



SOUTHERN CALIFORNIA  
ASSOCIATION OF GOVERNMENTS  
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Los Angeles, CA 90017  
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www.scag.ca.gov

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## REMOTE PARTICIPATION ONLY

# EMERGING TECHNOLOGIES COMMITTEE

*Thursday, August 25, 2022*  
*10:00 a.m. - 12:00 p.m.*

*To Participate on Your Computer:*

<https://scag.zoom.us/j/941139378>

*To Participate by Phone:*

**Call-in Number: 1-669-900-6833**

**Meeting ID: 941 139 378**

***Please see next page for detailed  
instructions on how to participate in the meeting.***

### **PUBLIC ADVISORY**

Given the declared state of emergency (pursuant to State of Emergency Proclamation dated March 4, 2020) and local public health directives imposing and recommending social distancing measures due to the threat of COVID-19, and pursuant to Government Code Section 54953(e)(1)(A), the meeting will be held telephonically and electronically.

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Maggie Aguilar at (213) 630-1420 or via email at [aguilarm@scag.ca.gov](mailto:aguilarm@scag.ca.gov). Agendas & Minutes are also available at: [www.scag.ca.gov/committees](http://www.scag.ca.gov/committees).

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. SCAG is also committed to helping people with limited proficiency in the English language access the agency's essential public information and services. You can request such assistance by calling (213) 630-1420. We request at least 72 hours (three days) notice to provide reasonable accommodations and will make every effort to arrange for assistance as soon as possible.



## Instructions for Public Comments

*You may submit public comments in two (2) ways:*

1. **In Writing:** Submit written comments via email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov) by 5pm on Wednesday, August 24, 2022. You are **not** required to submit public comments in writing or in advance of the meeting; this option is offered as a convenience should you desire not to provide comments in real time as described below.

All written comments received after 5pm on Wednesday, August 24, 2022 will be announced and included as part of the official record of the meeting.

2. **In Real Time:** If participating in real time via Zoom or phone, during the Public Comment Period (Matters Not on the Agenda) or at the time the item on the agenda for which you wish to speak is called, use the “raise hand” function on your computer or \*9 by phone and wait for SCAG staff to announce your name/phone number. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer. For purpose of providing public comment for items listed on the Consent Calendar, please indicate that you wish to speak when the Consent Calendar is called; items listed on the Consent Calendar will be acted on with one motion and there will be no separate discussion of these items unless a member of the legislative body so requests, in which event, the item will be considered separately.

If unable to connect by Zoom or phone and you wish to make a comment, you may submit written comments via email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov).

***In accordance with SCAG’s Regional Council Policy, Article VI, Section H and California Government Code Section 54957.9, if a SCAG meeting is “willfully interrupted” and the “orderly conduct of the meeting” becomes unfeasible, the presiding officer or the Chair of the legislative body may order the removal of the individuals who are disrupting the meeting.***

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### OUR MISSION

To foster innovative regional solutions that improve the lives of Southern Californians through inclusive collaboration, visionary planning, regional advocacy, information sharing, and promoting best practices.

### OUR VISION

Southern California’s Catalyst for a Brighter Future

### OUR CORE VALUES

Be Open | Lead by Example | Make an Impact | Be Courageous



## Instructions for Participating in the Meeting

SCAG is providing multiple options to view or participate in the meeting:

### To Participate and Provide Verbal Comments on Your Computer

1. Click the following link: <https://scag.zoom.us/j/941139378>
2. If Zoom is not already installed on your computer, click “Download & Run Zoom” on the launch page and press “Run” when prompted by your browser. If Zoom has previously been installed on your computer, please allow a few moments for the application to launch automatically.
3. Select “Join Audio via Computer.”
4. The virtual conference room will open. If you receive a message reading, “Please wait for the host to start this meeting,” simply remain in the room until the meeting begins.
5. During the Public Comment Period, use the “raise hand” function located in the participants’ window and wait for SCAG staff to announce your name. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer.

### To Listen and Provide Verbal Comments by Phone

1. Call **(669) 900-6833** to access the conference room. Given high call volumes recently experienced by Zoom, please continue dialing until you connect successfully.
2. Enter the **Meeting ID: 941 139 378**, followed by #.
3. Indicate that you are a participant by pressing # to continue.
4. You will hear audio of the meeting in progress. Remain on the line if the meeting has not yet started.
5. During the Public Comment Period, press \*9 to add yourself to the queue and wait for SCAG staff to announce your name/phone number. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer.

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### ETC - Emerging Technologies Committee *Members – August 2022*

1. **Sup. Curt Hagman**  
Chair, San Bernardino County
2. **Hon. Drew Boyles**  
El Segundo, RC District 40
3. **Ms. Leslie Lindahl**  
Government Relations, Ex-Officio Non-Voting Member
4. **Hon. Margaret Clark**  
Rosemead, RC District 32
5. **Hon. Keith Eich**  
La Cañada Flintridge, RC District 36
6. **Hon. Margaret Finlay**  
Duarte, RC District 35
7. **Hon. Jan C. Harnik**  
RCTC Representative
8. **Hon. Dan Kalmick**  
Huntington Beach, OCCOG
9. **Hon. Steve Manos**  
Lake Elsinore, RC District 63
10. **Mr. Paul Marquez**  
Caltrans District 7, Ex-Officio Non-Voting Member
11. **Hon. Carol Moore**  
Laguna Woods, OCCOG
12. **Hon. Frank Navarro**  
Colton, RC District 6
13. **Ms. Pam O'Connor**  
CA Road Charge TAC, Ex-Officio Non-Voting Member
14. **Sup. Luis Plancarte**  
Imperial County
15. **Hon. Deborah Robertson**  
Rialto, RC District 8

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## EMERGING TECHNOLOGIES COMMITTEE AGENDA

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**16. Hon. Cheryl Viegas-Walker**  
El Centro, RC District 1

**17. Hon. Alan Wapner**  
SBCTA Representative

**18. Hon. Acquanetta Warren**  
Fontana, SBCTA

**19. Hon. Edward Wilson**  
Signal Hill, GCCOG

**20. Hon. Frank Zerunyan**  
Rolling Hills Estates, SBCCOG

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## EMERGING TECHNOLOGIES COMMITTEE AGENDA

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Southern California Association of Governments

Remote Participation Only

**Thursday, August 25, 2022**

**10:00 AM**

The Emerging Technologies Committee may consider and act upon any of the items listed on the agenda regardless of whether they are listed as information or action items.

### **CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

*(The Honorable Curt Hagman, Chair)*

### **PUBLIC COMMENT PERIOD (Matters Not on the Agenda)**

This is the time for persons to comment on any matter pertinent to SCAG's jurisdiction that is **not** listed on the agenda. Although the committee may briefly respond to statements or questions, under state law, matters presented under this item cannot be discussed or acted upon at this time. Public comment for items listed on the agenda will be taken separately as further described below.

**General information for all public comments:** Members of the public are encouraged, but not required, to submit written comments by sending an email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov) by 5pm on Wednesday, August 24, 2022. Such comments will be transmitted to members of the legislative body and posted on SCAG's website prior to the meeting. Any writings or documents provided to a majority of the Emerging Technologies Committee regarding any item on this agenda (other than writings legally exempt from public disclosure) are available at the Office of the Clerk, located at 900 Wilshire Blvd., Suite 1700, Los Angeles, CA 90017 during normal business hours and/or by contacting the office by phone, (213) 630-1420, or email to [aguilarm@scag.ca.gov](mailto:aguilarm@scag.ca.gov). Written comments received after 5pm on Wednesday, August 24, 2022, will be announced and included as part of the official record of the meeting. Members of the public wishing to verbally address the Emerging Technologies Committee in real time during the meeting will be allowed up to a total of 3 minutes to speak on items on the agenda, with the presiding officer retaining discretion to adjust time limits as necessary to ensure efficient and orderly conduct of the meeting. The presiding officer has the discretion to equally reduce the time limit of all speakers based upon the number of comments received. If you desire to speak on an item listed on the agenda, please wait for the chair to call the item and then indicate your interest in offering public comment by either using the "raise hand" function on your computer or pressing \*9 on your telephone. For purpose of providing public comment for items listed on the Consent Calendar (if there is a Consent Calendar), please indicate that you wish to speak when the Consent Calendar is called; items listed on the Consent Calendar will be acted upon with one motion and there will be no separate discussion of these items unless a member of the legislative body so requests, in which event, the item will be considered separately.

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## EMERGING TECHNOLOGIES COMMITTEE AGENDA

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### REVIEW AND PRIORITIZE AGENDA ITEMS

### CONSENT CALENDAR

#### Approval Items

1. Minutes of the Meeting – February 24, 2022

### INFORMATION/DISCUSSION ITEMS

2. State Broadband Update 40 Mins.  
*(Scott Adams, Deputy Director of Broadband and Digital Literacy, California Dept of Technology)*
3. Smart Cities – Making the Investment 40 Mins.  
*(Patricia Zullo, Senior Director of Smart City Solutions, Charter)*
4. Broadband VMT Study Technical Methodology 40 Mins.  
*(Jim Damkowitch, Managing Director, DKS Associates)*

### FUTURE AGENDA ITEMS

### ANNOUNCEMENTS

### ADJOURNMENT

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Southern California Association of Governments  
Remote Participation Only  
**August 25, 2022**

**EMERGING TECHNOLOGIES COMMITTEE (ETC)**  
**MINUTES OF THE MEETING**  
**THURSDAY, FEBRUARY 24, 2022**

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE EMERGING TECHNOLOGIES COMMITTEE. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Emerging Technologies Committee (ETC) of the Southern California Association of Governments (SCAG) held its regular meeting telephonically and electronically given public health directives limiting public gatherings due to the threat of COVID-19 and in compliance with the Governor's recent Executive Order N-29-20. A quorum was present. The meeting was called to order by Chair Hon. Curt Hagman, San Bernardino County. A quorum was present.

