California Department of Technology

Middle-Mile Broadband Initiative Annual Legislative Report

Program Year 2024
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State of California

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California Government Operations Agency

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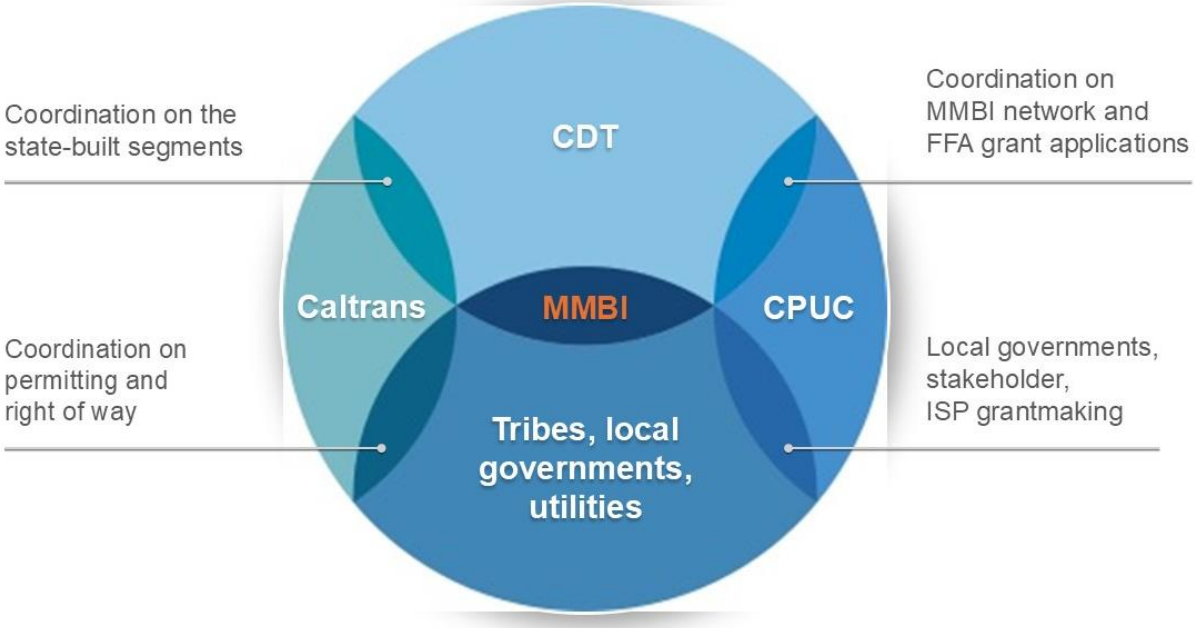
Letter from the State CIO

The California Department of Technology (CDT) is proud to have responsibility for a key element of the state's Broadband for All Action Plan: Overseeing the multi-year development and operation of a statewide open-access Middle-Mile Broadband Network (MMBN).

A highlight of the Middle-Mile Broadband Initiative's (MMBI) development continues to be CDT's cross-departmental coordination with the California Public Utilities Commission (CPUC), the California Department of Transportation (Caltrans), and California's tribes, local governments, and utilities:



The state's investment in the MMBI demonstrates a commitment to connecting underserved and unserved communities. CDT will continue to focus on that important goal as we progress toward the network's planned December 2026 completion.

Sincerely,
Liana Bailey-Crimmins, State of California Chief Information Officer
Director of the California Department of Technology

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Executive summary

The CDT submits this annual report on the MMBI pursuant to Senate Bill (SB) 156 [2021], SB 189 [2022], SB 104 [2023], SB 108 [2024], Assembly Bill (AB) 102 [2023], and AB 127 [2023].

This report documents a year of efficient and effective program management, timely progress on network deployment, and continued innovation in managing and reducing program costs.

The MMBI: A key enabler of the state's Broadband for All vision

As specified in SB 156 [2021], CDT is overseeing the acquisition and management of contracts for the development, construction, maintenance, and operation of the open-access MMBN. CDT continues to collaborate on these efforts with GoldenStateNet (GSN), the Third-Party Administrator for development (Development TPA) of the MMBI.

The MMBI is a key component of California's Broadband For All Action Plan (introduced through Executive Order N-73-20), which set a long-term goal of ensuring that "all Californians have high-performance broadband available at home, schools, libraries, and businesses."[1]

The MMBI will provide affordable, open-access middle-mile broadband infrastructure that will enable last-mile networks to reach unserved and underserved communities throughout the state.

Open-access means that users will connect on equal economic and service terms. This will enable users – internet service providers and public entities – to get more capacity at lower costs to benefit the communities they serve.

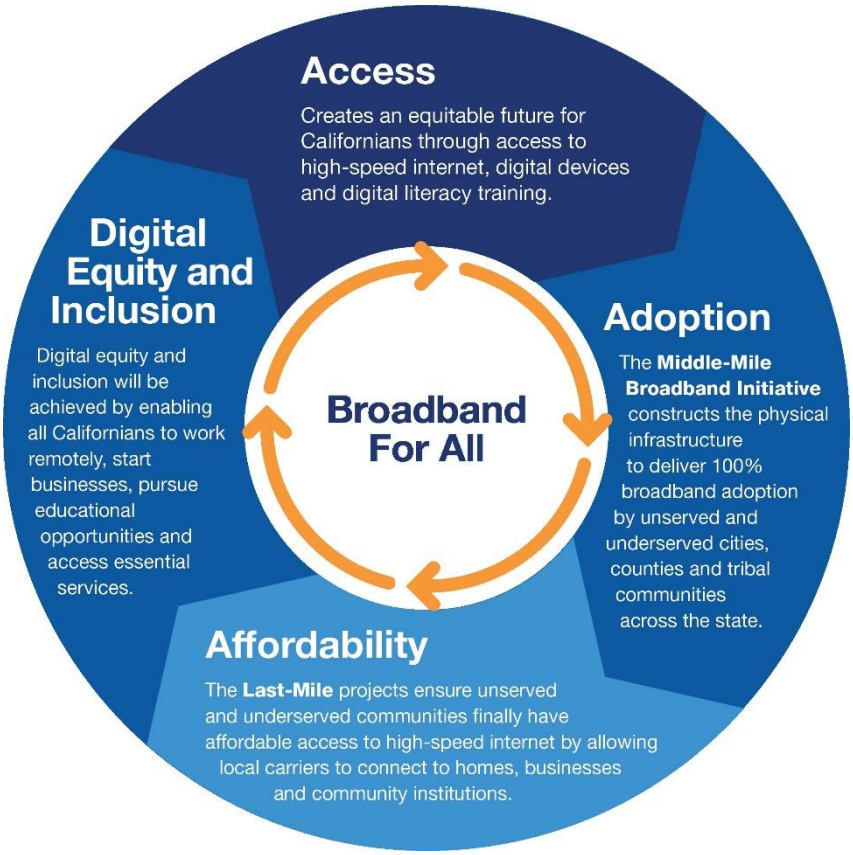
To achieve the MMBI's goals, CDT is leveraging the state's full range of tools, including policy, programs, funding, partnerships, and collaborations with federal, state, local, and tribal governments.

2024 MMBI milestones

In 2024, CDT and its partners made significant progress toward the implementation of the MMBN. CDT achieved several milestones:

[1] "Broadband Action Plan 2020: California Broadband for All," California Broadband Council, https://broadbandcouncil.ca.gov/wp-content/uploads/sites/68/2020/12/BB4All-Action-Plan-Final.pdf.

- **Secured contracts for more than 1,000 miles of network infrastructure** through newly signed and expanded partnership agreements. In 2024, CDT signed two new government-to-government partnership agreements with the Yurok Tribe (covering approximately 50 miles) and the Karuk Tribe (about 46 miles of fiber). Additionally, CDT signed a new agreement with American Dark Fiber, a partner selected through CDT's strategic Request for Innovative Ideas (RFI^2) solicitation; that agreement covers about 380 miles.



  CDT also amended its existing contract with CVIN to include an additional 160 miles and signed an asset purchase agreement with the California Broadband Cooperative, adding more than 420 miles of existing network infrastructure.

- **Began active installation of more than 3,000 miles of network infrastructure** by the end of 2024. Construction of the network remains aligned with the requirements of SB 156.

- **Achieved nearly $250 million in cost savings** through strategic procurement of network equipment and electronics. CDT had initially budgeted about $350 million for the procurement of network equipment and electronics. However, through analysis and strategic planning, CDT was able to use a different procurement vehicle – ultimately spending only about $100 million for the equipment without sacrificing any of the MMBI's needs.

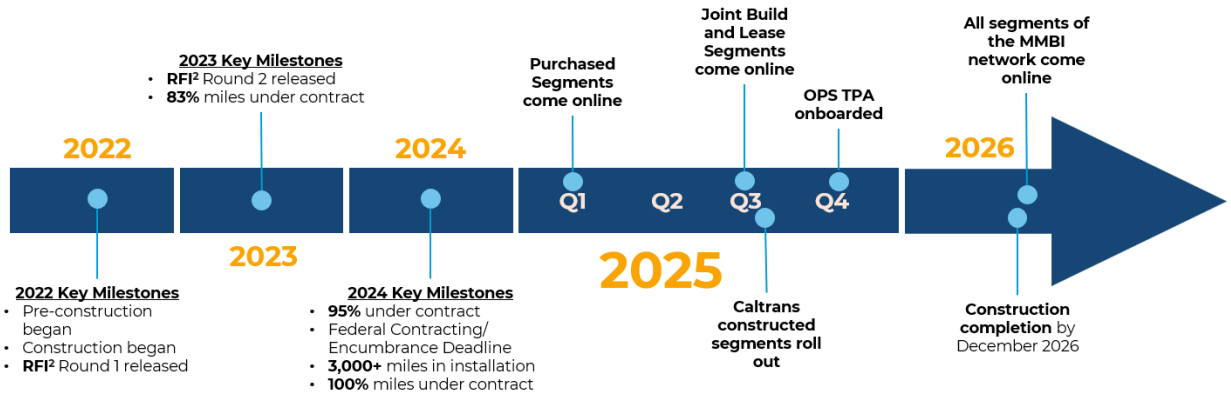
- **Procured more than 3,000 miles of MMBN materials** such as the fiber, conduit, vaults, hubs, and other construction materials essential for the deployment of the broadband network.

- **Completed a three-part MMBI market sounding study** to gather data and insights on potential customer demand and explore options for long-term operations and maintenance (O&M) of the MMBN. The market sounding included interviews with public and private entities, commercial entities, and potential customers. Findings from the market sounding reflect a wide range of potential customers and client demand, as well as a strong interest from public, private, and commercial entities.
- **Developed a business plan** demonstrating the positive impact of the state's capital investment. The plan projects that, based on currently available data and the anticipated selection of an Operations Third-Party Administrator (Operations TPA) through a competitive procurement process, the MMBI will meet the state's policy goals without requiring additional capital investment or operating subsidies.
- **Implemented enhancements to the MMBI website** to better communicate the project's progress and status.
- **Strengthened stakeholder relationships** through innovation and proactive stakeholder engagement activities.
- **Built new and historic partnerships with tribal nations** by actively engaging with tribal entities and tribal leaders in consultations and collaborations.

MMBI project timeline: On track for 2026 completion

In 2024, the initiative continued to make significant progress, with more than 8,000 miles of the network under contract and $2.9 billion of the $3.873 billion budget already at work, creating jobs and promising to deliver broadband to unserved and underserved California communities. The network is expanding rapidly, with more than 3,000 miles in active installation through joint builds and indefeasible rights of use (IRU)/lease partnerships.

Figure 1: MMBI project timeline



2024 MMBI recognitions

CDT secured contracts for more than 1,000 miles of network infrastructure

In 2024, CDT significantly advanced its goal of bridging the digital divide through new and expanded partnerships. Among the key highlights are the government-to-government agreements with the Yurok Tribe and the Karuk Tribe.

These partnerships, established in July and December 2024, respectively, underscore CDT's commitment to empowering local communities by enhancing their access to broadband infrastructure. By connecting these tribal communities, CDT is not only fostering digital equity but also promoting economic development and educational opportunities in these underserved areas.

The partnerships with the Yurok Tribe and the Karuk Tribe add approximately 100 miles to the MMBN, reflecting a tangible step forward in achieving universal broadband coverage in the state.

In addition to the government-to-government collaborations, CDT has bolstered its efforts through strategic partnerships with private entities under the RFI^2 framework. Notably, the September 2024 joint build agreement with American Dark Fiber to construct more than 380 miles of network infrastructure highlights a leap toward improving the state's middle-mile capabilities across a vast region of California.

The November 2024 signing of an asset purchase agreement with the California Broadband Cooperative added more than 420 miles of existing network infrastructure to the MMBN.

