



MONITORING NETWORK CURRENT UPDATE

**POSGCD BOARD MEETING
APRIL 9, 2013**

15. Management Goals, Objectives, & Performance Standards

15.1 Efficient Use of Groundwater

Management Objectives:

1. The District will maintain a monitoring well network with at least 50 monitoring wells to provide coverage across management zones and aquifers within the District. The District will measure water levels at the monitoring well locations at least once every calendar year. A written analysis of the water level measurements from the monitoring wells will be made available through a presentation to the Board of the District at least once every three years.

Performance Standards:

1. Maintain a monitoring well network and its criteria, and measure at least 50 monitoring wells at least once every calendar year.
2. Number of monitoring wells measured annually by the District.

2013 Water Level Measurements

The table to the right is the data that was submitted to the Texas Water Development Board (TWDB) for the district's annual water level measurements.

Measurements were taken between 2/11/2013 and 3/7/2013.

The district utilizes a variation of methods to obtain level measurements

- Steel Tape
- E-line
- Sonic recorder
- Pressure Transducer

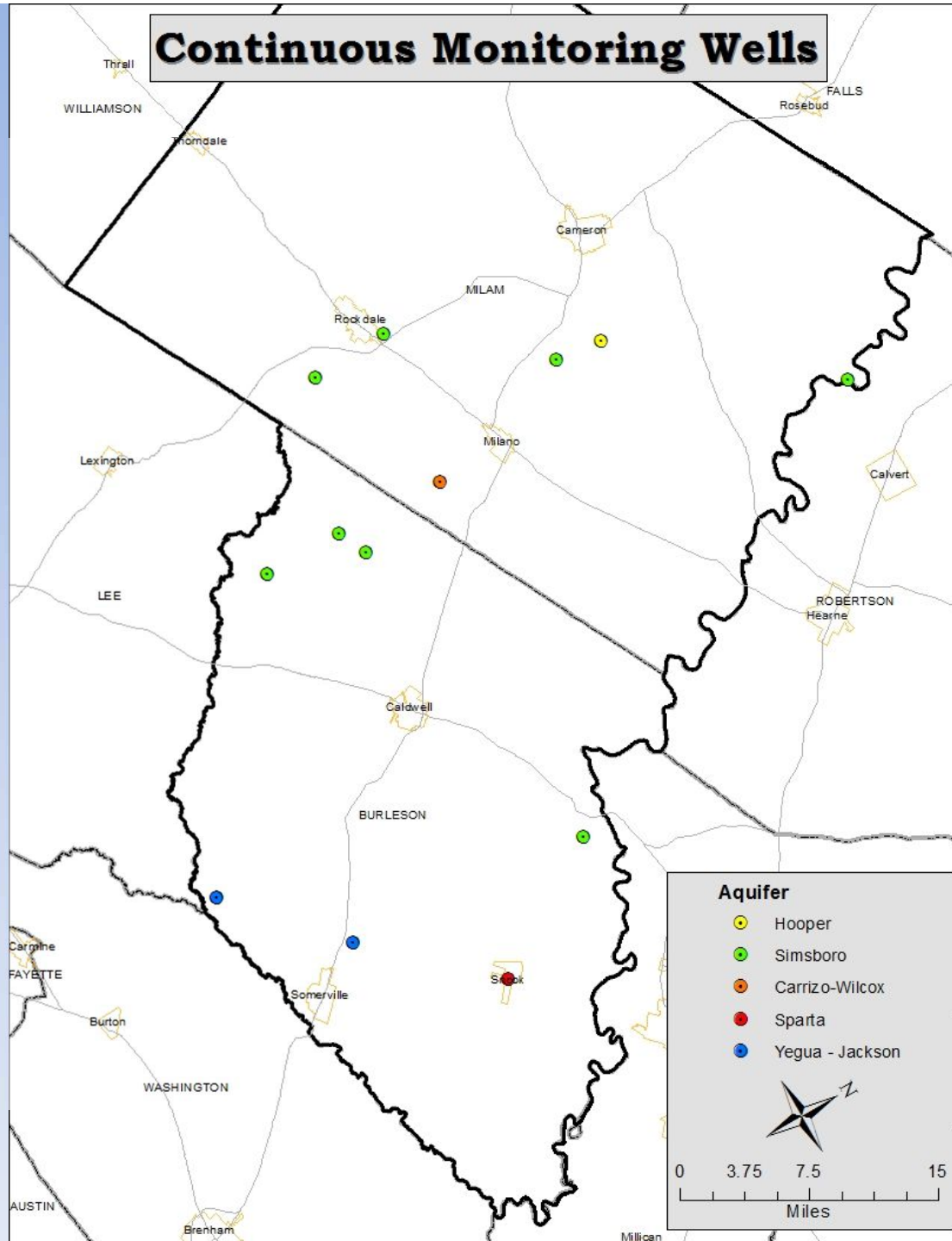
WID	State Well No.	Owner	Aquifer	Depth	2013 level	Date	Method
25	59-17-409	City of Rockdale (Belton)	Simsboro	391	-167.2	1/17/2013	transducer
26	59-17-103	Ralph Summers- Mary Jane Boyd	Hooper	410	-73.8	2/15/2013	sonic
53	59-09-901	Freddy S. Debault	Simsboro	169	-112.1	1/16/2013	transducer
59	59-11-402	Harold Lange	Carrizo	323	-148.2	2/11/2013	sonic
73	59-10-907	Willard Kornegay	Calvert Bluff	440	-130.25	2/11/2013	eline
77	59-19-103	Charles Hoppe	Carrizo	522	-138.8	2/28/2013	sonic
84	59-19-302	James Ayers	Queen City	45	-41.5	2/11/2013	eline
99	59-25-508	Larry Sexton	Carrizo	520	-61.7	3/1/2013	tape
107	59-25-128	Noack Family Partnership, Ltd.	Simsboro	860	-127	3/1/2013	transducer
115	59-17-715	L.B. Kubiak	Simsboro	337	-146	3/8/2013	sonic
121	59-17-714	City of Rockdale (Texas)	Simsboro	390	-138.3	3/4/2013	tape
138	59-17-713	City of Rockdale (Tracy)	Simsboro	408	-147.23	3/4/2013	eline
170	58-24-914	Rockdale ISD	Simsboro	295	-124.6	2/15/2013	sonic
221	59-09-605	Marlow WSC	Hooper	503	-147.9	1/16/2013	transducer
223	59-02-706	North Milam WSC	Hooper	315	-40.2	2/14/2013	eline
234	59-02-309	Wendy Breck	Simsboro	417	-41.3	1/18/2013	transducer
236	59-02-307	Mike Patzke	Simsboro	450	-124.6	2/14/2013	tape
256	59-02-901	North Milam WSC	Simsboro	318	-110.9	2/14/2013	sonic
268	58-32-101	Wayne Diver	Simsboro	60	-11.1	2/15/2013	tape
308	59-27-716	R. B. Wilkens	Queen City	400	-116	3/1/2013	tape
341	59-27-606	Rudy Steck	Queen City	600	-102.4	2/11/2013	tape
433	59-20-410	Milano WSC- Rita Test	Carrizo	800	-25.4	2/20/2013	eline
434	59-20-409	L. C. Hall, Sr.	Queen City	230	-45.4	2/11/2013	tape
457	59-19-502	Milano WSC - Well 4	Simsboro	2018	-280	2/20/2013	sonic
518	59-27-204	Dale Hill	Queen City	205	-25.8	2/11/2013	eline
579	59-37-611	Camilla J. Godfrey	Yegua-Jackson	240	-31.4	2/13/2013	eline
596	59-37-329	Finley Company	Brazos Alluv.	58	-21	2/13/2013	tape
638	59-37-101	Snook well #1	Queen City	1600	-26.6	3/7/2013	transducer
661	59-36-802	Lyons WSC	Sparta	1609	-122.8	2/13/2013	tape
698	59-43-608	Birch Creek Recreation	Yegua-Jackson	533	-51.8	1/16/2013	transducer
787	59-38-701	Baker Farm	Brazos Alluv.	56	-16.6	2/13/2013	eline
791	59-35-208	Juanita Amodin	Sparta	364	-68	2/13/2013	sonic
859	59-29-456	Marion Malazzo	Brazos Alluv.	60	-18.2	2/13/2013	tape
860	59-29-457	Marion Malazzo	Brazos Alluv.	60	-18.8	2/13/2013	eline
894	59-28-601	P. G. Haines	Brazos Alluv.	58	-22.4	2/11/2013	eline
895	59-28-702	Sarah Engleman	Sparta	498	-81.3	2/13/2013	tape
943	59-34-106	Nathan Ausley	Carrizo	840	-135	2/28/2013	sonic
1023	59-29-537	Texas A & M University	Sparta	1090	-21.8	2/13/2013	tape
1061	59-34-607	Deanville Water Supply Corporation 2	Queen City	797	-108.8	3/6/2013	sonic
1062	59-18-101	Milano WSC - Well # 1	Simsboro	790	-282.6	2/20/2013	sonic
1063	59-18-104	Milano WSC - Well # 2	Simsboro	800	-269.5	2/20/2013	sonic
1064	59-18-908	Milano WSC - Well # 3	Simsboro	1687	-297.8	2/20/2013	sonic
1066	59-18-705	Milano WSC - Buer Well	Carrizo	800	-219.3	2/20/2013	sonic
1082	59-11-703	Gause Water Supply # 1	Simsboro	992	-167.1	2/14/2013	sonic
1117	59-17-712	City of Rockdale (runway)	Simsboro	475	-149.35	3/1/2013	sonic
1118	59-17-711	City of Rockdale (airport)	Simsboro	463	null	3/1/2013	
1166	59-29-410	Holland Porter	Brazos Alluv.	71	-22.25	2/13/2013	eline
1197	59-34-107	Nathan C. Ausley	Queen City	370	-104.55	2/28/2013	sonic
1573	59-34-601	Deanville Water Supply Corporation 1	Queen City	784	-71.1	3/6/2013	sonic
1575	59-27-718	Deanville Water Supply Corporation 4	Carrizo	1300	-170.2	3/6/2013	sonic
2152	59-25-409	Glynn Phillips	Calvert Bluff	480	-175.7	3/1/2013	tape
2191	59-17-716	L.B. Kubiak	Hooper	520	-140.8	2/7/2013	eline
2423	59-02-806	Gary & Deryl Emola	Simsboro	240	-117.9	3/7/2013	sonic
6243	59-25-502	Birdie Kristoff	Calvert Bluff	614	-76.8	3/1/2013	tape
6305	58-32-908	James Arthur McDaniel	Calvert Bluff	344	-26.8	3/1/2013	eline
6621	59-26-402	Frederick A. Jackson	Simsboro	2020	-263.9	1/12/2013	transducer
6910	59-26-403	Joel A. Cowan	Simsboro	2200	-272.9	1/12/2013	transducer
7506	58-24-610	Southwest Milam Water Supply Corp.	Hooper	392	-137.1	2/15/2013	sonic
7774	59-10-705	Jay Wise	Simsboro	560	-147.2	2/11/2013	sonic
7793	59-25-127	Noack Family Partnership, Ltd.	Simsboro	420	-121.5	3/1/2013	sonic
8239	59-28-804	Providence Baptist Church	Sparta	460	-28.6	2/13/2013	eline
8388	59-43-104	Wayne Edwards	Simsboro	3988	-101.9	3/6/2013	sonic
8415	59-29-433	Portee FLP	Brazos Alluv.	59	-18.9	2/13/2013	tape
8451	59-25-408	Antonio E. Cantu	Calvert Bluff	690	-92.8	3/1/2013	tape
8658	59-10-706	Randal C. Leo	Simsboro	528	-181.4	2/11/2013	sonic
8767	59-34-108	Terry Ausley	Simsboro	2230	-184.1	1/12/2013	transducer
8935	59-01-904	Donald R. Schuerman	Hooper	80	-44.7	2/14/2013	sonic
9095	59-10-707	Randal C. Leo	Simsboro	580	-150.6	2/11/2013	tape
9104	59-28-342	David L. Hodges	Sparta	380	-70.1	2/11/2013	eline
9157	59-36-809	Post Oak Savannah - Lyons	Yegua-Jackson	592	-73.2	3/6/2013	eline
9166	59-18-108	Post Oak Savannah - Office Deep	Simsboro	1240	-256.95	3/5/2013	tape
9167	59-18-109	Post Oak Savannah - Office Shallow	Carrizo	140	-66.4	3/5/2013	tape

