



City of Harrisonburg, Virginia

Water and Sewer Operations Center

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TO: Kurt Hodgen, City Manager
FROM: David Gray, Public Utilities
DATE: July 21, 2016
RE: DCSM updates to City Council

Summary: In recent conversations the Virginia Department of Health, VDH, requested several minor changes to the City's Design and Construction Standards Manual. Public Utilities agrees with the requested changes and desires to incorporate several other changes at the same time.

Background: The City's Memorandum of Understanding with the Virginia Department of Health permits the Public Utilities Department to review and approve local construction drawings. This memorandum is up for renewal and the VDH has requested an update to the flushing and disinfection standards. These changes are consistent with current American Water Works Association, AWWA, standards and are agreeable to the Public Utilities Department.

The Public Utilities Department desires to take this opportunity to also address other needed changes in the standards. The requested changes are attached to this application. Many of the changes are minor with little to no impact to developers. However, the inclusion of polyethylene encasement is a change that could be considered to be significant to the development community.

Key Issues: The Public Utilities Department has recognized the premature failure of several waterlines as a result of external corrosion. Industry standard would suggest an average life of 100 years, whereas the Department has experienced numerous failures at 30-40 years. Through industry research and consultation with the Ductile Iron Pipe Research Association, the Department has accepted polyethylene encasement as the most efficient and effective solution. Polyethylene encasement (polywrap) is a thin sheet of material used to wrap the pipe in the installation trench and insulate it from the surrounding soil. This method has been studied since the mid-1950's and has proven to slow the external corrosion and extend the useful life of the pipeline almost indefinitely.

Environmental Impact: The changes proposed in the standards are not anticipated to create any environmental impacts.

Fiscal Impact: The changes to the disinfection and flushing standards should not have an appreciable fiscal impact to either the City or developers. The addition of polyethylene encasement adds an approximate material cost of \$0.05 per inch diameter per foot of length. In prior Capital Projects, the additional labor time was not appreciably noticeable. The fiscal impact of the polyethylene encasement is negligible to construction. However the fiscal impact to the life cycle costs of the pipelines is significant as the life of the pipeline can be extended from the observed 30-40 year life to indefinite life.

Prior Actions: Public Utilities has been utilizing this technology on Capital Project waterline installations since 2010.

Alternatives:

- (a) Do nothing. VDH changes are requested, but not mandated. Public Utilities could continue installing polyethylene encasement on City projects and not developer projects. Lifecycles would remain +/- 40 years. CIP funding would need to be adjusted accordingly;
- (b) Adopt some of the proposed changes, but not all;
- (c) Modify the standards to allow alternate materials other than ductile iron pipe. The Public Utilities Department has considered this previously, and deemed to use ductile iron exclusively due to its strength and industry standardization. Other materials are available, but less desirable to the Department.

Community Engagement: In preparation for the standards change, the Public Utilities reached out to the development community by email to alert them to the changes. A notice was also posted on the City's BeHeardHarrisonburg site inviting comments to the proposed changes. No comments were received through the review period.

Recommendation: The Virginia Department of Health and the Public Utilities Department have reviewed the proposed changes and recommend approval of the revised Design and Construction Standards.

Attachments: Current Design and Construction Standards, Chapters 4 and 7 and red-lined proposed changes.

Review:

The initiating Department Director will place in Legistar, in sequence of transmittal, the names of each department that must initial their review in order for this item to be placed on the City Council agenda. The completion of review only addresses the readiness of the issue for Council consideration. This does not address the recommendation for approval or denial of the issue.