These partnerships are instrumental in accelerating the deployment of last-mile services, ensuring that more communities gain access to the digital resources necessary for growth and innovation. Through these collaborations, CDT is advancing its mission to create a more connected and inclusive California.

CDT and its partners have more than 3,000 miles of middle-mile network infrastructure in active installation

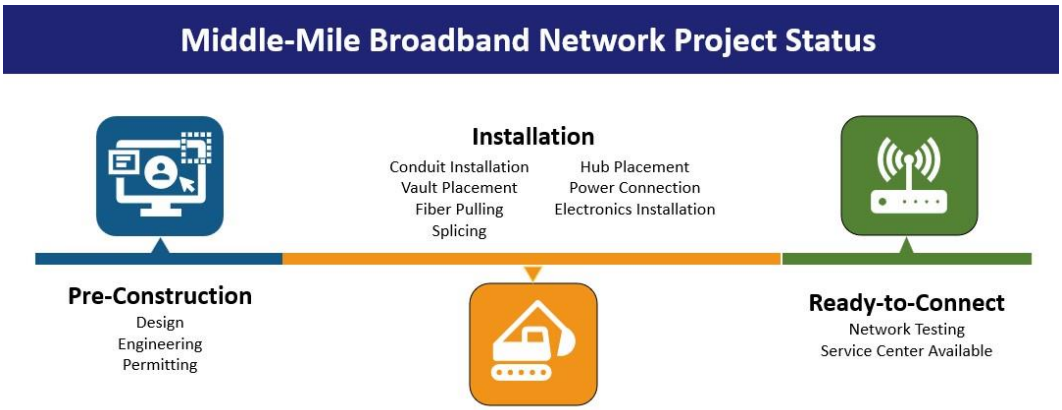
In 2024, CDT and its partners made momentous and tangible progress in the installation of middle-mile network infrastructure, enabling high-speed connections for underserved and

unserved Californians, tribal nations, historically disadvantaged communities, and remote areas.

A note on terminology

The MMBI uses the following terms to describe project activity:

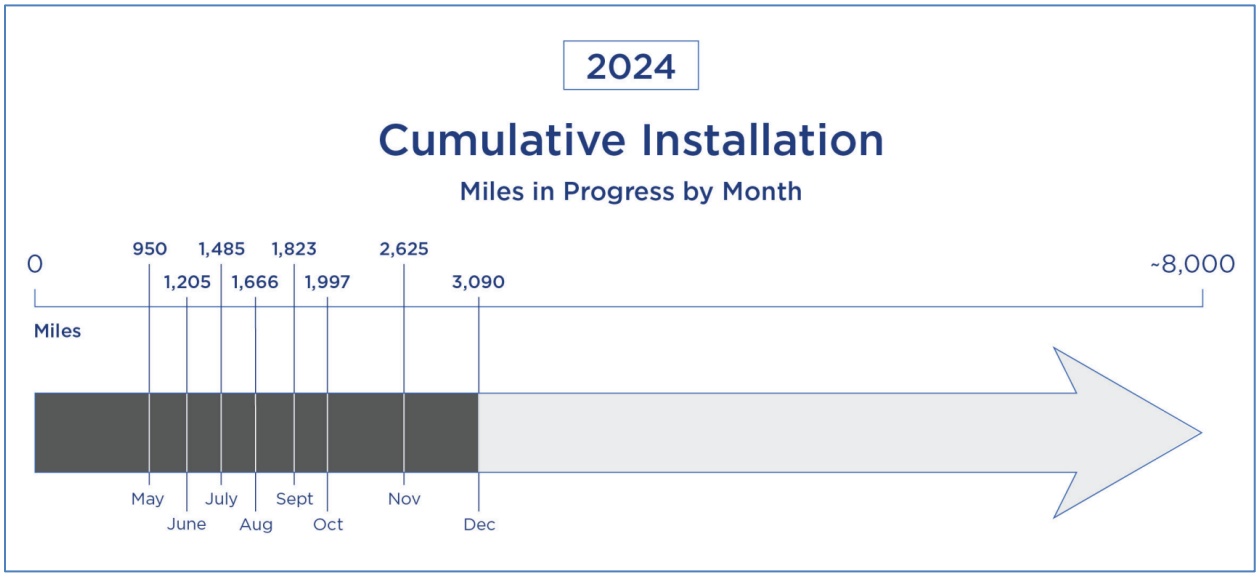
- **Pre-construction** includes design, engineering and permitting activities.
- **Installation** includes conduit installation, vault placement, fiber pulling, splicing, hub placement, power connection and electronics installation.
- **Ready-to-connect** status means the network service center is established and network testing confirms the segment is operational and secure.



To align with the terminology stated in Provision 5 of Item 7502-001-0001 of Chapter 35, Statutes of 2024 (SB 108), the following terms are used interchangeably in this report:

- Construction and installation.
- Activation and ready-to-connect.
- Projects, routes, and segments.

In 2024, the MMBI achieved a milestone of having more than 3,000 miles of network infrastructure in active installation.



CDT and its partners hosted several groundbreaking ceremonies throughout the year to kick off major fiber route installations. These roughly 3,000 miles are spread throughout the state and run through some of our most unserved and underserved rural and tribal communities. Additionally, these miles cover some of the MMBI's most critical routes.

CDT continues to make significant progress towards delivering more than 8,000 miles of fiber to communities across the State. This accomplishment demonstrates CDT's commitment to accelerating broadband deployment and highlights the effectiveness of the initiative's strategic planning and execution. The pace of this installation not only reflects the dedication to addressing the urgent need for reliable internet access across California but also stands as a testament to the strong, collaborative partnerships CDT has established.

The value of this milestone extends beyond mere numbers; it represents a transformative step toward digital inclusivity and economic opportunity for Californians. It bridges the digital divide that has long hindered progress in many communities, ensuring that everyone, regardless of their geographical location, has the tools needed to thrive in the digital age.

Strategic procurement is transforming the MMBI's cost efficiency

A hallmark of the MMBI's ongoing success has been its strategic procurement. One of the significant milestones achieved in 2024 was the cost savings realized in network equipment and electronics procurement.

Initially, CDT estimated and budgeted $350 million for these materials. However, through alternative options analysis, CDT determined a more strategic approach to procurement and successfully reduced this expenditure by $250 million, ultimately spending about $100 million.

CDT selected Presidio Networked Solutions Group, an experienced network solutions partner, to supply and implement network equipment and electronics tailored to the MMBN's physical infrastructure. Presidio has partnered with Cisco and Kore-Tek, which will be providing professional services such as planning, design, installation, testing, and logistics for the MMBN project deployment.

This achievement underscores the importance of strategic procurement in identifying cost-saving opportunities and leveraging competitive pricing. This strategic procurement initiative highlights CDT's commitment to financial prudence, making more funds available for other critical projects and investments.

The value of strategic procurement extends beyond cost savings. By adopting a strategic approach, the MMBI has enhanced its ability to negotiate better terms and conditions with suppliers, thereby improving the overall quality and reliability of procured goods and services. Strategic procurement also fosters stronger supplier relationships and more sustainable procurement practices, contributing to long-term operational efficiency and resilience.

Further capitalizing on the benefit of this procurement, the savings of $250 million were redirected to other vital areas such as network infrastructure upgrades and purchasing additional network miles. CDT was able to secure approximately 700 additional miles of network infrastructure due to these cost savings.

The holistic impact of strategic procurement on cost efficiency and resource optimization exemplifies how thoughtful financial strategies can lead to substantial organizational benefits, reinforcing CDT's position as forward-thinking and fiscally responsible.

The MMBI's materials procurement process is securing infrastructure for future connectivity

Through meticulous planning and strategic negotiations in 2024, CDT procured all fiber, conduit, vaults, hubs, and construction materials necessary for the deployment of 3,000 miles of the broadband network.

By securing these critical components, CDT has ensured the initiative remains on track to meet its ambitious goal of enhancing digital infrastructure and connectivity across the state. The strategic procurement process not only involved negotiating favorable terms to optimize costs but also planned for the timely availability of these materials, which are crucial for uninterrupted progress in the installation phase. This proactive approach underscores CDT's commitment to resource efficiency and operational excellence, laying a robust foundation for the project's success.

The value of this milestone extends beyond the physical acquisition of materials. Strategically storing these resources in three geographically distributed locations across the state will ensure rapid delivery to construction sites, thereby minimizing delays and enhancing project efficiency.

This logistical strategy is vital for maintaining the momentum of the MMBI, as it enables swift responses to construction needs and potential unforeseen challenges. Additionally, the state-owned materials' dispatch to various sites demonstrates CDT's ability to effectively manage large-scale projects, ensuring each step of the process is executed with precision.

CDT completed a market sounding for the MMBN

CDT conducted a three-part market sounding study[2] to gather data and insights on potential customer demand and explore options for long-term operations and maintenance of the MMBN.

The market sounding included interviews with a wide range of public and private entities, offering CDT key insights on a sustainable long-term operating approach that can support the state's objective to bridge the digital divide. The study included three separate tracks:

1. Interviews with network operators of public and nonprofit networks.
2. Interviews with industry.

[2] "Middle-Mile Broadband Initiative market sounding: Results and recommendations for network operations and maintenance," CDT, April 22, 2024, https://cdt.ca.gov/wp-content/uploads/2024/04/MMBI-Market-Sounding-Report-042224_Final.pdf.

3. A summary of discussions with potential network customers held over a two-year period.

Following exploration with industry, public and non-profit provider networks, and other potential MMBN customers, CDT identified healthy potential market interest for CDT in selecting an experienced and well-qualified partner as an Operations TPA to assume responsibility for MMBN operations and maintenance through a long-term contract.

This effort also revealed a widespread optimism that the network operations and maintenance could be sustained through revenues from a wide group of potential customers while delivering on the state's objective of closing the digital divide.

CDT developed an MMBI business plan that demonstrates the impact of the State Legislature's capital investment

The MMBI's business plan relies on multiple funding sources to cover the capital costs of building the network. These sources are supporting the state's goal to build an affordable, open-access, statewide digital infrastructure.

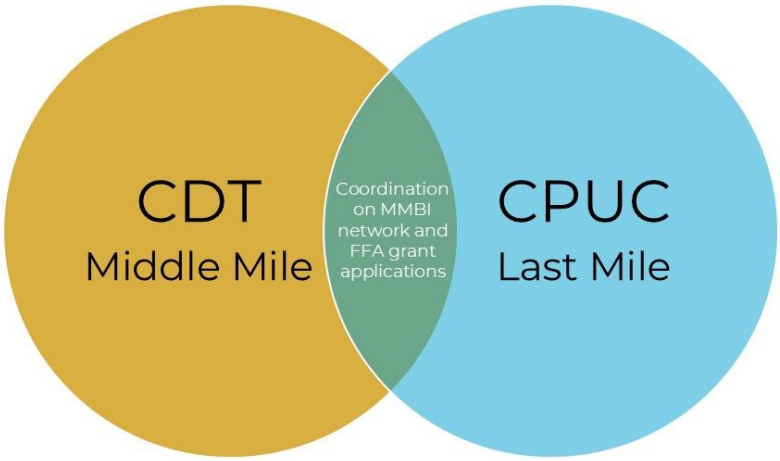
Based on federal guidance, the CPUC estimates there are approximately 4.93 million unserved individuals and approximately 996,000 unserved locations statewide.[3] The MMBI was developed to connect communities that include the estimated 996,000 unserved locations.

The MMBI's business plan also documents the goal of bringing pricing in remote and high-cost areas into greater parity with other parts of the state.

This cost-neutral pricing approach will enable MMBI customers, such as last-mile grant applicants and other internet service providers, to pay the same middle-mile costs in rural areas as they would in parts of the state where such services are more cost-effective due to a denser population and proximity to major interconnection points. Those savings will be built into the internet service providers' business models for investing in and delivering last-mile services, which will benefit end users throughout the state.

[3] A location may be a home or an apartment complex, in which there may be hundreds of unserved individuals. Locations also include vacation rentals, in which there are no unserved individuals.

