California Department of Technology

Middle-Mile Advisory Committee Meeting

September 15th, 2021

AGENDA

Item	Topic	Presenter(s)	Time
1	Welcome / Opening Comments	Amy Tong, Chair	5 minutes
2	Third Party Administrator Introduction	Third Party Administrator	15 minutes
3	Executive Report Out	Scott Adams, Deputy Director, Broadband and Digital Literacy	10 minutes
4	Information Items	• Middle Mile Public Comment/ Response - California Public Utilities Commission • Data and Mapping – California Public Utilities Commission; Caltrans; Third Party Administrator • Location Prioritization – California Department of Technology; California Public Utilities Commission; Third Party Administrator	30 minutes
5	Public Comment	• Public	30 minutes

Third Party Administrator - Introduction

CENIC

Louis Fox

President & Chief Executive Officer

Part One: What is CENIC?

CENIC is a 501(c)(3) with the mission to advance education and research statewide by providing the world-class network essential for innovation, collaboration, and economic growth.

Charter Associates:

- California K-12 System
- California Community Colleges
- California State University System
- Stanford, Caltech, USC
- University of California System
- California Public Libraries
- Naval Postgraduate School

Other Members Include:

- Scientific and Cultural Institutions
- Private Colleges and Universities
- Hospitals and Specialized Medical Institutions
- Biomedical, Space, Environmental Research Organizations
- Tribal Nations

The California Research and Education Network (CalREN)

8,000+ miles of optical fiber

Members in all 58 counties connect via fiber-optic cable or leased circuits from telecom carriers

Over 12,000 sites connect to CENIC

Operates multiple networks

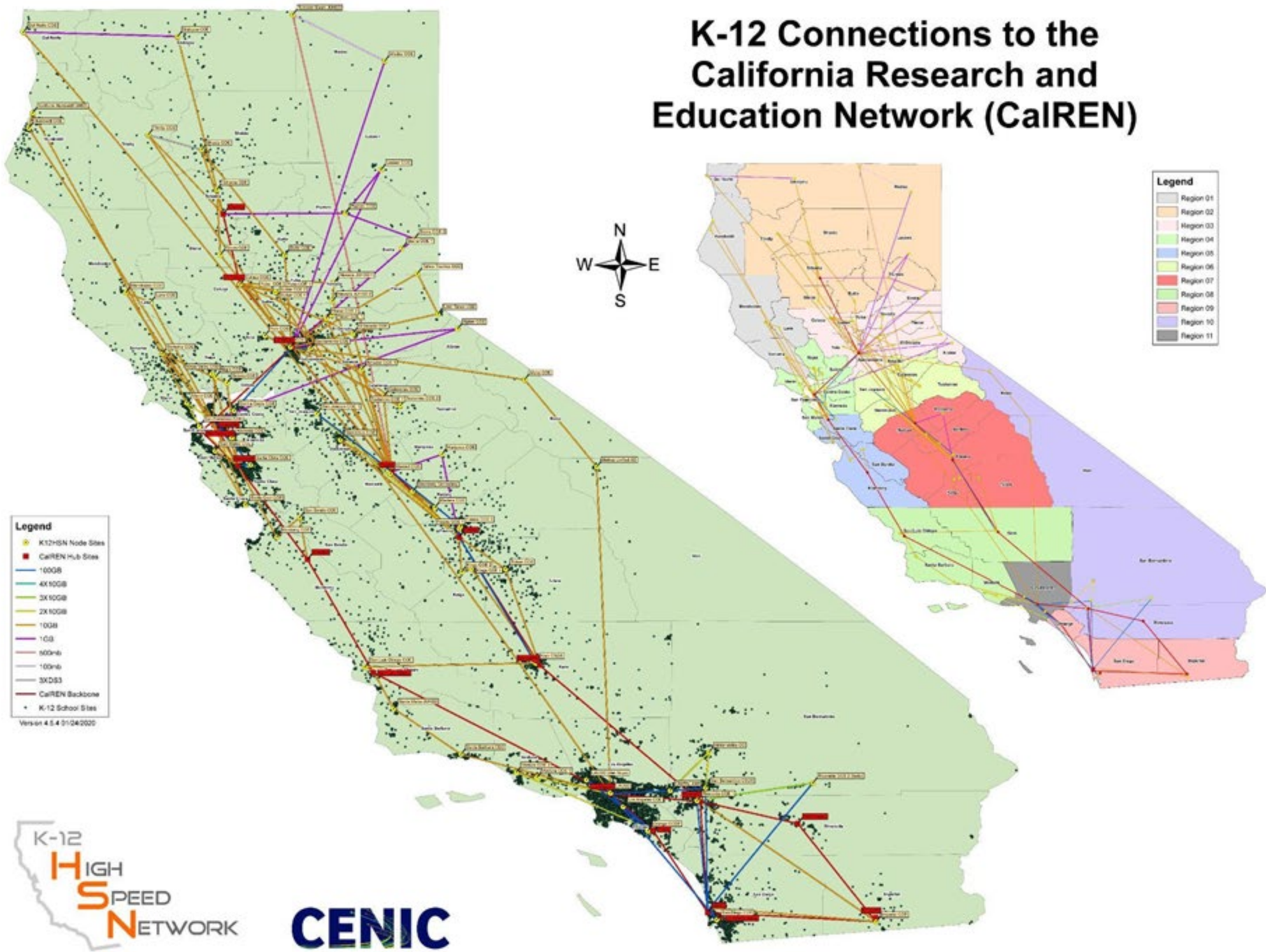
A 501(c)(3) organization chartered and governed by its members

