

# FIRE HYDRANT FLUSHING & VALVE EXERCISING PROGRAMS

## Water Field & Operations

Public Utilities Water Committee  
November 10, 2021

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## OVERVIEW

- Importance of Flushing & Exercising
- Hydrant Maintenance Program
- Valve Maintenance Program
- Questions



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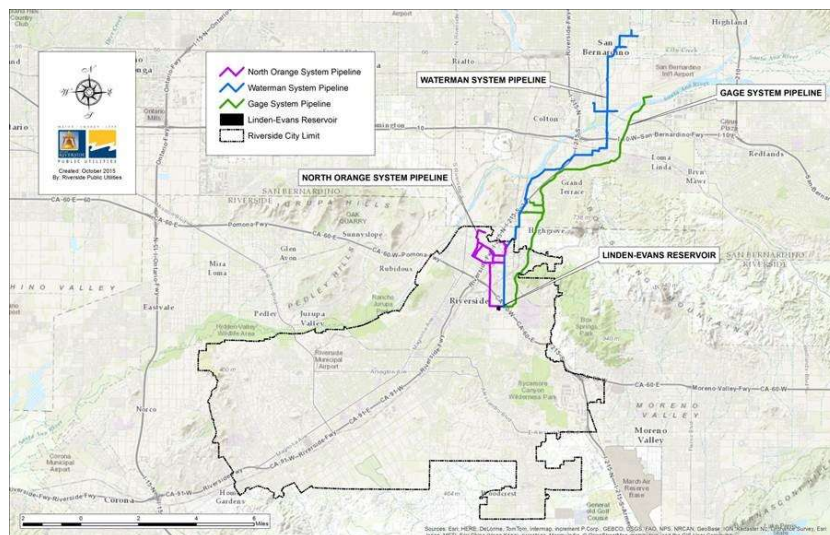
## RIVERSIDE PUBLIC UTILITIES

- Established in 1895
- Population - 324,000 residents
- 81 square mile service territory
- 65,000 water meters



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## WATER TRANSMISSION MAINS OVERVIEW

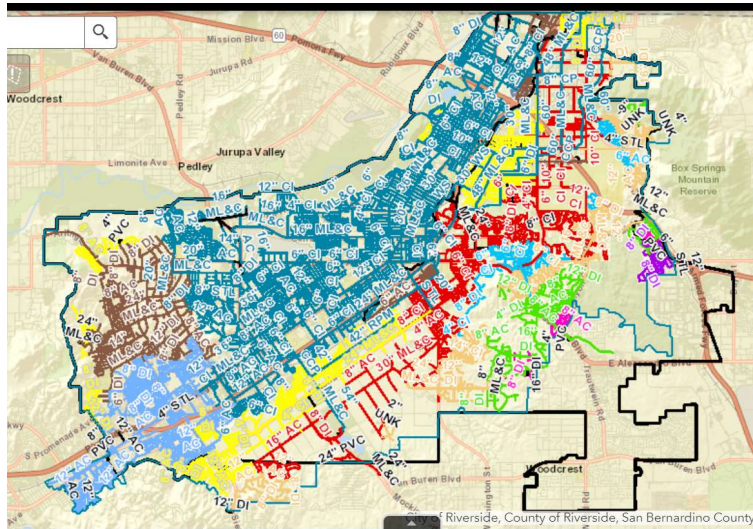


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## SERVICE AREA



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## FIRE HYDRANT FLUSHING & VALVE EXERCISING

### Importance of Flushing & Exercising:

- Bacteria Control
- Taste & Odor Control
- Corrosion Control
- Critical Operations



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## FIRE HYDRANT FLUSHING



Cutaway view of typical hydrant and valve installation

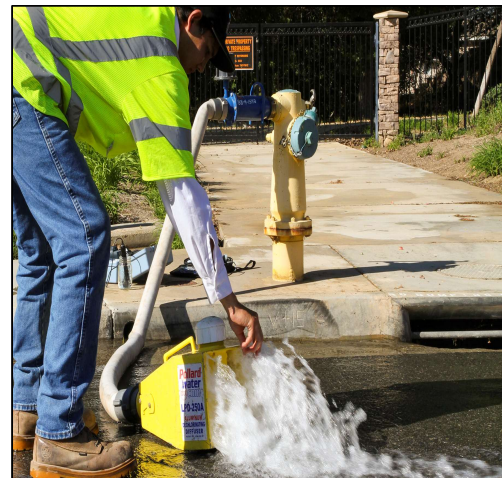
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## FIRE HYDRANT FLUSHING

Although it may seem wasteful to the casual observer, **flushing is actually an important and necessary activity** that is endorsed by the American Water Works Association (AWWA) and conducted in accordance with guidelines set by the California Division of Drinking Water.



