CDT NTIA MM Grant Application - Budget Narrative

Applicant Name:	California Department of Technology
Applicant Type:	State Government
Proposed Period of Performance:	3 Years
Total Project Costs:	$187,586,206.04
Total Federal Grant Request:	$ 73,000,000.00
Total Matching Funds (Cash):	$114,586,206.04
Total Matching Funds (In-Kind):	$0.00
Total Matching Funds (Cash + In-Kind):	$114,586,206.04
Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs:	61.08%

The California Department of Technology (CDT, the Applicant) is requesting $73,000,000.00 in middle mile grant funding to complete this project, matched by $114,586,206.04 in non-federal cash contributions. This 61.08% matching contribution exceeds NTIA's requirement of 30% non-federal share for middle mile projects. This Application is critical to the State's broad and comprehensive plans to provide all Californians access to broadband. While the State has coordinated with other entities that are applying to this grant program to confirm consistency with the State's plans, this application from CDT is the sole application from the State itself and is the State's prioritized application for funding.

CDT will adopt fiscally sustainable middle-mile strategies. Since the requested project funding is a portion of a larger, multi-billion-dollar investment being made by the State of California, the project will be overseen by the State's department of technology and will be fiscally cash flow positive within a year of the start of service provision. With NTIA funding, the project can be built on an expedited timeline of three years, and a substantial portion of the network will become available earlier than other non-grant supported segments and can provide services starting in 2026. CDT will maintain fiscally sustainable middle-mile strategies throughout the implementation of the Proposed Project. CDT recognizes that interconnection between middle mile infrastructure and last mile broadband providers is critical to achieving the Infrastructure Act's goals. This project will offer non-discriminatory interconnection to terrestrial and wireless last mile broadband providers and any other party making a bona fide request, on an open access and non-discriminatory basis.

1. Administrative and Legal Expenses - $ **0.00**

Activity	Total Time	Rate	Total Cost
N/A			

The California Department of Technology (the Applicant) is not requesting funding for administrative and legal expenses related to the proposed project. CDT will utilize internal resources dedicated to the overall Middle Mile Broadband Initiative (MMBI) program to support any administrative or legal needs related to the proposed project.

2. Land, structures, rights-of-way, appraisals, etc. - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
N/A				

The Applicant is not requesting funding pertaining to land, structures, rights-of-way, appraisals, etc. as relevant costs.

3. Relocation expenses and payment - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Applicant is not requesting pertaining to relocation expenses and payment as relevant costs.

4. Architectural and engineering fees - $25,387,800.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
Engineering & Design services	Foot	$7.00	3,590,400	$25,132,800.00
Railroad Crossing Permits	Each	$15,000.00	17	$255,000.00

The Applicant is estimating $25,132,800.00 for contractual costs associated with project engineering and design, including permitting services. This is estimated based on a per foot cost of $7.00 for the total project length of 3,590,400 feet (approximately 680 miles).

The project includes 17 railroad crossings and will require a permit for every crossing at $15,000.00 each for a total estimated cost of $255,000.00.

5. Other architectural and engineering fees - $1,560,000.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NEPA/Section 106 Consultations	Hourly	$250.00	6,240	$ 1,560,000.00

The Applicant anticipates contracting services for completion of environmental and historical/archeological consultations and permitting. This effort will begin shortly after an award is made and includes consideration for a team of six contractors over the course of six months for 1,040 hours each at a rate of $250 per hour for a total of $1,560,000.00.

6. Project Inspection fees - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Proposed Project is not requesting funding pertaining to project inspection fees.

7. Site work - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Proposed Project is not requesting funding pertaining to site work. CDT will utilize internal resources dedicated to the overall Middle Mile Broadband Initiative (MMBI) program to support any site work related to the proposed project.

8. Demolition and removal - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Proposed Project is not requesting funding pertaining to demolition and removal.

9. Construction - $ 151,703,447.87

Labor	Unit Basis	Unit Cost	Number of Units	Total Cost
Plowing and placement of 4x2" conduits, off-shoulder in unpaved ROW (Total)	Foot	$8.50	1,442,973.00	$12,265,270.50
Traffic control adder: Lane closure, 2 lane road, speed 25 mph up to 40 mph	Foot	$1.00	320,151.00	$320,151.00

