

**Steve Shute, Vice-President, Gardner City Council**  
**Matt Allen, City Manager, Garden City**  
**Toby Dougherty, City Manager, Hays**

# KANSAS WATER CHALLENGES FROM A UTILITY PERSPECTIVE



City of Gardner  
Water/Wastewater Conveyance &  
Treatment

Growth and Service



# Water Supply Alternatives

Gardner Lake

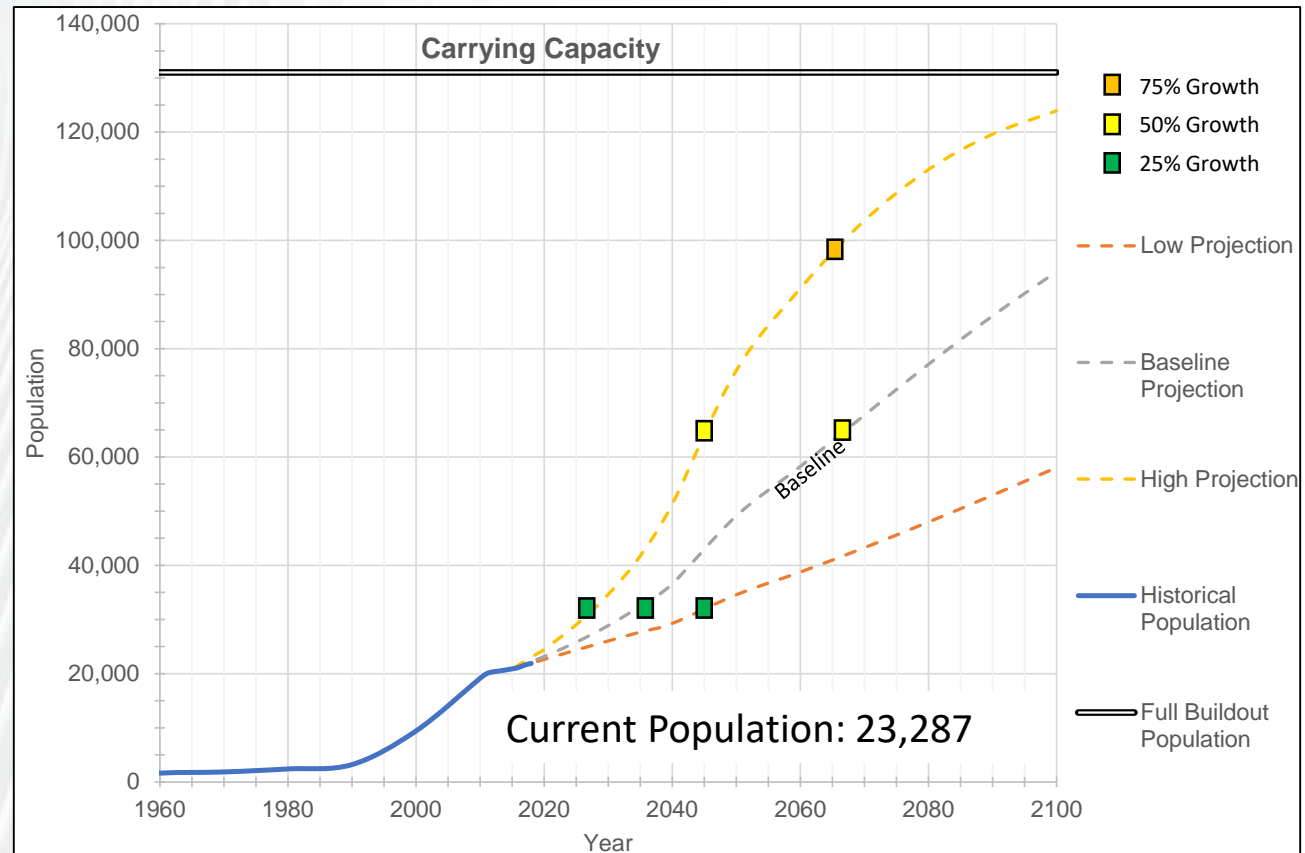


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2039	2044	2049	2080
Low Growth Projection	23,613	23,853	24,095	24,340	24,669	25,002	25,340	25,683	26,030	26,350	26,674	27,002	27,334	28,935	31,273	33,985	47,993
Baseline Growth Projection	24,166	24,695	25,237	25,790	26,375	26,973	27,585	28,210	28,850	29,535	30,236	30,953	31,688	35,712	41,151	47,677	77,098
High Growth Projection	25,327	26,496	27,720	29,000	30,039	31,115	32,230	33,384	34,580	35,898	37,266	38,686	40,160	49,192	59,993	73,013	113,038

