CALIFORNIA ALL

BROADBAND FOR ALL

Middle-Mile Advisory Committee

May 20, 2022

AGENDA

- Welcome
- Executive Report
- Project Approach Update
- Public Comment

WELCOME

Russ Nichols

Acting Director

California Department of Technology

California Department of Technology

Mark Monroe
Deputy Director
Middle-Mile Broadband Initiative

California Department of Technology

Scott Adams
Deputy Director
Office of Broadband and Digital Literacy

NTIA Broadband Funding Updates

The Infrastructure Investment and Jobs Act (IIJA) designates $65 billion to close the digital divide and invest in broadband.

NTIA's Notice of Funding Opportunities (NOFOs) released on May 13:

- **Broadband Equity, Access, and Deployment (BEAD) Program to support broadband infrastructure and deployment.**
- **State Digital Equity Planning Grants for states to promote the achievement of digital equity and inclusion. Includes additional provision for Tribal Digital Equity Plans.**
- **Enabling Middle Mile Broadband Infrastructure Program for the construction, improvement or acquisition of middle mile infrastructure**

California's BEAD and State Digital Equity Planning begins this summer. More to come soon!

NTIA NOFO Overview

	BEAD	State Digital Equity Planning Grants	Enabling Middle Mile Broadband Infrastructure
Uses	**Funding for broadband planning, deployment, mapping, equity, and adoption activities.**	**Funding to develop the State Digital Equity Plan, a prerequisite for access to State Digital Equity Capacity Grant funding.**	**Funding for the construction, improvement, or acquisition of middle mile infrastructure**
Total Funding	**$42.45 billion**	**$60 million**	**$980 million**
State Allocation	• **Minimum allocation of $100 million.** • **May request up to $5 million in planning funds.** • **State total allocation to be determined after release of federal data map.**	**California's tentative allocation is $4,001,525.45**	**NTIA expects to make awards in the $5 million - $100 million range.**
Immediate next steps	• **Letter of Intent due by Jul 18, 2022.** • **Request for Initial Planning Funds due by Aug 15, 2022.**	**Applications due by Jul 12, 2022**	**Applications due by Sep 30, 2022**

California Department of Technology

Mark Monroe
Deputy Director
Middle-Mile Broadband Initiative

THE CPUC'S ANCHOR BUILD MAP

In February, the CPUC produced a revised Anchor Build map that identified the need for a 9,470-mile network based on its analysis of public comment and its assessment of unserved and underserved locations.

GSN'S RECOMMENDED SYSTEM DESIGN

GSN produced a recommended system design of approximately 8,650 miles, which it presented at the April MMAC. To create this design, GSN used the following methodology:

- Add segments to create a "ring topology" that will make the system operationally resilient.
- Reduce miles for potentially duplicative routes.
- Reduce miles for spurs to some unserved populations that could be funded instead using last-mile/CASF funding.

CDT'S COMBINED APPROACH

CDT has combined these two approaches to develop a 10,000-mile statewide network. CDT's revisions balance the need for commercial viability of the network with the policy of maximizing connectivity in the following ways:

