Evaluation of the Newport Banning Ranch WSA & Newport Beach UWMP

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Contents

Executive Summary

The Newport Banning Ranch Water Supply Assessment is based on the 'paper water' found in the City's 2005 Urban Water Management Plan. NBR's WSA needs to be an evaluation of the city's real water supply and not simply restate a plan that greatly underestimated it. The point of SB 610 and SB 220, also known as the "Show me the Water Laws", is to assure that there is enough surplus water to support large projects that may not be accounted for in the most recent water plan. This WSA does not meet that standard. The WSA did not account for the shortfall of historical water supply, reduced Santa Ana River flows, and the City's ongoing growth that had already surpassed growth accounted for in the 2005 Urban Water Management Plan in 2010.

We find that unless a new WSA is performed that identifies new sources of water, then there is not enough city water supply to support it the project.

- In Section 1
    - We find that the 2005 UWMP had projected growth for only 1,039 additional units between 2005 and 2030 and that the proposed 1,375 units for the Newport Banning Ranch project is well over that 336 units.
    - Compounding the problem, we also found that by 2010, the City of Newport grew by 6,056 units which was 5,017 units over the UWMP projections.
    - If we factor in seasonal and recreational housing, the number grows to 6,993 units.
    - **This unaccounted for increase in housing units reinforces why WSA's should evaluate all of the conditions that impact water supply and not limit it to a simple review of the past UWMP.**
- In Section 2
    - The WSA points to an increase of water supply from 17,820 Af/y to 19,792. The implication is that this surplus (an increase from 200 to 220 gallons per capita daily) is enough to meet projects demand. However, we find that there is no surplus given the city's inability to access these projected demands. The increase in housing units and inability to meet supply targets has resulted in a decline to 164 gallons per capita daily.
- In Section 3
    - We find that all categories of the city's water supply sources of supply fell short of the UWMP's targets. This includes groundwater and imported water but not recycled water.
    - We also find that the city's UWMP has not been a reliable indicator of future water supply. Both 2000 and 2005 UWMP's stated the city had much more access to water than it really had.
    - We also found that the 2010 UWMP dropped its water supply projections by 21% which is perhaps why NBR choose to use the older 2005 UWMP with the paper water in it.
- In Section 4
    - We find that the WSA has exaggerated how much imported water is available to it during local droughts. We find that MWDOC has never been able to meet drought demands despite the WSA's claim the Metropolitan can meet this demand with 100% reliability.
- In Section 5
    - We confirmed earlier comments that there has been a 50% reduction of the Santa Ana River flows measured in cubic feet per second since 2007 by reviewing the stream data charts.

1. Projected Units

a) The City's UWMP accounts for only 1,039 new units while the proposed project has 1,375 units.

The proposed project's 1,375 units exceeds the 1,039 residential units accounted for in the 2005 UWMP by 387 units *(Figure 1)*.

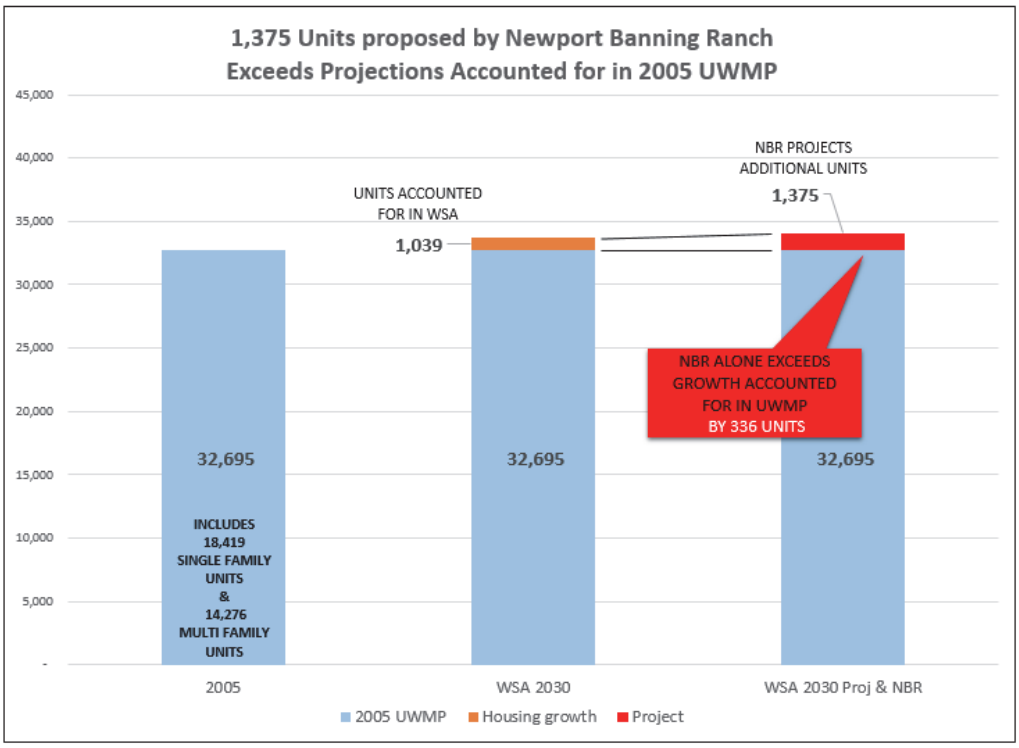

Figure 1 - Project Exceeds UWMP Projection

The City 2005 UWMP shows a net increase of 652 single family accounts, 136 multi-family accounts, and 101 commercial accounts.