**Members Present:**

Hon. Sean Ashton	District 25
Hon. Drew Boyles	District 40
Hon. Margaret Clark	SGVCOG
Hon. Curt Hagman ( <b>Chair</b> )	San Bernardino County
Hon. Jan Harnik	RCTC
Hon. Dan Kalmick	Hunington Beach, OCCOG
Hon. Steve Manos	District 63
Mr. Paul Marquez, Caltrans District 7	Ex-Officio Non-Voting Member
Hon. Carol Moore	OCCOG
Hon. Frank Navarro	District 6
Hon. Pam O'Connor, CA Road Charge TAC	Ex-Officio Non-Voting Member
Hon. Deborah Robertson	District 8
Hon. Alan Wapner	SBCTA
Hon. Acquanetta Warren	City of Fontana
Hon. Frank Zerunyan	SBCCOG

**Members Not Present:**

Hon. Margaret E. Finlay	District 35
Hon. Leslie Lindahl	Ex-Officio Non-Voting Member
Hon. Luis Plancarte	Imperial County





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Hon. David Pollock	District 46
Hon. Cheryl Viegas-Walker	District 1
Hon. Edward H.J. Wilson	GCCOG

**CALL TO ORDER & PLEDGE OF ALLEGIANCE**

Hon. Curt Hagman, San Bernardino County, called the meeting to order at 10:00 a.m. and led the Pledge of Allegiance.

**PUBLIC COMMENT**

No members of the public requested to comment.

**CONSENT CALENDAR**

Approval Items

1. Minutes of the Meeting – October 28, 2021

A MOTION was made (Ashton) to approve the Consent Calendar. The motion was SECONDED (Manos) and passed by the following votes:

**AYES:** ASHTON, BOYLES, CLARK, HAGMAN, HARNIK, KALMICK, MANOS, MOORE, NAVARRO, WAPNER, ZERUNYAN (11)

**NOES:** None (0)

**ABSTAIN:** ROBERTSON, WARREN (2)

**INFORMATION/DISCUSSION ITEMS**

2. Joby’s Aviation Technology 101

George Kivork, Joby Aviation, reported on their electric aircraft and its future use in urban environments. He noted their aircraft utilizes vertical takeoffs and landings which enables it to takeoff like a helicopter and fly like a plane. It has space for one (1) pilot and (4) passengers. The aircraft is also zero emission and low noise. It has a 150-mile range and a top speed of 200 miles per hour. He reviewed the central technology design and noted its benefits include safety, low-noise and has the potential to be a stepping-stone toward aerial ride share. The history of the aircraft’s development and stakeholders involved were reviewed. Further, the technology is sustainable, scalable and provides a profile that would enable its adoption in urban settings. He

noted the passenger fare would be competitive with premium ground transportation and noted other aspects benefitting its practical use as urban transportation.

Mr. Kivork discussed with the committee the critical aspects of this type of urban transportation and issues local governments need to consider.

### 3. Unmanned Aircraft Systems (UAS) Center at San Bernardino Airport (SBD)

Kimberly Benson, UAS Center at SBD, reported on the future of UAS. She reported that the UAS Center serves public sector agencies and updated the committee on the use of unmanned aircraft, commonly called drones. The organization seeks to fuel innovation by establishing partnerships and leveraging opportunities toward industry career development and technology advancement. Ms. Benson reviewed local stakeholders such as ESRI, a global leader in mapping technology which uses drones to advance technology. Additionally, there is an increasing use of drones by public sector agencies and UAS provides guidance and information on their practical use. Guidance on standard operating procedures, standardized policy and liability concerns are also provided. She stated some of the agencies include San Bernardino County Fire Protection District and San Bernardino County Airports.

Hon. Curt Hagman commented on workforce development opportunities in the unmanned aircraft space and the need for professionals to support the technology's use and evolution.

### 4. Urban Movement Labs (UML)

Clint Harper, Urban Movement Labs, reported on efforts to advance urban air mobility in Los Angeles. He noted UML seeks to solve problems around noise, air pollution and air mobility to build a model for policies and practices to establish leadership nationally or internationally. Further, UML seeks to bring government, business and community together to assist cities in integrating urban air mobility and the relevant policies and regulations involved in accommodating new modes of transportation. He reviewed potential infrastructure opportunities in urban areas which could support future urban air mobility.

### **ADJOURNMENT**

Hon. Curt Hagman, San Bernardino County, adjourned the meeting of the Emerging Technologies Committee at 11:50 a.m.

[MINUTES ARE UNOFFICIAL UNTIL APPROVED BY THE EMERGING TECHNOLOGY COMMITTEE]

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# AGENDA ITEM 2 REPORT

Southern California Association of Governments  
Remote Participation Only  
August 25, 2022

To: Emerging Technologies Committee (ETC)

EXECUTIVE DIRECTOR'S  
APPROVAL

From: Thomas Bellino, Senior Planner  
(213) 236-1830, bellino@scag.ca.gov

Subject: State Broadband Update

**RECOMMENDED ACTION:**

Information Only – No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal 2: Advance Southern California’s policy interests and planning priorities through regional, statewide, and national engagement and advocacy. 4: Provide innovative information and value-added services to enhance member agencies’ planning and operations and promote regional collaboration.

**EXECUTIVE SUMMARY:**

*Public funding for broadband investment programs has been made available due to recent state and federal legislation. Local municipalities will have the opportunity to work with SCAG, the state and federal government, and stakeholders to collectively align their efforts and utilize state and federal grants to bolster broadband infrastructure.*

*Scott Adams and Mark Monroe of the California Department of Technology (CDT) will brief the Committee members on work that the state is doing to ensure that communities around the state will get funding and that the projects funded will be in alignment with each other to reach the most people.*

*The presentation will cover three key topic areas:*

- *Broadband Action Plan Implementation*
- *Middle Mile Broadband Initiative (MMBI)*
- *Infrastructure Investment and Jobs Act (IIJA) State Digital Equity and Broadband Equity, Access, and Deployment (BEAD) Planning*

**BACKGROUND:**

Prior to the COVID-19 pandemic, broadband infrastructure was primarily built by internet service providers (ISPs) with minimal public investment. However, the pandemic exposed inequities known

as the “Digital Divide,” as many residents who live in underserved communities could not participate in remote work, tele-education, tele-medicine, finance and other services that are reliant on the internet. Often, residents within underserved communities provide “essential” work within sectors such as retail, food and general service, medical, public transportation, and education.

To help bring affordable broadband service to these communities, the government has made available a significant amount of funding (approximately \$6 billion from the state and \$65 billion from the federal government) that is required to build out broadband infrastructure. While that is certainly a necessary first step, the funding does not do the job on its own. Rather, agencies at all levels of government must avail themselves of that funding to get infrastructure built and get communities connected to it.

To retain its economic edge and provide a sustainable and resilient environment, California must address large inequities between those who can access critical online services and those who cannot. CDT is acting as one of the primary coordinators to facilitate several infrastructure initiatives and grant programs to bolster infrastructure throughout the state, thereby assisting in bridging the digital divide.

**FISCAL IMPACT:**

None

**ATTACHMENT(S):**

1. PowerPoint Presentation - CDT SCAG Emerging Technologies Committee

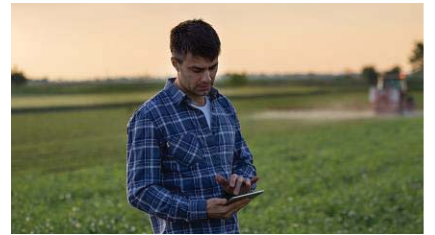


**BROADBAND  
FOR ALL**

# State Broadband Update

Southern California Association of Governments  
Emerging Technologies Committee Meeting

August 25, 2022



## AGENDA

- Broadband for All Action Plan Implementation Update
- Middle-Mile Broadband Initiative Update
- NTIA IIJA Broadband Program Update

Attachment: PowerPoint Presentation - CDT SCAG Emerging Technologies Committee (State Broadband Update)

# Scott Adams

Deputy Director, Broadband and Digital Literacy  
California Department of Technology

## BB4ALL ACTION PLAN IMPLEMENTATION

Significant Progress on all 24 BB4ALL action items.

### CDT LED ACTION ITEMS

- Action Item #6 – Enhance permitting at all levels of government
- Action Item #21 – Establish Broadband for All Portal
- Action Item #14 – Leverage Contracting and Procurement Vehicles
- Action Item #16 – Promote / Track Low-Cost Offers and Adoption Rates
- Action Item #18 – Network of Digital Inclusion Stakeholders
- Action Item #24 – State entities incorporate BB into Strategic Plans

## Action Item #6 – Enhance permitting at all levels of government

<b>Federal</b>	<ul style="list-style-type: none"> <li>• Federal Permit Improvement Steering Council</li> </ul>
<b>State</b>	<ul style="list-style-type: none"> <li>• Caltrans / Resources Agency Partners</li> </ul>
<b>Local</b>	<ul style="list-style-type: none"> <li>• Local Jurisdiction Broadband Deployment and Permitting Playbook</li> </ul>

## Action Item #21 – Establish Broadband for All Portal

[www.broadbandforall.cdt.ca.gov/](http://www.broadbandforall.cdt.ca.gov/)

### Features

- Action Plan Tracker
- Funding Finder
- Low-cost service offers
- Affordable Connectivity Program Page

**Closing the digital divide**

Broadband for All is California's commitment to closing the digital divide. Broadband is essential for vital services and opportunities, but millions of Californians still lack adequate broadband service or the devices and skills to use it.

Join us as we engage and support partners across the state to achieve Broadband for All.

[Learn more](#)

**Broadband initiatives**

**Broadband for All Action Plan**  
In response to executive order N-79-20, the California Broadband Council developed the "Broadband for All" Action Plan with the understanding that broadband access, adoption, and training are essential components of digital equity.

**Middle-Mile Broadband Initiative**  
In July 2021, Governor Newsom signed SB 156. This directed the California Department of Technology to develop a statewide, open-access middle-mile network. SB 156 provides \$3.25 billion to build the necessary infrastructure to bring internet connectivity to homes, businesses and community institutions.

**Last-Mile and Adoption Programs**  
To complement the middle-mile network SB 156 included \$2 billion to build local infrastructure, provide funding for local agency technical assistance, and a loss reserve. The California Public Utilities Commission administers these along a suite of existing programs that support broadband deployment, assistance, affordability, and adoption.