By lowering costs and removing the barriers to parity of service in rural and low-income areas relative to the areas where the middle-mile market currently functions better, the MMBI will dovetail with the direct efforts the CPUC is making in reducing last-mile costs. For example, the CPUC's Last Mile Federal Funding Account (FFA) provides grant funding to internet service providers that deploy last-mile broadband infrastructure.[4]



CDT enhanced the MMBI website to better demonstrate the status of the program's development goals

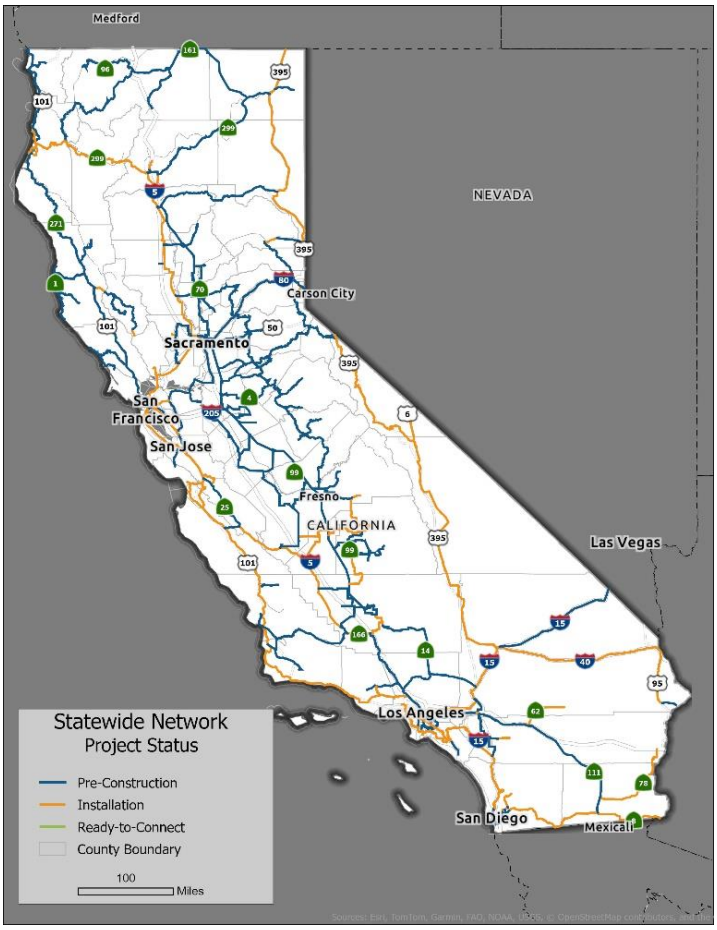
CDT made substantial enhancements to the MMBI's website in 2024 to better reflect the status of the initiative and the progress that has been made. These updates include improvements to the user interface to ensure audiences are being directed to the right information and resources, as well as newly created content and pages.

Collectively, these improvements not only enhance communication and information dissemination but also reinforce CDT's commitment to transparency and accountability. By keeping stakeholders well-informed and engaged, these website improvements support the broader goals of expanding digital connectivity and fostering digital inclusion across the state.

Map update log: To enhance transparency for the public, partners, and stakeholders, CDT launched a Map Update Log[5] that tracks and summarizes the monthly route updates published to the Delivery Methods Interactive Network Map.[6]

[4] "Last Mile Federal Funding Account," CPUC, https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-implementation-for-california/last-mile-federal-funding-account.
[5] "Middle-Mile Broadband Initiative: Map Update Log," CDT, https://middle-mile-broadband-initiative.cdt.ca.gov/pages/map-update-log
[6] "Statewide Middle-Mile Network Map: Delivery Methods," CDT, https://experience.arcgis.com/experience/e2540ace2ac248ee8c3350aa39395342. See also: "Middle-Mile Broadband Initiative: Statewide Middle-Mile Network," CDT, https://middle-mile-broadband-initiative.cdt.ca.gov/pages/statewide-middle-mile-network-map.

Project status map: Another key improvement to the website was the creation of the Project Status Interactive Network Map.[7] This map illustrates the current progress of network route miles across the three primary project statuses: pre-construction, installation, and ready-to-connect. Users can explore the map, click on counties, and search areas of interest to view details such as when the MMBN will be available and "ready-to-connect" in any given location.



The map functionality allows visitors to see not only the status of miles associated with network routes, but also the total number of miles. This map delivers transparent insights for stakeholders, including policymakers, community leaders, and residents.

Project status visual chart: CDT created a new "Project Status" page for a more detailed breakdown of the information provided in the map, such as status definitions and total miles by county. CDT developed a Project Status Diagram Model that provides a sequential and linear visual of the status of network development.

Improved user interface: CDT improved the user interface for multiple pages on the website by adding a feature that allows users to expand and collapse content, revealing additional information or sections. This change has made the website more intuitive and user-friendly, ensuring that users can more easily navigate through important information.

[7] "Statewide Middle-Mile Network Map: Project Status," CDT, https://experience.arcgis.com/experience/e2540ace2ac248ee8c3350aa39395342/page/Project/?draft=true&views=Layers.

Fact sheet: In October 2024, CDT launched a new middle-mile fact sheet[8] that is updated on the website at the end of each month (along with map updates). This downloadable fact sheet summarizes the MMBI's month-to-month progress.

Stakeholder engagements strengthened relationships in the MMBI

In 2024, CDT achieved significant progress through proactive stakeholder engagement activities. To increase transparency and improve communication for stakeholders, quarterly Stakeholder Engagement meetings were implemented at the start of 2024.

Based on meeting evaluations, most MMBI stakeholders find value in these engagements, which provide them an open-opportunity venue to ask questions tailored to their specific interests as they relate to the MMBI.

One of the notable outcomes from the various engagements throughout the year was the resolution of challenges identified by key stakeholders. Through CDT's creative thinking and engineering expertise, innovative solutions were devised to address and resolve these issues.

By involving stakeholders in the problem-solving process and transparently addressing their concerns, CDT has built trust and created a collaborative environment. This engagement not only helped to resolve existing disputes but also laid the groundwork for more cooperative relationships in future projects.

The value of these stakeholder engagements extends beyond immediate problem resolution. By investing in these relationships, CDT set a precedent for ongoing collaboration and mutual respect. The success of these engagements underscores the importance of stakeholder involvement in project planning and execution, ensuring that all voices are heard and addressed.

This approach has been instrumental in transforming the perception of the MMBI among its stakeholders, demonstrating CDT's commitment to responsive and inclusive project management.

The MMBI's tribal engagements are building historic partnerships with tribal nations

In 2024, CDT actively engaged with tribal entities and tribal leaders through key consultations and collaborations to discuss the MMBN and how it can help bring affordable,

[8] "Middle-Mile Broadband Initiative Fact Sheet," CDT, https://mmbi-files.cdt.ca.gov/mmbifiles/MMBIFactSheet.pdf.

high-speed internet to tribal communities. Over the course of the year, CDT engaged with nearly 70 tribes located along or near the MMBN routes. In addition, CDT presented its tribal policy to more than 34 tribes. CDT developed this tribal policy to maximize benefits to tribes and better enable tribes to connect to the MMBN.

This year also marked significant milestones in tribal engagements as CDT forged historic and meaningful new partnerships with tribes across the state. Highlighted below are some key examples from 2024.

New partnerships: In July 2024, CDT partnered with Yurok Telecommunications (Ytel), owned by the Yurok Tribe and covering Northern California, via a lease agreement. Ytel leased approximately 50 miles of broadband infrastructure via two network segments spanning Orick to Crescent City. The Yurok Tribe is the largest tribe in California, with more than 6,200 members and ancestral territory that covers 7.5% of the state's coastline.

This partnership allows the MMBI to lease Ytel's fiber optic strands, serve the Yurok Tribe community, and extend the network's reach to additional communities to the north. Ytel expects to start construction on this span in the first quarter of 2025.

In August 2024, the Santa Ynez Band of Chumash Indians (Chumash) Tribe adopted a Tribal Resolution authorizing CDT's access to tribal land right-of-way for an approximately 3-mile segment of the MMBN. This segment runs along California State Route 246 and provides an opportunity to partner with and enable the Chumash Tribe to accelerate last-mile connectivity. This Tribal Resolution was an initial step toward a state route and joint build effort that supports the Tribe's needs in a large new housing community being developed.

In December 2024, CDT signed a new agreement with the Karuk Tribe for a joint build fiber installation project along portions of State Route 96 and Highway 101 in Humboldt County. This agreement will lead to a 46-mile project that will support the Karuk tribal communities and other rural areas in Northern California.

Figure 2: CDT and Karuk Tribe representatives signing an agreement to deploy network infrastructure

Tribal policy presentations: As noted above, CDT presented the MMBI tribal policy to more than 34 tribes in 2024. CDT met with each tribe one-on-one to deliver this policy that establishes a baseline offer for tribes located along or near the MMBN.

In exchange for access to tribal land right-of-way, CDT's policy offers dark fiber and lit services to each tribe. The tribal policy aims to address the unique needs and challenges faced by tribal communities in accessing high-speed broadband. This aligns with the MMBI's goal to bridge the digital divide by connecting underserved and rural communities with more affordable, reliable internet options with an emphasis on tribal lands.

Negotiations: CDT is finalizing negotiations with the Tolowa Dee Ni' Nation to joint build a portion of the MMBN. The Tolowa Dee Ni' Nation will be partnering with CDT and Ytel to build 20 miles of network infrastructure along State Route 101 from the Oregon border to Cresent City. The Tolowa Dee Ni' Nation applied for and received FFA grant funding from the CPUC to construct this infrastructure.

Joint state/federal workshops: CDT participated in the first and second Joint State-Federal Rights of Way Workshop and Consultations sponsored by the CPUC and the Bureau of Indian Affairs (BIA) and hosted by the Rincon Band of Luiseño Indians. The workshop was an opportunity for the BIA, the CPUC, and other state entities as well as utility companies to meet with tribes to discuss processes and challenges with permitting and right-of-way for utility infrastructure on tribal lands.

These partnerships are invaluable, as they not only pave the way for improved broadband services but also strengthen the bonds between CDT and tribal nations, fostering long-term cooperation and mutual benefit. The success of these engagements highlights the importance of culturally sensitive and community-focused strategies in achieving sustainable and impactful development goals.

MMBI annual reporting (SB 156 [2021] / AB 127 [2023])

Pursuant to the MMBI's enacting legislation (SB 156 [2021]/AB 127 [2023]), this section of the annual report documents the total network length; the length of the portion constructed in the preceding year, by quarter; the number of internet service providers using the network; the number of households projected to connect to the network; and the total expenditures for each project, by quarter.

These metrics are summarized in the following narrative and described in more detail in the subsequent "Metric details" section. A final element of the required reporting (a list of the projected goals for each metric over the next 18 months) is included in a later section.

SB 156/AB 127 High-level Metric summary

Total network length: The total network length is 8,118.3 miles.

Length of the portion constructed in 2024, by quarter: The length of the portion constructed in 2024 is zero miles, as none of the miles are considered ready-to-connect. However, in 2024, the MMBI made significant progress in installing the physical infrastructure to support the network. By the end of the year, more than 3,000 miles were in active installation. Installation includes multiple activities such as conduit installation, vault placement, fiber pulling and splicing, hub placement with power, and electronics installation.

Of these 3,000 miles, 1,621 miles have construction activities related to conduit installation, vault placement, and/or fiber completed. Because none of these 3,000 miles are considered ready-to-connect and operational, the number of miles considered to be "constructed" in 2024 is zero.

See Appendix A for more detail.

Number of internet service providers using the network: The number of internet service providers using the network is currently zero, as the deployment of the MMBN is in progress with a planned December 2026 completion date. Consequently, no complete segments are available yet to internet service providers, businesses, or public agencies.

Number of households projected to connect to the network: While no segments are ready-to-connect and the number of households projected to connect to the network is undetermined, last-mile networks deployed by internet service providers will be able to serve households once network segments are available. Last-mile networks deployed by

internet service providers will serve households once network segments are available. The MMBI is currently in the pre-construction and installation phases, involving essential planning, designing, permitting, and installation. As this work progresses, CDT is preparing for future connections that will bring broadband access to households.

Total expenditures for each project, by quarter: The total expenditures for each project, by quarter, for the MMBI in 2024 are as follows:

Caltrans pre-construction (planning, designing, and permitting) incurred $0 in Q1, $46,975,688 in Q2, $29,483,991 in Q3, and $60,040,223 in Q4, totaling $136,499,902 for the year. The joint build category had significant expenditure only in Q1 amounting to $277,657,028 and remained $0 for the subsequent quarters, accumulating a total of $277,657,028.

The IRU/lease category saw a considerable expenditure of $526,779,307 in Q1 with no expenditures in the following quarters, resulting in a total 2024 expenditure of $526,779,307. The purchase category had no expenses throughout the year, remaining at $0. For materials, $0 was spent in Q1 and Q3, but there was a notable expenditure of $62,265,188 in Q2, keeping the total for the year at $62,265,188.

Lastly, administration expenditures were minimal, with $8,879 in Q1, $1,362 in Q2, $1,354 in Q3, and $900 in Q4, for a total of $12,495. The total expenditures for all categories combined reached $1,003,213,920, with quarterly breakdowns of $804,445,214 in Q1, $109,242,238 in Q2, $29,485,345 in Q3, and $60,041,123 in Q4.

Please refer to Table 2 in the “Metric details” section below for full details.

