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DRAFT TECHNICAL MEMORANDUM

DATE: September 3, 2021 **PROJECT #:** 9090.03

TO: Ad Hoc Sustainable Groundwater Planning Advisory Committee (GSU22 Committee)

CC: Brian Lockwood, P.G., C.Hg. and Casey Meusel
Pajaro Valley Water Management Agency

FROM: Cameron Tana, P.E.

PROJECT: Basin Management Plan: Groundwater Sustainability Update 2022 (GSU22)

SUBJECT: Non-Jurisdictional Assessment Plan

PROPOSED COMMITTEE STATEMENT FOR NON-JURISDICTIONAL ASSESSMENT PLAN

The Basin Management Plan: Groundwater Sustainability Update 2022 (GSU22) includes a plan that will assess adverse effects of groundwater conditions on an ongoing basis in:

1. the jurisdictional area from activities in the non-jurisdictional area, and
2. the non-jurisdictional area from activities in the jurisdictional area.

INTRODUCTION

The Pajaro Valley Water Management Agency (PV Water) Groundwater Sustainability Plan (GSP) Alternative for the Pajaro Valley Subbasin (Basin) was submitted on December 31, 2016, and approved by the California Department of Water Resources (DWR) in 2019. Although the jurisdiction of PV Water does not cover the entire Basin (Figure 1), DWR (2019) did confirm that the GSP Alternative effectively covers the entire Basin:

> "Considering the current extent of water use in areas outside the jurisdictional area of the Agency, Department staff do not regard the lack of regulatory control over those areas to pose a threat to successful implementation of the Basin Management Plan; or believe that implementation of the Plan is likely to adversely impact groundwater conditions in the portion of the Subbasin outside the Agency's jurisdictional boundary."

