



**BOARD OF COUNTY COMMISSIONERS
WARREN COUNTY, OHIO**

406 Justice Drive, Lebanon, Ohio 45036

www.co.warren.oh.us

commissioners@co.warren.oh.us

Telephone (513) 695-1250

(513) 261-1250

(513) 925-1250

(937) 425-1250

Facsimile (513) 695-2054

TOM ARISS

PAT ARNOLD SOUTH

DAVID G. YOUNG

**BOARD OF COUNTY COMMISSIONERS
WARREN COUNTY, OHIO**

MINUTES: Regular Session – May 6, 2014

The Board met in regular session pursuant to adjournment of the April 29, 2014, meeting.

Pat Arnold South - present

Tom Ariss - present

David G. Young - present

Tina Osborne, Clerk - present

Minutes of the April 29, 2014 meeting were read and approved.

- 14-0661 A resolution was adopted to hire Jacqueline K. Ruffner as Temporary Custodial Worker I within the Facilities Management Department. Vote: Unanimous
- 14-0662 A resolution was adopted to hire Wesley R. Baker as Temporary Custodial Worker I within the Facilities Management Department. Vote: Unanimous
- 14-0663 A resolution was adopted to hire Joshua A. Courtney as Temporary Custodial Worker I within the Facilities Management Department. Vote: Unanimous
- 14-0664 A resolution was adopted to approve end of 180-day Probationary Period and approve a Pay Increase for Ed Turner, Water Treatment System Chief Operator within the Warren County Water and Sewer Department. Vote: Unanimous
- 14-0665 A resolution was adopted to approve end of 240-day Probationary Period and approve a Pay Increase for Tim Kidd, Eligibility Referral Specialist II, within the Department of Job and Family Services, Human Services Division.
Vote: Unanimous
- 14-0666 A resolution was adopted to approve end of 240-day Probationary Period and approve a Pay Increase for Jason Hunt, Protective Services Caseworker I, within the Department of Job and Family Services, Children Services Division.
Vote: Unanimous

- 14-0667 A resolution was adopted to approve Notice of Intent to Award Bid to John R. Jurgensen for the 2014 Resurfacing Project. Vote: Unanimous
- 14-0668 A resolution was adopted to approve Notice of Intent to Award Bid to Ford Development Corp. for the Middletown Road Relocation Project (WAR-TR 30-14.38). Vote: Unanimous
- 14-0669 A resolution was adopted to enter into an Encroachment Easement Agreement with Duke Energy Ohio, Inc., for the Butler-Warren Road Bridge Replacement Project (Bridge No. 2-9.016). Vote: Unanimous
- 14-0670 A resolution was adopted to approve and authorize the President of the Board to enter into Crop Rental Agreement with Jeff Weaver. Vote: Unanimous
- 14-0671 A resolution was adopted to approve and authorize the President of the Board to enter into a Crop Rental Agreement with Tom Groh. Vote: Unanimous
- 14-0672 A resolution was adopted to approve the destruction of the following Warren County Sheriff's Office Equipment. Vote: Unanimous
- 14-0673 A resolution was adopted to authorize Telecommunications Department to dispose of unusable cellular devices through E-Cycle Recycling. Vote: Unanimous
- 14-0674 A resolution was adopted to enter into a Contract with Warren County Combined Health District for the Administration of Immunizations. Vote: Unanimous
- 14-0675 A resolution was adopted to approve and enter into Agreement with Facility Dude on behalf of the Warren County Facilities Management Department relative to a Facilities Preventative Maintenance Program offered through the County Risk Sharing Authority (CORSA). Vote: Unanimous
- 14-0676 A resolution was adopted to authorize Request for Proposal for Professional Broker/Consulting Services for the Warren County Employee Health Care Plan. Vote: Unanimous
- 14-0677 A resolution was adopted to acknowledge Receipt of April 2014 Financial Statement. Vote: Unanimous
- 14-0678 A resolution was adopted to approve various Refunds. Vote: Unanimous
- 14-0679 A resolution was adopted to acknowledge payment of Bills. Vote: Unanimous
- 14-0680 A resolution was adopted to affirm "Then and Now" requests pursuant to Ohio Revised Code 5705.41 (D) (1). Vote: Unanimous