Buildout %	25%	50%	75%
Population	32,750	65,500	98,250

Based on 2020 Census Results

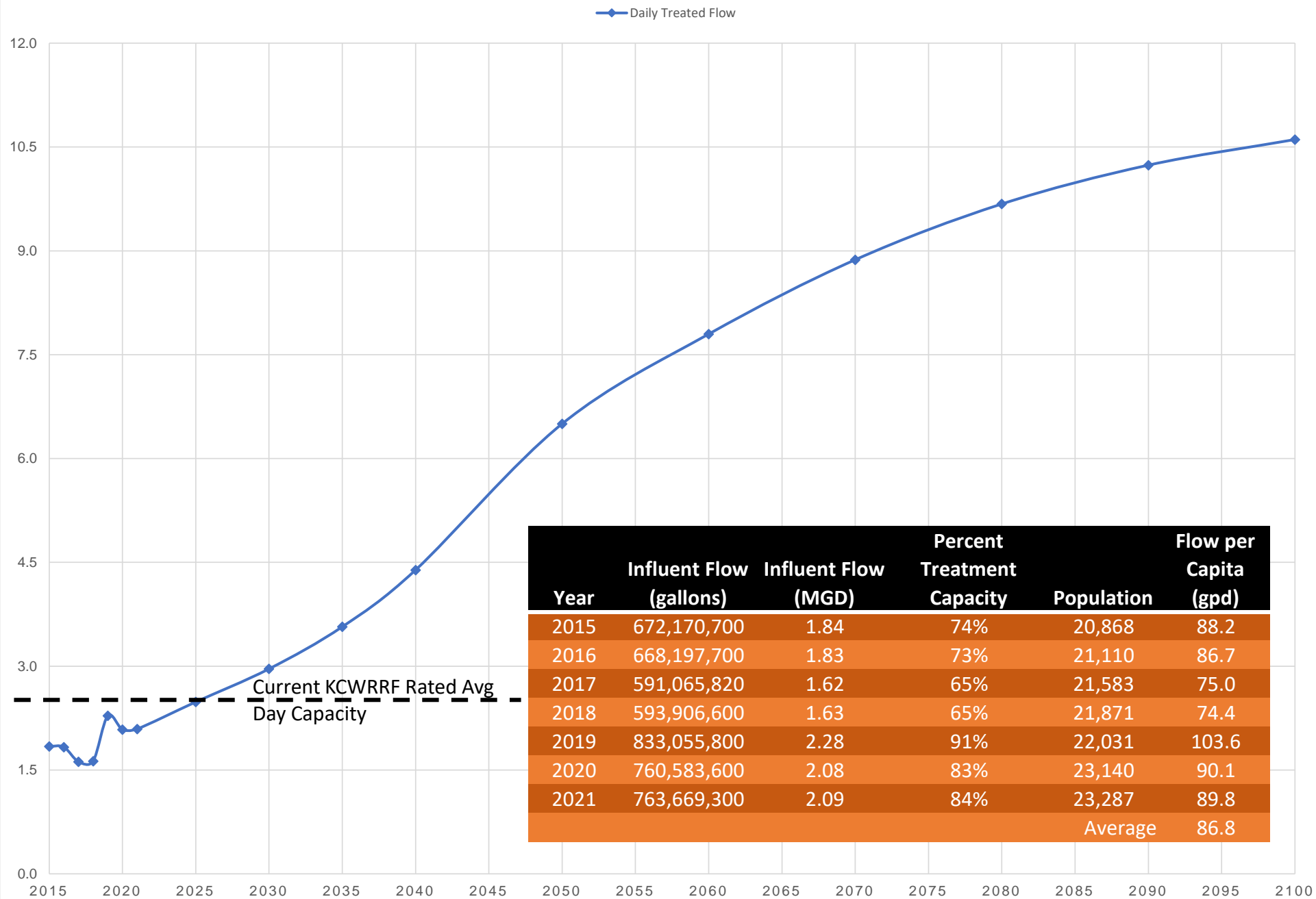
## Population and Design Flow Development - Wastewater



