

# Buena Vista Growth and Water Infrastructure

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TOWN OF BUENA VISTA WATER ADVISORY BOARD

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MAY 8, 2019 (REVISED MAY 17, 2019)

# Town Development Trends

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YEAR	SFEs ADDED	PERCENT INCREASE FROM PREVIOUS YEAR
2016	41	-
2017	48	17%
2018	79	65%

- End of April 2018: 3 SFEs added
- End of April 2019: 16.8 SFEs added

# Town Water Rights

WATER RIGHT	DECREED AMOUNT (GAL/DAY)	APPROPRIATION DATE	SUMMER OR WINTER RIGHT
Thompson	1,293,000	12/19/1864	Summer
Prior	646,317	4/30/1866	Summer
Cottonwood Irrigating Priority 1	568,759	7/31/1866	Summer
<b>Total Summer Rights</b>	<b>2,508,076</b>		
Town	6,463,170	6/1/1880	Winter

- Summer Rights available from April 1<sup>st</sup> to October 31<sup>st</sup>
- Winter Right available from November 1<sup>st</sup> to March 31<sup>st</sup>

# Demand/Growth Calculation Basis

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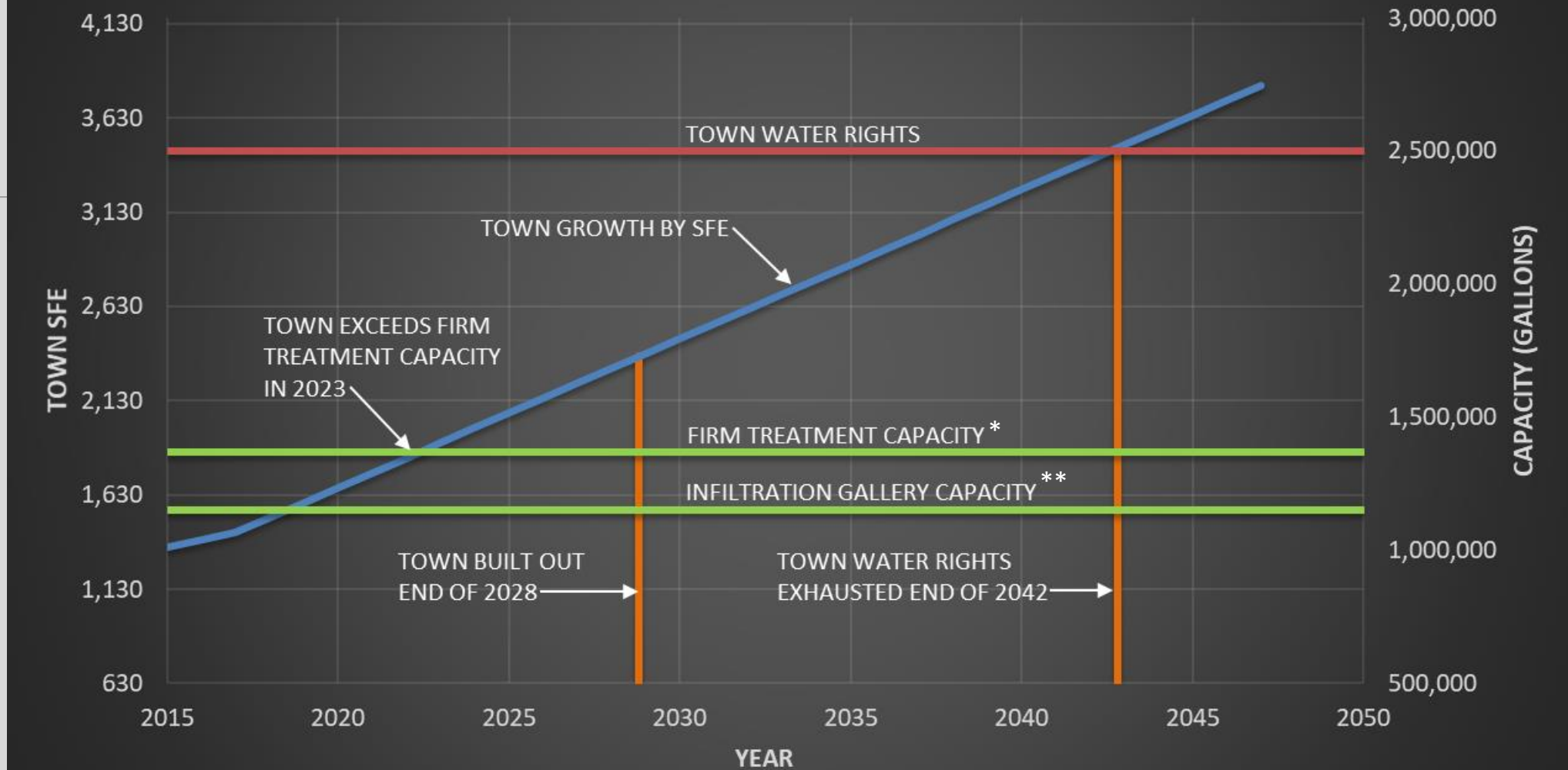
Peak Day Flow (PDF): Maximum instantaneous flow on the highest consumption day (e.g. June 23<sup>rd</sup>, 2018).