Collaborates with over **800 private sector partners and contributes > $100,000,000** to the CA economy

25 years of connecting California

CENIC
California Research and Education Network (CalREN)
August 2021
NORDUnet
Nordic Countries
JANET
United Kingdom
SURFnet
Netherlands
GEANT
Europe
ESnet
CERN
Chicago
Internet2
CANARIE
Canada
100 Gbps
ESnet
DREN
PNWGP
FRGP
KISTI
KREONET
Korea
CSTNET
China
GLORIAD
Hong Kong
Denver
Internet2
UltraLight
(CalTech)
GEMNet2
Japan
TransPAC/
Pacific Wave
100Gbps
Japan
Vancouver
Seattle
ABQG
Albuquerque
DREN
UH
Oahu
AARNet
Australia
JGN-X
Japan
NII/SINET
Japan
TransPAC
Japan
CERNET
China
El Paso
ESnet
NREN
(NASA Ames)
Palo Cedro
Chico
Corning
Sacramento
Colusa
Merced
Fresno
Palm
Desert
Emeryville
Sunnyvale
Bakersfield
Riverside
Yuma
San
Francisco
Palo
Alto
Soledad
El Centro
Los
Angeles
Tustin
San Luis
Obispo
San
Diego
Tijuana
CalREN Nodes
Optical add/drop
Optical add/drop & DC
Optical add/drop, DC, & HPR
TWAREN
TANET
Taiwan
Qatar
Foundation
Qatar
NUS-GigaPoP
Singapore
UH
Oahu
UH
Hawaii
CEV.041018

K-12 Connections to the California Research and Education Network (CalREN)

