Enterprise

Utilities and Infrastructure 101: Resources, Planning, and More

CALIFORNIA TRIBAL HOUSING ACCELERATOR ACADEMY 2025

May 21 2025

Icebreaker Question

Please share your name, tribe, and role in the chat

What is your favorite song to listen to to pump yourself up?

AGENDA

INTRODUCTION

APPROACH TO INFRASTRUCTURE:

CRITICAL PATH CONSIDERATIONS

AVAILABLE RESOURCES

QUESTIONS AND FOLLOW UP

Your Speakers Today

Utilities and Infrastructure 101

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About LACO

LACO Associates is a Native-owned, multi-disciplinary consulting firm specializing in lead consulting, land surveying, civil engineering, environmental and land use planning, and grant writing and management services.

We support a diverse range of projects across varying levels of complexity, delivering high-quality solutions tailored to our clients' unique needs.

Since 2018, we have led or consulted on projects for Dry Creek Rancheria, Cahto Tribe, Round Valley Indian Housing Authority, Scotts Valley Band of Pomo Indians, and Northern Circle Indian Housing Authority (NCIHA).

APPROACH TO INFRASTRUCTURE

Defining Infrastructure as it relates to Housing

In the context of housing, infrastructure refers to the basic physical systems that support and facilitate living in a community

This includes:

- Roads
- Dry Utilities
- Water Systems
- Sewer Systems

Also includes:

- Pedestrian Facilities
- Public Transportation
- Storm Water Systems
- EV Chargers
- Solar Facilities
- Parks & Playgrounds

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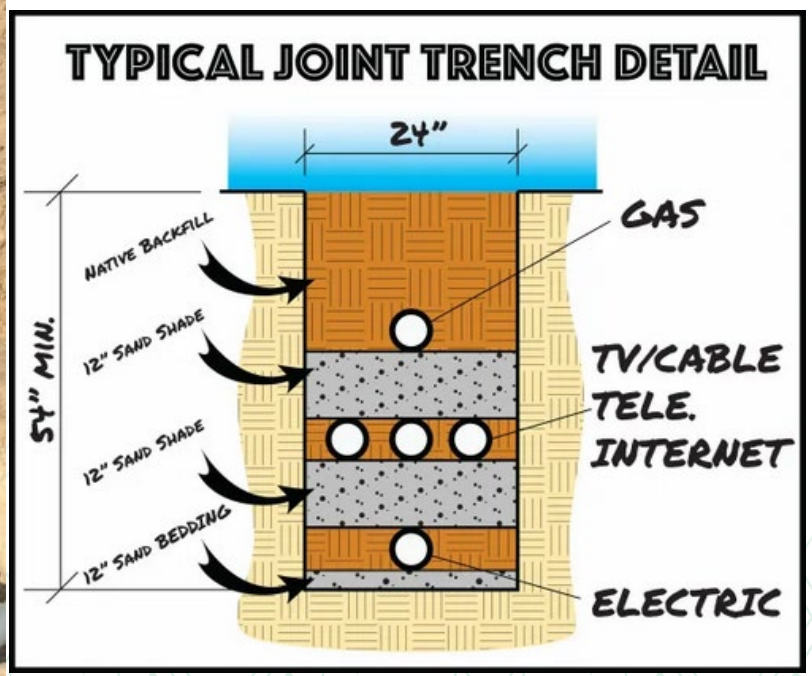
Dry Utilities Joint Trench



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Common Terms To Know When Requesting Professional Services for Infrastructure Planning and Design

RFP (Request for Proposal): A formal document soliciting “FEE” proposals from qualified firms for services. An RFP typically has a defined scope of work for a specific project.

RFQ (Request for Qualifications): A request for firms to submit their qualifications before a “FEE” proposal is requested. A Tribe issuing an RFQ may be interested in vetting multiple consultants whom later provide fee proposals in response to RFPs.

Fixed Price vs. Time and Materials:

- A fixed price is a lump sum
- Time and materials are based on hours worked and materials used.

Master Plan: A framework for physical development (housing layouts, roads, utilities) across a specific area or community.

Topographic Survey: A survey that maps the contours, elevations, and physical features of the land.

Site Plan: A scaled drawing showing the arrangement of buildings, roads, utilities, and other site features.