# Action Item #14 – Leverage Contracting and Existing Procurement Vehicles

## HIGHLIGHTS

- Leveraged procurements and existing contracts for MMBI

## NEXT STEPS

- Identify opportunities during State Digital Equity and BEAD planning efforts



Attachment: PowerPoint Presentation - CDT SCAG Emerging Technologies Committee (State Broadband Update)

# Action Item #16 – Promote / Track Low-Cost Offers and Adoption Rates

Official website of the State of California

**CALIFORNIA ALL** Broadband for All

Search

Initiatives Partners Residents About Contact us

### Affordable service programs

Home internet service is critical for all individuals. The cost of internet remains a barrier for many people. We've partnered with EveryoneOn<sup>®</sup> and the California Emerging Technology Fund to help you find programs in your area:

- The [Affordable Connectivity Program](#)
- Low-cost internet service
- Computer offers
- Digital skills training (like computer and internet basics)

\* The information from EveryoneOn is provided as a public service. Review our disclaimer for more details.

### Find affordable service programs

1. Enter your ZIP code

ZIP code

[Find offers](#)

**Disclaimer**

The California Department of Technology (CDT) provides the information from EveryoneOn as a public service to California residents. The information and services are provided by a separate entity that is not affiliated in any way with CDT. CDT does not make any endorsements or representations regarding the accuracy of the information provided by EveryoneOn.

### 3. Review your offers

Internet offers

There are 5 offers in your area, based on your selections.

#### Affordable Connectivity Program by the Federal Communications Commission

- EveryoneOn is very excited about the Federal Communications Commission's (FCC) new program to provide a subsidy program called the Affordable Connectivity Program (ACP), to help connect those who are disconnected and to provide affordable computers.
- For more information, call (877) 384-2575 or email [ACPSupport@vnc.org](mailto:ACPSupport@vnc.org).

You may be eligible to receive a temporary \$30 a month subsidy towards internet connectivity and \$100 towards a computer. Call or email to sign up to receive the subsidy that can be used towards any of the internet service options below.

[Learn more](#)

#### Comcast

- \$9.99 per month
- For more information, call (855) 846-6376.
- Data: 50/10 Mbps
- No installation fee. No modem fee.

You may qualify if you are eligible for public assistance programs such as the National School Lunch Program, Housing Assistance, Medicaid, SNAP, SSI, and others.

[Learn more](#)

#### Access from ATT

- \$20.00 or less
- For more information, call (855) 220-5211.
- Data: 150GB or 1TB based on type & speeds available
- No installation fee. No charge for in-home Wi-Fi routers.

The speed is 25 megabits per second. You may be eligible for this offer if at least one resident in the household participates in the U.S. Supplemental Nutrition Assistance Program (SNAP) your address is in ATT's 21-state service area, at which ATT offers wireless home internet service, and you do not have outstanding debt for ATT Fixed Internet service within the last six months or outstanding debt incurred under this program. If you are a California resident and at least one member of your household receives Supplemental Security Income (SSI), you may also qualify according to the same requirements that apply to SNAP participants.

[Learn more](#)

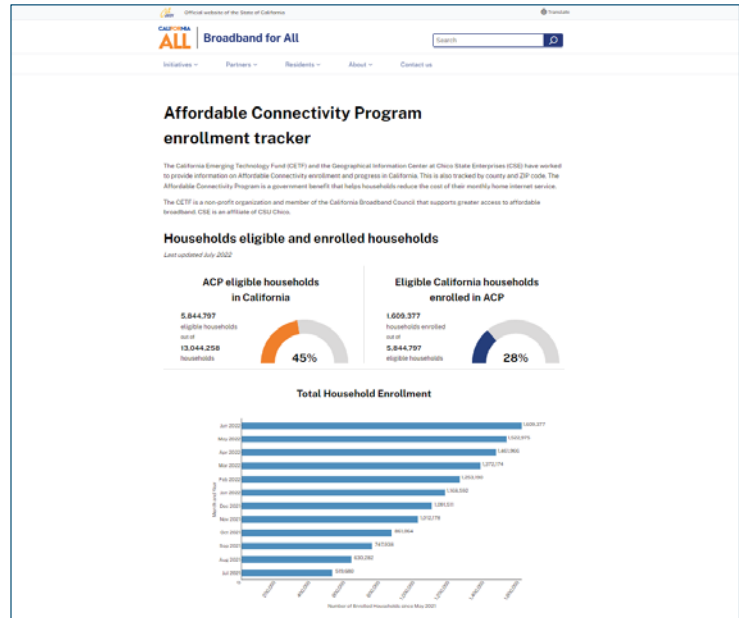


## Action Item #16 – Promote / Track Low-Cost Offers and Adoption Rates

### In the News

[More than 1.6 million California households enrolled in affordable broadband program, White House says - ABC7 Los Angeles](#)

[How to get free broadband in L.A. if you're a lower-income resident - Los Angeles Times \(latimes.com\)](#)



## Action Item #18 – Network of Digital Inclusion Stakeholders

Engaged with over 1,000 local and tribal governments, broadband consortia, metropolitan planning organizations, school, libraries, nonprofits, and internet service providers.

- Meetings and Consultations
- Broadband for All Roundtables
- External Meetings and Conferences



## Action Item #24 – State entities incorporate BB into Strategic Plans

Entity/Agency	Goals and Activities
Dept. of Corrections and Rehabilitation	Deploying broadband to prisons in support of rehabilitative efforts for incarcerated persons.
Labor and Workforce Development Agency	Workforce Literacy program will include digital literacy.
Dept. of Parks and Recreation	Expanding connectivity and services to rural parks with connectivity challenges.
Dept. of Food and Agriculture	Surveying Network of California Fairs to learn about broadband capabilities and deficiencies
Dept. of Motor Vehicles	Expanding services available online, including senior services via voice assisted online channel.

## MIDDLE-MILE UPDATE

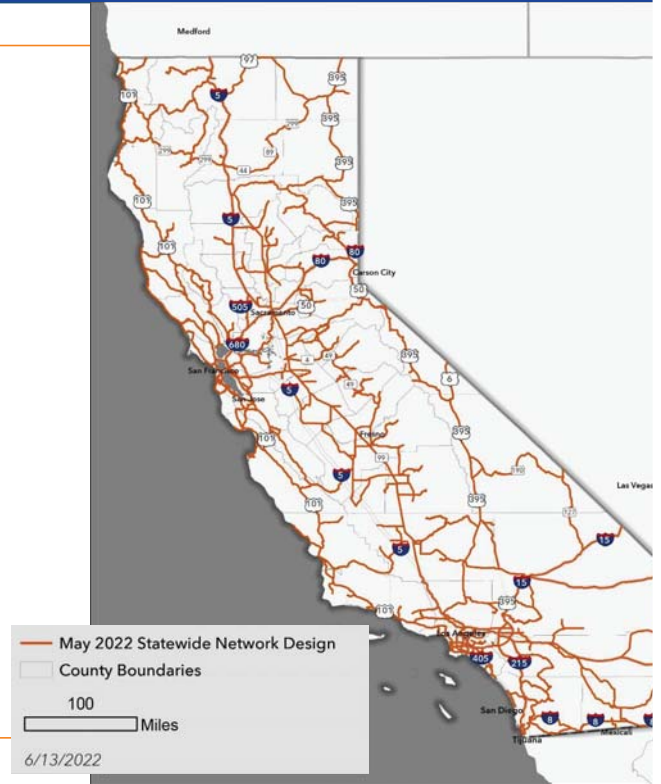
**Mark Monroe**

**Deputy Director, Broadband Middle-Mile Initiative  
California Department of Technology**

# MIDDLE-MILE BROADBAND INITIATIVE (MMBI)

## Recap

- Fiber contract awarded May 2022
  - Supplies ready for use starting January 2023
- Statewide 10,000-mile MMBI network map
  - Delivered June 2022
- Project transition to execution phase starting June 2022
  - Caltrans continues build efforts
  - GSN continues to explore lease options
  - Balance build and lease to optimize statewide coverage



