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SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS
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REMOTE PARTICIPATION ONLY

ENERGY AND ENVIRONMENT COMMITTEE

Thursday, January 7, 2021
9:30 a.m. – 11:30 a.m.

To Participate on Your Computer:
https://scag.zoom.us/j/317727062

To Participate by Phone:
Call-in Number: 1-669-900-6833
Meeting ID: 317 727 062

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

PUBLIC ADVISORY

Given recent 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, 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 Peter Waggonner at (213) 630-1402 or via email at waggonner@scag.ca.gov. Agendas & Minutes are also available at: 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) 630-1402. 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. **Submit written comments via email to: EECPublicComment@scag.ca.gov by 5pm on Wednesday, January 6, 2021.**

   All written comments received after 5pm on Wednesday, January 6, 2021 will be announced and included as part of the official record of the meeting.

2. **If participating via Zoom or phone, during the Public Comment Period, 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.**

   If unable to connect by Zoom or phone and you wish to make a comment, you may submit written comments via email to: EECPublicComment@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.

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/317727062
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: 317 727 062**, 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.
6. 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.

EEC - Energy and Environment Committee
Members – January 2021

1. **Hon. David Pollock**
   EEC Chair, Moorpark, RC District 46

2. **Hon. Victoria Baca**
   Moreno Valley, WRCOG

3. **Hon. Ana Beltran**
   Westmorland, ICTC

4. **Hon. Daniel Brotman**
   Glendale, AVCJPA

5. **Hon. Margaret Clark**
   Rosemead, SGVCOG

6. **Hon. Robert Copeland**
   Signal Hill, GCCOG

7. **Hon. Maria Davila**
   South Gate, GCCOG

8. **Hon. Ned Davis**
   Westlake Village, LVMCOG

9. **Hon. Jordan Ehrenkranz**
   Canyon Lake, WRCOG

10. **Hon. Shari Horne**
    Laguna Woods, OCCOG

11. **Hon. Britt Huff**
    Rolling Hills Estates, SBCCOG

12. **Hon. Elaine Litster**
    Simi Valley, VCOG

13. **Hon. Diana Mahmud**
    South Pasadena, SGVCOG

14. **Hon. Cynthia Moran**
    Chino Hills, SBCTA

15. **Hon. Oscar Ortiz**
    Indio, CVAG

16. **Sup. Linda Parks**
    Ventura County

17. **Sup. Luis Plancarte**
    Imperial County

18. **Hon. Greg Raths**
    Mission Viejo, OCCOG

19. **Hon. Deborah Robertson**
    Rialto, RC District 8

20. **Hon. Richard Rollins**
    Port Hueneme, VCOG

21. **Hon. Rhonda Shader**
    Placentia, President's Appointment (Member at Large)

22. **Hon. Jesus Silva**
    Fullerton, President's Appointment (Member at Large)

23. **Hon. Sharon Springer**
    Burbank, SFVCOG

24. **Hon. John Valdivia**
    San Bernardino, SBCTA

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

ENERGY AND ENVIRONMENT COMMITTEE AGENDA

Southern California Association of Governments
Remote Participation Only
Thursday, January 7, 2021
9:30 AM

The Energy and Environment Committee may consider and act upon any of the items on the agenda regardless of whether they are listed as Information or Action items.

CALL TO ORDER AND PLEDGE OF ALLEGIANCE
(The Honorable David Pollock, Chair)

PUBLIC COMMENT PERIOD
Members of the public are encouraged to submit written comments by sending an email to: EECPublicComment@scag.ca.gov by 5pm on Wednesday, January 6, 2021. Such comments will be transmitted to members of the legislative body and posted on SCAG's website prior to the meeting. Written comments received after 5pm on Wednesday, January 6, 2021 will be announced and included as part of the official record of the meeting. Members of the public wishing to verbally address the Energy and Environment Committee will be allowed up to 3 minutes to speak, 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 reduce the time limit based upon the number of comments received and may limit the total time for all public comments to twenty (20) minutes.

REVIEW AND PRIORITIZE AGENDA ITEMS

CONSENT CALENDAR

Approval Items

1. Minutes of the Meeting – November 5, 2020

Receive and File

2. California Air Resources Board (CARB) Acceptance of Connect SoCal and Recommendations

ACTION/DISCUSSION ITEMS

3. Election of Energy and Environment Committee Vice Chair

4. Climate Change Action Resolution 30 Mins.
(Sarah Jepson, Planning Director)

RECOMMENDED ACTION FOR EEC:
Recommend that the Regional Council adopt Resolution No. 21-628-1 on Climate Change Action.

RECOMMENDED ACTION FOR RC:
Regional Council adopt Resolution No. 21-628-1 on Climate Change Action.

INFORMATION ITEMS

5. Changing Energy Marketplace 30 Mins.
(Ted Bardacke, Executive Director, Clean Power Alliance)

6. Overview of 2022 South Coast Air Quality Management Plan and Near-term Air Quality Planning Challenges 30 Mins.
(Dr. Philip Fine, Deputy Executive Director, South Coast AQMD)

7. Update on AB 617 Community Plans in the South Coast AQMD 20 Mins.
(Dr. Jo Kay Ghosh, South Coast AQMD)

CHAIR'S REPORT
(The Honorable David Pollock, Chair)

STAFF REPORT
(Grieg Asher, SCAG Staff)

FUTURE AGENDA ITEM/S

ANNOUNCEMENT/S

ADJOURNMENT

Southern California Association of Governments
Remote Participation Only
January 7, 2021

ENERGY AND ENVIRONMENT COMMITTEE
MINUTES OF THE MEETING
THURSDAY, NOVEMBER 5, 2020

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE ENERGY AND ENVIRONMENT COMMITTEE (EEC). A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE AT: <http://scag.iqm2.com/Citizens/>

The Energy and Environment Committee (EEC) held its special 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.

Members Present

Hon. David Pollock, Moorpark (Chair)	**District 46**
Hon. Carmen Ramirez, Oxnard (Vice Chair)	**District 45**
Hon. Daniel Brotman, Glendale	AVCJPA
Hon. Margaret Clark, Rosemead	SGVCOG
Hon. Robert Copeland, Signal Hill	GCCOG
Hon. Ned Davis, Westlake Village	LVMCOG
Hon. Jordan Ehrenkranz, Canyon Lake	WRCOG
Hon. Shari Horne, Laguna Woods	OCCOG
Hon. Britt Huff, Rolling Hills Estates	SBCCOG
Hon. Elaine Litster, Simi Valley	VCOG
Hon. Diana Mahmud, South Pasadena	SGVCOG
Hon. Toni Momberger, Redlands	SBCTA
Hon. Cynthia Moran, Chino Hills	SBCTA
Hon. Oscar Ortiz, Indio	CVAG
Sup. Linda Parks	Ventura County
Sup. Luis Plancarte	Imperial County
Hon. Richard Rollins, Port Hueneme	VCOG
Hon. Meghan Sahli-Wells, Culver City	District 41
Hon. Rhonda Shader, Placentia	President's Appointment
Hon. Jesus Silva, Fullerton	President's Appointment
Hon. Sharon Springer, Burbank	SFVCOG
Hon. John Valdivia, San Bernardino	SBCCOG
Hon. Edward H.J. Wilson, Signal Hill	GCCOG

Members Not Present

Hon. Ana Beltran, Westmoreland	ICTC
Hon. Maria Davila, South Gate	GCCOG
Hon. Sandra Genis, Costa Mesa	OCCOG
Hon. Jeannine Pearce, Long Beach	District 30
Hon. Miguel Pulido, Santa Ana	OCTA
Hon. Greg Raths, Mission Viejo	OCCOG
Hon. Deborah Robertson, Rialto	District 8
Hon. Bonnie Wright, Hemet	WRCOG

CALL TO ORDER AND PLEDGE OF ALLEGIANCE

Chair David Pollock called the meeting to order at 9:31 a.m. Staff confirmed that a quorum was present. Chair Pollock led the Pledge of Allegiance.

PUBLIC COMMENT PERIOD

Chair David Pollock and SCAG staff provided instructions for public comment. Chair Pollock opened the Public Comment Period.

SCAG staff announced that no public comments were received.

Seeing there were no public comment speakers, Chair Pollock closed the Public Comment Period.

REVIEW AND PRIORITIZE AGENDA ITEMS

Chair David Pollock stated that SCAG staff had requested that Agenda Item No. 4, SoCal Climate Adaptation Planning Guide, be reprioritized and heard before Agenda Item No. 3, Climate Change Action Resolution.

CONSENT CALENDAR

Approval Items

1. Minutes of the Meeting - October 1, 2020

Receive and File

2. Public Release of Transportation Conformity Analysis for Draft 2021 Federal Transportation Improvement Program (FTIP)

SCAG staff Grieg Asher announced that there was a correction to the attendance sheet for Agenda Item No. 1, Minutes of the Meeting - October 1, 2020.

A MOTION was made (Sahli-Wells) to approve the Consent Calendar with the attendance sheet as modified for Agenda Item No. 1. Motion was SECONDED (Copeland) and passed by the following votes:

AYE/S: Brotman, Clark, Copeland, Davis, Horne, Huff, Litster, Mahmud, Momberger, Moran, Ortiz, Parks, Plancarte, Pollock, Rollins, Sahli-Wells, Shader, Silva and Springer (19)

NOE/S: None (0)

ABSTAIN/S: None (0)

INFORMATION ITEMS

4. SoCal Climate Adaptation Planning Guide

Kimberley Clark, Program Manager, introduced the project team and began a presentation on the SoCal Climate Adaptation Planning Guide. Ms. Clark stated that the SoCal Climate Adaptation Framework kicked off in February 2019 and is funded through Senate Bill (SB) 1. SCAG established the Adaptation Planning Guide to assist jurisdictions with adaptation planning efforts. The framework includes tools and resources; outreach and communications strategies; planning guidance and model policy language; transportation and land use scenarios and modeling; and finance and funding guidance.

Ms. Clark welcomed David Von Stroh of Cambridge Systematics. Mr. Von Stroh provided an overview of climate change impacts in the SCAG region as addressed in the framework, such as extreme heat, inland flooding and wildfires. Mr. Von Stroh introduced Reema Shakra of ESA, who outlined four phases of Climate Adaptation Planning. The four phases were defined as: 1) Explore, Define and Initiate; 2) Assess Vulnerability; 3) Define Adaptation Framework and Strategies; and 4) Implement, Monitor, Evaluate and Adjust.

Mr. Von Stroh stressed the widespread impact of climate change factors, and Ms. Shakra described case studies of threats to specific resources, including Dana Glacier, Ventura County agriculture, Joshua Tree National Park and Capistrano Beach. Mr. Von Stroh then showed maps of heat health events (HHEs) in the Los Angeles area projected over time, and he discussed the 2020 wildfire season, the largest recorded in the state's modern history.

Ms. Shakra reviewed regulatory requirements regarding Safety Elements to address climate adaptation, including SB 379, SB 1035 and SB 1000. She stated that the guidebook was created with these requirements in mind, and she outlined relevant tools for each of the four phases of Climate Adaptation Planning. She elaborated on some of these tools, including a spreadsheet listing adaptation strategies and actions. Mr. Von Stroh discussed a sampling of adaptation strategies for specific hazard types, and Ms. Shakra outlined examples of model policies, organized by elements and hazard type. Ms. Shakra introduced Jeff Caton of ESA, who presented on project checklists, which are templates for incorporating climate change adaptations in local project-review processes. Mr. Caton stated that a project checklist can act to access a project's vulnerability, access potential consequences and measure a project's adaptive capacity.

Councilmember Diana Mahmud, South Pasadena, SGVCOG, asked how the information presented will be disseminated by SCAG. Kimberly Clark stated that the Climate Adaptation Planning Guide has been posted to SCAG's website as a PDF. Ms. Clark confirmed that a link is included in the staff report. Councilmember Mahmud also asked if the project team was aware of examples of landscape ordinances for new construction that have specific tree canopy requirements proximate to the structure to provide shading. David Von Stroh and Reema Shakra acknowledged the question but did not immediately know of examples.

Regional Councilmember Meghan Sahli-Wells, Culver City, District 41, asked if addressing climate change and reducing greenhouse gas emissions (GHG), in addition to mitigation measures to adapt to climate change, were integrated in the guide. Mr. Von Stroh stated that this project was intended to focus on identifying hazards and addressing these hazards, but he noted projects throughout the region to address interrelated issues, including equity. Kimberly Clark stated that there will be an agenda item later in today's meeting that will provide more information to address this question. Regional Councilmember Sahli-Wells commented on downsides of looking at mitigation measures narrowly and encouraged maximizing SCAG's resources.

Councilmember Margaret Clark, Rosemead, SGVCOG, commented in support of mandatory tree canopy planting requirements. She asked about an image displayed during the presentation; Ms. Reema Shakra stated that this picture was intended to illustrate the adaptation strategy of elevating structures to limit flood risk. Ms. Shakra continued by noting that there are adaptation strategies included in the guide to reduce the urban heat island effect.

Supervisor Linda Parks, Ventura County, commented on a project by Ventura County to plant two million trees and address extreme heat. Supervisor Parks commented on maps presented to show impact of hazards and asked if there was an index to put together impacts. Kimberly Clark stated that overlapping areas of hazards are being considered as part of the project. Supervisor Parks commented on a webpage being developed to assist with tree selection based on a variety of

factors. David Von Stroh acknowledged the comment.

Vice Chair Carmen Ramirez, Oxnard, District 45, commented on the Tree People of Los Angeles and a project in the San Fernando Valley that demonstrated a reduced heat island effect. She also commented on the negative impact of palm trees during fire season.

Councilmember Richard Rollins, Port Hueneme, VCOG, asked about warming trends displayed on the maps presented and their data sources. David Von Stroh stated that data was drawn from the California Heat Assessment Tool. Reema Shakra stated that there may be different projections based on effectiveness of emission reductions in the future.

Councilmember Cynthia Moran, Chino Hills, SBCTA, commented on a program in the City of Anaheim that includes an energy efficiency assessment and no-charge tree planting.

3. Climate Change Action Resolution

Sarah Jepson, Planning Director, provided background on the Climate Change Action Resolution. She stated the recommended action and reminded members that the EEC asked staff to prepare this item during last month's meeting. She stated that the draft resolution builds off work already done in Connect SoCal and the PEIR, and it also outlines new activities that SCAG can pursue to strengthen regional resilience.

Ms. Jepson introduced Kimberly Clark, Program Manager, to present on the impacts of climate change and contents of the drafted Climate Change Action Resolution. Ms. Clark stated that, based on discussion with stakeholders, it can be helpful to look at past and present climate conditions before looking at future vulnerabilities. She began by charting warming temperatures in California and temperature trends at the regional level. She then discussed the increasing severity of drought in California and the vulnerability of chaparral lands to drought, subsequently increasing the risk for wildfires. In connection with low precipitation, Ms. Clark compared wildfire burn areas over time, stating that 3.5 million acres in the state have burned from 2011-2020, compared to 1.6 million acres from 2001-2010. She discussed health and economic impacts of wildfires in 2020. She continued by enumerating the population impact of sea level rise and extreme heat health events in 2016 and the projected impact in 2030.

Ms. Clark expressed Connect SoCal's plan goal of adapting to a changing climate and supporting an integrated regional development pattern and transportation network, thus reducing population in very high-risk wildfire areas and homes in two-feet sea level rise areas. Ms. Clark then reviewed the SoCal Climate Adaptation Planning Guide, which summarizes climate change impacts specific to the SCAG region and provides tools that can be incorporated into local plans and policies. Ms. Clark shared language of the Climate Change Action Resolution which outline relevant actions SCAG should take.

These actions included developing a regional resilience framework; providing resource support and technical assistance; developing a regional advance mitigation program (RAMP); including climate mitigation and exploring opportunities to expand adaptation in the 2024 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS); and developing and promoting programs and outreach strategies. In closing, Ms. Clark stated that, as part of the resolution, SCAG's Planning Director shall report to the EEC on a quarterly basis on the progress of these efforts.

Supervisor Linda Parks, Ventura County, commented in support of adding additional language on extreme heat, drought and trees.

Regional Councilmember Meghan Sahli-Wells, Culver City, District 41, commented in support of including an economic analysis to demonstrate current and projected costs of climate change. She also commented on the positive economic impacts and opportunities for job creation in addressing climate change.

Councilmember Daniel Brotman, Glendale, AVCJPA, commented in support of comments by Supervisor Parks and Regional Councilmember Sahli-Wells. He asked if mitigation should include energy generation and buildings rather than a focus on transportation. Kimberly Clark acknowledged the comment. Sarah Jepson noted that the resolution was drafted with a focus on areas of the agency's greatest impact, such as emission reduction from transportation activity as included in the RTP/SCS. Councilmember Brotman commented in support of including land use planning and energy codes in mitigation considerations.

Vice Chair Carmen Ramirez, Oxnard, District 45, commented in support of considering vulnerable communities in the resolution, given the disproportionate impact of climate change on such populations.