- For planning purposes, it represents the maximum amount of water that can be delivered instantaneously through the system
- Equipment/Infrastructure should be sized to accommodate this value
- Most conservative planning value

7-Day Running Average Flow: Average of the last 7 consecutive daily flows during the year

- For planning purposes, it represents the equalization capacity of the system throughout any given week (e.g. can we keep the tanks full during any given week?)
- A less conservative, but perhaps more realistic planning value
- All growth projection values in this presentation are based on the 7-Day Running Average Flow

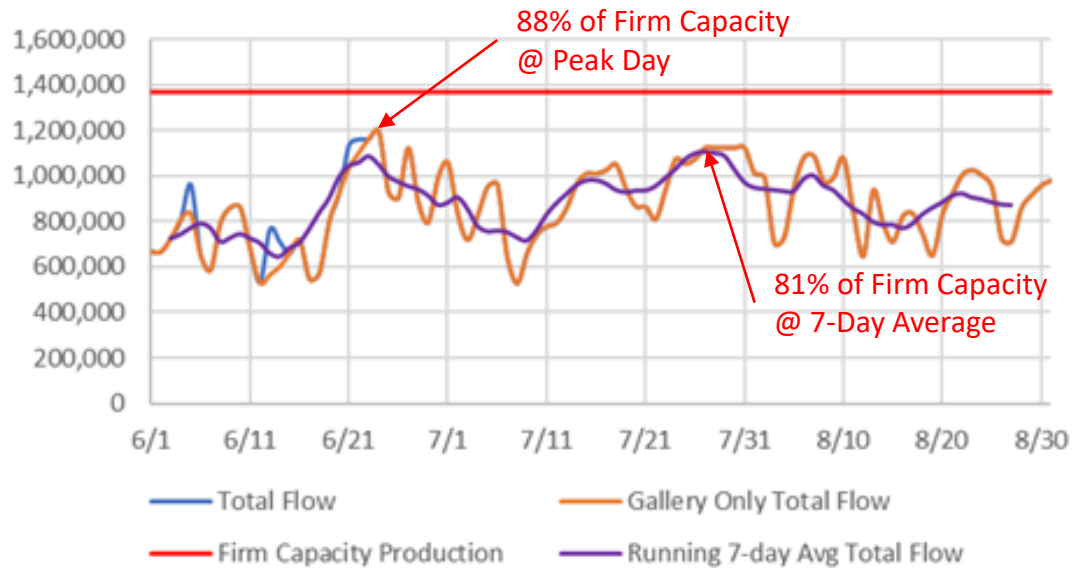
# Town Growth vs Capacity



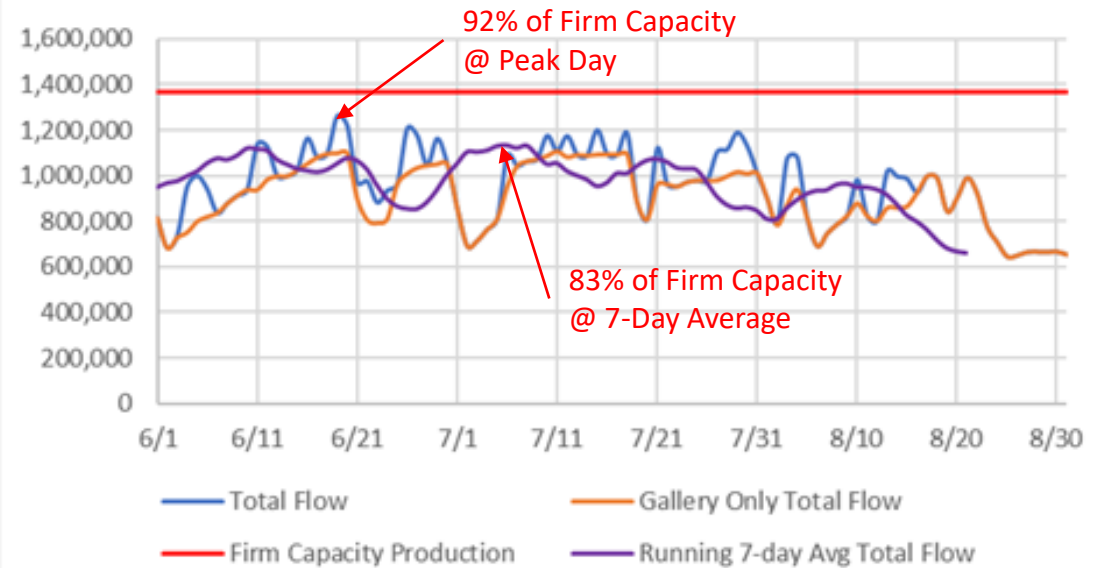
\*Includes Gallery and Well #2 (Well #2 subject to Cottonwood Lake storage); \*\*Utilizes available Town Water Rights without augmentation

- Assumes growth rate of 79 SFEs per Year
- Consumption projections based on 7-Day Running Average Flow (720.9 Gallons/SFE)
- Total SFEs end of 2018 = 1,511 (calculated from 2015-2017 average consumption data @ 293 gal/SFE); Total Available SFEs = 2,366 (without subdivision)