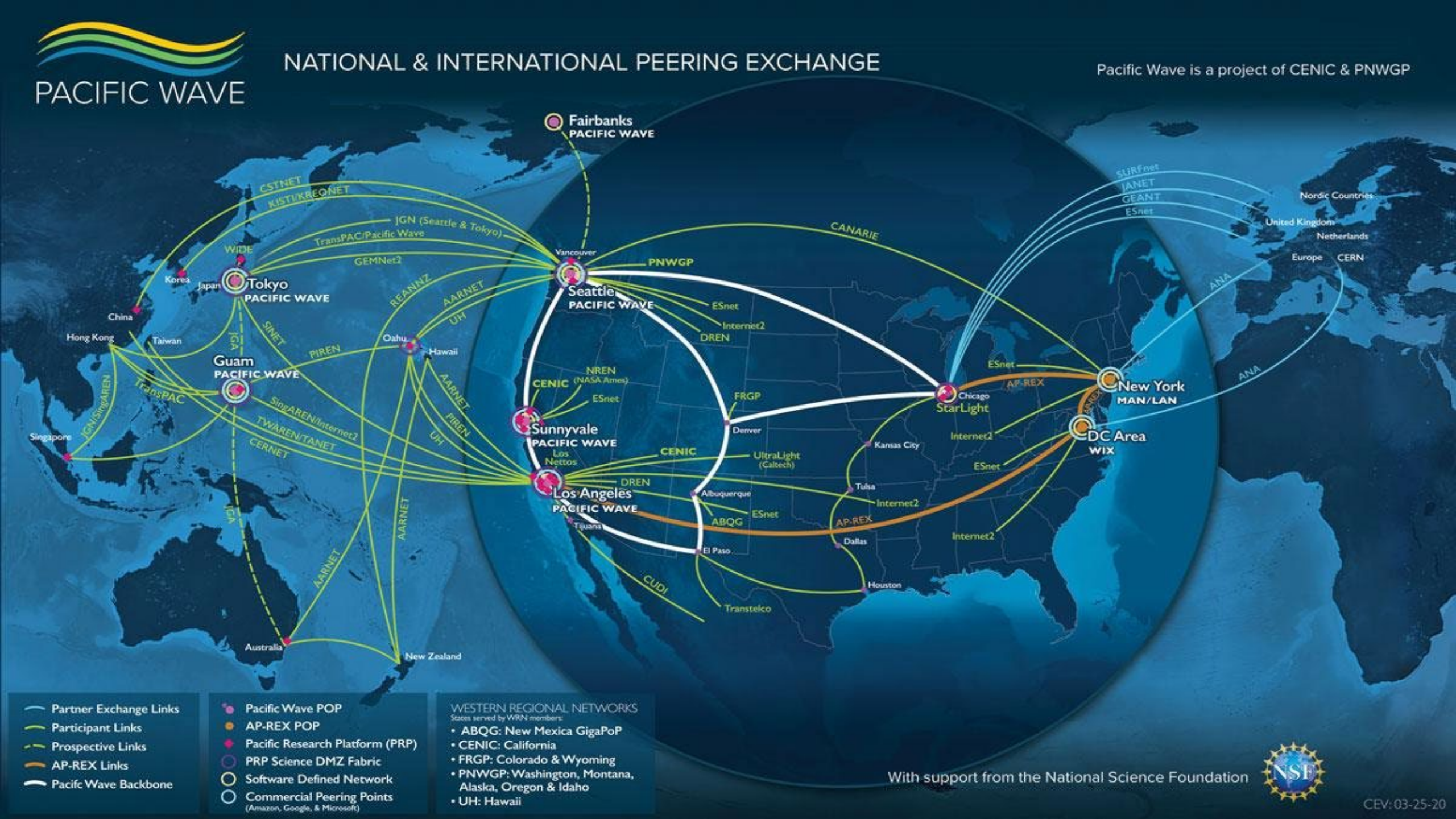


K-12 High Speed Network

CENIC

Western Regional Network

PACIFIC WAVE


PACIFIC WAVE
NATIONAL & INTERNATIONAL PEERING EXCHANGE
Pacific Wave is a project of CENIC & PNWGP
Fairbanks
PACIFIC WAVE
Vancouver
Seattle
PACIFIC WAVE
Tokyo
PACIFIC WAVE
Guam
PACIFIC WAVE
Oahu
Hawaii
Sunnyvale
PACIFIC WAVE
Los Nettos
Los Angeles
PACIFIC WAVE
Tijuana
Chicago
StarLight
New York
MAN/LAN
DC Area
WIX
Denver
Kansas City
Albuquerque
El Paso
Tulsa
Dallas
Houston
Transtelco
Korea
Japan
China
Hong Kong
Taiwan
Singapore
Australia
New Zealand
Nordic Countries
United Kingdom
Netherlands
Europe
CERN
CSTNET
KISTI/KREONET
JGN (Seattle & Tokyo)
TransPAC/Pacific Wave
GEMNet2
WIDE
SINET
IGA
PIREN
REANNZ
AARNET
UH
JGN/SingAREN
TransPAC
SingAREN/Internet2
TWAREN/TANET
CERNET
CANARIE
PNWGP
ESnet
Internet2
DREN
NREN
(NASA Ames)
CENIC
FRGP
UltraLight
(Caltech)
ABQG
AP-REX
SURFnet
JANET
GEANT
ANA
CUDI
Partner Exchange Links
Participant Links
Prospective Links
AP-REX Links
Pacifc Wave Backbone
Pacific Wave POP
AP-REX POP
Pacific Research Platform (PRP)
PRP Science DMZ Fabric
Software Defined Network
Commercial Peering Points
(Amazon, Google, & Microsoft)
WESTERN REGIONAL NETWORKS
States served by WRN members:
• ABQG: New Mexica GigaPoP
• CENIC: California
• FRGP: Colorado & Wyoming
• PNWGP: Washington, Montana, Alaska, Oregon & Idaho
• UH: Hawaii
With support from the National Science Foundation
NSF
CEV: 03-25-20

CENIC Benefits to California Institutions

CENIC's California Research and Education Network (CalREN) is a multi-tiered, high- performance network serving the majority of research and education institutions in the state.