Common Terms To Know When Requesting Professional Services for Infrastructure Planning and Design

Geotechnical Investigation: A study of soil and sub-surface conditions to inform foundation and construction design.

Environmental Assessment (EA) / Environmental Impact Statement (EIS): Evaluations of environmental effects required under NEPA or other regulations.

Environmental Site Assessment (Phase I or Phase II): Evaluation of historical site uses and history of environmental contamination. Part of due diligence for a real estate transaction and required for fee-to-trust applications. Does not supplant or otherwise take the place of an EA or EIS.

Utilities Infrastructure: Systems such as water, sewer, stormwater, electrical, and broadband.

Stormwater Management: Design strategies to control runoff and minimize erosion or flooding.

Civil Engineer: Designs infrastructure like roads, grading, drainage, water/sewer systems.

Architect: Designs building layouts, aesthetics, and code-compliant structures.

Surveyor: Measures land and property boundaries.

Environmental Consultant: Conducts studies related to habitat, cultural resources, and environmental impacts.

Existing Site Assessment

Proximity to Existing Infrastructure, Constraints and Opportunities

Performing a pre-development infrastructure site assessment for a housing project is a critical step in evaluating the feasibility, cost, and timeline implications of site conditions before construction begins.

Define Project Scope and Objectives

- Clarify the goals and scale of the housing development.
- Identify the type and number of units, density, and expected utilities.

Review Existing Documentation

- Collect and analyze:
  - Topographic maps
  - Aerial imagery
  - Previous environmental/site reports
  - Utility as-built drawings
  - Local development plans and zoning regulations (If Fee Land or available from Tribal Planning Department)
  - Cultural Resources Documentation

Existing Site Assessment

Proximity to Existing Infrastructure, Constraints and Opportunities

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Conduct Site Visit and Initial Reconnaissance

- Perform a walk-through of the site to assess:
    - Access points and road connectivity
    - General topography and vegetation
    - Signs of environmental constraints (wetlands, flood zones, contamination)
    - Areas of Cultural Resources

Bring your Team

- Architect, Engineer
- Tribal Department Personnel

Existing Site Assessment

Proximity to Existing Infrastructure, Constraints and Opportunities

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Assess Existing Infrastructure

Transportation Access

- Condition and capacity of existing roads
- Connectivity to major roads/highways
- Availability of public transit

Utilities

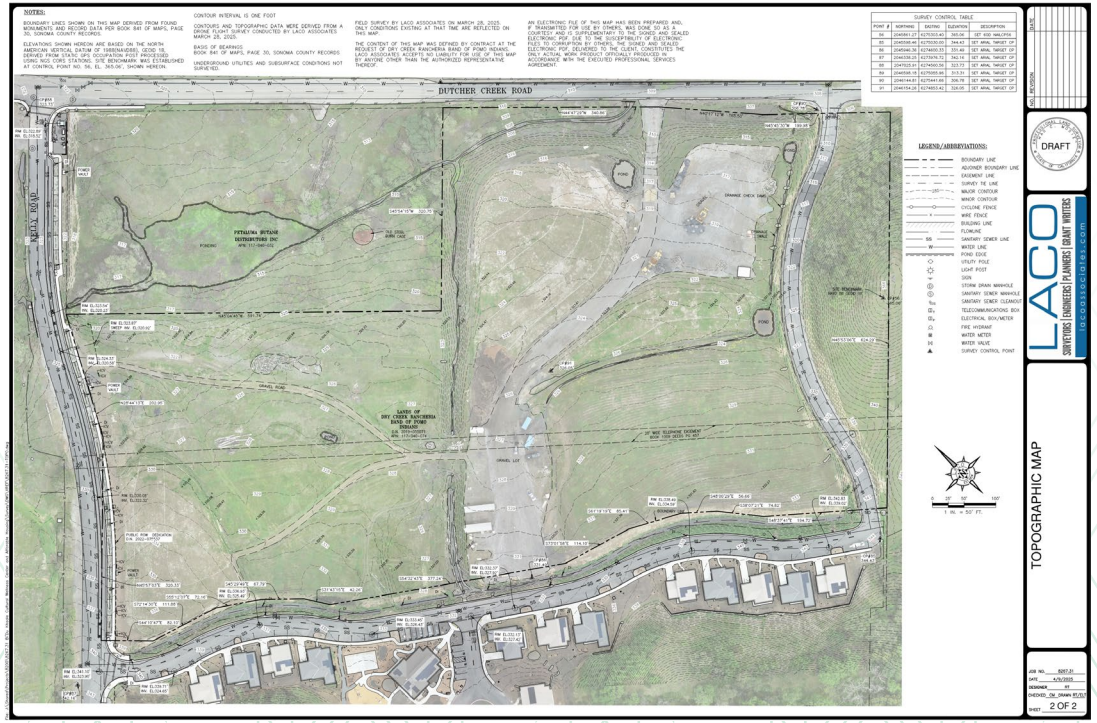
- Water Supply:
  - Availability, capacity, pressure levels
  - Distance to connection points
- Sanitary Sewer:
  - Existing lines and capacity
  - Feasibility of gravity flow vs. pumping stations
- Stormwater Drainage:
  - Existing drainage systems
  - Topography and flow patterns
- Electricity and Gas:
  - Proximity of mains and substations
  - Capacity and upgrade requirements
- Telecommunications:
  - Internet and telephone service providers
  - Fiber optic availability

