CALIFORNIA ALL

BROADBAND FOR ALL

Middle-Mile Advisory Committee

June 17, 2022

AGENDA

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

WELCOME

Liana Bailey-Crimmins

Director

California Department of Technology

California Department of Technology

Mark Monroe

Deputy Director

Middle-Mile Broadband Initiative

Executive Report Out

Final Initial Map:

- 10,000-Mile MMBI Network Map
- Delivered to Caltrans for start of Preconstruction
- Focusing on posting a static version of the map on the MMBI website
- Moving towards posting a dynamic version of the map in the weeks to come

Procurement:

- Fiber/Materials: As reported previously, CDT signed contracts in May for procurement of fiber and related materials between 2023 and 2026.
- Hut Procurement: The state has a contract through DGS that will provide the huts needed.
- Electronics Procurement: The state has a contract through DGS that can provide the electronics needed.
- Logistics Coordinator: In July, CDT plans to move forward with a procurement for a logistics coordinator to organize ordering, storage, and delivery of fiber and related materials to construction contractors.

CDT's Transition from planning to governance:

- Caltrans is now moving forward with implementation of construction work.
- GSN is moving forward with evaluation of IRU/lease alternatives and development of the schedule of services that will be provided. (***GSN will be providing an update on its activities as we move into this development and execution phase.***)
- CDT and GSN will also continue coordinating with PUC on last mile projects. (***PUC will be providing an update on its last mile activities.***)

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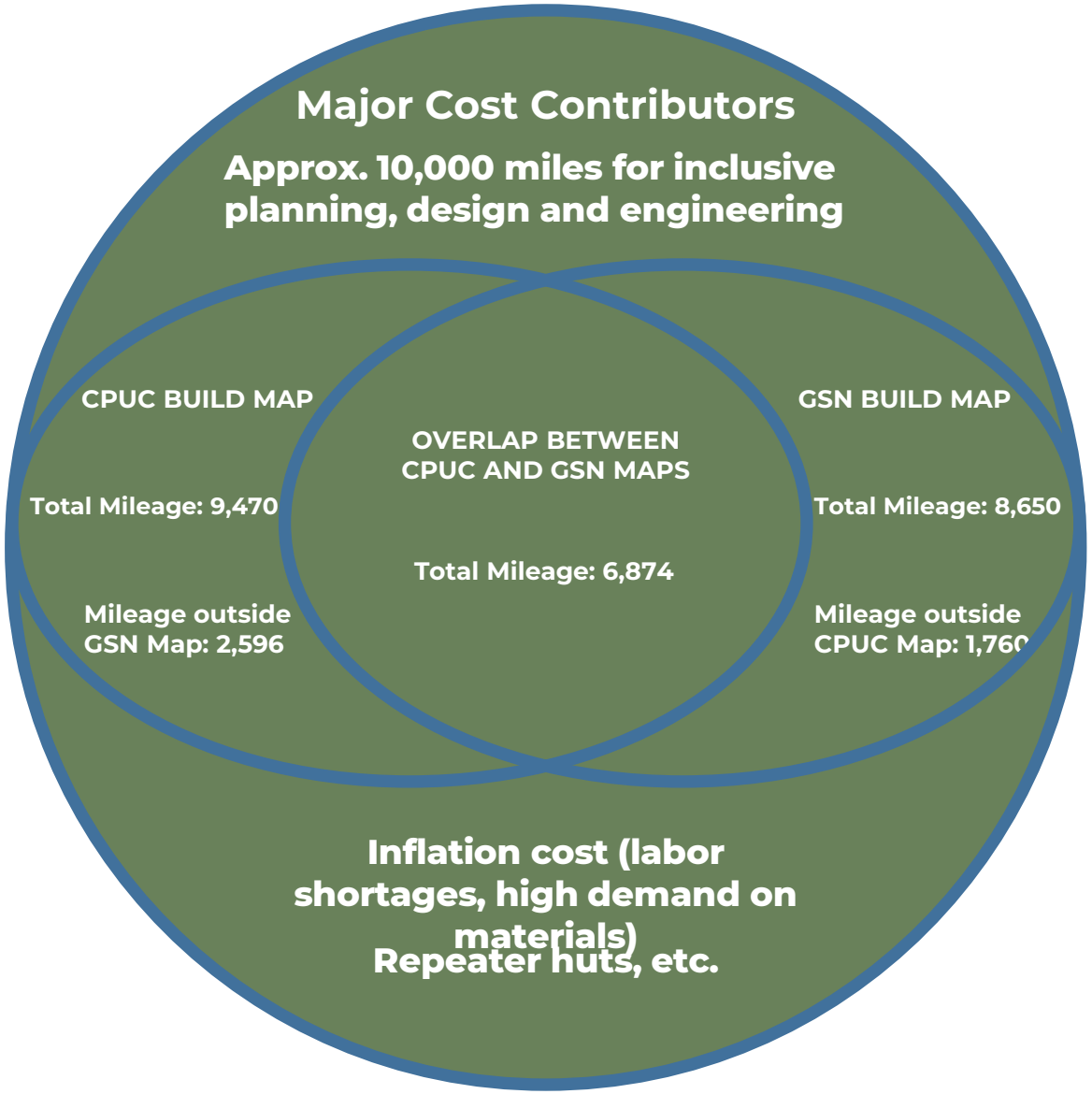