To convert residential accounts to units, we need to add a 'density' multiplier of 2.828 to multi-family accounts. The density multiplier is based on the 2000 Census[1] for housing and provides for the average number of units per multi-family account.

Adjusting for density[2], the 5,048 multi-family accounts in 2005 shown in Figure 2 represents ~14,276 units. An increase of multi-family accounts to 5,184 in 2030 would represent an additional 387 units for a total of 14,663 units citywide. Single family accounts in 2005 represent 18,419 units. An increase in single family units in 2030 is 19,071 units. No density multiplier is needed for single family units and their increase during that period was projected for a total of 652 units.

In total, the UWMP projects an increase of number of single family and multi-family projected units of 1,039 units for a total of 33,734 units. *(Figure 2)*

[1] Newport Beach 2000 Census. Housing Tenure. http://www.newportbeachca.gov/home/showdocument?id=4709

[2] 14,663 housing units/5,184 accounts = 2.828 units per acct.

The project proposed 1,375 units is 336 more units than is projected in the UWMP and the WSA does not cite where the additional water will come from.

2005 UWMP								Units When Adjusted for Density		
HOUSING (Accounts)	2005	2010	2015	2020	2025	2030	increase	2005	2030	net resid
single fam	18,419	18,588	18,747	18,909	19,071	19,071	652	18,419	19,071	652
multi-fam	5,048	5,052	5,096	5,140	5,184	5,184	136	14,276	14,663	387
comm	1,863	1,914	1,931	1,948	1,964	1,964	101	-	-	
Total	25,330	25,554	25,774	25,997	26,219	26,219		32,695	33,734	1,039

Figure 2 – Table showing UWMP Projected Housing Units[3]

b) The Housing Growth in the City exceeded growth accounted for in the City's UWMP.

Planning departments and water agencies do not track or report the incremental increases in water demand for new housing that falls under the 500 unit CEQA threshold so there is no way to know if the incremental water demand has exceeded the projected growth found in the UWMP. To effectively evaluate the impacts a project will have on the city's water supply, a Water Supply Assessment should include this incremental demand.

As noted in the Section 1A above, the WSA reports that there was 23,467 single-family and multi-family 'accounts'. When density is factored in for multi-family accounts, we find there were 32,695 units in the city in 2005. The 2010[4] U.S. Census reports that the city's total housing rose 38,751 for a net increase of 5,017 units. This increase of 5,017 units *(See Figure 3)* is not accounted for in the WSA and far outstrips the 1,039 units that was projected in the 2005 UWMP. Adding the NBR project to the unaccounted for units increases the total to 6,392 units.

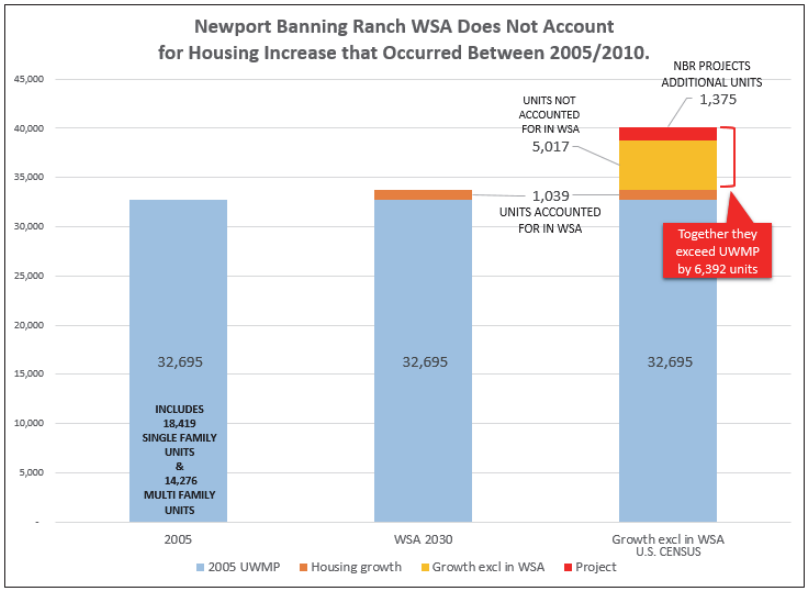

Figure 3 - City Growth Exceeds UWMP Projections

Adding further to the demand, if we include the seasonal and recreational housing of 937 units found in the census, the net increase would be 5,954 units. In a coastal city such as Newport Beach where good weather is year round, water consumption in seasonal and recreational housing may not be significantly different from 'occupied housing'.