Supervisor Linda Parks commented in support of specifying "disproportionately affected" in the resolution's discussion of communities. She reiterated comments on land use considerations in mitigation measures and spoke to sea level rise as a hazard.

Chair David Pollock asked staff if they would like to modify the staff report considering comments made today and bring the item back to the EEC at the next meeting, or if they would like to proceed today. Sarah Jepson acknowledged comments made by members and responded that either approach could be taken depending on members' preference. She mentioned that an inclusive economic recovery strategy is being prepared by staff, and staff can clarify that climate mitigation and adaptation will be a part of that effort. She restated that additions could be made today or the request can be brought back to the EEC at the next meeting, depending on how members would like to move forward.

Chair Pollock commented that he believes staff can move forward if comments have been noted, but he will leave the decision to committee members.

SCAG staff clarified that this is an action item.

Councilmember Edward Wilson, Signal Hill, GCCOG, commented that, if the timing works for this item to be brought back at the next meeting, he would prefer to bring the item back rather than rush through. Sarah Jepson confirmed that there is not an issue with timing, and she stated that staff will plan to bring the item back at the next meeting of the EEC, scheduled for January 2021.

Councilmember Elaine Litster, Simi Valley, VCOG, commented in support of incorporating comments based on mitigation actions in terms of sustainability. She articulated her preference to bring the item back at the next meeting. She commented on increased Public Safety Power Shutoffs (PSPS) and sustainability in terms of electric viability.

Councilmember Daniel Brotman, Glendale, AVCJPA, commented in support of bringing the item back with wording changes and looking again at the item then. He emphasized his support of expanding language on mitigation to include housing-related issues.

Councilmember Jesus Silva, Fullerton, President's Appointment, commented in support of bringing the item back at the next meeting.

Supervisor Linda Parks offered to make a motion to bring the item back with comments incorporated.

Acting Chief Counsel Justine Block clarified that a motion is not necessary; this can be considered as direction to staff to consider comments made and bring the resolution back to the EEC in January 2021 for consideration and action.

Chair David Pollock reiterated that a motion is not necessary, and he asked staff if sufficient direction has been provided by members. Kimberly Clark confirmed that sufficient direction had been provided, and she thanked members for their comments.

Regional Councilmember Meghan Sahli-Wells thanked staff for their work on the resolution and acknowledged that she is leaving office prior to the next EEC meeting.

5. Climate Action Planning and Renewable Natural Gas

Chair David Pollock introduced Joe Avila, Senior Policy Director for SoCalGas. Chair Pollock noted the important role of gas companies in mitigating climate change by sequestering methane

emissions.

Mr. Avila thanked members for the invitation to present, and he began his presentation by providing background on his professional experience. He shared a PowerPoint on Local Climate Action and Adaptation Plan (CAAP) Elements for Decarbonization and Resilience and outlined goals for the discussion. He denoted basic components of a vertically integrated utility, covering generation, transmission and distribution. He displayed a chart of power production by resource type. He explained advantages and disadvantages of each resource type, including nuclear, hydro, wind, biogas, biomass, thermal and solar.

In discussing recent blackouts and brownouts, he shared a summary of 9-month load average compared to 3-month (July, August and September) load average in 2020, delineated by resource type. He mentioned that solar loses efficiency when temperature is over 77 degrees, so load is reduced in summer. He demonstrated that renewable load diminishes as a percentage of total load during the summer months observed, while natural gas and imported gas compose a greater percentage of total load during these same months. He demonstrated hourly demand and load summary on September 6, 2020, the hottest day ever recorded in Los Angeles County. He reiterated that solar's optimum performance occurs between 10:00am to 3:00pm, and while solar's load will grow in the future, renewables will still require complimentary resources during off-peak hours. He stated that the fuels of tomorrow must be clean, affordable, diverse and resilient. He spoke about advancements in foreign counties in using hydrogen as a decarbonized fuel.

Mr. Avila continued by looking at SoCalGas's role in California's renewable future. He reviewed California's emissions by sector, stating that 41 percent of emissions are generated by transportation. He remarked that California's consumption is lower than it was 20 years ago, and California's emissions compose about one percent of global emissions. He spoke about the importance of affordability and reliability in service. He elaborated upon green molecule strategies such as electrolysis, the splitting of water into hydrogen and oxygen using electricity. He laid out tools to enhance reliability, such as fuel cell microgrids, natural gas backup generators and natural gas fleets. In closing, he outlined SoCalGas's customer value proposition.

Vice Chair Carmen Ramirez, Oxnard, District 45, asked about rate per kilowatt hour (kWh). Mr. Avila stated that he believes the rate is about $0.25 per kWh. Vice Chair Ramirez remarked on the importance of keeping "true cost" of service in mind, including costs from settlements and incidents.

Councilmember Edward Wilson, Signal Hill, GCCOG, asked how the industry is changing to allow for greater energy storage and how this will affect transmission. He provided an example of on-site generation, which could reduce the cost of transmission. Mr. Avila reviewed the hourly generation by resource, and he acknowledged that utilities are looking to store renewable energy generated during peak hours for use during times with higher demand. He discussed batteries, their lifespan

and the challenge of disposal. He also touched on modern technology like pumped storage plants and salt caverns to store excess renewables.

Supervisor Linda Parks, Ventura County, spoke about installation versus removal costs and the high costs of dissembling infrastructure. Supervisor Parks provided an example of high-pressure gas lines underneath an elementary school within her jurisdiction, and she asked if there are funds that the gas company has to mitigate safety concerns. Mr. Avila stated that the company's operations and maintenance dollars go to maintaining the system.

Councilmember Diana Mahmud, South Pasadena, SGVCOG, asked about plans for including hydrogen in the distribution system. Mr. Avila stated that SoCalGas is considering hydrogen blending, while keeping safety and cost-effectiveness as priorities. Councilmember Mahmud asked if Mr. Avila knew the percentage of load served by hydrogen in Europe and Japan, where it is currently being used. Mr. Avila stated that Japan is designing assets that could handle 35 percent blending, while Europe is anticipating 20 percent blending.

6. SunLine Transit Advancing Alternative Fuel Buses and Infrastructure

Lauren Skiver, CEO/General Manager of SunLine Transit Agency, spoke about practical applications of alternative fuel technology and current regulations. She began her presentation with a background on SunLine and its operations. She discussed the redesign of the transit network and adaptations, such as consolidated fixed routes, rideshare, and commuter links, in response to COVID-19 and current needs.

She reviewed SunLine's history as an early zero emissions adopter. Currently, part of the fleet uses compressed natural gas (CNG), but the fleet is transitioning away from CNG, in response to rules passed by the California Air Resources Board. She discussed SunLine's investment in hydrogen and the agency's standing as the largest transit network producer of hydrogen in North America. She discussed a board policy passed in 1993 to purchase and use only vehicles fueled by alternative fuels with the lowest possible emissions.

She provided further details on the fleet, which included fuel cell vehicles, and grant opportunities for local transit agencies to fund zero emissions fleets. She shared an overview on SunLine's hydrogen fueling station and lessons learned from its implementation. She spoke about future plans to create a solar micro-grid on SunLine's facilities and outlined phase of future projects, noting the goal of selling production to the open market to become revenue-independent. She stated that SunLine is building a trade school, the West Coast Center of Excellence in Zero Emission Technology and Renewable Energy, at their facility, and she spoke about the importance of workforce development. She continued by outlining advisory board members and objectives, which inform future plans for technology training. She announced that SunLine has created a user group, the Zero

Emission Bus Resource Alliance (ZEBRA), composed of transit agencies across the country. She closed by offering tours and resources to those interested in learning more about SunLine's efforts in workforce development and technological advances.

Councilmember Oscar Ortiz, Indio, CVAG, complimented SunLine's efforts and commented on the agency's ability to generate hydrogen despite having a small facility.

7. Overview of 2022 South Coast Air Quality Management Plan and Near-term Air Quality Planning Challenges

This item was continued to a future meeting.

CHAIR'S REPORT

Chair David Pollock recognized Regional Councilmember Meghan Sahli-Wells and Vice Chair Carmen Ramirez, given recent electoral changes, and commended them for their service to SCAG.

Chair Pollock reminded members of the 11th Annual Southern California Economic Summit scheduled for December 1, 2020.

STAFF REPORT

Grieg Asher, SCAG staff, stated that there will not be an EEC meeting in December, and the next meeting will occur in January 2021.

FUTURE AGENDA ITEMS

There were no future agenda items requested.

ANNOUNCEMENTS

There were no announcements.

ADJOURNMENT

There being no further business, Chair Pollock adjourned the Energy and Environment Committee meeting at 11:59 a.m.

Respectfully submitted,
Peter Waggonner
Energy and Environment Committee Clerk

[MINUTES ARE UNOFFICIAL UNTIL APPROVED BY THE EEC]
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ENERGY AND ENVIRONMENT COMMITTEE ATTENDANCE REPORT

2020-21

MEMBERS	Representing	Jun (GA)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Total Mtgs Attended To Date
Beltran, Ana	Westmoreland, ICTC		0		0	0	0							0
Brotman, Daniel	Glendale, AVCJPA		1		1	1	1							4
Clark, Margaret	Rosemead, SGVCOG		1		1	1	1							4
Copeland, Robert	Signal Hill, GCCOG		1		0	1	1							3
Davila, Maria	South Gate, GCCOG		0		0	0	0							0
Davis, Ned	Westlake Village, LVMCOG		1		1	1	1							4
Ehrenkranz, Jordan	Canyon Lake, WRCOG		0		0	0	1							1
Genis, Sandra	Costa Mesa, OCCOG		1		0	1	0							2
Horne, Shari	Laguna Woods, OCCOG		1		1	1	1							4
Huff, Britt	Rolling Hills Estates, SCBCOG						1							1
Litster, Elaine	Simi Valley, VCOG		1		1	1	1							4
Mahmud, Diana	So. Pasadena, SGVCOG		1		1	1	1							4
Momberger, Toni	Redlands, SBCTA		1		1	1	1							4
Moran, Cynthia	Chino Hills, SBCTA		1		1	0	1							3
Ortiz, Oscar	Indio, CVAG		1		1	1	1							4
Parks, Linda	Ventura County		1		1	1	1							4
Pearce, Jeannine	Long Beach, District 30		1		1	1	0							3
Plancarte, Luis	Imperial County		1		1	1	1							4
Pollock, David (CHAIR)	Moorpark, VCOG		1		1	1	1							4
Pulido, Miguel	Santa Ana, OCTA		0		0	0	0							0
Ramirez, Carmen (Vice Chair)	Oxnard, RC District 45		1		1	1	1							4
Raths, Greg	Mission Viejo, OCCOG		1		1	1	0							3
Robertson, Deborah	Rialto, RC District 8		1		1	1	0							3
Rollins, Richard	Port Hueneme, VCOG		1		0	1	1							3
Sahli-Wells, Meghan	Culver City, RC District 41		1		1	1	1							4
Shader, Rhonda	Placentia, President's Appointment		1		0	1	1							3
Silva, Jesus	Fullerton, President's Appointment				0	1	1							2
Springer, Sharon	Burbank, SFVCOG		1		1	1	1							4
Valdivia, John	San Bernardino, SBCCOG		1		0	1	1							3
Wilson, Edward H.J.	Signal Hill, GCCOG		1		0	1	1							3
Wright, Bonnie	Hemet, WRCOG		0		0	0	0							0

Attachment: EEC Attendance Sheet 2020-21 (Minutes of the Meeting - November 5, 2020)

Southern California Association of Governments
Remote Participation Only
January 7, 2021

To: Executive/Administration Committee (EAC)
Community, Economic & Human Development Committee (CEHD)
Energy & Environment Committee (EEC)
Transportation Committee (TC)
Regional Council (RC)

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

From: Sarah Dominguez, Senior Regional Planner,
(213) 236-1918, dominguezs@scag.ca.gov

Subject: California Air Resources Board (CARB) Acceptance of Connect SoCal and Recommendations

RECOMMENDED ACTION FOR CEHD, EEC AND TC:
Receive and File

RECOMMENDED ACTION FOR EAC AND RC:
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:
The California Air Resources Board (CARB) released Executive Order G-20-239 which accepts SCAG's determination that the 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS, Connect SoCal) meets the applicable 2035 greenhouse gas emission reduction target. The acceptance was issued on October 30, 2020, enabling projects from the SCAG region to be eligible for the Senate Bill 1 (SB 1) grants approved at the California Transportation Commission meeting in December. The CARB determination included several recommendations which staff will work to address in the coming months through collaboration with local and state partners.

BACKGROUND:
In compliance with the Sustainable Communities and Climate Protection Act of 2008 (SB 375) SCAG completes a Sustainable Communities Strategy as part of its Regional Transportation Plan (RTP/SCS) every four years. Once adopted, SCAG submits the SCS to CARB to make the determination "that the strategy submitted would, if implemented, achieve the greenhouse gas emission reduction

targets established by the state board."[1]

SCAG's 2020 RTP/SCS, Connect SoCal, faced a new, higher target for 2035 of 19 percent per capita greenhouse gas (GHG) emissions reduction, relative to 2005 levels, as well as needed to comply with updated SCS Evaluation Guidelines from CARB. These new guidelines broadened the scope of CARB's review to include more detailed assessment of the SCS strategies such as the policy commitments relating to implementation. The review also included reporting components to evaluate equity, incremental progress (compared to the last SCS) and tracking implementation (related to CARB's Senate Bill 150 responsibility).

SCAG staff submitted the SCS Submittal Package to CARB on August 28, 2020 and worked with CARB staff to promptly answer subsequent clarification questions and requests over the following weeks. CARB's extensive review of SCAG's SCS submittal data, modeling and supportive documentation enabled them to issue Executive Order G-20-239 to accept SCAG's determination that the SCS, if implemented, will reduce per capita GHG emissions by 19 percent in 2035, compared with 2005 levels. CARB's evaluation of the 2020 SCS concludes that the plan includes sufficiently supportive indicator trends; near-term policy support actions; active transportation, transit, and other SCS-supportive project investments; and adjustments in response to observed implementation challenges. The acceptance of the SCS by CARB came just in time for projects from the SCAG region to be eligible for SB 1 grants from the Trade Corridor Enhancement Program and Solutions for Congested Corridors programs approved by the California Transportation Commission in December.

However, while CARB staff "commend SCAG and its member jurisdictions for demonstrating innovative thinking and leadership with the additional strategies included within the 2020 SCS[2]" they expressed concerns about SCAG's ability to implement the plan.

CARB shared eight specific recommendations with its determination:

1. Deprogram Capacity Expansion Projects and Prioritize Funding for Transportation Projects that Advance SCS Implementation and Goals
    a. CARB recommends that SCAG develop a more rigorous vetting process and a project analysis tool to be used by local agencies when submitting projects for consideration in the RTP project list in order to advance projects that are well-aligned with the SCS[3].

[1] Government Code 65080(b)(2)(J)(ii)

[2] California Air Resources Board Executive Order G-20-239 and CARB Evaluation Packet of SCAG's 2020 RTP/SCS https://scag.ca.gov/sites/main/files/file-attachments/carb-2020-scs-evaluation-packet.pdf?1606337689

[3] CA Government Code section 65080(b)(2)(L) specify that "Nothing in this section shall require a transportation sales tax authority to change the funding allocations approved by the voters for categories of transportation projects in a sales tax measure adopted prior to December 31, 2010"

2. Monitor Implementation of the Adopted SCS Strategies, Actions, and Transportation Project List
    a. CARB recommends tracking and reporting on the implementation of all strategies and providing data-supported metrics in order to determine which strategies are performing well or which should be adjusted in future SCSs.
3. Accelerating Infill to Further SCS Implementation and Goals
    a. CARB recommends that jurisdictions should align planning and local policies and actions that support the goals of the SCS and the regional housing needs assessment (RHNA) and that in the next SCS the Open Space and Natural Lands Mitigation Program should be fully developed.
4. State and Regional Partnership on Pricing Pilot Options
    a. CARB states that SCAG needs to identify further progress on implementation of its pricing strategies in order to receive credit for the full GHG emission reductions in the next SCS.
5. Improve GHG Benefit Estimates for 2020 SCS New Strategies
    a. CARB expects more detailed local data and specific supporting actions to be provided in the next SCS.
6. Provide All Trend Analysis Metrics
    a. CARB requests that additional specific performance indicators are included in the next SCS.
7. Improve Modeling and Data
    a. CARB recommends specific model improvements such as incorporation of transportation network companies (TNCs) and autonomous vehicles as part of the mode choice model of the activity-based travel demand model (ABM) as well as adjustments to the off-model assumptions documentation.
8. Analyze Induced Travel Demand
    a. CARB recommends that SCAG explores methods of analyzing long-term induced demand that can identify the geographic areas of induced travel through an integrated land use and travel demand model.

SCAG staff are working to evaluate and determine how best to approach each recommendation and will collaborate with state and local partners to identify paths forward. These recommendations will also inform the development of the 2024 RTP/SCS in order to ensure that SCAG continues to receive full GHG emission reduction credit for the strategies and efforts identified in the SCS. However, further discussion with CARB staff will be necessary to ensure that SCAG can comply with the intent of the recommendations without diverting resources away from our support of local jurisdictions and agencies in implementing the plan in order to provide enhanced documentation for CARB.

