




MEMORANDUM

TO: Jason Gray, City Manager
FROM: Joe Williams, Deputy City Manager 
DATE: January 11, 2011
SUBJECT: North Texas Municipal Water District and the Drought

Current Conditions:

The North Texas area is currently in "the drought of record" conditions with an expectation of average, to below average rainfall expected through the summer of 2012. The average rainfall in the next 6 months is approximately 16 inches. According to the North Texas Municipal Water District (NTMWD) it will take in excess of 25 inches of rain in the next 6 months to replenish the reservoirs to conservation levels (for Lake Lavon 492 feet). Some forecasters believe the drought will last until 2016.

In November 2011, the city of McKinney initiated Stage 3 water restrictions at the recommendation of the NTMWD. Stage 3 conservation efforts are intended to reduce our water consumption by at least 10% as stated in the Drought Contingency policy adopted by council in October 2011. For the month of December 2011 we have reduced our per capita consumption by 6% in comparison to December 2010. With more communication to the public, education and enforcement, we believe further reductions will occur over the next few months and bring us to the 10% overall reduction goal.

The pumping of water from Lake Texoma to Lake Lavon has ceased due to an invasive species known as zebra mussels that currently reside in the Red River basin. The pumping of water from Texoma accounts for roughly 30% of the surface water utilized by NTMWD. The NTMWD is currently working with the Army of Corps of Engineers and the US Fish and Wildlife Service to resume seasonal pumping to Lavon but several obstacles stand in the way. Once water temperatures in Texoma reach 52 degrees, zebras do not spawn and therefore can be pumped into Lavon. However, NTMWD has also been notified if allowed to pump, and mussels are found downstream in the Trinity basin, the district could be held liable for damage, eradication or maintenance of other pumping equipment. This restriction will have to be overcome with federal legislation that is currently being drafted.

Lake Chapman is another reservoir in which water is pumped to replenish Lake Lavon. Currently Lake Chapman is currently depleted to a level that further pumping is not allowed until the lake level rises significantly.

NTMWD is in the process of finalizing an agreement with the City of Dallas to purchase up to 60 MGD to be injected into the NTMWD system. It is expected to take several months to finalize the agreement.

Future Considerations:

It is likely that following the January 26th board meeting of NTMWD, member and customer cities will be asked to enter into Stage 4 drought contingency plans. While there are examples of what Stage 4 entails, the director of NTMWD, can either lessen or increase the level of restrictions based on current conditions. It is important to note that there is not a specific reduction goal specified in the policies. The director may set a reduction goal amount for Stage 4, in addition to the Stage 3 percentage goal of 10%.

Several meetings have been occurring over the last 6 months regarding the drought conditions. These meetings have been attended by city management staff and/or public works administration. We are currently assessing the impact of Stage 4 on city activities and operations, the impact to homeowners and business owners, and the long term effects of economic development should the drought or water restrictions last into the foreseeable future.

Several scenarios exist presently that are likely to require staff discussion and council actions. I've bulleted some of the issues we are soon to be confronted with:

When to initiate Stage 4? Currently Stage 3 (as recommended by NTMWD) is to expire March 31, 2012. Some member cities are deliberating the idea of starting Stage 4 on April 1, while others believe June 1 is more appropriate. The answer to this lies in the definition of Stage 4. By NTMWD policy, Stage 4 automatically occurs when the level of Lake Lavon is at 35% of conservation level (475 feet). We are currently at 480 feet and expect little depletion until May-June time period. The idea of some is to restrict outdoor watering early so as to prevent homeowners planting spring landscaping only to be told in June they can't water the plants.

What is Stage 4? The written policies, or guidelines, do not specify what actions occur in Stage 4. The restrictions listed in Stage 3 are still relevant, plus additional restrictions either placed by the director of NTMWD, the city council or city manager. It's widely believed that Stage 4 is the prohibition of outdoor watering except by soaker hose, drip system or by handheld sprinklers. In conversations with NTMWD, it is possible to enter into a Stage 4 scenario while still be allowed some sort of outdoor watering as long as cities are doing so in a responsible, conservative manner.

What are the effects on business? In recent conversations, NTMWD has stated they do not desire to limit the building of swimming pools or infringing on businesses such as car washes. Landscaping companies may suffer some limitations, but those are yet to be defined.