[3] Not enough information was provided in WSA to include commercial and landscaping so it was purposely omitted to maintain focus on housing element.

[4] Newport Beach 2010 Census http://www.newportbeachca.gov/home/showdocument?id=13487

2. Population and GPCD

Actual available water supply fell dramatically between 2005 and 2010.

The WSA states in Table 7-2 (see *Figure 12*) the city's supply was 17,820 Af/y in 2005. With a population of 79,320[6] this would suggest an average city supply of 200.6 gallons per capita daily which would also include commercial, government, and landscape.

Generally, we find the supply values reported in UWMP to be quite close to actual supplies delivered in the year that the UWMP was published. However, in future years, water agencies usually *overestimate* supply to bank water[5] used by somebody else. We verified that this unfortunate tendency to overestimate future water supply also occurred in the 2005 UWMP by comparing projected supply with the historical records supplied by OCWD and MWDOC.

A public records request was made to both the MWDOC and OCWD for historical records of water sales that were made to the Newport Beach utility district. The information received was compiled and compared to the UWMP *(Figure 9)* which is cited in the WSA.

Citing a population of 85,250[6], the WSA states that the available water supply in 2010 would increase to 19,792 Af/y giving the city 220 GPCD and implying there will be a surplus of water. However, when we look back at the 'actual amount', we find that the City received only 15,688 AF. With less water and a larger than projected population of 85,185[6], the per capita supply fell 25 percent to just 164.4 GPCD. *(Figure 4)*

In each succeeding year this WSA projected water supplies exceeding 19,000 Af/y (*Figure 12*). Given that actual deliveries fall short of projections by ~21 percent we can only conclude that this is paper water. The long term result is a water supply deficit that hits the community economically and by quality of life.

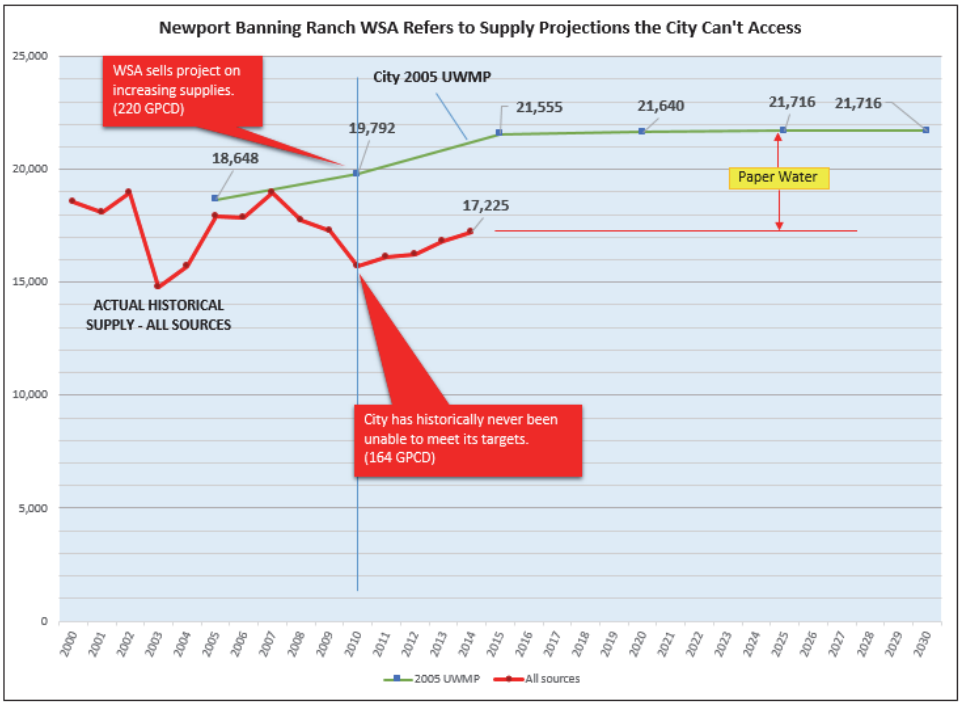

Figure 4 – Gallons per Capita Daily (GPCD)

[5] Water for Growth - California Water Plan Update 2009. http://www.waterplan.water.ca.gov/cwpu2009/index.cfm

[6] WSA, Table 5-1 on page 11

3. Supply Source Projections v. Actual Delivery

a) Merely citing the UWMP does not provide evidence of available water supply.

A public records request was made to both the MWDOC and OCWD for historical records of water sales that were made to the Newport Beach utility district. The information received was compiled and compared to the UWMP *(Figure 9)* that the WSA cites as demonstrating sufficient supply for the Newport Banning Ranch project.