- 14-0681 A resolution was adopted to enter into Street and Appurtenances Security Agreement with Wendy's International, LLC., for installation of the southbound left turn lane extension on Kings Island Drive situated in Deerfield Township. Vote: Unanimous
- 14-0682 A resolution was adopted to approve the following Record Plats. Vote: Unanimous
- 14-0683 A resolution was adopted to approve Sub Fund Adjustments within Water and Sewer Department Fund #583. Vote: Unanimous
- 14-0684 A resolution was adopted to accept an Amended Certificate into Sheriff Grant Fund #293, approve Cash Advance from General Fund #101 into Sheriff Grants Fund #293 and approve Supplemental Appropriation into Sheriff Grants Fund #293. Vote: Unanimous
- 14-0685 A resolution was adopted to approve Operating Transfer from Commissioners Fund #101 into County Court Probation Fund #253. Vote: Unanimous
- 14-0686 A resolution was adopted to approve a Supplemental Appropriation within Juvenile Detention Addition & Renovation Fund #496. Vote: Unanimous
- 14-0687 A resolution was adopted to approve Supplemental Appropriation into Property and Casualty Insurance Fund #637. Vote: Unanimous
- 14-0688 A resolution was adopted to approve a Supplemental Appropriation into Fund #484 (P & G Tif). Vote: Unanimous
- 14-0689 A resolution was adopted to approve Appropriation Adjustment from Commissioners' General Fund #101-1110 into Facilities Management Fund #101-1600. Vote: Unanimous
- 14-0690 A resolution was adopted to approve Appropriation Adjustment within WCSO Funds #630. Vote: Unanimous
- 14-0691 A resolution was adopted to approve Appropriation Adjustment within Facilities Management Fund #101-1600. Vote: Unanimous
- 14-0692 A resolution was adopted to approve Appropriation Adjustment within Telecom Fund #101-2810. Vote: Unanimous
- 14-0693 A resolution was adopted to approve Appropriation Adjustment within Board of Elections Fund #101-1301 to #101-1300. Vote: Unanimous
- 14-0694 A resolution was adopted to authorize payment of Bills. Vote: Unanimous

- 14-0695 A resolution was adopted to approve and authorize Warren County Data Processing to register as an Apple Developer and authorize Ben Clift to sign documents relative thereto. Vote: Unanimous
- 14-0696 A resolution was adopted to approve hiring of Temporary Employees for the Facilities Management Department.
Vote: Mr. Ariss – yea; Mr. Young – yea; Mrs. South – absent
- 14-0697 A resolution was adopted to enter into a Resignation Agreement with Stephanie Newkirk, Investigative Supervisor within Warren County Job and Family Services, Children Services Division.
Vote: Mr. Ariss – yea; Mr. Young – yea; Mrs. South – absent
- 14-0698 A resolution was adopted to hire Tiffany L. Sheibley as Protective Services Caseworker I, within the Warren County Department of Job and Family Services, Children Services Division.
Vote: Mr. Ariss – yea; Mr. Young – yea; Mrs. South – absent
- 14-0699 A resolution was adopted to accept Resignation, due to Retirement, of Fredrick M. Hayes, Wastewater Treatment Plant/Mechanic Operator, within the Warren County Water and Sewer Department, effective August 22, 2014.
Vote: Mr. Ariss – yea; Mr. Young – yea; Mrs. South – absent
- 14-0700 A resolution was adopted to accept Resignation, of Paula Jill Hicks, Emergency Communications Operator, within the Warren County Emergency Services Department, effective May 5, 2014.
Vote: Mr. Ariss – yea; Mr. Young – yea; Mrs. South – absent

DISCUSSIONS

On motion, upon unanimous call of the roll, the Board accepted and approved the consent agenda.

Susan Spencer, Personnel Officer, was present to introduce the new employees to the Board.

On motion, bids were closed at 9:15 a.m. this 6th day of May and the following bids were received, opened and read aloud for the FY 2012 Village of South Lebanon Mason-Morrow-Millgrove Road Rehabilitation Project – Phase II for the Warren County Office of Grants Administration:

| | |
|--|--------------|
| Barrett Paving Middletown, Ohio | \$ 40,396.05 |
| Mt. Pleasant Blacktopping Fairfield, Ohio | \$ 43,388.98 |
| John Jurgensen Cincinnati, Ohio | \$ 40,389.50 |

Susanne Mason, Program Manager, Warren County Office of Grants Administration will review bids for a recommendation at a later date.