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## FIRE HYDRANT FLUSHING BMPs

### Protection and National Pollution Discharge Elimination System (NPDES)

- Preventing or reducing potential environmental damage include implementing de-chlorination methods, sediment control, and/or other BMPs to limit environmental impact.
- Protection of Private and Public Property preventing damage to property may include actions to stop or divert flows that are causing flooding and threatening homes or businesses.

## FIRE HYDRANT FLUSHING

### Bacterial Control

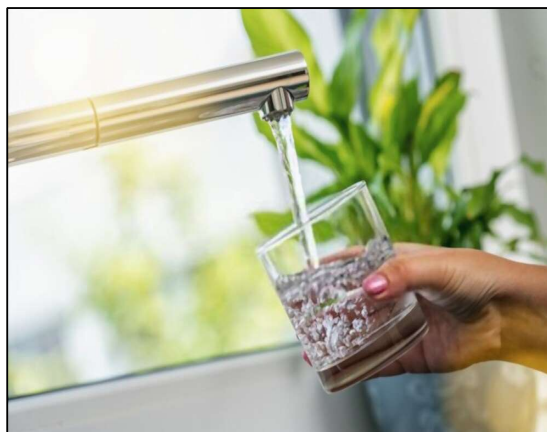
Biofilm growth in drinking water systems can occur when an area becomes stagnant. This can be eliminated through flushing.



## FIRE HYDRANT FLUSHING

### Taste & Odor Control

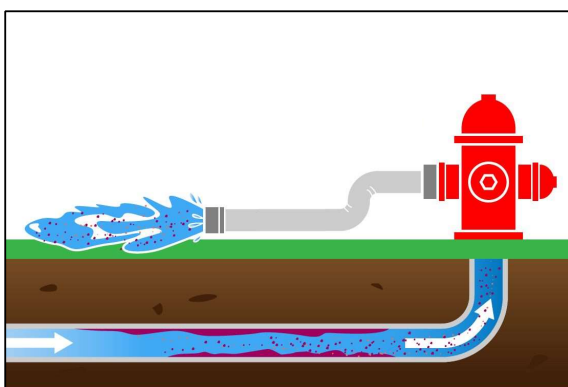
Flushing removes many of the mineral deposits and sediment that naturally accumulate in the water mains which can affect taste and odor.



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## FIRE HYDRANT FLUSHING



### Corrosion Control

Flushing introduces higher than normal water velocities. This ensures that the inside of the piping is scoured and, thus, reduces corrosion.



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## FIRE HYDRANT FLUSHING

### Critical Operations

Operating fire hydrants and valves helps to ensure that they'll work properly in an emergency.



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## FIRE HYDRANT FLUSHING

- RPU currently maintains **8,159** Fire Hydrants in the Water Distribution system.
- Hydrants are maintained/flushed through our Preventative Maintenance (PM) Program.
- The PM Program is part of RPU Asset Management Program which deployed in 2015.
- In the PM Program, RPU flushes an average of **2,500** hydrants per year.



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## FIRE HYDRANT FLUSHING

1. Clean & Grease threads on outlets, caps, and stem.
2. Operate stem to fully open and closed positions to flush.
3. Take pressure reading (PSI)
4. Paint & stencil Hydrant #
5. Apply reflective colored tape (hydrant class).
6. Check/Install blue reflector in street.
7. Check/Maintain 36" clearance.
8. Make repairs as necessary.

## FIRE HYDRANT FLUSHING

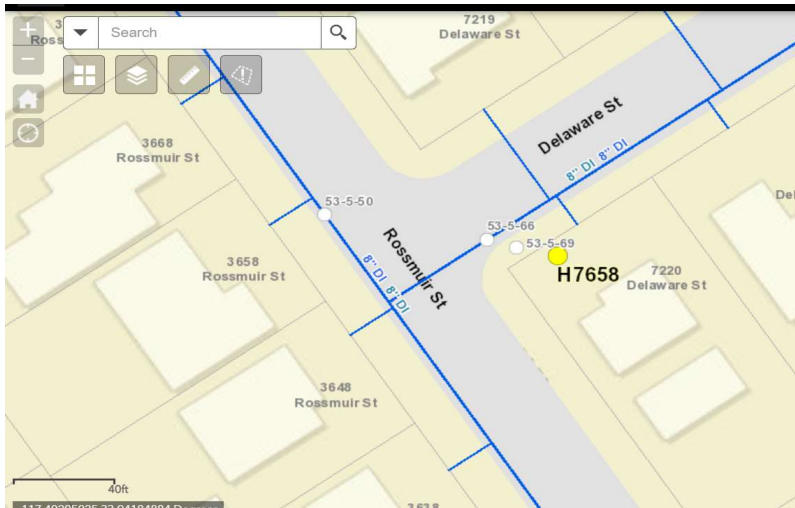
### Fire Hydrant Class

Class	Color	Min (PSI)	Max (PSI)
C	Red Top	20	500
B	Orange Top	500	1000
A	Green Top	1000	1500
AA	Green Top & Caps	1500	More