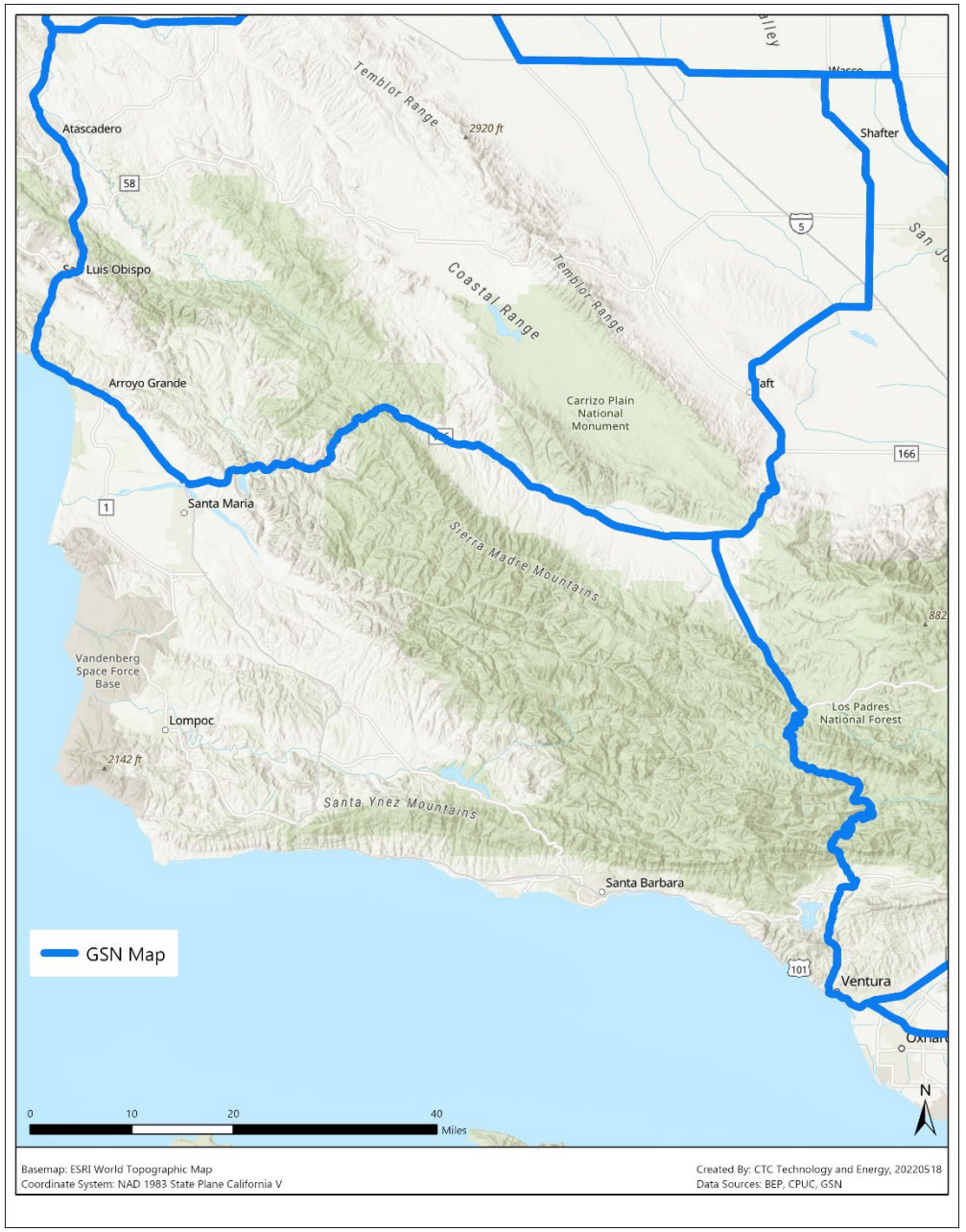
- Remove redundant "rings within rings". The revised design provides for operational resiliency and features fewer, sometimes larger, rings.
- Remove segments that are outside of the state.
- Align routes to those recommended by the CPUC.
- Add back spurs to connect more than 400,000 households.

Caltrans will start its 2-year preconstruction process on this network.

EXAMPLE OF REMOVAL AND REPLACEMENT

This map shows an example of CDT's adjustments to the proposed GSN statewide map to demonstrate the added value from this change:

- **Image 1: GSN map**
- **Image 2: GSN map with CPUC map**
- **Image 3: GSN map removal with CPUC map replacement**
- **Image 4: CDT statewide map**



