

2018 Update

Water and Sewer Design and Construction Standards

Department of Utilities/Public Works

Benjamin Loveday, PE

Christopher Edwards, PE

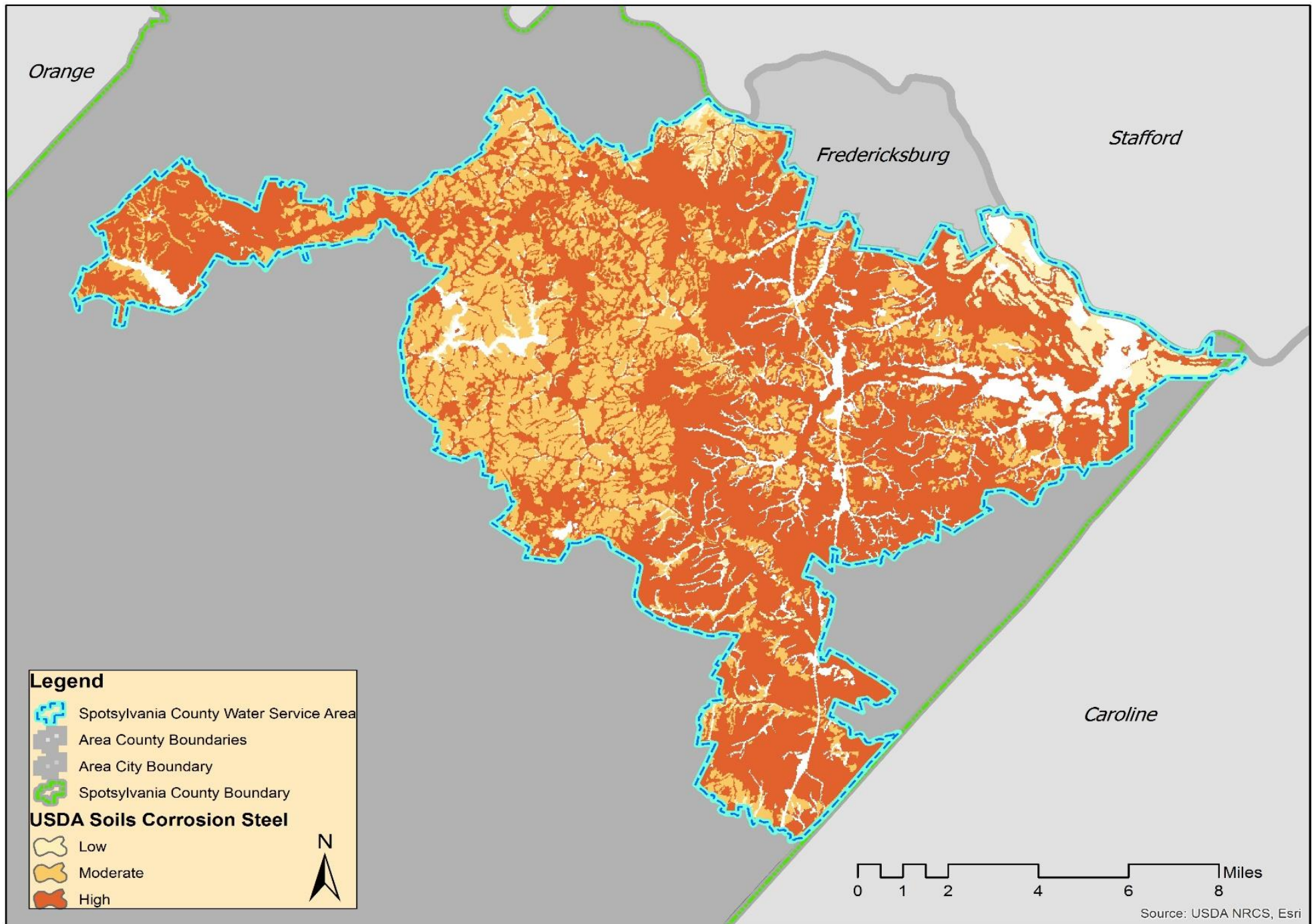
Overview

- Last updated June, 2013
- Site Plans submitted after the effective date must comply with new standards
 - Plans submitted prior to the effective date must comply with 2013 standards
- Regulatory and Construction Standards
- 2018 Update
 - Reliability = confidence
 - Resiliency = toughness
- Provided to industry for non-mandatory 30-day comment period
- Updates driven by Virginia Department of Health requirements
- Highlighted Changes:
 - Corrosion program, tracer wire requirements, after-hours inspections, material updates

Corrosion Program Improvements

- Spotsylvania County is at high risk of corrosive soils
- Increased failures directly relating to corrosive soils
 - 3 unprotected bolt failures within last month;
 - Most recent 13 year old main near Dean Ridings Lane
 - Protection at time of construction: \$50/fitting
 - Repair value: \$20,000 to \$30,000





Corrosion Program Updates

Highlighted Item	2013 DSM	2018 DSM
Soil Base Condition	Assumes good soils base	Assumes corrosive soils base
Testing Procedure	Industry 10 Point System	Industry Design Decision Model
Ductile Iron Pipe	Bare installation w/polywrap as needed (50-year design life)	Zinc coated pipe with enhanced V-Bio polywrap (100-year design life)
Bolt Installation	No coating required; failure observed in less than 6 months	Factory applied anti-corrosion coating or stainless steel (life of system)
Test Out Option	Allowed	Allowed

Corrosion Program Item	Material Cost Increase	Rate Payer ROI (50 years)
Zinc Coated Pipe	\$5 per linear foot	20,000% to 30,000%
Coated bolts	\$1 per bolt (<\$25/fitting)	100,000+%

After-Hours Inspections

- Current Program
 - Inspections can be requested at anytime (regardless of weather)
 - 10 to 20 requests per year from 1 to 2 contractors
- Proposed Program
 - ~~Rate: \$110 per hour with 2-hour minimum~~
 - Industry consultation agreed to revisit when Community Development fees updated
 - When: Major holidays, Before 7 a.m. and after 5 p.m., On weekends
 - Notice: 2 business days
- Not all activities require on-site inspection

Other Changes

Materials

- Materials were updated to meet current industry specifications
- Brass Fittings - Increase pressure rating requirements for areas greater than 100 PSI

Tracer Wire Requirements

- All Services
 - Customer protection
- All Gravity Sewer
 - Needed for service connection
- Improved materials
 - Sewer/water individual marking tape
 - Waterproof connectors
 - Improved signal

Future Considerations

- Lifting of corrosive soil testing requirement for low/moderate risk areas
- HDPE service connections
- Auxiliary Water Systems (Program being finalized for commercial use)
- Early Utility Installation Permit
 - During early clearing and grading
 - Sanitary sewer installation only
- Bonding program improvements/consistency
- Alternative coating systems



Questions