# Population and Design Flow Development

Projected flow based on Baseline Growth

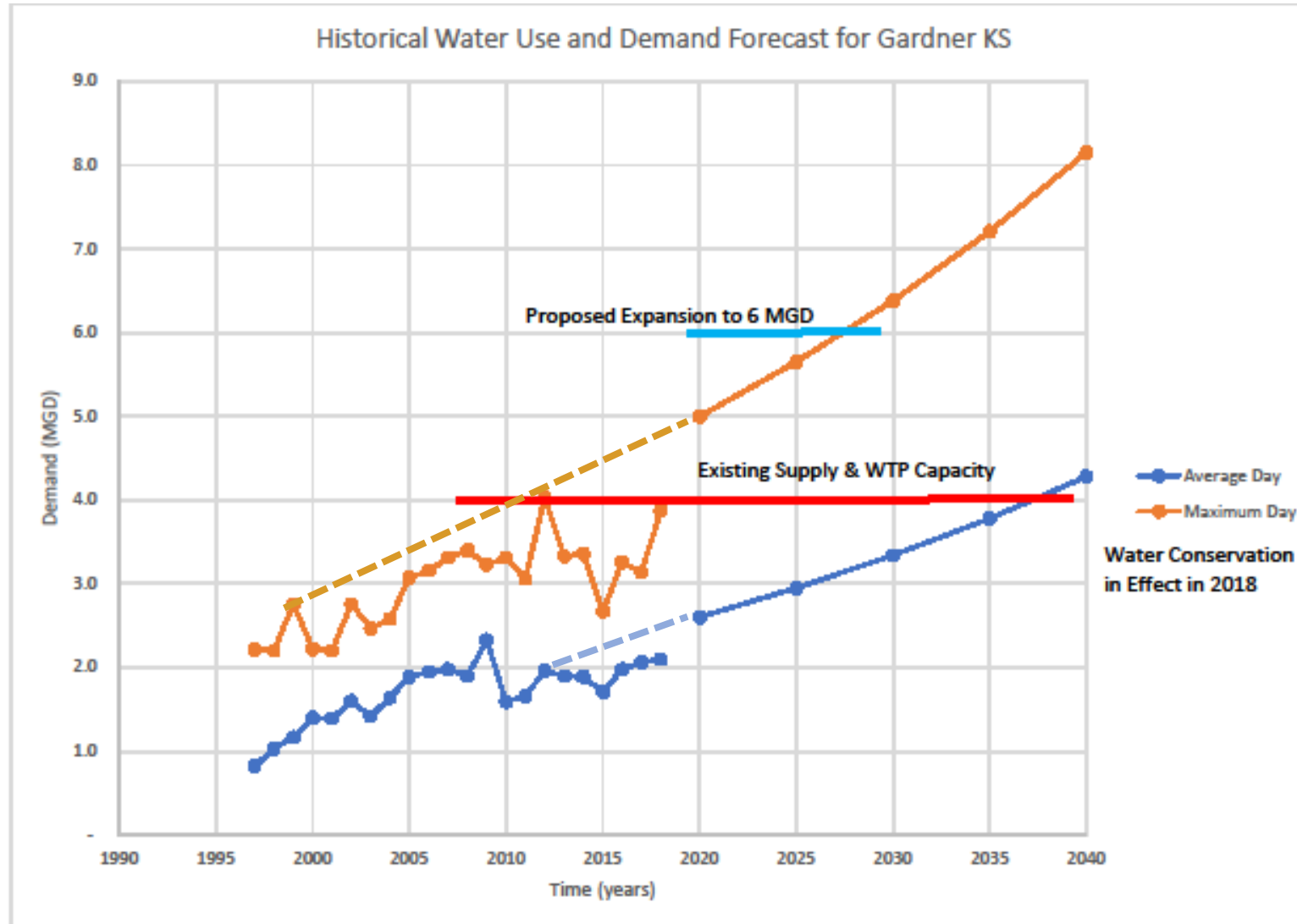
## PROJECTED WASTEWATER DAILY FLOW



# Background – Schedule Urgency

<u>Demand</u>	<u>Urgency</u>
Actual MD 2012 = >4.0 MGD Spring 2018 MD = 4.0 MGD	Raw Water Delivery Capacity = 4.0 MGD WTP Capacity = 4.0 MGD 2 years behind
By 2020, Need 5.0 MGD By 2027, Need 6.0 MGD	Increasing Building Permits Planned Developments
Near-term Water Use Control	Water Conservation Plan / Restrictions

