

MEMORANDUM

To:	Christy Eusebio
From:	Kevin Burnett, Pat Walker
Date:	May 10, 2017
Client:	City of El Mirage, AZ
Subject:	Dysart Ranchettes Summary of Findings

Willdan Financial Services and Pat Walker Consulting (Willdan Team) was retained by the City of El Mirage (City) to review the cost of providing irrigation service to the City's Dysart Ranchette customers. *It is our recommendation that the City adopt a rate of \$52.11 per hour for the Dysart Ranchettes (the most current full year for which actual data is available) in order to appropriately recoup the cost to the City of providing irrigation service.*

This analysis identifies but does not address the ongoing capital exposure and liability to the City of \$698,250 as detailed in Table 4.

The balance of this memorandum summarizes our review of costs and findings.

Introduction

The City provides water service to Dysart Ranchette customers through a dedicated well, at a rate of \$20.97 per hour. Willdan has reviewed the cost of providing water service and the water used, in order to identify both the hourly cost and the corresponding cost per thousand gallons (kgals) of water.

Approach and Preliminary Rates

The City provided operational cost data to the Willdan Team for 6 years (2011 through 2016) for electricity, staff and recharge. Annual electricity costs for 2016 were extrapolated based on 6 months (January through June) of actual costs. Staff costs were provided on an annual basis.

Water production and run time data was provided for 2011 through 2015 and 8 months of 2016. We converted the 2016 costs to an annual estimate based on prior years 8 months (January through August) to total ratios.

Because costs and water usage varies from year to year, we examined several average estimates of costs and use to perform a sensitivity of the cost of service rates. Table 1 summarizes the calculated costs of providing service, while Table 2 provides a summary of the run time and water production from the well.

Table 1
Summary of Operational Costs

Cost	Estimated 2016 ⁽¹⁾	Current Year	2-Year Average	3-Year Average	4-Year Average	5-Year Average
Electricity	\$24,917	\$22,465	\$22,115	\$21,205	\$21,264	\$20,450
Staff	11,606	11,606	11,606	11,606	11,606	11,606
Recharge	<u>46,482</u>	<u>41,385</u>	<u>40,820</u>	<u>38,980</u>	<u>38,045</u>	<u>36,612</u>
Annual Costs	\$83,004	\$75,455	\$74,451	\$71,790	\$70,915	\$68,667
(1) Based on partial year estimates of costs extrapolated for a full year estimate.						

The annual costs range from a low of \$68,667 using a 5-year average of costs, to a high of \$83,004 for the projected 2016 costs (a difference of approximately 21%).

Table 2
Summary of Run Time and Flows

Production	Estimated 2016 ⁽¹⁾	Current Year	2-Year Average	3-Year Average	4-Year Average	5-Year Average
Run Time (Hours)	1,619	1,448	1,412	1,341	1,324	1,275
Flows (kgals)	81,871	72,893	71,905	68,664	67,017	64,490
(1) Based on partial year estimates of run time and flows extrapolated for a full year estimate.						

In reviewing the run time of the well and the amount of water produced, the trend is of greater use in more recent years as compared to a larger average of years (27% higher in 2016 compared to 2011 through 2015). This is consistent with the higher annual costs in more recent years as identified in Table 1.

Based on the summarized data in Tables 1 and 2, the Willdan Team calculated the cost per hour and cost per thousand gallons of water pumped. The results are summarized in Table 3.

Table 3
Operational Rate Summary

Rate	Estimated 2016 ⁽¹⁾	Current Year	2-Year Average	3-Year Average	4-Year Average	5-Year Average
Cost per Hour	\$51.27	\$52.11	\$52.79	\$53.52	\$53.56	\$53.84
\$/kgals	\$1.01	\$1.04	\$1.04	\$1.05	\$1.06	\$1.06
(1) Based on partial year estimates of costs and use extrapolated for a full year estimate.						