Major Cost Contributors
Approx. 10,000 miles for inclusive planning, design and engineering
CPUC BUILD MAP
Total Mileage: 9,470
Mileage outside GSN Map: 2,596
OVERLAP BETWEEN CPUC AND GSN MAPS
Total Mileage: 6,874
GSN BUILD MAP
Total Mileage: 8,650
Mileage outside CPUC Map: 1,760
Inflation cost (labor shortages, high demand on materials)
Repeater huts, etc.

Project Approach Updates-CDT

Definitions:

- Fiber: Glass cables that carry light signals. Comes in pairs for transmitting and receiving. CDT is installing 288 ct. fiber. (Standard sizes include 144, 288, 432, 576, and 864) A smaller number of fiber pairs, such as 4 pairs can often be sufficient to carry most signals. Additional fiber is used so that last mile providers can tap into pairs and use them until they get to a MMBI network connection point. (Absent the additional fiber pairs, last mile providers need to build to a point where they can connect to the MMBI network.)
- Conduit: Reinforced plastic tubes that hold/protect the fiber. CDT is installing 2” conduits standard, since these will hold/fit any size fiber counts.
- Vaults: Small pull boxes that are about 2,500 feet apart. Vaults provide access points to the MMBI network for last mile providers.
- Electronics: These are necessary to move/repeat signals along the fiber.
- Repeater huts: These are needed to house the electronics. These are placed every 50 miles or less to ensure a strong signal. These require power and emergency generators.
- Regional Internet Exchange Points (IXPs): An IXP is one or more physical locations containing network switches that route traffic between the different member networks. These are the key points throughout the state where the MMBI network will tie into the broader core of the internet.

Project Approach Updates-CDT

Market Sounding:

- Purpose: GSN's System-Level Design requires a systematic survey process that reaches the widest range of potential users of the MMBI network and considers future MMBI services.
- Types of Entities: Market research covers all types of broadband infrastructure and service providers, as well as enterprise customers with large-scale fiber needs.
- Channels of Engagement:
  - Electronic surveys - To collect a uniform set of information across all market research participants (e.g., services they provide, who and where they serve) shared with 300+ recipients.
  - Complimentary interviews - To gather reliable information on the kinds of services, the routes of the MMBI network, and the price points that the participants may be interested in.
- Goals:
  - Collect information and assumptions to help build a business plan for the MMBI network.
  - Collect information that can inform service agreements, demand and revenue assumptions, and priority routes.
  - Start marketing the MMBI network to potential customers.

Third Party Administrator

Tony Naughtin
President and COO
GoldenStateNet

GoldenStateNet Update

Transition into development and execution phase of MM network continues:

- Continuing work on ILA hut development process: approx. 180+ huts across 10,000 miles of new MM network
- Substantive discussions on joint-build opportunities with multiple carriers/ISPs that are interested
- Evaluating and negotiating carrier proposals that have now been presented for Dark Fiber IRUs
- Nearing final v 1.0 of System Layer Design and v 1.0 of Program Plan in collaboration with CDT; Business model work in progress (projecting for long term O+M)
- Analysis and process for recommending Regional Exchange Point locations throughout MM network

California Public Utilities Commission

Jonathan Lakritz
Communications Division
California Public Utilities Commission

2021 Broadband Investments
Last-Mile Broadband Initiative Snapshot

	TECHNICAL ASSISTANCE	LOAN LOSS RESERVE FUND	FEDERAL FUNDING ACCOUNT	CALIFORNIA ADVANCED SERVICES FUND
Amount	$50 million	$750 million	$2 billion	$150 million per year
Summary	Assist local governments & Tribes to prepare for broadband infrastructure investments.	Enable local governments & nonprofits to secure financing for broadband infrastructure.	Fund last-mile broadband infrastructure projects in every county.	Assist with broadband infrastructure deployment & adoption in public housing, Tribes, & unserved areas.
Target	Apply for Grants: June-July	Comment on proposal to be issued by August	Priority Areas to be released before applications open	Apply for Grants: Adoption by July 1 Housing by July 1 Consortia by July 15 Infrastructure Ruling comment requested

California Advanced Services Fund
Broadband Grant Windows

Broadband Adoption and Digital Equity

Grants to public entities and community-based organizations for digital literacy and broadband access projects.