Chris Brausch, Sanitary Engineer, was present along with staff for a work session and discussed the following matters:

1. Mr. Brausch updated the Board on the Deerfield Township Irwin Simpson Sanitary Sewer Project. He explained that the project is being funded through TIF funds from the Township as well as a proposed contribution from Warren County General Fund in the amount of \$76,000. He then stated that the project would include sanitary sewer service to a portion of the unsewered area within the Township that is known as the Plainview Sewer Area. He also stated that the Warren County Water and Sewer Department is proposing to finance a portion of the project that is within the Plainview Sewer Improvement Area through an assessment project with their department providing short term financing during construction. Upon discussion, the Board stated their agreement to the project and funding mechanism.
2. Deerfield Hamilton Water Distribution System—Dave Walling, Deputy Sanitary Engineer, was present to give an update to the Board relative to water quality improvements to the system.

Mr. Walling presented the attached PowerPoint presentation which provided various options to eliminate brown water within the system.

There was discussion relative to the water softening option that was discussed several months ago. Mr. Brausch stated that he is in negotiations with a consultant to provide a master water plan that will address the water softening option as well as any other possible options such as the purchase of water from an outside entity and provide recommendations upon their findings. He then stated that the study would not be completed in a timely manner to address the brown water remediation needed immediately.

Commissioner Young stated that the power flushing option is a management issue and can be implemented immediately with existing staff. He stated his opposition to hiring additional staff at this time. He stated his desire to increase the filtering process as well stating his option that the two things together would produce the desired results.

Julie Sanvidge, Hamilton Township resident, presented a picture of the brown water she experiences on a regular bases within her home.

Commissioner South stated that due to any water softening solution being many months down the road and the need to fix the problem is immediate, she feels the flushing/filtering process is the best option as well.

Upon discussion, the Board directed the Water and Sewer staff to begin the pilot project to begin the new filtering process and implement the power flushing as discussed.

3. Waynesville Sewer Agreement—Mr. Brausch informed the Board of a recent discussion with a Waynesville Council Member relative to the Village of Waynesville contemplating a request for Warren County to take over the Waynesville Sewer System. Upon discussion, the Board recommended scheduling a work session to discuss the matter with the Village of Waynesville Council.

On motion, upon unanimous call of the roll, the Board entered into executive session at 10:45 a.m. to discuss personnel matters relative to hiring within Facilities Management, Water and Sewer, Children Services and Emergency Services pursuant to Ohio Revised Code Section 121.22 (G) (1) and exited at 11:09 a.m.

Upon motion the meeting was adjourned.



Pat Arnold South, President




David G. Young



Tom Ariss

I hereby certify that the foregoing is a true and correct copy of the minutes of the meeting of the Board of County Commissioners held on May 6, 2014, in compliance with Section 121.22 O.R.C.



Tina Osborne, Clerk
Board of County Commissioners
Warren County, Ohio

Warren County Water & Sewer Department:
Deerfield-Hamilton Service Area
Water Quality Improvements

Warren County Commissioners Meeting
May 6, 2014



Water Department Mission Statement

...provide quality water services to
Warren County residents in a cost-
effective manner...



Deerfield-Hamilton Water Distribution System

This system has approximately:

190 miles of water mains

2,080 fire hydrants

11,850 customer accounts

and....

200* brown water complaints per year!



Deerfield-Hamilton System

Brown Water Complaints (BWC)

VS.