It will take the continued leadership of SCAG's Regional Council and Committee members and partnership with our local jurisdictions and County Transportation Commissions to implement Connect SoCal and to address these recommendations raised by CARB.

CARB's Determination and Evaluation can be found on SCAG's website, under "Approvals" on the Adopted Final Connect SoCal page here: https://scag.ca.gov/read-plan-adopted-final-plan

FISCAL IMPACT:
Work associated with this item is included in the current FY 2020-21 Overall Work Program (310.4874.01 Connect SoCal Development).

ATTACHMENT(S):
1. California Air Resources Board Executive Order G-20-239 and CARB Evaluation Packet of SCAG's 2020 RTPSCS

October 30, 2020

Mr. Kome Ajise
Executive Director
Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700
Los Angeles, California 90017

Dear Mr. Ajise:

In accordance with the Sustainable Communities and Climate Protection Act of 2008, please find enclosed the California Air Resources Board's (CARB) Executive Order G-20-239 and CARB staff's determination based on its evaluation of the Southern California Association of Governments' SB 375 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020 SCS). The Executive Order accepts the Southern California Association of Governments' (SCAG) determination that its 2020 SCS would, when implemented, meet the applicable 2035 greenhouse gas (GHG) emissions reduction target for automobiles and light trucks as established by CARB in 2018, specifically, a 19 percent per capita reduction by 2035 relative to 2005 levels. CARB staff's determination summarizes its assessment, findings, and recommendations relating to the determination on the 2035 target. CARB's full evaluation report of SCAG's 2020 SCS will be transmitted to you separately and posted on CARB's website in the coming weeks.

While SCAG appropriately provided a determination to CARB as to whether its 2020 SCS meets the 2020 target, its reliance on modeled evidence without consideration of observed data and the performance indicators, as called for in CARB's SCS evaluation guidelines, was inappropriate. As a result, CARB staff could not evaluate the adequacy for the 2020 determination and therefore does not include a conclusion on the 2020 determination. Furthermore, observed data regarding housing development and transit ridership show that SCAG may not in fact be achieving the target. CARB explains in its determination the importance of this information to support a 2020 target determination in SCSs to meet SB 375 requirements and achieve anticipated GHG reductions needed to meet State climate commitments.

CARB staff commend SCAG and its member jurisdictions for demonstrating innovative thinking and leadership with the additional strategies included within the 2020 SCS. Though the Executive Order accepts the 2020 SCS 2035 target determination based on a sufficient presentation of information that would support achievement if every

strategy and measure were in fact implemented, CARB staff were reluctant to approve this SCS due to serious concerns about whether this plan will really be implemented. Many of the SCAG's key actions rely heavily on others to implement them and there are no existing commitments to do so. For example, the average vehicle ridership for job centers, parking deregulation in transit priority areas, co-working, and job center parking strategies require local or private support and buy-in to implement. Additionally, many of the funding sources identified to support the SCS strategies, key actions, and projects, rely on legislative authority for implementing its congestion pricing and mileage-based user fee strategies that may or may not be forthcoming. Furthermore, transit and active transportation projects that will support GHG emission reductions are back loaded to occur around or after 2035, suggesting they will not be implemented in time to meet the 2035 target.

Even with a commitment to 100 percent zero-emission vehicles sales in 2034[1], California needs strong commitments to implement vehicle miles traveled (VMT) reduction strategies by every region in the State to meet its SB 375 targets and support the statewide effort to successfully mitigate the worst impacts of climate change. Commitment to implementing SCAG's latest adopted 2020 SCS strategies is an important piece of this. At the same time, commitment is needed to reduce project investments in projects that are counter to the region's adopted SCS land use and housing strategy, and will increase VMT. Future regional target setting for 2035 will need to consider whether a more aggressive GHG reduction target is appropriate given that the SCS appears to achieve its targets despite the inclusion of these types of roadway capacity expansion projects. This suggests more needs to be done to realize SB 375's goals.

To support successful implementation of the 2020 SCS, and the GHG benefits claimed, CARB staff include specific recommendations within the SCS Evaluation Report and requests SCAG regularly monitor the implementation actions associated with its SCS in consultation with CARB and other relevant agencies.

CARB staff appreciates SCAG's continued work to advance the sustainability of transportation and land use planning in California, and looks forward to an ongoing partnership to implement this plan. If you have any questions or need further information, please contact Jennifer Gress, Chief, Sustainable Transportation and Communities Division, at jennifer.gress@arb.ca.gov.

[1] See Governor Gavin Newsom's Executive Order N-79-20. September 2020.

Sincerely,

Richard W. Corey
Executive Officer

Enclosures

cc: (via email)

Ms. Sarah Jepson
Planning Director
Southern California Association of Governments (SCAG)
Jepson@scag.ca.gov

Mr. Rex Richardson
SCAG President & Council Member, Long Beach
Sacramento Area Council of Governments (SACOG)
district9@longbeach.gov

Ms. Jennifer Gress, Ph.D.
Division Chief
Sustainable Transportation and Communities Division
jennifer.gress@arb.ca.gov

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State of California
AIR RESOURCES BOARD

Executive Order G-20-239

Southern California Association of Governments'
(SCAG)
2020 Sustainable Communities Strategy
CARB Acceptance of GHG Quantification Determination

WHEREAS, SB 375 (Steinberg, Chapter 728, Statutes of 2008), also known as the Sustainable Communities and Climate Protection Act, aims to reduce greenhouse gas (GHG) emissions from passenger vehicle travel through improved transportation and land use planning at the regional scale;

WHEREAS, SB 375 requires each of the State's 18 federally designated Metropolitan Planning Organizations (MPOs), including the Southern Califoria Association of Governments (SCAG), to develop a Sustainable Communities Strategy (SCS) or an Alternative Planning Strategy that meets the regional GHG emissions reduction targets for automobiles and light trucks set by the California Air Resources Board (CARB or Board);

WHEREAS, on September 23, 2010, the Board set targets for the SCAG region of an 8 percent per capita reduction by 2020, and a 13 percent per capita reduction by 2035 relative to 2005 levels;

WHEREAS, on June 4, 2012, CARB accepted SCAG's quantification of GHG emissions reductions for automobiles and light trucks as meeting the applicable targets in its first SCS, adopted by the SCAG Regional Council on April 4, 2012;

WHEREAS, on June 28, 2016, CARB accepted SCAG's quantification of GHG emissions reductions for automobiles and light trucks as meeting the applicable targets in its second SCS, adopted by the SCAG Regional Council on April 7, 2016;

WHEREAS, on March 22, 2018, the Board set targets for the SCAG region of an 8 percent per capita reduction by 2020 and a 19 percent per capita reduction by 2035 relative to 2005 levels;

WHEREAS, in preparation for its 2020 SCS, SCAG staff engaged the public via advisory committee meetings, stakeholder working group meetings, public workshops, and public hearings between September 2018 and September 2020;

WHEREAS, in November 2019, SCAG published its draft 2020 SCS, which was available for public review through January 2020;

WHEREAS, on September 3, 2020, SCAG's Regional Council adopted the final 2020 SCS, known as the Connect SoCal 2020 - 2045 Regional Transportation

Plan/Sustainable Communities Strategy, with a determination that the SCS would achieve the region's GHG target of an 8 percent per capita reduction by 2020 and a 19 percent per capita reduction by 2035 relative to 2005 levels;

WHEREAS, SCAG submitted the final 2020 SCS to CARB on September 11, 2020, as required by California Government Code section 65080, subdivision (b)(2)(J)(ii), and completed its submittal of supporting information on October 9, 2020;

WHEREAS, CARB staff performed an evaluation of the 2020 SCS's quantification of the GHG emissions reductions the strategy would achieve and the technical methodology used to obtain that result based on CARB's November 2019 document entitled *Final Sustainable Communities Strategy Program and Evaluation Guidelines*;

WHEREAS, CARB staff's evaluation indicated that SCAG appropriately included a determination as to whether its 2020 SCS meets the 2020 GHG emissions reduction target, however, CARB staff found that the determination was made relying on modeled evidence only, without consideration of observed data and performance indicators as called for in CARB's SCS evaluation guidelines, which prevented CARB from performning an evaluation of the 2020 target determination;

WHEREAS, CARB staff's evaluation indicated that SCAG used technical methodologies that would reasonably quantify GHG emissions reductions from the 2020 SCS for 2035;

WHEREAS, CARB staff's evaluation indicated that SCAG's 2020 SCS included strategies, key actions, and investments to support its stated GHG emissions reductions for 2035;

WHEREAS, CARB staff's evaluation showed SCAG's 2020 SCS, when implemented, would meet the applicable GHG emissions reduction target that the Board established for the region for 2035;

WHEREAS, CARB staff's technical evaluation of SCAG's GHG emissions reduction determination is included in Attachment A, Evaluation of the Southern California Association of Governments' SB 375 2020 Sustainable Communities Strategy, October 2020;

WHEREAS, California Government Code section 65080, subdivision (b)(2)(J)(ii), calls for CARB to accept or reject an MPO's determination that the Sustainable Communities Strategy submitted would, if implemented, achieve the GHG emissions reduction targets established by the Board;

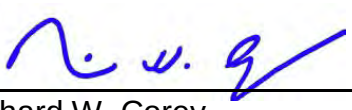
WHEREAS, California Health and Safety Code sections 39515 and 39516 delegate to the Board's Executive Officer the authority to act on behalf of the Board in this manner;

NOW, THEREFORE, BE IT RESOLVED that under California Government Code section 65080, subsection (b)(2)(J)(ii), the Executive Officer hereby accepts SCAG's determination that the SCS adopted by the SCAG Regional Council on September 3, 2020, would, when implemented, achieve the applicable GHG emissions reduction target for automobiles and light trucks of 19 percent per capita reduction by 2035,

relative to 2005 levels, as established by CARB for the region.

NOW, THEREFORE, CARB staff is directed to forward this executive order to the SCAG Executive Director.

Executed at Sacramento, California this 30th day of October 2020.



Richard W. Corey
Executive Officer

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EVALUATION OF THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS' SB 375 2020 SUSTAINABLE COMMUNITIES STRATEGY

October 2020

CALIFORNIA
AIR RESOURCES BOARD

This document has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the California Air Resources Board, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

Electronic copies of this document are available for download from the California Air Resources Board's internet site at:

https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program

In addition, written copies are also available. Please email California Air Resources Board program staff at sustainablecommunities@arb.ca.gov to place your request.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette, or computer disk. Please contact CARB's Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact CARB's Bilingual Manager at (916) 323-7053.

Table of Contents

List of Tables

List of Figures

Background

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) is intended to support the State's broader climate goals by encouraging integrated regional transportation and land use planning that reduces greenhouse gas (GHG) emissions from passenger vehicle use. California's metropolitan planning organizations (MPO) develop regional Sustainable Communities Strategies (SCS) – as part of their regional transportation plans (RTP) – which contain land use, housing, and transportation strategies that, when implemented, can meet the per capita passenger vehicle GHG emission reductions targets for 2020 and 2035 set by the California Air Resources Board (CARB or Board). Once an MPO adopts an SCS, SB 375 directs CARB to accept or reject an MPO's determination that its SCS, when implemented, would meet the targets.

On September 3, 2020, Southern California Association of Governments (SCAG)[1], which serves as the MPO for the Southern California region, adopted its 2020 Regional Transportation Plan/Sustainable Communities Strategy, also known as *Connect SoCal*.[2] SCAG provided for CARB staff's review, a complete submittal of the 2020 SCS and all necessary supporting information on October 9, 2020. SCAG's 2020 SCS estimates an 8 percent and a 19 percent decrease in GHG per capita emissions from light-duty passenger vehicles by 2020 and 2035, respectively, compared to 2005. The region's per capita GHG emissions reduction targets are 8 percent in 2020 and 19 percent in 2035, compared to 2005 levels, as adopted by the Board in 2018.[3] This report reflects CARBs evaluation of SCAG's 2020 SCS GHG quantification.

[1] Southern California Association of Governments is the largest MPO in California, covering six counties and 191 cities in the Southern California region. The SCAG region includes 48 percent of California's population with about 19.1 million people.
[2] Southern California Association of Governments. 2020 Regional Transportation Plan/Sustainable Communities Strategy. Available at: https://www.connectsocal.org/Pages/Connect-SoCal-Final-Plan.aspx.
[3] Board Resolution 18-12 (March 22, 2018) Available at: https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Final_Target_Staff_Report_%202018_Resolution_18-12.pdf.

CARB's Evaluation

After CARB set the first SB 375 GHG emission reduction targets in 2010, CARB staff developed the first guidelines[4] on how SCSs would be evaluated for the purposes of CARB's determination in 2011. These 2011 Evaluation Guidelines focused on the technical aspects of regional travel demand modeling and analysis for how CARB would determine acceptance or rejection of an MPO's determination that it met its applicable GHG emission reduction targets. In 2018, when CARB updated the SB 375 GHG emission reduction targets, the Board directed CARB staff to place greater attention on the strategies, key actions, and investments committed by the MPOs rather than on modeling outputs. Pursuant to Board direction, CARB staff updated its 2011 Evaluation Guidelines in the document *Final Sustainable Communities Strategy Program and Evaluation Guidelines*[5] (2019 Evaluation Guidelines). Under CARB staff's 2019 Evaluation Guidelines, evaluation of SCS strategies, key supporting actions and investments serve as the basis for accepting or rejecting an MPO's SB 375 GHG determination.

CARB's evaluation of the SCS consists of two components - the determination and reporting components and is based on the general method described in CARB staff's 2019 Evaluation Guidelines. This report summarizes CARB staff's evaluation of SCAG's 2020 SCS.

The determination component covers the analyses conducted by CARB staff to determine whether the SCS would achieve the applicable GHG emission reduction targets when implemented. This component consists of a series of four policy analyses, which evaluate whether the strategies, key actions and investments from the SCS support its stated GHG emission reductions. These four analyses include Trend Analysis, Policy Analysis, Investment Analysis, and Plan Adjustment Analysis. CARB staff's evaluation relied on a review of SCAG's 2020 SCS, additional SCS submittal materials provided by SCAG further explaining its modeling inputs and assumptions, performance indicators trends, key actions, investments, current trends and plan

[4] California Air Resources Board. Description of Methodology for ARB Staff Review of Greenhouse Gas Reductions from Sustainable Communities Strategies Pursuant to SB 375. July 2011. Available at: https://ww3.arb.ca.gov/cc/sb375/scs_review_methodology.pdf.

[5] California Air Resources Board. *Final Sustainable Communities Strategy Program and Evaluation Guidelines*. November 2019. Available at: https://ww2.arb.ca.gov/sites/default/files/2019-11/Final%20SCS%20Program%20and%20Evaluation%20Guidelines%20Report.pdf.

adjustments, as well as on information gathered in follow up conversations with SCAG staff. For a summary of strategies and quantification methods evaluated as part of SCAG's 2020 SCS submittal see Appendix A.

With respect to the reporting component, the 2019 Evaluation Guidelines includes three elements: tracking implementation, incremental progress, and equity. Tracking implementation reporting captures progress the region has made toward its SCS implementation based on observed data and whether it is on track to meet the GHG reduction targets based on how well the observed data track with what the plan said would happen. Incremental progress reports on whether an MPO's SCS includes more or enhanced strategies compared to its prior SCS that are consistent with the information the MPO shared during the 2018 target-setting process. The equity section identifies the efforts the MPO has undertaken to meet federal and State requirements related to equity. These reporting components are included as Appendix C: MPO Reporting, and serves to identify the effectiveness of prior SCS implementation efforts and increase overall transparency of the SCS for the public and other stakeholders.

Trend Analysis

This section summarizes CARB's analysis of key plan performance indicators to determine if the data provided by SCAG support the 2020 SCS's stated GHG and vehicle miles traveled (VMT) reductions. As part of the 2019 Evaluation Guidelines, CARB staff requested data on the following eight performance indicators: 1) household vehicle ownership, 2) mode share, 3) average travel time by mode, 4) daily transit ridership, 5) average trip length by mode, 6) seat utilization, 7) VMT per capita, and 8) GHG per capita. These indicators represent how a region can show changes to its per capita VMT over time through policies and investments undertaken and reflected in its SCS.

SCAG provided data associated with these metrics from the output of its travel demand model, SCAG Activity-Based Travel Demand Model (ABM). Staff analyzed how these metrics change over time (i.e., 2016 to 2035)[6] to determine whether these eight SCS

[6] The trend analysis is intended to analyze trends for the target year compared to 2005. However, SCAG did not provide 2005 data for some performance indicators, including Average Trip Length by Mode, Daily Transit Ridership, and Average Travel Time by Mode due to a change in the modeling platform from a trip-based model to a new activity-based travel demand model. Therefore, CARB's trend analysis is based on 2016 and 2035 data.

performance indicators are trending in a direction that supports the stated GHG/VMT reductions. Table 1 provides a summary of the trend analysis for SCAG's 2020 SCS. SCAG did not provide transit seat utilization data, so CARB staff could not review the trend for those data.