# Historical and Projected Water Demand





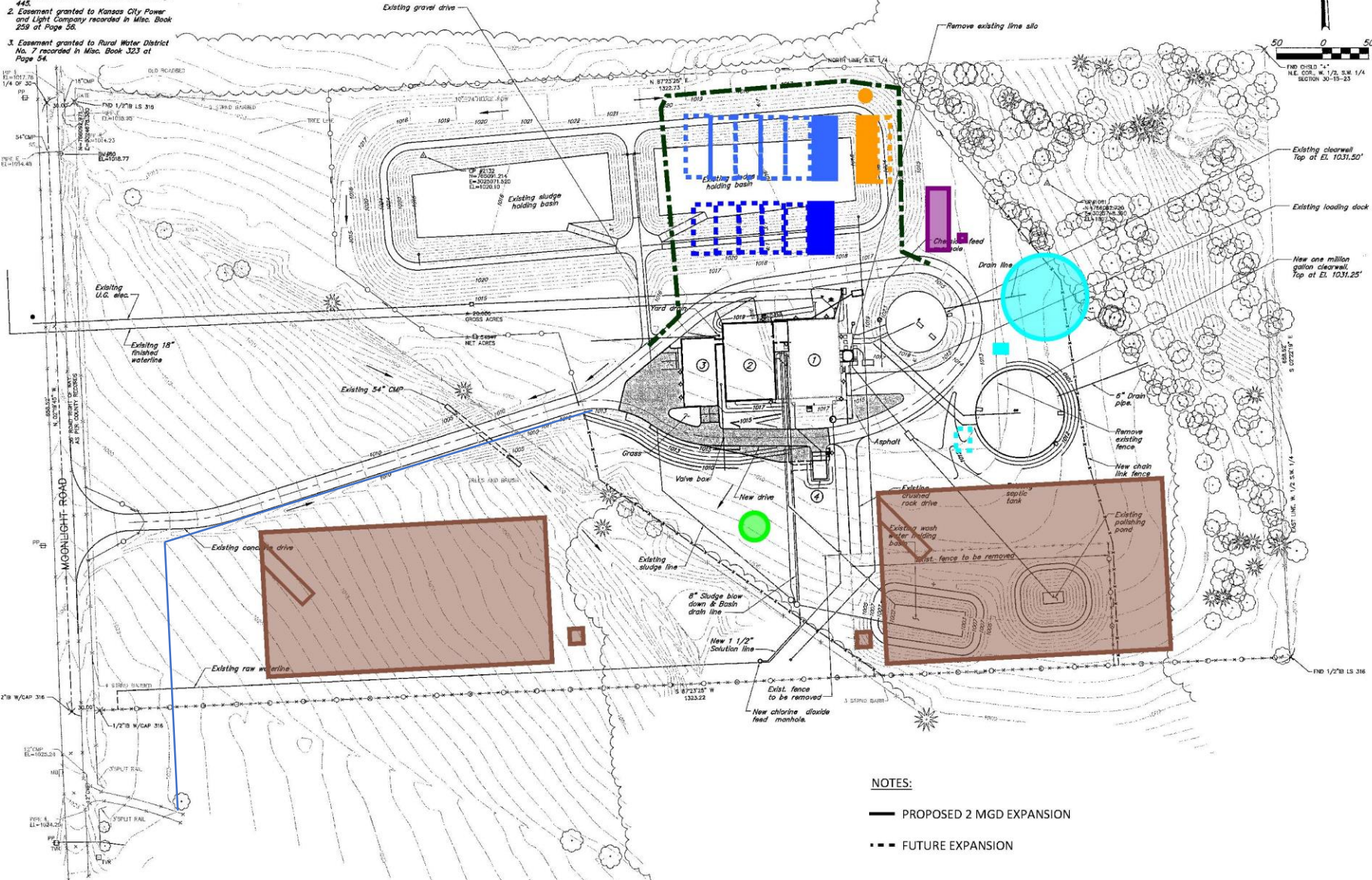
**LEGAL DESCRIPTION**

The North 20 acres of the West 1/2 of the Southwest 1/4 of Section 30, Township 15, Range 23, Miami County, Kansas, except that part in roads.

CP#1049  
N=76241.588  
E=302478.670  
CL=1027.43

**EASEMENTS**

1. Easement granted to Rural Water District No. 7 recorded in Misc. Book 237 of Page 445.
2. Easement granted to Kansas City Power and Light Company recorded in Misc. Book 259 of Page 58.
3. Easement granted to Rural Water District No. 7 recorded in Misc. Book 323 of Page 54.



**LEGEND**

- ROAD CENTERLINE
- CARBON CONTACT & PAC SILO
- FLOCCULATION/ SEDIMENTATION
- FILTERS
- BACKWASH HOLDING TANK & PUMP STATION
- CLEARWELL, BACKWASH PUMP STATION & FUTURE HIGH SERVICE PUMP STATION
- CHEMICAL FEED BUILDING & SCRUBBER
- RESIDUALS BASIN & PUMP STATION

**NOTES:**

- PROPOSED 2 MGD EXPANSION
- - - FUTURE EXPANSION



FIGURE 1  
WTP SITE LAYOUT



# GARDEN CITY

— THE WORLD GROWS HERE —



### Density Distribution (5-mi radius) of the Average Reported Ground-Water Use, 1996 - 2016, in the Kansas High Plains Aquifer Region