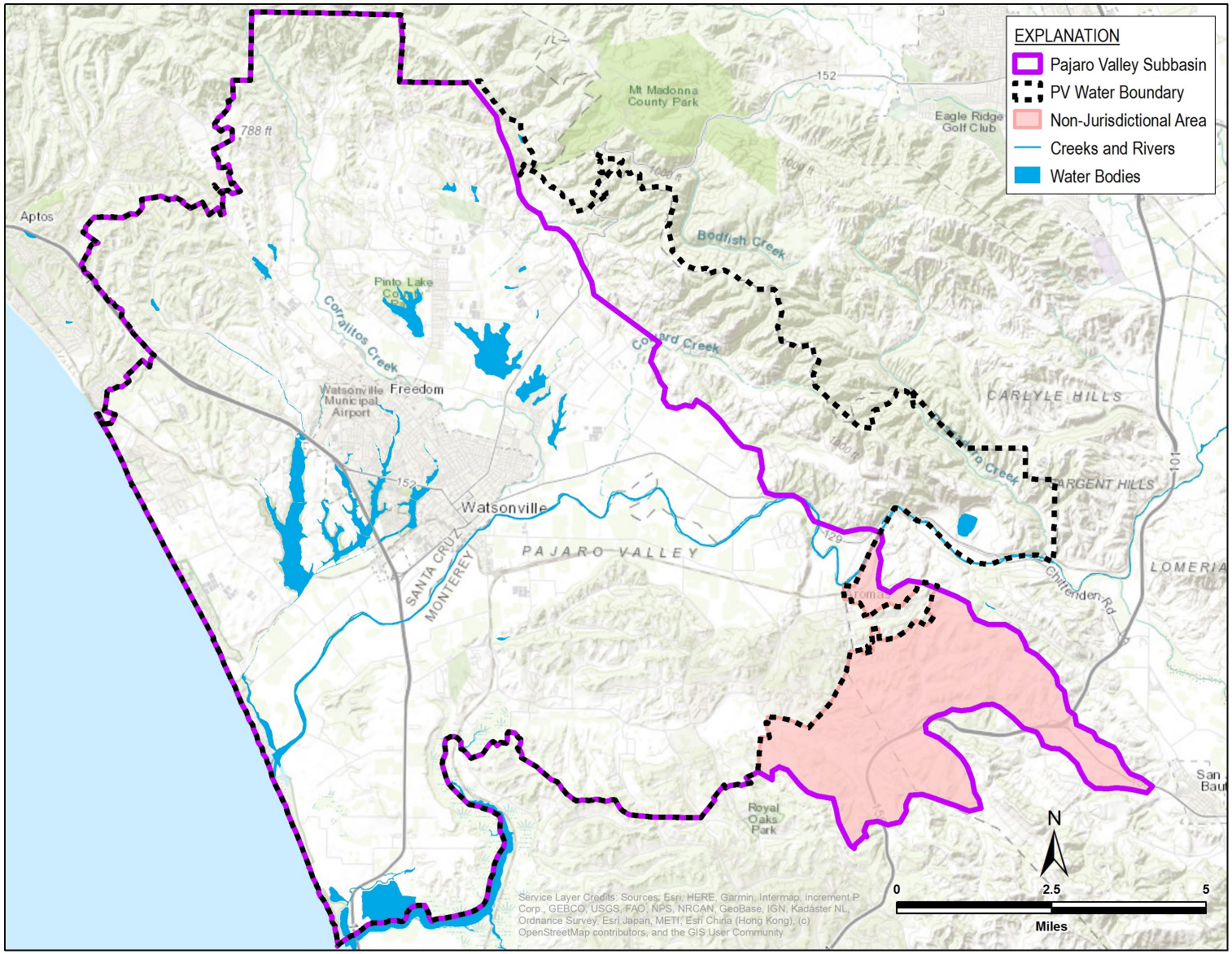

Figure 1. Pajaro Valley Subbasin, PV Water Jurisdictional Boundary, and Non-Jurisdictional Area

DWR recommended the GSP Alternative include an additional plan to evaluate future groundwater conditions related to the area outside the jurisdictional area (non-jurisdictional area):

> Recommended Action 1: (DWR) Staff recommend that the Agency define how it will assess, on an ongoing basis, the non-jurisdictional portion of the Subbasin and demonstrate that activities in that area are not adversely impacting successful implementation of the Plan within the Agency's jurisdictional area, or adversely affected by implementation of the Plan or by groundwater use in the area not subject to that Plan. That assessment may include, but is not limited to, additional monitoring in the non-jurisdictional areas and agreements with other entities.

This technical memorandum describes the plan to evaluate future groundwater conditions related to the non-jurisdictional area.

GROUNDWATER LEVEL MONITORING

There are several wells in PV Water's groundwater level monitoring network near its eastern jurisdictional boundary with the non-jurisdictional area. This includes the AWD_Aimee well, shown on Figure 2, that is part of the GSP Alternative monitoring network with publicly available data. AWD_Aimee well groundwater levels have a stable groundwater level trend (Figure 3) in the Basin's principal aquifer, the Aromas Red Sands, near the jurisdictional boundary. If the groundwater level trend in the AWD_Aimee well changes to a declining trend near the jurisdictional boundary, it would indicate potential adverse effects in groundwater conditions across the boundary. PV Water will include the findings of an assessment of the groundwater level trend in this area in its annual report to DWR.

If a declining groundwater level trend near the jurisdictional boundary occurs, PV Water will assess whether the decline is related to changing groundwater conditions within its jurisdiction. The assessment will involve evaluating groundwater levels within its jurisdiction farther away from the jurisdictional boundary. If declining groundwater level trends in the jurisdictional area farther from the boundary are greater than observed near the boundary, it would indicate groundwater use within the jurisdiction may be having an adverse effect on the non-jurisdictional area. If declining groundwater level trends toward the interior of the jurisdiction are less than observed near the boundary, it would indicate groundwater use in the non-jurisdictional area may be having an adverse effect on the jurisdictional area.