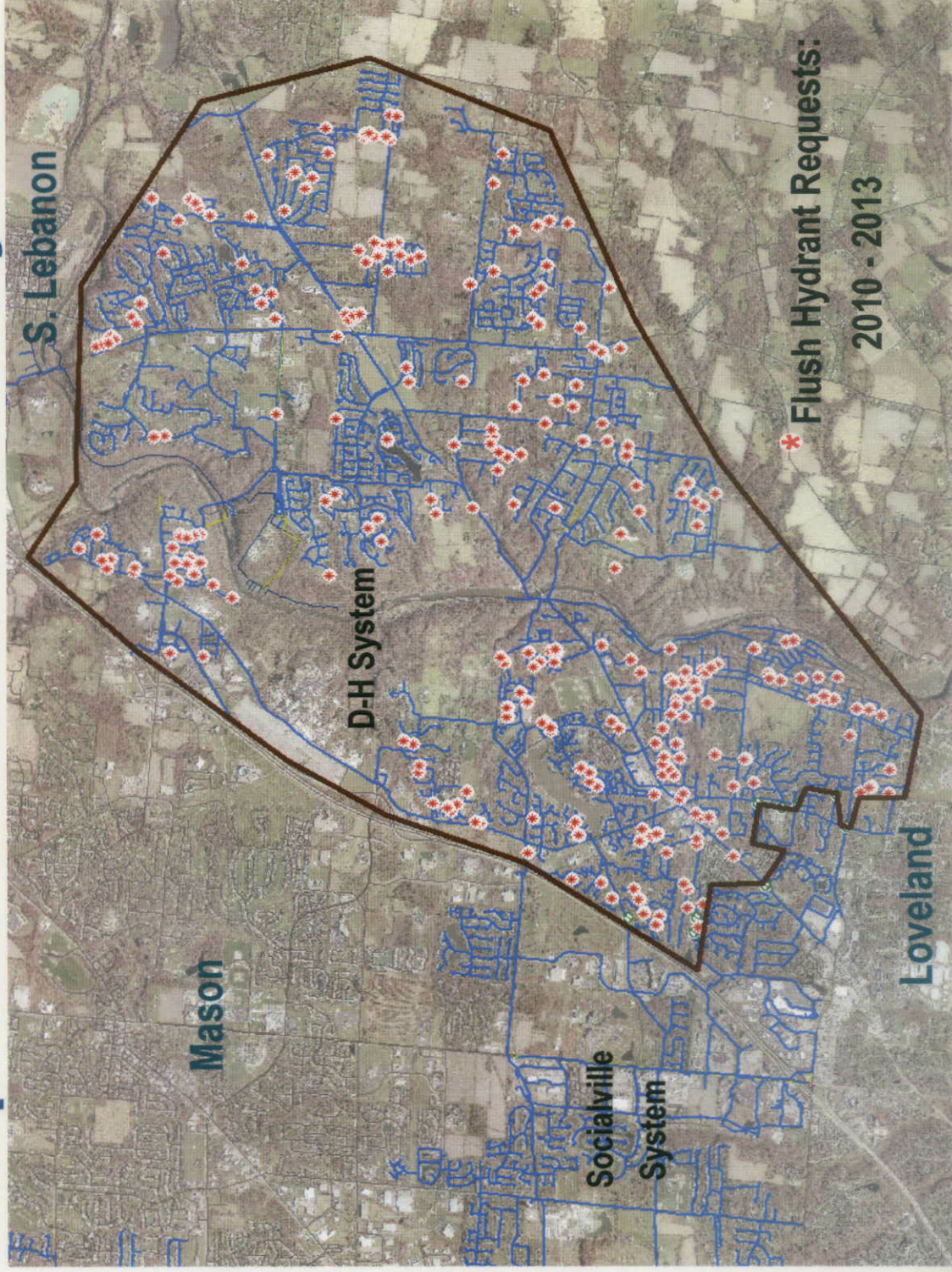
Flush Hydrant Requests (FHR)

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| # FHR | 18 | 44 | 40 | 35 | 52 | 92 | 94 | 79 | 100 | 84 | 126 | 92 |
| # BWC* est. | 36 | 88 | 80 | 70 | 104 | 184 | 188 | 158 | 200 | 168 | 252 | 184 |
| % FHR | 0.17 | 0.41 | 0.37 | 0.32 | 0.47 | 0.82 | 0.83 | 0.69 | 0.87 | 0.72 | 1.07 | 0.78 |
| % BWC est. | 0.33 | 0.81 | 0.73 | 0.63 | 0.93 | 1.64 | 1.66 | 1.38 | 1.73 | 1.44 | 2.14 | 1.55 |

*Actual number of BWC's not recorded, estimated at two times the number of FHR's.

2001 AWWA Study indicated immediate action level when BWC's exceeds 2%.

Map of D-H Distribution System



Brown Water - System Wide Incidents

Search for the Source of the Brown Water Complaints

- Our search for the source of the brown water intensified in 2013 due to record number of BWC in 2012
- Monitored RAR WTP flows for high levels of iron & manganese
- Confirmed low levels of iron (non-detect) leaving the WTP
- Manganese levels not as low as iron but usually less than 0.05 mg/L which is the secondary containment limit set by OEPA, confirmed levels mostly less than 0.04 mg/L
- Water quality leaving WTP is very good, meets all potable standards

Water Quality Leaving the RAR WTP Looks Great

Then what is the source of the BWC in the system?