How will reduced water sales impact the FY 12 budget? Attached to this memo is an analysis prepared by the Finance Dept. illustrating how reductions in water consumption will impact our current budget. Several assumptions are made in the analysis (a 10%

reduction from Nov. 11 to Apr 12, and a 20% reduction from Apr 12 to the end of the fiscal year). It appears that in this scenario there will be an overall 3.2 million dollar loss to the water and wastewater funds. This is based on the reduced amount of water sales, the effect the reduction has on wastewater revenues, and all rebates from NTMWD for water not utilized (take or pay). If the fund balance was to absorb the loss, it is estimated that our reserve would be reduced from the current 114 days to 92 days. If this is a one year scenario, it is not insurmountable. If this is a multi-year crisis, this reduction without rate increases is unsustainable.

Conclusion:

I've attached the financial analysis and a memo from the public works director on issues that we're currently considering. We will continue to attend local meetings, working with NTMWD, using all available legislative initiatives and communicating with our neighboring cities, citizens and businesses.

There are no simple solutions to the drought conditions. Rainfall is the only true solution. We need to take this matter seriously and prepare for worst case situations. I believe there are identifiable, responsible, and conservative approaches the member and customer cities can take to alleviate the shortage of water in the near terms.

Please recall that the memo attached are talking points to discuss as no decisions on what type of restrictions will or will not be imposed.

I look forward to answering the questions you may have.



MEMORANDUM

PUBLIC WORKS

TO: Joe Williams, Deputy City Manager

FROM: Hal Cranor, Executive Director of Public Works

DATE: January 5, 2012

SUBJECT: Impact of Stage 4 Drought Restrictions on the City of McKinney

cc: Lemuel Randolph, Harlyn Farrell, Tim White, Steve Brainerd, Lori Dees, Rob Daake, Michael Hebert

One of the topics discussed during the December, 2011, North Texas Municipal Water District (NTMWD) Meeting, was initiation of Stage 4 of the Drought Plan. The primary issue addressed was not if, but when, Stage 4 will be implemented; the majority of the attendees preferred April 1, 2012. A spring, rather than a summer implementation date, would deter citizens from buying and planting new vegetation that could not then be watered, for example, in June or July.

If Stage 4 is implemented, the following water use restrictions could apply:

1. Continue Stage 3 restrictions.
2. Prohibit irrigation of new landscaping using treated (potable) water.
3. Prohibit washing of vehicles/equipment except as necessary for health, sanitation or safety reasons.
4. Prohibit commercial or residential landscape watering. However, foundations and trees may be watered for 2 hours/day with a handheld hose, a soaker hose, or a dedicated zone using a drip irrigation system. ET/Smart irrigation systems will NOT be exempt from this restriction.
5. Prohibit golf course watering with treated water except for greens and tee boxes.
6. Prohibit permits to construct private pools.
7. Require all commercial water customers to reduce water use by a percentage established by the City Manager, Mayor and City Council, or their designee.
8. If NTMWD imposes a percent water use reduction for McKinney, then impose that same percent reduction on the city's wholesale customer, i.e., North Collin Water Supply Corporation.
9. Initiate a rate surcharge for all water use which exceeds normal usage for all customers.

The following are some of the potential issues and/or questions which may be relevant when the preceding restrictions are imposed:

1. How will the city deal with granting Certificates of Occupancy for new construction since new landscaping, a requirement, cannot be watered?
2. How will the car wash businesses be affected if washing of vehicles is prohibited except for the reasons stated in Restriction No. 3?
3. How will outdoor watering restrictions be enforced except as stated in Restriction No. 4? For example, will an irrigation water meter be locked for repeat violations? Are the current enforcement efforts adequate? Will warnings for Stage 4 offenders still be issued? Will the amount of fines be increased?
4. Is 2 hours/day to water foundations and trees (per Restriction No. 4) too much time?
5. How will golf course water use be monitored? Many courses have wells, but most mix well water with potable water.
6. May private pools which were permitted before Stage 4 is implemented still be built if construction is not started before the implementation date? When new pool construction is prohibited, will there be a rush for permit approvals before Stage 4 begins?

7. How much water reduction can a commercial water customer, for example, a Laundromat, bear? What will be the revenue impact on commercial customers once NTMWD forces the city to reduce what it allocates to them?
8. What is "normal use" as stated in Restriction No. 9? Currently, customers are charged per a tiered rate structure. But are the rates high enough to make an impact?
9. If the water use is reduced by 20%, 30%, or 40%, how does the proportional loss of revenue affect the city's water budget?
10. What water use restrictions will be applicable for athletic fields? An inadequately irrigated athletic field can be a safety issue for players.
11. May the city power wash surfaces to remove graffiti?
12. What will be the impact on city pool and splash pad operations?