Traffic control adder: Lane closure, 2 lane road, speed >40 mph	Foot	$1.25	591,360.00	$739,200.00
Traffic control adder: Multi-lane Highway closure, 40 mph to 55 mph	Foot	$1.00	21,120.00	$21,120.00
Traffic control adder: Multi-lane Highway closure, above 55 mph	Foot	$2.50	274,560.00	$686,400.00
Trenching and placement of 1 x2" conduits in unpaved ROW (Total)	Foot	$25.50	295,680.00	$7,539,840.00
Adder: Sand backfill (rock on either side of the road)	Foot	$20.00	4,224.00	$84,480.00
Rock cutting adder hardness 2	Foot	$20.00	8,226.00	$164,520.00
Traffic control adder: Lane closure, 2 lane road, speed >40 mph	Foot	$2.50	162,255.00	$405,637.50
Directional boring and placement of 1 x2" conduits in unpaved ROW (Total)	Foot	$47.00	612,480.00	$28,786,560.00
Traffic control adder: Lane closure, 2 lane road, speed >40 mph	Foot	$5.00	168,960.00	$844,800.00
Traffic control adder: Multi-lane Highway closure, above 55 mph	Foot	$10.00	412,840.00	$4,128,400.00
Directional boring and placement of 2" conduit in paved ROW (Total)	Foot	$47.00	1,238,183.95	$58,194,645.43
Rock adder for rock hardness >14,000psi, <18,000psi	Foot	$20.00	164,912.00	$3,298,240.00
Traffic control adder: Lane closure, 2 lane road, speed 25 mph up to 40 mph	Foot	$4.00	21,008.00	$84,032.00
Traffic control adder: Lane closure , 2 lane road, speed >40 mph	Foot	$5.00	634,600.00	$3,173,000.00
Traffic control adder: Multi-lane Highway closure, 40 mph to 55 mph	Foot	$4.00	268,960.00	$1,075,840.00
Traffic control adder: Multi-lane Highway closure, above 55 mph	Foot	$10.00	37,760.00	$377,600.00
Placement of 30"x48"x36" vault in unpaved ROW, no traffic	Item	$500.00	988	$494,208.00
Placement of vault in paved ROW, no traffic	Item	$1,600.00	287	$459,571.20
Placement of vault in paved ROW, traffic bearing	Item	$2,450.00	93	$227,673.60

Trace wire installation in conduits with fiber placement	Foot	$0.25	3,590,400.00	$897,600.00
Installation of fiber cable by pull or blow method	Foot	$1.25	3,590,400.00	$4,488,000.00
Installation of splice enclosures	Foot	$250.00	274	$68,428.80
Splicing of fiber segments (288 fibers, ribbon fusion splicer)	Foot	$1,200.00	274	$328,458.24
Bi-directional continuity testing of all fiber strands on completed segments using ODTR (Hut)	Foot	$4,320.00	39.00	$168,480.00
Fiber termination	Other	$500.00	5.00	$2,500.00
Fiber splicing	Other	$1,200.00	5.00	$6,000.00
Hut site preparation, hut foundation work, and commissioning	Item	$175,000.00	5	$875,000.00
Project Management	Foot	$0.84	3,421,440	$2,872,320.00
Materials	**Unit Basis**	**Unit Cost**	**Number of Units**	**Total Cost**
Conduit	Foot	$1.49	3,590,400	$5,349,696.00
Conduit coupler	Item	$8.14	13,908.29	$113,213.50
Fiber cable	Foot	$2.04	3,734,016.00	$7,617,392.64
Trace wire	Foot	$0.39	3,590,400	$1,400,256.00
Vault 1	Item	$1,237.00	1,094.86	$1,354,342.81
Vault 2	Item	$3,210.00	273.72	$878,625.79
Ground rod	Item	$55.00	273.72	$15,054.34
Splice enclosure	Item	$463.00	273.72	$126,730.14
Splice tray	Item	$12.12	273.72	$3,317.43
Hut Structure, 12’ x 16’ (includes primary electrical panel, outlets, ground system, lighting, cable ladders, alarm wiring, and equipment racks)	Item	$155,000.00	5	$775,000.00
HVAC, redundant 5-ton AC (Hut)	Item	$20,000.00	5	$100,000.00
Fire suppression system (Hut)	Item	$25,000.00	5	$125,000.00
DC power plant and backup batteries	Item	$35,000.00	5	$175,000.00
Physical security systems (includes video surveillance and electronic door lock system)	Item	$15,000.00	5	$75,000.00

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Generator, 60 KW natural gas or LP and ATU	Item	$60,000.00	5	$300,000.00
Shipping	Item	$15,000.00	5	$75,000.00

Labor

The Applicant will use multiple methods to place one two-inch conduit along the project route. These are:

- Plowing, at a base labor rate of $8.50 per foot for 1,442,973.00 feet, totaling $12,265,270.50
- Trenching, at a base labor rate of $25.50 per foot for 295,680.00 feet, totaling $7,539,840.00
- Directional boring of unpaved rights of way at a base labor rate of $47.00 per foot for 612,480.00 feet, totaling $28,786,560.00
- Directional boring of paved rights of way at a base labor rate of $47.00 for 1,238,183.95 feet, totaling $58,194,645.43.