- **Average water age in the system has increased (2.4 - 5.0 days)**
- **As the water ages, very small amounts of soluble iron & manganese convert to solids and settle in the system**
- **Over time, solids accumulate in low flow areas**
- **Localized high velocities like main breaks and seasonal high demands disturb deposits causing brown water**



How Do We Fix This? Prevent Solids Accumulation !

Increase removal At WTP in filters

Replace filter media with new
Product to remove more Fe & Mn
Potential increase initial water quality

Rebuild filters with Greensand Plus
Capital Cost: \$518,000
Five Year Cost: **\$642,000**

Implement a power Flushing program

Design and implement a UDF
Program to systematically clean
Entire D-H pipe network annually

Clean system with a UDFP
Capital Cost: \$18,000
Five Year Cost: **\$433,000**

Combination of Removal & flushing

Replace filter media to increase
Removal and implement a UDF
Program to clean the system

Increased removal & cleaning
Capital Cost: \$536,000
Five Year Cost: **\$867,000**

Use other source Water

Draw additional water from North
Water system, supplement or blend
With RARWTP flows

Will aid in water quality short term
Does not address peak flow needs
UDF still required to clean existing
Pipe conditions

Filter Media Replacement

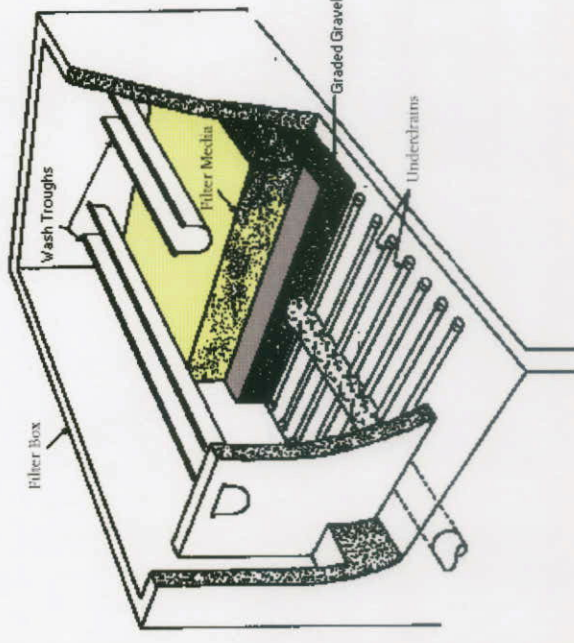
Greensand Plus media has potential to remove more Iron and Manganese



Extra chemicals needed to oxidize More of the Fe & Mn

Less Fe & Mn leaving WTP
Less load on distribution system

Pilot study needed to confirm
new media will improve
output water quality



How Do We Fix This? Prevent Solids Accumulation !

Increase removal
At WTP in filters

Replace filter media with new
Product to remove more Fe & Mn
Potential increase initial water quality

Rebuild filters with Greensand Plus
Capital Cost: \$518,000
Five Year Cost: **\$642,000**

Implement a power
Flushing program

Design and implement a UDF
Program to systematically clean
Entire D-H pipe network annually

Clean system with a UDFP
Capital Cost: \$18,000
Five Year Cost: **\$433,000**

Combination of
Removal & flushing

Replace filter media to increase
Removal and implement a UDF
Program to clean the system

Increased removal & cleaning
Capital Cost: \$536,000
Five Year Cost: **\$867,000**

Use other source
Water

Draw additional water from North
Water system, supplement or blend
With RARWTP flows

Will aid in water quality short term
Does not address peak flow needs
UDF still required to clean existing
Pipe conditions