## FIRE HYDRANT FLUSHING



Example of GIS information related to fire hydrants

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## FIRE HYDRANT FLUSHING

Hydrant	
Number	7658
Hydrant	H7658
Subtype	FIRE
Manufacturer	JONESHEAD
Catalog	J-40-40
Class	UNK
PSI	42
Small Outlets	1
Large Outlets	1
Check Valve	NO
Gate Valve	
Main To Gate	
Gate To Riser	
Location	7220 DELAWARE ST
Comments	
Device Tag	-128990
Asset ID	HYD203521
Section	53-5
Route	W HYD-53
Stop	292
Flow	
Community	Magnolia Center
Ward	3

Example of GIS information related to fire hydrants

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## VALVE EXCERCISING

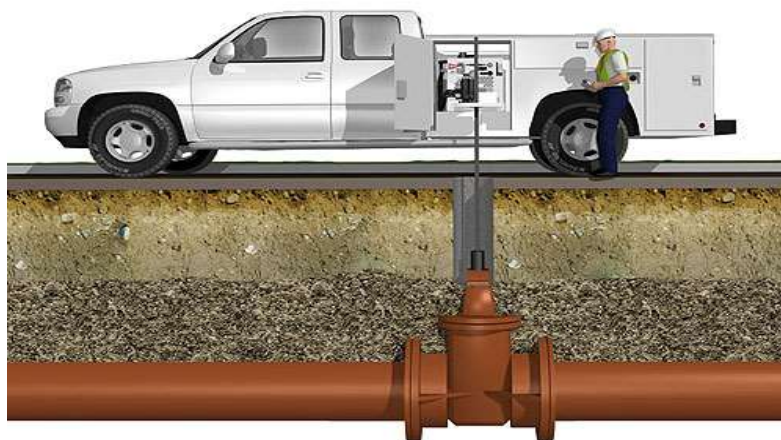
- RPU currently operates **30,939** Transmission, Distribution, Air Relief, Hydrant, and End of Main Blow Off Valves.
- Valves are systematically operated through our Preventative Maintenance (PM) Program.
- The PM Program is part of RPU Asset Management Program which deployed in 2015.
- In the PM Program, RPU operates an average of **7,500** valves per year.



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## VALVE EXCERCISING



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## VALVE EXERCISING

1. Set up traffic control and remove valve cap in street to access 2" square head.
2. Operate valve to fully closed position while counting number of turns.
3. Reverse operation until fully open, minus half a turn.
4. Verify all attribute data – turns, type, manu, status, etc.
5. Update valve lid tag with attribute data.
6. Paint new "ties" on curb face – for valve location if ever covered.
7. Make any necessary mapping corrections.
8. Make repairs as necessary.

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## VALVE EXERCISING

- Painting "ties" helps to locate valves if they become overlayed by new street paving.
- Also aids in identifying and locating specific valves in areas where many are present.



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## STRATEGIC PLAN ALIGNMENT

Fire Hydrant Flushing and Valve Maintenance Programs support the City Council Strategic Plan 2025 Priorities and **Goal 2.3** Strengthen neighborhood identities and improve community health and physical environment through amenities and programs that foster an increase sense of community and enhance feelings of pride and belonging citywide. A well-maintained water distribution system delivers high water quality which contributes to overall public health and safety.

## CROSS-CUTTING THREADS

1. Item aligns with EACH of the five :

- a) **Community Trust**, *by providing safe reliable drinking water and the infrastructure that delivers it to the community we serve*
- b) **Equity**, *water availability to ensure every member of the community has equal access to water*
- c) **Fiscal Responsibility**, *Preventative asset maintenance prevents premature replacements of infrastructure and ensures they are in proper working order*
- d) **Innovation**, *use best available technology to maintain and document assets(CWMS, GIS and equipment)*
- e) **Sustainability & Resiliency**, *Maintaining assets to meet life expectancy and beyond.*



## RECOMMENDATION

That the Board of Public Utilities Water Committee receive an update on the Flushing and Hydrant Maintenance Programs.