BOS AGREEMENT NO. **24-037-A3**

AMENDMENT **03**

Original Agreement No.	**24-037**
Amendment 1	**24-037-A1**
Amendment 2	**24-037-A2**

THIRD AMENDMENT TO COUNTY OF MENDOCINO AGREEMENT NO. 24-037

This third Amendment to Agreement No. 24-037 is entered into by and between the **COUNTY OF MENDOCINO**, a political subdivision of the State of California, hereinafter referred to as "COUNTY," and **Larry Walker Associates, Inc.**, hereinafter referred to as "CONTRACTOR," the date this Amendment is fully executed by all parties.

WHEREAS, Agreement No. 24-037 was entered into on February 27, 2024 (the "Initial Agreement"); and

WHEREAS, First Amendment to Agreement No. 24-037 was entered into on May 07, 2024 (the "First Amendment") increasing the total amount by $20,000.00 for a new total of $320,000.00; and

WHEREAS, First Amendment to Agreement No. 24-037 incorporated a technical advisory group into "Exhibit A – Definition of Services"; and

WHEREAS, Second Amendment to Agreement No. 24-037 was entered into on July 8, 2025 (the "Second Amendment") extending the termination date from June 30, 2025 to December 31, 2025; and

WHEREAS, the Initial Agreement, First Amendment, and Second Amendment are referred to as the Agreement; and

WHEREAS, upon execution of this document by COUNTY and CONTRACTOR, this Third Amendment will become part of the Agreement and shall be incorporated therein; and

WHEREAS, it is the desire of COUNTY and CONTRACTOR to extend the termination date from December 31, 2025 to June 30, 2026; and

WHEREAS, it is the desire of COUNTY and CONTRACTOR to amend "Exhibit A – Definition of Services" Tasks 6-9, based off outcomes from the completion of Tasks 1-5 of the Agreement.

NOW, THEREFORE, we agree as follows:

1. The termination date set out in the Agreement is hereby extended from 12/31/25 to 06/30/2026.
2. The Exhibit A, Definition of Services, set out in the Agreement is hereby amended and superseded by Exhibit A attached hereto and incorporated herein by this reference.

All other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF

DEPARTMENT FISCAL REVIEW:

By: _____
DEPARTMENT HEAD

Date: 12-16-25

Budgeted: ☒ Yes ☐ No

Budget Unit: 2851 (PB)

Line Item: 862189 #PBLCP

Org/Object Code: PB-862189 #PBLCP

Grant: ☒ Yes ☐ No

Grant No.: LCP-22-06

COUNTY OF MENDOCINO

By: _____
Bernie Norvell
~~JOHN HASCHAK~~, Chair
BOARD OF SUPERVISORS

Date: 01/06/2026

ATTEST:
DARCIE ANTLE, Clerk of said Board

By: _____
Deputy 01/06/2026

I hereby certify that according to the provisions of Government Code section 25103, delivery of this document has been made.

DARCIE ANTLE, Clerk of said Board

By: _____
Deputy 01/06/2026

INSURANCE REVIEW:

By: _____
Risk Management

Date: 12/12/2025

CONTRACTOR/COMPANY NAME

By: _____
SIGNATURE

Date: 12-15-25

NAME AND ADDRESS OF CONTRACTOR:

Larry Walker Asociates, Inc.

Attn: Dr. Laura Foglia, Vice President

1480 Drew Ave., Ste 100, Davis, CA 95618

By signing above, signatory warrants and represents that he/she executed this Agreement in his/her authorized capacity and that by his/her signature on this Agreement, he/she or the entity upon behalf of which he/she acted, executed this Agreement

COUNTY COUNSEL REVIEW:

APPROVED AS TO FORM:

By: _____
COUNTY COUNSEL

Date: 12/12/2025

EXECUTIVE OFFICE/FISCAL REVIEW:

By: _____
Deputy CEO or Designee

Date: 12/12/2025

Signatory Authority: $0-25,000 Department; $25,001- 50,000 Purchasing Agent; **$50,001+ Board of Supervisors**
Exception to Bid Process Required/Completed ☐ _____
Mendocino County Business License: Valid ☐ **Exempt Pursuant to MCC Section:** _____

EXHIBIT A

DEFINITION OF SERVICES

CONTRACTOR shall provide the following services:

Tasks 1 and 2 – Existing Conditions Analysis Memorandum and Coastal Groundwater Mapping and Graphics

Larry Walker Associates (LWA) will conduct a detailed analysis of the existing conditions beginning with data from the sources below:

- Department of Drinking Water (DDW), water quality reports
- Department of Water Resources (DWR), CASGEM water levels
- DWR, Well Completion Reports
- United States Geological Survey, Stream Gauges
- DWR, Dry Well Reporting System Data
- California Geologic Survey, Geologic maps
- Federal and state agencies, climate data, including evapotranspiration and rainfall
- Local agencies, water and wastewater infrastructure
- County Land Use Surveys