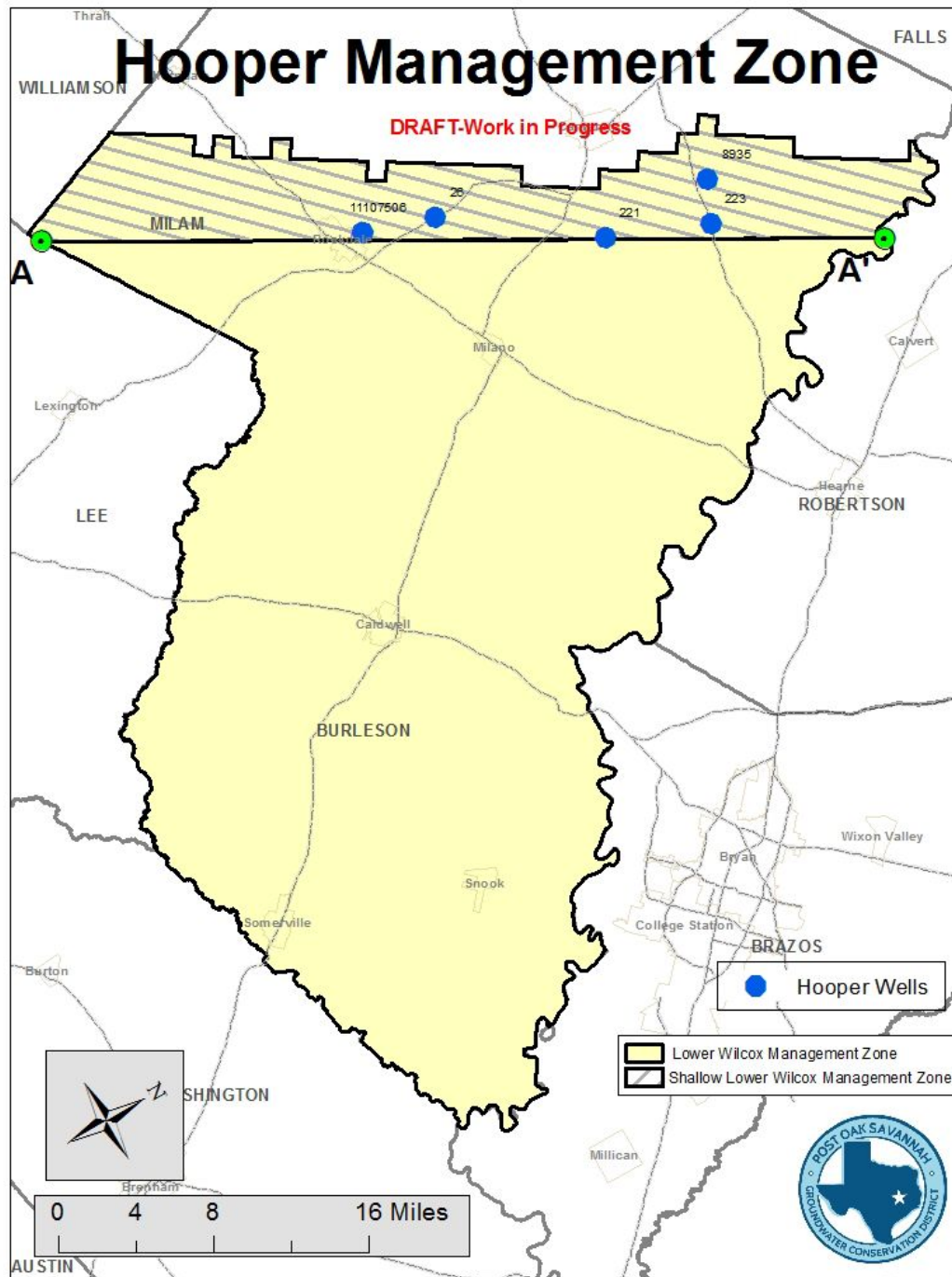
Current Monitor Well Count

Aquifer	Management Zone	
	Shallow	Deep
<i>Hooper</i>	6	0
<i>Simsboro</i>	12	17
<i>Calvert Bluff</i>	5	0
<i>Carrizo</i>	4	4
<i>Queen City</i>	5	3
<i>Sparta</i>	0	7
<i>Yegua-Jackson</i>	N/A	3
<i>Brazos River Alluvium</i>	7	N/A