Table 1. Trend Analysis Results

Performance Indicator	Forecast Change* 2016** to 2035	Trend Analysis
Average Trip Length By Mode	SOV (-3.8%) HOV (-3.6%) Transit (+19.8%) Bike (+7.4%) Walk (+1.3%)	SCAG's 2020 SCS forecasts a decrease in the average single-occupancy vehicle (SOV) trip length from 12.1 miles/day in 2016, to 11.7 miles/day in 2035. Over the same time period, trip lengths for bike/walk increase from 1.7 to 1.8 and transit increases from 7.3 to 8.8 over the same period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that reducing SOV trip length reduces VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Average Travel Time By Mode	SOV (-10.7%) HOV (-6%) Transit (+16.3%)	SCAG's 2020 SCS forecasts a decrease in the average SOV travel time (20 minutes in 2016 to 17.9 minutes in 2035) and high-occupancy vehicle (HOV) travel time (13 minutes to 12.2 minutes); with increasing transit travel time (39.1 minutes to 45.4 minutes) over the same time period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that travel time and trip length change proportionally and are supportive of reducing VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Mode Share	SOV (-0.2%) Transit (+1.4%) Bike/Walk (+1.0%)	SCAG's 2020 SCS forecasts that mode share for SOV will slightly decrease from 36% in 2016 to 35.8% in 2035, while mode share for transit and walk/bike will increase from 3.2% to 4.7%, and 9.1% to 10.1%, respectively, over the same period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that shifting away from driving alone to other modes such as transit, walk and bike reduces per capita VMT

		and GHG emissions. Please see Appendix B: Data Table for more details.
Daily Transit Ridership	+115.4%	SCAG's 2020 SCS forecasts daily transit ridership increases from 2,074,697 in 2016 to 4,469,294 in 2035. CARB staff finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that increasing transit ridership will reduce GHG emissions. However, CARB staff has concern about this trend when looked at in the context of the trend in transit travel time (which increase from 39.1 minutes to 45.4 minutes in 2035 as noted above) compared to driving alone (which decrease from 20 minutes to 17.9 minutes in 2035 as noted above). Transit travel time is more than two times longer than driving alone despite transit trip lengths being one-third the length of SOV trips. This is not consistent with the empirical literature that shows decreasing SOV travel times alongside increasing and longer transit travel times would increase transit ridership and reduce GHG emissions. Please see Appendix B: Data Table for more details.
Household Vehicle Ownership	-1.2%	SCAG's 2020 SCS forecasts a decrease in household vehicle ownership from 1.90 in 2016 and 1.88 in 2035. CARB staff finds the 2016 to 2035 trend directionally supportive of reducing GHG emissions and consistent with the relationship shown in the empirical literature that reducing vehicle ownership reduces GHG emissions. However, CARB staff has concern about this trend when looked at in the context of transit ridership per household (i.e., 0.34 in 2016 to 0.62 in 2035). The magnitude of increase in transit ridership forecasted may not be consistent with the modest reduction in vehicle ownership between 2016 and 2035, even though transit ridership increases over the same period. This is contrary to the empirical literature where a household that uses more transit tends to own fewer vehicles. These results are not consistent and may not support

		reducing GHG emissions. Please see Appendix B: Data Table for more details.
VMT per Capita	-13.9%	SCAG's 2020 SCS forecasts VMT to decrease from 23.1 VMT/day in 2016 to 19.8 VMT/day in 2035. CARB staff finds this trend supportive and consistent with the relationship shown in the empirical literature that reducing VMT per capita will reduce GHG emissions. Please see Appendix B: Data Table for more details.
GHG per Capita Reduction Between 2005 and 2020	-8.3%	The GHG per capita reduction forecasted by SCAG meets the target established by CARB. Please see Appendix B: Data Table for more details.
GHG per Capita Reduction Between 2005 and 2035	- 19.1%	The GHG per capita reduction forecasted by SCAG meets the target established by CARB. Please see Appendix B: Data Table for more details.
Seat Utilization	SCAG did not provide data.	
* (-) decreasing, (+) increasing, (~) no change		
** For its 2020 RTP/SCS, SCAG used a new activity-based travel demand model. The output from this modeling included the performance indicators used for the trend analysis. SCAG was not able to provide modeled output for 2005 for all metrics, but did provide output for calendar year 2016, the base year of the plan.		

CARB staff finds that taken as a whole, the performance indicators used to conduct the Trend Analysis support the GHG reductions projected in SCAG's SCS.

Policy Analysis

The following section summarizes CARB staff's evaluation of whether or not SCAG's 2020 SCS contains key policy, investment, and other actions that support its identified strategies for meeting its GHG emission reduction targets using the general method described in CARB's 2019 Evaluation Guidelines. This analysis focuses on what policy commitments are contained in the SCS to support implementation and provides CARB with qualitative evidence on whether an MPO's claimed GHG reductions from its SCS strategies are likely, risky, or unlikely. CARB staff's analysis is organized across four broad SCS strategy categories: (1) land use and housing, (2) transportation infrastructure and network, (3) local/regional pricing, and (4) electric vehicle and new mobility. Within each strategy category, CARB staff discusses: the applicable SCS strategies; the planned outcomes that the SCS assumes will occur in 2035 when strategies are fully

implemented; and CARB staff's analysis of whether the SCS contains key policy and investment actions that will support implementation of the SCS strategies and planned outcomes.

CARB staff's analysis of key supporting actions looked at a number of policy factors that, when considered together, are expected to explain how the MPO region will achieve the development pattern, transportation network characteristics, and travel pattern assumed in its SCS by 2035. In general, across all strategy categories, CARB staff looked for:

- Whether the SCS provided policy actions that corresponded to each of its individual strategies.

- Whether the actions were clear with respect to scope, who will be involved, what will be done, and the anticipated implementation timeline.

- Whether the actions were measurable and included specific regional investment commitments in the RTP/SCS project list, policy and/or financial incentives; technical assistance; and if legislative or other entity action is needed, partnership activities to advance needed changes.

Information used for this effort was collected from SCAG's 2020 SCS and through additional supporting materials provided by SCAG in its submittal to CARB.

Land Use and Housing Strategy Commitments

SCAG's 2020 SCS includes four land use- and housing-related strategies, including infill development, increasing density near transit infrastructure, job/housing balance, and mixed land uses. Together, these land use and housing strategies support SCAG's goals of encouraging development of diverse land uses in areas that are supported by multiple transportation options and promoting conservation of natural and agricultural lands and restoration of habitats. SCAG estimates these strategies, in aggregate, will contribute to 14.2 percent[7] of its total per capita GHG emissions reductions.

[7] SCAG estimates VMT changes from its land use and housing strategies, along with transportation network changes, and pricing strategies in aggregate using its activity-based travel demand model.

SCS Planned Outcomes

The SCS includes assumptions about the type and character of new land use and housing development that will take place in the region between 2016 and 2035. Specifically, the plan[8].

- Adds 1,158,000 new housing units and 1,177,000 new jobs.
- Increases the region's residential density by 20 percent.
- Includes 393,000 new single-family housing units (30 percent of the total new units) and 906,000 (70 percent) multi-family or attached housing.
- Forecasts 64 percent of households[9] and 74 percent of employment to occur in the regions priority growth areas.
- Increases growth within priority areas[10] (which include job centers, high-quality transit areas, and neighborhood mobility areas), avoids growth in absolute constrained areas[11], and avoids growth in variable constraint areas[12], where

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SCAG uses these estimates to calculate the change in per capita GHG emissions. Therefore, the percent reduction reflected here represents SCAG's estimated reductions from implementing its land use and housing strategies, along with transportation network changes, and pricing strategies together. CARB is unable to isolate the emissions reductions associated with SCAG's land use and housing strategies only.

[8] This subsection includes information based on the data table and compares demographic and land use indicators from the 2016 base year to 2035.

[9] This bullet point refers to growth comparison tables provided by SCAG..

[10] Priority growth areas are designated areas prioritized for new development based on established criteria (e.g., infrastructure, location, market). These include transit priority areas, high-quality transit areas, livable corridors, neighborhood mobility areas, jobs centers, and spheres of influence.

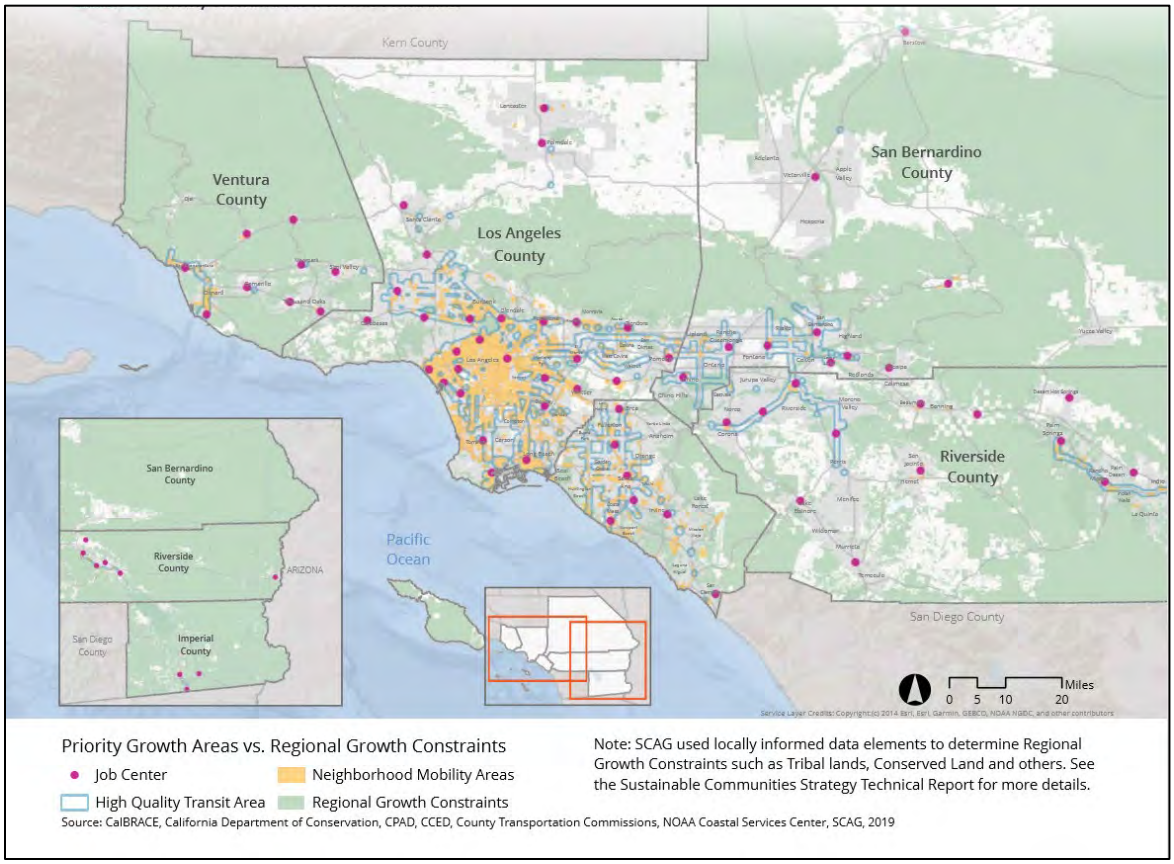
[11] Absolute constrained areas include tribal lands, military, open space, conserved lands, sea level rise areas, and farmlands in unincorporated areas. These areas were identified during the scenario development process to be used during the modeling process to redirect jurisdictional growth into other areas. These are intended to be regional guidelines and do not supersede existing regulations or protections, or local land use policy.

[12] Variable constrained areas included Wildland Urban Interface (WUI), grazing lands, farmlands in incorporated jurisdictions, 500-year flood plains, CalFire Very High Severity Fire Risk, and Natural Lands Conservation Areas. These areas were identified during the scenario development process to be used during the modeling process to redirect jurisdictional growth into other areas when feasible. These are intended to be regional guidelines and do not supersede existing regulations or protections or local land use policy.

possible[13]. See Figure 1 for locations of priority growth vs. regional growth constraints, or where development is assumed to occur and not occur in the region.

- Assumes 735,919 new housing units and 1,034,810 new jobs are located within a ½-mile of high-quality transit stations[14] (a 35 percent and 29 percent increase, respectively, compared to 2016 levels).

Figure 1. Priority Growth Areas vs. Regional Growth



Source: SCAG, 2020 RTP/SCS

[13] SCAG 2020 RTP/SCS, Sustainable Community Strategy Technical Report pages 18-19.
[14] This is an area within a ½-mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours.

Supporting Actions

While MPOs create SCSs that forecast regional growth patterns, local government staff and elected officials have almost exclusive authority over land use decisions relevant to implementing the SCS. Achieving the plan outcomes discussed above will therefore require local government action. Local actions that do not align with regional goals, such as allowing leapfrog development in natural or agricultural areas, and failing to allow enough infill, especially affordable housing and growth in walkable or transit-oriented areas, stifles the Southern California region's ability to implement the plan.

CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed development pattern in the SCS. In particular, CARB staff considered whether the SCS identified region-specific funding or technical assistance programs that support developers and local governments in prioritizing growth in the SCS's preferred growth areas. In addition, CARB staff checked to see how the SCS's assumptions about future housing unit development within the SCS's preferred growth areas compared against existing local plans, as alignment of regional and local plans is an important first step toward ensuring that future needs can be accommodated.

CARB staff found that the 2020 SCS land use and housing planned outcomes are supported by region-specific funding and planning program actions. In particular, the 2020 SCS carries over a number of positive, well-established programs and commitments to support implementation of the Southern California region's SCS land use and housing strategy. Notable examples include SCAG's technical assistance to help potential applicants compete for the Affordable Housing Sustainable Communities (AHSC) grant program[15], as well as other technical assistance through programs such as Tool Box Tuesdays, where SCAG staff provide a range of practical skills and knowledge for local planners, including training in the use of computer-based tools and education in practical approaches to timely planning issues[16]. Applicants within the SCAG region have received funding from the AHSC grant program to help with the construction of affordable housing. Between 2014 and 2018 there were 36 projects awarded within the SCAG region, totaling over $380 million in funding. These 36 projects will bring an additional 3,665 units of affordable housing in addition to improvements to the

[15] More information can be found at: http://ahsc.scag.ca.gov/Pages/Home.aspx.
[16] More information can be found at: http://sustain.scag.ca.gov/Pages/ToolboxTuesdayTraining.aspx.

surrounding transit, bicycle, and pedestrian infrastructure. SCAG's member agencies will continue to compete for AHSC funding.

The 2020 SCS also identifies that SCAG will provide technical support to local jurisdictions for new pilot projects and will examine and evaluate the viability of tax increment financing tools for local sustainable infrastructure projects and local economies. SCAG has assumed $3 billion in financing[17] available from these value-capture strategies for infrastructure to support housing in transit areas, which is a new supporting action in the region.

To support its assumptions about absolute and constrained areas and other key provisions in the RTP/SCS, SCAG is also working on developing an Open Space and Natural Lands Mitigation Program[18] to continue to engage partners and stakeholders on potential approaches to prioritize open space resources in the SCAG region.

Additionally, SCAG will continue to provide resources to local jurisdictions in the SCAG region for implementing new CEQA transportation impact assessment regulations as mandated by Senate Bill 743[19]. For example, a cooperative effort with the City of Los Angeles focuses on the evaluation of opportunities for developing a regional VMT exchange or banking program as potential VMT mitigation options to benefit local agencies throughout the SCAG region.

Table 2 shows CARB staff's summary of SCAG's 2020 SCS land use and housing strategy commitments and associated supporting actions and investments.

[17] SCAG 2020 RTP/SCS, Transportation Finance Technical Report, page 9.
[18] SCAG Final Overall Work Program Fiscal Year 2020-2021, page 77.
[19] Senate Bill 743 (Steinberg, Chapter 386, Statutes of 2013).

Table 2. SCAG's 2020 SCS Land Use and Housing Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Infill Development	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to increase infill development in priority growth areas. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program[20] to accelerate infill and development near transit. SCAG will also provide technical assistance to local governments, transit agencies and developers within the region to build housing capacity and to compete in the statewide Affordable Housing Sustainable Communities (AHSC) grant program.	Actions Identified[21]: Yes Funding in the RTP/SCS Project List[22]: N/A[23] SCAG Program Funding Available[24]: Yes, SCAG has identified resources to provide funding and technical assistance.

[20] SCAG's Sustainable Communities Program provides resources and direct technical assistance to jurisdictions to complete important local planning efforts and enable implementation of the RTP/SCS. The 2020-2021 Sustainable Communities Program will provide local jurisdictions with multiple opportunities to seek funding and resources to meet the needs of their communities, address recovery and resiliency strategies considering COVID-19, and support regional goals. More information can be found at http://sustain.scag.ca.gov/Pages/DemoProjApplication.aspx.

[21] Actions identified refers to if SCAG has identified how the SCS strategy will be implemented through actions.

[22] Funding in the RTP/SCS Project List refers to if there are projects and investments in the financially constrained project list that support the SCS strategy.