## CALTRANS Update

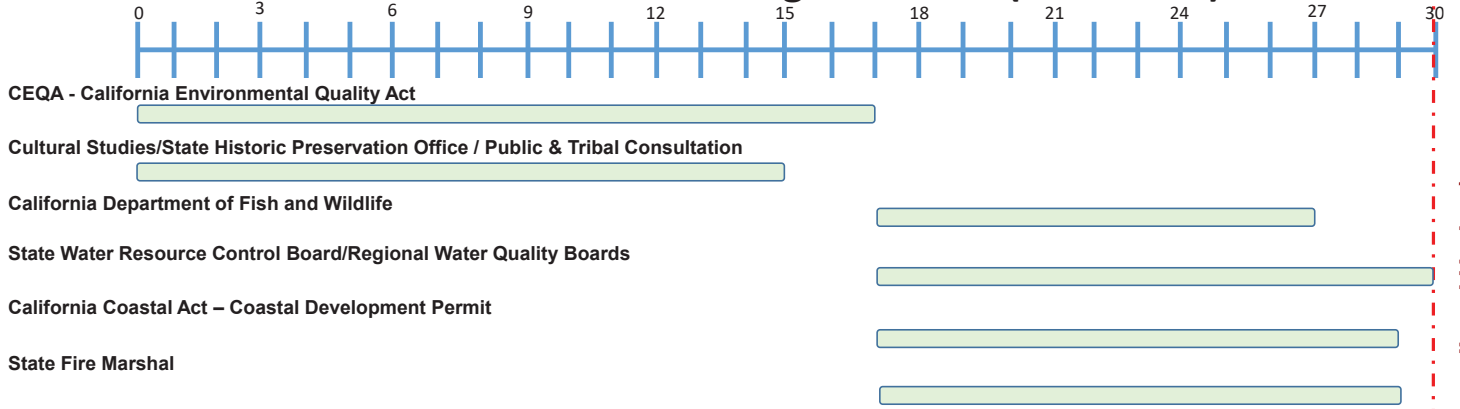


## Dig Smart Opportunities

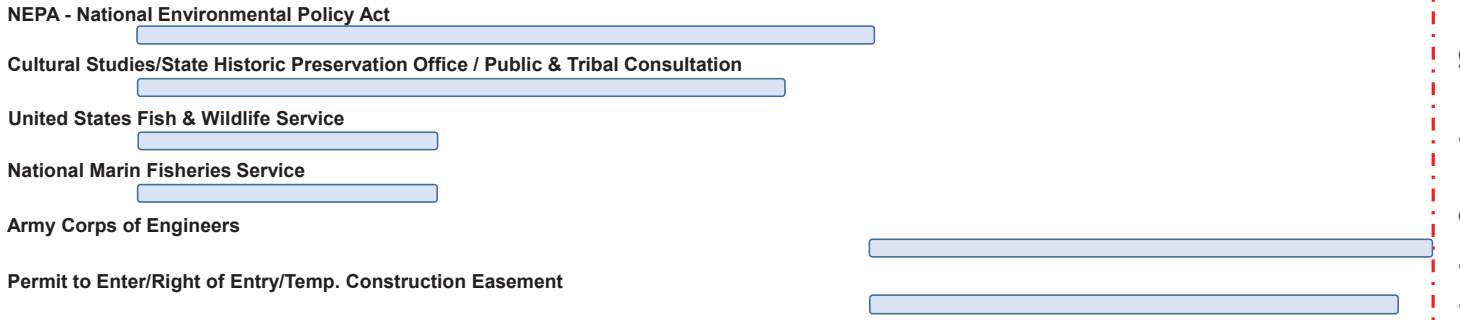
DIG SMART	Initial 18 MMBI Locations (~855 miles)		Non-Initial 18 MMBI Locations (~9,040 miles)		Total MMBI Network (~9,896 miles)	
	Number of Viable Projects	Miles of Fiber	Number of Viable Projects	Miles of Fiber	Number of Viable Projects	Miles of Fiber
Starting in 2022	3	22	7	61	10	83
Under Evaluation	9	88	70	496	79	584
<b>Total</b>	<b>12</b>	<b>110</b>	<b>77</b>	<b>557</b>	<b>89</b>	<b>667</b>

# Pre-SB 156 Broadband Permitting Processes (in months)

State Permitting

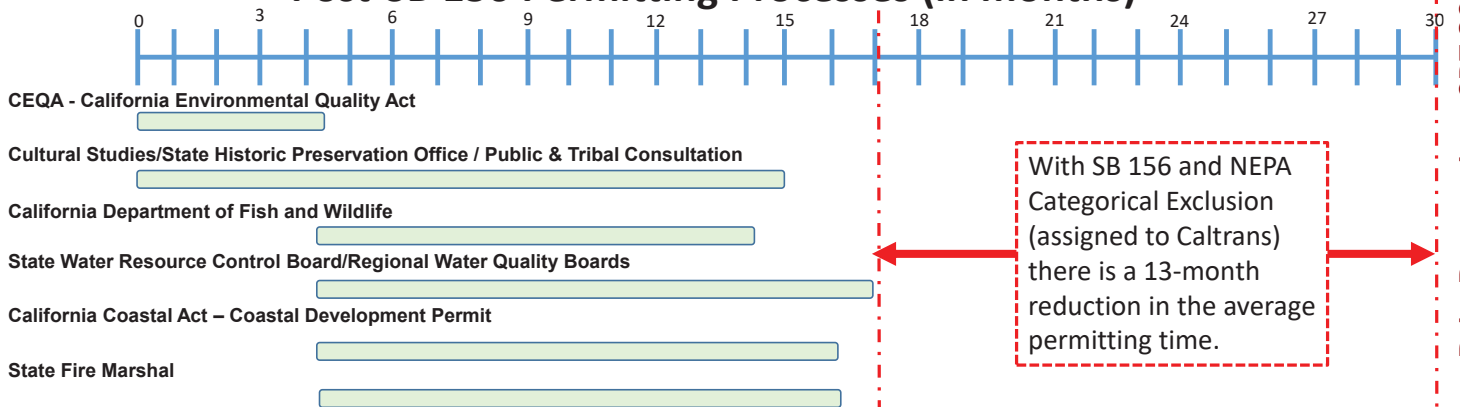


Federal Permitting

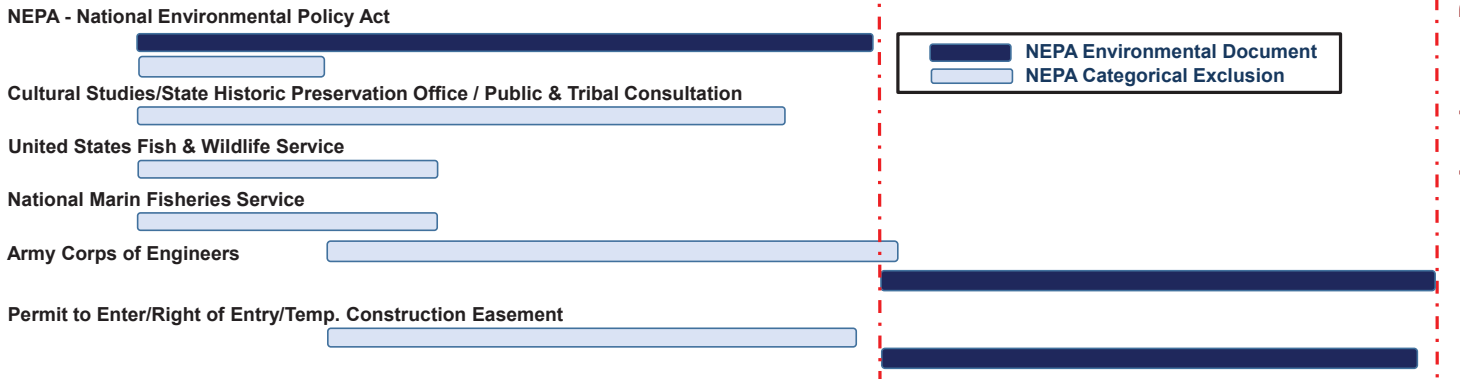


# Post-SB 156 Permitting Processes (in months)

State Permitting



Federal Permitting



With SB 156 and NEPA Categorical Exclusion (assigned to Caltrans) there is a 13-month reduction in the average permitting time.

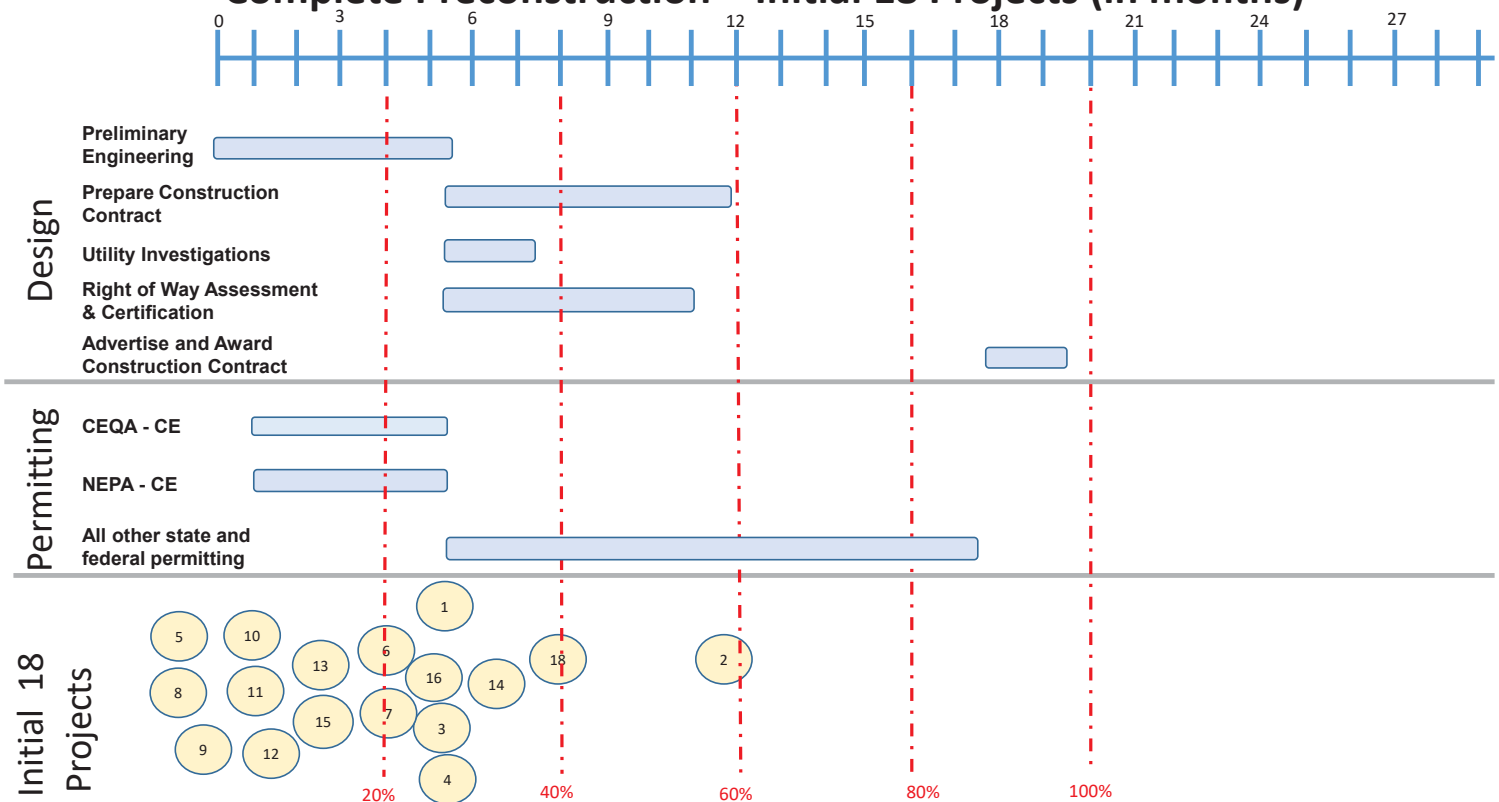
■ NEPA Environmental Document  
■ NEPA Categorical Exclusion

Attachment: PowerPoint Presentation - CDT SCAG Emerging Technologies Committee (State Broadband Update)

**Initial 18 Locations: Discovery Phase**



**Complete Preconstruction – Initial 18 Projects (in months)**





## Market Research

- Vendor briefing sessions on labor market for construction
- Market sounding on the demand for broadband
- Business plan for ongoing maintenance and operation

## NTIA IJA PROGRAM - DIGITAL EQUITY AND BEAD PROGRAMS

- CDT submitted Digital Equity Planning Grant application
- CPUC submitted Broadband, Equity, Access and Deployment (BEAD) Letter of Intent
- Both will lead respective planning efforts and coordinate
- Will ask that you participate in this process
- Once completed and approved by NTIA, will unlock billions of federal dollars to support state BB4All efforts



**THANK YOU!**



**BROADBAND  
FOR ALL**





**AGENDA ITEM 3**  
**REPORT**

Southern California Association of Governments  
Remote Participation Only  
**August 25, 2022**

**To:** Emerging Technologies Committee (ETC)

**EXECUTIVE DIRECTOR'S  
APPROVAL**

**From:** Thomas Bellino, Senior Planner  
(213) 236-1830, bellino@scag.ca.gov

**Subject:** Smart Cities – Making the Investment

**RECOMMENDED ACTION:**

Information Only – No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal 1: Produce innovative solutions that improve the quality of life for Southern Californians.