Data will first be used to identify the appropriate Study Area for the coastal groundwater study. The initial area evaluated should extend to the watershed boundaries for all streams that discharge to the Pacific Ocean on the Mendocino County coastline. The groundwater study area should include the marine terrace and streamside alluvial aquifers that are present at the coast and the bedrock groundwater aquifers that are tributary to them. Study Area boundaries will be hydrologic (watershed) and hydrogeologic in nature and will be accurately mapped future use. LWA will analyze data collected from within the study area and provide a narrative description of the hydrogeologic framework. The description will include:

- Geometry and structural controls of the alluvial and marine terrace deposits
- Delineation of alluvial/terrace aquifers and bedrock
- Evaluation of aquifer properties (e.g., saturated thickness)
- groundwater elevation
- groundwater storage
- water quality
- impacts of sea level rise on groundwater levels and stream flows
- potential for water quality degradation due to saltwater intrusion

The assessment of available data and existing conditions analyses will include the evaluation of data gaps and provision of recommendations for methods to fill those gaps. LWA's evaluation of these existing conditions, data gaps, and analytical approaches will be summarized in a Technical Memorandum that includes relevant groundwater maps

and graphics.

- Data compiled for the Technical Memorandum will be stored in a GLA-Data database management system (DMS). GLA-Data uses a relational database (SQL Server) backend for storing tabular data and a representative state transfer (REST) server for storing spatial data.

LWA will use the information and data compiled, analyzed, and developed as described above to prepare maps and graphics that represent regional hydrology, topography, terrace and streamside alluvial aquifers, groundwater conditions, and other factors related to the Study Area. These maps and graphics will be related to the existing condition analyses and will be incorporated into the technical memorandum. All maps will be prepared using modern geographic information systems (GIS) software and data management techniques to provide usable, reproducible, and easily updated resources.

- LWA maps and graphics must clearly define the Coastal Zone using hydrology and hydrogeology and account for water district and local purveyor boundaries, land use, water sources, water use, topography, and surface water features as well as supporting a basic hydrogeologic conceptual framework, to develop as-needed hydraulic models, and to support proof of water testing. Maps and graphics developed as part of this task will include:
    - Historical and current land use
    - Surface water watersheds and water bodies
    - Water supply sources
    - Water supply well locations and density
    - Precipitation variation in space and time
    - Climate monitoring station locations
    - Potable water conveyance systems
    - Wastewater collection systems
    - Geologic and geomorphic maps
    - Terrace and streamside aquifer locations and boundaries
    - Localized aquifer parameters
    - Sea level rise and saltwater intrusion potential

  The Technical Memorandum produced will include a relevant narrative description and discussion of existing conditions along with maps and graphics. All maps and graphics generated will be included in the final report and may be used in additional tasks.

Task 1 & 2 Deliverables:

- Draft and final existing condition documentation Technical Memorandum including relevant groundwater maps and graphics submitted electronically in Microsoft Word and pdf formats.
- GLA-Data DMS with a user-friendly, web-based interface that presents available spatial and time series data associated with the project.

Task 3 – Hydraulic Model Development

LWA will develop several analytical models to support land use planning and well

permitting decisions.

Watershed Model

LWA will engage with County staff to evaluate potential watershed-wide surface water model tools that could be developed to assess hydrologic conditions in all of the watersheds and streams that discharge to the Pacific Ocean along the Mendocino County coast. Potential platforms for a hydrology model include the United States Geological Society (USGS) Basin Characterization Model (BCM), effectively a simplified grid-based model framework that iteratively computes a water balance given a spatial extent and climate inputs. Additional platforms that will be considered include the United States Environmental Protection Agency (EPA) Better Assessment Science Integrating Point and Non-point Sources (BASINS) (currently in iteration 4.5) that utilizes national scale resources including the National Hydrography Dataset (NHD), National Land Cover Dataset (NLCD), and other datasets to efficiently represent surface water hydrology and translate these representations into other models such as the Watershed Characterization System (WCS), Soil and Water Assessment Tool (SWAT), and others. Both model platforms are likely to allow for the simulation of surface water conditions for areas contributing to the coastal zone in existing conditions and in future land use and climate change scenarios. The watershed model will be used to evaluate if and where the watershed is supporting the local coastal aquifer with more basin-wide recharge. These results will then be included in the more localized approaches.

Saturated Thickness Model

This Excel-based model will serve as the primary tool to assist County staff in determining whether a well proposed to supply a new development will be able to produce water during long dry seasons and multi-year droughts. It will contain fields for entering selected information from the well completion report and the pumping test report. This information will be combined with values from look-up tables indicating the amount of water-level decline expected under intense and prolonged dry conditions. LWA will develop the look-up table values from available water-level hydrographs and structure the tables to facilitate the frequent addition of new data as they become available from recommended monitoring programs. The model will indicate the remaining saturated aquifer thickness above the bottom of the well screen at the end of the dry condition, and LWA will recommend a minimum thickness for County staff to apply.