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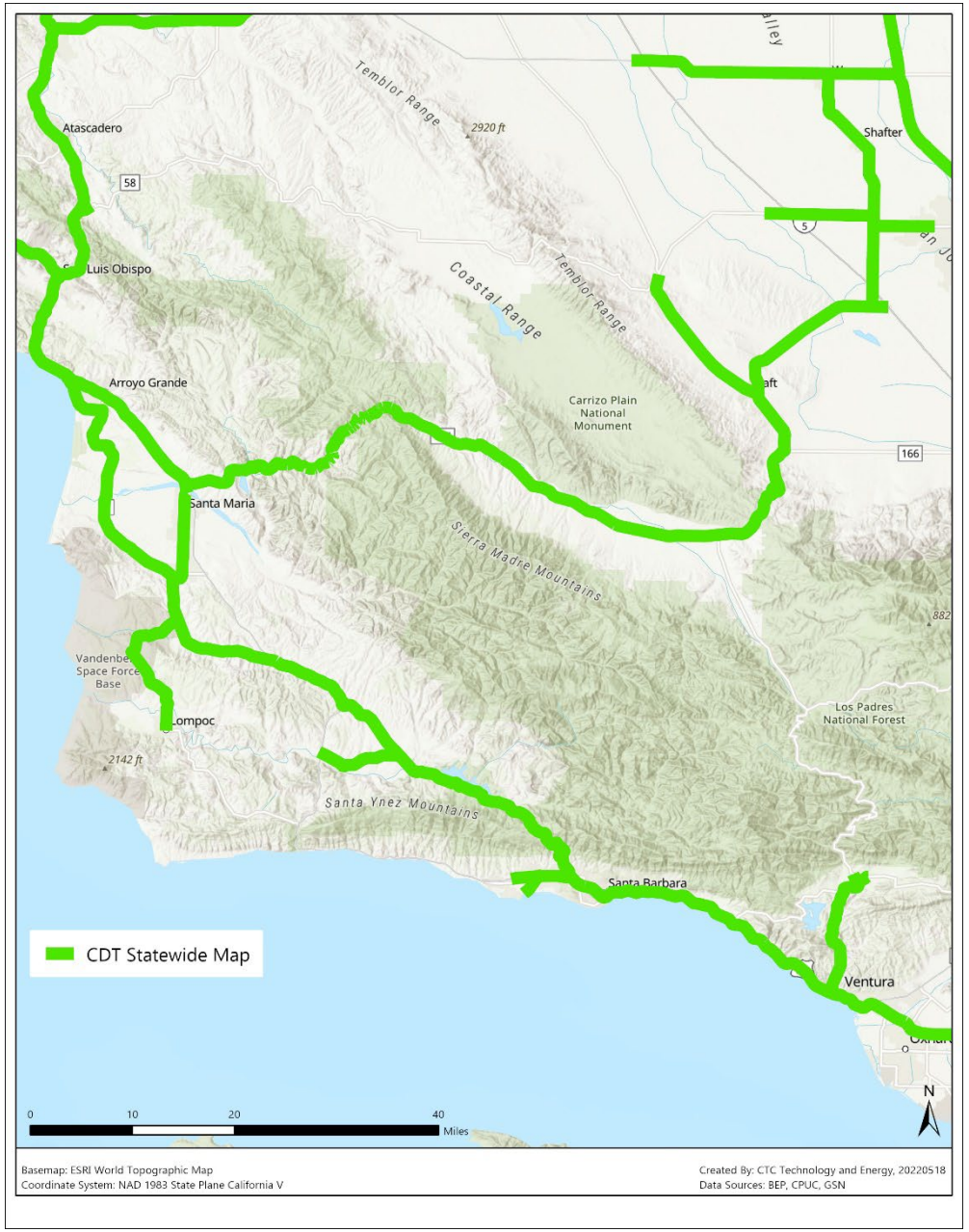

SUMMARY OF MAP DESIGNS

CPUC map: 9,470 miles

GSN map: 8,650 miles

CDT map: 10,000 miles

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MOVING FORWARD

CDT will continue the following efforts:

- **Get revised construction cost estimates from Caltrans.**
- **Get updated market assessment for dark and lit service.**
- **Get updated locations of potential infrastructure that can be leased through IRUs.**

As data is refined, CDT will identify where the state will be able to build and where it will need to use IRU leases.

Third Party Administrator

Tony Naughtin
President and CEO
GoldenStateNet

TPA: GoldenStateNet Update

Processes/work product supporting transition from design phase to development/execution phase:

- **Inform and support optimization process for CDT's network development decisions: *Build vs. Buy vs. Joint Build***
  - **Finalizing network route designs with CDT**
  - **Working with Caltrans on new-build specs and practices**
  - **ILA repeater huts: capex, locations, maintenance costs**
  - **Analysis and recommendations for active network gear**
- **Initial draft of Program Plan (i.e. network implementation 'playbook')**
- **Working with CDT on business model (projected opex and revenues) in support of long term O+M costs**
- **Assisted in development of survey for last mile providers (sent to ISPs/telecom carriers)**

Optimization Process

Inform CDT to enable partner-based optimization and application of available budget. This includes:

- Providing comprehensive information to drive decision-making for Build vs. Buy vs. Joint Build
- Working with CDT to determine contingency reserve percentage against $3.2B budget (typically 10-20%)

Steps to achieving optimization:

- Show total routes, mileage, and projected cost of statewide Middle Mile Network that would be 100% newly-built fiber, including required equipment facilities
- Determine newly-built routes that are *no regrets* and most *feasible* within available budget
- Determine routes for dark fiber IRUs within remaining budget
- In addition, determine joint-build portions of MM network within remaining budget

Final CDT decisions for all MM network segments within $3.2B budget (minus contingency):

- 18 Initial Projects
- Newly built fiber routes
- Dark Fiber IRU routes
- Joint build routes
- Equipment and facilities

Design Factors for Commercial Partnerships

- Engaged services providers (carriers, vendors, ISP, etc.) to examine potential solution sets.
  - Geographic fit
  - Systems designs
  - Commercial willingness to partner
- Sought joint build partnerships to reduce costs to the State and to Partners.
  - A variety of carriers including local California companies and national carriers.
  - Over 1000 Miles of potential joint builds identified.
- Examined CASF awards to uncover synergies in construction plans.
  - Approximately a dozen CASF grants regardless of middle mile or last mile exist.
  - Adjusting system designs to develop collaborations are needed.

Current Routes for Potential Commercial Partnerships

GOLDENSTATENET

California Public Utilities Commission

Robert Osborn
Director, Communications Division
California Public Utilities Commission

2021 Broadband Investments
Background on CPUC Responsibilities

Last Mile Initiatives and Supporting Programs

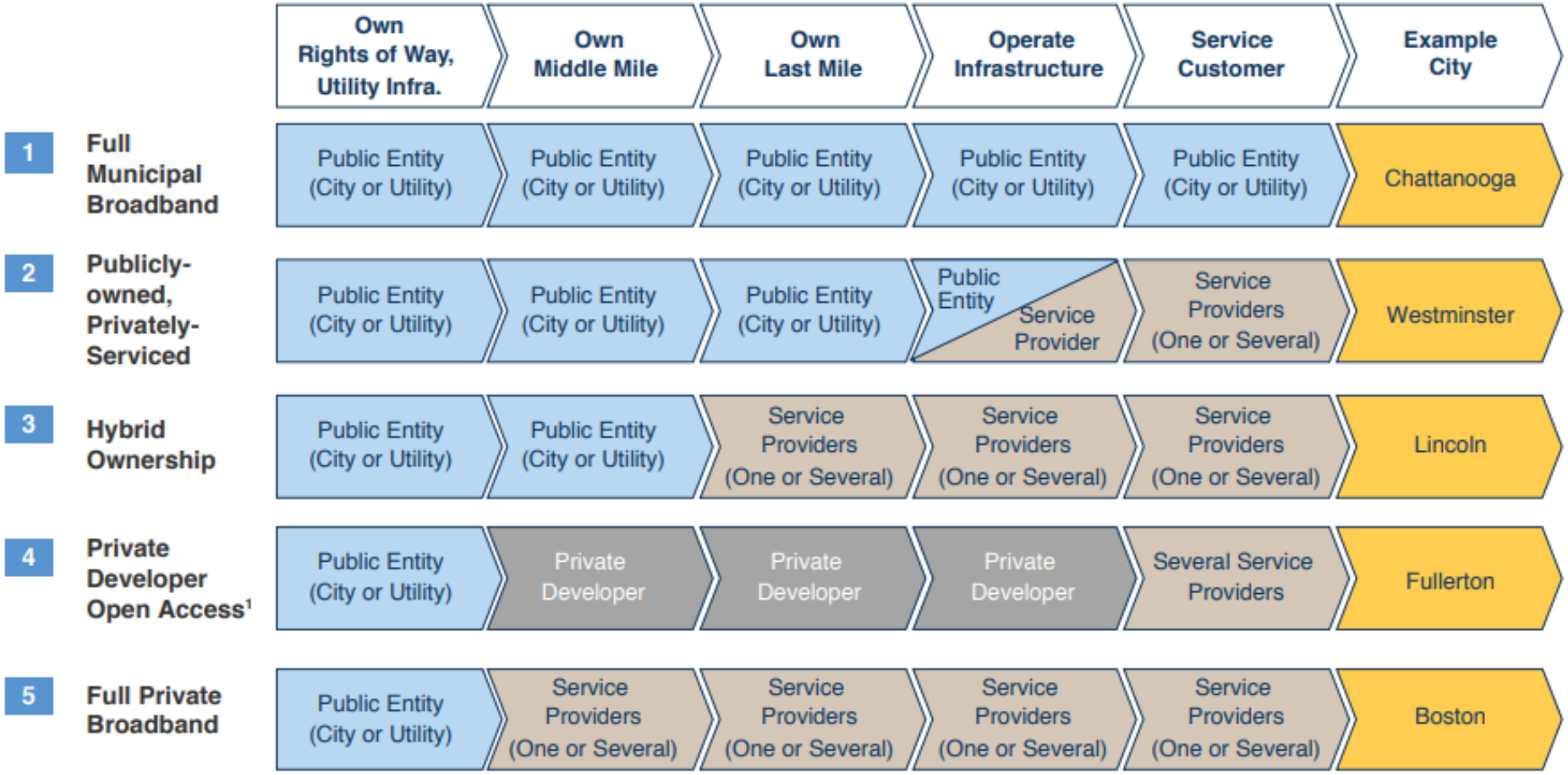
1. **Broadband Technical Assistance** - $50 million total**
   - Purpose: Help prepare local governments & Tribes for broadband infrastructure investments.
2. **Loan Loss Reserve** - $750 million
   - Purpose: enable local governments & nonprofits to secure financing for broadband infrastructure.
3. **Federal Funding Account** - $ 2 billion
   - Purpose: Funding for last-mile broadband infrastructure projects.
4. **California Advanced Services Fund (CASF)** ~up to $150 million per year
   - Purpose: assist with broadband infrastructure deployment & adoption in public housing, Tribes, & unserved areas.