**EXECUTIVE SUMMARY:**

*City initiatives can foster a strong network, deployment of sensors and devices and the collection, analysis, and visualization of data, thereby transitioning a standard city into a “Smart City.” Smart Cities provide a real time view of operational patterns, allowing for better citizen engagement; deeper understanding of vital operations, such as transportation; the ability to provide faster, more accurate situational awareness and the ability to upgrade and leverage city infrastructure like lighting, water, and waste collection – to attract more people to live, work and play there.*

*Patti Zullo, Senior Director of Smart City Solutions for Spectrum Enterprise, will lead an interactive discussion on how to best plan a city’s smart cities journey.*

**BACKGROUND:**

Throughout several Emerging Technology Committee meetings, the topic of “Smart Cities” has been used to describe several initiatives that SCAG has studied to assess the region’s infrastructure and data systems, which would assist cities to be technologically connected and their governments’ systems more accessible to their residents. However, many prefer to think of Smart Cities as a more comprehensive vision for the future of their cities.

While updating or upgrading traffic control, data management, resident resources, government service websites and other systems on a one-off basis can be beneficial, upgrades that are done on a staggered and coordinated basis can bring greater benefits. A regional approach to develop a



comprehensive interconnected network of improvements would not only be more efficient, but would assist in an alignment of policies, thereby resulting in a resilient environment.

SCAG's adopted Connect SoCal (2020 Regional Transportation Plan/Sustainable Communities Strategies), lists Smart Cities & Job Centers as a "Key Connection" strategy<sup>1</sup>. The strategy aims to catalyze investments across sectors to make "virtual access" a cost-effective and reliable part of the way cities and communities interact with their constituents and each other. Connect SoCal also specifically envisions deployment in sub-regional job centers to encourage more growth of both jobs and housing in areas with already high employment density. This presentation aligns with efforts the SCAG region's local governments can implement to make Connect SoCal's vision a reality.

**FISCAL IMPACT:**

None.

**ATTACHMENT(S):**

1. PowerPoint Presentation - Spectrum Smart Cities SCAG August 2022

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<sup>1</sup> "A Plan Summary for Connect SoCal," pg. 10, Southern California Association of Governments (2020): [https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plansummary\\_0.pdf?1606000989](https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plansummary_0.pdf?1606000989)

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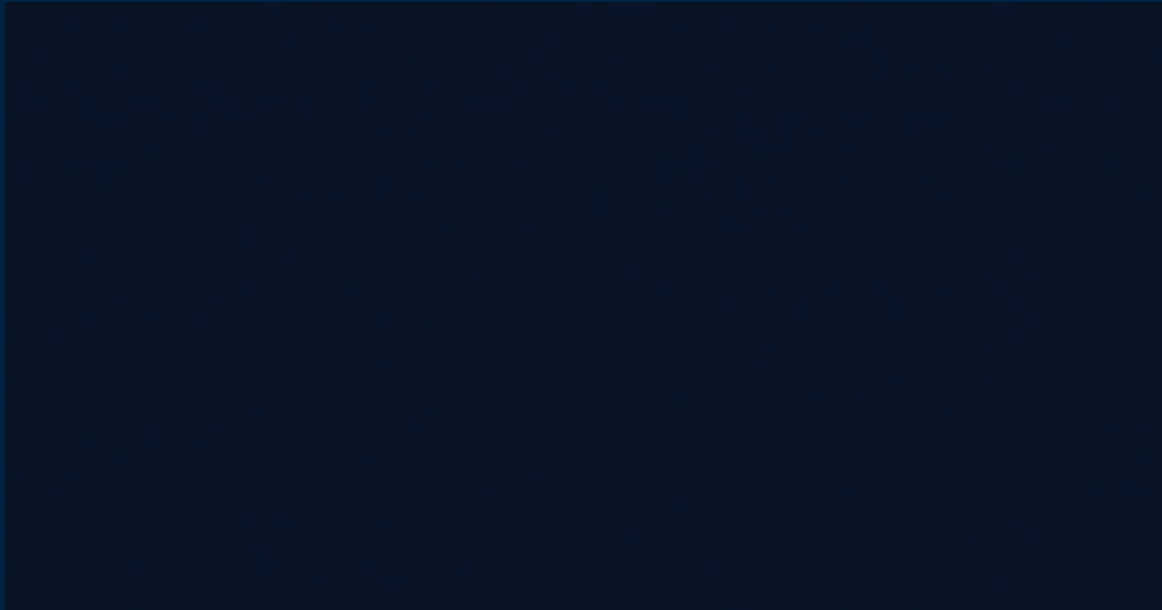


Spectrum

# Smart Cities – Making the Investment

Patti Zullo  
 Sr. Director, Smart City Solutions  
 Spectrum Enterprise

The Spectrum logo, featuring the word "Spectrum" in a bold, sans-serif font with a blue arrow pointing to the right.



Spectrum

# SMART CITIES SOLUTIONS ARE IN DEMAND

The smart cities market in the U.S. is estimated at

**\$233.9 Billion**  
in 2021



Among respondents surveyed by S&P Global, citizens are most interested in smart city initiatives to improve:

**44%**  
quality of life

**44%**  
public safety

**35%**  
public health protections

**77%**  
sustainability (e.g., reduction of greenhouse gas emissions, decarbonization, increased use of renewable energy sources, etc.)

# PUTTING CITIZENS AT THE HEART OF YOUR SMART CITY

- ▶ **Successful smart cities are people-centric**, so citizens should be the heart of any smart city
- ▶ **Citizens should be involved from the very beginning** to encourage proactive use of technology
- ▶ Citizens can also be **engaged in solution design** through events such as hackathons
- ▶ **Educating citizens on how technology works and the benefits** of it can reduce concerns around privacy or accessibility

GET STARTED BY FINDING THE RIGHT PARTNERS AND DISCUSSING HOW TO CREATE YOUR PEOPLE-CENTRIC SMART CITY



BECOMING A SMART CITY

# FUNDAMENTALS OF A SMART CITY

## SENSOR LAYER

Devices that collect real-time data of certain conditions e.g., temperature, humidity, noise level, etc.

## NETWORK LAYER

Where data is sent through to be processed in the next stage



## DATA PROCESSING LAYER

Where data volume is further reduced through analytics and machine learning tools

## APPLICATION LAYER

Where data is analyzed in-depth to determine whether action needs to be taken

# IMAGINE A CITY WHERE...

- **Smart Lighting** improves energy efficiency, creates cost savings, provides the pole infrastructure for connected devices and facilitates both safer driving and public safety.
- **Smart Waste Management** enables significant efficiencies, cost reduction and improved aesthetics.
- **Smart Water Management** protects the water infrastructure, prevents and detects shortages and leaks, improves water quality and drives efficiencies.
- **Smart Buildings** operate more efficiently, offer a more appealing environment, and help drive cost savings and economic development.
- **Digital Twins** allow cities to predict the effects a new infrastructure project will have on the city without incurring any construction costs.

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Attachment: PowerPoint Presentation - Spectrum Smart Cities SCAG August 2022 (Smart Cities – Making the Investment)

## Utilities & Infrastructure



# WHAT IS “SMART INFRASTRUCTURE”?

Smart Infrastructure is the result of combining physical infrastructure with digital infrastructure.

It provides improved information to enable better decision making that can be faster to respond to changes, less expensive to deploy and provides a platform to accelerate city initiatives.



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# WHY MAKE THE COMMITMENT?

- Cost Savings & Increased Asset Value** ..... Hard data is emerging that proves economic advantages realized through elevated productivity and ROI on infrastructure assets.
- Improved Services & Delivery** ..... Digitally transformed operations enable greater efficiencies and services delivered at the right place, at the right time.
- Decision Making & Citizen Involvement** ..... Not just more data but improved data quality which enables more informed operational decisions and the ability to shape future smart city initiatives.
- Quality of Life** ..... Less roadway congestion, safer environments, reduced air pollution and higher water quality are just a few ways living, working and playing are impacted.
- Economic Development** ..... City brand is enhanced: attracting new talent, supporting start-ups, elevating tourism and economic development, and increasing citizen engagement.