Recharge Model

LWA will apply a one-dimensional rainfall-runoff-recharge model to various combinations of land cover, precipitation, soil type and slope to generate maps of annual recharge in normal, dry and critically dry years. For evaluating specific wells, County staff can determine the amount of recharge available to a well as a weighted average of the 1-D recharge rates in the area surrounding the well. To support land use planning, LWA will translate the recharge map into maximum densities of wells that can be supported by local recharge, with different densities for different well uses (residential, commercial, agricultural).

Climate Change Model

LWA will review available climate models and data sets for their applicability to the study area. The selected future time series of precipitation and evapotranspiration

(ET) will be substituted into the recharge model to estimate recharge under future conditions. As with the existing conditions analysis, the resulting recharge maps can be used to evaluate individual wells and to recommend maximum development densities. The recharge model operates at a daily time step, which allows the effects of a shift to larger but less frequent storm events to be estimated, in addition to changes in average annual or drought period rainfall and ET.

Sea Level Rise Model
LWA will apply conservative assumptions about sea-level rise, regarding the inland water-table profile, to determine whether well depth and saturated thickness criteria developed for existing conditions will need to be modified for future conditions. The conceptual model for saltwater penetration up creek and river channels is that the slope of the channel approaching the ocean can be used to estimate the inland advance of saltwater for every increment of sea level rise. LWA will create maps showing where existing or future wells would be impacted.

Additional Modeling
As an option, LWA can work with County staff to identify, design, and implement additional phases of model or other analytical tool development to facilitate additional future planning.

Task 3 Deliverables:

- Draft and final model approach memorandum presenting selected modeling techniques and tools prior to model construction.
- Electronic Microsoft Word and .pdf drafts and final model technical memorandum with complete documentation of the modeling and associated analytical methodologies.

Task 4 – Land and Water Use Forecasts
LWA will work closely with County and other local municipal staff to bridge knowledge gaps in the Coastal Element and develop appropriate land and water use forecasting methodologies that are informed by their institutional knowledge. Utilizing information collected from County, local municipal, and other agency staff, LWA will develop and apply a quantitative land use forecasting framework that identifies parcels which will likely undergo land use change to permanent households, transient households (motels, hotels, vacation home rentals, campgrounds, and recreational vehicle parks), employment, retail activities, and major recreational sites. LWA will then evaluate the anticipated water demand associated with these potential land use changes for comparison to the available water supply from the models already developed.
Task 4 Deliverables:

- Electronic Microsoft Word and .pdf drafts and final technical memorandum presenting land use forecasts throughout the Study Area.

Task 5 – Proof of Water Testing Guidelines and Procedures
In this task, LWA will use the information developed in the preceding tasks and work with County staff to develop comprehensive guidelines for proof of water adequacy testing throughout the coastal groundwater zone. This task will also include review of historical proof of water testing procedures in Mendocino County and in other counties with similar

programs.

The Saturated Thickness Modeling tool and the maps from all four hydraulic modeling analyses will be included in these procedures to provide the basis for evaluating the adequacy of water supply to a well under exceptionally dry conditions. In addition, and subject to participation, pumping tests will be requested as they are designed to confirm that a well is physically capable of producing the maximum day demand for the proposed domestic, vacation, commercial, or other development without reduced well performance or significantly impacting neighboring wells. The test should include concurrent water-level measurements at nearby wells, if those well owners opt to participate. If included, pumping test procedures will be clearly defined in the guidelines, including criteria to identify who is authorized to perform the tests and specific data collection and reporting requirements.

- Data collected during pumping tests would benefit ongoing updates and refinements to the Saturated Thickness Modeling tool for evaluating supply adequacy under dry conditions. Using the Saturated Thickness Modeling tool in combination with pumping tests could remove the requirement for dry season well testing, thus streamlining and simplifying the proof of water requirements for property owners and other planning permit applicants.

The pumping test guidelines will include tiered well yield requirements tied to water demand estimates that include all potable, non-potable, and fire flows while the proof of water guidelines will include procedures for testing and minimum yield and storage requirements for springs. The yields and required storage capacity for springs will be the same as those for wells and the testing procedures will primarily focus on demonstrating that the spring has been developed to capture and convey water.

Task 5 Deliverables:

- Electronic Microsoft Word and pdf format Drafts and final guideline document with the procedures, methodologies, and requirements for demonstrating adequate water from any well and/or spring proposed as water supply sources in the Study Area.

Task 6 – Technical Memorandum: Data Gap Analysis, Future Monitoring Recommendations, Data Management Plan

The Larry Walker Associates team (LWA team) will prepare a comprehensive technical memorandum that documents the project's pivot away from spatial water availability mapping toward a uniform Proof of Water approach, identifies remaining data gaps, provides recommendations on addressing data gaps and develops a plan to manage data as it is collected. This memorandum will include:

Decision Documentation

- Summarize the reasoning behind the decision not to define water availability zones within Coastal Mendocino County.
- Describe the subsequent decision to develop the Task 5 Proof of Water Procedure with a uniform approach that is:
    - Conservative to protect water users during future droughts;