Middle-Mile Locations

- Identify routes & priority areas using public process.
- Report mapping & analysis to the California Department of Technology for use in program implementation & project development.

* May be increased pursuant to Public Utilities Code Section 281(d)(4)
** Included in $2 billion Last-Mile Initiative

Public-Private Broadband Models

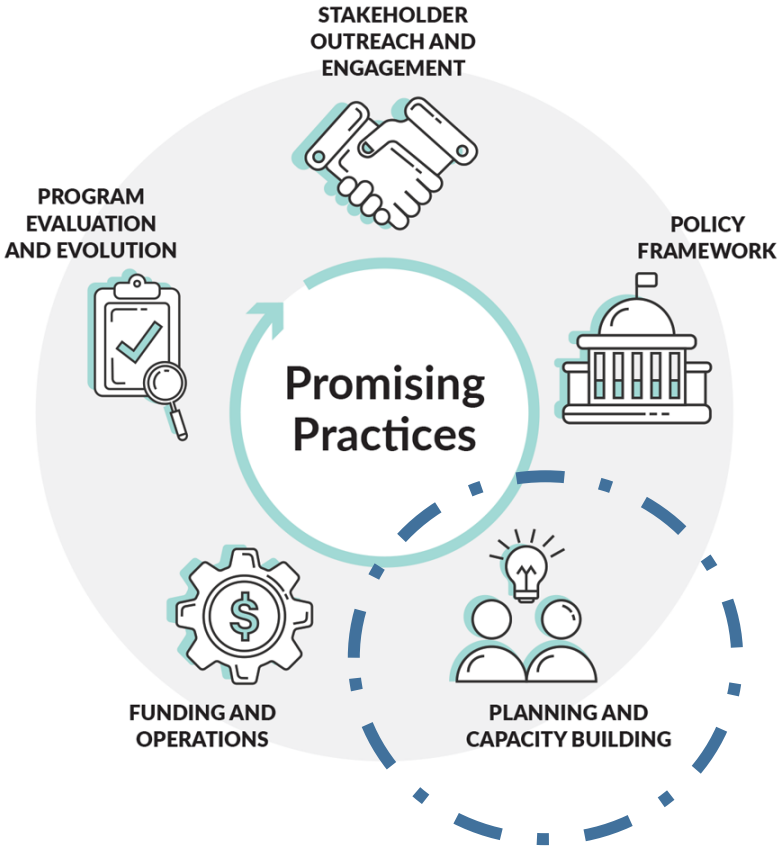


Note: 1) Private Developer is defined as private company that builds, owns and operates the network infrastructure and offers open access to it to several retail SPs that provide service on the top

US Ignite Whitepaper on Broadband Models (July 2020)