Pre Design Considerations

These documents help ensure the project is feasible, compliant, and well-planned before moving into the design and construction phases

Mapping

- Topographic Survey (Aerial Drone With Imagery)
  - Elevations/Slopes
  - Natural & Manmade Features
  - Existing Underground/Overhead Utilities
- Cadastral Mapping (Boundary Survey)
  - Property Boundaries
  - Legal Descriptions & Plat Maps
- GIS Mapping
  - Spatial Data (Publicly Available)
  - Environmental, Cultural overlays
  - Flood Zones



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Geotechnical Evaluation

- Geologic Hazards
- Soil Bearing Capacity
- Groundwater Levels

Cultural Resources Evaluation

- Ensure Tribal voices lead the process of identifying and protecting their cultural heritage
- Protect places, stories, and practices that shape a Tribe's identity and ancestral connection to the land
- Include Tribal Historic Preservation Officers (THPOs) or cultural experts
- Walkovers or subsurface testing only with tribal approval
- Prevent disturbance of sacred sites

Pre-Design Considerations

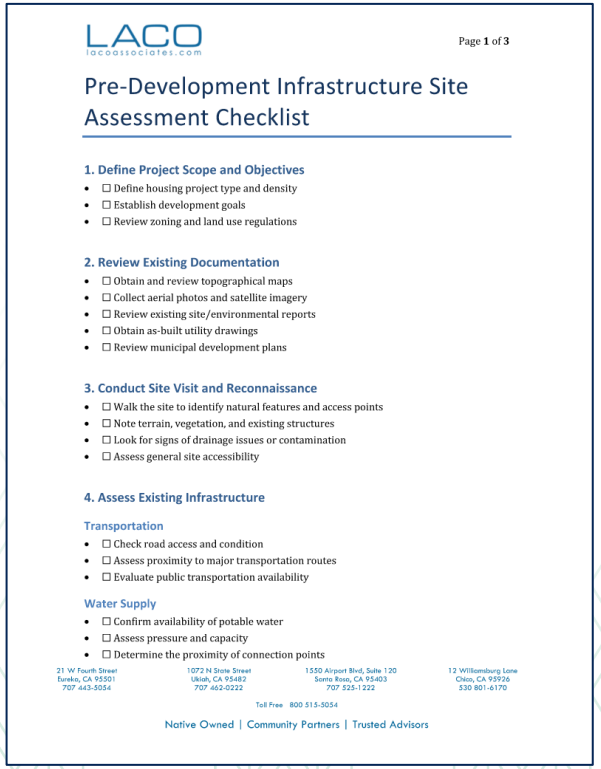
These documents help ensure the project is feasible, compliant, and well-planned before moving into the design and construction phases

Hydrology Report

- Surface water drainage
- Flood risk assessment
- Water table and stormwater management

Utilities and Infrastructure Assessment

- Existing water, electricity, gas, sewage lines
  - Study the capacity of the existing infrastructure to support your project
  - Onsite wastewater capacity if no public sewer system
- Internet and telecom connectivity