The WSA relies on the fact that it can build this project because it states that the City will have and continuously be able to maintain substantial groundwater and imported supplies.

However, we found that the city has not been able to meet the supply projections noted in the WSA and the City's UWMP. The chart at Figure 5 shows the combined actual supply from MWDOC (imported water), OCWD wells (groundwater) and recycled water and compares that to the WSA's projections.

Using UWMP data, the proposed project suggests that it has access to substantial surplus water that we find really isn't available, hence paper water.

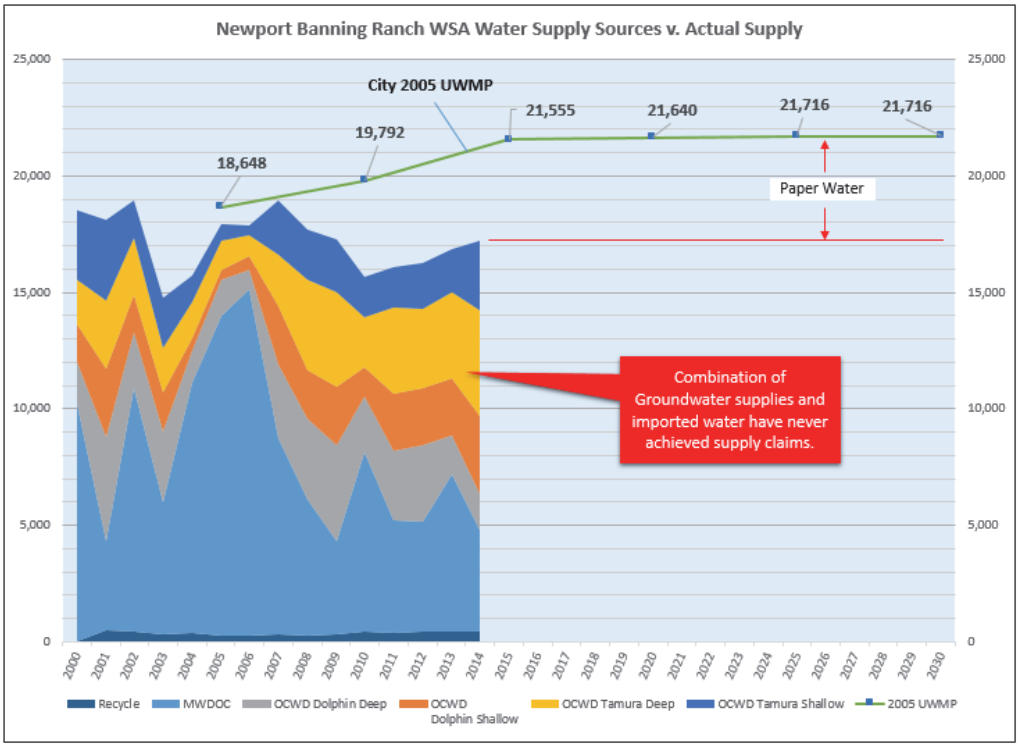

Figure 5 – Comparison of City of Newport Historical Supply to UWMP Projections

i. **Groundwater -** The WSA suggests that the City would have available to it and would be receiving 11,287 to 14,921 Af/y of groundwater between 2008 and 2015 *(Figure 12)*. However, the average supply from the four wells belonging to the City between 2008 and 2014 has been only 10,883 Af/y.

ii. **Imported Water -** The WSA suggests the City would have available to it and be receiving 3,743 Af/y of imported water in 2008 and increasing to 6,157 Af/y by 2015. However, the average supply to the City from MWDOC has only been 5,457 Af/y between 2008 and 2014.

iii. **Recycled Water –** Recycled water is purchased separately from OCWD through the Green Acres Project. Over the last 5 years the City has been purchasing an average of 422 Af/y which suggests that it's met its projections.

b) Past City UWMP's haven't been Reliable Enough to Be Taken at Face Value

> In an article that appeared in the **2005 California Water Update** called '*Water for Growth*'[7] the author noted that *"a majority of utilities are reporting substantial normal-year surpluses. The magnitudes involved—some 2 million acre-feet per year—**suggest that many utilities are banking on "paper water" already being used by someone else within the state's water system.**"*
>
> It further cites that ***"land-use authorities may not be led to adequately considering the water supply consequences of growth.** Second, even in jurisdictions with municipal water departments, elected officials may take a shorter-term view of resource adequacy than area residents do. If—as is often asserted—land-use authorities are aligned with pro- development forces, they may be inclined to favor growth..."*

We noted in Section 2 that water agencies tend to overestimate future water supplies to 'bank water' already being used by someone else. This leads us to ask how reliable were the City's past UWMP's in forecasting available water supply? Historical evidence shows us they are not reliable at all. WSA's and the UWMP' they rely on all promise lots water for future growth but they misrepresent how much we really have access to. This is called 'Paper Water'.