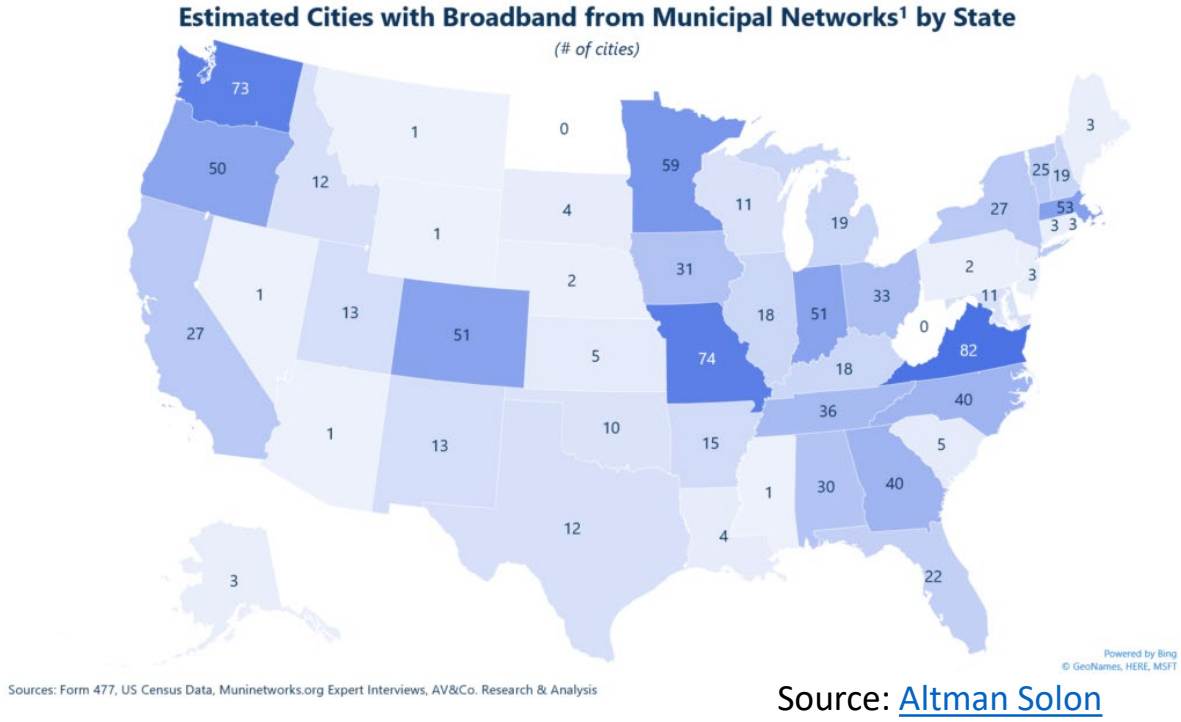
Local Agency Technical Assistance

- **$50 million** for **technical assistance grants** to local agencies and Tribes.
- Funding can be used for public entity or consultant costs to create **Joint Powers** Authorities, and for other costs to prepare to deploy broadband infrastructure, including for **environmental** permitting**, engineering, and design** activities.
- **Timing** - Applications June-July 2022.
- **Actions** - Public entities identify needs and prepare to apply May through July 2022.
- More information