Flushing Methods We use Today

Hydrant "Flushing"
and Maintenance



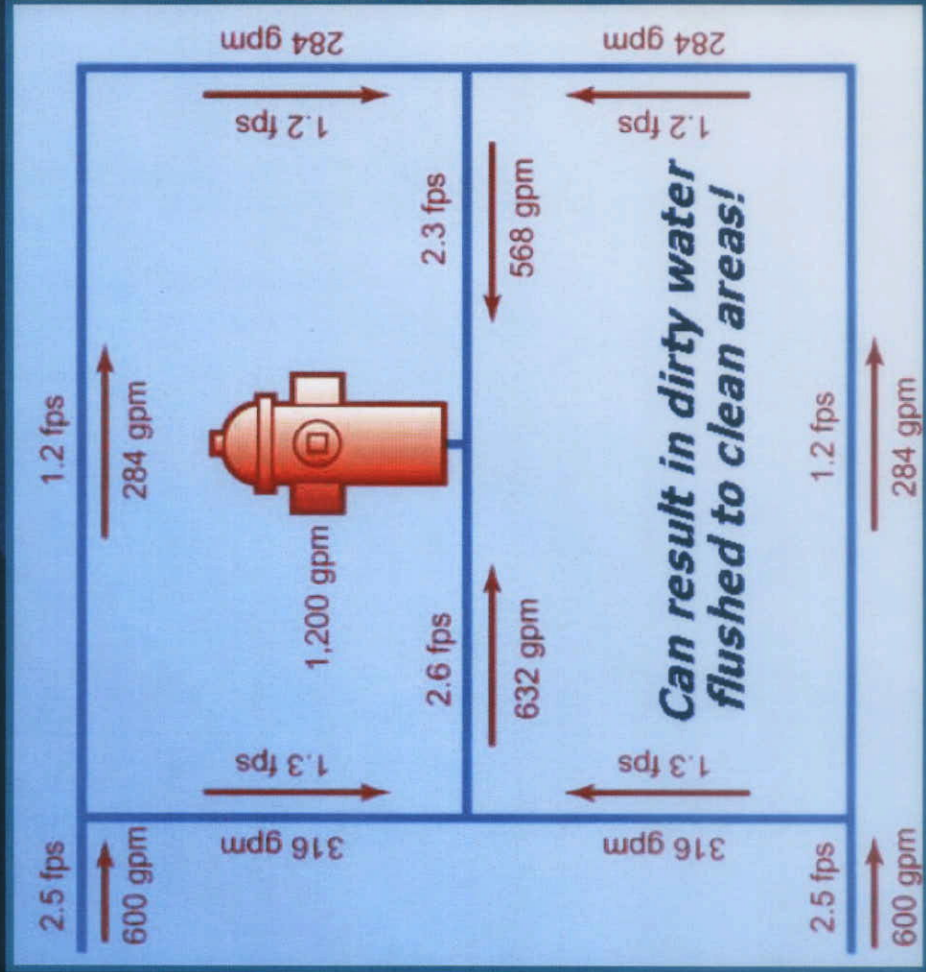
Spot Flushing in
Response to BWC



Stagnant area
Flushing



Conventional Flushing



Water from all directions

Low flow velocities

Less scouring

Don't control flushing direction

FLUSHING STRATEGIES

Spot Flushing

Reactive. Most common type of flushing. Used when there are local quality complaints

Stagnant Area Flushing

Short term preventive. Used in areas with longer detention times (i.e. Dead-ends, low demand areas)

System-wide Flushing

Long term preventive. Most comprehensive form of flushing. Maintains WQ and useful life of the mains.