These base labor rates for each method of conduit placement are subject to adders for necessary activities like traffic control and the presence of rock in the project path, which require specialized labor and handling, detailed below by method of installation.

For the portion of the route that is plowed, a total of $1,776,871.00 in specialized labor for traffic control is anticipated. For the portion of the route that is trenched, $654,637.50 in specialized labor is anticipated for an anticipated lane closure on 2 lane roads with a speed limit >40 mph, as well as for the rocky terrain. For the portion of the route that is directionally bored in unpaved rights of way, $4,973,200.00 in specialized labor is anticipated for traffic control due to lane closures on 2 lane roads and highways. For the portion of the route that is directionally bored in paved rights of way, $8,008,712.00 in specialized labor is budgeted for both anticipated hard rock and traffic control due to lane closures on both 2 lane roads and multi-lane highways.

After conduit is installed, fiber will be deployed using either pull or blow methods at a rate of $1.25 per foot. The Applicant anticipates a total of 3,590,400 feet of fiber, representing the entire project route, will be installed for a total labor cost of $4,488,000.00. Trace wire will be installed along with fiber when placed. The labor for the installation of trace wire is estimated at a rate of $0.25 per foot over 3,590,400 feet for a total of $897,600.00.

The labor costs for the installation of vaults are also estimated based on the traffic and rights-of-way conditions in which the vaults will be installed. Placement of vaults in unpaved rights of way with no traffic are estimated at a per vault rate of $500.00, totaling $494,208.00. Placement of vaults in paved rights of way with no traffic are estimated at a per vault rate of $1,600.00, totaling $459,571.20. Placement of vaults in paved rights of way which are traffic bearing are estimated at a per vault rate of $2,450.00, totaling $227,673.60.

Labor costs for the installation of splice enclosures are anticipated at $250.00 each, totaling $68,428.80.

Labor associated with fiber splicing, splicing fiber segments, bi-directional continuity testing of all fiber strands on completed segments, and fiber termination is estimated to aggregate to $505,438.24. These labor costs are based on a vendor bid for this project.

Site preparation, hut foundation work, and commissioning of the five huts have been estimated to cost $175,000 per hut, or a total of $875,000.

Project Management labor is estimated at a per foot rate of approximately $0.84 for 3,421,440 feet, totaling $2,872,320.00.

Materials

The project will utilize 3,590,400 feet of conduit at a rate of $1.49 a foot for a total cost of $5,349,696.00. Conduit couplers, at $8.14 each, will be used to couple conduit segments; the total estimated cost for this item is $113,213.50.

3,734,016 feet of fiber cable (including approximately 4% of slack) will be utilized at a rate of $2.04, totaling $7,617,392.64 for this project. 3,590,400 feet of trace wire will be installed in conduits with fiber placement, at a rate of $0.39 per foot for a total of $1,400,256.00.

Approximately 1,095 smaller vaults will be placed along the project route, each costing $1,237.00, for an estimated total of $1,354,342.81. Approximately 274 larger vaults, each costing $3,210.00, will be placed for an estimated total cost of $878,625.79.

Approximately 274 ground rods are anticipated to be placed at a cost of $55.00 each for a total of $15,054.34. The same number of splice enclosures are estimated at a rate of $463.00 each, for a total cost of $126,760.14. Approximately 274 splice trays will be utilized at $12.12 each, totaling $3,317.43.

Five core sites (including prefabricated huts) will be deployed for this project at a cost of $325,000.00 each, for an estimated total of $1,625,000.00. These costs include the hut structures ($775,000), HVAC ($100,000), fire suppression systems ($125,000), DC power plant and batteries ($175,000), security systems ($75,000), generators ($300,000), and associated shipping costs ($75,000).

10. Equipment - $ 0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Proposed Project does not require additional funding pertaining to equipment. This portion of the network will rely on other parts of the larger planned California middle-mile network to

distribute signals from the spurs. Lit services and other support services have been priced in such a way as to allow the use of electronics, support services, and other on-going operational expenses from the rest of the California middle-mile network as well, so this portion of the middle-network's marginal cost contribution to the overall operations of the network has been modelled as minimal.

11. Miscellaneous - $0.00

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
NA	NA	NA	NA	$ 0.00

The Proposed Project does not require funding pertaining to the miscellaneous cost category.

12. SUBTOTAL (sum of lines 1-11) - $178,651,247.87

Contingencies - $8,934,958.16

An approximately 5% project contingency on the estimated cost of construction of 8,934,958.16 has been included to account for other project expenses, inflation, and supply chain constraints.

13. SUBTOTAL (sum of lines 12-13) - $187,586,206.04

Project (program) income - $0.00

The Proposed Project does not anticipate requesting use of program income to meet match requirements.

14. TOTAL PROJECT COSTS - $187,586,206.04