[23] N/A means not applicable.

[24] SCAG Program Funding Available refers to if SCAG has resources to support the SCS strategy.

Increasing Density Near Transit	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to increase density near transit. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program to accelerate infill and development near transit. SCAG will also provide technical assistance to local governments, transit agencies, and developers within the region to build housing capacity and to compete in the statewide AHSC grant program. SCAG also assumes $3 billion from the formation of Enhanced Infrastructure Financing Districts (EIFD) and the use of tax increment financing for transit-supportive, housing-related infrastructure. SCAG seeks to expand activities to support local agencies in establishing self-help tax-increment financing districts. SCAG also seeks to leverage resources to support local activities that stimulate development near transit and in priority growth areas.	Actions Identified: Yes Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes, SCAG has identified resources to provide funding and technical assistance, however, CARB staff is concerned about the certainty of funding from yet to be created EIFDs and the negative impacts of not obtaining needed funding to achieving reduction associated with the strategy.
Jobs/Housing Balance	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to create jobs/housing balance within the region in order to shorten vehicle trips. SCAG intends to continue to fund local planning efforts through the Sustainable Communities Program to accelerate the shortening of trips through land use strategies. SCAG will also provide technical assistance and host meetings and Toolbox Tuesdays to provide solutions to address jobs/housing imbalances. In order to address jobs/housing imbalances and reduce sprawl, SCAG is working to develop an Open Space and Natural	Actions Identified: Yes. However, CARB staff is concerned that SCAG's analysis of growth constraints is not reflected or well-supported by SCAG and its member jurisdictions as it is not well-aligned with local land use policies.

		Lands Mitigation Program to encourage conservation measures in the region.	Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes, SCAG has identified resources and can provide technical assistance.
Mixed Land Uses	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to provide a mix of land uses in priority growth areas, where most daily needs can be met within a short distance of home. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program to accelerate the shortening of trips through land use strategies. SCAG will also provide technical assistance and host meetings and Toolbox Tuesdays to encourage a mix of diverse land uses. SCAG will provide technical and mitigation strategy development guidance to local jurisdictions in the region to facilitate implementation of the VMT-based California Environmental Quality Act (CEQA) transportation impact analysis provisions of SB 743 to help shorten vehicle trips.	Actions Identified: Yes Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research and technical assistance.

In addition to CARB staff's evaluation of strategies and supporting actions, CARB staff also looked for general alignment of regional and local planning assumptions around the location of future housing unit development. CARB staff found that the 2020 SCS forecasted housing units appeared to be generally aligned with General Plan buildout capacities for the region. However, CARB staff was unable to conclude that this was the case because SCAG only provided information on priority growth areas, not all 35 place types identified in the region or at the jurisdictional level. These priority growth areas overlap, so growth totals are unclear. (See "Recommendation" section in this report).

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the land use and housing strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. While there are local plans in place within the SCAG region that support the 2020 SCS housing growth scenario local plan alignment does not guarantee this housing will be built. As shown in CARB's *2018 Progress Report: California's Sustainable Communities and Climate Protection Act*,[25] prepared pursuant to SB 150 (Allen, Chapter 646, Statutes of 2017), local housing planning is mostly compliant with Regional Housing Needs Allocation (RHNA) law, but actual permits issued are lagging, especially for affordable housing. In the four largest regions, according to local jurisdiction reports that were submitted to the California Department of Housing and Development (HCD), most regions are ahead of schedule in issuing permits for housing for the wealthiest "above-moderate-income" households but are falling short in housing that is affordable for households in the three lower-income categories: moderate-income, low-income, and very low-income.

SCAG's process for developing the 2020 SCS includes actions to help address observed shortfalls, however CARB staff finds that these actions rely on funding that has yet to be secured and local measures that have yet to be developed such as EIFDs and growth constraints that limit development in natural and working lands. While some cities, such as Placentia[26] have implemented EIFDs to support streetscape, sewer and water infrastructure improvements and to reduce the cost of housing construction in transit-oriented locations, there is some risk to this action, as EIFDs require local approval and participation in creating these districts in order to generate revenue. The Open Space

[25] Available at: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf.
[26] SCAG, 2020 RTP/SCS, Chapter 3: A Path to Greater Access, Mobility & Sustainability, page 11.

and Natural Lands Mitigation Program, also appears to be in its initial stages and will require local buy-in to implement measures identified in this program. While these actions and assumptions align with addressing the challenges the region faces with getting development in the right places, implementing the actions will require a series of local actions that today have no definite commitments or guarantees. Therefore, CARB staff has concerns as to whether the SCS will achieve its planned outcomes based on the land use and housing strategy commitments identified.

Transportation Infrastructure and Network Strategy Commitments

SCAG has included nine transportation strategies in the 2020 SCS. These strategies seek to complement its land use and housing strategies and focus on increasing non-SOV mode share and reducing driving. The strategies include transportation demand management (TDM), new transit capital projects, improved bike infrastructure, average vehicle ridership (AVR) for job centers, parking deregulation in transit priority areas, co-working, improved pedestrian infrastructure, safe routes to school, and multimodal dedicated lanes. These transportation strategies support SCAG's goals of improving mobility, accessibility, reliability, and travel safety and increasing personal travel and choices within the transportation system. Altogether, SCAG estimates these strategies will contribute to approximately 16.1 percent[27] of its total per capita GHG emission reductions.

SCS Planned Outcomes

These strategies translate into assumptions about changes to the transportation infrastructure and network that will serve the region between 2016 and 2035[28]. Specifically, the plan:

- Increases the region's total transit operational miles by 24 percent compared to 2016.

- More than doubles bike and pedestrian lanes miles compared to 2016.

[27] Transportation strategies are aggregated with other on-model strategies. Only a portion of the reduction would come from transportation strategies.
[28] This subsection includes information based on the data table and compares transportation indicators from the 2016 base year to 2035. It also includes information from Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.

- Increases Freeway/General Purpose lanes (4 percent), Freeway Toll lanes (231 percent), Arterial/Expressways (6 percent), Collector Lanes (5 percent), and decreases Freeway HOV lanes (20 percent) compared to 2016.

- Increases vehicle occupancy[29] to 1.5 at 21 strategically identified jobs centers through additional TDM measures starting in 2035, mainly in Los Angeles and Orange Counties as shown in Table 3.

- Reduces parking for 76,190 multifamily residential households in Transit Priority Areas[30] throughout the region.

- Assumes 40 regional co-working centers[31] will be created and located in strategically identified areas starting in 2025 as shown in Table 4.

- Adds multimodal dedicated lanes starting in 2025 consistent with the Transit Enhanced Network in the City of Los Angeles *Mobility Plan 2035* as shown in Figure 2.

[29] The average vehicle ridership strategy aims to increase occupancy. Average vehicle ridership is a measure used by South Coast AQMD that is generally calculated as the total trips to a location such as a worksite, divided by the total vehicles arriving at that location.
[30] Transit priority areas are areas within ½-mile of a major transit stop that is existing or planned.
[31] Co-working is an arrangement in which workers of different companies share an office space, allowing cost savings and convenience through the use of common infrastructure, such as equipment, utilities, and custodial services, and in some cases refreshments and parcel acceptance services. Co-working spaces may charge membership dues. An example is WeWork, which has co-working centers in the SCAG region.

Table 3. Assumed Average Vehicle Ridership Job Center Locations in SCAG

Anaheim-Fullerton	Loma Linda	Santa Ana
Culver City	Long Beach	Santa Monica
Downtown Los Angeles	Marina del Rey	Sherman Oaks
Glendale-Burbank	Newport-Mesa	Thousand Oaks-Newbury
Hollywood	North Hollywood	Torrance-Carson
Irvine-Spectrum	Pasadena	San Fernando Valley
LAX	SNA-Irvine	West Los Angeles

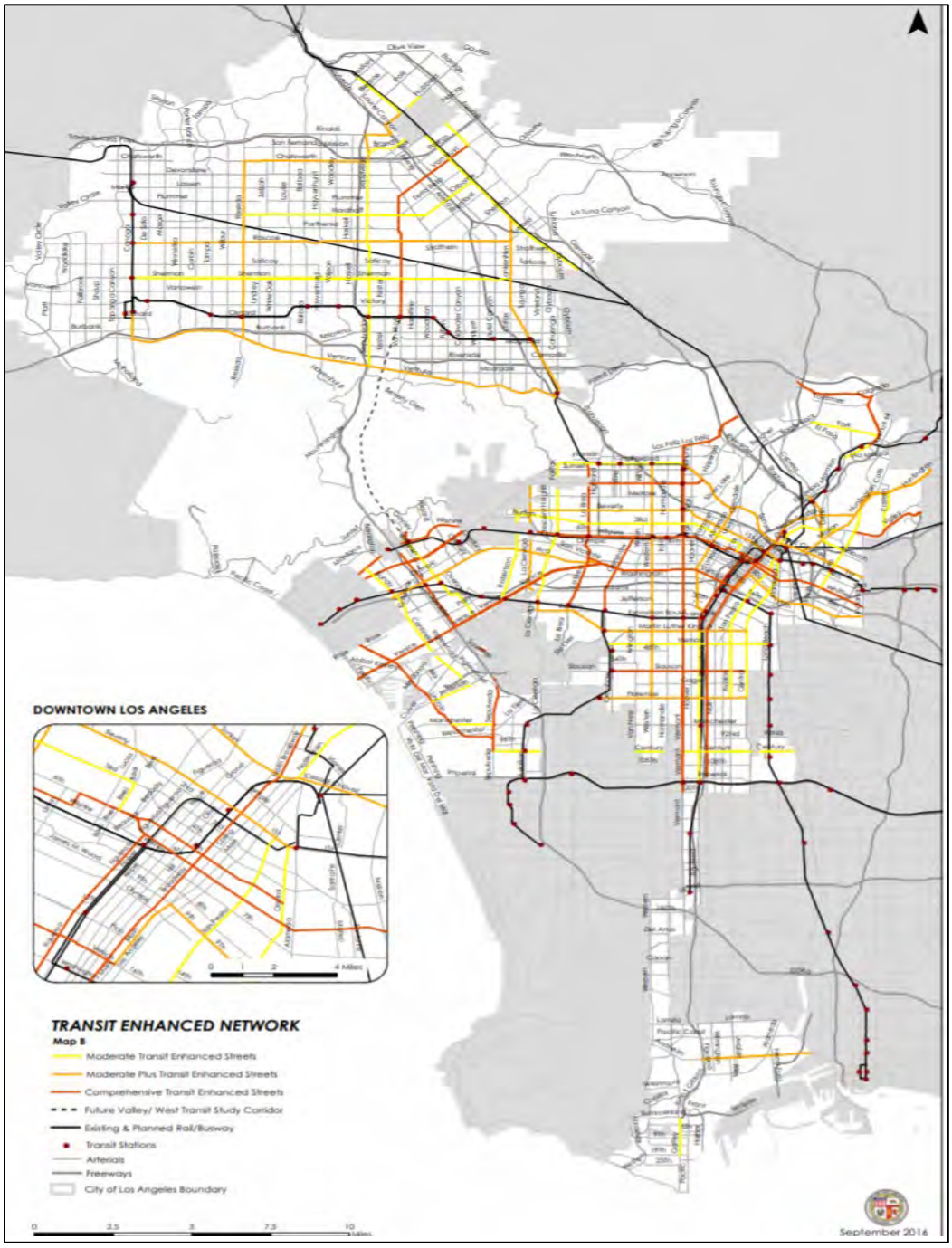
Source: SCAG Submittal to CARB

Table 4. Assumed Key Co-Working Job Center Locations in SCAG

Palmdale	Downtown Riverside	El Monte	Calabasas
Santa Clarita	San Clemente	West Los Angeles	Desert Hot Springs
Lancaster	Chino	Pasadena	Corona
Victorville	Moreno Valley	Pomona	North Hollywood
Lake Elsinore	Downtown Los Angeles	Downey	Newport-Mesa
Anaheim-Fullerton	Long Beach	Slymar	Ventura
Temecula-Murietta	ONT-Rancho Cucamonga	San Bernardino	Glendora
Torrance-Carson	Sherman Oaks	San Pedro	Arcadia
Glendale-Burbank	LAX	Industry-Rowland Heights	Irvine-Spectrum
Fontana	Moorpark	Commerce-Montebello	San Fernando Valley

Source: SCAG Technical Methodology

Figure 2. Enhanced Transit Network in the City of Los Angeles



Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the development of the transportation network in the SCS. CARB staff looked for alignment against the project list adopted with the 2020 SCS, as well as other supporting documents[32] to see whether the actions are planned and funded within the 2035 target timeframe. CARB staff also considered whether SCAG identified other region-specific funding or technical assistance programs to support implementation of its transportation strategies. In addition, CARB staff evaluated the extent to which the projects included in the SCS complement its land use and housing strategies, with a particular focus on capacity-increasing projects that induce travel and therefore increase VMT/GHG emissions.

CARB staff found that the 2020 SCS transportation strategies are supported by region-specific funding and planning program actions, as well as through direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS includes a number of positive project commitments that align with the Southern California region's SCS land use strategy and help advance GHG emission reductions. As part of the project list adopted with SCAG's 2020 SCS, CARB staff found multi-modal projects that are intended to improve transit, bike and walk options in the region by the 2035 target year. Examples include:

- Extension of Section 1 ($2.9 billion) and Section 2 ($2.5 billion) of the Metro Purple Line Westside Subway from Wilshire/La Cienega to Century City and Section 3 to Westwood ($3.9 billion).

- Extension of Phase 2 of the Metro Gold line from its terminus at Atlantic Station in East Los Angeles to Eastern Los Angeles County ($44 million).

- Pedestrian and streetscape enhancements along Market Street from the Los Angeles River to Cherry Avenue in Long Beach, including Class II/IV bike lanes, bulb outs, wayfinding signage, crosswalk and transit stop enhancements, construction of at least four curb ramps, pedestrian lighting, traffic signal

[32] Other documents include SCAG's Overall Work Program Fiscal 2020-2021, the SCS Strategies Table 2, and other materials submitted by SCAG.

installation/upgrades, flashing beacons, landscaping, and street trees ($4.6 million).

- Community linkages to the Hawthorne/Lennox Green Line station in Los Angeles County. The project includes pedestrian and bicycle facility improvements, wayfinding, and landscaping on the major corridors around the station ($3 million).

- A Safe Routes to School Program in the City of Lake Elsinore, in Riverside County, including community pedestrian/bike safety training, walkability workshops, on campus safety campaigns and increased targeted enforcement, and walk/bike to school days. This program would incorporate SCAG's Go Human Campaign[33] ($625,000).

- Transportation Demand Management in Riverside County, including rideshare programs, incentives, vanpool programs (e.g. vanpool lease, asset management, consultants), program outreach, etc. ($16 million).

Table 5 shows CARB staff's summary of SCAG's 2020 SCS transportation strategy commitments and associated supporting actions and investments.

[33] Go Human is a community outreach and advertising campaign with the goals of reducing traffic collisions in Southern California and encouraging people to walk and bike more through education, advocacy, information sharing and events that help residents reenvision their neighborhoods. More information can be found at http://gohumansocal.org/Pages/Home.aspx.

Table 5. SCAG's 2020 SCS Transportation Infrastructure and Network Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Transportation Demand Management (TDM)	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy aims to encourage ridesharing, telecommuting, park-and-ride programs, walking, biking, and alternative work schedules. SCAG has planned expenditure of $7.3 billion in the project list for TDM strategies to incentivize drivers to reduce driving and encourage other modes. SCAG had developed a TDM Strategic Plan[34], which identifies new strategies and promote TDM across the region. SCAG will pursue implementation of these strategies in coordination with regional and local partners. In addition, Los Angeles Metro will continue with implementation of AB 2548[35], which authorizes Metro to adopt for Los Angeles County a commute benefit ordinance that requires covered employers to offer all covered	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to TDM, about 56 percent or $4.1 billion is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments puts the strategy at risk of not being implemented. SCAG Program Funding Available: Yes. SCAG has

[34] SCAG's Transportation Demand Management (TDM) Strategic Plan provides an objective-driven, performance-based planning framework for identifying TDM strategies and programs that increase the efficiency of the transportation system through alternative modes of travel. More information can be found at http://www.scag.ca.gov/Documents/TDMStrategicPlanFinalReportwAppendicesweb.pdf.