UDF Flushing Program



Comprehensive system-wide flushing

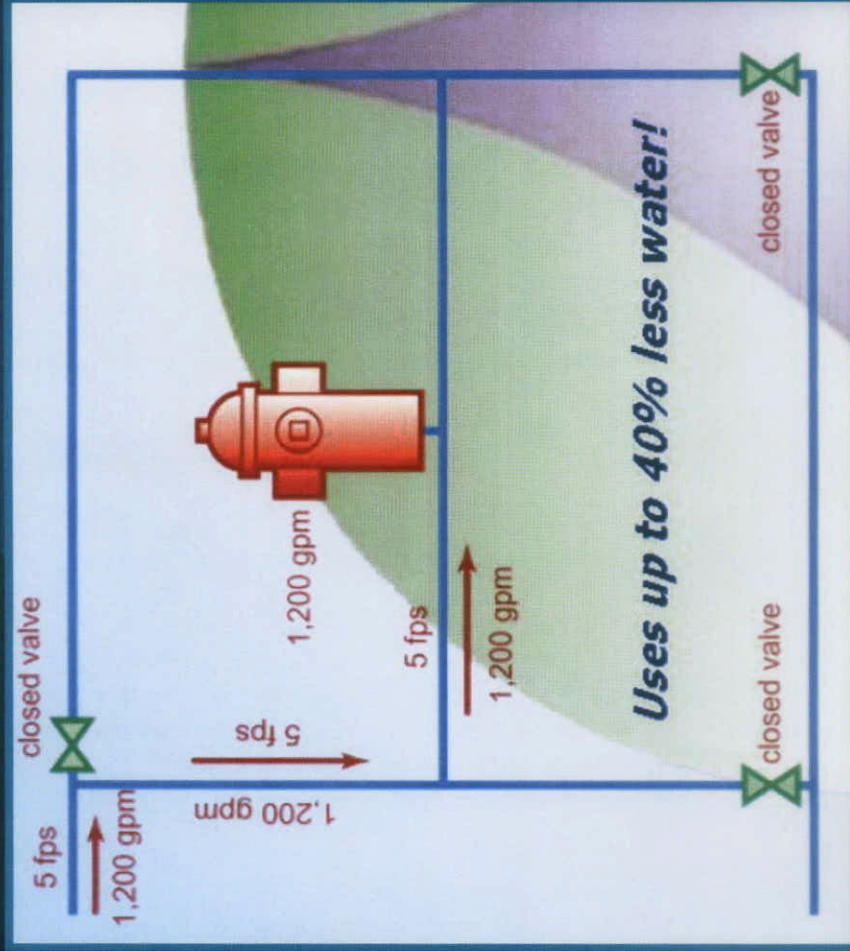
High velocities scour lines clean

Includes both valve and hydrant
maintenance programs

Better customer notification
with street signs



Unidirectional Flushing



Water channeled

Higher flow velocities

More scouring/
better cleaning

Systematic valve operation

How Do We Fix This? Prevent Solids Accumulation !

Increase removal
At WTP in filters

Replace filter media with new
Product to remove more Fe & Mn
Potential increase initial water quality

Rebuild filters with Greensand Plus
Capital Cost: \$518,000
Five Year Cost: **\$642,000**

Implement a power
Flushing program

Design and implement a UDF
Program to systematically clean
Entire D-H pipe network annually

Clean system with a UDFP
Capital Cost: \$18,000
Five Year Cost: **\$433,000**

Combination of
Removal & flushing

Replace filter media to increase
Removal and implement a UDF
Program to clean the system

Increased removal & cleaning
Capital Cost: \$536,000
Five Year Cost: **\$867,000**

Use other source
Water

Draw additional water from North
Water system, supplement or blend
With RARWTP flows

Will aid in water quality short term
Does not address peak flow needs
UDF still required to clean existing
Pipe conditions



Media Replacement & UDF Flushing



If pilot scale media study is favorable,
implement both programs



How Do We Fix This? Prevent Solids Accumulation !

Increase removal At WTP in filters

Replace filter media with new
Product to remove more Fe & Mn
Potential increase initial water quality

Rebuild filters with Greensand Plus
Capital Cost: \$518,000
Five Year Cost: **\$642,000**

Implement a power Flushing program

Design and implement a UDF
Program to systematically clean
Entire D-H pipe network annually

Clean system with a UDFP
Capital Cost: \$18,000
Five Year Cost: **\$433,000**

Combination of Removal & flushing

Replace filter media to increase
Removal and implement a UDF
Program to clean the system

Increased removal & cleaning
Capital Cost: \$536,000
Five Year Cost: **\$867,000**

Use other source Water

Draw additional water from North
Water system, supplement or blend
With RARWTP flows

Will aid water quality short term
Does not address peak flow needs
UDF still required to clean existing
Pipe conditions



RECOMMENDATION

Begin pilot scale testing special media to investigate practicality of implementing full-scale media replacement project.

Select a portion of the D-H distribution system to plan and implement a limited UDF program to check efficacy of flushing program

Continue to monitor NWS interconnect flows and Water Quality effects

Cost of pilot study and limited UDF program: \$35,000 - \$50,000

Metrics: Can we significantly improve water quality leaving the WTP?

Can we achieve a significant reduction in the BWC's in target UDF area?

Capture better water complaint data to improve metrics.