Tables 1 and 2 showed slightly higher costs and higher use in more recent years as compared to the 5-year average. However, because staff costs are static and do not change based on use, the higher use in recent years slightly lowers the unit cost (per hour or kgals) as compared to the unit cost for the 5-year average. The fees range from a low (using current data) of \$52.11 per hour or \$1.04 per kgals to a high (using the 5-year average) of \$53.84 per hour or \$1.06 per kgals (a difference of approximately 2%).

Each of the options presented represent an increase in the cost of service to Dysart Ranchette customers current rate by 2.43 times or more.

Capital Costs

As part of the analysis we also examined the repair and replacement capital costs to maintain the irrigation system. The capital costs have been estimated at \$698,250 as summarized in Table 4.

Table 4
Capital Cost Summary

Project	Cost
Well Site Replace	\$350,000
Reservoir & Hydro Tank Removal	25,000
Fence Replacement	17,500
Well Pump Replacement	25,000
Pull Pump – Televis Well	5,750
Irrigation Ditch Replacement	<u>275,000</u>
Total	\$698,250

Comparisons

As part of the study we examined other communities in the El Mirage area that provide irrigation water service to its customers. It should be noted however, that we could not find any other communities that provide irrigation water in the same fashion and from the same water source (ground water) as the City of El Mirage for the Dysart Ranchettes. Therefore, an exact comparison could not be made. The findings are presented for informational purposes of how other communities provide irrigation services. The following communities were examined for comparison purposes:

- Mesa (\$52.95 per hour)
- Tempe (\$152.62 semi-annual fee per parcel)
- Buckeye (\$55.00 base fee)
- Chandler (\$8.87 base + \$2.42 per 1,000 gallons)
- Glendale (rate varies by number of months of service and size of lot)¹

Of the communities examined, only Mesa assesses an irrigation rate on an hourly basis. Mesa charges a fee based on a minimum of ½ an hour of use. Tempe assesses their fee based on parcel size and the fee is assessed on a semi-annual basis. Buckeye assesses a monthly fee for irrigation use. Chandler assesses its irrigation fees in a more traditional manner with a monthly base charge and a volume component for each 1,000 gallons of water use consumed.

Of the municipalities used for comparison, Mesa provides the closest matching of approach to assessing fees for irrigation water. The hourly rate charged is a little over double the current Dysart Ranchettes rate, but approximately the same as the range of rates presented in Table 3 for the actual cost for El Mirage to provide irrigation service. A summary of the comparison is attached to this memorandum as appendix A-1.

¹ It should be noted that neighboring Glendale reportedly provides flood irrigation to residents in the older part of the City. Like the above listed cities they too do not use more expensive groundwater, but instead use untreated Salt River Projects (SRP) water from the Central Arizona (CAP) canal.

	El Mirage							Mesa ⁽²⁾	Tempe ⁽³⁾	Buckeye ⁽⁴⁾	Chandler	
	Existing ⁽¹⁾	Estimated 2016	Current Year	2-yr avg	3-yr avg	4-yr avg	5-yr avg				Base ⁽⁵⁾	>0
\$ per Hour	\$20.97	\$51.27	\$52.11	\$52.79	\$53.32	\$53.56	\$53.84	\$52.95	\$152.62	\$55.00	\$8.87	
\$ per kgals	0.41	1.01	1.04	1.04	1.05	1.06	1.06	n/a				2.42

(1) Assumes 50,560 gallons per hour

(2) Minimum of 1/2 hour water delivery at a cost of \$26.48

(3) Semi-annual fee based on parcel are up to 13,068 square feet

(4) January 1, 2017 base rate

(5) Monthly inside City base charge for a 5/8" meter

MEMORANDUM

To:	Christy Eusebio
From:	Kevin Burnett, Pat Walker
Date:	June 1, 2017
Client:	City of El Mirage, AZ
Subject:	Dysart Ranchettes Summary of Findings – Addendum 1

Willdan Financial Services and Pat Walker Consulting (Willdan Team) completed a cashflow analysis for the Dysart Ranchettes after the May 10 2017 *Dysart Ranchettes Summary of Findings* report.

