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TO: Kurt Hodgen, City Manager
FROM: Mike Collins, Director of Public Utilities
DATE: May 17, 2016
RE: VWWP # 16-0730 (Re-issued from VWWP # 98-1672) for City of Harrisonburg

Summary: Mike Collins, Director of Public Utilities, will update City Council on re-issuance of the City's Water Withdrawal Permit from the South Fork of the Shenandoah River (with influence upon other City raw water sources). This permit, as revised in draft, has implications for change to the City's long term "Raw Water Supply Management Plan" (RWSMP).

Background: On January 26, 2016, M. Collins introduced City Council to the RWSMP as written around VWWP # 98-1672. M Collins then informed City Council of the changes that were proposed by DEQ in reissuing the referenced water withdrawal permit. Specific issues of concern were as follows:

- 1) The proposed allocation of raw water withdrawal was to be capped at the City's forecasted fifteen (15) year demand such to coincide with the expiration of the new permit. This limitation proposed concerns in perspectives that a) the project needed to be planned, designed and constructed to deliver the City's ultimate raw water supply and b) that the project will most likely be financed over a 30 year period at \$20M+/-.
- 2) The draft permit proposed withdrawal limitations beyond the original permit at 12% and 10% of in-stream flow at North River and South Fork Shenandoah River, respectively. This condition reduced the sustainable drought flow under worst conditions from 13.5 MGD (North River = 5.5 MGD and South Fork Shenandoah = 8.0 MGD) to 6.8 MGD (North River =1.3 MGD. and South Fork Shenandoah = 5.5 MGD); under these latter circumstances the long term water supply needs for Harrisonburg cannot be met.
- 3) The draft permit proposed daily maximum withdrawals on all sources; these conditions added potentials for undesirable effects upon the flexibility of the City to optimize operations for energy usage , total operating costs and water quality . In addition, these conditions also eliminated opportunities for the City to mitigate risk for catastrophic loss of one or more water sources.
- 4) The draft permit proposed upgrade of all existing raw water withdrawal locations to be retrofitted, with 1 mm mesh screens of size to limit intake velocities to 0.25 fps. This may create significant feasibility and cost concerns.

Key Issues:

- 1) The revised permit now retains the original fifteen (15) year forecast and cap but now includes a provisional reopen of the permit under Tier 2 which will allow Harrisonburg to continue to its 15.3 MGD raw water needs if conditions of proof should be met.
- 2) The revised permit now allows a withdrawal from the Shenandoah River that recognizes that 66% of all water withdrawn from this source will be returned upstream. Furthermore, the City will be permitted to withdrawal 100% of its recycled water; this provision allows the City to recognize a sustainable drought flow under worst conditions at 10.4 MGD (North River = 1.3 MGD and South Fork Shenandoah = 9.1 MGD).
- 3) All requirements for daily maximum withdrawals from all sources have been repealed from the permit.
- 4) The requirements for screen devices on all source intakes have been retained but language has been added to allow the City to propose and debate alternatives.

Environmental Impact: This draft permit is now supported by DEQ and various environmental agencies that have been solicited during the drafting process.

Fiscal Impact: The Shenandoah project will incur additional costs to 1) accommodate a greater delivery of water, 2) install variable speed drives for variable output and energy management and 3) to accommodate revised screening requirements. There will also be additional costs at the North River and Dry River Intakes for screening requirements. Budget level cost estimates are not available but order of magnitude estimates of \$2.5M and \$0.5M +/- 50% can be expected at the Shenandoah River and North River/ Dry River, respectively.

Prior Actions: : City Council was introduced to this subject on January 26, 2016.

Alternatives:

- (a) Re-visit previous alternative water sources
- (b) Contest the legality of the proposed terms
- (c) Delay

Community Engagement: Public Notice under the permit process will allow for community feedback; City Council can evaluate additional methods.

Recommendation: Director Collins recommends that the City move forward with publication of the permit notice; pursue and obtain the final permit and then he will return to City Council with an activities based master plan for scope, cost / financing and schedule to complete the Shenandoah Project.

Attachments: Draft VWWP # 16-0730

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Review: Submitted for review by City Council May 24, 2016.