By using CalREN broadband, CENIC member institutions enjoy supremely reliable, efficient, and cost-effective access as well as these benefits:

- Unlimited broadband use
- Access to a state-of-the-art network
- Entry into a participatory, membership organization
- Network design expertise for LANs
- Cloud connectivity and content services
- All Internet services including settlement-free peering and exchange
- 24/7 Network Operation Center
- Circuit and fiber procurement, lighting, and support
- Security services
- Scaling services to the need
- Federal and state subsidy assistance
- Lower costs on circuits and equipment
- A global community of tens of thousands of research and education institutions

Part Two: Third Party Administrator
CENIC California Middle Mile Broadband Initiative, LLC

- The Third-Party Administrator (TPA) will support the work of, and partner with, the California Department of Technology on developing the fiber network, creating exchange points as will be needed - whether rural or urban, and collaborating with the California Public Utilities Commission and Caltrans
- TPA contract signed with state on August 30, 2021
- Quickly coming up to speed on workflows and processes
- Launching website on September 16: www.goldenstatenet.org

CENIC California Middle Mile Broadband Initiative, LLC
Guiding Principles

- **Provide affordable, open-access, middle-mile broadband infrastructure to enable last-mile network connectivity throughout the state**
- **Build the network expeditiously, leveraging existing infrastructure, networks, and construction projects, where feasible**
- **Prioritize connectivity to unserved and underserved communities, including community institutions**

CENIC California Middle Mile Broadband Initiative, LLC
Leadership

Louis Fox
President

Tony Naughtin
Vice President & COO

Kim Lewis
Vice President,
Government Relations

Erik Hunsinger
Vice President,
Infrastructure

Ron Hutchins
Senior Advisor, Technology

Supported by Network Design, Engineering, Project Management, Operations, Finance, Internet Services, Security, & Communications Staff

CENIC California Middle Mile Broadband Initiative, LLC
Advisory Board Members

Barbara Hayes
Rural County Representatives of CA

Matt Rantanen
Southern CA Tribal Chairmen's Association

Connie Stewart
Humboldt State University

Howard Pfeffer
Internet2

Advisory Board (as of 9/10)

Executive Report Out

Program Update

- Initial 30 Days - Recap
- Last 30 Days - Update
- Next 30 Days - Look ahead

Initial 30 Days - Recap

- Established Leadership Structure and Governance
  - Middle-Mile Advisory Committee – 1st Meeting 8/18/21
  - Working Group – CDT, CPUC, Caltrans, DOF
  - Program Oversight and SLFRF Reporting – CDT, DOF
- Agreements and Contracts
  - Initiated IAA discussions with Caltrans and CPUC
  - Initiated process to retain Third-Party Administrator
- Working Group
  - Key staff in place and working together
  - Established weekly working sessions
- Established Work Streams

Last 30 Days - Update

- Agreements / Roles and Responsibilities
  - Caltrans Interagency Agreement
  - CPUC Interagency Agreement
  - TPA Agreement
- TPA Onboarding
  - CDT/TPA Information Exchange
  - Integration with Business Partner Working Group
  - Culture Building
- Established GIS Data Lake
- Work Plan Update

Work Plan Update

Program Work Streams

- Program Management | Oversight
- Advisory Committee Support
- Communications
- External Affairs
- Agreements and Contracts
- Data and Mapping - Planning
- Design and Engineering
- Build | Expand Middle-Mile

Next 30 Days – Look Ahead

- Execute work plan – 30 days goals
- CPUC Public Comment Process – closes on 10/15/21
- Emphasis on
  - Data and Mapping - Planning – 30 days
    - Establish information/data sharing framework
      - (Criteria) - What can be shared?
    - Harmonize State data mapping efforts (GIS Coordination)
    - Harmonize ISP middle-mile data
    - Establish “No Regret” project tasks for DOT
  - Design and Engineering – 30 days plus