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Pre-Development Infrastructure Site Assessment Checklist

1. Define Project Scope and Objectives
- ☐ Define housing project type and density
- ☐ Establish development goals
- ☐ Review zoning and land use regulations

2. Review Existing Documentation
- ☐ Obtain and review topographical maps
- ☐ Collect aerial photos and satellite imagery
- ☐ Review existing site/environmental reports
- ☐ Obtain as-built utility drawings
- ☐ Review municipal development plans

3. Conduct Site Visit and Reconnaissance
- ☐ Walk the site to identify natural features and access points
- ☐ Note terrain, vegetation, and existing structures
- ☐ Look for signs of drainage issues or contamination
- ☐ Assess general site accessibility

4. Assess Existing Infrastructure

Transportation
- ☐ Check road access and condition
- ☐ Assess proximity to major transportation routes
- ☐ Evaluate public transportation availability

Water Supply
- ☐ Confirm availability of potable water
- ☐ Assess pressure and capacity
- ☐ Determine the proximity of connection points

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Design Assessment

Constraints and Opportunities

Before diving into assessment, all data collected during the pre-design phase should be reviewed and synthesized

Review of Pre-Design Findings

- Site analysis (topography, climate, access)
- Cultural resource assessments (esp. for Tribal communities)
- Environmental reports
- Geotechnical, utility, and infrastructure assessments
- Revisit the Community needs or stakeholder consultation findings
- Goal: Establish the baseline conditions, constraints, and opportunities

Refine Project Goals and Design Objectives

- Clarify and formalize the overarching vision and goals:
  - What kind of housing is needed (e.g., affordable, senior, family units)?
  - Who are the users (demographics, lifestyle, cultural considerations)?
  - What values guide the project (sustainability, cultural sensitivity, equity)?

Design Assessment

Constraints and Opportunities

Before diving into assessment, all data collected during the pre-design phase should be reviewed and synthesized

Technical Feasibility Review

- Coordinate with:
  - Engineers (civil, Mechanical/Electrical/Plumbing (MEP), structural)
  - Utility providers
  - Transportation or traffic specialists
- Validate:
  - Buildability
  - Infrastructure capacity
  - Cost implications of major systems
- Goal: Confirm that early design assumptions are realistic

Design Assessment

Constraints and Opportunities

Before diving into assessment, all data collected during the pre-design phase should be reviewed and synthesized

Design Risk Assessment

- Identify potential design risks early:
  - Cultural misalignment
  - Environmental impact
  - Cost escalation

Final Design Brief (Summarize)

- Compile all findings into a Design Brief that serves as the foundation for schematic design. It typically includes:
  - Project goals
  - Housing needs and program
  - Design values and principles
  - Regulatory constraints
  - Design criteria and performance targets

Schematic Design Layout

Schematic infrastructure design involves early-stage planning and conceptualization of essential infrastructure elements to support housing development. This phase focuses on creating a holistic, culturally sensitive, and technically feasible layout that can guide detailed design and implementation

Preliminary Layout and Conceptual Design

- Prepare schematic site plans showing:
  - Road networks and access points
  - Housing clusters or lots
  - Utility corridors (for underground or overhead systems)
  - Community amenities (parks, cultural centers, active recreation features, etc.)
- Integrate green infrastructure (rain gardens, bioswales) and renewable energy (solar, wind) if applicable.

Technical Feasibility and Coordination

- Coordinate with utility providers and tribal departments to ensure alignment with service availability.
- Evaluate constructability and maintenance considerations.
- Conduct preliminary cost estimates for infrastructure components.
- Assess phasing and scalability of infrastructure for future expansion