- **Apply by July 1**

Consortia

Regional consortiums of public entities and community-based organizations to help deploy broadband infrastructure and service by assisting applicants in California Advanced Services Fund the project development or grant application process.

- **Apply by July 15**

Public Housing and Low-Income Communities

Grants to build broadband networks offering free broadband service for residents of low-income communities including but not limited to, publicly supported housing developments, and housing or mobile home parks with low-income residents.

- **Apply by July 1**

California Department of Transportation

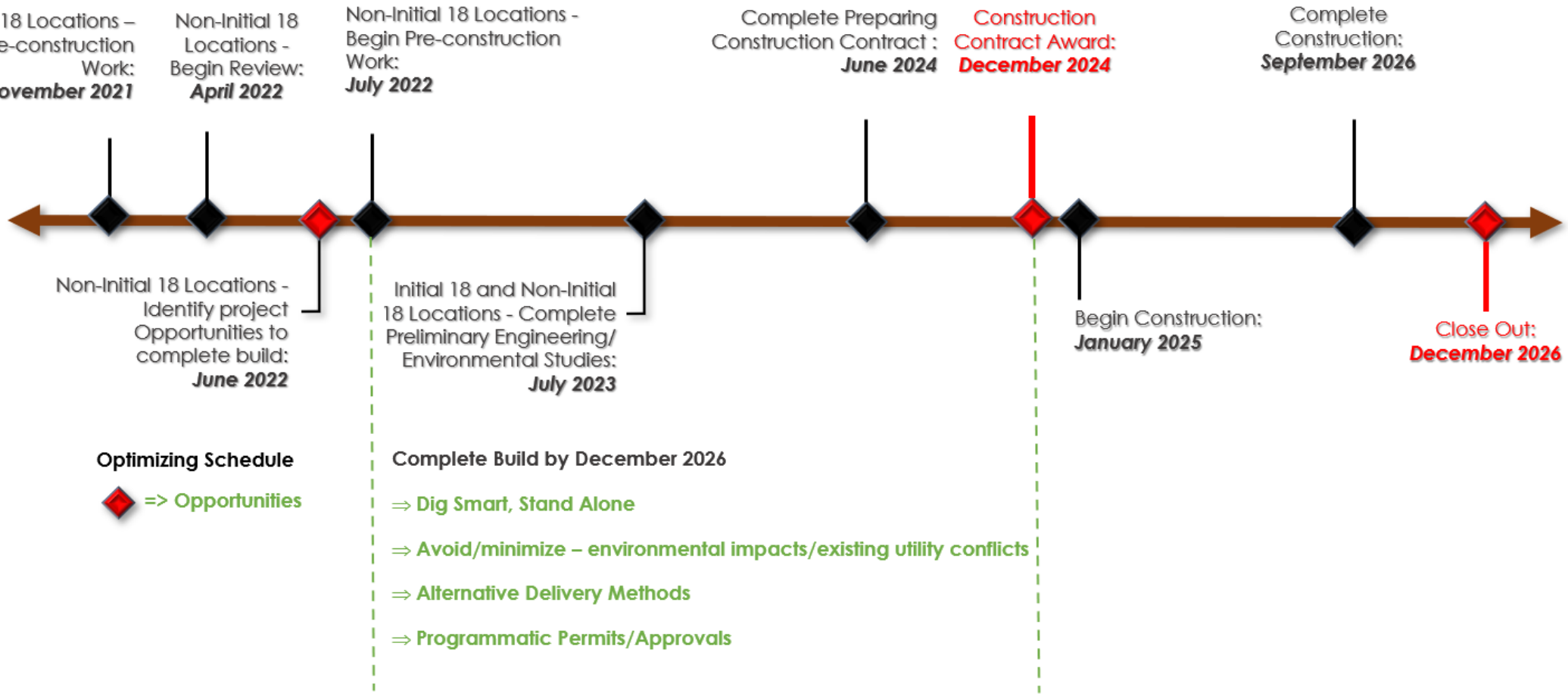
Hardeep Takhar

Broadband Middle-Mile Network Program Director

California Department of Transportation

Caltrans Update

Project Delivery Strategy



Caltrans Update

Project Delivery Update – Dig Smart

District	Number of Potentially Viable Projects the overlap MMBI Map *	Number of Potentially Viable Miles that overlap the MMBI Map *	Total MMBI Map * locations (miles)	Remaining miles to be constructed via Standalone Broadband Projects
District 1	5	27	730	702
District 2	5	49	1246	1197
District 3	22	137	978	841
District 4	14	100	917	816
District 5	1	0.35	672	671
District 6	10	63	1078	1015
District 7	0	0	647	647
District 8	4	51	1315	1264
District 9	3	26	695	668
District 10	12	85	804	719
District 11	6	58	692	633
District 12	5	40	148	108
Statewide	87	638	9,922	9283

* Approximate MMBI Miles estimated based on May 2022 Systemwide Map provided by CDT.

Caltrans Update

Dig Smart Opportunities

Dig Smart	Initial 18 MMBI Locations (~844 miles)		Non-Initial 18 MMBI Locations (~9,078 miles)		Total MMBI Network (~9,922 miles)	
	Number of Viable Projects	Miles of Fiber	Number of Viable Projects	Miles of Fiber	Number of Viable Projects	Miles of Fiber
Starting in 2022	3	22	6	44	9	66
Starting after 2022	6	73	4	33	10	106
Total	**9**	**95**	**10**	**77**	**19**	**172**

Caltrans Update

Project Delivery Update

INITIAL 18 LOCATIONS (~ 844 Target Miles)

- **Pre-construction (Preliminary Engineering/Environmental Studies Underway**