Information Items

Middle Mile Public Comment/ Response - California Public Utilities Commission

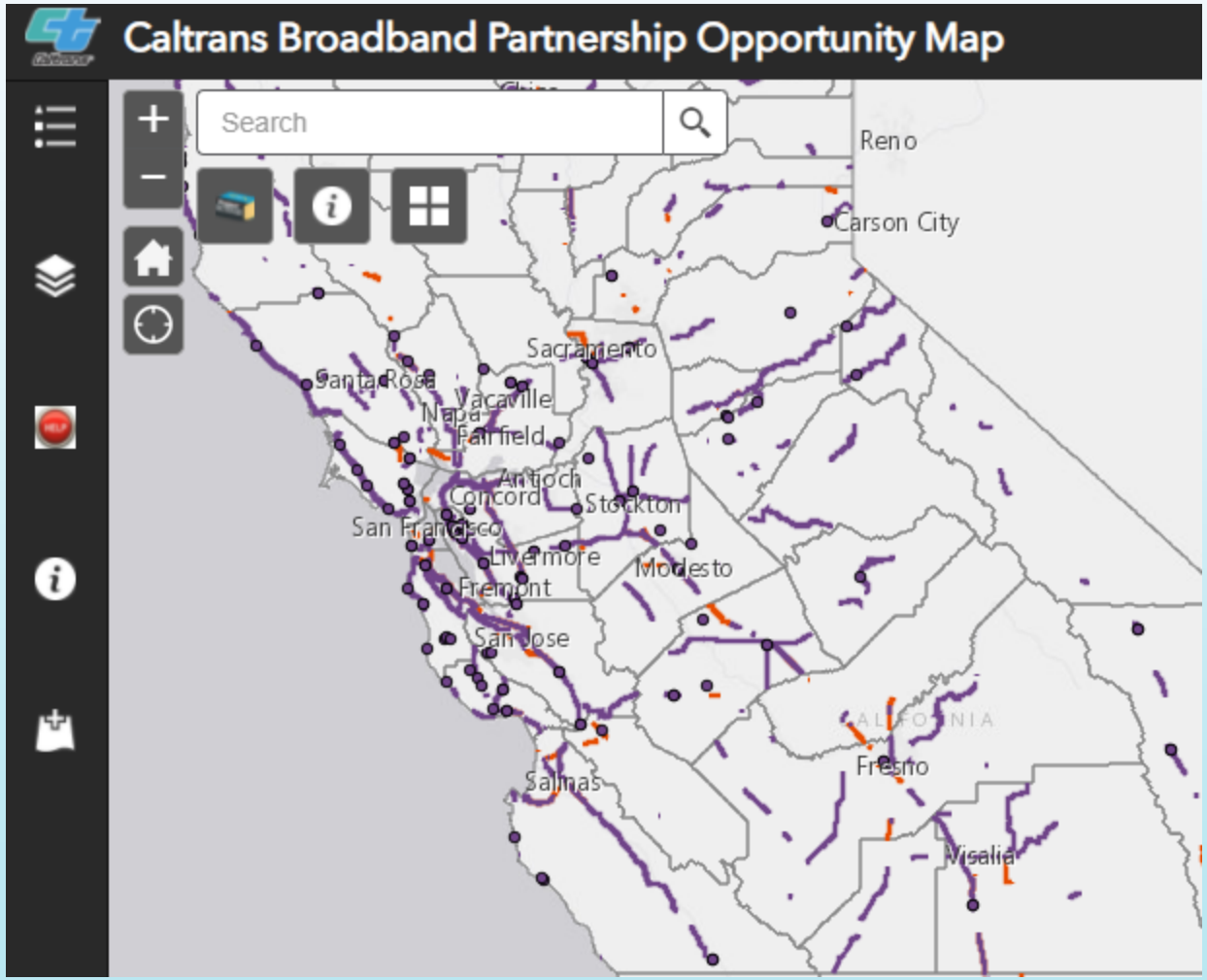
Data and Mapping – California Public Utilities Commission; Caltrans; Third Party Administrator

Location Prioritization – California Department of Technology; California Public Utilities Commission; Third Party Administrator