[35] Assembly Bill 2548 (Friedman, Chapter 173, Statutes of 2018).

		employees a pretax option program with transit passes or vanpool charges. The ordinance is projected to start in January 2021.	existing resources to provide funding, research and technical assistance.
New Transit Capital Projects	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy includes investments in transit to encourage mode shift. SCAG has planned expenditure of about $321 billion (capital, operations and maintenance) in the project list for transit projects including extensions of Metro Gold and Purple lines, new buses, new stops, and other transit improvements. SCAG will continue to support transit primarily through the Regional Transit Technical Advisory Committee. Activities include monitoring and implementing Federal Transit Administration rule-making; assessing causes of transit ridership decline in the region; participating in regional, state, and federal transit studies and forums; researching pilot programs to incorporate new technology and mobility innovations into the delivery of transit services; and monitoring and reporting on regional transit system performance.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to transit, about 51 percent of transit funding, or $163.5 billion, is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments does not support the target. SCAG Program Funding Available: Yes SCAG has existing resources to provide funding, research and technical assistance.
Improved Bike Infrastructure	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific	This strategy includes investments in bike infrastructure to encourage mode shift. SCAG has planned expenditure of $17.7 billion in the project list for capital active transportation including Class I, Class II, Class III, and Class IV bike facilities, bike signage, bicycle parking, and other improvements. SCAG will host workshops and web-based planning tools for local governments to encourage active transportation	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to active transportation, about 54 percent of the active transportation funding or $9.5 billion is planned for

	proportion not provided.	use. SCAG also provides support and guidance to local agencies in the delivery of projects as part of the California Active Transportation Program. SCAG will also continue to manage the Regional Active Transportation Program, including providing technical assistance to project sponsors, managing planning and program grants, tracking project delivery, and preparing program amendments, as necessary. SCAG will provide leadership and input at the state and regional level to ensure California's Active Transportation Program future funding cycles align with regional planning goals. Through continued collaboration with the California Transportation Commission, Caltrans and the Southern California regional transportation planning aAgencies, SCAG will also work to improve the application and allocation procedures for funding. Additionally, SCAG's Go Human campaign and planning resources, like the Regional High Injury Network[36] encourage safety and biking and walking in the region	expenditure after the 2035 target year. CARB staff is concerned that back loading these investments does not support the target. SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research, outreach, and technical assistance.

[36] Regional High Injury Network identifies stretches of roadways where the highest concentrations of collisions occur on the transportation network, including bicycle and pedestrian injuries and fatalities. This tool can help target resources where they are needed most. More information can be found at http://maps.scag.ca.gov/hin/index.html.

Average Vehicle Ridership for Job Centers	-0.64%	This strategy assumes increases in average vehicle ridership at 21 strategically identified jobs centers through additional TDM measures, which would increases vehicle occupancy to 1.5 starting in 2035, mainly in Los Angeles and Orange Counties. SCAG has planned expenditure of $7.3 billion in the project list for TDM strategies to incentivize drivers to reduce driving and encourage other modes. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. Implementation of this strategy is supported by recommendations in SCAG's TDM Strategic Plan, including the development of regional TDM performance metrics and data collection/reporting standards, and support for the development of Transportation Management Agencies/Organizations (TMAs/TMOs), which offer alternatives to driving alone and encourage TDM strategy implementation. Performance monitoring and reporting with respect to TDM implementation and outcomes is an ongoing challenge. The TDM Strategic Plan recommends action steps for improving performance measurement in the SCAG region, including the development of a regional clearinghouse for TDM data and the development of formalized metrics and regional data standards, such as	Actions Identified: Somewhat While SCAG has identified actions, it is unclear how the 21 jobs centers and the private sector employers within them will participate at the assumed levels and how this strategy is different from, and beyond, SCAG's TDM strategy. Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Somewhat. SCAG did not identify a specific amount of funding available from the pricing strategies, but SCAG has existing resources to provide funding, research and technical assistance. However, funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.

		those set in Rule 2202[37]. TDM programs and incentives would vary by location reflecting the local context and be driven in part by private sector involvement and provision of direct incentives through the TMA/TMO. Identification of context-sensitive TDM strategies would be facilitated through regional training and planning support that could be provided by SCAG in coordination with local jurisdictions, and through partnerships with non-profit and private sector organizations. The development of TMAs/TMOs may also facilitate implementation tracking through improved monitoring and reporting.	
Parking Deregulation in Transit Priority Areas	-0.43%	This strategy supports local jurisdictions eliminating parking minimums in Transit Priority Areas between 2025 through 2045. SCAG assumes that with this strategy 39% households (76,190 multi-family residential households) will have zero vehicles in 2035 and will be zero-VMT households. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG has stated that support will occur through grant programs to local	Actions Identified: Yes. While SCAG has identified actions, CARB staff is concerned that the assumption of zero-vehicle households are zero-VMT households is not supported by empirical data. Furthermore, communities may not implement this strategy

[37] South Coast AQMD requires compliance with Rule 2202, which is designed to reduce mobile source emissions from employee commutes through a menu of emission reduction strategies, such as TDM. More information can be found at http://www.aqmd.gov/home/programs/business/r2202-forms-guidelines.

		jurisdictions that allow for the development and adoption of parking deregulation strategies/ordinances that are informed by community feedback. Through SCAG's grant programs in the past, innovative parking strategies along these lines have been formulated and evaluated by the City of Long Beach and the City of Los Angeles. The City of Santa Monica has adopted parking deregulation policies in 2017 with the adoption of its Downtown Community Plan.	since they might receive pushback over loss of parking. Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Somewhat. SCAG did not identify a specific amount of funding available from the pricing strategies, but SCAG has provided funding in the past for supportive research and technical assistance. However, future funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.
Co-Working	-0.14%	This strategy assumes 40 regional co-working centers will be created and located in strategically identified areas starting in 2025. SCAG assumes that existing long-range commuters (i.e., longer than 100 miles) who do not participate in an existing telecommute program, will have an opportunity to co-work for two days a week. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG intends to sponsor 40 co-working centers across the region.	Actions Identified: Yes. While SCAG has identified actions, CARB staff is concerned that SCAG did not include an existing participation rate based on local data Furthermore, communities may not implement this strategy at the assumed locations or at the assumed level..

		In collaboration with local partners and private-sector co-working space providers, this would involve promoting the establishment of co-working sites in these key areas. In addition to technical support for city-led proposals and efforts to identify opportunities for establishing sites in the 40 locations, SCAG will provide financial incentives to known co-working site providers, in addition to connectivity improvements such as 5G and additional co-working services/amenities in public spaces such as libraries, which can also function as co-working sites. The new program would be modeled off SCAG's existing Future Communities Pilot Program, which also combines multiple funding sources and evaluates city-led proposals based on potential VMT savings. Implementation would be coupled with monitoring to track the extent of trip substitution arising from the use of co-working centers.	Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Somewhat. SCAG did not identify specific amount of funding available from the pricing strategies, but SCAG is developing a new program to support this strategy. However, future funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.
Improve Pedestrian Infrastructure	-0.10%	This strategy supports the installation of pedestrian facilities to support safe conditions for walking. SCAG has planned expenditure of $17.7 billion in the project list for capital active transportation projects, a portion of which includes pedestrian infrastructure such as	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to active transportation, about 54 percent of active transportation funding or $9.5 billion is planned for expenditure after the 2035 target year. CARB staff is

		sidewalks, bulb-outs[38], ADA ramps[39], etc. SCAG will hold workshops and web-based planning tools for local governments to encourage active transportation use. SCAG also provides support and guidance to local agencies in the delivery of projects as part of the California Active Transportation Program. SCAG will also continue to manage the Regional Active Transportation Program, including providing technical assistance to project sponsors, managing planning and program grants, tracking project delivery, and preparing program amendments, as necessary. SCAG will provide leadership and input at the state and regional level to ensure future California's Active Transportation Program funding cycles align with regional planning goals. Through continued collaboration with the California Transportation Commission, Caltrans and the Southern California regional transportation planning agencies, SCAG will also work to improve the application and allocation procedures. Additionally, SCAG's Go Human campaign and planning resources, like the	concerned that back loading these investments does not support the target. SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research, outreach, and technical assistance.

[38] Bulb-outs also known as curb-extensions are traffic-calming measures that widen the sidewalk for a short distance typically at intersections or mid-block. These reduce pedestrian crossing distances and improve visibility.
[39] ADA ramps are curb ramps that meet the American with Disability Act requirements.

		Regional High Injury Network, encourage safety and walking and biking in the region.	
Safe Routes to School	-0.20%	The Safe Routes to School (SRTS) strategy is an approach to reduce the number of single-occupant vehicle trips to schools and to shorten school commute trips. The SRTS strategy includes a combination of both infrastructure investments, as well as programs that encourage kids to bike and walk to school instead of being driven. SCAG has planned expenditure of $193 billion in the project list for infrastructure to schools and community education and safety training programs. SCAG funds and manages the Go Human advertising campaigns to encourage the public to walk and bicycle more and the demonstration of new infrastructure to get communities excited about changing their streets. Through continuing Office of Traffic Safety (OTS) grant funding, SCAG will direct investments that will include state and federal grants for SRTS plans and programs at the local level. SCAG recently completed a call for applications for community-based mini-grants, and has confirmed funding to conduct another program during the next cycle. Additional OTS funding will be committed to other locally based programs that further implementation of SRTS strategies at the local level.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes. SCAG has established programs and funding. CARB encourages SCAG to more closely track the development of SRTS plans and programs and how these result in mode shift.

Multimodal Dedicated Lanes	-0.40%	This strategy involves the conversion of auto traffic lanes to dedicated lanes for transit. SCAG assumes these lanes will be in place based on the Enhanced Transit Network in the City of Los Angeles Mobility Plan 2035, which is an element of Los Angeles' General Plan. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. The City of Los Angeles has made commitments to improve transit corridor performance in February 2020 through the Mayor's Executive Directive 25, which calls for a network of bus infrastructure improvements and priority infrastructure, including bus-only lanes. Additionally the City of Los Angeles continues to support LA Metro with NextGen implementation. NextGen is LA Metro's plan to redesign its bus network to better meet the needs of current and future riders. The LA Metro Board in January 2020 approved $1 billion in transit-supportive capital infrastructure to improve speed and reliability, including dedicated bus lanes. City of Los Angeles and LA Metro staff have formed a Bus Speed Engineering Working Group to identify a priority list of bus-supportive infrastructure projects. As a result, bus lanes on 5th and 6th Streets in Downtown Los Angeles are currently under development with anticipated implementation by the end of calendar year 2020.	Actions Identified: Yes Funding in the RTP/SCS Project List: No SCAG Program Funding Available: Somewhat. While the City of Los Angeles has taken important steps to support implementation of this strategy, these dedicated lanes are conceptual and have not gone through public and environmental review or the design and engineering process and are not currently in the project list. While local funding may be available, other funding sources have not yet been secured. CARB staff is concerned that funding will come from pricing strategies, which is extremely uncertain. because of the need for legislative changes and local buy-in. CARB staff advises SCAG to only include these projects when they have gone through the appropriate review process, have secured funding to be included in the RTP project list, and can be

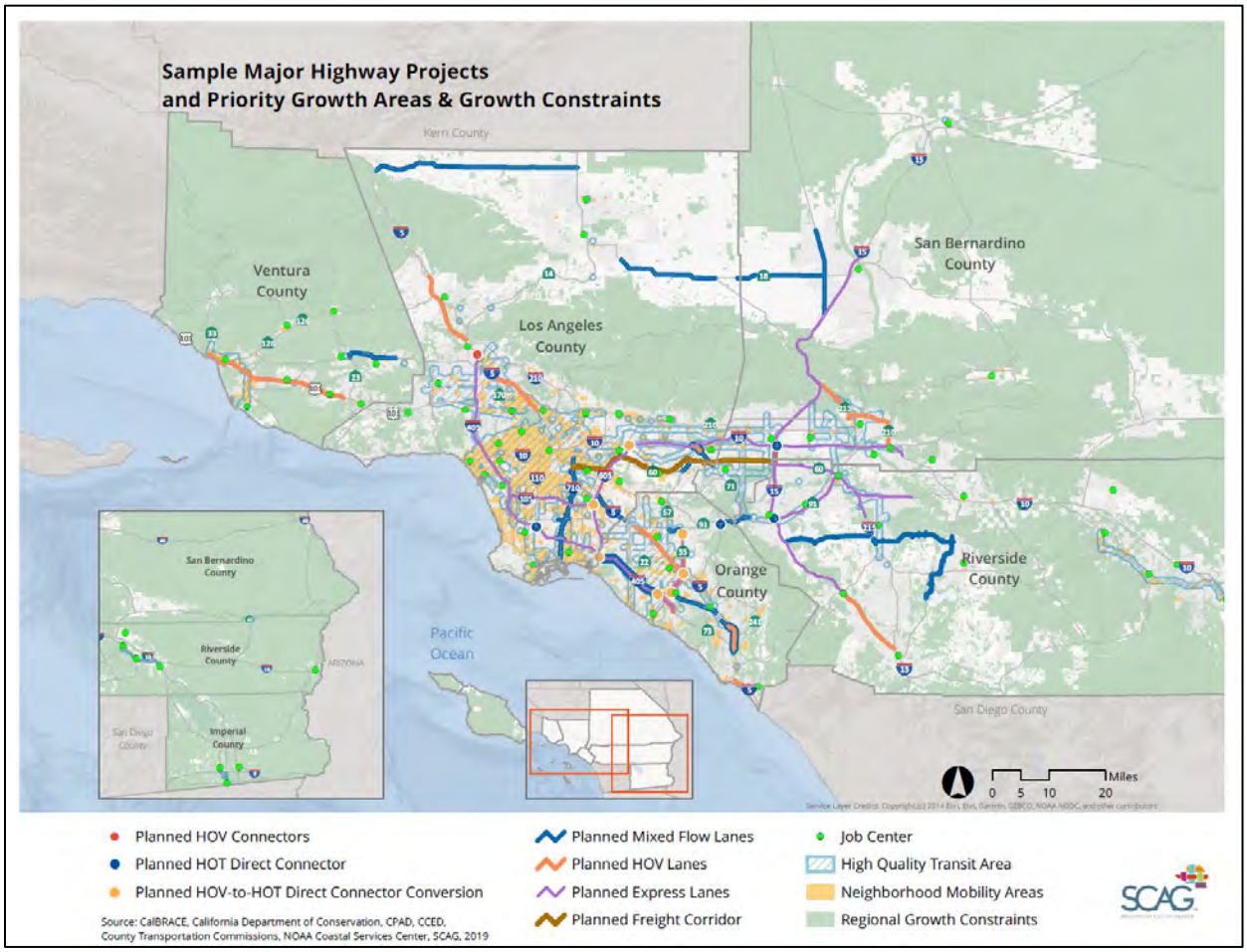
			reflected in the travel demand model.

In addition to CARB staff's evaluation of the strategies and supporting actions, CARB staff evaluated the extent to which capacity-increasing projects that induce travel and therefore increase VMT/GHG emissions were present. CARB staff found that the 2020 SCS includes hundreds of millions of dollars in funding for roadway capacity expansion projects that are counter to region's adopted SCS land use and housing strategy. These include local roadway capacity projects and new mixed-flow lanes on highway segments in San Bernardino County, in the Lancaster/Palmdale area near the Los Angeles/Kern County line, and in Riverside County.

Figure 3. shows a sample of major highway projects[40] in the region overlaid on SCAG's priority and constraint areas. This figure was prepared by SCAG at CARB's request and combines information across different figures shown in the 2020 SCS and shows that there are major highway projects planned to occur where growth is not envisioned in the plan. Capacity expansion projects, especially those that are counter to the long-term vision for accommodating new growth, increase VMT and work against achieving the State's climate and air quality goals.[41]

[40] A sample means some of the major highway projects listed in the 2020 RTP/SCS project list. SCAG selected and depicted these sample projects in the 2020 RTP/SCS.
[41] See CARB's Policy Brief: Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions. Available at: https://ww3.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

Figure 3. Sample of Major Highway Projects Overlaid on Priority Growth Areas and Growth Constraints in SCAG



Source: SCAG

As part of its SCS submittal, SCAG conducted an analysis of the anticipated long-term effects on VMT due to the roadway capacity expansion projects within the SCS by applying off-model adjustments using the Induced Travel Calculator developed by UC Davis.[42] This analysis included interstate freeways, other freeways, expressways and arterial roads, but excluded toll roads/lanes. Based on this analysis, SCAG estimated that altogether these types of roadway projects would increase the region's GHG

[42] UC Davis, Induced Travel Calculator. Available at: https://ncst.ucdavis.edu/research-product/induced-travel-calculator.

emissions by 0.56 percent in 2035, or about 2.96 million VMT per day.[43] SCAG included these forecasted VMT increases as part of its overall 2020 SCS emissions estimate and determined that it will still be able to meet its SB 375 GHG reduction target, when implemented. CARB staff reviewed SCAG's approach to capturing the short-and long-term VMT/GHG impacts of its 2020 SCS roadway capacity expansion projects and found them to be reasonable in the context of aggregate impacts on SCS performance. However, for the next SCS, SCAG should evaluate and discuss the VMT impacts of individual capacity projects in comparison with the aggregate analysis used for the SCS. Results of this effort could be used to further refine how SCAG assesses the VMT impacts of capacity projects on its SCS. Future regional target setting for 2035 should consider whether a more aggressive target is appropriate if the 19 percent target is achievable even with such massive increases in VMT over that period.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the transportation strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. SCAG's SCS backloads billions of dollars in funding for transit and active transportation projects to the 2031 to 2035 and 2036 to 2045 timeframes (see discussion in "Investment Analysis" section of this report). CARB staff is especially concerned with the region's ability to fund and deliver the transit and active transportation projects that are needed to support the 2020 SCS planned outcomes. Support for transit and active transportation projects is important given the fact that the region wants to overcome recent declines in transit ridership and increase transit ridership in the region by 24 percent and double bike and pedestrian lane miles compared to its 2016 level. Delays or removals of transit and active transportation projects will prevent SCAG from meeting its regional targets.