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# TRENDS IN SMART CITY INFRASTRUCTURE

## People and Processes

### People

- Creation of executive roles tasked with exclusive focus on driving smart city initiatives
- More defined vision for smart cities, with infrastructure and networks as the foundation
- Digital transformation becoming a reality for citizens and city workers
- Formal messaging development and evangelism, increasing awareness for citizens, government agencies and businesses

### Processes

- Standards are evolving and organizations are forming to share best practices and resources
- Siloed departments are beginning to collaborate and share data to gain actionable insights
- Businesses, governments and anchor institutions are forming “Public Private Partnerships” (PPPs)
- Security policies are being defined to address the increase of data being collected to ensure privacy for the public
- Moving from planning to pilots and eventually to implementation

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# TRENDS IN SMART CITY INFRASTRUCTURE

## Technology and Data

### Technology

- 5G, WiFi, LoRaWAN, NBIoT ... are complementing traditional communication protocols being used
- Network providers are taking on the role of partner/trusted advisor in smart city discussions
- Security is evolving to make networks smarter, more resilient
- IoT devices are proliferating, becoming more mature and more secure

### Data

- Massive influx of data generated through connected infrastructure and IoT devices
- Artificial intelligence and other data analysis technologies turning data actionable and visible
- Data standards enabling interoperability are being more widely adopted
- External data, including citizen-generated data, is being integrated
- Data integrity is improving, with blockchain slowly becoming integrated

Internet of Things (IoT) connected devices across the globe are expected to exceed 66 billion in 2026 at a compound annual growth rate (CAGR) of nearly 15% from 2017, according to Frost & Sullivan\*

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# SMART INFRASTRUCTURE IN ACTION

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Attachment: PowerPoint Presentation - Spectrum Smart Cities SCAG August 2022 (Smart Cities – Making the Investment)

HOW TO GET STARTED

## STARTING SMALL: COLLECTING DATA WITH SMART LIGHTING POLES

### BENEFITS OF SMART LIGHTING POLES

- ▶ Replacing 14,000 lightbulbs with LEDs led to a **\$2.5 million savings**
- ▶ Light sensors further reduces **energy consumption**
- ▶ Emergency button reduces **emergency response time**
- ▶ IP cameras and light sensors reduces **crime rates**
- ▶ Water detection and seismic sensors detects **natural disasters**





# SMART CITY SOLUTION EXAMPLES

Your smart city journey starts here



**SMART TRANSPORTATION**  
Managing timing of traffic lights and roadway traffic

**VISION ZERO**  
Cars – bicycles – pedestrian crossing

**SMART LIGHTING**  
LED retrofit

**SMART PARKS**  
Data governance

**PUBLIC SAFETY**  
Situational awareness

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## Smart City Solutions



### Digital Services & Economic Development

- Connected communities
- Digital government
- Open data & civic engagement
- Smart kiosks
- Workforce Development



### Utilities & Infrastructure

- Smart lighting
- Smart waste management
- Smart water management
- Smart building, venue, & campus
- Asset tracking & remote monitoring
- Digital Twin



### Intelligent Transportation

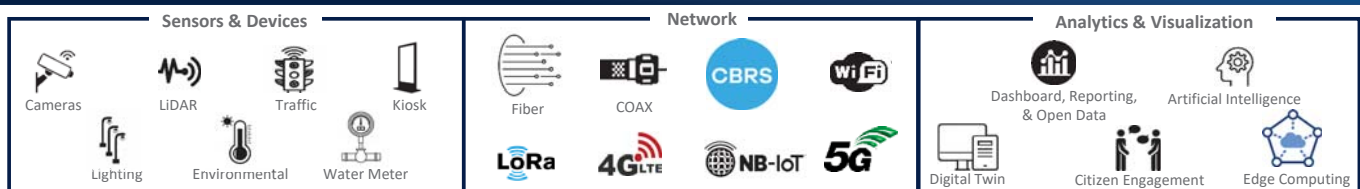
- Intelligent traffic management
- Connected vehicles
- Autonomous vehicles
- Smart parking
- Fleet management
- Curb management
- Vision Zero



### Public Safety

- Video & Data analytics
- Critical infrastructure monitoring
- Smart Parks
- Situational awareness
- Environmental monitoring
- Drone monitoring
- Emergency management

### Smart City Infrastructure



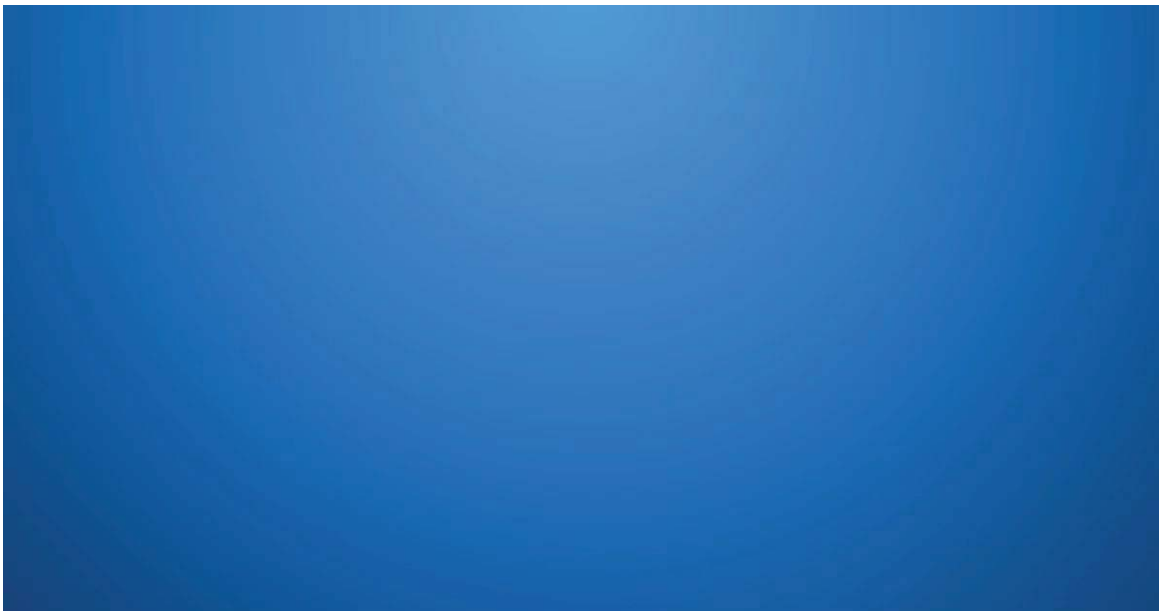
## Curb Management



17



## Vision Zero



18



## Smart Train Crossing Reroute



19

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## DATA IS THE KEY TO UNLOCKING SMART CITIES

- ▶ The smart cities market is growing rapidly – Smart city initiatives can make your city **competitive, efficient, and connected**
- ▶ Pure data collection is not enough – Use a **high-performance network, the right technology and actionable data** to unlock the limitless potential of your smart city
- ▶ Realize the power of data by **developing a plan and engaging your citizens** (via education, forums, hackathons, etc.)
- ▶ **Start small** – One or two initiatives that meet your city's needs is all it takes

GET STARTED BY FINDING THE RIGHT PARTNERS AND DISCUSSING HOW TO SOLVE THE UNIQUE CHALLENGES FACING YOUR CITY.

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NOT JUST DATA, "ACTIONABLE" DATA

## WHAT IS ACTIONABLE DATA?

- ▶ Actionable data is **data that has been analyzed to uncover insights** and help you make informed decisions to improve your city
- ▶ Characteristics of actionable data:
  - **Accurate** – With safeguards in place (e.g., data cleansing and data validation to ensure the data is correct)
  - **Accessible** – People who need the data should be able to access the data
  - **Timely** – Data should be as close to real-time as possible to help users make accurate decisions
  - **Easy to understand** – Data visualization tools can present data in a format that's easy for non-data professionals to understand



HOW TO GET STARTED

## THE KEY TO A SUCCESSFUL SMART CITY IMPLEMENTATION IS PARTNERSHIP

### Find a partner who is:

#### RELIABLE

Has essential network infrastructure to keep initiatives running

#### SCALABLE

Can quickly adapt to increasing volume of data, people, and shifting urban trends

#### HIGH-PERFORMING

Capable of handling next-gen big data

#### INTEROPERABLE

Can seamlessly move data regardless of the protocols or geographic locations

#### RESOURCEFUL

Offers a broad range of technology ecosystems, partners, and right connectivity solutions to your specific implementations, and the deep expertise specific to each element in the solution



# EVERY SMART CITY ALSO REQUIRES A MODERN AND SCALABLE NETWORK



Every smart city initiative has different connectivity requirements.

But due to the large amount of data generated by smart city initiatives, every smart city needs reliable, high-performance network connectivity.

Next-generation network infrastructure should bring together a variety of technologies, such as: Coax, Fiber, Low-power wireless, WiFi, 5G.

# PLANNING FOR YOUR SUCCESS



## Vision & Evangelism

C-level positions tasked with developing strategies for successful execution.



## Processes and Best Practices

Focusing on small projects and pilots that allow for ongoing expansion.



## Technology Roadmap

Start with what's feasible for your city.



## Next-Gen Big Data Analysis

Data is only valuable when it's actionable.



## Security

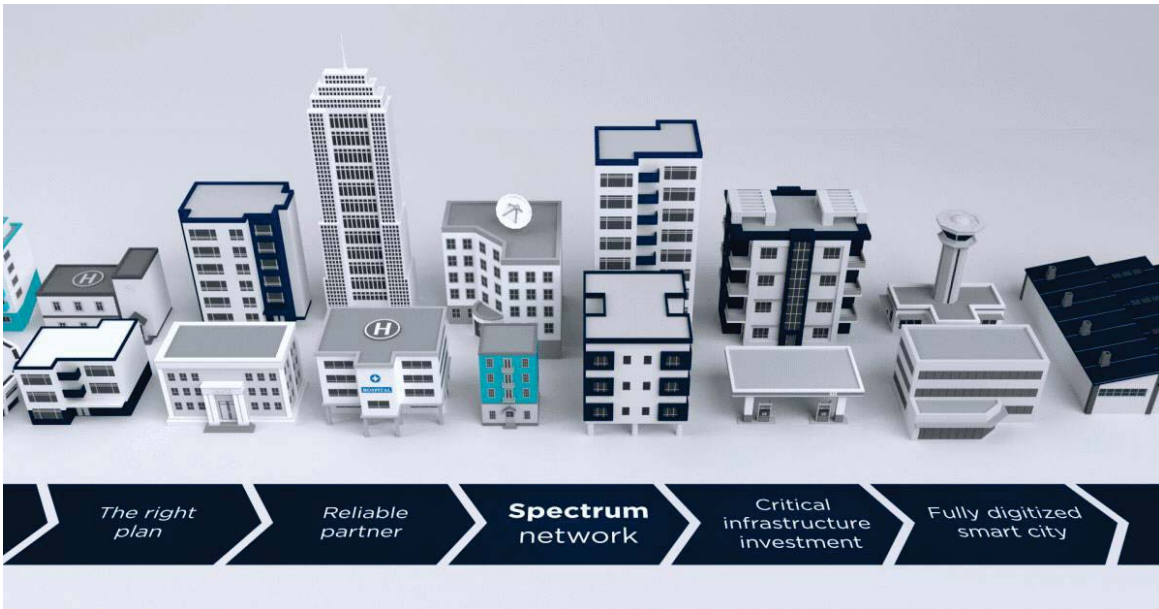
Embrace the resources from your technology providers.