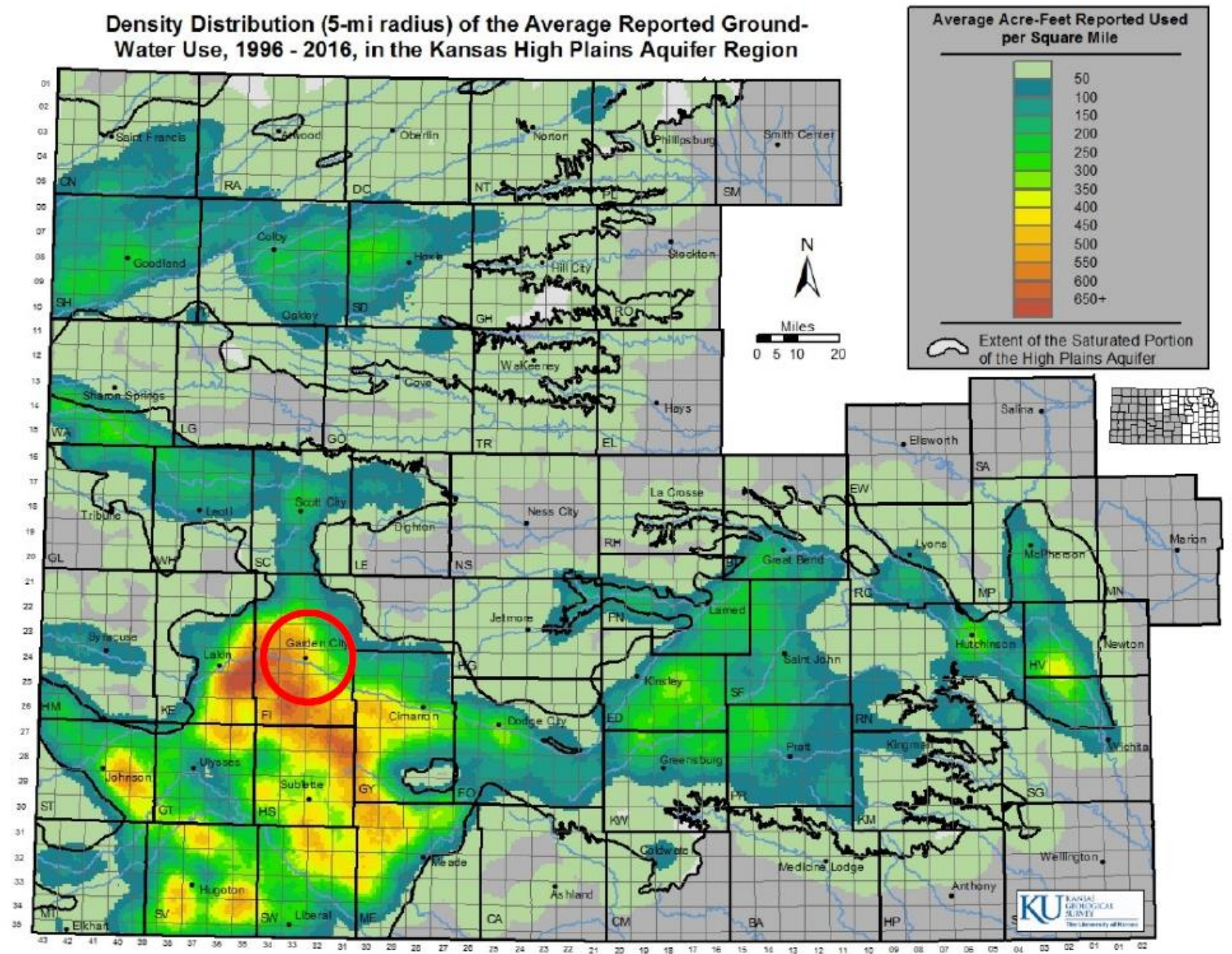


Figure 1: Groundwater use in the Kansas High Plains Aquifer Region (KGS, 2012)