PV Water will take the following actions should a declining groundwater level trend near the jurisdictional boundary be determined:

- If it is indicated that groundwater use within the jurisdictional area may be having an adverse effect on the non-jurisdictional area, PV Water will evaluate changes to its groundwater management to reduce the adverse effect.
- If it is indicated that groundwater use in the non-jurisdictional area may be having an adverse effect on the non-jurisdictional area, PV Water will communicate with the land use authorities (San Benito and Monterey Counties), well permitting agencies for the non-jurisdictional area (San Benito County Water District and Monterey County Health Department), and the water supply district (Aromas Water District) near the non-jurisdictional the area to evaluate how groundwater use may have changed and develop options to reduce the adverse effect.

PV Water does not monitor the Aromas Red Sands aquifer in the non-jurisdictional area where the Aromas Red Sands thins out considerably from the jurisdictional area (Figure 2). Addressing this monitoring data gap would improve monitoring of the Basin. However, adding groundwater level monitoring in the non-jurisdictional area is not currently a priority because ongoing assessment can be performed with existing wells in the jurisdictional area. If a declining groundwater level trend is observed along the jurisdictional boundary, adding groundwater level monitoring in the non-jurisdictional area would increase in priority.

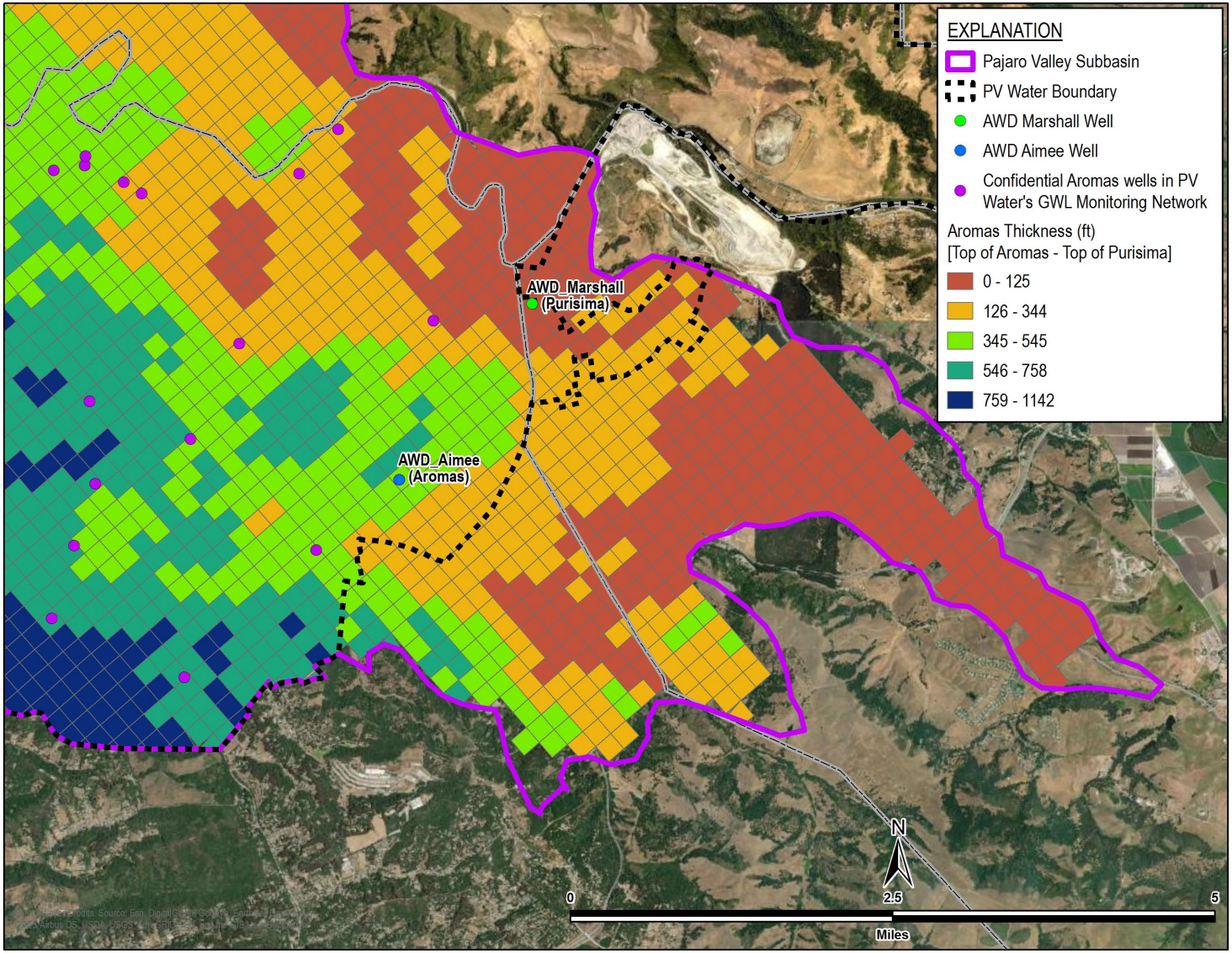

Figure 2. PV Water GWL Monitoring Network Locations and Aromas Red Sands Thickness Based on Pajaro Valley Hydrologic Model (Hanson et al, 2015)

