



WOOD RODGERS

Attachment to Exhibit M
TECHNICAL MEMORANDUM

To: City of Roseville

Date: January 27, 2020

Subject: Amoruso Ranch Specific Plan Amendment
Amendment to Water Conservation Plan to Accommodate Revised Land Use Plan

INTRODUCTION

The Amoruso Ranch Specific Plan (ARSP) Amendment has been prepared at the direction of Brookfield Residential Properties, Inc. (Brookfield) to meet the City of Roseville's (City) planning requirements to address proposed land use changes resulting from the State and Federal Environmental Permitting Processes. The ARSP Amendment modifies the original approved plan dated June 2016.

The ARSP Area consists of approximately 694.4-acres located in the northwest edge of the City of Roseville. The Specific Plan Area is bounded on the west by the Al Johnson Wildlife Area, to the south by the Creekview Specific Plan Area, to the east by the future proposed Placer Ranch Specific Plan Area and to the north by the existing Toad Hill Ranches #1 area/Sunset Boulevard West.

The ARSP Area provides for a mix of land uses to achieve the desired community form and objectives. These land use designations include low-, medium- and high-density residential uses; commercial and office uses; which in some cases are sited with one another and/or with residential uses; public and quasi-public uses for the schools and civic activities such as a fire station; parks and open space uses; and an urban reserve.

At buildout, as originally proposed, the ARSP Area will provide for 2,827 dwelling units, adds approximately 51 acres of commercial retail and office land uses, and provide approximately 22-acres of parks and 146-acres of open space.

With the changes in the land use plan, resulting from the environmental permitting processes, the project parameters are identical in terms of the number of units, acres of commercial, and acres of parks. However, the acres of open space have increased from approximately 146-acres to approximately 155-acres with a corresponding reduction in residential land use acreage.

As part of the original Specific Plan, the "*Brookfield Residential, Amoruso Ranch Specific Plan Area, Water Conservation Plan*", dated April 2016, was prepared by Kimley-Horn and Associates. While the number of units proposed for the Specific Plan Area has not changed, the density of some of the units has been modified, which affects the calculations presented in the referenced Water Conservation Plan. This Technical Memorandum amends the referenced Water Conservation Plan to accommodate the changes in the land use plan.

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LAND USE PLAN UPDATE

As noted in the Introduction, the major change in the Land Use Plan occurs with the expansion of the open space and the coinciding reduction in the developable acres. The change represents approximately 9- acres that will be added to the open space, transitioning from developable land use. Figure TM-1 depicts the existing approved Land Use Plan that was adopted as part of the Amoruso Ranch Specific Plan in June 2016 by the City of Roseville. It depicts the area that was modified through the environmental permitting processes. The proposed and modified Land Use Plan is shown on Figure TM-2.