Middle Mile Public Comment

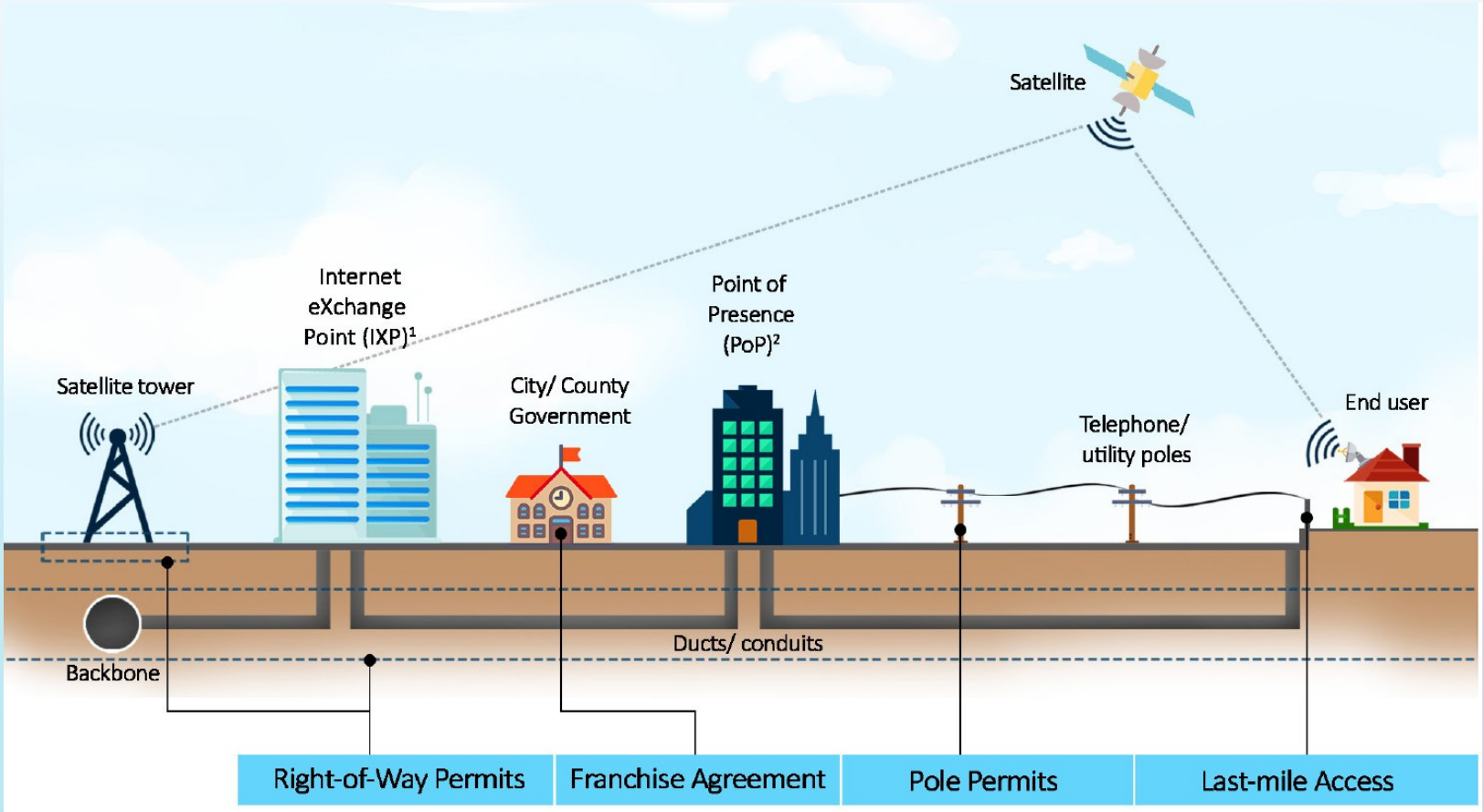
- Middle Mile Locations Public comment (in Government Code Section 11549.54(f))
- Ruling 1 - Aug 6, 2021 - focus on current network infrastructure
  - Opening Comments - 46 formal party opening comments 31 public comments
  - Reply comments due on or before **September 21, 2021**
- Ruling 2 - Sep 9, 2021 - focus on planned network infrastructure
  - Opening comments due on or before **October 1, 2021**
  - Reply comments due on or before **October 15, 2021**
- Links
  - Broadband Deployment Rulemaking 20-09-001 website and docket with filed comments
  - CPUC Middle Mile Locations implementation website

Data and Mapping



- Caltrans analysis of work that corresponds with the preliminary middle mile map
  - Caltrans Broadband Partnership Opportunity Map
  - CPUC preliminary Anchor Build Fiber Highways Map

Location Prioritization – Enabling Last Mile Connections



Source: The Brookings Institution

- California Broadband Availability Maps and GIS Data
  - 25/3 wireline and 25/3 served/unserved datasets and shapefiles will be posted to the Broadband Infrastructure and Deployment Proceeding website https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-infrastructure-deployment

Thank You