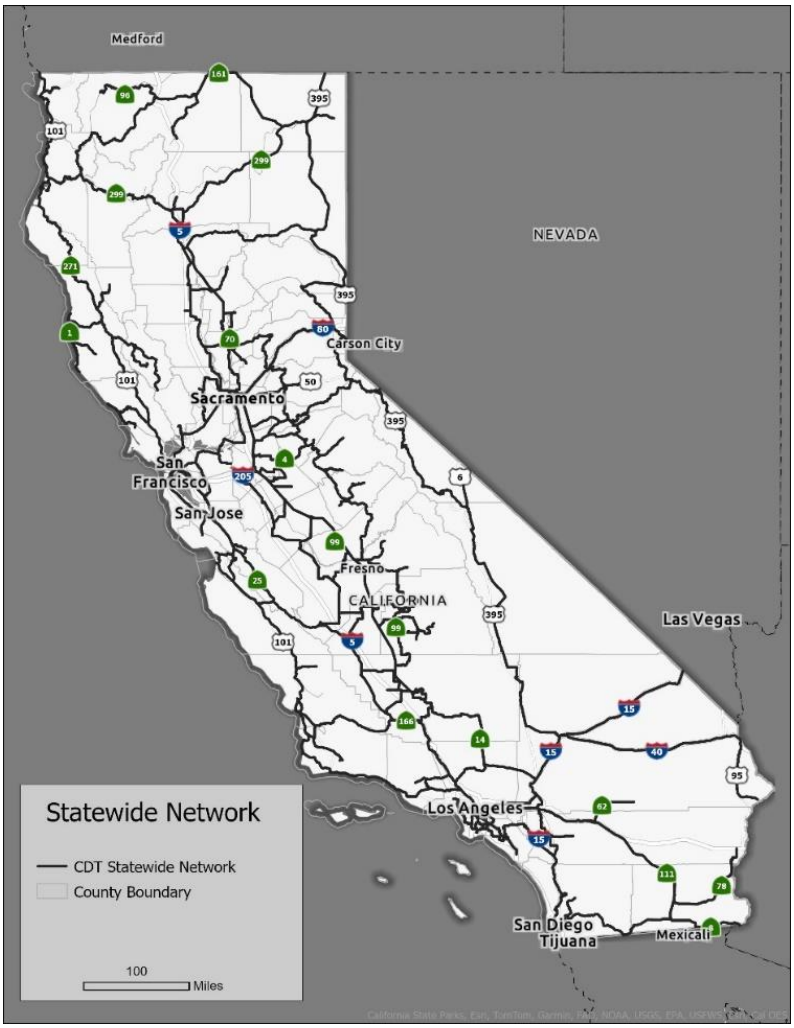
SB 156/AB 127 Metric details

Total length of the MMBN: The anticipated length of the planned statewide open-access MMBN is more than 8,000 miles. Per SB 156, the CPUC was given the role of identifying where the MMBN would need to reach. To that end, in 2021 the CPUC held a public proceeding to gather input from local governments, community organizations, and private sector stakeholders to understand the unique needs and challenges faced in different regions by a variety of populations and potential end users and customers.

This collaborative approach aimed to ensure that the MMBN would effectively address local needs while promoting equity in broadband access. This proceeding, as well as the regular Middle-Mile Advisory Committee (MMAC) meetings and continued stakeholder outreach,

have created public forums that serve as key channels for gathering feedback and building consensus around the MMBI's execution.

Figure 3: Planned MMBN routes



The MMBN routes were developed through a collaborative effort involving the MMBI's appointed Development TPA, the CPUC, and input from public comments and extensive stakeholder outreach and engagement efforts. Additionally, Caltrans influenced the initial mapping based on the challenges it encountered during the pre-construction phase (including planning, designing, and permitting).

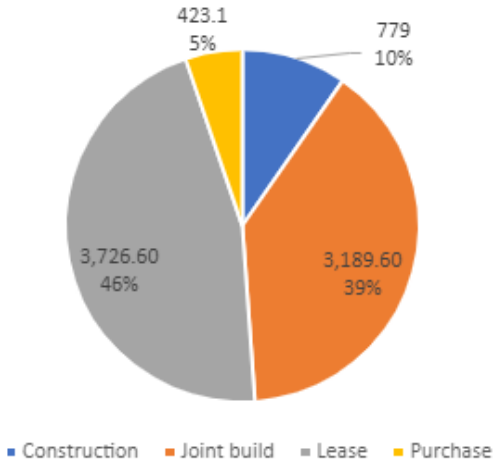
Details on all planned MMBN routes are publicly available in CDT's Delivery Methods Interactive Network Map.[9]

Length of MMBN construction in 2024: At the end of 2024, the MMBI had more than 8,000 miles of the MMBN under contract and more than 3,000 miles in active installation through joint build and IRU/lease partnerships. The implementation of innovative and cost-effective joint build, lease, and purchase agreements significantly reduced the total amount of new construction compared to previous plans. This strategic approach has not only accelerated the deployment timeline but also substantially lowered the MMBI's capital costs, enabling faster and more efficient expansion of broadband infrastructure across California.

[9] "Statewide Middle-Mile Network Map: Delivery Methods," CDT, https://experience.arcgis.com/experience/e2540ace2ac248ee8c3350aa39395342.

Table 1: MMBI miles under contract (2024)[10]

Deployment type	Miles under contract
Construction	779
Joint build	3,189.6
Lease	3,726.6
Purchase	423.1
Total	**8,118.3**



Number of internet service providers using the MMBN: As the MMBN will be an open-access network, any of the more than 200 internet service providers currently operating in the state of California – as well as new internet service providers, anchor institutions, and other eligible entities including local and tribal governments – will be able to purchase access to the infrastructure to enable delivery of last-mile service to customers.

The network is not yet operational, so no internet service providers were able to use the network in 2024. Based on the current project timeline, service is projected to be available to internet service providers in early 2026 – and internet service providers will have access no later than the fourth quarter of 2026.

Number of households projected to be served by the MMBN: The MMBN has been designed to serve communities in all 58 California counties. The middle-mile network will enable a range of programs and initiatives, including billions of dollars in last-mile projects being funded by the CPUC to reach underserved and unserved households.

The middle-mile comprises high-capacity fiber optic lines that carry large amounts of data at high speeds over long distances. The initial middle-mile locations were identified to connect unserved communities – communities that do not have internet access – thus enabling internet service providers to more easily construct last-mile connections to reach individual households.

[10] "Network Miles by County and Delivery Method," Middle-Mile Broadband Initiative, CDT, https://middle-mile-broadband-initiative.cdt.ca.gov/pages/network-development (accessed December 30, 2024).

Each middle-mile segment will provide the potential to enable last-mile connections to other customers and entities far beyond the immediate region and will increase reliability, affordability, and competition in these areas. This will allow for greater access for more Californians at a more reasonable cost.

At the same time CDT is developing the MMBN, the CPUC is distributing more than $2 billion in last-mile funding to internet service providers and other entities to construct regional projects that can connect to the MMBN.

The CPUC has indicated that providers and jurisdictions submitting applications for last-mile grants can work with the CPUC before or after submission to coordinate middle-mile needs in their grant applications.

Total MMBI expenditures by quarter: The MMBI is now funded almost entirely with General Fund. No funding is now coming from the American Rescue Plan Act/State Fiscal Recovery Funds (ARPA/SFRF), and the only federal funding remaining for the $3.873 billion project is a $73 million grant from the National Telecommunications and Information Administration (NTIA) awarded in 2023.

The MMBI was originally created by SB 156 [2021] and funded through a $3.25 billion appropriation of ARPA/SFRF in the 2021 Budget Act. Per authority in the 2022 Budget Act, $887 million of ARPA/SFRF was swapped out and replaced with General Fund. The remaining $2.363 billion in ARPA/SFRF funding had been encumbered before the end of calendar year 2024 and was scheduled to be liquidated as components of the project were completed, before the end of calendar year 2026, per federal requirements.

Additional General Fund resources were appropriated through SB 189 [2022] ($300 million in the 2023–2024 California Spending Plan and $250 million in the 2024–2025 plan).

Finally, in 2023, CDT was awarded $73 million in NTIA Enabling Middle Mile grant funding, which brought the total budget to $3.873 billion.

In 2024, per authority in the 2024 Budget Act, the remaining $2.363 billion in budget authority was swapped from ARPA/SFRF to General Fund. This ARPA/SFRF authority was moved to other projects that were previously General Funded but which are also qualified uses of the federal ARPA/SFRF funding, consistent with U.S. Treasury guidelines.

CDT is working with the State Controller’s Office to convert all previous expenditures from ARPA/SFRF to General Fund.

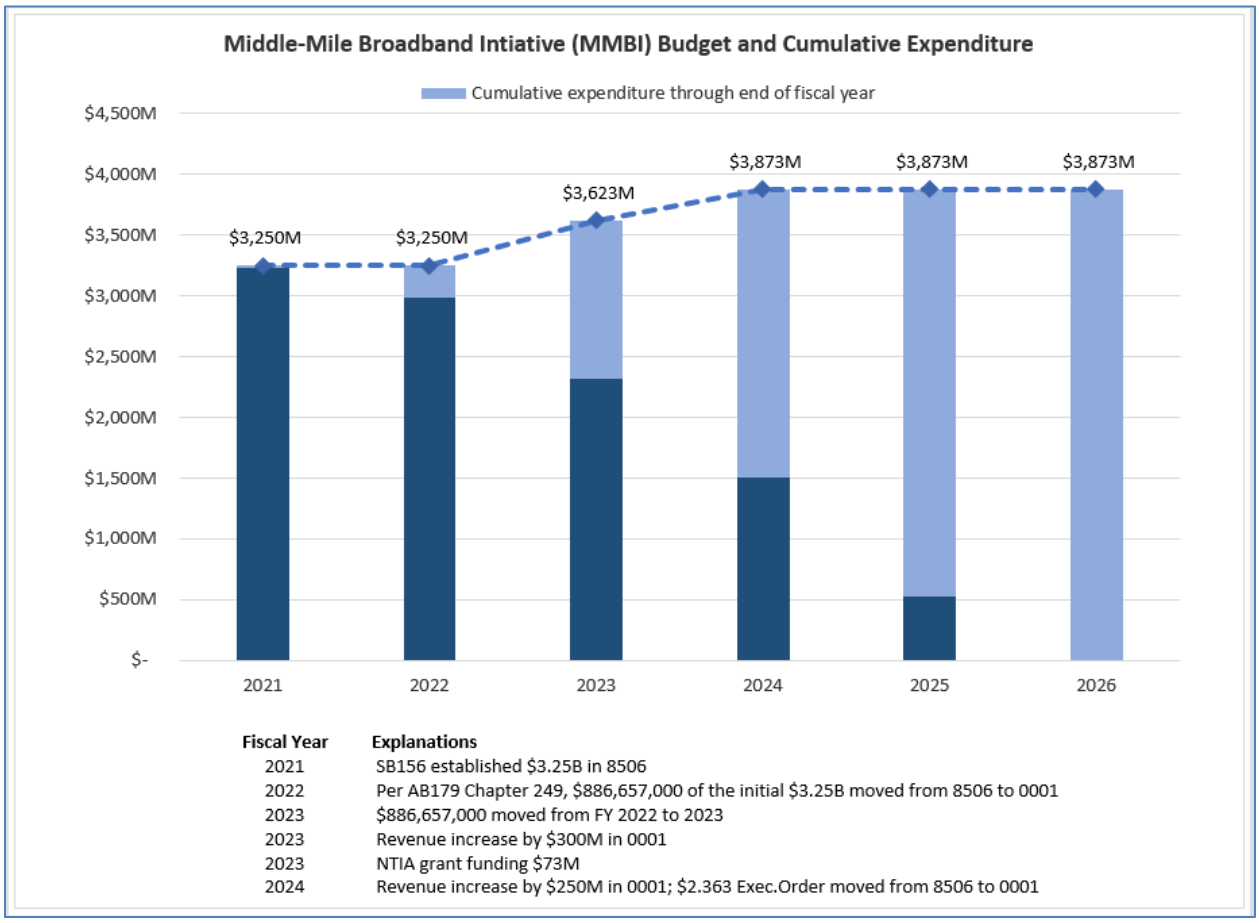
The graph in Figure 4 illustrates the MMBI's cumulative expenditure pattern, both actual (through the end of 2024) and projected (through planned completion in 2026), based on that funding.

In 2024 (fiscal year 2023–24), the MMBI had the following quarterly expenditures by cost category.