CARB staff is also concerned that SCAG's 2020 SCS is estimated to only just achieve the GHG emission reduction targets, while many of the strategies identified have a high risk of not being implemented. The inclusion of roadway capacity-increasing projects that increase VMT and GHGs could further jeopardize the region's target attainment. SCAG will need to be vigilant about monitoring implementation and deployment levels of

[43] Through induced travel, or increases in travel due to changes in residence and workplace locations, whereas changes in the number of trips and trip distances (destination changes); shifts in travel modes, the time-of-day travel occurs, and routes are all captured as part of SCAG's ABM.

strategies, including how projects are prioritized, through 2035 to ensure planned reductions and SB 375 goals are achieved.

Local and Regional Pricing Strategy Commitments

SCAG has included four pricing strategies in the 2020 SCS. These strategies include congestion pricing, job center parking, mileage-based user fees/TNC user fees, and express lanes pricing. These strategies seek to put a price on driving in the region in the following ways:

- Charging a fee to operate vehicles in designated areas, roads, or highway corridors.
- Charging a fee to park in job centers.
- Charging a fee based on auto ownership and mileage driven on the region's road network.
- Charging TNC users a fee based on mileage of their TNC trip.
- Charging a fee based on use of express toll lanes.

These strategies are projected to decrease driving and congestion, increase transit, walking, and biking, and improve the road/highway condition. These strategies also generate revenue through fees for the transportation system, including other transportation and new mobility strategies in the SCS. SCAG estimates these strategies will contribute to approximately 14.2 percent[44] of its total per capita GHG emission reductions.

[44] Pricing strategies are aggregated with other on-model strategies. Only a portion of the reduction would come from pricing strategies.

SCS Planned Outcomes

These strategies translate into assumptions about changes to the cost of transportation options, specifically, the cost to drivers for use of the roadway network in the region between 2016 and 2035[45]. Specifically, the plan assumes:

- Starting in 2021, decreased congestion and increased transit, walking, and biking through a region-wide TNC user fee of 5 cents per mile. This is part of the mileage-based user fee.

- Starting in 2024, decreased congestion and roadway travel with dynamic express lanes that charge rate of $0 to $2.65 dollars per mile for passenger vehicles utilizing express lanes. An increase in the number of express toll lanes from 414 lane miles today to 1,370 lane miles by 2035, a 231 percent increase. The planned express lanes throughout the region are shown in Figure 4 and would operate in Los Angeles, Orange, Riverside, and San Bernardino counties starting in 2024.

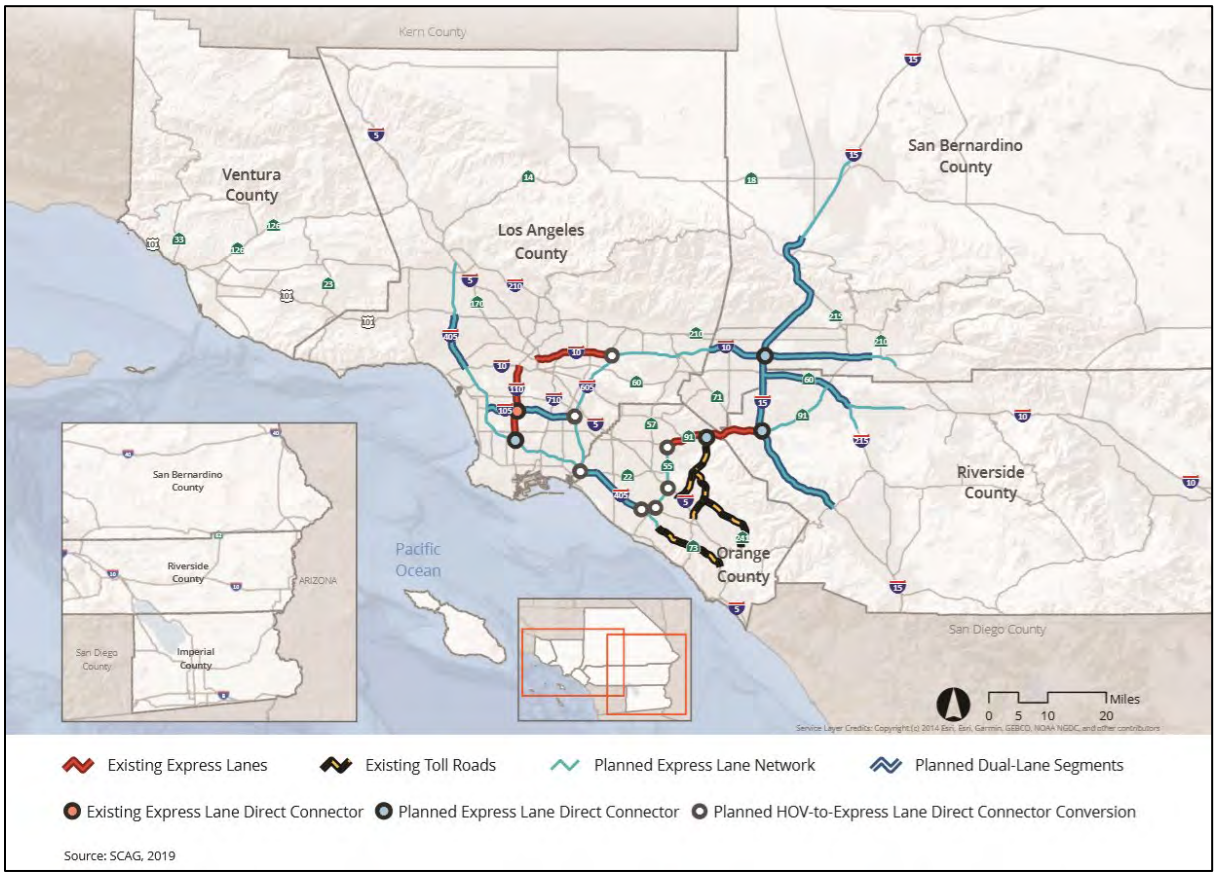
- Starting, in 2030, decreased congestion and increased transit, walking, and biking through a congestion pricing fee of $4 dollars[46] per entry in parts of Los Angeles County between Downtown Los Angeles and West Los Angeles starting as shown in Figure 5.

- Starting in 2025, decreased driving and increased transit, walking and biking by increasing parking pricing by 50 percent in 16 strategic job centers as shown in Table 6.

[45] This subsection includes information based on the data table and compares transportation indicators from the 2016 base year to 2035. Fee information and timeframe assumptions were taken from the data table and the 2020 RTP/SCS Chapter 4: Paying Our Way Forward and the Transportation Finance Technical Report.
[46] This bullet relies of data from SCAG's Model Sensitivity Test report, page 21.

- Starting in 2030, decreased overall roadway travel demand and increased transit, walking, and biking, with a new region-wide per-mile fee for drivers of 1.5 cents per mile[47].

Figure 4. Planned Regional Express Lane Network in SCAG



Source: SCAG, 2020 RTP/SCS

[47] The mileage-based user fee consists of three components, which are reflected in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions): $0.025 per mile is to replace gas taxes from 2030 (and therefore not included as an SCS strategy); $0.015 per mile as regional VMT fee from 2030; and $0.05 per mile as TNC user fee. In the activity-based modeling 1% (i.e., $0.005) of TNC user fee is applied to all VMT in the region in order to capture the proportional TNC population.

Table 6. Assumed Strategic Job Center Parking Pricing Locations

Downtown Los Angeles	Irvine-Spectrum	Loma Linda	North Hollywood
West Los Angeles	Anaheim-Fullerton	San Fernando Valley	Newport-Mesa
Pasadena	Long Beach	Torrance-Carson	Thousand Oaks-Newbury
SNA-Irvine	Glendale-Burbank	LAX	Sherman Oaks

Source: SCAG Submittal to CARB

Figure 5. Congestion Pricing Boundaries (Go Zone)

Source: SCAG, Mobility GO Zone & Pricing Feasibility Study

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed local and regional pricing strategies in the SCS. In particular, CARB staff looked for alignment against the project list adopted with the 2020 SCS to see whether the actions are planned and funded within the target timeframe. CARB staff also considered whether SCAG identified other region-specific funding or programs to support implementation of its pricing strategies. In addition, CARB staff looked for whether and how SCAG considered equity, which is a key implementation concern for pricing strategies.

CARB staff found that the 2020 SCS local and regional pricing assumptions are supported by some region-specific funding and planning program actions, as well as through some direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS project list includes some express lane corridor projects for funding by 2035 that SCAG assumed when quantifying the SCS's GHG benefits in 2035. The SCS also identifies some initial supporting actions to further support its pricing strategies. One action is to work with Caltrans and other local partners to identify options for governance and administration of revenues from facility-based pricing. Another action is to work with regional partners to develop pilot programs and pursue funding for piloting roadway pricing mechanisms, such as facility-based pricing (e.g., congestion pricing) and mileage-based fees, in partnership with the State, federal, and local agencies, and private sector organizations. SCAG also recently applied, in partnership with SACOG and SANDAG, for a Caltrans planning grant to design a pricing pilot.

Table 7 shows CARB staff's summary of SCAG's 2020 SCS local and regional pricing strategy commitments and associated supporting action and investments.

Table 7. SCAG's 2020 SCS Local and Regional Pricing Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Congestion Pricing	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy assumes a local road charge program of $4 dollar entry fee starting in 2030 in parts of Los Angeles County between Downtown Los Angeles and West Los Angeles. SCAG assumes $77.8 billion will be generated from this program. In 2019, SCAG prepared a Mobility Go Zone and Pricing Feasibility Study[48] to understand how cordon congestion pricing could be structured. SCAG continues to collaborate with local jurisdictions and LA Metro, community-based organizations (CBOs), business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. SCAG applied as an applicant for a Caltrans Sustainable Transportation Planning grant with SACOG and SANDAG to pilot roadway pricing mechanisms, however this bid was not successful.	Actions Identified: Yes. SCAG has made some initial steps to plan and analyze congestion pricing. However, CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires state enabling legislation and local support. Funding in the RTP/SCS Project List: No SCAG Program Funding Available: Somewhat. SCAG can provide funding, research and technical assistance, however, CARB is concerned

[48] More information can be found at https://www.scag.ca.gov/Documents/MobilityGoZone_Report_FINAL.pdf.

			that if this strategy is not implemented, SCAG's funding gap may not be filled and the implementation of other RTP/SCS strategies may be at risk. Additionally, more work needs to be done around program development and implementation, specifically around fee collection, revenue allocation, and equity considerations.
Job Center Parking	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy assumes a 50 percent increase in parking pricing in 16 regional jobs centers. SCAG assumes $77.8 billion will be generated from the local road charge program, a portion of which will come from the job center parking pricing. SCAG assumes increases in parking costs starting in 2025. SCAG will work with local jurisdictions in evaluating opportunities to implement parking pricing strategies for their job centers, and it has already initiated a data collection effort to better understand parking costs and utilization rates	Actions Identified: Yes. CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires local and private support and buy-in from stakeholders and the public regarding parking pricing, which makes it unclear whether implementation would reach assumed levels. Funding in the RTP/SCS Project List: N/A

			SCAG Program Funding Available: Somewhat. SCAG has funded and completed some research and coordination with local jurisdictions, but it is unclear how much of these efforts have resulted in changes to parking pricing.
Mileage-Based User Fee/TNC User Fee	Strategy contributes an unknown amount to the total -14.2% reduction from all on model strategies. Specific proportion not provided.	This strategy assumes fees on driving and includes a mileage based-user fee and a TNC user fee region-wide. For funding purposes, SCAG assumed a 4 cent mileage-based use fee, which includes a 2.5 cents per mile will be in place to replace the gas tax and a 1.5 cent fee per mile starting in 2030. The mileage base user fee is projected to generate $42.7 billion. SCAG also assumes a TNC user fee at about 5 cents per mile starting in 2021. SCAG assumes this program would generate $4.7 billion. SCAG, in collaboration with stakeholders, will pursue actions related to demonstrations and eventual full deployment of a mileage-based user fee system through research and evaluation of implementation cost and administrative methods for fee collection and revenue allocation. SCAG will work to engage communities to better understand equity concerns and explore opportunities for appropriate mitigations including exemptions and credits, as applicable. SCAG is an	Actions Identified: Yes. CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires congressional and state enabling legislation and local action. Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Somewhat. SCAG has funded and completed research and has coordinated with stakeholders. CARB staff is concerned that if this strategy is not implemented, SCAG's funding gap may not be filled and the

		active member of the Mileage-Based User Fee Alliance (MBUFA). As a member of MBUFA, SCAG has participated in and hosted meetings and shared findings from research studies. SCAG completed a legislatively-mandated live pilot demonstration in 2017 and has continued to support and coordinate with Caltrans on other efforts to explore the feasibility of road charges through a pay-at-the-pump demonstration program. LA Metro is also currently exploring a TNC fee.	implementation of other RTP/SCS strategies may be at risk. Additionally, more work needs to be done around program development and implementation, specifically around fee collection, and revenue allocation, and equity considerations.
Express Lane Pricing	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy includes investment in express lanes where drivers pay a toll to drive in these lanes. SCAG has planned expenditure of $13.4 billion to high-occupancy vehicles/express lanes in the project list. SCAG assumes express lanes will generate $32.7 billion in revenue. The project list builds on the implementation of the I-10 and I-110 Express Lanes in Los Angeles County and the recent extension of the SR-91 Express Lanes between Orange and Riverside counties. Implementation efforts underway include planned express lanes on I-105 in Los Angeles County, I-15 in Riverside County, I-15 and I-10 in San Bernardino County, and I-405 in Orange County and Los Angeles County. SCAG anticipates continued work with the region's county transportation commissions and Caltrans to further the regional express lane network with an update of SCAG's Regional Concept of Operations (ConOps).	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes, SCAG can provide funding, research and technical assistance.

		SCAG is currently in the process of reconvening its Regional Express Lanes Working Group to oversee updates to the Regional ConOps.	

In addition to its evaluation of the strategies and supporting actions, CARB staff's also looked for whether and how SCAG considered equity when developing its pricing strategies. CARB staff found that SCAG continues to collaborate with local jurisdictions and LA Metro, CBOs, business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. This included hosting a series of listening sessions to understand the concerns of environmental justice communities and to inform recommendations for an equity-focused outreach strategy.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the local pricing strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. CARB staff acknowledges the significant leadership and partnership work needed to realize the 2020 SCS pricing strategies. CARB staff are concerned that the strategy deployment assumptions for these strategies rely on programs and partnerships outside of SCAG's control, including local jurisdictions and private companies that do not have existing authority, ordinances, or programs in place to impose fees and parking pricing. Supporting actions that more squarely address these implementation steps need to be identified and implemented to achieve the emission reductions assumed in the 2020 SCS. SCAG will need to demonstrate further progress to implement these strategies by its next plan cycle for SCAG to continue receiving the full amount of GHG emission reductions assumed.

Electric Vehicle and New Mobility Strategy Commitments

SCAG has included five strategies related to electric vehicles (EV) and new mobility services, which include EV charging infrastructure, EV incentive programs, transit/TNC partnerships, bike share and micromobility, and car share. These strategies seek to accelerate the penetration of EVs in the region by providing infrastructure and incentives to help drivers switch to using EVs, supporting first-last mile partnerships to transit, and supporting shared fleets. The strategies are intended to support SCAG's goal of leveraging new transportation technologies and data-driven solutions to result in more efficient travel. These strategies will result in a total of 2.5 percent reduction in per capita GHG emissions.

SCS Planned Outcomes

These strategies translate into assumptions about the availability of EV-supportive infrastructure and incentives, transit/TNC partnerships, and new mobility fleets that will serve the region between 2016 and 2035[49]. Specifically, the plan assumes:

- 58,423 new EV charging connectors between 2020 to 2035 for a total of 68,571 region-wide to support electric vehicles in SCAG.
- Funding for subsidies and rebates for 100,000 purchases of new EVs between 2030 to 2035.
- Deployment of a transit/TNC partnership program around all Los Angeles Metro Rail and Bus Rapid Transit (BRT) stations in Los Angeles County between 2030 to 2035.
- Deployment of 167,176 bikes and scooters around all Transit Priority Areas and transit stations between 2020 to 2035.
- 150,000 residents participate in car share programs throughout all Neighborhood Mobility Areas[50] in 2035.

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed availability of EV-supportive infrastructure, EVs, and other new mobility services in the SCS. CARB staff looked for alignment against the project list adopted with the 2020 SCS to see whether the actions are planned and funded within the target timeframe. CARB staff also considered whether SCAG identified other

[49] This subsection includes information-based assumptions from SCAG's Technical Methodology, Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.
[50] Neighborhood Mobility Areas are areas with a high number of intersections, low observed travel speed, high mix of uses and high accessibility to "everyday" destinations. These are areas where complete streets and sustainability policies support and encourage replacing or reducing automobile use with other modes.

region-specific funding or technical assistance programs to support implementation of its EV and new mobility strategies.