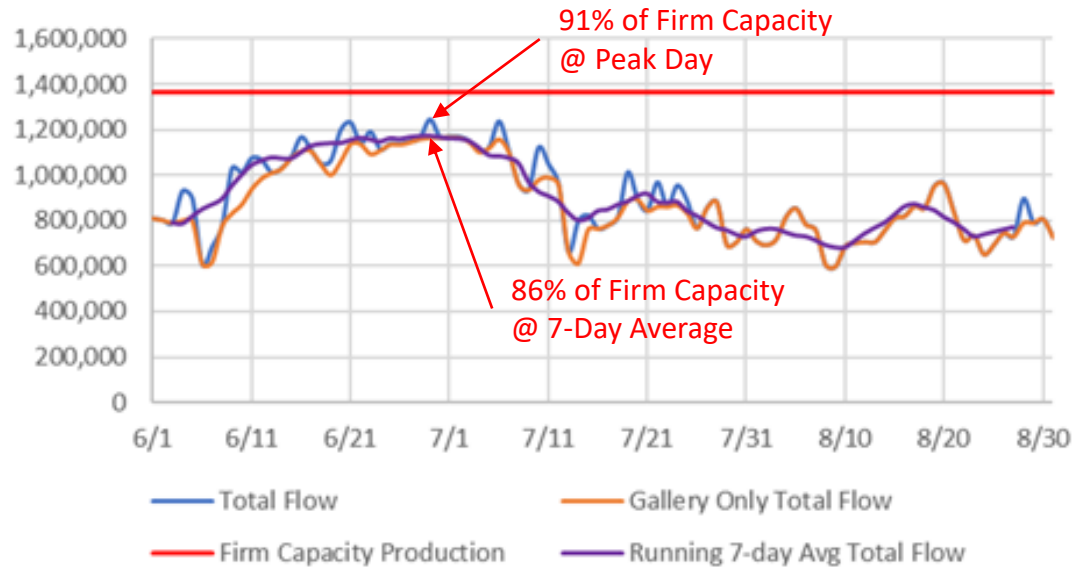
### 2015 Summer Water Production



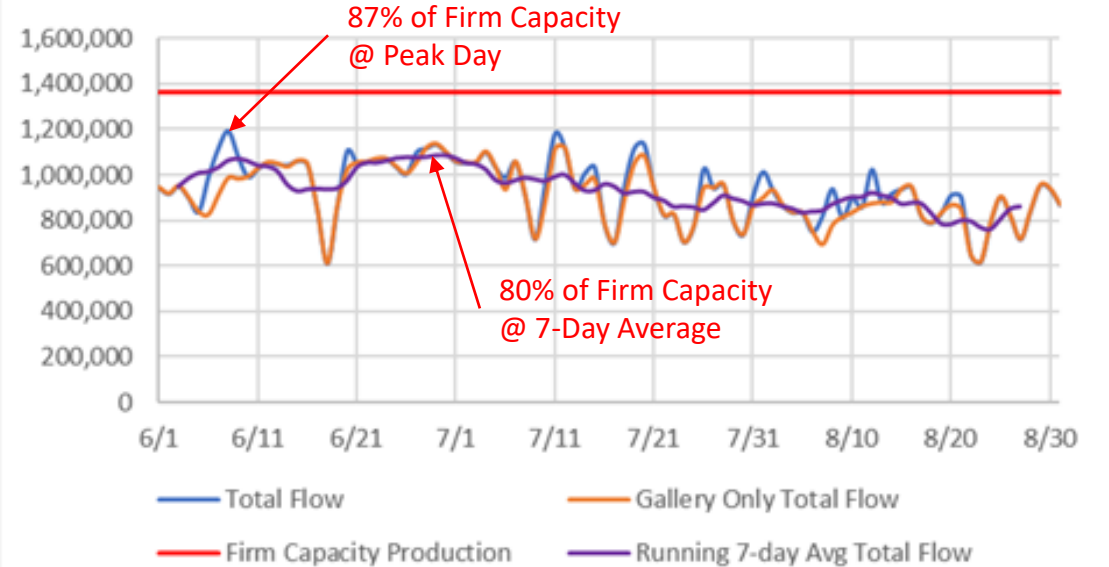
### 2016 Summer Water Production



### 2017 Summer Water Production



### 2018 Summer Water Production



# Infrastructure Expansion Alternatives

ALTERNATIVE*	CAPACITY (GALLON)	CAPITAL COST***	COST PER GALLON
Upgraded Conventional Filtration Surface Water Treatment Plant	2,500,000	\$5,800,000	\$2.32
Membrane Surface Water Treatment Plant	2,500,000	\$6,900,000	\$2.76
Infiltration Gallery and Surface Water Treatment Expansion Project	2,500,000	\$3,300,000	\$1.32
Reduced Capacity Direct Filtration Surface Water Treatment Plant	520,000	\$2,000,000	\$3.85
New Groundwater Well**	216,000	\$533,635	\$2.47

\*Alternatives analysis conducted by Providence Infrastructure Consultants – Water Treatment Feasibility Study (includes information sourced from the 2014 Water Resources Master Plan)

\*\*Capital cost for new groundwater well based on total estimated cost of Well #3 and includes purchase of project water @ an estimated \$17/acre-foot for 20 years, discounted at 2% to present day

\*\*\*Will need to include 20-Year Lifecycle Analysis as a next step

# Town Growth vs Infrastructure Alternatives