The following are businesses or groups that will be most impacted by the city moving into stage 4:

1. *Pool businesses.* Primarily new private pool construction. Maintenance of existing pools should not be impacted.
2. *Landscapers.* No new vegetation will be planted.
3. *Irrigators.* Existing irrigation systems will be turned off, so very little maintenance will be needed. However, new irrigation systems will still be installed. Suppliers for irrigators will also be impacted.
4. *Retailers.* Businesses, such as Lowe's, Home Depot, WalMart, Calloway's, and other nurseries which sell plants and lawn and garden supplies will be adversely effected .
5. *Car washes.* Some recycle a portion of the water used, but does this make a difference?
6. *Car dealers.* Will still want to wash the cars on their lots. It was a problem during the last drought with the small businesses that power wash the dealers cars.
7. *Painters.* Will want to power wash, rather than hand scrape, the structure before it is painted.

As in all the previous stages of the Drought Plan, there is an existing procedure for water customers to request relief from any of these restrictions.

In conclusion, I recommend a meeting of the appropriate city staff to discuss these issues and any others which may be pertinent.

Comparison Facts:

- 50 ft soaker hose 360 GPH
- 50 ft drip line 36 GPH
- Tree Bubblers 30 GPH
- Hose End Spray 480 GPH
- Largest car wash 756,000 GP (Month) AVG
- New pools 300,000 GP (Month) AVG
- Nov - Mar Irrigation 138 MG (Month) AVG
- Apr - Oct Irrigation 621 MG (Month) AVG

Scenarios:

- Stage 4 Soaker hose 2 Hr per day 21,000 GP (Month) X 40,000 accounts = 864 MG (Month)
- Soaker hose 2 Hr per week 2,800 GP (Month) X 40,000 accounts = 112 MG (Month)
- Soaker hose 4 Hr per week 5,600 GP (Month) X 40,000 accounts = 224 MG (Month)

City of McKinney
Actual Water Sales

	FY 09			FY 10			FY 11			FY 12		
	Total Sales	BASE Sales	CONS Sales	Total Sales	BASE Sales	CONS Sales	Total Sales	BASE Sales	CONS Sales	Total Sales	BASE Sales	CONS Sales
October	\$ 1,129,334	\$ 433,591	\$ 695,743	\$ 937,165	\$ 480,939	\$ 456,226	\$ 1,536,708	\$ 516,254	\$ 1,020,455	\$ 1,952,095	\$ 542,195	1,409,900
November	\$ 2,115,637	\$ 458,891	\$ 1,656,747	\$ 1,746,941	\$ 493,073	\$ 1,253,867	\$ 2,413,235	\$ 528,021	\$ 1,885,213	\$ 2,403,945	\$ 550,149	1,853,795
December	\$ 1,846,076	\$ 457,426	\$ 1,388,650	\$ 1,706,668	\$ 495,122	\$ 1,211,547	\$ 2,188,679	\$ 528,427	\$ 1,660,252	\$ 1,740,972	\$ 544,153	1,196,819
January	\$ 1,599,866	\$ 463,603	\$ 1,136,263	\$ 1,722,269	\$ 494,222	\$ 1,228,046	\$ 1,855,517	\$ 531,487	\$ 1,324,030			
February	\$ 1,625,947	\$ 462,101	\$ 1,163,846	\$ 1,364,958	\$ 483,629	\$ 881,329	\$ 1,716,424	\$ 417,062	\$ 1,299,362			
March	\$ 1,688,106	\$ 460,932	\$ 1,227,174	\$ 1,486,865	\$ 508,426	\$ 978,439	\$ 1,846,940	\$ 643,598	\$ 1,203,342			
April	\$ 1,762,655	\$ 461,492	\$ 1,301,162	\$ 1,811,009	\$ 497,940	\$ 1,313,069	\$ 2,667,015	\$ 531,363	\$ 2,135,652			
May	\$ 1,979,335	\$ 461,985	\$ 1,517,350	\$ 2,491,183	\$ 498,021	\$ 1,993,162	\$ 2,421,106	\$ 533,723	\$ 1,887,383			
June	\$ 2,502,249	\$ 464,814	\$ 2,037,435	\$ 3,189,913	\$ 502,357	\$ 2,687,557	\$ 3,170,483	\$ 535,738	\$ 2,634,745			
July	\$ 3,279,315	\$ 464,393	\$ 2,814,922	\$ 3,636,757	\$ 503,396	\$ 3,133,361	\$ 4,347,388	\$ 537,472	\$ 3,809,915			
August	\$ 3,587,053	\$ 467,226	\$ 3,119,826	\$ 3,896,828	\$ 503,490	\$ 3,393,339	\$ 5,253,766	\$ 541,339	\$ 4,712,447			
September	\$ 4,125,676	\$ 470,702	\$ 3,654,974	\$ 5,097,752	\$ 505,672	\$ 4,592,080	\$ 6,650,678	\$ 539,360	\$ 6,111,318			
Total Sales	\$ 27,241,249	\$ 5,526,956	\$ 21,714,293	\$ 29,088,308	\$ 5,966,287	\$ 23,122,021	\$ 36,067,959	\$ 6,383,845	\$ 29,684,114			
		20%	80%		21%	79%		18%	82%			