Cashflow

Appendix A-1 summarizes the cashflow projections for FY 2017-18 through FY 2021-22. The cashflow assumes a constant hourly use and constant number of customers, based on actual 2015 customer billings (the same year for which the operation costs were based and in turn the recommended rate). The billable hours for the irrigation service is approximately 72% of the run time hours for the pump which is required to provide the service. As such at a rate of \$52.11, the City of El Mirage (City) would not fully recover its operational costs of providing service. The City would incur an annual deficit of approximately \$21,000. In order to fully recover operational costs based on the lower billable hours compared to run time hours, the hourly rate would need to be \$72.62 per hour (Appendix A-4).

El Mirage, AZ
Dysart Ranchette Cost of Service
Irrigation Water
Cash Flow Analysis

Line No.	Description	<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
Irrigation Water Fee Revenues:						
1	Irrigation Fees - Residential	\$54,142	\$54,142	\$54,142	\$54,142	\$54,142
2	Irrigation Fees - Non-Residential	0	0	0	0	0
3	Total Irrigation Fee Revenues	54,142	54,142	54,142	54,142	54,142
Expenditures:						
4	Electricity	22,465	22,465	22,465	22,465	22,465
5	Staff	11,606	11,606	11,606	11,606	11,606
6	Recharge (per AF projected)	41,385	41,385	41,385	41,385	41,385
7	Capital	0	0	0	0	0
8	Total Expenditures	75,455	75,455	75,455	75,455	75,455
9	Increase/(Decrease) in Cash Balance	(21,313)	(21,313)	(21,313)	(21,313)	(21,313)
10	Beginning of Year Cash Balance	0	(21,313)	(42,626)	(63,939)	(85,252)
11	End of Year Cash Balance	(\$21,313)	(\$42,626)	(\$63,939)	(\$85,252)	(\$106,565)

**El Mirage, AZ
Dysart Ranchette Cost of Service
Irrigation Water
Revenue Projections**

		<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
1	Irrigation Fee - Residential	\$52.11	\$52.11	\$52.11	\$52.11	\$52.11
2	Hourly Billed Time	1,039	1,039	1,039	1,039	1,039
	Total Revenue - Residential	\$54,142	\$54,142	\$54,142	\$54,142	\$54,142

		<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
3	Irrigation Fee - Non-Residential	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	Hourly Billed Time	0	0	0	0	0
	Total Revenue - Non-Residential	\$0	\$0	\$0	\$0	\$0

El Mirage, AZ
Dysart Ranchette Cost of Service
Irrigation Water
Cash Flow Analysis - Full Cost Recovery

Line No.	Description	<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
Irrigation Water Fee Revenues:						
1	Irrigation Fees - Residential	\$75,455	\$75,455	\$75,455	\$75,455	\$75,455
2	Irrigation Fees - Non-Residential	0	0	0	0	0
3	Total Irrigation Fee Revenues	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>
Expenditures:						
4	Electricity	22,465	22,465	22,465	22,465	22,465
5	Staff	11,606	11,606	11,606	11,606	11,606
6	Recharge (per AF projected)	41,385	41,385	41,385	41,385	41,385
7	Capital	0	0	0	0	0
8	Total Expenditures	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>	<u>75,455</u>
9	Increase/(Decrease) in Cash Balance	0	0	0	0	0
10	Beginning of Year Cash Balance	0	0	0	1	1
11	End of Year Cash Balance	<u><u>\$0</u></u>	<u><u>\$0</u></u>	<u><u>\$1</u></u>	<u><u>\$1</u></u>	<u><u>\$1</u></u>

**El Mirage, AZ
Dysart Ranchette Cost of Service
Irrigation Water
Revenue Projections - Full Recovery**

		<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
1	Irrigation Fee - Residential	\$72.62	\$72.62	\$72.62	\$72.62	\$72.62
2	Hourly Billed Time	1,039	1,039	1,039	1,039	1,039
	Total Revenue - Residential	\$75,455	\$75,455	\$75,455	\$75,455	\$75,455

		<i>Projected</i>				
		FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22
3	Irrigation Fee - Non-Residential	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	Hourly Billed Time	0	0	0	0	0
	Total Revenue - Non-Residential	\$0	\$0	\$0	\$0	\$0