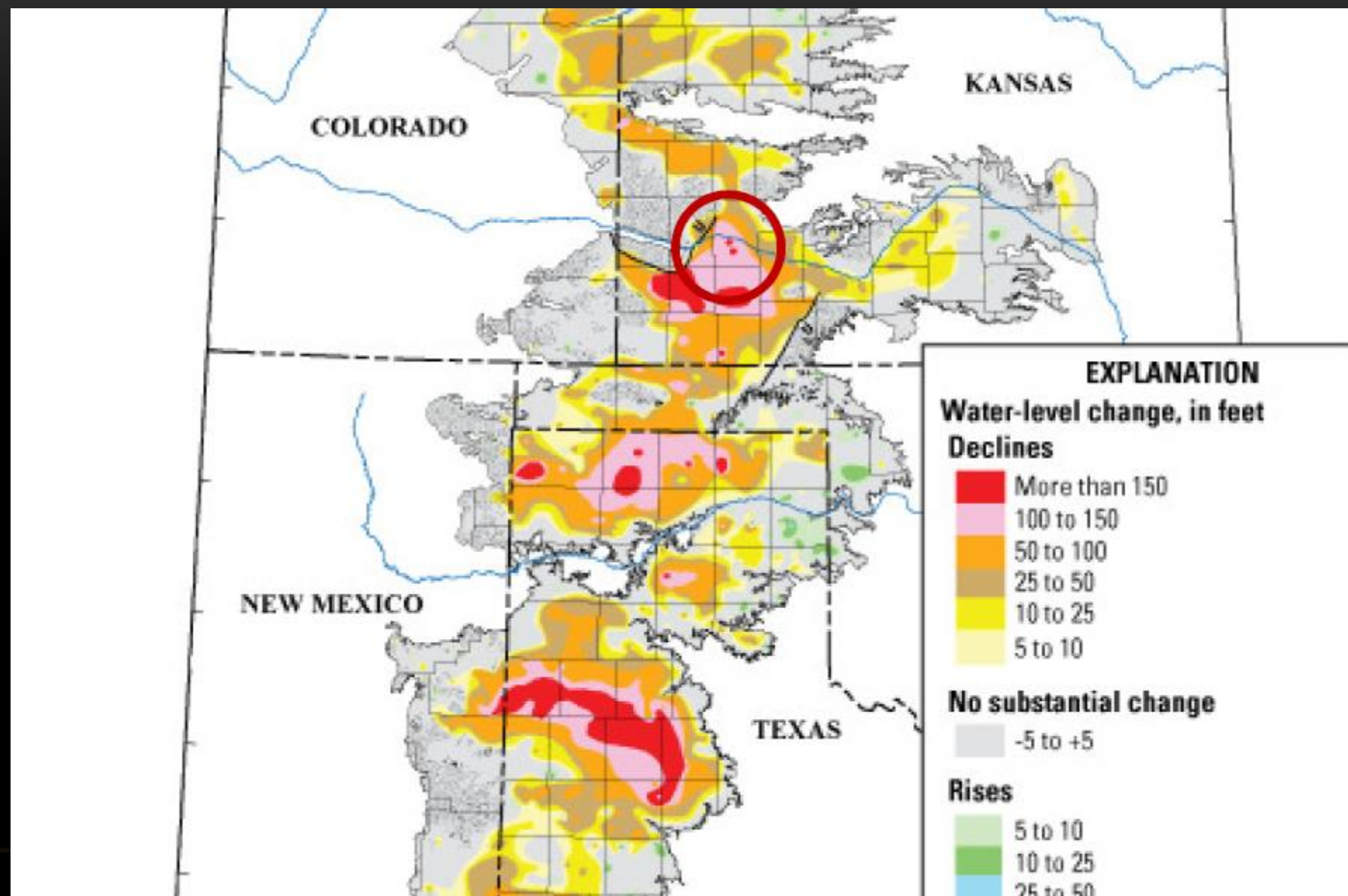
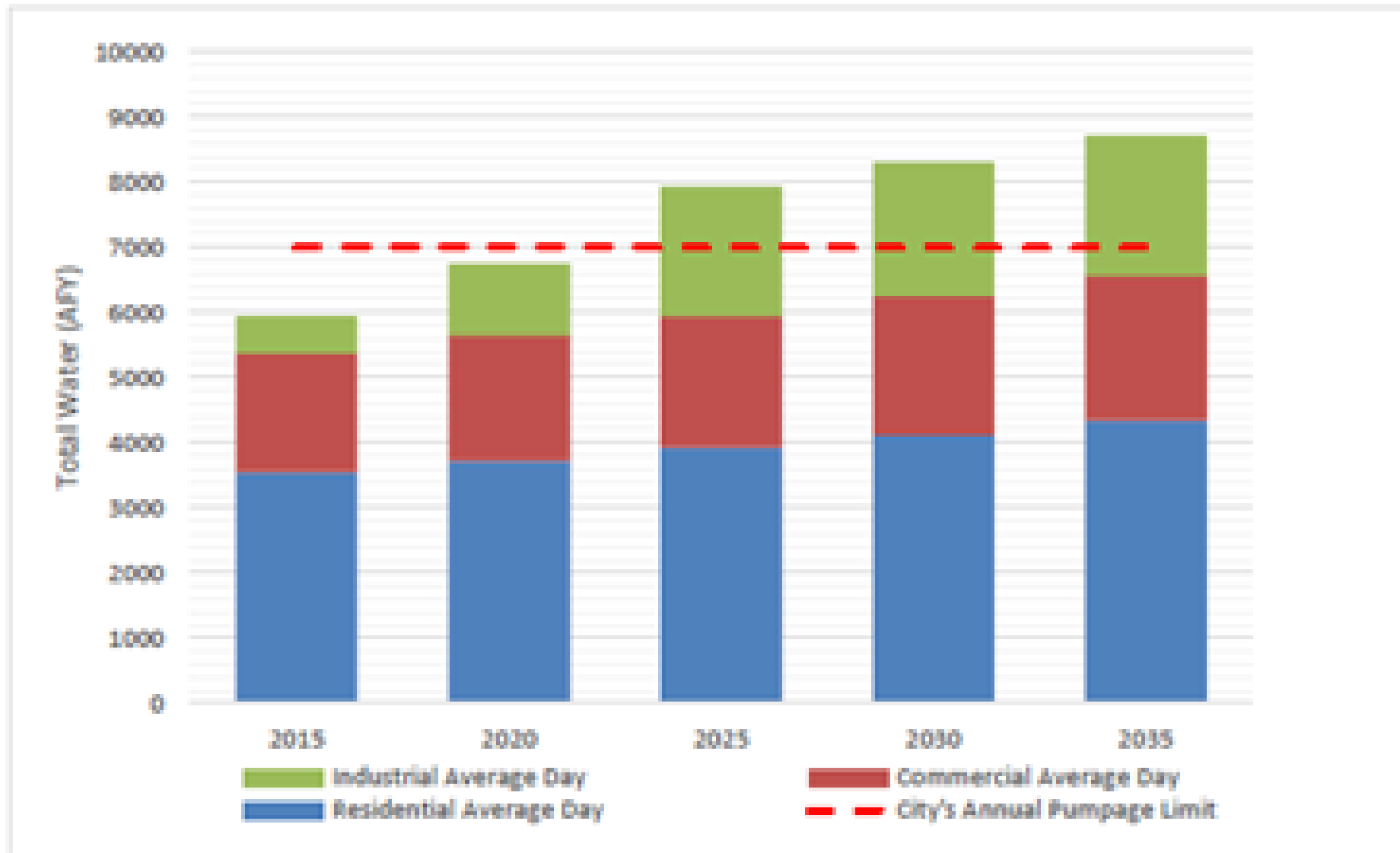