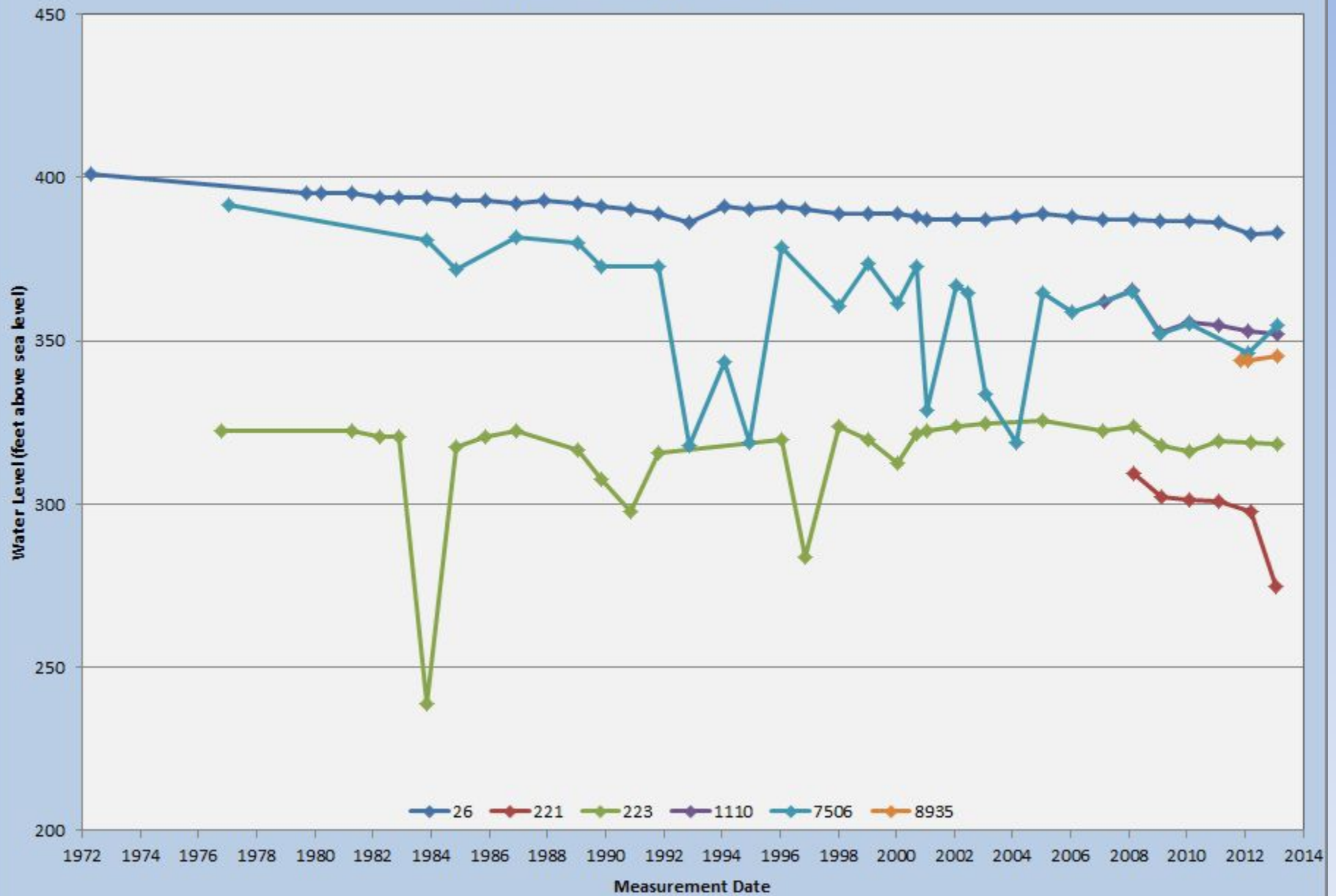


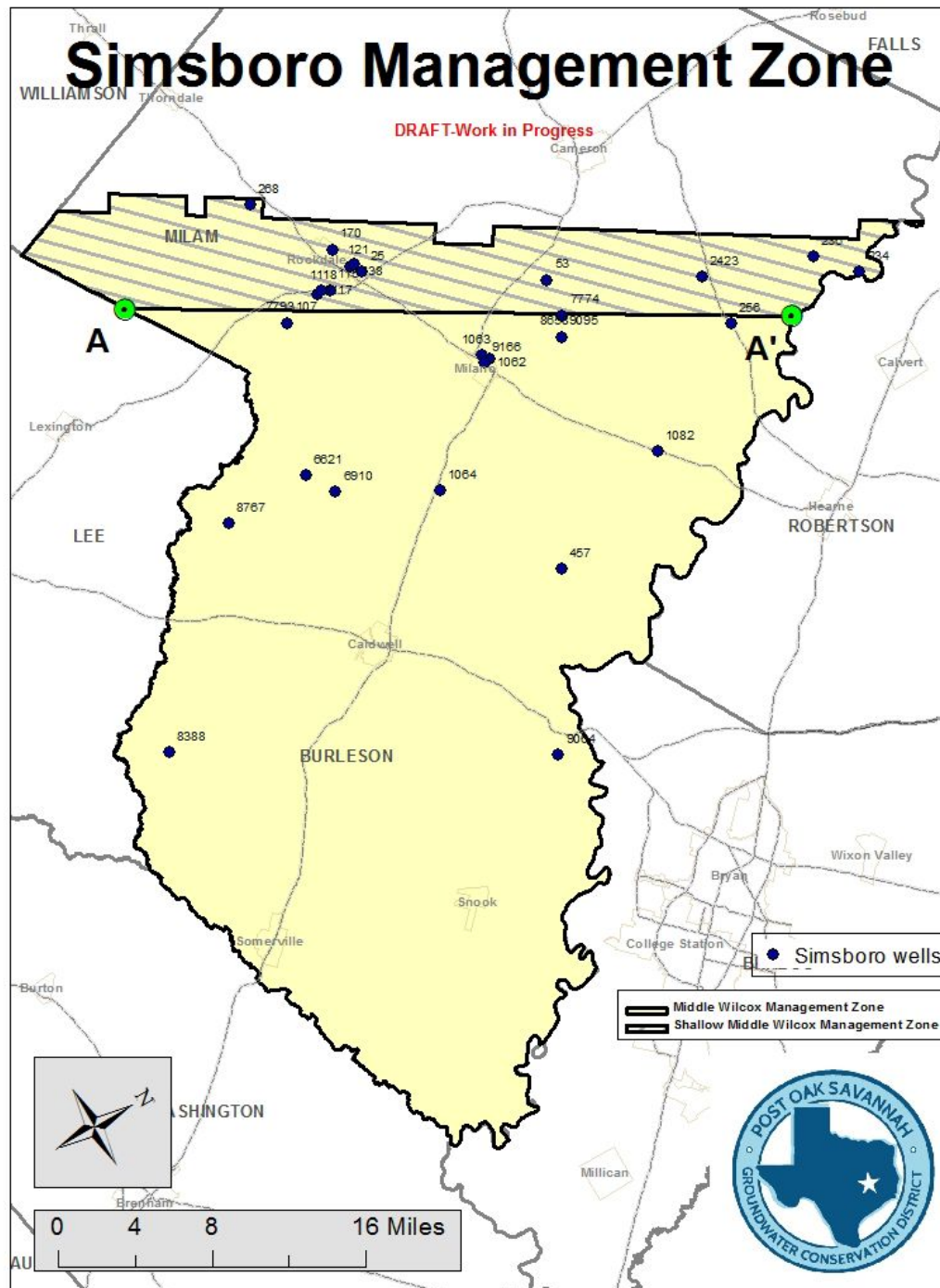
Continuous Monitoring Wells



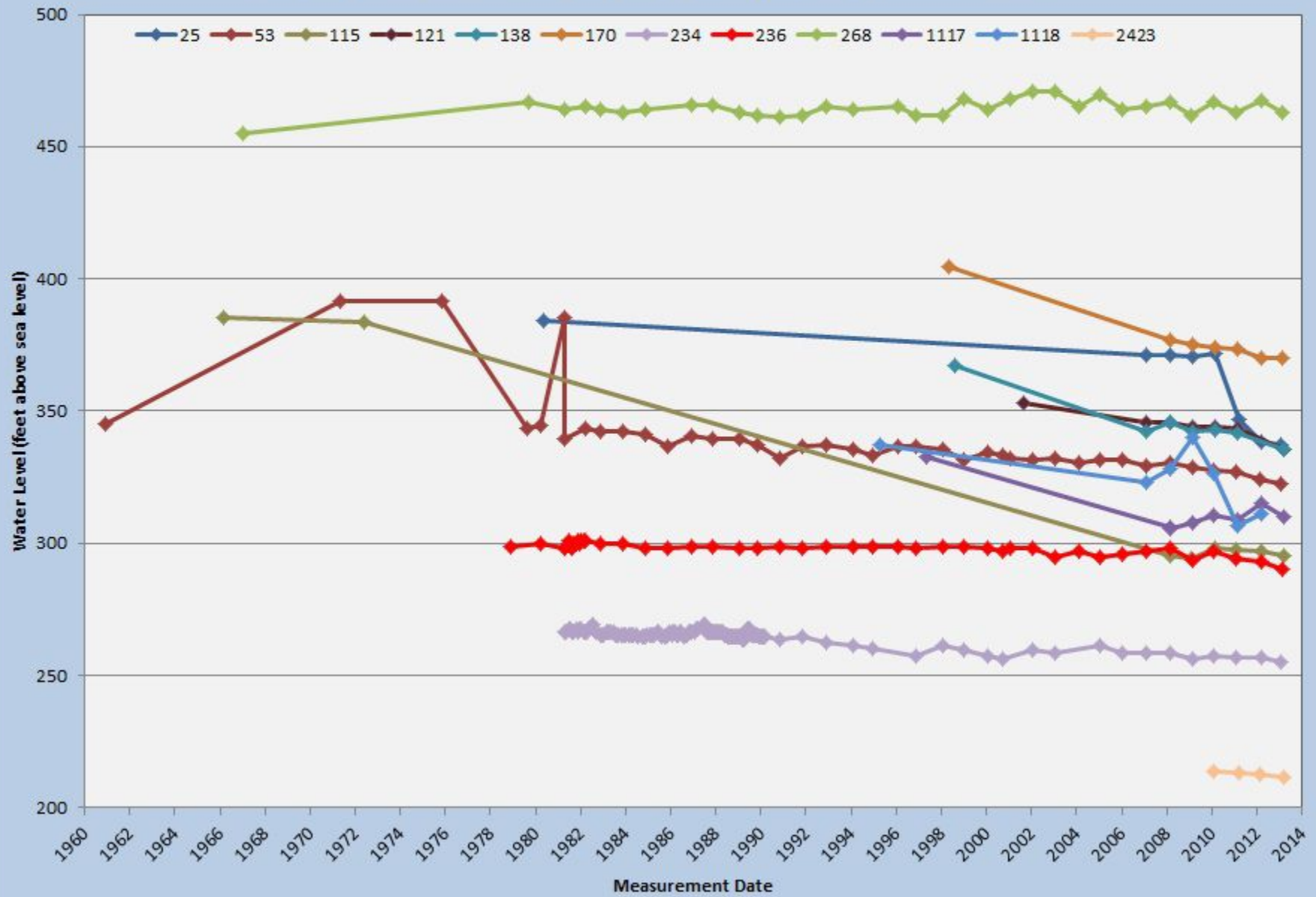