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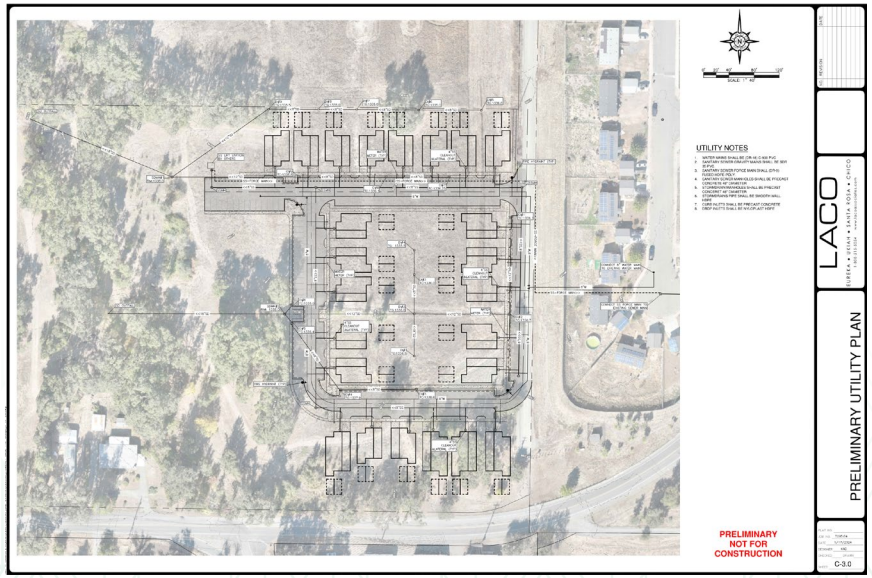
Deliverables at the Schematic Design Phase:

- Schematic site plan
- Preliminary infrastructure layout maps
- Conceptual utility diagrams
- Environmental and cultural impact summaries
- Cost estimate summary
- Phasing plan (if applicable)



Documentation and Approval

- Prepare schematic design drawings and narrative reports summarizing concepts and justifications.
- Submit for tribal council or housing authority review.
- Secure approvals for moving into detailed design and engineering

CRITICAL PATH CONSIDERATIONS

Critical Path Considerations

When planning and executing tribal housing infrastructure projects, understanding and managing the critical path is essential to ensure timely and successful completion. The critical path refers to the sequence of dependent tasks that determine the minimum time needed to complete a project. Any delay in these tasks will directly impact the overall project timeline.

Land Use and Environmental Clearances

- Critical Because: Many tribal lands are held in trust by the federal government, requiring additional clearances.
- Delays Occur If:
  - NEPA (National Environmental Policy Act) compliance, archaeological surveys, or BIA approvals are not factored into the schedule.
- Strategies:
  - Begin environmental and historical reviews early
  - Coordinate with BIA, EPA, and SHPO/THPO (Tribal Historic Preservation Office).

- Infrastructure Access and Capacity
  - Critical Because: Water, wastewater, electricity, and roads are often lacking or insufficient in tribal areas.
  - Delays Occur If: Utility right-of-way or expansion requires long lead times or additional permitting.
  - Strategies: Conduct early feasibility studies and engage infrastructure partners

Planning for Improvement/Upgrades and the Potential Impact on Residents

Upgrades to housing infrastructure can have a range of positive and negative impacts on existing residents, depending on how the project is planned, communicated, and executed.

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Positive Impacts

- Improved Living Conditions:
  - Upgrades to plumbing, electrical systems, insulation, roofing, and HVAC improve comfort, health, and energy efficiency.
- Improved air and water quality directly benefits residents, especially elders and children.
- Economic Benefits
  - Energy-efficient upgrades reduce utility bills.
  - Local employment opportunities may arise during construction, especially if TERO is used.
- Enhanced Community Pride and Stability

Planning for Improvement/Upgrades and the Potential Impact on Residents

Upgrades to housing infrastructure can have a range of positive and negative impacts on existing residents, depending on how the project is planned, communicated, and executed.

Negative Impacts

- Temporary Displacement:
  - Residents may need to temporarily relocate during upgrades, causing disruption, stress, or loss of access to services.
- Construction Disruptions:
  - Noise, dust, road closures, or reduced access to homes can be stressful or dangerous, especially for elders or those with disabilities.
  - Utility systems may need to be shut off at certain times to accommodate construction, leading to inconveniences or difficulties for existing residents.
- Lack of Communication:
  - Poorly managed communication can lead to confusion, fear, or mistrust among residents

Planning for Improvement/Upgrades and the Potential Impact on Residents

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Best Practices

- Community Involvement:
  - Involve residents in the planning and decision-making process.
- Transparent Communication:
  - Keep residents informed about timelines, disruptions, and expected benefits.
- Minimize Displacement:
  - Provide temporary housing or work in phases to limit disruptions.
- Post-Upgrade Support:
  - Offer education on using new systems (e.g., Septic System, Water Connections), and help with utility or maintenance costs if needed.