Loan Loss Reserve Fund

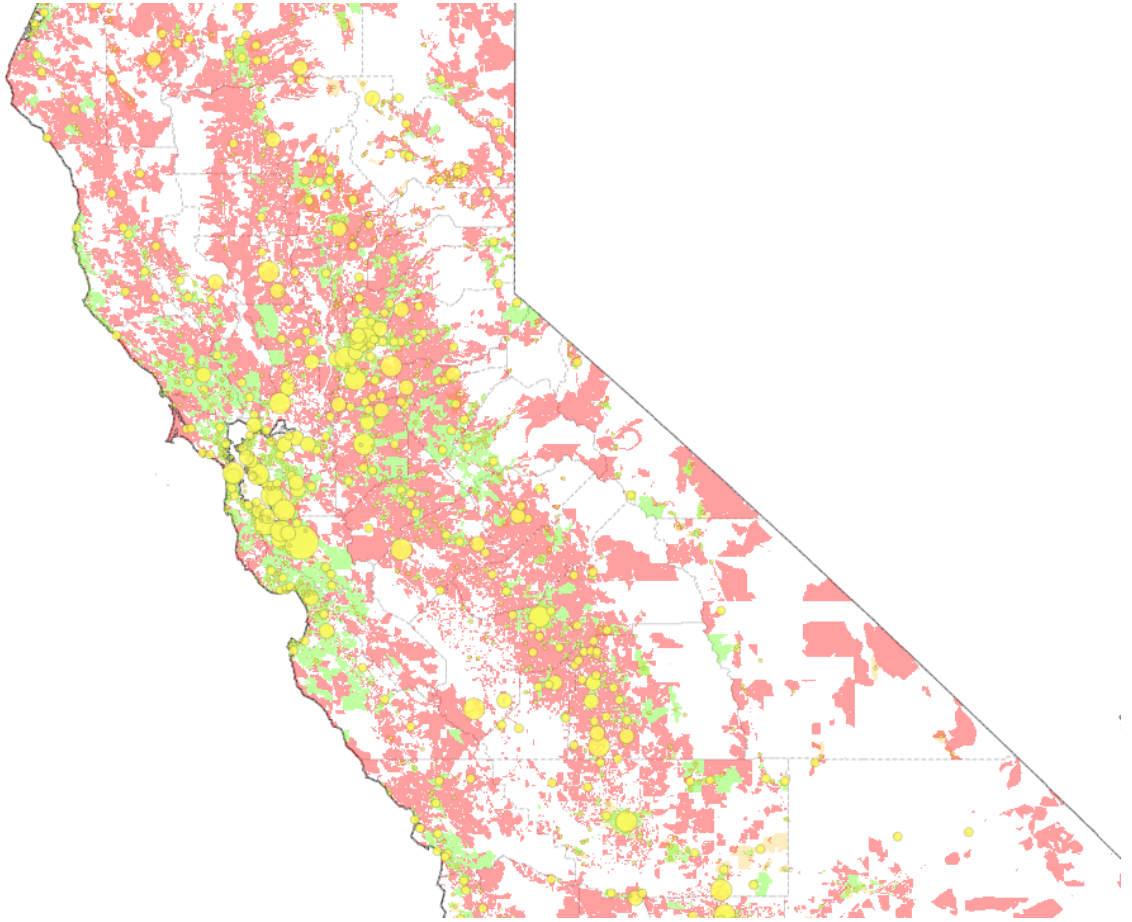
- **$750 million** Loan Loss Reserve Fund to support development of public broadband networks.
  - A form of **credit enhancement**, or a type of insurance, that helps lenders control for the risk that loans will not be repaid. This new funding will provide collateral to local governments and non-profits for bond financing.
  - The US Department of Energy operates a similar loan loss reserve program.
- CPUC Rulemaking 20-08-021
- **Timing** - Proposal for input by August 2022, comments and workshops to follow.
- **Actions** - Engage in the implementation and consider becoming a party to the proceeding to inform program rules that meet needs.



Source: Altman Solon

Last Mile Federal Funding Account

- The new $2 billion **Federal Funding Account** is for last-mile broadband infrastructure grants.
- These funds must be encumbered by the **2025** federal deadline, and spent (i.e., projects built) before **2027**.
- **Timing** - Targeting applications before July 2022.
- **Action** - Get ready to apply or to support those who will apply.