Hooper Management Zone

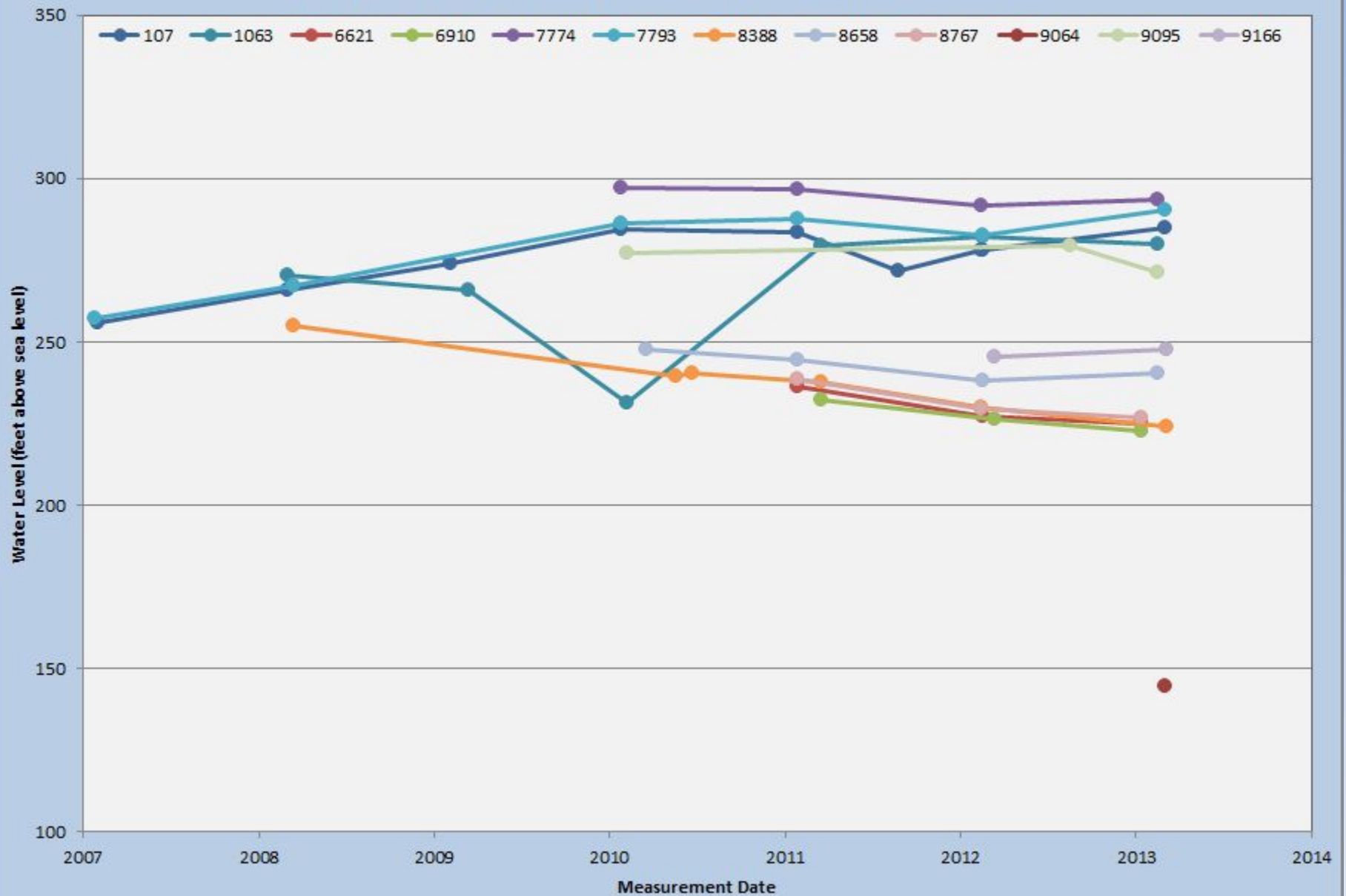




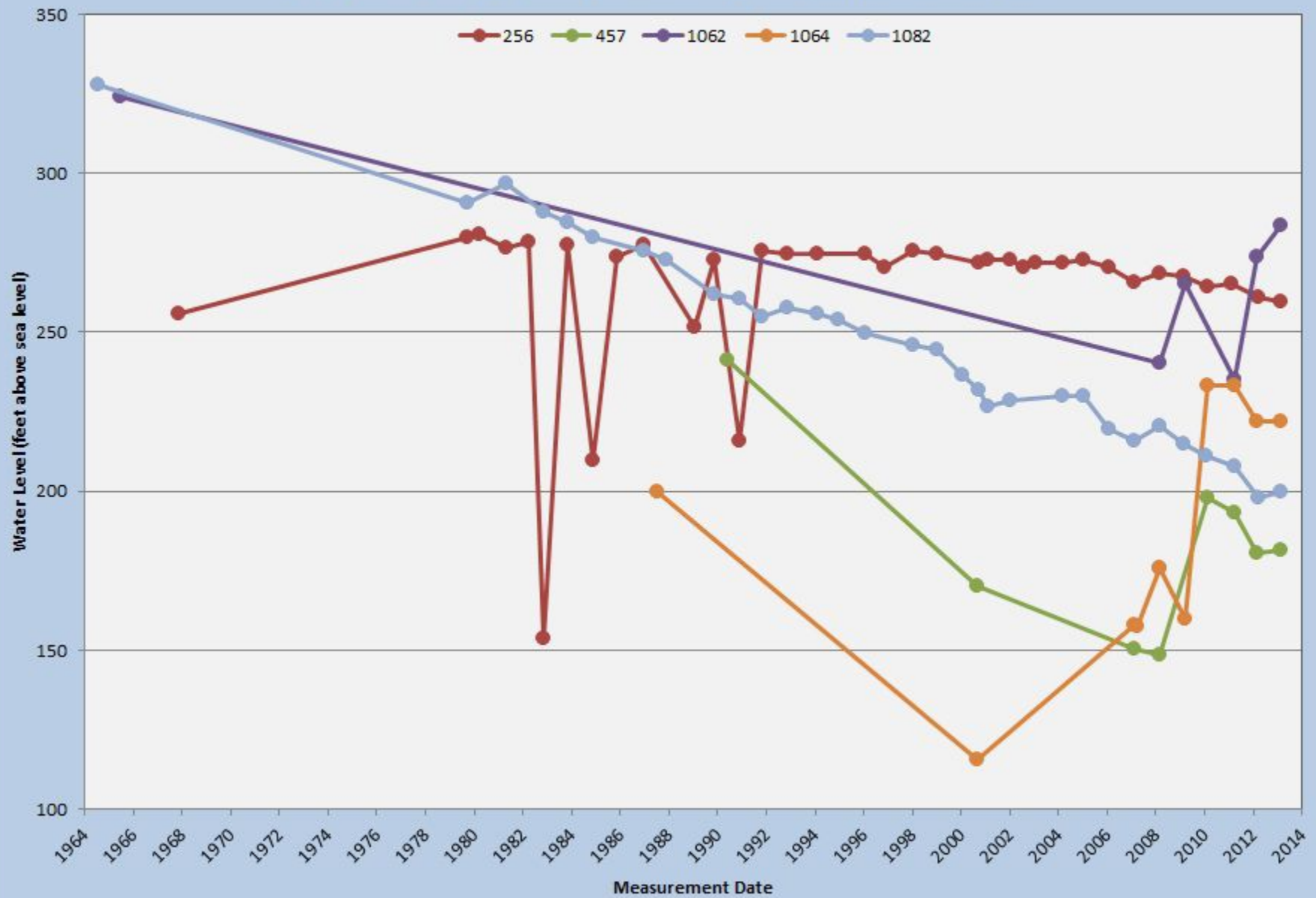
Shallow Middle Wilcox (Simsboro) Management Zone