Table 2: MMBI quarterly expenditures by category (fiscal year 2023–24)

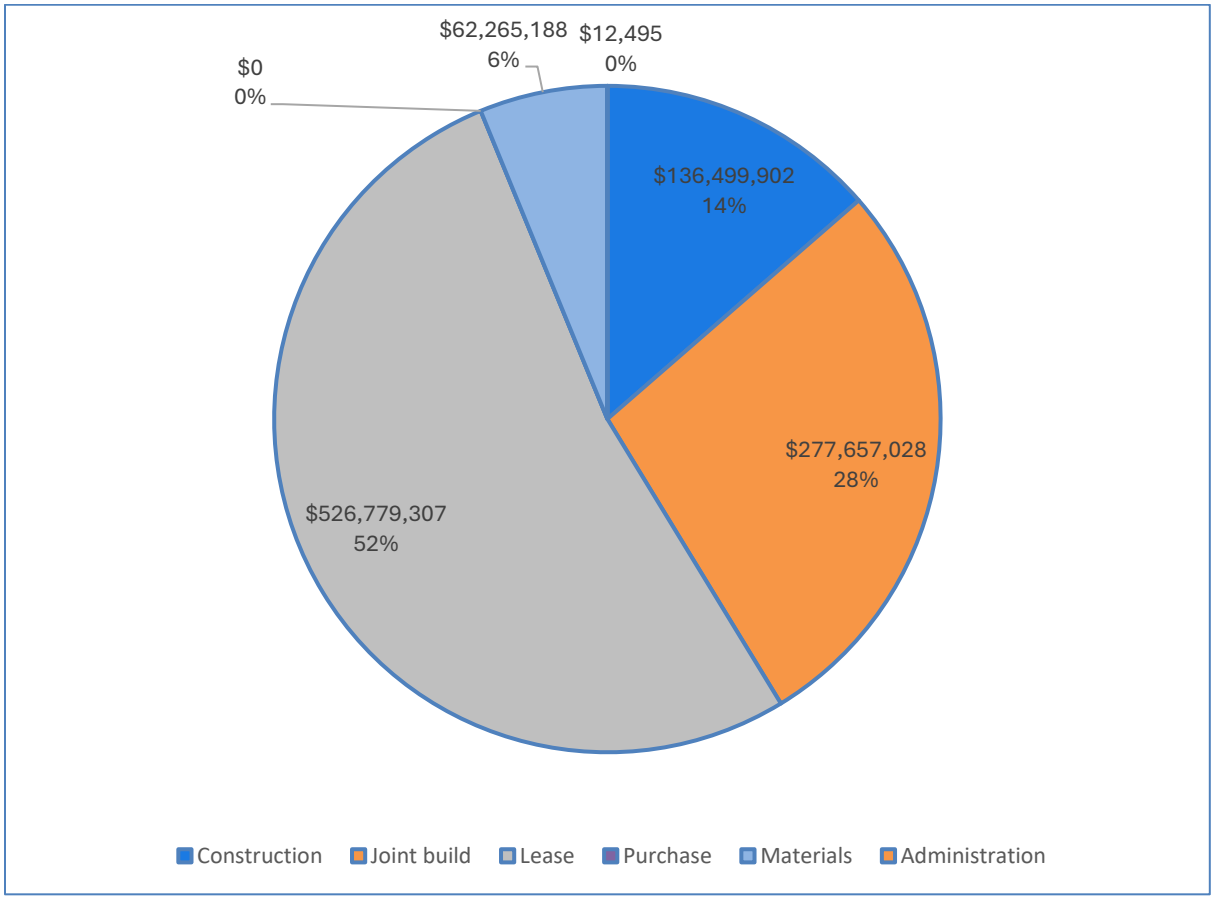
Category	Q1	Q2	Q3	Q4	Total
Caltrans pre-construction (planning, designing, and permitting)	$0	$46,975,688	$29,483,991	$60,040,223	$136,499,902
Joint build	$277,657,028	$0	$0	$0	$277,657,028
IRU/lease	$526,779,307	$0	$0	$0	$526,779,307
Purchase	$0	$0	$0	$0	$0
Materials	$0	$62,265,188	$0	$0	$62,265,188
Administration	$8,879	$1,362	$1,354	$900	$12,495
Total	**$804,445,214**	**$109,242,238**	**$29,485,345**	**$60,041,123**	**$1,003,213,920**

Figure 4: MMBI cumulative expenditure projection ($3.873 billion funding)



Fiscal Year	Explanations
2021	SB156 established $3.25B in 8506
2022	Per AB179 Chapter 249, $886,657,000 of the initial $3.25B moved from 8506 to 0001
2023	$886,657,000 moved from FY 2022 to 2023
2023	Revenue increase by $300M in 0001
2023	NTIA grant funding $73M
2024	Revenue increase by $250M in 0001; $2.363 Exec.Order moved from 8506 to 0001

Figure 5: MMBI Expenditure by category (fiscal year 2023–24)



MMBI annual reporting (SB 189 [2022])

This section of the annual report documents the information required by SB 189 [2022] in terms of the MMBI. The metrics provided are based on the funding of $3.873 billion and developed in consultation with Caltrans and the CPUC.

SB 189 Metric summary – CDT reporting in consultation with Caltrans and the CPUC

The total number of miles planned for construction with these funds: The total number of miles planned for construction with these funds is 779 miles. This plan focuses on enhancing the middle mile broadband network within the State Highway right-of-way.

The total number of miles planned for lease with these funds: The total number of miles planned for lease with these funds is 3,726.6 miles.

The total number of miles planned in State Highway rights-of-way: Of the 8,000+ mile statewide network, the total number of miles planned along the State Highway right-of-way is 5,300 miles. This plan focuses on enhancing the MMBN to ensure digital access for unserved and underserved communities across the State.

The total number of miles planned for which existing middle-mile broadband infrastructure is already available from another provider in the area: The total number of miles planned for which existing middle-mile broadband infrastructure is already available from another provider in the area is 423 miles which exists along the Digital 395 route. This highlights a significant gap in the current broadband infrastructure within the proposed area of construction. This project will pave the way for improved internet connectivity, ensuring that underserved communities gain access to the digital resources they need.

The total number of miles planned for which no existing middle-mile broadband infrastructure currently exists: The total number of miles planned for which no existing middle-mile broadband infrastructure currently exists is 4,466.9 miles. This significant undertaking addresses a critical need for improved connectivity in these areas.

A list of the planned middle-mile infrastructure projects identified by Department of Transportation districts, that are to be constructed or leased, according to the following criteria: A specific list of the planned middle-mile infrastructure projects is not yet available. Caltrans construction will commence in multiple Caltrans districts as pre-construction activities—such as planning, designing, and permitting—are completed and

spans are cleared for construction. It is important to note that Caltrans is not identifying miles to be leased. This approach allows for flexibility and ensures that all necessary preparatory steps are meticulously followed to achieve optimal outcomes. Once pre-construction activities are completed, the projects will be ready to move forward, bringing enhanced connectivity and infrastructure to the designated areas.

The estimated cost of the project per mile constructed or leased: The estimated cost of the project per mile constructed or leased is as follows: $880,000 for Caltrans-led construction and $280,221 for CDT-identified leases. These figures represent significant investments in infrastructure aimed at improving connectivity and access throughout the state.

The estimated time needed to complete the project: The estimated time needed to complete the project is detailed by the MMBI, which has a planned deployment completion date, including all construction, of December 31, 2026.

The number of internet service providers in that area that have expressed interest in using the statewide open-access MMBN: The number of internet service providers in that area that have expressed interest in using the statewide open-access MMBN is currently unavailable. Because the deployment of the MMBN is still in progress, with a planned completion date of December 2026, no complete segments are yet available for internet service providers, businesses, or public agencies.

The estimated number of households projected to connect to the middle-mile infrastructure project, including the proportion of those households that are unserved by an existing internet service provider that provides service at minimum speeds of 25 megabits per second download and 3 megabits per second upload: The estimated number of households projected to connect to the middle-mile infrastructure project, including the proportion of those households that are unserved by an existing internet service provider providing service at minimum speeds of 25 megabits per second download and 3 megabits per second upload, is currently undetermined. Because the deployment of the MMBN is still in progress, with a planned completion date of December 2026, no complete segments are yet available for internet service providers, businesses, or public agencies.

SB 189 Metric summary – CDT's project reporting

Total funds expended: The total funds expended on the MMBI amount to $1.308 billion.

Total miles constructed: In 2024, the MMBI made significant progress in installing the

physical infrastructure to support the network.

By the end of the year, more than 3,000 miles are in active installation. Installation includes multiple activities such as conduit installation, vault placement, fiber pulling and splicing, hub placement with power, and electronics installation.

Of these approximately 3,000 miles, 1,621 miles have construction activities related to conduit installation, vault placement, and/or fiber completed.

Because none of these 3,000 miles are considered ready to connect and operational, the length of the portion considered constructed is 0 miles.

Total miles leased: There are 3,705 planned lease miles.

Remaining number of miles until total network completion: CDT has determined that 8,118.3 miles remain to complete the state's middle-mile network. CDT will continue to utilize available funding to support that build-out and leverage joint builds and other partnerships to deliver a cost-effective project.

MMBI annual reporting (AB 102 [2023] SB 104 [2023] / SB 108 [2024])

This section of the annual report, together with Appendix A and Appendix B, document information required by AB 102 [2023]. The following section lists amounts identified in AB 102, Section 220(1)(3)(f) through Section 220(1)(3)(h).

Amount of federal funding from the Coronavirus State and Local Fiscal Recovery Funds, as authorized by the American Rescue Plan Act of 2021 (P.L. 117-2), encumbered and expended on CDT's MMBI: In 2024, the Department of Finance cumulatively converted $2.363 billion in Budget Authority from ARPA/SFRF to General Fund. (ARPA/SFRF funds were moved to other projects.)

The amount of federal funding from the Enabling Middle-Mile Broadband Infrastructure Program, as authorized by the Infrastructure Investment and Jobs Act of 2021 (IIJA) (P.L. 117-58), encumbered and expended on CDT's MMBI: In 2023, CDT was awarded $73 million in NTIA Enabling Middle Mile grant funding. CDT expects to complete its first partial drawdown of NTIA funds by the second quarter of fiscal year 2025.

Amount of General Fund funds encumbered and expended on CDT's MMBI: The amounts of General Fund funds encumbered and expended on CDT's MMBI are as follows:

Date	Encumbered	Expended
12/31/23	$0.504B	$0.027B
12/31/24	$3.243B	$1.308B
Difference	*$2.739B*	*$1.282B*

Projected MMBI goals for the next 18 months (SB 156 [2021]/AB 127 [2023])

Over the next 18 months, CDT expects to build on its strong foundation by cost-effectively deploying more network segments in line with the multi-year project plan.

Overview of goals

On a rolling basis, CDT will commence installation on all joint build and leased/purchased segments by December 2025. In April 2025, CDT will begin deployment and installation of the first repeater hubs. Caltrans' partner will assist with the installation effort. Also in April 2025, CDT and its network solutions partner, Presidio, will begin deploying and testing the network electronics equipment at Digital 395 hubs.

By June 2025, CDT and Zayo Group's joint build installation efforts for about 200 miles of fiber routes are projected to be completed. By September 2025, CDT and Vero Networks' joint build installation efforts for about 25 miles of fiber routes are projected to be completed.

By January 2026, CDT aims to have 7,500 miles of fiber routes in active installation – and expects the first lit services to be available.

With those goals in mind, CDT currently is gathering data and insights on how stakeholders plan to interconnect with the MMBN. CDT will also continue consultations and collaboration with tribal nations and local communities to address access and connectivity needs.

MMBI goals related to Caltrans construction

Over the next 18 months, CDT plans for Caltrans to build approximately 779 miles of the statewide MMBN and install an anticipated 108 network hubs (which are needed approximately every 50 miles to house network electronics) as standalone projects.

Caltrans expects to complete pre-construction of network fiber miles and hubs by the end of the first quarter of 2025.

Caltrans expects to have about 688 miles in active installation by March 2025 in multiple Caltrans districts as pre-construction activities (planning, designing, and permitting) are completed and spans are cleared for installation. (Caltrans currently has roughly 90 miles in active installation.)

The following tables provide additional details on Caltrans' projections.

Table 3: Caltrans' projections for 2025 network fiber miles pre-construction delivery by region

	Pre-construction completed prior to January 2025	Jan – March	April – June	July – Sept	Oct – Dec	Region total
Region 1	74	352	0	0	0	426
Region 2	95	120	0	0	0	215
Region 3	0	28	0	0	0	28
Region 4	14	16	0	0	0	30
Region 5	29	51	0	0	0	78
Total	212	567	0	0	0	779

** Pre-construction is expected to be completed by March 2025.*

Table 4: Caltrans' projections for 2025 network fiber miles in active installation by region

	In Installation prior to January 2025	Jan – March	April – June	July – Sept	Oct – Dec	Region total
Region 1	43	384	0	0	0	427
Region 2	13	204	0	0	0	217
Region 3	0	28	0	0	0	28
Region 4	11	18	0	0	0	29
Region 5	24	54	0	0	0	78
Total	91	688	0	0	0	779

** All fiber is expected to be in active installation by March 2025.*

Continuing the MMBI's successful deployment

The MMBI is a critical component in the state's strategy – established by Executive Order N-73-20[11] and presented in the Broadband for All Action Plan – to bring broadband access, affordability, equity, and inclusion to all Californians.