  - **Dig Smart = 9 Projects (~96 Miles) (e.g. Gleason Beach)**
  - **Stand Alone = 28 Projects (~748 Miles)**
  - **Total = 37 Projects (~844 Miles)**
- **Construction Begin Estimated**
  - **June 2022 – December 2024**

Caltrans Update

Project Delivery Update - INITIAL 18 LOCATIONS (~ 844 Target Miles)

CDT Project Location #	County	State Routes	Miles	Estimated Total Cost	Start Construction	End Construction	Pre-construction - Environmental % Complete	Pre-construction - Design % Complete
1	Siskiyou	3	45	$20,561	8/26/2022	11/17/2025	30%	20%
2	Plumas/ Lassen/ Tehama	36/89	122	$55,478	4/12/2024	12/31/2026	60%	50%
3	Mendocino/Lake	20/29/175	84	$38,053	8/1/2024	11/1/2026	30%	20%
4	Colusa	20/5	23	$15,976	8/15/2024	6/30/2026	30%	20%
5	Alpine	88	21	$9,386	7/22/2024	8/31/2026	10%	0%
6	Amador	88	8	$3,550	5/31/2024	12/29/2025	40%	0%
7	Calaveras	4	3	$1,441	10/17/2022	12/29/2023	40%	0%
8	Alameda	580/880/980/185/77	26	$11,728	5/1/2024	5/1/2026	8%	0%
9	Santa Clara/Santa Cruz/San Benito	25/101/87/280/17/1/156/152	92	$41,468	8/1/2024	11/30/2026	5%	0%
10	Fresno/ Merced	145/180/33	33	$14,852	7/1/2024	7/1/2026	5%	0%
11	Inyo	190	33	$15,118	8/29/2024	11/30/2026	15%	0%
12	Kern	178	52	$95,000	TBD	TBD	5%	0%
13	San Luis Obispo/ Santa Barbara/ Kern	166/33	31	$14,276	7/1/2024	10/1/2026	12%	0%
14	San Bernardino	247	33	$15,131	2/2/2024	2/6/2026	35%	25%
15	Los Angeles	91/710/105/110	50	$22,858	7/31/2024	1/14/2026	22%	0%
16	Orange	22/55/91	38	$17,379	5/29/2024	11/30/2026	47%	0%
17	Riverside	111	0	(To be delivered by local agency – CVAG)			50%	60%
18	Riverside/ San Diego	67/76/78/79/371	150	$87,381	7/29/2022	11/28/2025	29%	50%

Caltrans Update

Project Delivery Update

NON-INITIAL 18 LOCATIONS (~9,078 Miles)

- **Reviewing mapping provided in May 2022**
- **Developing project proposals in June 2022**
- **Pre-construction underway:**
  - **Dig Smart = 10 Projects (~76 Miles)**
  - **Stand Alone = 3 Projects (~152 Miles)**
  - **Total = 13 Projects (~228 Miles)**
- **Construction begin Estimated**
  - **June 2023 – December 2024**

THANK YOU!

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