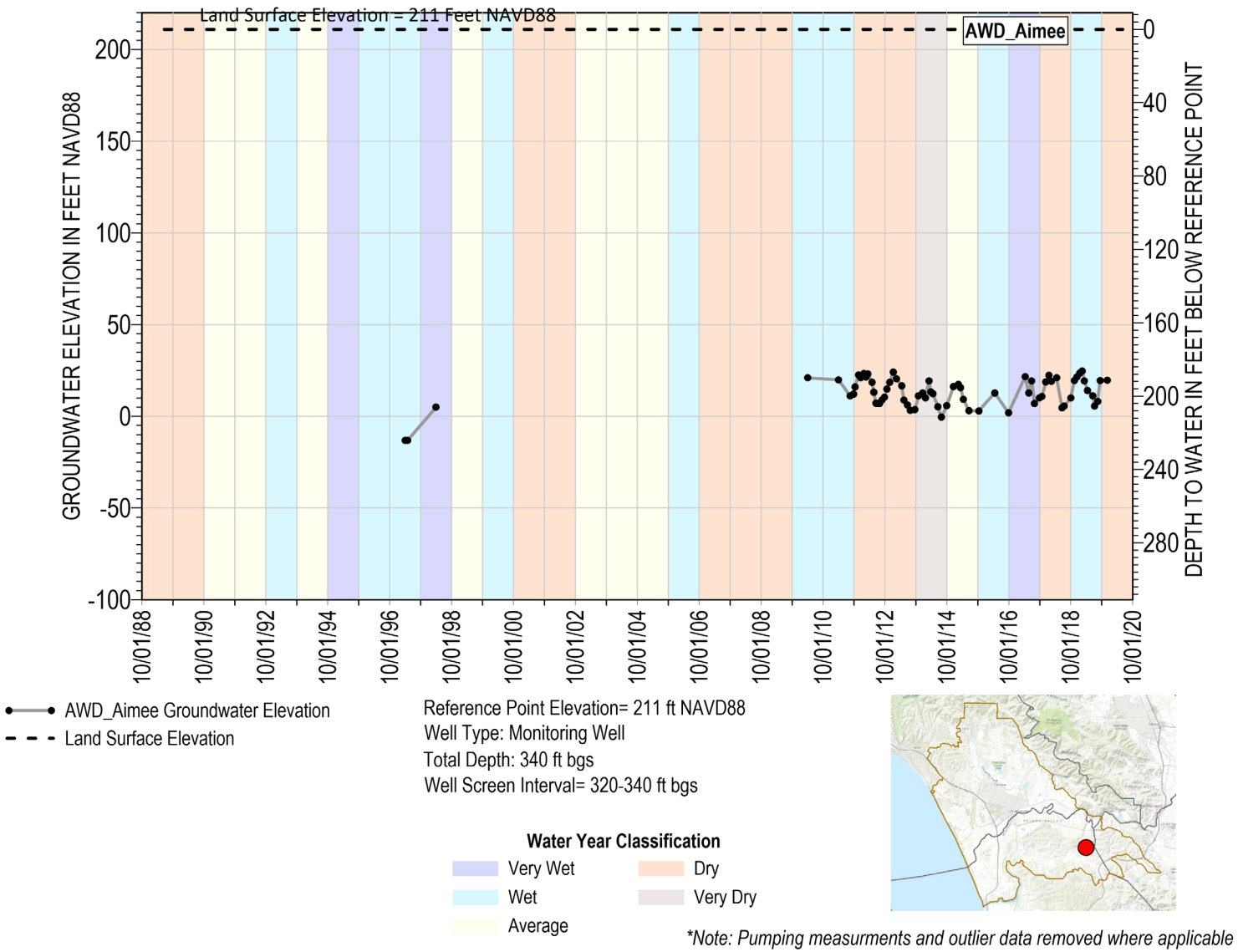

Figure 3. Groundwater Levels at AWD_Aimee Well (ft NAVD88)