In 2024, CDT secured contracts for more than 1,000 miles of network infrastructure, began active installation of more than 3,000 miles of fiber routes, and achieved nearly $250 million in cost savings through strategic procurement of network equipment and electronics.

These tactical and strategic successes reflect CDT's ongoing commitment to strong financial stewardship, results-oriented innovation, and timely delivery of a statewide network.

The MMBI is on track to begin network activation by early 2026; complete construction by December 2026; and begin network operations in January 2027.

CDT and its partners are proud to play this important role in delivering on the state's goal of Broadband for All.

[11] "Executive Order N-73-20," Executive Department, State of California, August 14, 2020, https://www.gov.ca.gov/wp-content/uploads/2020/08/8.14.20-EO-N-73-20.pdf. See also: "Executive order," CDT, https://broadbandforall.cdt.ca.gov/executive-order/.

Appendix A: Network deployment partnerships

Network miles by partner and type

The table below lists all partners that will provide lease, purchase, joint build, and Caltrans-led standalone construction.[12] Miles stated are non-overlapping miles reflected in the contracts.

Table 5: MMBI partners (as of December 30, 2024)

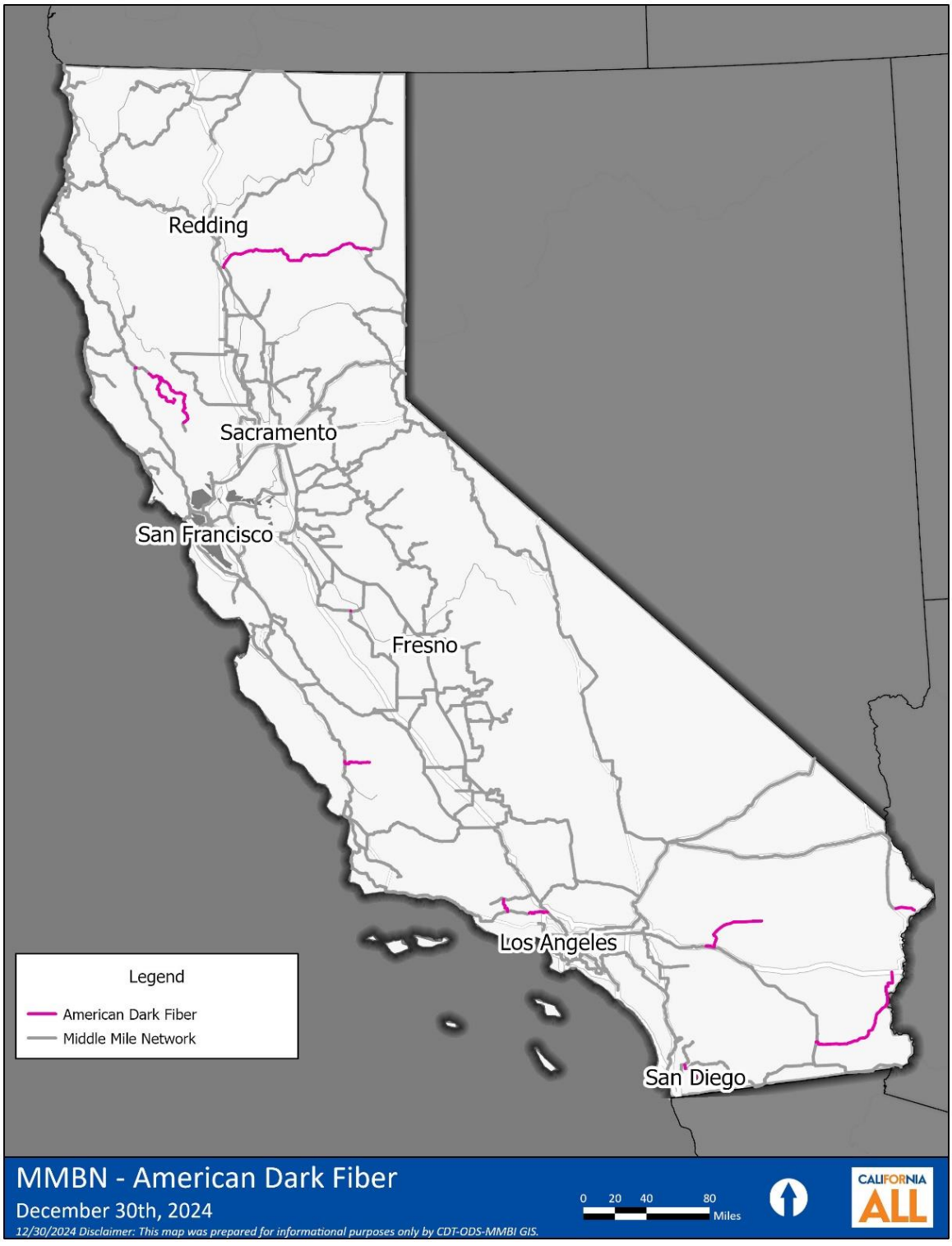
Partner	Type	Miles
American Dark Fiber	Joint build	384.6
Anticipated Partnerships (Joint Build)	Joint build	217.5
Anticipated Partnerships (Lease)	Lease	26.7
Arcadian Infracom	Joint build	1,003.9
Boldyn Networks	Lease	81.5
Caltrans	Caltrans construction	779.0
CVIN	Lease	2,699.7
Digital 395	Purchase	423.1
Hoopa Valley Public Utilities District	Joint build	22.4
Lumen Technologies (Joint Build)	Joint build	1,179.6
Lumen Technologies (Lease)	Lease	698.8
Siskiyou Telephone Company	Joint build	164.0
Trans Pacific Network	Lease	170.9
Vero Networks	Joint build	23.8
Yurok Telecommunications (Ytel)	Lease	49.0
Zayo Group	Joint build	193.8
Total miles		**8,118.3**

[12] "Network Partners," CDT, https://middle-mile-broadband-initiative.cdt.ca.gov/pages/cdt-network-partners (accessed December 30, 2024).

Network partner route maps

American Dark Fiber

Figure 6: American Dark Fiber route map (joint build)

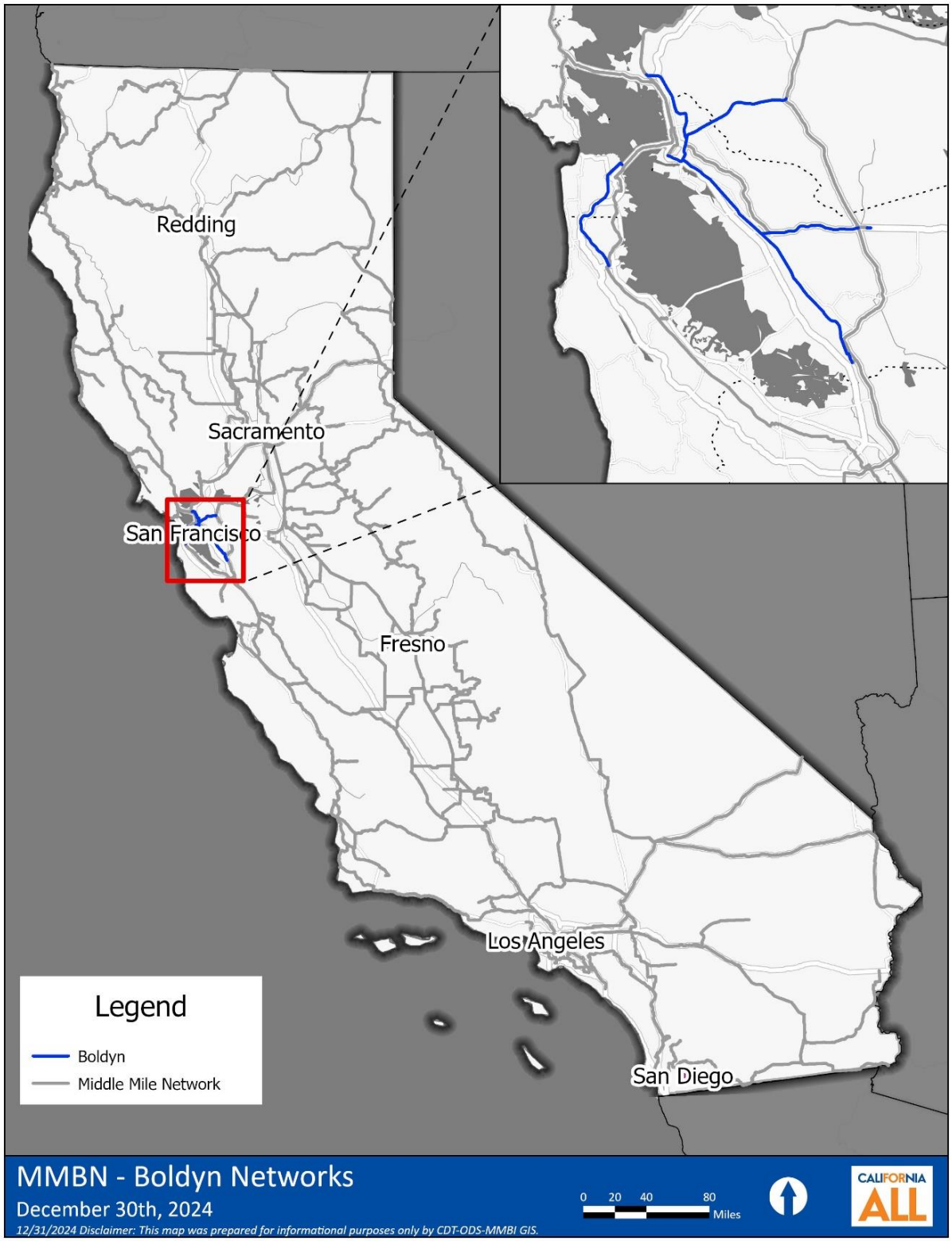


Arcadian Infracom

Figure 7: Arcadian Infracom route map (joint build)

Boldyn Networks

Figure 8: Boldyn Networks route map (lease)



Caltrans

Figure 9: Caltrans route map (construction)

CVIN

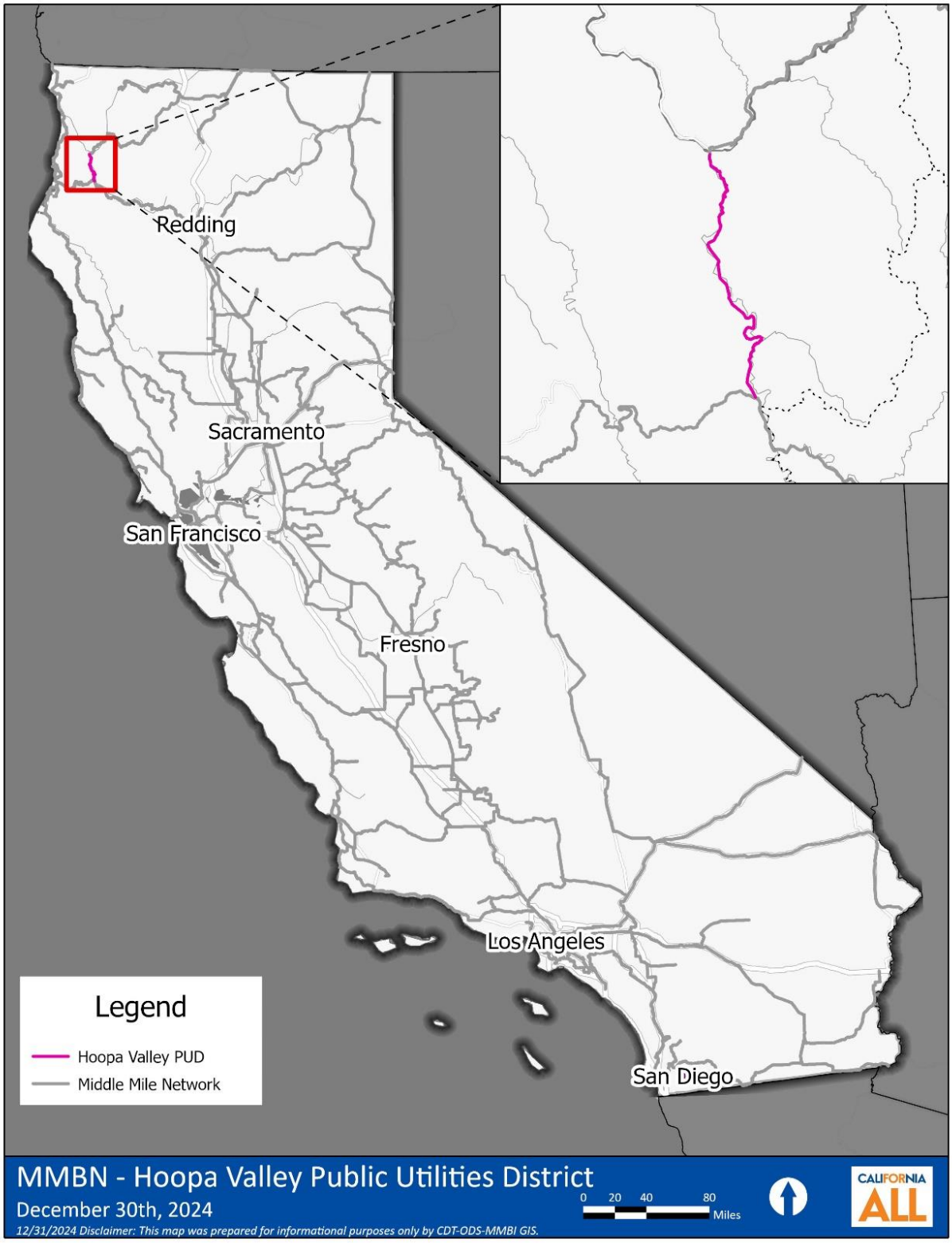
Figure 10: CVIN route map (lease)