Deep Middle Wilcox (Simsboro) Management Zone

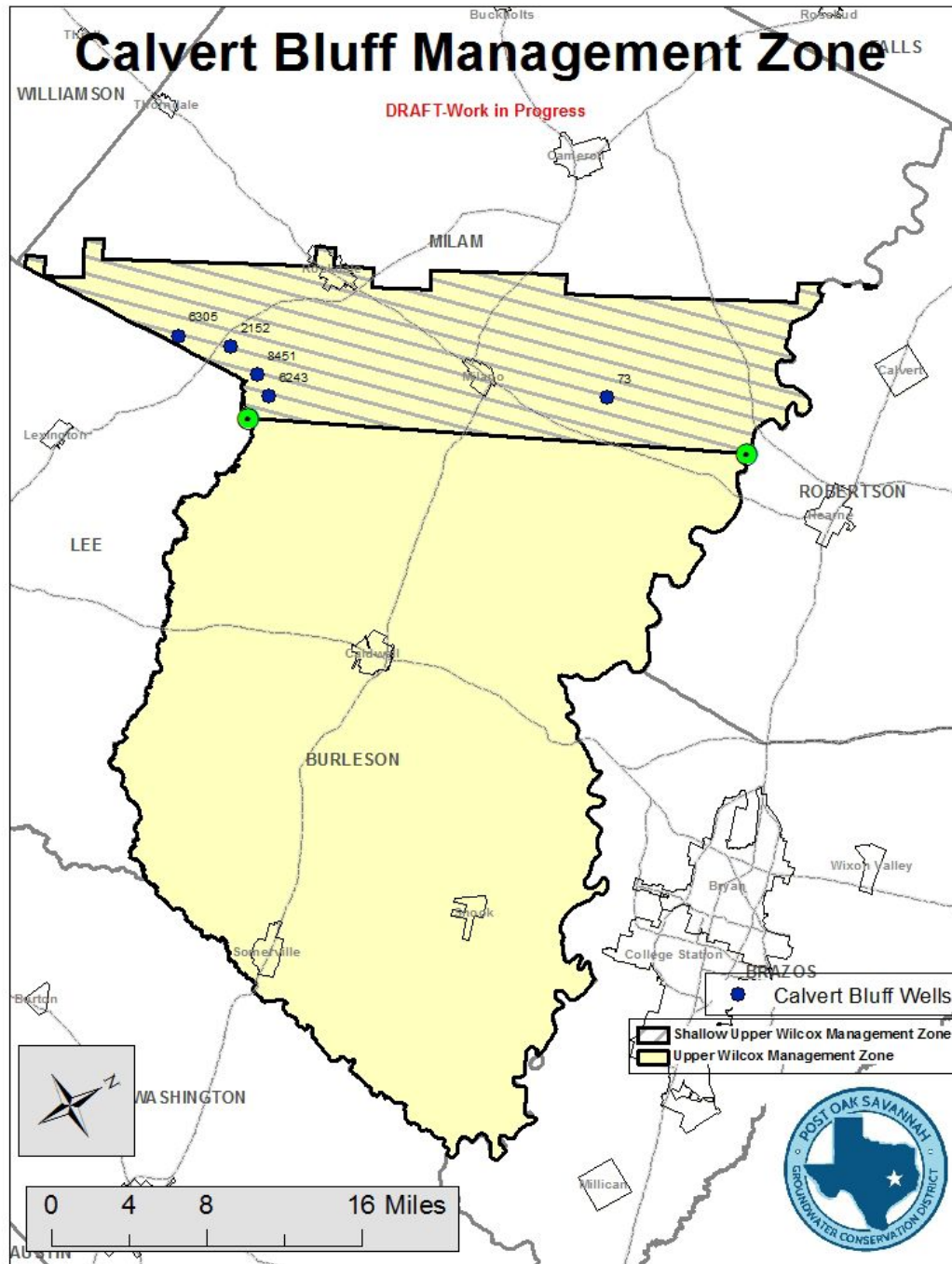


Deep Middle Wilcox (Simsboro) Management Zone

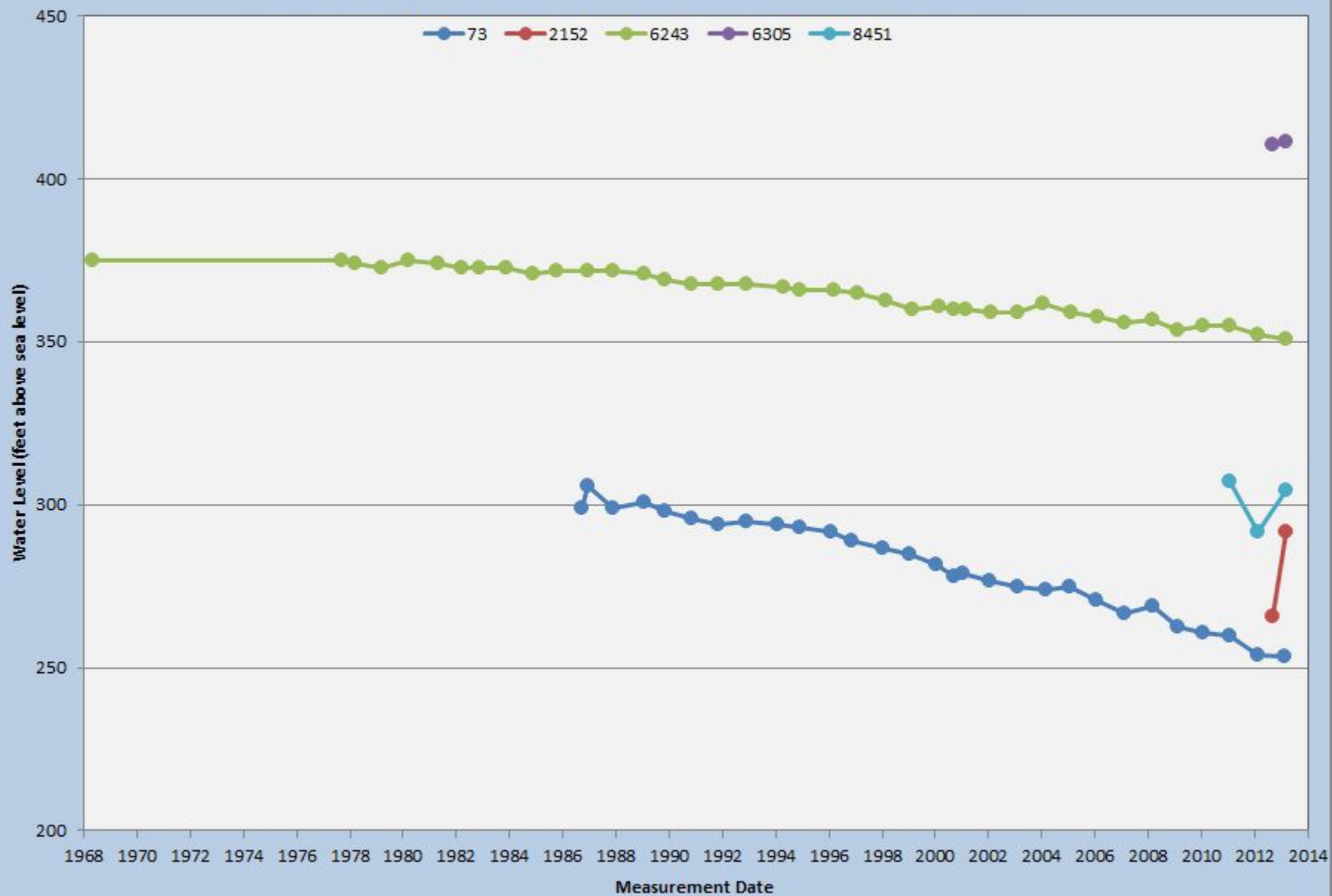


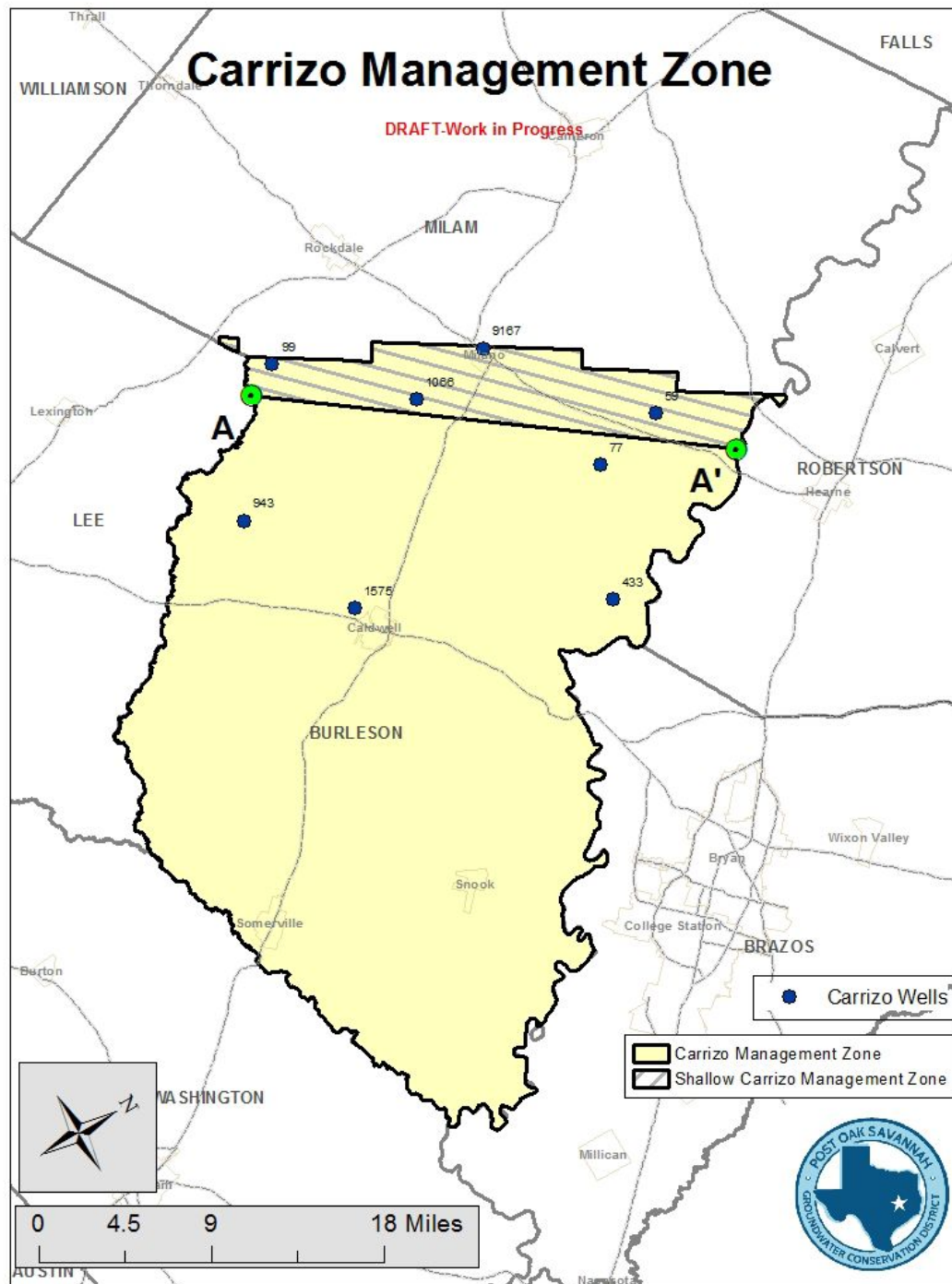
Calvert Bluff Management Zone

