AGENDA ITEM or FINAL CONTRACT REVIEW SUBMITTAL FORM

Agenda Item: Impacts of Infiltration on Wastewater Treatment

Action Requested: Discussion

Parties to the Agreement:

Term Begins: **Term Ends:** **Grant Contract #:**

Summary:

Request to take action to charge sewer system users who have service lines that need to be repaired to reduce infiltration.

Fiscal Impact: Could save thousands of dollars each year.

Submitted by: Marlene D. Crosby **Submitter's Email Address:** mcrosby@gunnisoncounty.org

Finance Review: ○ Required ◉ Not Required

Comments:

Reviewed by: Discharge Date:

County Attorney Review: ○ Required ◉ Not Required

Comments:

Reveiwed by: Discharge Date: Certificate of Insurance Required Yes ○ No ○

County Manager Review:

Comments:

Reveiwed by: GUNCOUNTY1\jost Discharge Date: 6/8/2018

○ Consent Agenda ○ Regular Agenda ○ Worksession Time Allotted: 20

Agenda Date: 6/12/2018

Revised April 2015

Memorandum

To: Marlene Crosby, Gunnison County Director of Public Works

From: Mike Rogers, City of Gunnison Wastewater Superintendent

Date: 6/8/2018

Re: Effects of Inflow and Infiltration on the Gunnison Wastewater Treatment Plant.

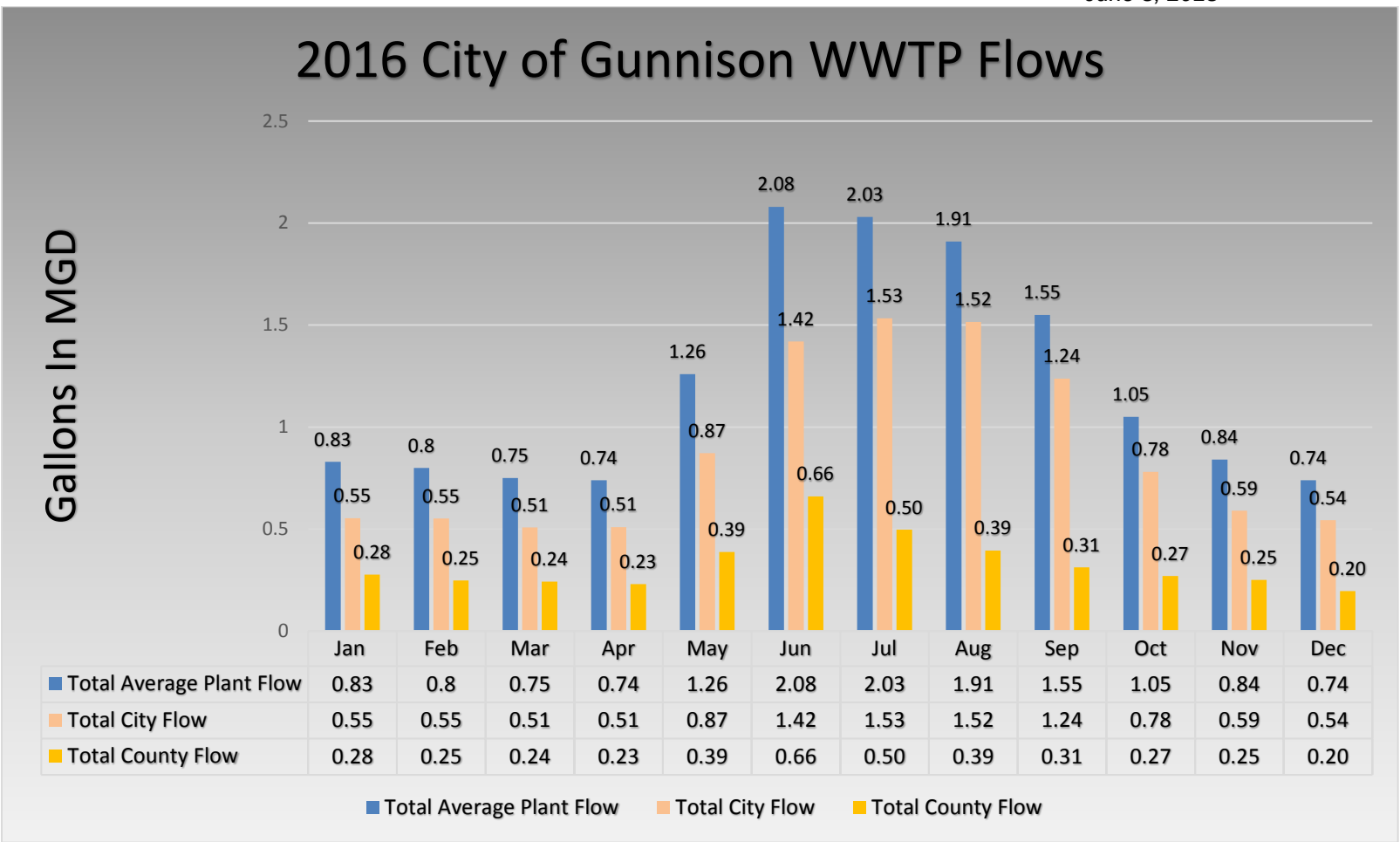
Inflow and Infiltration (I&I) is when groundwater enters the collection system. Common causes of this are separated pipe joints, broken sections of sewer lines, and submerged manholes. In other cases, privately owned services laterals have the same issues. Cleanouts can be pulled out of the service lateral during winter freezing. In the spring the groundwater inters the collections system via the separated section.

The City of Gunnison Wastewater Treatment Plant has a rated capacity of 4.2 million gallons/day, with a maxim allowance of 2.5 million gallons of I&I. During the runoff season I&I flows increase dramatically due to high groundwater levels. Sewer flows jump from a winter average of 850,000 gallons/day to 2,100,000 gallons/day in the spring runoff period.

Every gallon of water that enters the collection lines must be treated at the Wastewater Treatment Plant. This increased I&I flow takes up 1/3 of the plant's treatment capacity during runoff season, increasing treatment costs. A second oxidation ditch must be brought online to treat the increased flow. Aeration of the oxidation ditches at the treatment plant is the costliest element of the treatment process due to the large amount of electricity needed to run mechanical aerators.

The dilution of the sewage also effects the plant's biological treatment process. In order to treat wastewater via biological nutrient removal specific ratios of nutrients and carbon must be kept. This dilution makes meeting discharge permit requirements difficult, and costlier. Violating the discharge permit would result in CDPHE compliance schedules and possible fines.

The attached chart shows 2016 flow increase due to I&I.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total Average Plant Flow	0.83	0.8	0.75	0.74	1.26	2.08	2.03	1.91	1.55	1.05	0.84	0.74
Total City Flow	0.55	0.55	0.51	0.51	0.87	1.42	1.53	1.52	1.24	0.78	0.59	0.54
Total County Flow	0.28	0.25	0.24	0.23	0.39	0.66	0.50	0.39	0.31	0.27	0.25	0.20