Digital 395

Figure 11: Digital 395 route map (purchase)

Hoopa Valley Public Utilities District

Figure 12: Hoopa Valley Public Utilities District route map (joint build)



Lumen Technologies (joint build)

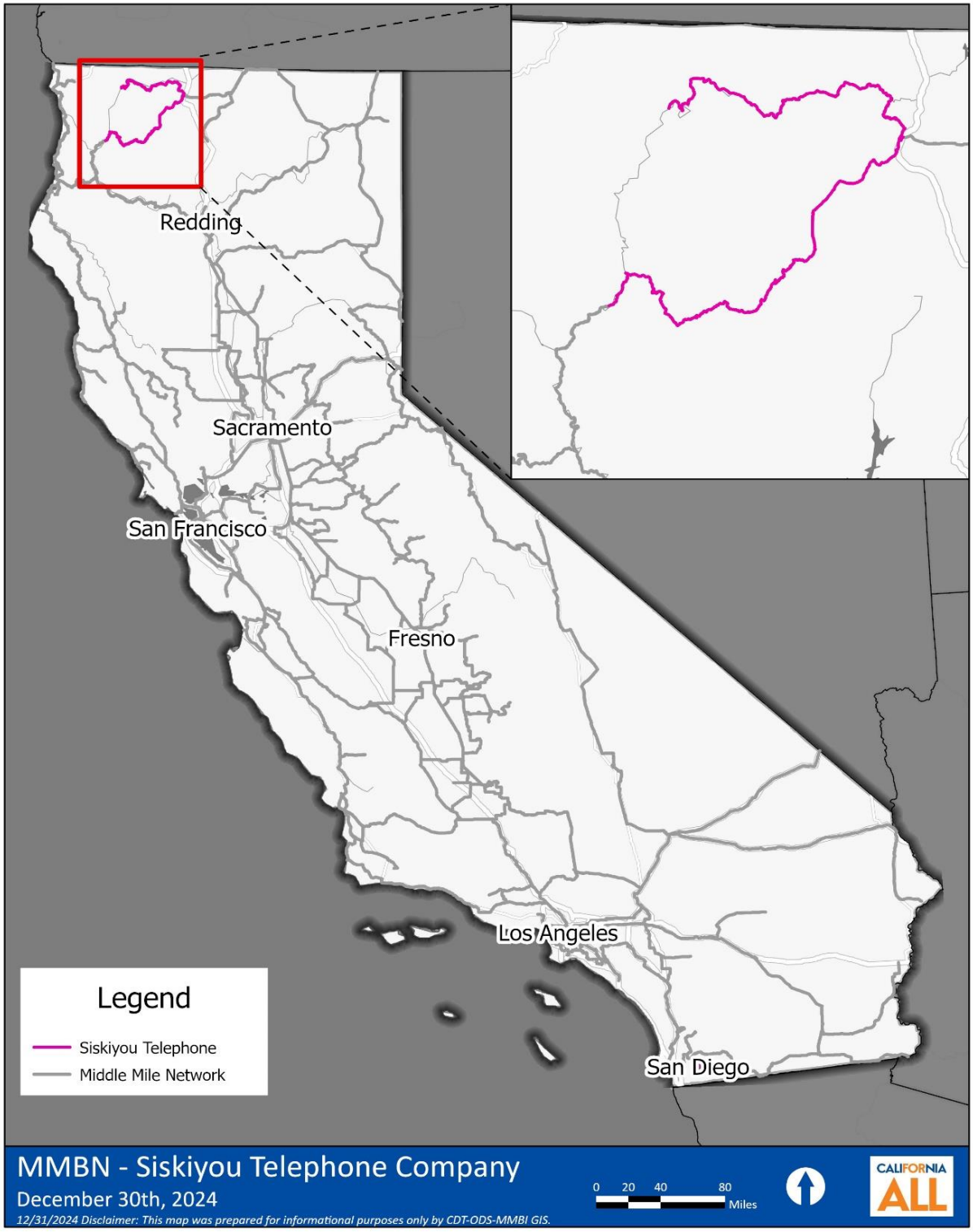
Figure 13: Lumen Technologies route map (joint build)

Lumen Technologies (lease)

Figure 14: Lumen Technologies route map (lease)

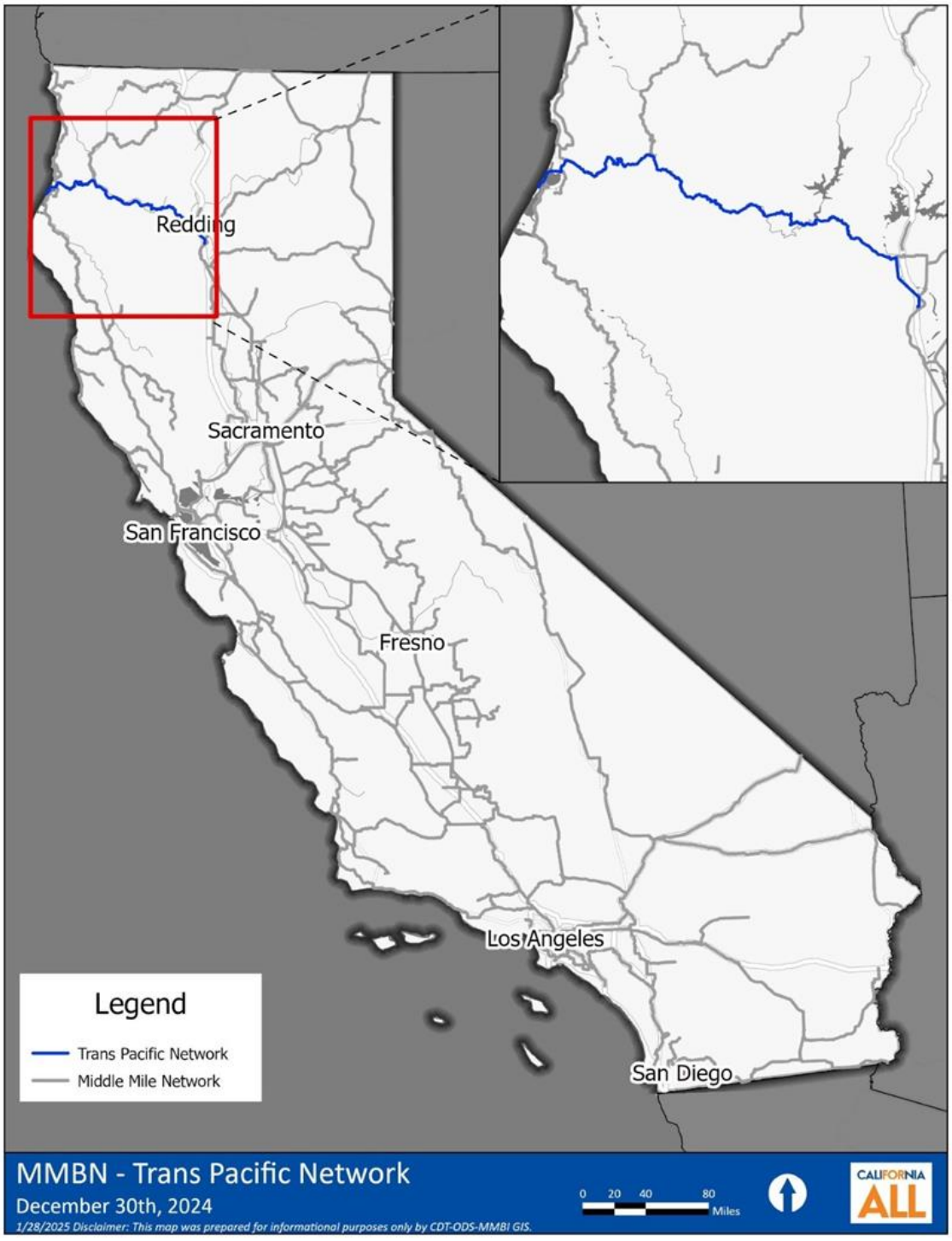
Siskiyou Telephone Company

Figure 15: Siskiyou Telephone Company route map (joint build)



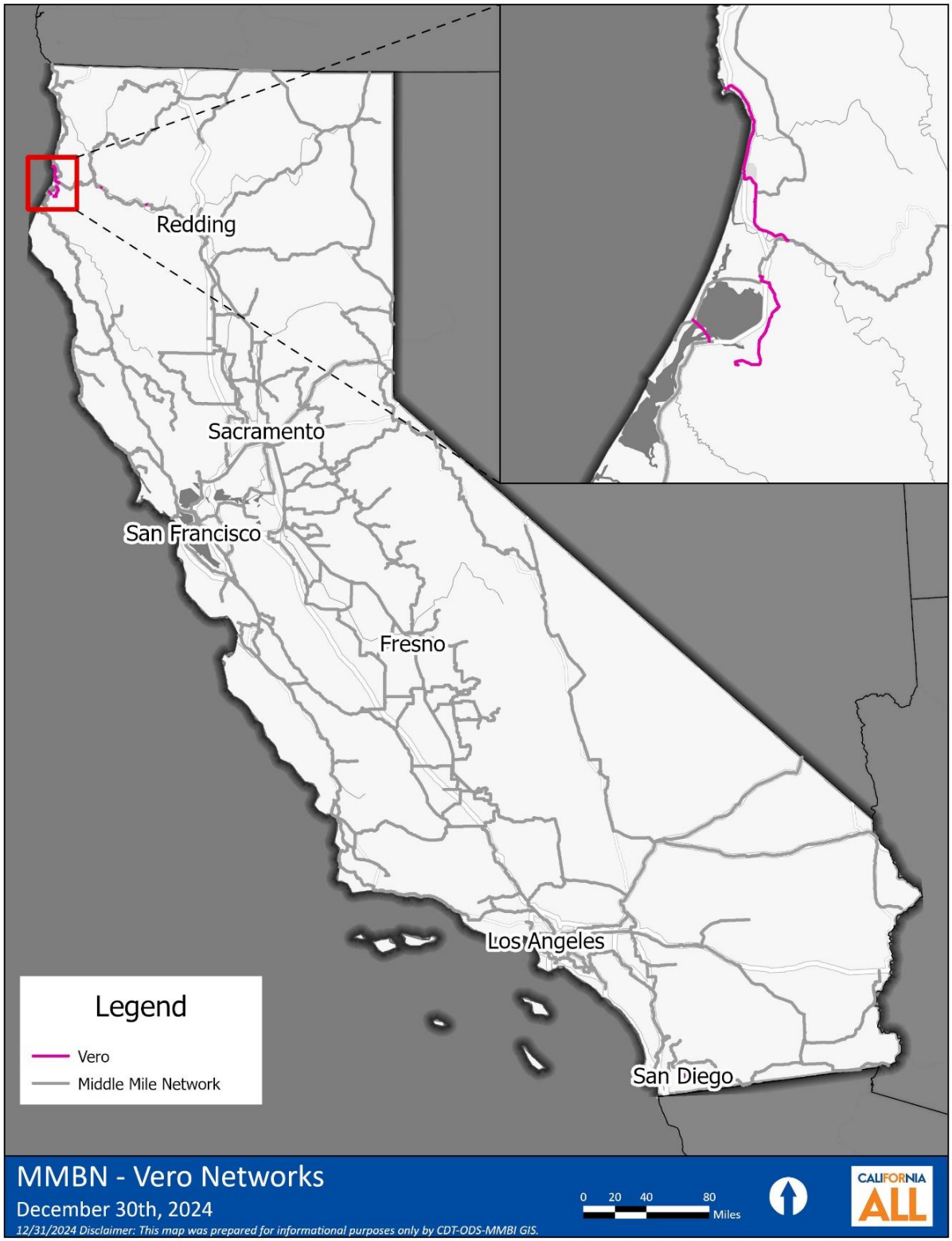
Trans Pacific Network

Figure 16: Trans Pacific Network (lease)