Adoption, Consortia, Public Housing & Infrastructure Broadband Grants

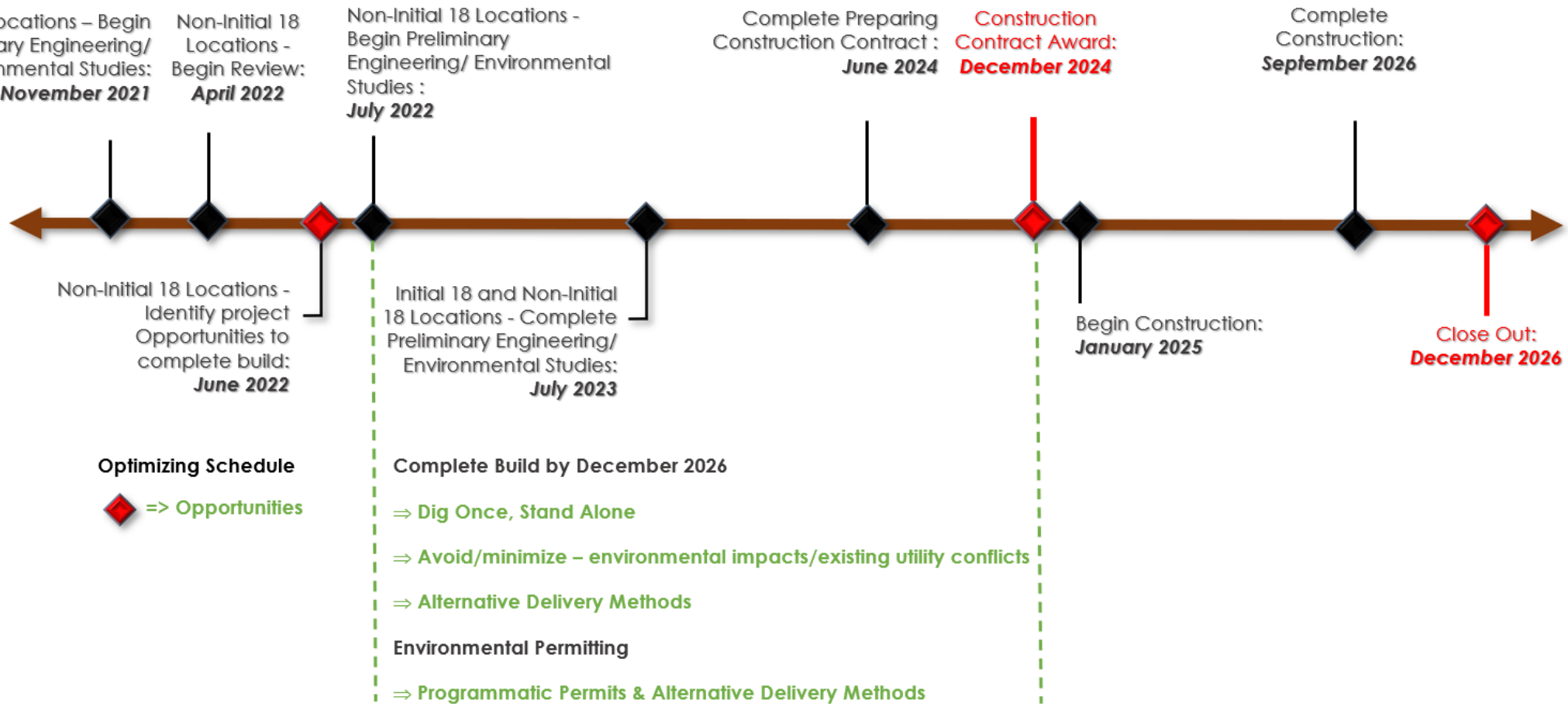
- Broadband Adoption, Consortia, Public Housing and Infrastructure grants are supported by the California Advanced Services Fund (CASF) broadband grant program. Up to **$150 million** a year funded by a surcharge on telephone bills
  - Broadband Adoption Grants
  - Broadband Consortia Grants
  - Broadband Infrastructure Grants
  - Broadband Public Housing / Low-Income Communities
- **Timing** - Updated rules for Adoption, Consortia, and Housing May; Applications in June/July. Infrastructure proposal before end of second quarter 2022.
- **Action**
  - Engage on the implementation of the Broadband **Adoption**, **Consortia**, and **Public Housing** Program Updates in Rulemaking 20-08-021.
    - Become a party to the Rulemaking.
    - Join the mailing list for funding availability (email CASF_Adoption@cpuc.ca.gov)
  - Watch for the CASF budget allocation of amounts across the subaccounts (Adoption, Consortia, Infrastructure, and Public Housing)

California Department of Transportation

Hardeep Takhar
Broadband Middle-Mile Network Director
California Department of Transportation

Caltrans Update

Project Delivery Strategy



Project Delivery Update

INITIAL 18 LOCATIONS (845 Target Miles)

- **Preliminary Engineering/Environmental Studies Underway**
  - **Dig Once = 9 Projects (90 Miles)**
  - **Stand Alone = 22 Projects (605 Miles)**
  - **Total = 31 Projects (18 Locations) = 695 Miles**
  - **Locations under evaluation = 150 miles**
- **Construction Begin Estimated = June 2022 – December 2024**

Caltrans Update

Project Delivery Update

NON-INITIAL 18 LOCATIONS (7,255 Target Miles)

- **Developing project proposals by June 2022**
  - **Dig Once**
  - **Stand Alone**
- **Preliminary Engineering/Environmental Studies to begin July 2022**
- **Construction begin Estimated = June 2023 – December 2024**

THANK YOU!

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