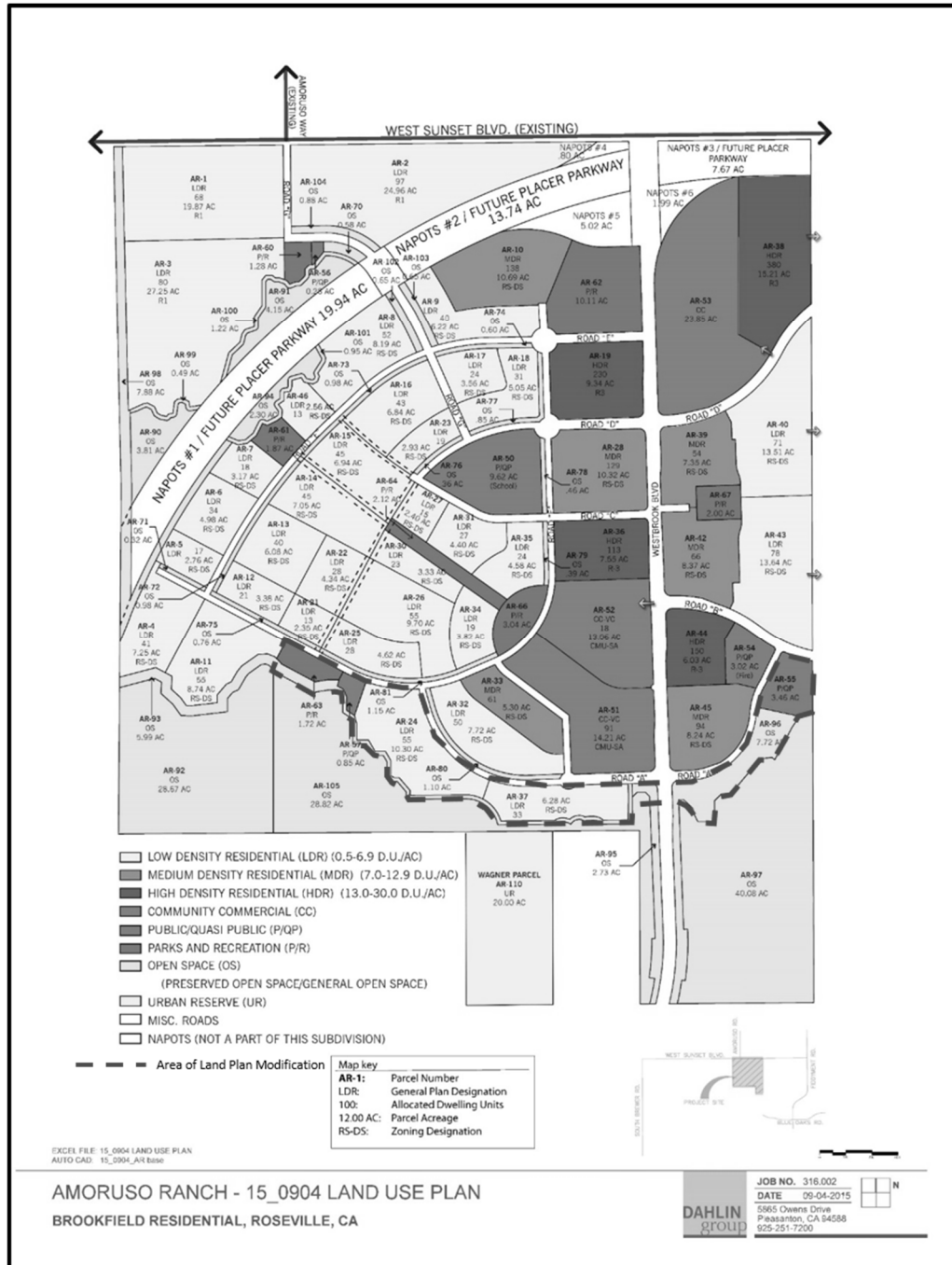


Figure TM-1 – 2016 Approved Land Use Plan

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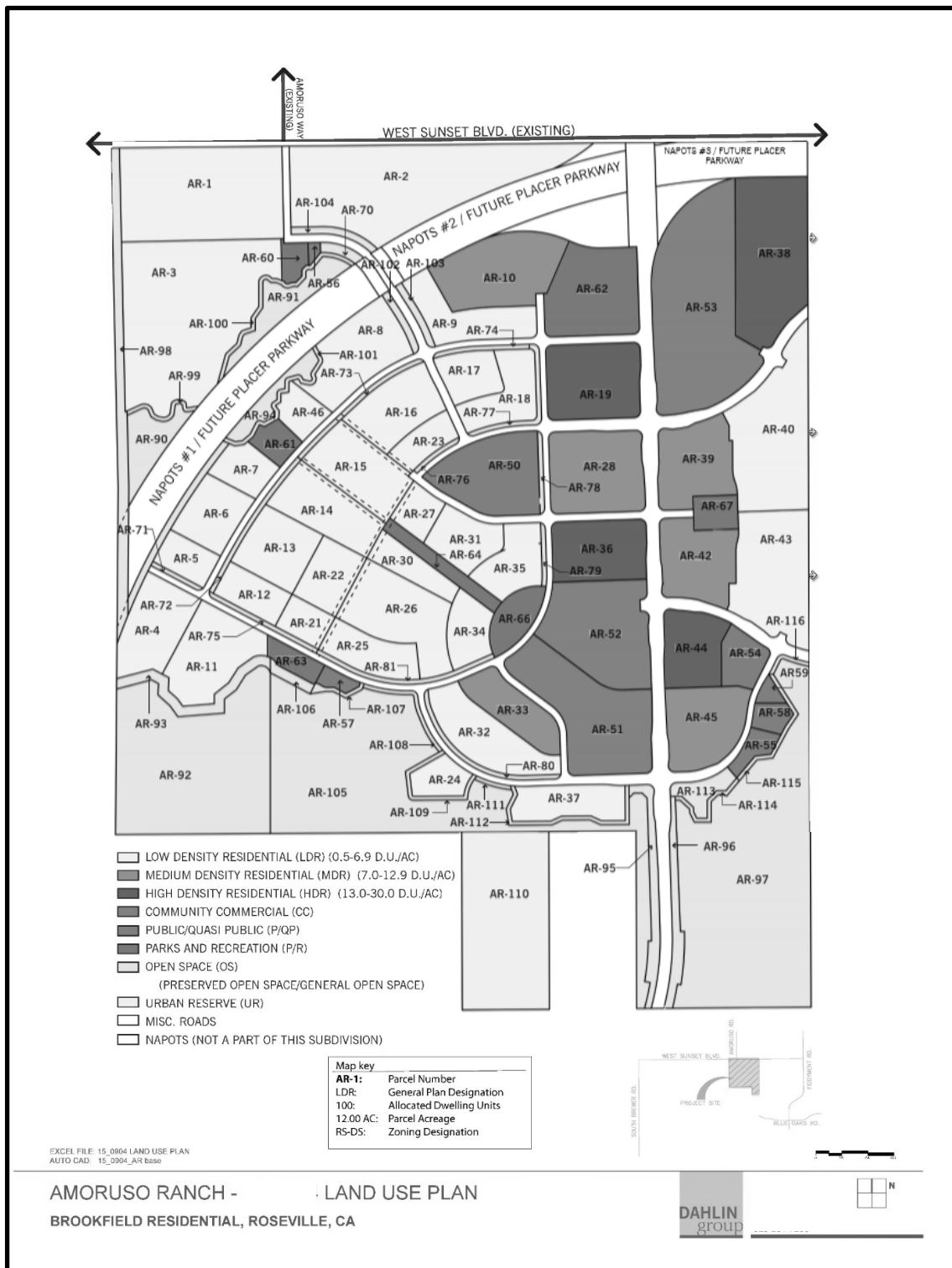


Figure TM-2 – 2019 Proposed and Modified Land Use Plan

The required modifications in the Land Use Plan occur along the southern edge of development, both to the east and west of Westbrook Boulevard, in locations where the development abuts the open space. The changes are depicted on Figure TM-2.

While the land plan has a reduced number of developable acres, the total unit count has remained the same, with the displaced units reallocated to an existing developable parcel that can support the units, while conforming to the density ranges for the given product types.

Table TM-1 is a comparison of the unit allocation changes throughout the plan area.

**Table TM-1
Unit Allocation Comparison**

Parcel	Land Use	Acres			Units		
		2016	2019	Net Change	2016	2019	Net Change
AR-24	LDR	10.3	2.5	<7.8>	55	13	<42>
AR-37	LDR	6.28	5.05	<1.23>	33	25	<8>
AR-52	CC-VC	13.06	13.06	0	18	68	50
TOTAL				<9.03>			0

As noted in Table TM-1, the reallocated units are all located in the Community Commercial/Village Center (AR-52). This places the units very close to their original location. This also modifies the units from LDR to be CC/VC where the use factors for these units are consistent with HDR. This is important as it results in lower water use factors and lower wastewater generation rates.

The location of the affected land use parcels is shown on Figure TM-3 and indicated with a “blue circle”.



Figure TM-3 – Affected Land Use Parcels (Unit Transfer) (2019 Land Plan)

WATER CONSERVATION PLAN

As noted above, the calculations related to water conservation for the development change as a result in the shift in density of some of the units. Provided below are the revised Water Conservation Plan Tables that have been updated based on the new land plan.