AVAILABLE RESOURCES

Tips on Capital Stack for Infrastructure

- Evelyn

- Tribal HHAP Round 4 NOFA
  - Release and application workshops
- Next Quarterly Tribal Working Group: 5/8
- Implementation of new laws
  - SB 1187 and AB 1878: Tribal Advisory Committee and Tribal Housing Grant Program

Indian Community Development Block Grant

Evelyn

Insert Content

- Tribal Homekey+ builds on the previous Homekey Tribal program with a focus on behavioral health and supportive services
- $121 million is available through non-competitive, over-the-counter grants

Eligibility

- Funding for permanent supportive housing for households
  - Experiencing or at-risk of homelessness and
  - Having a behavioral health challenge and
  - With incomes at or below 60% of area median
- Tribal entities may apply, including FRT, TDHEs, and California Tribes

Things to Know

- If the total requested funds exceed the amount available: *an allocation methodology will be used to determine each applicant's proportionate share of need relative to all application submissions*
- Each applicant is assigned a technical assistance provider to help with everything from the application to grant reporting
- Round 4 Draft NOFA expected to be released in the coming weeks

Contact Info

- Email: TribalHHAP@hcd.ca.gov
- Amy Lopez, Program Manager: Amy.Lopez@hcd.ca.gov

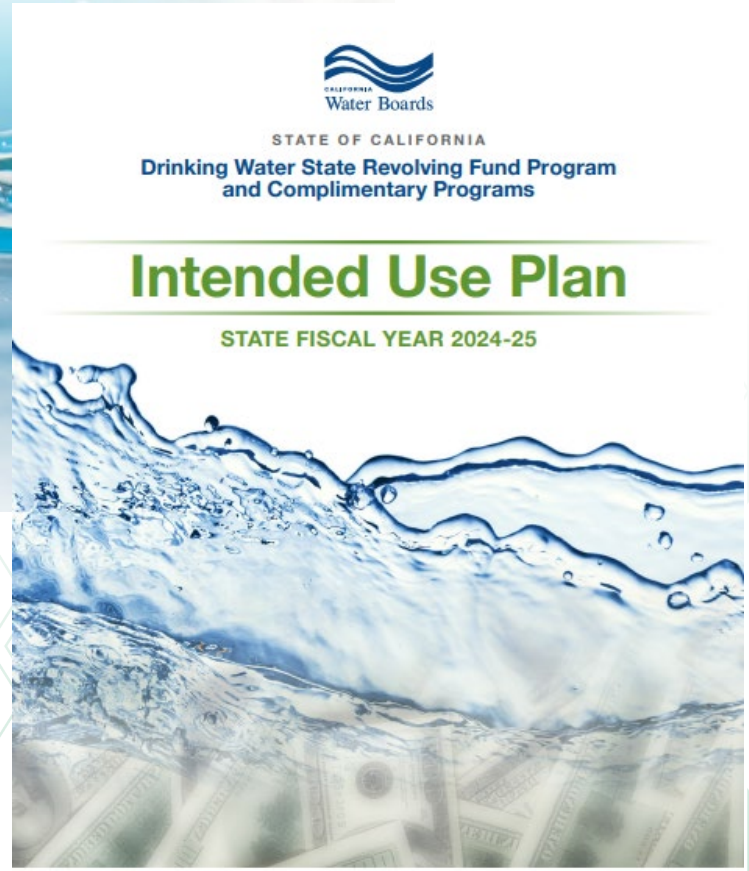
State Revolving Funds

State Revolving Funds (SRFs)

- Federal-State Partnership to support water and wastewater infrastructure
- Administered by the California State Water Resources Control Board (SWRCB) Division of Financial Assistance (DFA)
- Clean Water SRF: Wastewater Systems
- Drinking Water SRF: Potable Water Systems

Eligibility & Details

- Federally Recognized Tribes AND Tribes on State Native American Commission Consult List are eligible
- Funding can be grant, loan, or combination
  - Disadvantaged Communities typically can receive 100% grant funding
- Planning and Construction funding available
- Rolling application review process, can submit at any time