## Don't Go It Alone

Partnering for success will accelerate the value you'll receive from your smart city solution.





25




  
**THANK YOU!**
  
 Reach out for conversations and workshops to get started




# PATTI ZULLO

**Sr. Director**  
Smart City Solutions

[patricia.zullo@charter.com](mailto:patricia.zullo@charter.com)

[spectrumsmartcities.com](http://spectrumsmartcities.com)

Mobile: 303-681-4687



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# AGENDA ITEM 4 REPORT

Southern California Association of Governments  
Remote Participation Only  
August 25, 2022

**To:** Emerging Technologies Committee (ETC)

EXECUTIVE DIRECTOR'S  
APPROVAL

**From:** Thomas Bellino, Senior Planner  
(213) 236-1830, bellino@scag.ca.gov

**Subject:** Broadband VMT Report - Technical Methodology

**RECOMMENDED ACTION:**

Information Only – No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal 1: Produce innovative solutions that improve the quality of life for Southern Californians. 3: Be the foremost data information hub for the region.

**EXECUTIVE SUMMARY:**

*Staff previously reported to the Transportation Committee (TC) regarding the study to quantify vehicle miles traveled (VMT) and greenhouse gas (GHG) impacts of broadband access. The work included both technical analysis performed by a selected consultant team, Magellan Advisors and DKS Associates, surveys and stakeholder engagement by CETF and the regional broadband consortia (RBCs), and input from an Expert Advisory Committee. The report can be found in full on SCAG’s Broadband webpage, <https://scag.ca.gov/broadband>.*

*At this Emerging Technology Committee meeting, Jim Damkowitch from DKS Associates will take a deeper dive into the technical methodology used to determine the findings of the report, and will be able to answer questions about what these findings mean for local agencies in the region, and how we might be able to use this methodology to zoom in to specific communities and learn more about specific areas of concern.*

**BACKGROUND:**

In 2019, SCAG initiated work on the California Department of Transportation (Caltrans) Sustainable Transportation Planning grant-funded project titled Transportation Broadband Strategies to Reduce VMT and GHGs (vehicle miles traveled and greenhouse gases, respectively). However, with the onset of the COVID-19 pandemic, travel restrictions and “work from home” mandates in place, many people were forced to participate in a trial run of tele-everything which includes, teleworking, tele-medicine, remote learning, e-commerce, etc. It became apparent the drastic change towards, and reliance on, digital services and other Internet-dependent phenomena have had an impact VMT



and congestion, at a cursory level. As such, SCAG decided to use the observed traffic patterns in conjunction with online surveying to analyze potential impacts of broadband on VMT and GHGs.

Prior to the COVID-19 pandemic, according to the US Census, about 5% of all workers telecommuted. During the first peak of COVID-19, telework increased to approximately 40%, with some reports suggesting much higher rates. Trips to school, medical, local government, and retail and service destinations have also greatly decreased. A significant portion of the workforce will continue to telecommute at least one day per week post-COVID-19. While telecommuters may add trips, such as errands or shopping trips, to their routines due to their flexible schedule, it is also possible that they may combine trips and/or make them at non-peak times. Use of distance learning, tele-medicine, online government, and other online services post-pandemic are likely to continue, driving the need for broadband while reducing demand for these types of local travel.

#### **TECHNICAL METHODOLOGY:**

Based on travel behavior, the AM and PM peak auto trips in SCAG's 2045 Activity Based Model origin-destination (OD) trip table were factored at the TAZ (transportation analysis zone) level to yield the following potential broadband commuter market scenarios.

Scenario A reflects the Connect SoCal 2045 Baseline.

Scenario B reflects "Non-Broadband Expansion Increment – Shelter in Place Behavior (NBEI-SIPB)": This scenario reflects changes to the SCAG travel demand model trip matrices using the SIPB factor for each underserved TAZ. This analysis reflects the potential incremental change in vehicle activity assuming quality broadband service is expanded to non-broadband areas and the mixed adoption of worker preference emulates the empirically observed travel characteristics during the various shelter in-place order inflection points experienced during the COVID-19 pandemic in 2020 and 2021. This analysis reflects only the incremental benefit resulting from adoption within current nonbroadband areas. It does not assume any benefits associated with areas currently served by broadband in the SCAG region.

Scenario C reflects "Non-Broadband Expansion Increment - Upper Bound Behavior (NBEI-UBB)": This scenario reflects changes to the SCAG travel demand model trip matrices using the UBB factor for each underserved TAZ. This analysis shows the potential change in vehicle activity assuming quality broadband service is expanded to non-broadband areas and 100 percent of non-essential worker's preference and employer flexibility to work remotely is achieved. This analysis reflects only the incremental benefit resulting from adoption within current non-broadband areas.

Scenario D reflects "Total Broadband – Upper Bound Behavior (TB-UBB)": This scenario reflects changes to the SCAG travel demand model trip matrices using the UBB factor for all TAZs independent of existing broadband status. This analysis shows the change in travel patterns that

could be expected from 100 percent broadband adoption and 100 percent non-essential worker's preference and employer telecommute flexibility in both broadband and non-broadband areas.

The VMT results for Scenarios A, B, C, and D were stratified by speed class based on SCAG's regional VMT by speed class distribution used for on-road mobile source emissions estimates/inventories. Total on-road mobile source emissions of carbon dioxide (i.e., GHG) associated with each scenario was generated using the latest emissions model EMFAC2021 developed by the California Air Resources Board. The deltas between the three broadband scenarios (Scenarios B-D) relative to the future baseline (Scenario A) yield the relative benefit of these futures. The VMT and GHG (carbon dioxide or CO<sub>2</sub>) reduction results are provided in the table below.

Scenario	Total VMT LDA/LDT	Percent Change of Total VMT	CO <sub>2</sub> (tons per day)	Percent Change of Total CO <sub>2</sub>
<b>A: 2045 Baseline</b>	459,090,327	-	164,369	-
<b>B: 2045 NBEI-SIPB</b>	454,523,915	-1.00%	163,009	-0.89%
<b>C: 2045 NBEI-UBB</b>	451,795,887	-1.61%	162,185	-1.43%
<b>D: 2045 TB-UBB</b>	400,444,110	-14.65%	148,397	-11.48%

**FISCAL IMPACT:**

None.

**ATTACHMENT(S):**

1. PowerPoint Presentation - Transportation Broadband Strategies to Reduce VMT and GHG

# Transportation Broadband Strategies to Reduce VMT and GHG Emissions

Southern California Association of Governments

Magellan Advisors, LLC  
DKS Associates

Connecting The World One Community at a Time

August 25, 2022

## Project Objectives

Determine how broadband availability impacts VMT and GHG emissions.

- Estimate how VMT and GHG emissions may be reduced as broadband is used as a substitute for travel.

Determine how integrated broadband and transportation planning can increase broadband availability.

- Identify cost and funding strategies for including broadband in transportation projects.

# Transportation System Performance

## Baseline Performance Assessment

Level of Congestion (VMT; VHT; VHD)

- Volume/Capacity Plots
- Speed Plots

Identified Non-Broadband Areas (TAZs)

Origin-Destination of Trips from Non-Broadband TAZs

- Streetlight Data from SCAG
- Home-Based Work Trips (19% of total trips)
- Average Trip Length – Approximately 6 miles

Safety

- Federal PMs

PERFORMANCE MEASURE	2016 BASELINE 5-YEAR ROLLING AVERAGE	2017 SINGLE YEAR	2021 SCAG REGIONAL TARGET*
NUMBER OF FATALITIES	1,403	1,505	1,622
FATALITY RATE (PER 100 MILLION VMT)	0.88	0.906	1.32
NUMBER OF SERIOUS INJURIES	5,044	6,386	6,672
SERIOUS INJURY RATE (PER 100 MILLION VMT)	3.162	3.843	5.45
TOTAL NUMBER OF NON-MOTORIZED FATALITIES + SERIOUS INJURIES	2,046	2,118	2,212

	VMT	VHT	VHD
PASSENGER VEHICLES	427,205,797	12,170,601	2,484,014
LIGHT TRUCKS	5,877,749	134,496	25,694
MEDIUM TRUCKS	4,345,778	100,475	18,443
HEAVY TRUCKS	20,960,500	409,955	68,076
<b>TOTAL</b>	<b>458,389,824</b>	<b>12,815,527</b>	<b>2,596,227</b>



Magellan ADVISORS

DKS

## Broadband Expansion Market Assessment

Pre-screening at the block group level

- Census table B28011 “Internet Subscriptions in Household”
- If Block Group < 50 percent of households: Non-Broadband-0
- If Block Group > 50 percent of households: Broadband-1
- Aggregate Block Groups to the TAZ level
- If TAZ < 50 percent of households: Non-Broadband-0
- If TAZ > 50 percent of households: Broadband-1

Total households: 441,712 (5.8% of Total HH in 2045)

Non-broadband TAZs have significantly higher proportion of low-income households.