	3 YR AVG CONS	Monthly %
October	724,141	2.92%
November	1,598,609	6.44%
December	1,420,150	5.72%
January	1,229,446	4.95%
February	1,114,846	4.49%
March	1,136,318	4.57%
April	1,583,294	6.37%
May	1,799,298	7.24%
June	2,453,312	9.88%
July	3,252,783	13.09%
August	3,741,871	15.06%
September	4,786,124	19.27%
Total	\$ 24,840,143	100%

Total Budget	BASE Budget	CONS Budget
1,227,549	542,195	685,354
2,063,133	550,149	1,512,983
1,888,236	544,153	1,344,082
1,708,594	545,000	1,163,594
1,600,131	545,000	1,055,131
1,620,454	545,000	1,075,454
2,043,489	545,000	1,498,489
2,247,923	545,000	1,702,923
2,866,906	545,000	2,321,906
3,623,508	545,000	3,078,508
4,086,446	545,000	3,541,446
5,074,766	545,000	4,529,766
30,051,134	6,541,497	23,509,637
	22%	78%

**City of McKinney
Forecasted Consumption Sales FY 12**

	FY 09	FY 10	FY 11	FY 12				
	Consumption Sales Rev	Consumption Sales Rev	Consumption Sales Rev	Consumption Budget	Adj for Stage 3 (10% reduction)	Adj for Stage 4 (20% reduction)	Total Adjusted for all Stages	Difference Budget to Adjusted
October	\$ 695,743	\$ 456,226	\$ 1,020,455	685,354	469,939		1,409,900	724,546
November	\$ 1,656,747	\$ 1,253,867	\$ 1,885,213	1,512,983	1,353,795		1,853,795	340,812
December	\$ 1,388,650	\$ 1,211,547	\$ 1,660,252	1,344,082	1,266,349		1,196,819	(147,264)
January	\$ 1,136,263	\$ 1,228,046	\$ 1,324,030	1,163,594	1,177,221		1,047,234	(116,359)
February	\$ 1,163,846	\$ 881,329	\$ 1,299,362	1,055,131	949,843		949,618	(105,513)
March	\$ 1,227,174	\$ 978,439	\$ 1,203,342	1,075,454	957,939		967,909	(107,545)
April	\$ 1,301,162	\$ 1,313,069	\$ 2,135,652	1,498,489		1,387,944	1,198,791	(299,698)
May	\$ 1,517,350	\$ 1,993,162	\$ 1,887,383	1,702,923		1,362,338	1,362,338	(340,585)
June	\$ 2,037,635	\$ 2,687,557	\$ 2,634,745	2,321,906		1,857,525	1,857,525	(464,381)
July	\$ 2,814,922	\$ 3,133,361	\$ 3,809,915	3,078,508		2,452,808	2,462,806	(615,702)
August	\$ 3,119,826	\$ 3,393,339	\$ 4,712,447	3,541,446		2,333,157	2,833,157	(708,289)
September	\$ 3,654,974	\$ 4,592,080	\$ 6,111,318	4,529,766		3,623,313	3,623,813	(905,953)
Total Sales	\$ 21,714,293	\$ 23,122,021	\$ 29,684,114	23,509,637	7,425,275	13,338,430	20,763,705	(2,745,931)
Annual Change in Total Sales		\$ 1,407,728	\$ 6,562,094	(6,174,478)			(2,745,931)	

- Notes:
1. FY 12 budget for first 3 months = actual sales
 2. FY 12 Stage 3 adjustment = 10%
 3. FY 12 Stage 4 adjustment = 20%