Water Conservation Plan Table 2 - Amended

**Amoruso Ranch Specific Plan Amendment
 Water Use Estimation – LDR, MDR and HDR**

Land Use Category Density	Number of Units	Average Day Demand (GPD/DU)	Total Average Day Demand (GPD)	Total Average Day Demand (AFY)	Total Average Day Demand with 2% (AFY) ¹
LDR1: < 3.5 DU / Acre	148	728	107,744	120.7	123.1
LDR2: > 3.5 to 5 DU / Acre	116	600	69,600	78.0	79.5
LMDR1: > 5 to 6 DU / Acre	351	521	182,871	204.8	208.9
LMDR2: > 6 to 8 DU / Acre	757	430	325,510	364.6	371.9
MDR: > 8 to 12 DU / Acre	155	323	50,065	56.1	57.2
HDR1: > 12 to 16 DU / Acre	380	288	109,440	122.6	125.0
HDR2: > 16 DU / Acre	760	177	134,520	150.7	153.7
Community Commercial - Village Center – Residential	159	288	45,792	51.3	52.3
Urban Reserve	1	728	728	0.8	0.8
Total	2,827	-	1,037,920	1,162.60	1,185.90

¹ Demand accounts for 2% system losses.

Water Conservation Plan Table 3 - Amended

**Amoruso Ranch Specific Plan
 Water Use Factors and Demands**

Land Use	Land Use Abbreviation/ Zoning	Total Area (Acres)	Dwelling Unit Count	Water Use Factor	Daily Demand (GPD)	Annual Demand (AFY)	Annual Demand with 2% (AFY) ²
Low Density Residential	LDR	239.34	1,252	Varies	634,125	710.3	724.5
Medium Density Residential	MDR	50.27	542	Varies	178,561	200.0	204.0
High Density Residential	HDR	38.13	873	Varies	167,064	187.1	190.9
Community Commercial - Village Center - Residential	CMU-SA (Commercial Mixed-Use - Special Area)	Included On Next Line	159	288	45,792	51.3	52.3
Community Commercial - Village Center – Non-Residential	CMU-SA (Commercial Mixed-Use - Special Area)	27.27	-	2,598	70,847	79.4	80.9
Community Commercial	CC (Community Commercial)	23.85	-	2,598	61,962	69.4	70.8
Open Space (Paseos)	OS	10.74	-	2,988	32,091	35.9	36.7
Open Space (General)	OS	37.24	-	0	0	0.0	0.0
Open Space (Preserve)	OS	106.97	-	0	0	0.0	0.0
Parks & Recreation	PR	22.14	-	2,988	66,154	74.1	75.6
Public / Quasi Public (school)	P/QP (School)	9.62	-	3,454	33,227	37.2	38.0
Public / Quasi Public (Fire Station & Utility Site)	P/QP	7.61	-	1,780	13,546	15.2	15.5
Urban Reserve	UR	20	1	728	728	0.8	0.8
Rights-of-Way	ROW	52.06	-	0	0	0.0	0.0
Not a Part of This Subdivision	NAPOTS	49.16	-	0	0	0.0	0.0
Total		694.4	2,827	-	1,304,098	1,460.78	1,489.99

² Demand accounts for 2% system losses.

Water Conservation Plan Table 4 - Amended

**Amoruso Ranch Specific Plan
Single Family Residential Water Usage**

Residential Use	Percentage of Total³
Landscaping	51%
Toilets	13%
Faucets, Cooking, Cleaning	10%
Showers	9%
Clothes Washing	8%
Bath	6%
Toilet Leaks	2%
Dishwasher	1%

³ Percentage of total water use was derived from information obtained from the City of Roseville Frequently Asked Questions (FAQ) on the subject of water conservation.

Water Conservation Plan Table 5 - Amended

**Amoruso Ranch Specific Plan
 Residential Irrigation Water Demands**

Land Use	Annual Demand (AFY)	Annual Demand Front Yard (AFY)	Annual Demand Backyard (AFY)	Annual Total Irrigation Demand (AFY)
Low Density Residential	710.3	144.90	217.35	362.25
Medium Density Residential	200.0	40.80	61.20	102.00
High Density Residential ⁴	187.1	N/A	N/A	37.42
Urban Reserve	0.8	0.16	0.24	0.40
Total	1098.2	185.86	278.79	502.07

⁴ Demand for HDR parcels was calculated differently from LDR and MDR parcels, as described above. Demand for HDR parcels was not separated into front yard and backyard demand since traditional front and back yards are not present on HDR parcels.