The following chart shows the water supply projections in the City's 2000, 2005 and 2010 UWMP's. Both the 2000 and 2005 UWMP's cited that the city would have more than 19,700 Af/y within 5 years of their adoption and it didn't happen in either case.

In both plans, city planners and residents were told the city would have sufficient water for growth. However, instead of 20,000 Af/y as promised, what the City had access to was just 17,000 Af/y thus creating a deficit.

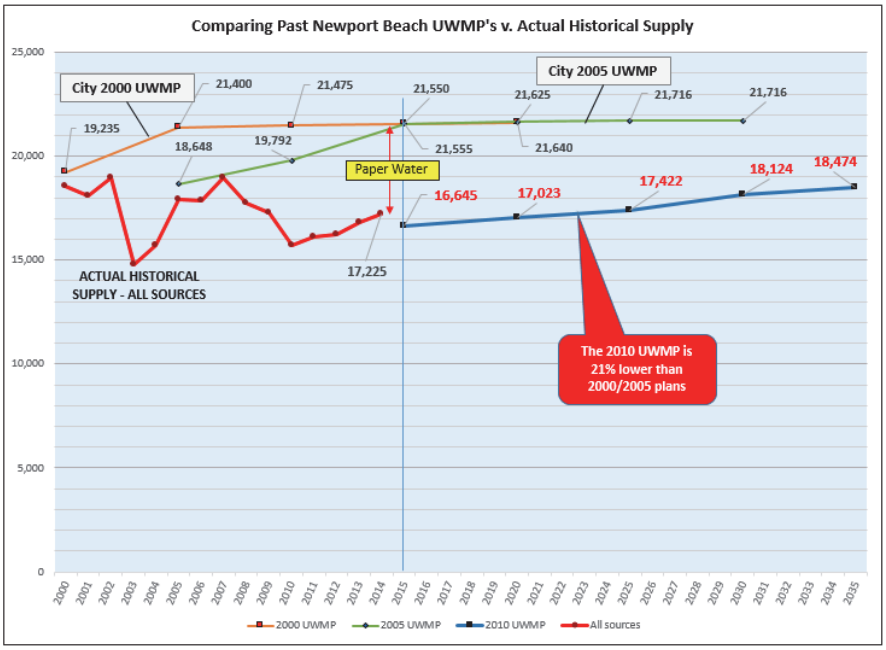

Figure 6 – Comparing the City's Projections v. Actual Supply

This chart also holds some special significance since it may suggest why NBR does not want to revise the WSA using 2010 UWMP.

After years of overly optimistic projections, the City finally acknowledged that this was never going to be met. The **2010 UWMP lowered its projections 21% to an average of 17,761 Af/y.** Any surplus that the project sought to have, real or imagined, saw that disappear in the 2010 plan.

[7] *E. Hanak (2005) Water for Growth.* California Water Plan Update 2009. http://www.waterplan.water.ca.gov/cwpu2009/index.cfm

4. Dry Year Forecasts Points to Drought Recovery Flaw

WSA Exaggerated Dry Year forecasts point to drought recovery flaw

The WSA, using UWMP figures suggests that the City will have substantial surplus water is available to it when the City's local ground water supplies fall short.

This is another common reporting phenomena that can be found in most urban UWMP's. In Table 4-9 of the UWMP shown in (Figure 14) and Table 8-2 (Figure 13).

In the WSA we find the claim that the City can increase imported water from 140 to 160% *(Figure 14)* in single and multi-dry years when local ground water is in short supply. The rationale behind this is that single and multi-dry years are a local groundwater shortage problem that can be resolved by importing water. In fact, the 2005 UWMP and WSA both assure that **"Metropolitan Water District indicates it can provide 100% of the supply demanded by its member agencies through 2030"**[8].

However, **in 2007 *we find that this strategy is no longer viable***. In that year, a court found that the huge deliveries of water through the State Water Project had a serious environmental downside and it ordered the DWR[9] to sharply cut back supplies to Central and Southern California. Multi-dry years weren't just a local problem; they were also a State problem.