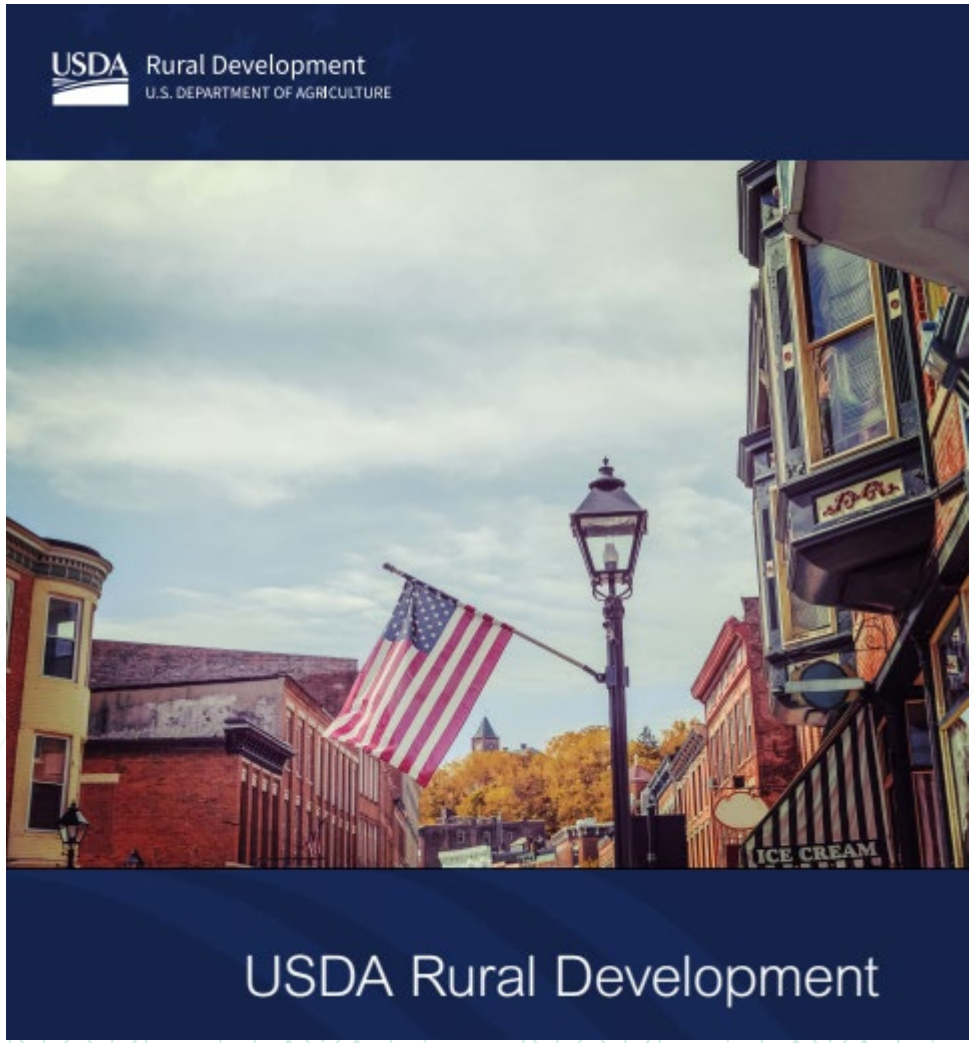
USDA Rural Development

[USDA Rural Development: Rural Utilities Service]

- Federal program to fund water and waste treatment, electric power, telecommunication and broadband services in rural communities.
- Annual funding allocations which vary based on federal budget cycle.

Eligibility & Details

- Provides both grant and loan funding. Matching share for grants can range from 25% to 55% depending on community demographics
- Can offer small planning grants to support preliminary engineering design to assess project feasibility
- Rolling application process
- Regional representatives typically available to discuss project fit, determine matching share, and clarify information needed.
    - Some regional representatives also provide technical assistance to applicants
- Also offers rapid response loans/grants for emergency utility issues