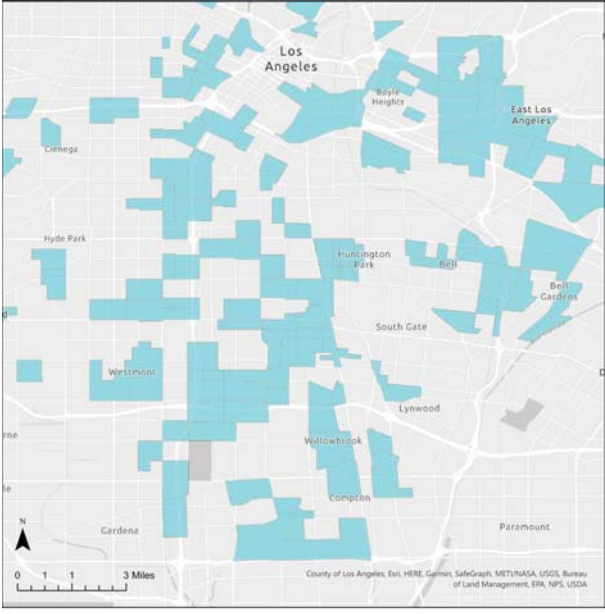


Broadband Adoption Ratio  
0.00000 - 0.50000

SCAG Region  
Regionwide

Magellan ADVISORS

DKS



**SCAG Region**  
South LA/Long Beach

# Broadband Expansion Market Assessment

Essential versus Non-essential Workers

- NAICS Code
- 387 Sub-Sectors

Major Sector	Percent Essential
Agriculture	100%
Construction	100%
Manufacturing	92%
Wholesale Trade	70%
Retail Trade	70%
Transportation and Warehousing	100%
Information	88%
Finance Insurance Real Estate	66%
Professional Scientific and Technical	52%
Education	83%
Arts Entertainment Recreation	59%
Other Service	57%
Public Administration	60%



**SCAG Region**  
San Bernardino

# Broadband Scenarios

Shelter in Place Behavior

- Streetlight Data & PeMS Data.
- Shelter-In-Place Orders (closing and reopening periods) during the COVID-19 pandemic. AM / PM Peak Period.
- HBW origin-destination volumes between the Non-Broadband TAZs and all other zones.
- Passenger Vehicles Only

Upper Bound Behavior

- Non-Essential Workers (NAICS Analysis)
- Non-Broadband TAZs and Broadband TAZs
- Passenger Vehicles Only



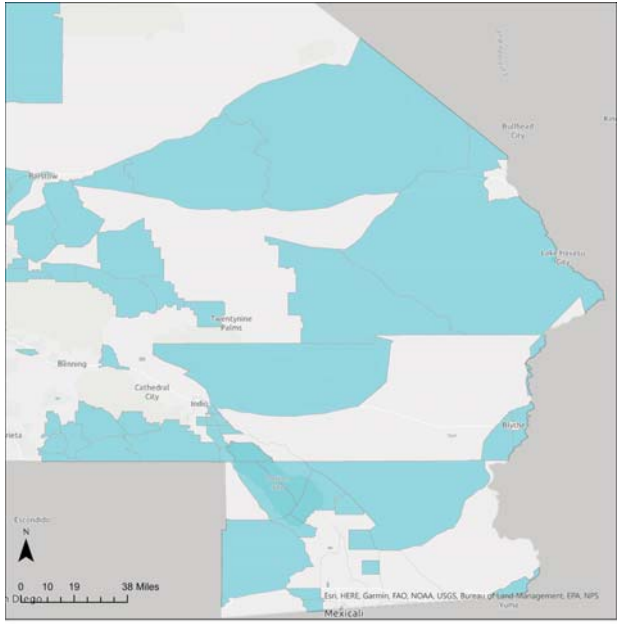




Broadband Adoption Ratio  
0.00000 - 0.50000  
SCAG Region  
San Bernardino

# Broadband Scenarios: 2045

- A. Future Baseline - Pre-Pandemic Travel Behavior – SCAG Connect SoCal (RTP/SCS) Preferred Scenario
- B. Non-Broadband Expansion Increment – Shelter in Place Behavior: Modified SCAG O-D Trip Matrix
- C. Non-Broadband Expansion Increment - Upper Bound Behavior: Modified SCAG O-D Trip Matrix
- D. Total Broadband - Upper Bound Behavior (Regionwide): Modified SCAG O-D Trip Matrix
  - Vehicle Miles of Travel (Regionwide)
  - Vehicle Hours of Travel (Regionwide)
  - Volume Difference Plots of SCAG Network



Broadband Adoption Ratio  
0.00000 - 0.50000  
SCAG Region  
Imperial/Riverside

# Analysis of Broadband Impacts on VMT and GHG

SCENARIO	TOTAL VMT LDA/LDT	PERCENT CHANGE OF TOTAL VMT	CO2 (TONS PER DAY)	PERCENT CHANGE OF TOTAL CO2
A: 2045 BASELINE	459,090,327	-	164,369	-
B: 2045 NBEI-SIPB	454,523,915	-1.00%	163,009	-0.89%
C: 2045 NBEI-UBB	451,795,887	-1.61%	162,185	-1.43%
D: 2045 TB-UBB	400,444,110	-14.65%	148,397	-11.48%

Broadband Expansion (Scenario B and C): Isolates Increment

- Daily VMT reductions between 4.6 million to 7.3 million (1 - 2 %) CO<sub>2</sub>
- Reduction between 1,360 – 2,184 tons/day (1 – 1.5%)

Total Region (Scenario D): All Non-Essential Workers Telecommute

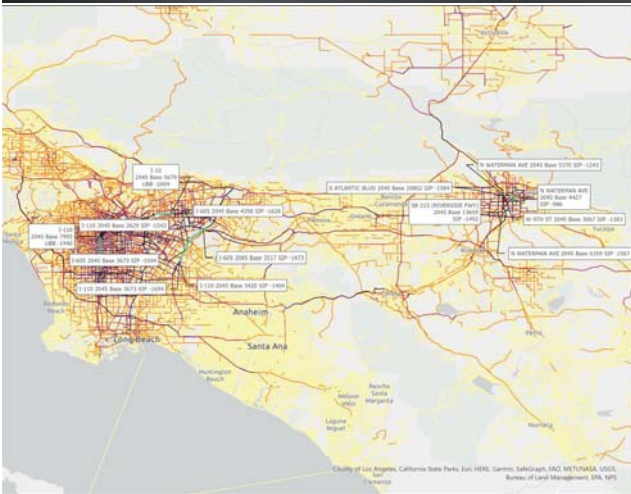
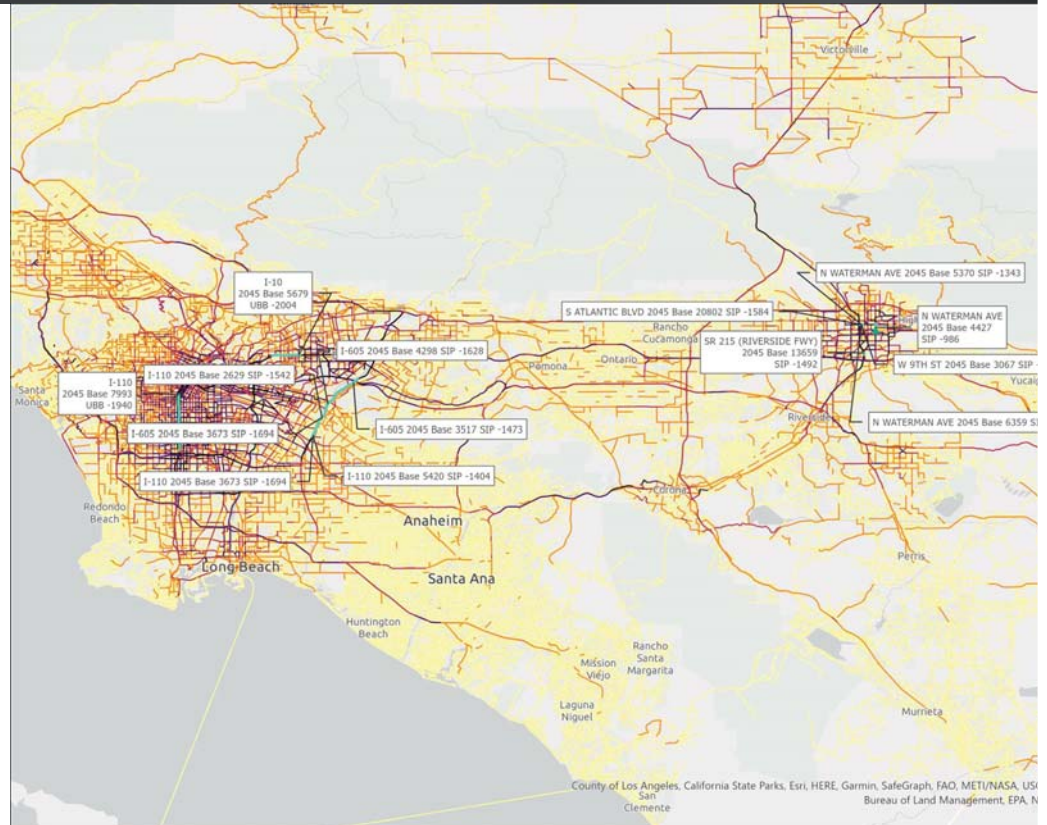
- Daily VMT reductions up to 59 million (15 % reduction)
- CO<sub>2</sub> Reduction of up to 15,972 tons/day (11.5% reduction)



# Volume Difference Plots

AM/PM Peak Hour Roadway Volumes (Scenario B or C) relative to Connect SoCal RTP/SCS (Scenario A).

Most heavily utilized roadways (shown as green) that serve non-broadband areas (i.e., TAZs)



## Analysis of Broadband Impacts on VMT and GHG

Most Benefiting Roadways from Broadband Expansion to Non-Broadband Areas:

- I-10
- I-110
- I-605
- I-710
- SR 215
- SR 91
- SR 72
- SR 42
- North Waterman
- South Atlantic Blvd
- Riverside Dr
- East 7<sup>th</sup> St
- Figueroa St
- West 120<sup>th</sup> St



# For Further Study

## Refine Definition of Non-Broadband Areas

- Access / Adoption / Speed
- Apply Continuous Scale vs. Binary
- Finer spatial granularity

## Include Additional Trip Purposes and Other Time Periods (Non-Peak Periods)

- Tele-Shopping
- Tele-Health

## Reflect Current Academic Research

- UC Davis Research
- USC Research

## Analyze Additional Scenario (E) Total Broadband – Shelter-In-Place Behavior

- Anticipated Benefit: Between 2 – 15 % VMT and GHG Emission Reduction
- Connect SoCal (2024 RTP/SCS Update) - contribute to SCAG Region’s GHG Emission Targets