A review of the historical supply figures shows that since 2007, the MWDOC supply has not been able to provide the additional water that is cited in the WSA for dry and multi-dry years. From 2000 to 2006 the City's average MWDOC supply was 9,933 Af/y. This dropped to an average of 5,827 Af/y between 2007 and 2014. *(See Figure 9)*

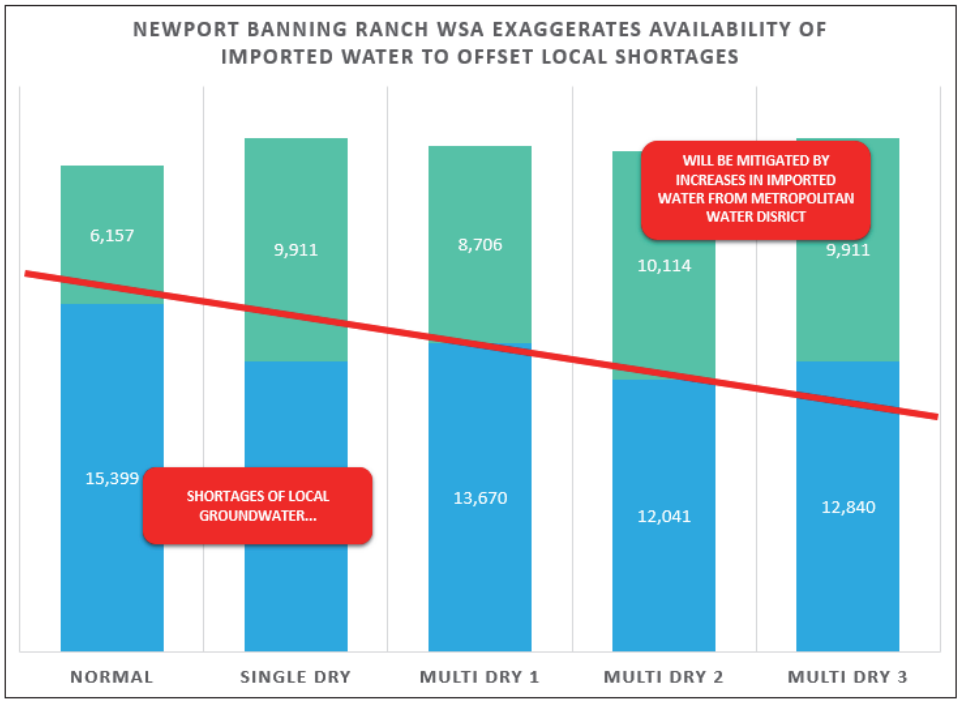

Figure 7 - Dry Year Source Strategy

[8] NBR Water Supply Assessment. Page 4, Para. 5

[9] Delta Smelt Decision. Natural Resources Defense Council v. Kempthorne, E.D.Cal., 2007

5. Santa Ana River Supply

Santa Ana River flows are substantially reduced.

A new WSA should be performed because the original WSA was based on a wet period. Since that time there has been significantly reduced flows on the Santa Ana River and subsequent reduced recharge in the basin.

At a recent Westchester/Playa Water forum, Michael R. Markus, General Manager of the Orange County Water District spoke about OCWD recycling program and recycling efforts of other agencies. In his remarks he stated that OCWD has been impacted by reduced Santa Ana River flows and attributed some of it to upstream water agencies that are making a better effort at recycling their sewage instead of just treating it and releasing it into the Santa Ana River. This has resulted in reduced flows and less water for OCWD to treat.

To verify what Mr. Markus intimated, we reviewed gage data located at an entry point into OCWD basin. The chart in Figure 8 shows flows of the Santa Ana River at the gage (11074000[10]) below Prado Dam between 2007 and 2015 and confirms both the General Manager's comments and the comments made by Newport Beach Conservancy of reduced flows.

From Oct 2007 to Jan 2011 flows averaged 297 CFS. From Jan 2011 to Sep 2015 flows averaged just 166 CFS amounting to a 50% drop.