DRAFT-Work in Progress



Shallow Upper Wilcox (Calvert Bluff) Management Zone





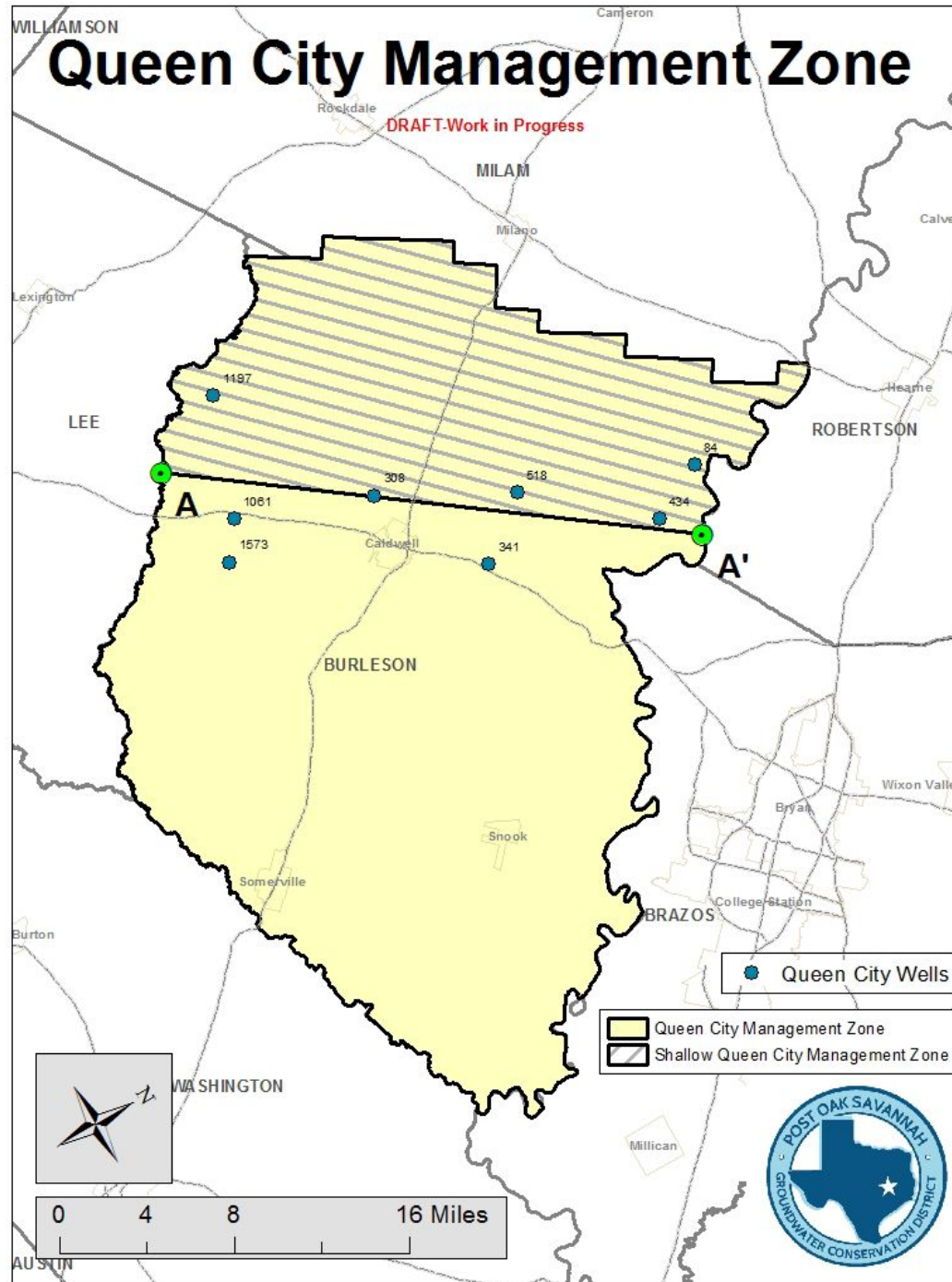
Carrizo Management Zone



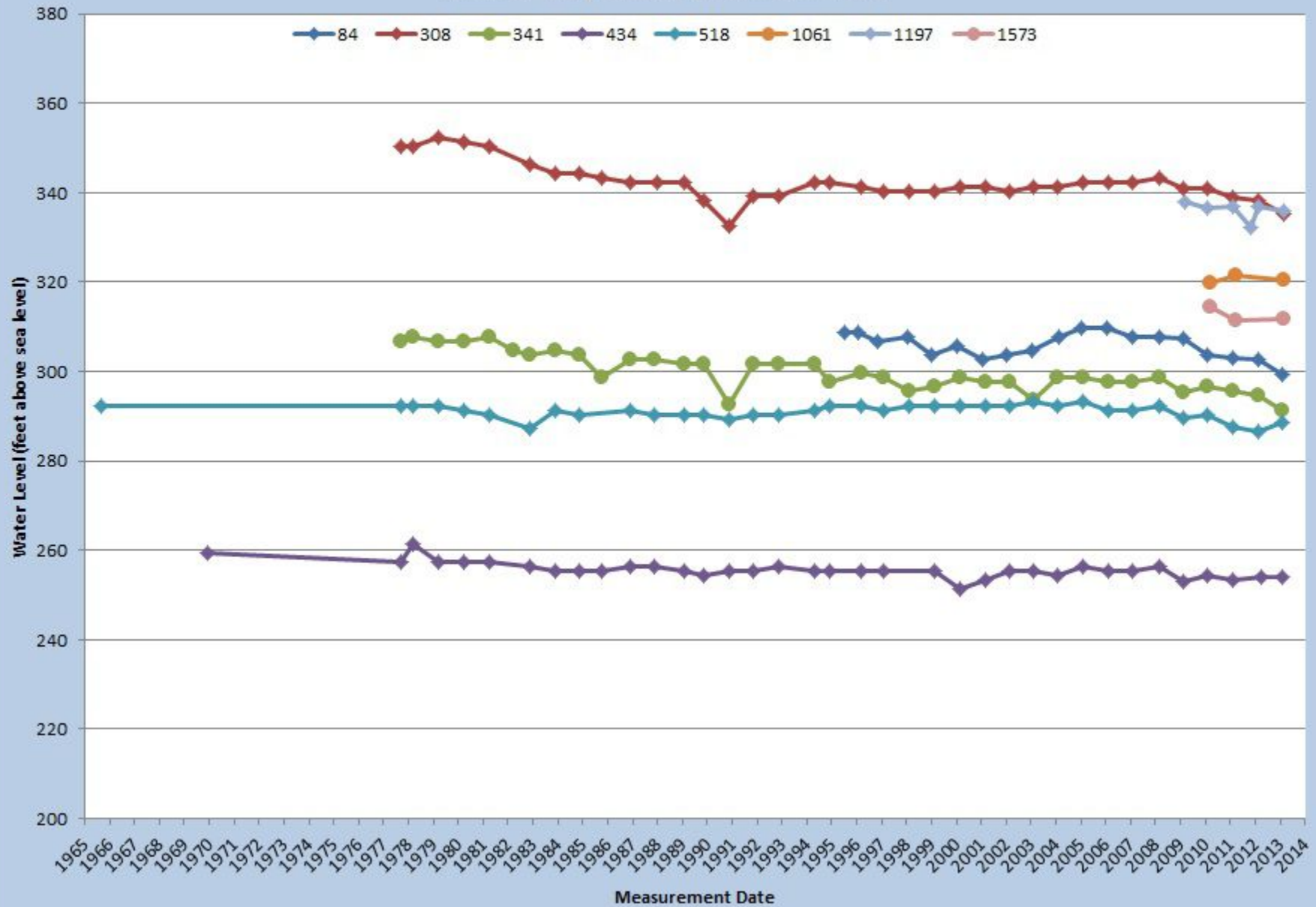
Note: Diamonds denote shallow zone wells, Circles denote deep zone wells