Proposition 4 Bond Funding

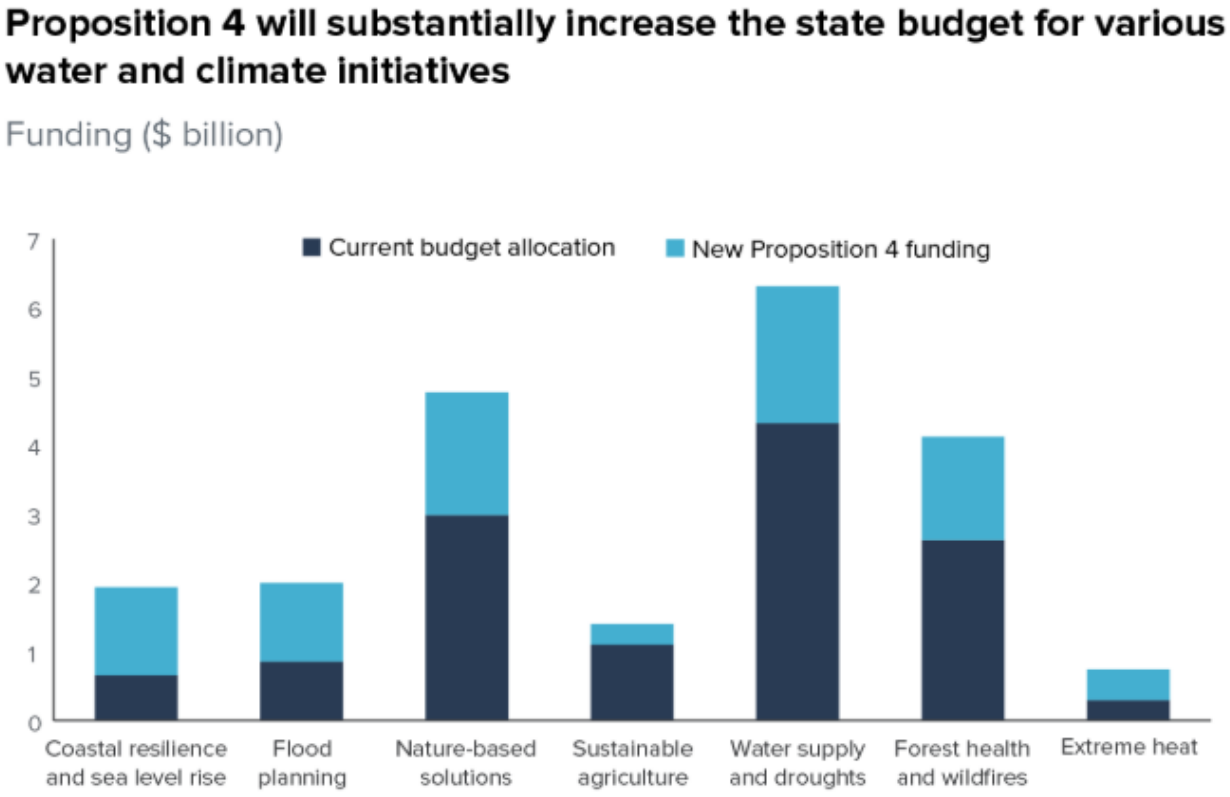
Proposition 4: Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond

- $10 billion bond measure approved by California Voters in November 2024
- $3.8 billion for safe drinking water, drought, flood, and water resilience
- $1.2 billion for nature-based climate solutions

Next Steps

- Grant programs through a variety of State agencies currently being developed or rolled out
  - $2.655 billion proposed in FY 2025-26
  - $194 million through SWRCB for water infrastructure projects
  - $153 million for water reuse and recycling
- Track CNRA announcements for upcoming funding rounds
- Consider climate adaptation needs as you develop your project infrastructure design

Proposition 4 will substantially increase the state budget for various water and climate initiatives



Infrastructure Infill Grant (IIG)

Evelyn

Insert Content

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DOE funds for Energy Rebates

Evelyn

Insert Content

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EPA Funds

Evelyn

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QUESTION CHECKPOINT

Next Steps for CA Tribal Housing Academy

CA Tribal Housing Accelerator Academy

Visit this link to register for all sessions! https://www.enterprisecommunity.org/learning-center/resources/2025-california-tribal-housing-academy-training-events

- July 16 at 1:00pm PST | Supportive Services Plan Deep Dive
  - With Beaux Simone Consulting

Thank You

Enterprise