Water Conservation Plan Table 7 - Amended

**Amoruso Ranch Specific Plan
 Front Yard Irrigated Area Water Efficiencies**

Land Use	Annual Demand Front Yard (AFY) ⁵	New Front Yard Demand (AFY)	Annual Demand Savings (AFY)	Annual Demand Savings (%)	Water System Savings
Residential Properties LDR and MDR	185.70	134.8	50.90	30.0%	Potable
HDR	37.42	27.16	10.26	27.4%	Recycled
Total	223.12	161.96	61.16	27.4%	

⁵ Front yard demand from Table 5. HDR is total since there is not a distinction between front and back yards.

Water Conservation Plan Table 8 - Amended

**Amoruso Ranch Specific Plan
 Non-Residential Irrigated Area Water Efficiencies**

Land Use	Annual Water Demand (AFY) ⁶	Annual Irrigation Demand (AFY)	Base Turf Area	New Turf Area	Low Water Use Area	New Irrigation Demand (AFY)	Annual Demand Savings (AFY)	Annual Demand Savings (%)	Water System Savings
Park	4.3	4.21	80%	60%	20%	3.48	0.73	17.3%	Potable
Parks	69.8	68.40	80%	60%	20%	56.43	11.97	17.5%	Recycled
Paseos	4.8	4.80	80%	60%	20%	3.96	0.84	17.5%	Potable
Paseos	31.0	31.00	80%	60%	20%	25.58	5.42	17.5%	Recycled
Total	109.9	108.41				89.45	18.96	17.5%	

⁶Annual water demand derived from Table 3.

Water Conservation Plan Table 9 - Amended

**Amoruso Ranch Specific Plan
 Smart Irrigation Controller Water Efficiencies**

Land Use	Annual Irrigation Demand (AFY)	New Irrigation Demand w/Controller (AFY)	Annual Demand Savings (AFY)	Annual Demand Savings (%)	Water System Savings
Residential Properties (Front) ⁷	134.80	107.84	26.96	20%	Potable
Residential Properties (Back) ⁸	278.79	223.03	55.76	20%	Potable
Residential Properties (HDR) ⁹	27.16	21.73	5.43	20%	Recycled
Parks ¹⁰	3.48	2.78	0.7	20%	Potable
Parks ¹¹	56.43	45.14	11.29	20%	Recycled
Paseos ¹²	3.96	3.17	0.79	20%	Potable
Paseos ¹³	25.58	20.46	5.12	20%	Recycled
Total	530.20	424.15	106.05	20%	

⁷ Annual irrigation demand derived from Table 7.

⁸ Annual irrigation demand derived from Table 5.

⁹ Annual irrigation demand derived from Table 7.

¹⁰ Annual irrigation demand derived from Table 8.

¹¹ Annual irrigation demand derived from Table 8.

¹² Annual irrigation demand derived from Table 8.

¹³ Annual irrigation demand derived from Table 8.

Water Conservation Plan Table 10 - Amended

**Amoruso Ranch Specific Plan
Recirculating Hot Water System Water Efficiencies**

Land Use	Dwelling Unit Count	Savings per Dwelling Unit (Gal)	Annual Demand Savings (AFY)	Annual Demand Savings (%)	Water System Savings
Residential Units	2,827	7.5	23.75	1.6%	Potable

Water Conservation Plan Table 11 - Amended

**Amoruso Ranch Specific Plan
 Summary of Water Efficiencies**

Water Conservation Opportunity	Total Water Demand (AFY)	Potable Water Savings (AFY)	Recycled Water Savings (AFY)	Annual Demand Savings (AFY)	Annual Demand Savings (%)
Residential Properties Irrigation – Front ¹⁴	1,460.78	50.90	10.26	61.16	4.2%
Non-Residential (Parks, ROW, School) ¹⁵		1.57	17.39	18.96	1.3%
Smart Irrigation Controllers ¹⁶		84.21	21.84	106.05	7.3%
Recirculating Hot Water System ¹⁷		23.75	0	23.75	1.6%
Total		160.43	49.49	209.92	14.4%

¹⁴ Annual demand savings derived from Table 7.

¹⁵ Annual demand savings derived from Table 8.

¹⁶ Annual demand savings derived from Table 9.

¹⁷ Annual demand savings derived from Table 10.