Queen City Management Zone

DRAFT-Work in Progress



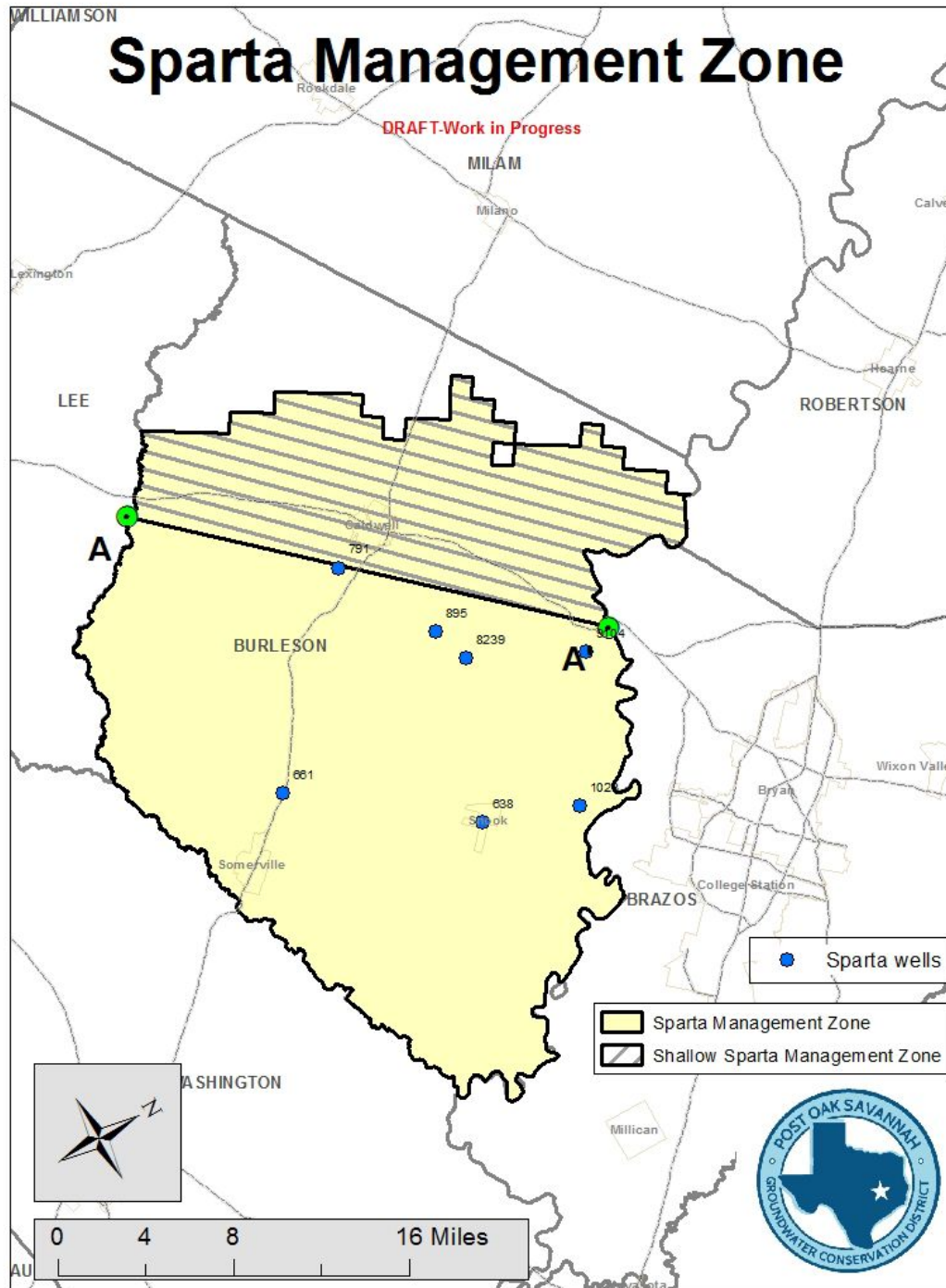
Queen City Management Zone



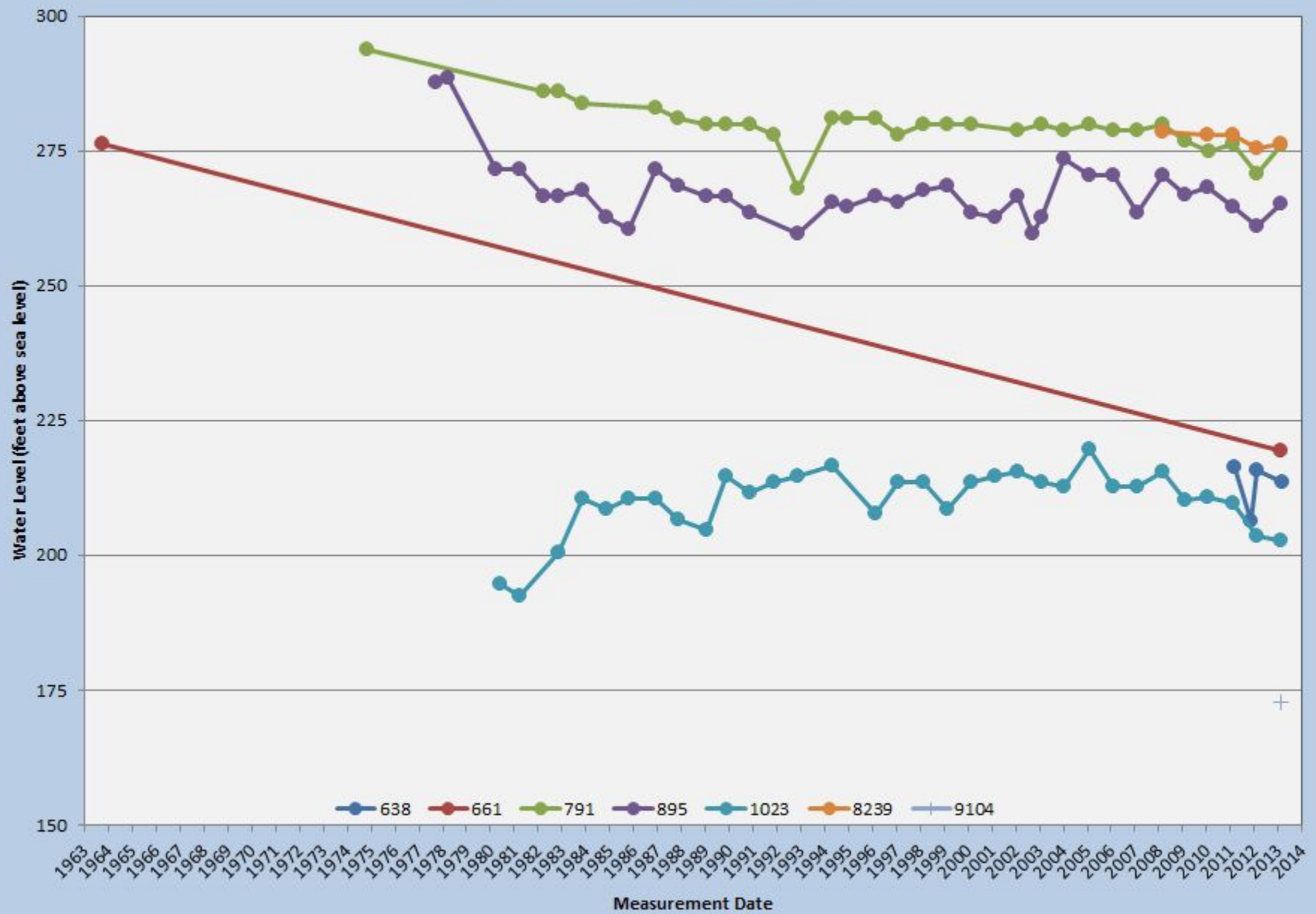
Note: Diamonds denote shallow zone wells, Circles denote deep zone wells