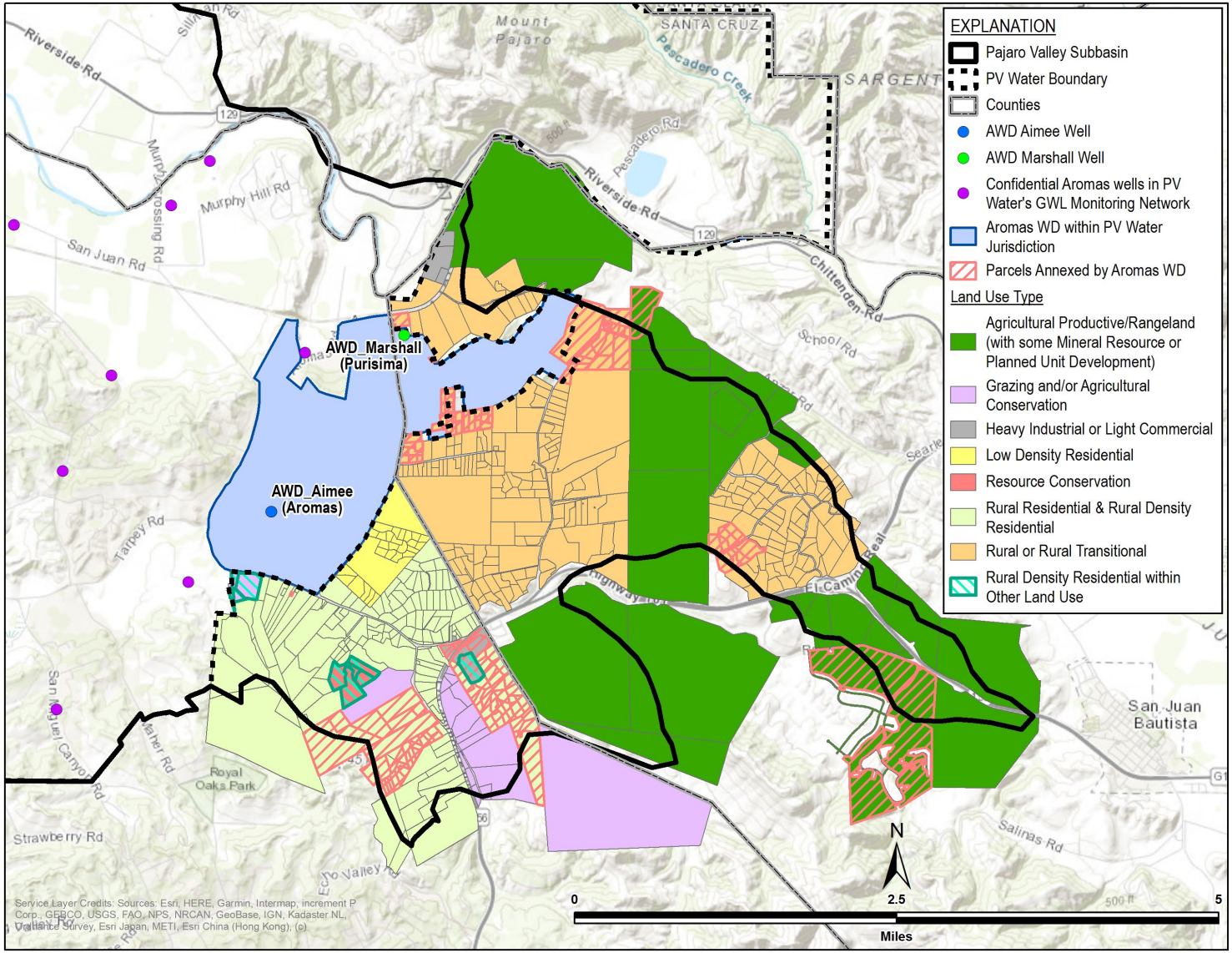

Figure 4. Land Use Types within Non-Jurisdictional Area

LAND USE MONITORING

DWR based its determination that the GSP Alternative adequately covers the entire Basin in part on land use in the non-jurisdictional area indicating limited water use in the area. In its annual reports submitted to DWR for SGMA (PV Water, 2021), PV Water also estimates non-jurisdictional area pumping based on land use in the area (Figure 3). Changes in land use would indicate a potential change in water use in the non-jurisdictional area that could adversely affect sustainability in the rest of the Basin.

PV Water will request that San Benito and Monterey Counties, the land use authorities for the non-jurisdictional area of the Basin, inform PV Water of any proposed changes to land use in the area. PV Water will also request receipt of well drilling permits from the well permitting agencies, San Benito County Water District and Monterey County Health Department, for the area.

Based on proposed changes to land use and/or well permit information, PV Water will estimate the change to water use for the non-jurisdictional area. PV Water will assess whether the change to water use may result in adverse effects for management of the Basin under the GSP Alternative. This assessment may include use of the Pajaro Valley Hydrologic Model (PVHM) as described below.

If PV Water identifies a change to water use that may have adverse effects for management of the Basin under the GSP Alternative, PV Water will communicate with the land use and well permitting agencies as well as Aromas Water District for the non-jurisdictional area to develop options to limit the potential adverse effect.