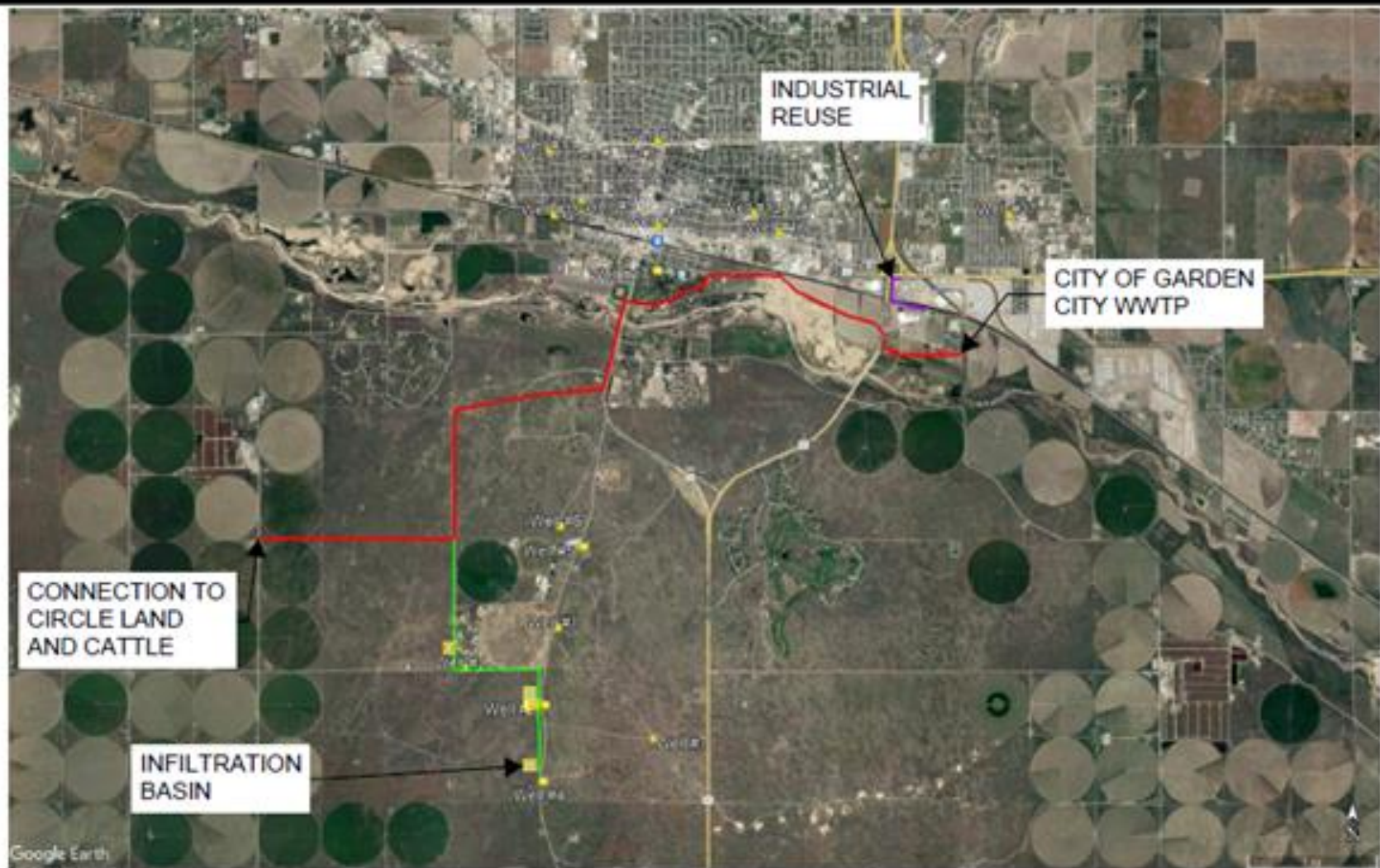