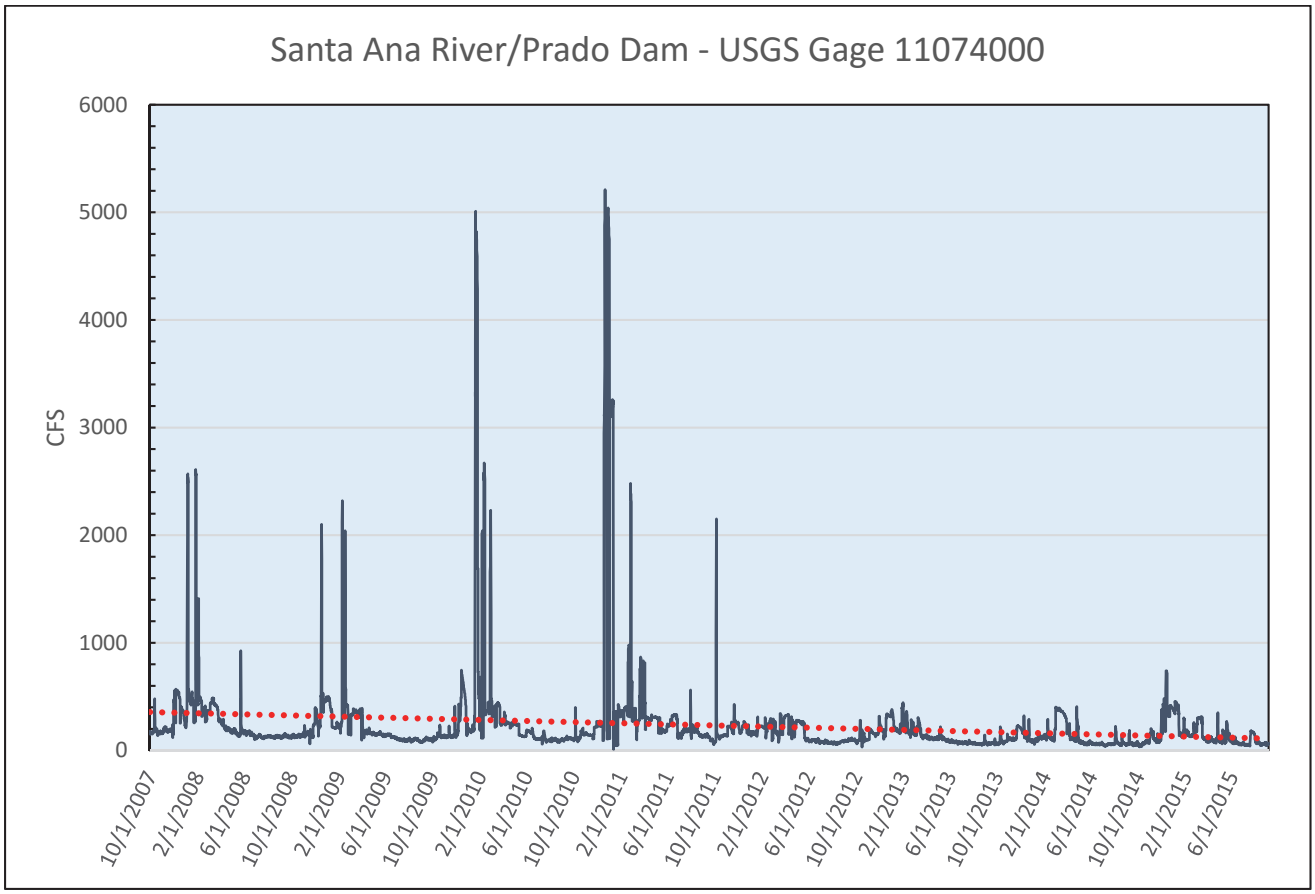

Figure 8 – Santa Ana River flow at OCWD basin

[10] USGS Gage http://waterdata.usgs.gov/usa/nwis/uv?site_no=11074000

Conclusion

The Newport Banning Ranch Water Supply Assessment is based on the 'paper water' found in the City's 2005 Urban Water Management Plan. NBR's WSA needs to be an evaluation of the city's real water supply and not simply restate a plan that greatly underestimated it. The WSA does not assure the residents of the City that there is enough water the projects and still meet the needs of the residents. We find that unless a new WSA is performed that identifies new sources of water, then there is not enough city water supply to support it the project.

About

David Coffin is a manufacturing engineer whose interest carries over to California water infrastructure, water history and policy and its relationship to growth. Mr. Coffin's research into urban water supply began in 2000 when he served for two elected terms (eight years) as a board member on the Neighborhood Council of Westchester/Playa in the City of Los Angeles.

Mr. Coffin researches and writes about water supply at *www.DroughtMath.com* - *A Critical Look at the City of L.A. Water Supply Policy* and his columns are occasionally appear on CityWatchLA.com.

Appendix

NEWPORT BEACH HISTORICAL SUPPLY 2000 – 2015 With 2005 Projected Supply							
Year	MWDOC	OCWD Dolphin Shallow	OCWD Dolphin Deep	OCWD Tamura Deep	OCWD Tamura Shallow	Total	2005 UWMP
2000	10,261.1	1,594.4	1,791.1	1,915.8	2,990.5	**18,552.9**	
2001	3,829.8	2,907.0	4,489.8	2,925.1	3,487.2	**17,638.9**	
2002	10,403.9	1,656.7	2,391.0	2,402.1	1,643.2	**18,496.9**	
2003	5,661.2	1,688.1	3,005.0	1,885.2	2,194.4	**14,433.9**	
2004	10,722.9	528.5	1,362.0	1,584.2	1,127.5	**15,325.1**	
2005	13,761.1	452.8	1,507.4	1,241.8	689.1	**17,652.2**	**18,648**
2006	14,895.8	568.8	815.9	921.6	406.8	**17,608.9**	
2007	8,413.9	2,493.2	3,208.5	2,184.1	2,374.1	**18,673.8**	
2008	5,843.8	2,113.2	3,465.9	3,834.0	2,200.9	**17,457.8**	
2009	3,996.7	2,520.4	4,143.6	4,030.6	2,294.6	**16,985.9**	
2010	7,705.2	1,277.1	2,382.1	2,125.9	1,766.2	**15,256.5**	**19,792**
2011	4,854.6	2,401.0	3,007.8	3,750.5	1,722.6	**15,736.5**	
2012	4,732.7	2,475.5	3,266.7	3,397.2	1,962.8	**15,834.9**	
2013	6,732.2	2,444.7	1,658.2	3,686.1	1,844.2	**16,365.4**	
2014	4,339.1	3,365.2	1,521.1	4,517.7	3,008.4	**16,751.5**	
2015	-	885.0	1,515.9	1,707.4	1,087.6	5,195.9	**21,556**
2016							
2017							
2018							
2019							
2020							**21,640**
2021							
2022							
2023							
2024							
2025							**21,716**
2026							
2027							
2028							
2029							
2030							**21,716**

Figure 9 – Historical Supply to Newport by OCWD and MWDOC.

