a general reference guideline to check for conformity of any maintenance with “Standards”.
- Used as a reference and education tool for new employees in the Operations group.
- Used as a guide to review new products offered by vendors.
- Used by the warehouse as a reference when purchasing repair materials inventory.
- Used by Contractors to define materials and quality of work.

Update Needs

- Regulation and Standards References
 - Drafting standards
 - Missing sections and Standard Drawings
 - Named Manufacturers and Specified Products
 - Standard Forms
- 

Summary

- The updated Standards to include the following:
 - Changes to reflect current regulatory agency requirements
 - Deletion of outdated product specifications
 - Updated references to material and testing standards
 - Changes to plan submittal requirements to (1) provide uniformity; (2) reflect current drafting technology; and (3) improve the review process
 - Deletion of unused construction details
 - Addition of new construction details.

Overall Goal

- Improve the applicability and ease of use for the end user while maintaining high design and construction standards.
- Provide constructed facilities
 - That will meet or exceed expected pipeline design life
 - That will minimize O&M costs
 - That are accessible for maintenance

Preliminary Schedule

Draft Standards

April 2007

Reviews (County/Interested Firms) Complete

May 2007

Final Draft Standards

June 2007

VDH/DEQ Submittal and Review

July 2007

Final Standards Document

August 2007

QUESTIONS AND COMMENTS

- INVITE QUESTIONS AND COMMENTS
- INPUT TO DEVELOP FUTURE FORUMS