GROUNDWATER MODEL ASSESSMENTS

PV Water will evaluate potential changes to groundwater use that may have adverse effects across the jurisdictional boundary with the PVHM. Substantial changes to PV Water's Basin Management Plan project and management actions will be simulated with the PVHM and effects across the jurisdictional boundary will be evaluated. The effects across the jurisdictional boundary can also be evaluated based on simulations of changes to groundwater use in the jurisdictional or non-jurisdictional areas. The August 9, 2021, technical memorandum *Projected Water Budget Analyses* (M&A, 2021) provides an example of this evaluation using water budgets simulated with the PVHM. Groundwater level effects across the boundary can also be evaluated.

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REFERENCES

California Department of Water Resources (DWR), 2019, Alternative Assessment Staff Report, Corralitos-Pajaro Valley (Basin No. 3-002.01), July 17.

Hanson, R.T., et al, 2014, Integrated Hydrologic Model of Pajaro Valley, Santa Cruz and Monterey Counties, California, USGS Scientific Investigations Report 2014–5111, Prepared in cooperation with Pajaro Valley Water Management Agency.

Pajaro Valley Water Management Agency (PV Water), 2021, Pajaro Valley Subbasin Water Year 2020 Annual Report, March, https://www.pvwater.org/images/about-pvwma/assets/annual_reports_assets/SGMA-WY/PVWater_AR_WY2020.pdf.

Montgomery & Associates (M&A), 2021, Projected Water Budget Analyses, draft technical memorandum to Ad Hoc Sustainable Groundwater Planning Advisory Committee (GSU22 Committee), August 9.