Sparta Management Zone

DRAFT-Work in Progress

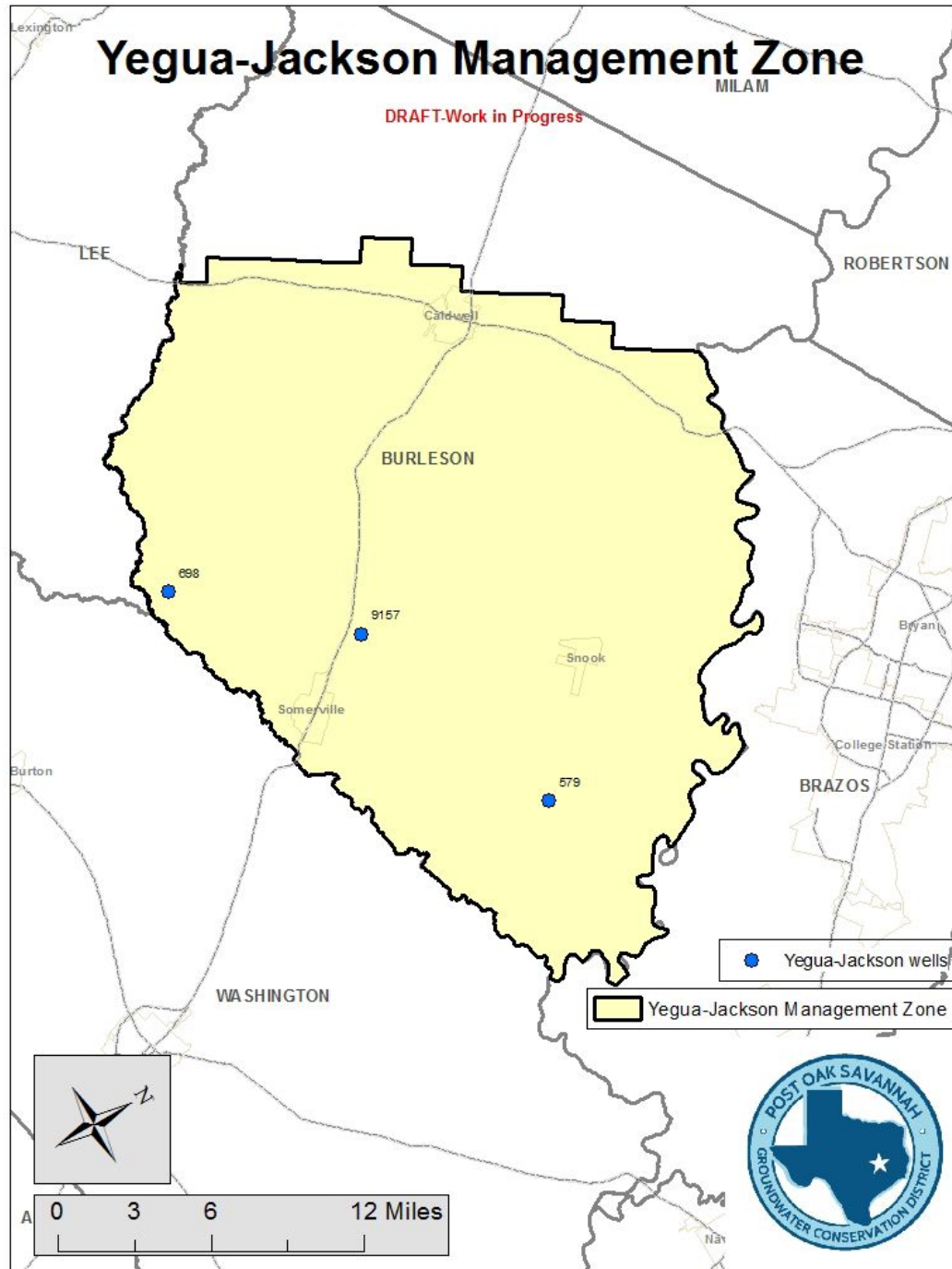


Sparta Management Zone

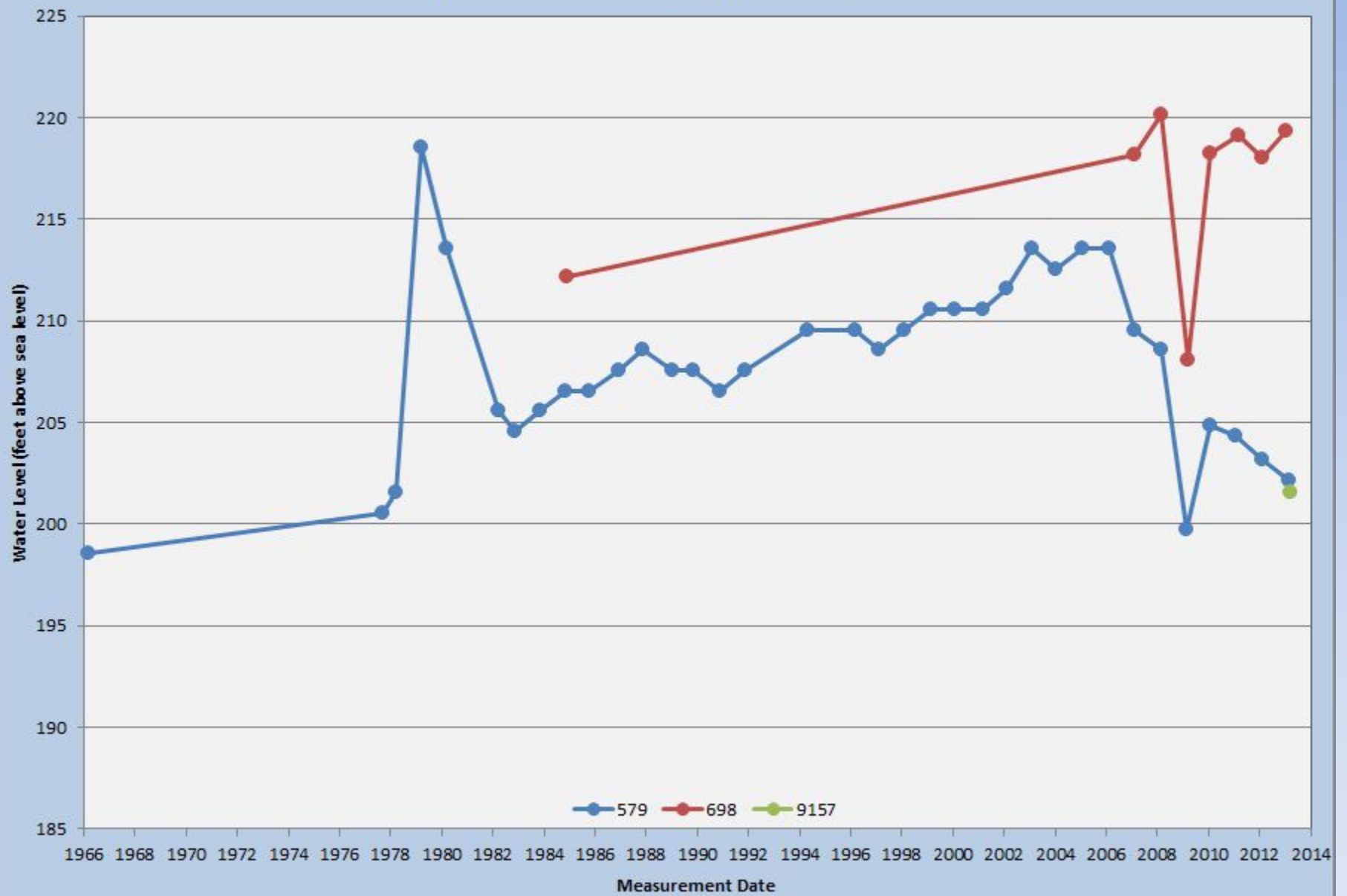


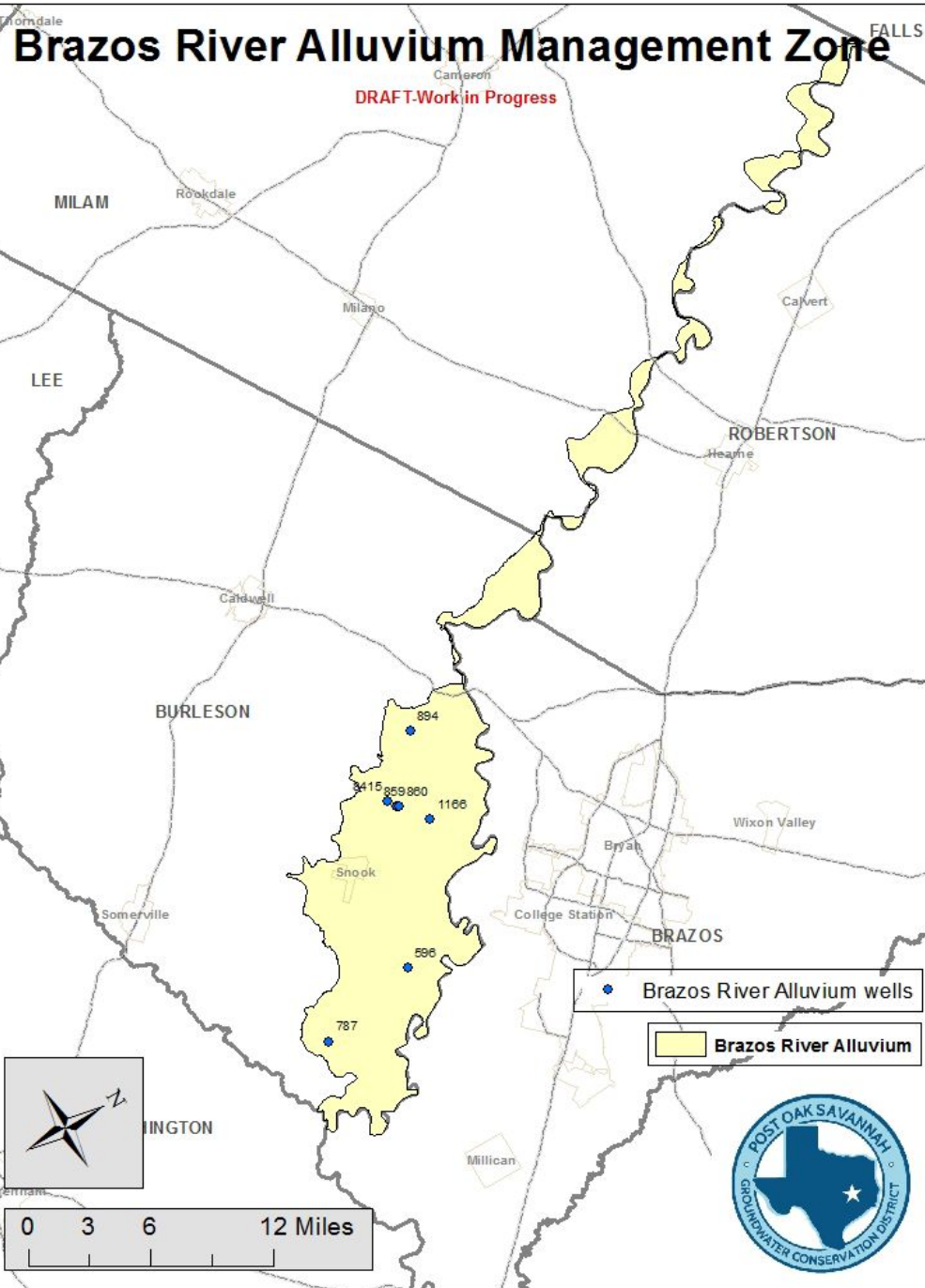
Yegua-Jackson Management Zone

DRAFT-Work in Progress

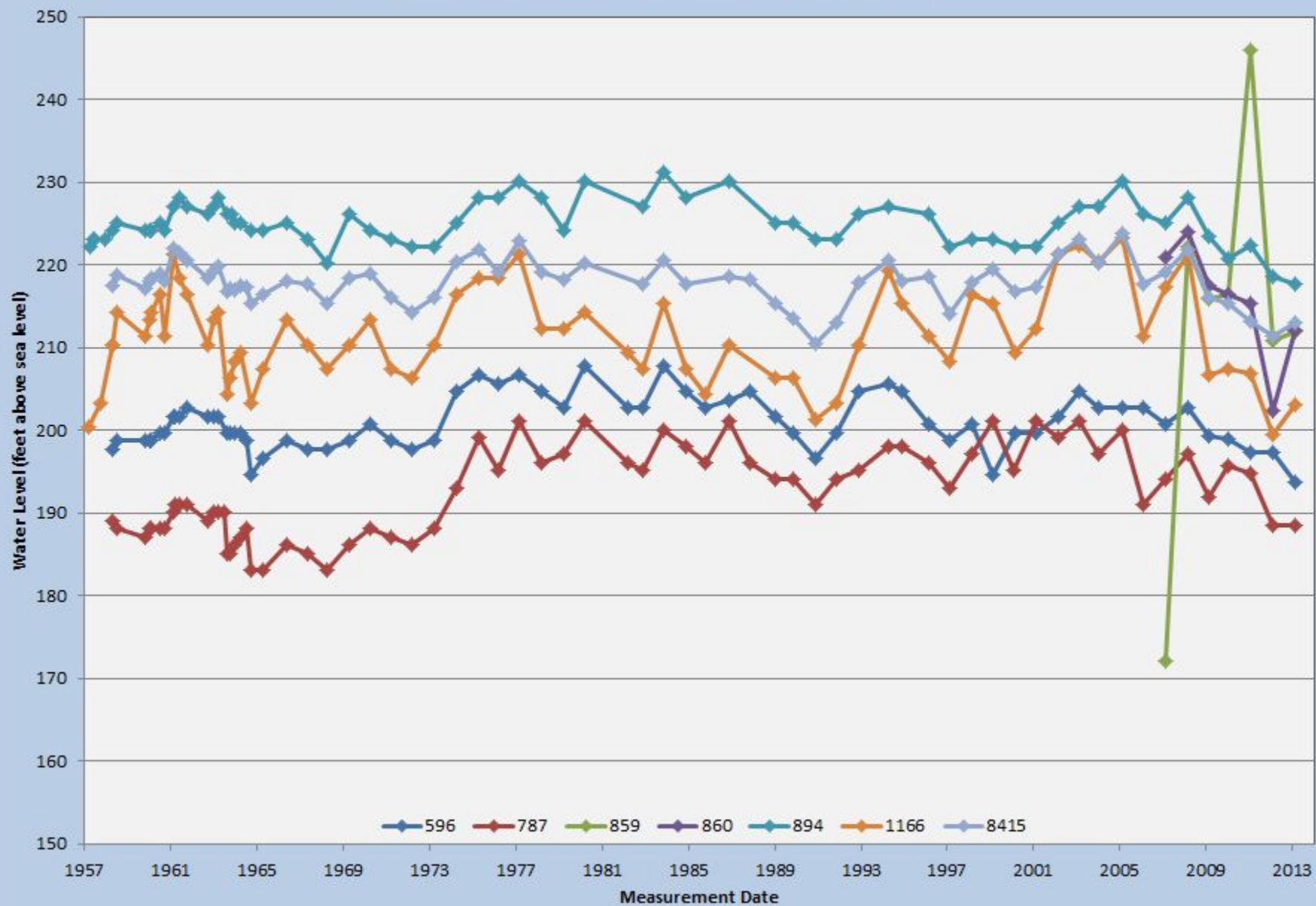


Yegua-Jackson Management Zone





Brazos River Alluvium Management Zone



Summary

- 73 monitoring wells
 - 60 incidental wells
 - 13 continual wells
- Preliminary Analysis:

Aquifer	Zone	# wells	Water Levels				Trend Last Five (5) Years
			Mean	Max	Min	Range	
Hooper	Shallow	6	354	401	239	162	<i>relatively constant, most wells dropping ~5 ft.</i>
Simsboro	Shallow	12	309	471	212	259	<i>relatively constant, most wells dropping ~2-10 ft, a couple dropped >10 ft</i>
Simsboro	Deep	17	248	328	116	212	<i>some wells dropping, but several raising as much as 30 ft.</i>
Calvert Bluff	Shallow	5	329	411	254	158	<i>Mixed results, No apparent trend</i>
Carrizo	Shallow	4	330	458	268	190	<i>relatively constant, mostly dropping ~2-6 ft.</i>
Carrizo	Deep	4	303	319	273	46	<i>relatively constant, mostly dropping ~2-6 ft.</i>
Queen City	Shallow	5	299	352	251	101	<i>relatively constant, a couple wells dropping ~10 ft.</i>
Queen City	Deep	3	302	321	291	30	<i>mixed results, but trending downward</i>
Sparta	Deep	7	251	294	173	121	<i>relatively constant, mostly dropping no more than ~10 ft.</i>
Yegua-Jackson		3	209	220	199	22	<i>Mixed results, No apparent trend</i>
Brazos River Alluvium		7	210	246	172	74	<i>Relatively constant, dropping ~10 ft.</i>

*Note: Data is preliminary and needs to be checked and verified

Future Activity: Monitoring Network

- Network Expansion
 - New Wells
 - Oil & Gas Well Conversions
 - Well Owner Volunteer
 - District Install
 - Existing wells
 - Increase measurement frequency
 - Use of pressure transducers
- Outreach / Education
 - Webpage
 - Meetings
- Collaborate with other agencies
- Database Enhancements

Future Activity: Data Approach

- Water Levels
 - DFC Compliance (GMA 12 and District Requirement)
 - Threshold Compliance (District Requirement)
- Pumping, Water Levels, Aquifer Properties
 - Well Spacing/ Management Zone Delineation
 - Updates to GAMs and Development of BRA GAM
- Groundwater Availability /Well Productivity
 - Mitigation Agreement
 - Maximum allowable production (MAP)
 - Updates to GAMs and Development of BRA GAM

Future Activity: Data Analysis

- Water Levels
 - QA/QC filters
 - Interpolation methods
 - Weighting options
- Pumping, Water Levels, Aquifer Properties
 - Correlation between pumping change and W.L. change
 - Small-scale aquifer tests
 - Geophysical logs and driller logs
 - Cost-effective & scale appropriate models
- Groundwater Availability /Well Productivity
 - Seasonal variability
 - Water quality
 - Regional and local models