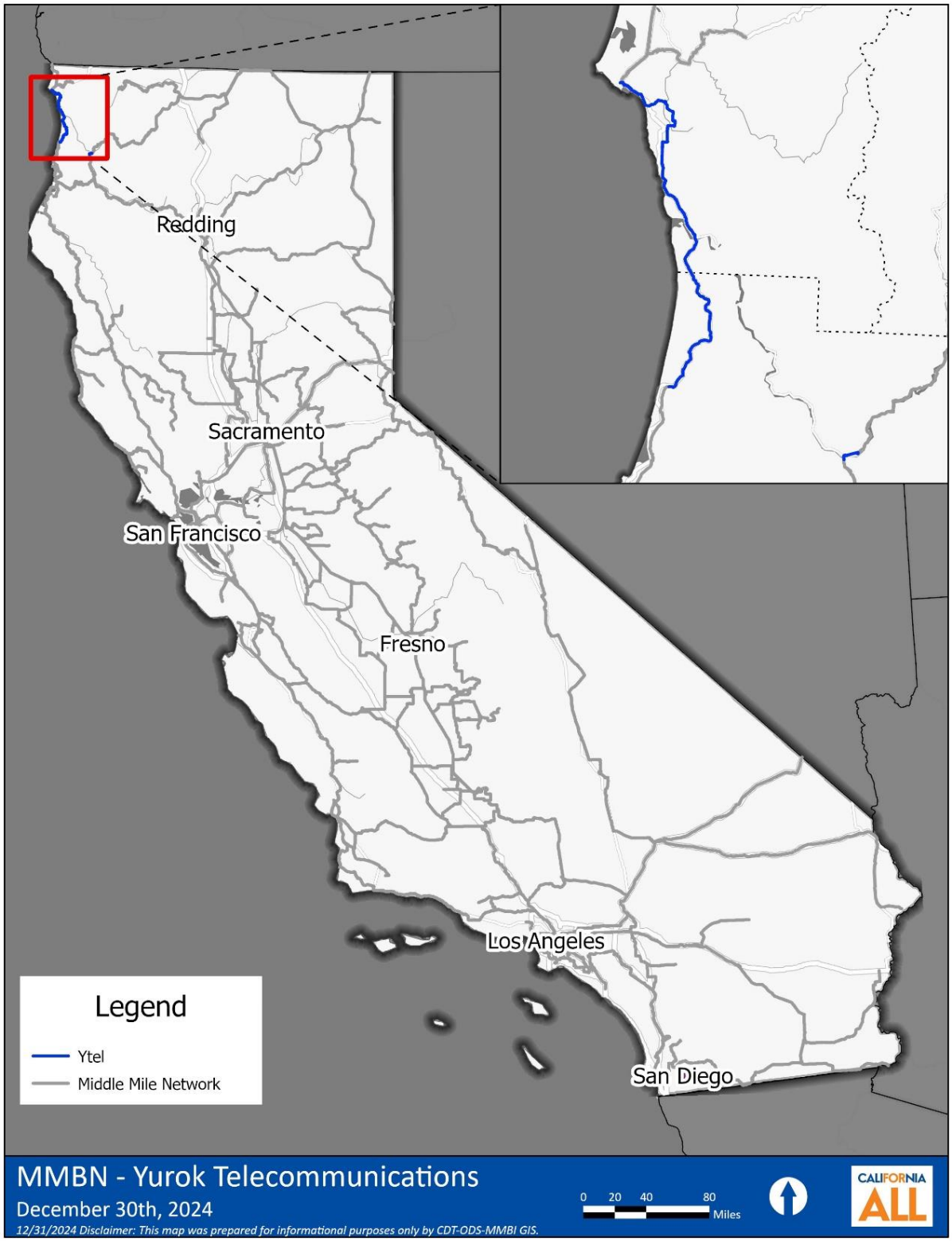
Vero Networks

Figure 17: Vero Networks route map (joint build)



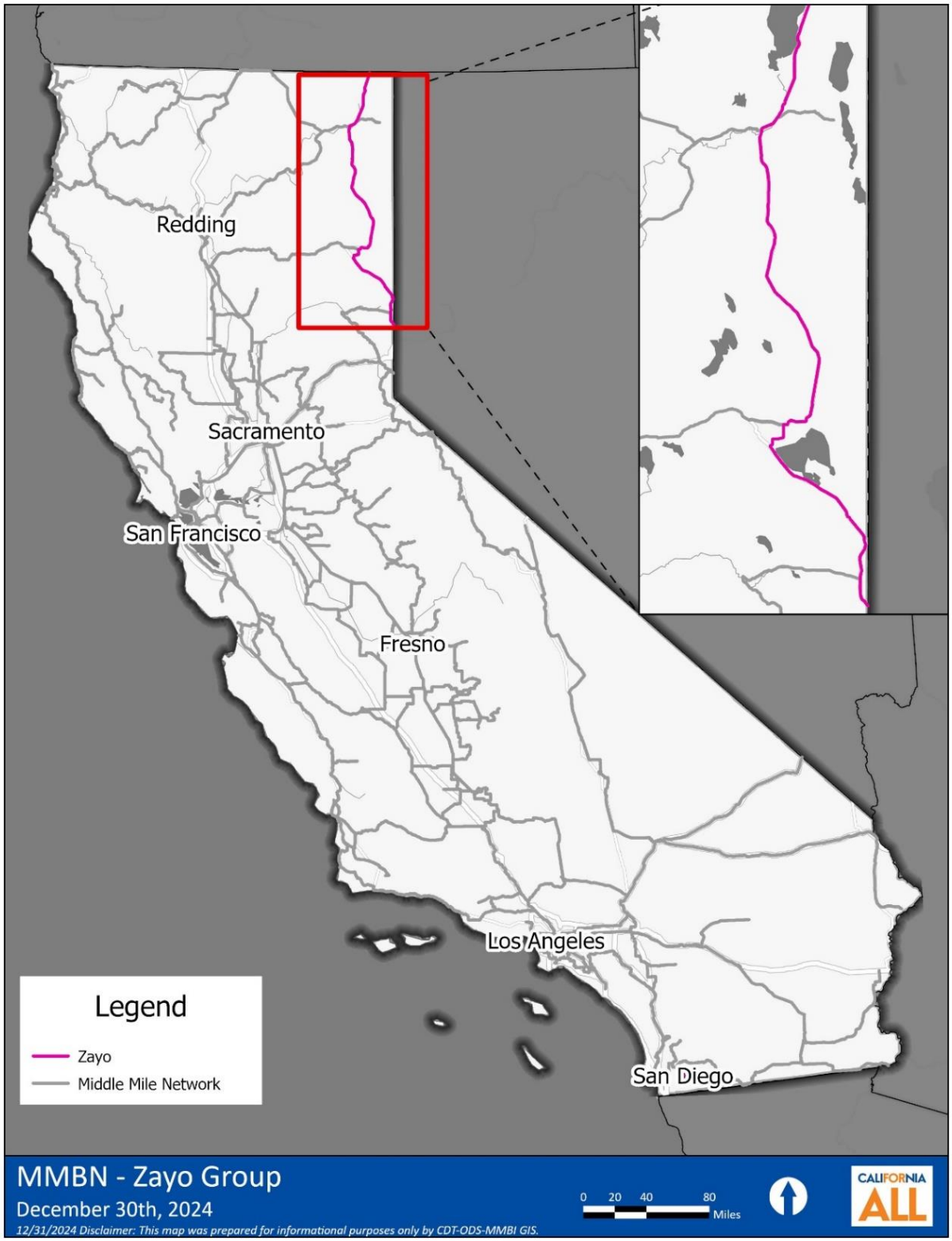
Yurok Telecommunications

Figure 18: Yurok Telecommunications (Ytel) route map (joint build)



Zayo Group

Figure 19: Zayo Group route map (joint build)



Appendix B: Network miles by county

The following table documents the status of the MMBN planned as of December 30, 2024.[13] Miles reported in this table will vary slightly from those reported in Appendix A. The variation is due to point-in-time adjustments that follow the natural course of pre-construction (planning, designing, and permitting).

Table 6: MMBN miles by county

County name	Lease miles	Purchase miles	Joint build miles	Caltrans construction miles	Total miles
Alameda	54.4	0.0	31.7	20.2	106.3
Alpine	41.0	0.0	0.0	2.6	43.6
Amador	105.0	0.0	0.1	0.0	105.1
Butte	85.4	0.0	0.0	23.0	108.4
Calaveras	99.2	0.0	0.0	4.7	103.9
Colusa	3.5	0.0	39.8	0.0	43.3
Contra Costa	13.1	0.0	64.4	15.2	92.7
Del Norte	29.5	0.0	0.0	35.7	65.2
El Dorado	55.1	0.0	14.9	47.9	117.9
Fresno	229.5	0.0	36.7	25.8	292.0
Glenn	10.5	0.0	34.2	4.3	49.0
Humboldt	76.7	0.0	180.3	0.3	257.3
Imperial	55.9	0.0	172.2	0.0	228.1
Inyo	0.0	147.2	0.0	0.0	147.2
Kern	304.5	31.5	113.1	0.0	449.1
Kings	96.8	0.0	27.8	0.0	124.6

[13] "Network Miles by County and Delivery Method," Middle-Mile Broadband Initiative, CDT, https://middle-mile-broadband-initiative.cdt.ca.gov/pages/network-development (accessed December 30, 2024).

County name	Lease miles	Purchase miles	Joint build miles	Caltrans construction miles	Total miles
Lake	0.0	0.0	83.7	6.1	89.8
Lassen	25.6	0.0	169.6	3.8	199.0
Los Angeles	105.3	0.0	300.8	15.6	421.7
Madera	64.9	0.0	26.5	0.0	91.4
Marin	0.0	0.0	28.2	9.7	37.9
Mariposa	59.4	0.0	0.0	31.6	91.0
Mendocino	0.0	0.0	110.4	144.3	254.7
Merced	93.9	0.0	43.5	0.0	137.4
Modoc	108.5	0.0	61.5	0.0	170.0
Mono	7.5	175.4	0.0	0.0	182.9
Monterey	151.6	0.0	0.4	0.0	152.0
Napa	11.8	0.0	5.8	0.0	17.6
Nevada	45.9	0.0	22.2	8.2	76.3
Orange	0.0	0.0	74.6	15.4	90.0
Placer	25.3	0.0	77.2	17.8	120.3
Plumas	0.0	0.0	19.1	37.4	56.5
Riverside	145.6	0.0	91.4	19.8	256.8
Sacramento	35.7	0.0	115.0	5.1	155.8
San Benito	94.8	0.0	0.0	0.0	94.8
San Bernardino	17.9	69.0	493.6	0.5	581.0
San Diego	0.0	0.0	128.9	61.8	190.7
San Francisco	15.8	0.0	0.0	3.2	19.0

County name	Lease miles	Purchase miles	Joint build miles	Caltrans construction miles	Total miles
San Joaquin	112.0	0.0	63.0	0.0	175.0
San Luis Obispo	132.8	0.0	19.4	0.0	152.2
San Mateo	34.1	0.0	0.0	0.0	34.1
Santa Barbara	187.0	0.0	2.3	0.0	189.3
Santa Clara	76.6	0.0	19.0	19.2	114.8
Santa Cruz	5.2	0.0	0.0	2.8	8.0
Shasta	128.3	0.0	16.4	9.6	154.3
Sierra	0.0	0.0	3.1	29.8	32.9
Siskiyou	80.8	0.0	158.7	44.1	283.6
Solano	17.5	0.0	43.2	0.0	60.7
Sonoma	0.0	0.0	56.1	69.8	125.9
Stanislaus	87.2	0.0	24.9	0.0	112.1
Sutter	69.0	0.0	0.0	0.0	69.0
Tehama	28.7	0.0	105.1	0.0	133.8
Trinity	72.4	0.0	0.1	0.0	72.5
Tulare	232.8	0.0	21.9	0.0	254.7
Tuolumne	39.2	0.0	0.0	42.6	81.8
Ventura	64.6	0.0	35.3	0.0	99.9
Yolo	41.6	0.0	53.5	1.1	96.2
Yuba	47.2	0.0	0.0	0.0	47.2
Total miles	**3,726.6**	**423.1**	**3,189.6**	**779.0**	**8,118.3**