City of McKinney
Forecasted Wastewater Sales FY 12

	FY 09	FY 10	FY 11		FY 12	FY 12	FY 12	FY 12	FY 12
				Monthly Average	Budget	Adjusted for Stage 3	Adjusted for Stage 4	Total Adjusted for all Stages	Difference Budget to Adjusted
October	614,876	646,746	764,717	3.89%	660,691	863,299		863,299	202,608
November	1,332,596	1,442,187	1,457,709	8.12%	1,380,011	1,606,512		1,606,512	226,501
December	1,308,083	1,411,599	1,485,483	8.07%	1,371,101	1,548,600		1,548,600	177,499
January	1,335,323	1,467,298	1,473,418	8.20%	1,394,209	1,296,615		1,296,615	(97,595)
February	1,328,418	1,325,862	1,464,711	7.90%	1,343,004	1,248,994		1,248,994	(94,010)
March	1,335,450	1,370,601	1,524,692	8.11%	1,379,441	1,282,880		1,282,880	(96,561)
April	1,317,436	1,375,880	1,597,502	8.23%	1,399,028		1,301,096	1,301,096	(97,932)
May	1,353,200	1,404,530	1,587,341	8.33%	1,416,718		1,317,547	1,317,547	(99,170)
June	1,400,551	1,447,288	1,582,345	8.50%	1,444,469		1,343,356	1,343,356	(101,113)
July	1,396,459	1,477,210	1,635,824	8.65%	1,470,328		1,367,405	1,367,405	(102,923)
August	1,445,181	1,472,168	1,694,019	8.84%	1,503,545		1,398,296	1,398,296	(105,248)
September	2,169,209	2,228,727	2,464,336	13.16%	2,237,455		2,080,833	2,080,833	(156,622)
Total Sales	16,336,782	17,070,095	18,732,096	100%	17,000,000	7,846,899	8,808,535	16,655,434	(344,566)
Annual Change in Total Sales		733,313	1,662,001		(1,732,096)			(344,566)	
Percent Change in Total Sales									

Notes:

1. FY 12 budget for first 3 months = actual sales
2. FY 12 Stage 3 adjustment = 7%

City of McKinney
Water and Wastewater
Fund Summary

	Based on Regular Rebate				Based on Meter Reduction (pay on actual consumption for Feb-Sept)		
	FY 12 Adopted	FY 12 Adjusted^	FY 12 Adj for 3 & 4	FY 12 Difference	FY 12 Adjusted^	FY 12 Adj for 3 & 4	FY 12 Difference
Beginning Balance	13,431,576	15,413,124	15,413,124		15,413,124	15,413,124	
Revenues							
Water Sales	#####						
Base Sales		6,541,497	6,541,497	-	6,541,497	6,541,497	-
Consumption Sales		23,509,637	20,763,705	(2,745,931)	23,509,637	20,763,705	(2,745,931)
Other*		1,583,000	1,583,000	-	1,583,000	1,583,000	-
Wastewater Sales	#####	17,116,500	16,655,434	(461,066)	17,116,500	16,655,434	(461,066)
Misc. Charges	366,000	366,000	366,000	-	366,000	366,000	-
Interest Income	50,000	50,000	50,000	-	50,000	50,000	-
Total Revenues	49,166,634	49,166,634	45,959,637	(3,206,997)	49,166,634	45,959,637	(3,206,997)
Expenditures							
Personnel	5,269,992	5,269,992	5,269,992	-	5,269,992	5,269,992	-
Supplies	653,706	653,706	653,706	-	653,706	653,706	-
Maintenance	463,520	463,520	463,520	-	463,520	463,520	-
Services/Sundry	30,916,334	30,916,334	30,916,334	-	30,916,334	30,916,334	-
Water Purchase**	#####	14,532,287	14,532,287	-	14,532,287	12,052,202	(2,480,085) <i>see consumption history tab</i>
Capital	714,805	714,805	714,805	-	714,805	714,805	-
Total Expenses	52,550,644	52,550,644	52,550,644	-	52,550,644	50,070,559	(2,480,085)
Depreciation Adjustment	6,400,000	6,400,000	6,400,000	-	6,400,000	6,400,000	-
Ending Balance	16,447,566	18,429,114	15,222,117	(3,206,997)	18,429,114	17,702,202	(726,912)
90 Days of Fund Balance per policy	12,123,280	12,123,280	11,332,513		12,123,280	11,332,513	
One Day of Fund Balance		134,703.11			134,703.11		
Actual Days with Adjustment			113.00			131.42	

^ Updated FY12 beginning fund balance (un-audited)

* Delayed payments, meter set fees, service charge, etc.

** Budget assumed a \$900K rebate