Figure 2-5: Water Demand Projection





**Legend**

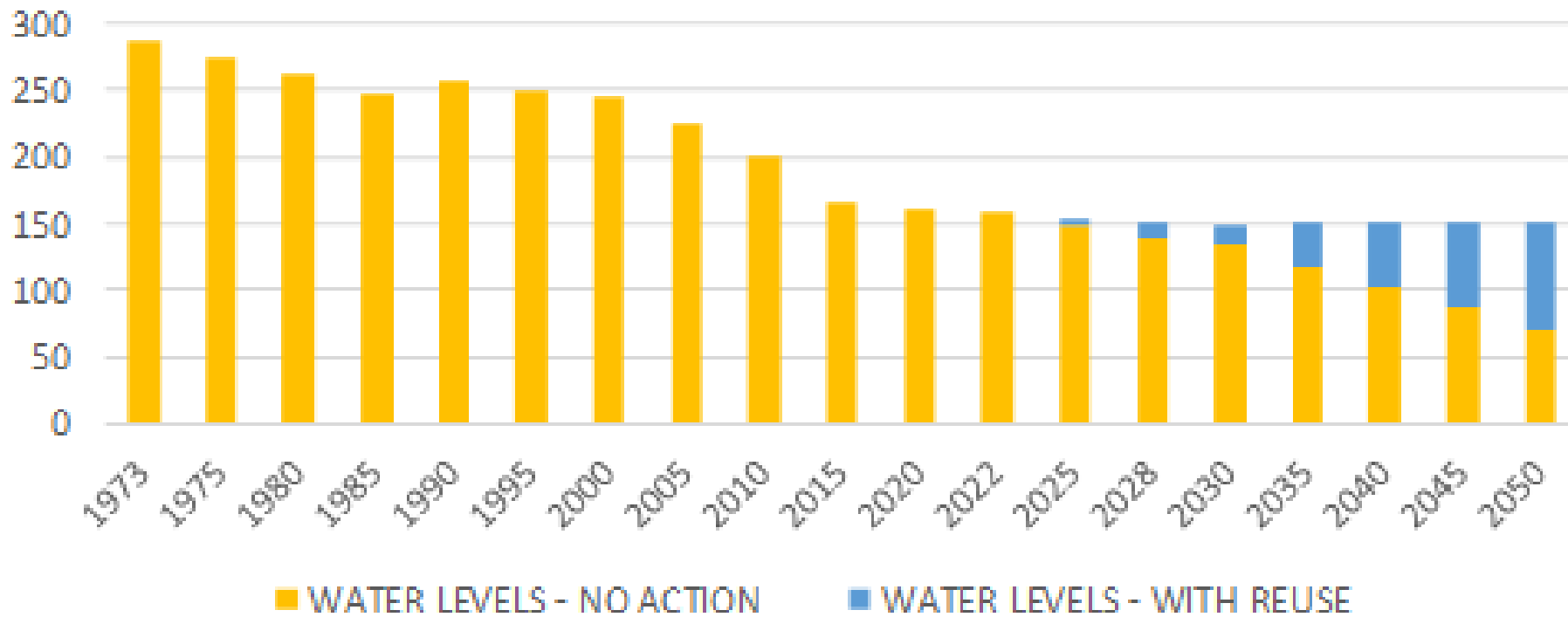
- 16" Reuse Line from Garden City WWTP
- 12" Infiltration Basin Inlet Line
- 8" Bonanza Line from DFA to Bonanza



**FIGURE 3  
PROPOSED PHASE III  
INDUSTRIAL REUSE  
CITY OF GARDEN CITY, KS**



## GARDEN CITY SANDHILLS GROUNDWATER WELLS ACTUAL/PROJECTED WATER LEVELS





CITY OF  
**Haystack**

# GALLONS PER CAPITA PER DAY