Table 3-2. (DWR Table 12) Past, Current, and Projected Water Deliveries (AFY)

Year	Water Use Sector	Single-Family	Multi-Family	Commercial	Industrial	Instit./Gov.	Landscape	Agricultural	Total
2000 Metered	# of accounts	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	deliveries (AFY)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2005 Metered	# of accounts	18,419	5,048	1,863	0	397	623	0	26,350
	deliveries (AFY)	7,484	2,727	3,760	0	903	2,842	0	17,723
2010 Metered	# of accounts	18,588	5,052	1,914	0	399	638	0	26,591
	deliveries (AFY)	8,085	2,820	3,948	0	940	3,008	0	18,801
2015 Metered	# of accounts	18,747	5,096	1,931	0	402	644	0	26,820
	deliveries (AFY)	8,805	3,072	4,300	0	1,024	3,276	0	20,477
2020 Metered	# of accounts	18,909	5,140	1,948	0	405	649	0	27,051
	deliveries (AFY)	8,840	3,084	4,317	0	1,028	3,289	0	20,558
2025 Metered	# of accounts	19,071	5,184	1,964	0	409	655	0	27,283
	deliveries (AFY)	8,870	3,095	4,333	0	1,032	3,301	0	20,631
2030 Metered	# of accounts	19,071	5,184	1,964	0	409	655	0	27,283
	deliveries (AFY)	8,870	3,095	4,333	0	1,032	3,301	0	20,631

Figure 10 – Table from UWMP showing projected accounts and water supply.

Table 5-1 – Existing & Projected Population in Service Area

	2005	2010	2015	2020	2025	2030
Population	79,320	80,250	81,052	81,863	82,681	83,508

SOURCE: City UWMP (December 2005).

Figure 11 – WSA Projected Population Growth

City of Newport Beach

The City's 2005 UWMP contains a comparison of projected water supply and estimated demands through the year 2030. The potable water resources necessary to meet projected demands include imported water (30%) and groundwater (70%). Existing and projected supplies to the City are shown in **Table 7-2**.

Has Newport Beach been meeting these projections?

Table 7-2 – Existing and Projected Supplies

Supply Source	Annual Amount (af/yr)								
	FY 05-06	FY 06-07	FY 07-08	FY 08-09	2010	2015	2020	2025	2030
MWDOC (Imported)	14,012	15,093	3,743	5,843	5,758	6,157	6,362	6,226	6,256
OCWD (Groundwater)	3,558	3,605	14,338	11,287	13,590	14,921	14,778	14,990	14,960
Recycled Water	250	311	265	299	443	477	500	500	500
Total	**17,820**	**19,009**	**18,346**	**17,429**	**19,791**	**21,555**	**21,640**	**21,716**	**21,716**
% Potable from Groundwater	**20%**	**19%**	**79%**	**66%**	**70%**	**71%**	**70%**	**71%**	**71%**

SOURCE: City UWMP (December 2005), City demand records.

Figure 12 – WSA Showing existing & projected water supply

Table 8-2 – Projected Water Supply and Demand
(Normal, Single Dry-Year, and Multiple Dry-Years)

Description		Annual Amount (af/yr)				
		Normal Year	Single Dry-Year	Multiple Dry-Years		
				Year 1	Year 2	Year 3
2015						
Total Projected Demand		21,555	22,751	22,376	22,155	22,751
Available Supply	MWDOC (Imported)	6,157	9,911	8,706	10,114	9,911
	OCWD (Groundwater)	14,921	12,363	13,193	11,564	12,363
	Recycled Water	477	477	477	477	477
Total Available Supply		21,555	22,751	22,376	22,155	22,751
% Potable Supply from Groundwater		71%	56%	60%	53%	56%
Difference		0	0	0	0	0

Figure 13 – Newport Banning Ranch WSA

2015	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years		
			2008 (1959)	2009 (1960)	2010 (1961)
Local Supply	15,399	12,840	13,670	12,041	12,840
% of Normal					
Imported Supply	6,157	9,911	8,706	10,114	9,911
	% of Normal	161.0%	141.4%	164.3%	161.0%

Figure 14 – Table 4-9 of the City of Newport 2005 UWMP