CARB staff found that SCAG'S 2020 SCS EV and new mobility strategy assumptions are supported by some region-specific funding and planning program actions, as well as through some direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS project list includes EV infrastructure installation projects that are expected to be completed by 2035. In addition, SCAG's 2020 SCS carries over actions and programs from the 2016 SCS in support of EV charging, infrastructure and innovative education programs to support its new mobility strategies. These include the SCAG Electric Vehicle Program[51] and Department of Energy-designated Clean Cities Coalition[52] to accelerate the deployment of EV charging infrastructure. SCAG has and will continue to host events and create programming to help inform stakeholders in the region about new mobility.

Table 8 shows CARB staff's summary of SCAG's 2020 SCS EV and new mobility strategy commitments and associated supporting actions and investments.

[51] More information at: http://sustain.scag.ca.gov/Pages/AFV.aspx.
[52] More information at: http://cleancities.scag.ca.gov/Pages/default.aspx.

Table 8. SCAG's 2020 SCS EV and New Mobility Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Electric Vehicle Charging Infrastructure	-1.16%	This strategy supports increasing the number of EV charging stations to encourage adoption of EVs. SCAG assumes 58,423 new charging connectors will be implemented between 2020 to 2035 for a total of 68,571 region-wide to EVs. SCAG assumes that 100% of EVs in the region will have access to a charger and drive 13 electric miles a day. The project list includes $300 million for a Regional PEV Charger Program to provide charging infrastructure. In addition, SCAG has allocated $584,803 for its EV Readiness Program, which includes $400,000 to conduct an Electric Vehicle Charging Station Study. SCAG is working with local jurisdictions to accelerate the deployment of EV charging infrastructure through its Electric Vehicle Program[53] and the Department of Energy-designated Clean Cities Coalition. SCAG will continue to host events	Actions Identified: Yes. however, CARB staff found SCAG's assumptions that 100% of the EVs in the region will have access to a charger and will drive 13 miles on electricity a day to be aggressive. SCAG provided limited EV infrastructure location information and travel behavior data in the SCS, and CARB staff could not verify these assumptions. CARB staff recommends that SCAG collect local EV usage data and provide necessary policy commitments to support

[53] The EV Readiness Program seeks to prepare the Southern California region for EVs through plans, tools, and technical assistance. More information is available at https://scag.ca.gov/programs/Pages/RegionalElectric.aspx.

		and create programming to help inform stakeholders in the region about zero-emission vehicles and their supporting infrastructure. SCAG previously conducted a survey of all jurisdictions in the region to assess compliance with AB 1236[54], a bill that requires jurisdictions to streamline permitting for public charging stations. SCAG also created a Plug-In Electric Vehicle online mapping tool to help support charging siting decisions. SCAG plans to continue updating the tool. SCAG is currently funding a project that would create an electric vehicle charging station site suitability analysis for the region and create tailored plans and outreach to help 18 large and small jurisdictions in the region prepare for more charging. The results from the site suitability analysis are intended to be hosted on the Plug-In Electric Vehicle online mapping tool so they will be accessible to the public. The project is anticipated to start in Fall 2020.	these assumptions, or refine the existing assumption to be more conservative. Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes. SCAG has allocated funding for its EV Readiness Program and Electric Vehicle Charging Station Study. SCAG also continues to invest in local EV charging tools to support siting decisions.
Electric Vehicle Incentives	-0.60%	This strategy seeks to facilitate the purchase of EVs by offering purchase incentives. SCAG assumes 100,000 new EV purchases between 2030 to 2035 from this strategy region-wide. SCAG assumes that 100% of the new EVs purchased will be used everyday when calculating the eVMT reduction,	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes

[54] Assembly Bill 1236 (Chiu, Chapter 598, Statutes of 2015).

		whereas the travel survey indicates that only 65% of vehicles are used per day in the SCAG region. The project lists allocates $2 billion for a PEV Rebate Program. In addition, SCAG has allocated $584,803 for its EV Readiness Program, which seeks to increase rapid deployment of electric vehicles in the region. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG has stated that this strategy is not yet fully developed. SCAG stated that they will work with local partners to identify revenue streams to provide local EV purchase incentives. SCAG is currently in the initial scoping stages to identify appropriate public and private partners as well as to initiate a needs assessment and opportunities analysis.	SCAG Program Funding Available: Somewhat CARB is concerned that funding from pricing strategies is extremely uncertain and SCAG's assumptions may overestimate the GHG reductions from this strategy since it assumes 100% of EVs will be used on a daily basis, which is not supported by the data. This assumption may overestimate the eVMT and GHG reductions. CARB recommends SCAG collect and utilize local data on EV uptake and usage to inform its assumptions. Furthermore, SCAG should provide details around regional incentive programs, including who implements the programs, the rebate amounts, and who can receive these rebates/incentives. This is especially important when CARB staff evaluate the plan to ensure that the SCS

			strategy is surplus to State actions and incentives.
Transit/TNC Partnership Program	-0.04%	This strategy would subsidize transportation network company (TNC) rides as a first last mile strategy within a 2-mile radius around all Metro rail stations in Los Angeles County. The project list identifies funding for a TNC partnership with Lyft for $1.75 million for a first/last mile program for select transit stations with a 2019 completion year. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will continue to analyze the costs and benefits of subsidized pooled TNC trips within targeted areas. SCAG will address barriers to safe and efficient pick-up and drop-off strategies through its curbside management studies. If warranted, SCAG will develop funding for full program implementation as part of the next Connect SoCal cycle. SCAG participated with SANDAG, MTC, and the County of San Francisco on a statewide TNC data collection effort funded by a Caltrans grant. Data collected through this project will enable MPOs and planning	Actions Identified: Yes Funding in the RTP/SCS Project List: No The only Transit/ TNC partnership project on the project list appears to have already been completed. SCAG Program Funding Available: Somewhat CARB is concerned that funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in. While there are currently some first-last mile partnerships programs at specific transit stations in the region, such as Blue LA[55], which CARB is a partner on,

[55] Blue LA is an electric vehicle car-share program that provides vehicles at some transit stations and other locations in Los Angeles. More information is available at https://www.bluela.com/about-bluela.

		agencies to effectively model travel behavior and explore policies to guide these emerging modes.	there is no such program with TNCs that covers all the LA Metro Stations. SCAG needs to develop more specific actions around partnership activities and explain how these are distinct from efforts supported by CARB funding.
Bike Share & Micromobility	-0.30%	This strategy supports docked and dock-less bike sharing and e-scooters for short trips and first-last mile connections. SCAG assumes deployment of 167,176 bikes and scooters around all Transit Priority Areas and transit stations between 2020 to 2035. The project list allocates $9.86 million to bike share, including education and program implementation, providing bicycles, and bike share stations/kiosks. Furthermore, $153 million is identified in the project list for complete streets, new mobility, and curbspace management initiatives. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will promote research and analysis of best practices and proposed policies that address barriers to safe deployment of shared micromobility in the target areas. SCAG will leverage increased active transportation infrastructure such as protected bike lines to facilitate greater usage of micromobility. SCAG has completed a study of docked publicly run bike share systems, and will continue to analyze	Actions Identified: Yes. However, several communities within the SCAG region prohibit bike share and micromobility options within their jurisdictions. CARB staff recommend that SCAG develop a program or provide incentives to local jurisdictions and bike share and micromobility companies to encourage deployment around transit priority areas. Funding in the RTP/SCS Project List: Yes, however CARB recommends that SCAG clearly state if funding is going to bike share and micromobility projects, instead of using the broader term of new mobility as this could encompass other

		deployment of dockless shared bikes, e-bikes, and e-scooters.	transportation options not related to this strategy. SCAG Program Funding Available: Somewhat. SCAG has previously funded research, but has stated that the strategy will predominately be funded with pricing strategy revenues, as well as relies on private companies for deployment, which are both extremely uncertain.
Car Share	-0.44	This strategy supports car share, which allows for short-term rental of a vehicle. SCAG assumes 150,000 residents will participate in the car share programs throughout Neighborhood Mobility Areas by 2035. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will research and share best practices as part of its shared mobility policy development to support the program.	Actions Identified: Yes Funding in the RTP/SCS Project List: No SCAG Program Funding Available: Somewhat. SCAG will fund research, but has stated that the strategy will predominately be funded with pricing strategy revenues, as well as rely on private company deployment, which are both extremely uncertain.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the EV and new mobility strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. CARB staff found that the supporting actions for these strategies primarily rely on revenues from the mileage-based user fee and local pricing strategies to support the implementation of these new mobility strategies, as stated in the "Local and Regional Pricing Strategy Commitments" section above. CARB considers this risky because if these pricing strategies are not implemented then revenue will not be available to support these new mobility strategies.

Further, CARB staff found that the deployment assumptions within the 2020 SCS rely on programs and partnerships outside of SCAG's control, including reliance on new mobility providers, local jurisdictions, and private companies that often have no established programs in place. In addition, SCAG itself has stated that additional research, funding, or program development may be necessary for implementation of the EV incentives and transit/TNC partnerships strategies. This is concerning given the dynamic nature of these new mobility strategies and the degree to which these strategies are forecast to contribute to target achievement. SCAG will need to be vigilant about implementing these strategies though 2035 and making adjustments as necessary to ensure planned reductions and SB 375 goals are achieved.

Looking across all four policy analysis categories, CARB staff's analysis found that SCAG's 2020 SCS includes evidence of policy commitments for its strategies, that when implemented would meet the target. However, areas of concern for CARB staff are that many strategies still require funding sources, legislative authority, and program development to be implemented.

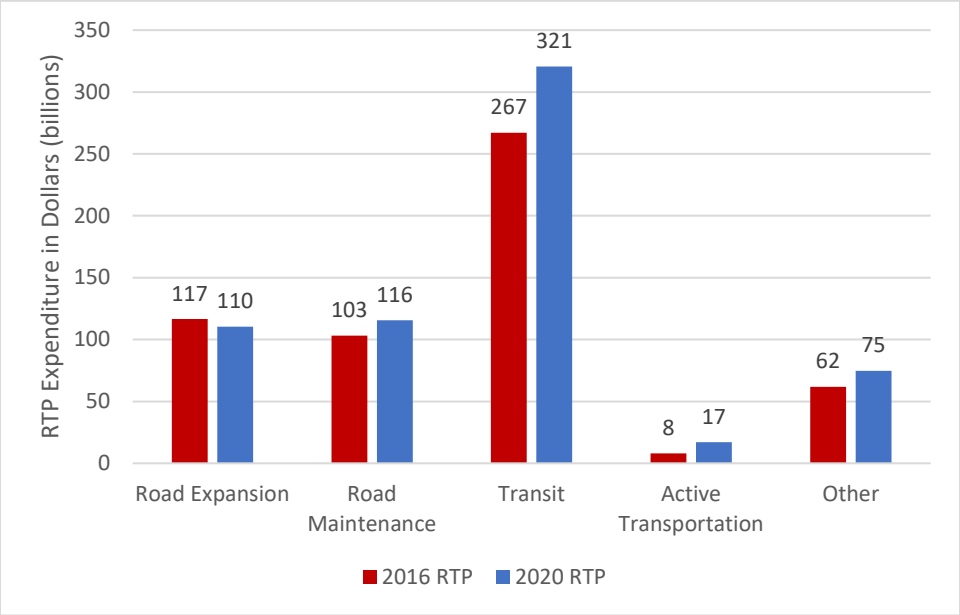
Investment Analysis

CARB staff evaluated whether the 2020 investments support the expected GHG emission reductions, by looking for evidence within the project list adopted with the 2020 SCS for commitments to funding SCS-consistent projects by 2035. CARB staff also qualitatively assessed the risk of delay to delivering projects that advance SCS goals based on assumed available funding sources.

Based on CARB staff's review of SCAG's project list, CARB staff found that the 2020 SCS included a number of projects in the project list for funding that would advance implementation of the SCS, as discussed in the "Policy Analysis" section of this report. For example, SCAG is increasing funding for transit and active transportation modes.

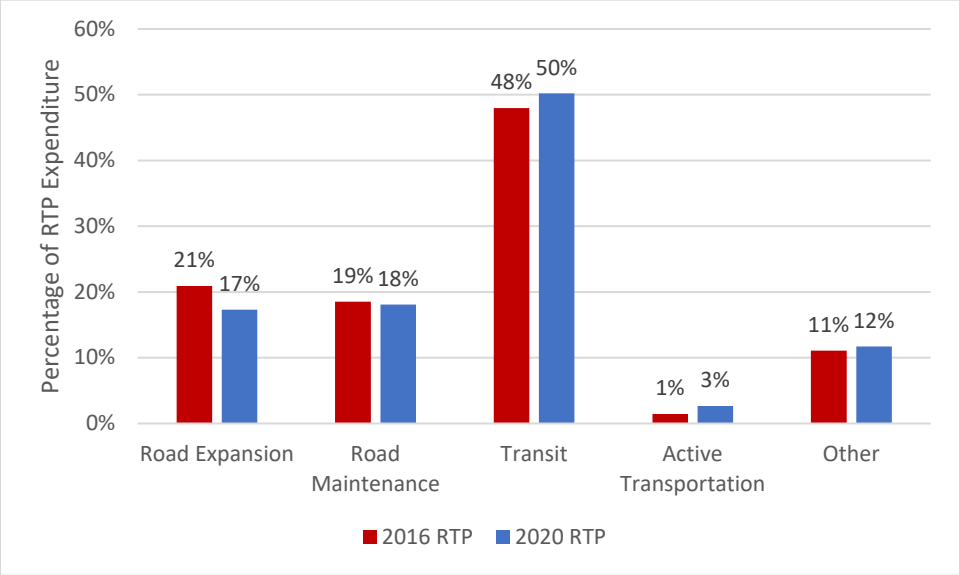
A comparison between the 2016 and 2020 SCS investments by mode are shown in Figure 6 and Figure 7. Total spending increased by nearly 13 percent, to approximately $639 billion compared to approximately $556 billion in the 2016 SCS. Of the total budget, approximately 35 percent is dedicated to road expansion, operations, and maintenance, 50 percent is for capital, operations and maintenance for transit, 3 percent is dedicated to active transportation, and the remaining 12 percent is for debt service obligations, transportation system management, other investments such as incentives, EV chargers, etc. Approximately 13 percent ($316 billion) is dedicated to operations and maintenance, which increased from $275.5 billion in the 2016 SCS. The budget for transit (capital projects and operation and maintenance) has increased 17 percent to $320.6 billion from $267.1 billion between the 2020 and 2016 SCSs respectively. Lastly, the bicycle and pedestrian improvements budgets increased 54 percent to $17.7 billion dollars from $8.1 billion in the last SCS.

Figure 6. Investment by Mode in SCAG's 2020 SCS Compared to the 2016 SCS (Total Dollars)



Source: SCAG 2016 RTP/SCS and 2020 RTP/SCS Expenditures Table 8

Figure 7. Investments by Mode in SCAG's 2020 SCS Compared to the 2016 SCS (Percent of Total Investment)



Source: SCAG 2016 RTP/SCS and 2020 RTP/SCS Expenditures Table 8

The increase in planned expenditure for transit, bike and pedestrian improvements is aligned with SCAG's assumptions around increased non-SOV mode share, increased transit ridership, and forecasted declines in VMT and GHG emissions. However, CARB staff is concerned with the risk of delivering SCS-supportive projects on the project list by 2035. As shown in Table 9, more than half of the plan's investments for transit/passenger rail and active transportation projects (which make up a portion of the "Other" expenditure category) are back loaded to after the SCS target year of 2035 (i.e., post 2035). Planned expenditures for transit/passenger rail and active transportation projects prior to 2035 (i.e., 2031-2035) are not necessarily associated with any firm funding sources, as they are anticipated to rely in part on revenue from the pricing strategies.

Table 9. SCAG SCS Investment Breakdown by Expenditure Category and Fiscal Year[56,57]

Expenditure Category	FY 2021-2025 (B$)	FY 2021-2025 (%)	FY 2026-2030 (B$)	FY 2026-2030 (%)	FY 2031-2035 (B$)	FY 2031-2035 (%)	FY 2036-2045 (B$)	FY 2036-2045 (%)	Total (B$)
Local Highway	$11.9	17%	$11.8	17%	$13.3	20%	$31.2	46%	$68.2
State Highway	$12.1	13%	$15.1	16%	$17.3	19%	$47.3	52%	$91.8
Transit/Passenger Rail	$38.0	12%	$48.0	15%	$71.1	22%	$163.5	51%	$320.6
Other	$15.3	10%	$21.3	13%	$31.6	20%	$90.1	57%	$158.3

Source: SCAG

The 2020 SCS does include new revenue assumptions from its new roadway user fee strategies. Of the new revenue assumed[58], $42.7 billion from 2030 to 2045 is from the mileage-based user fee strategy, which includes a TNC user fee that would separately generate $4.7 billion in revenue from 2021to 2045. The congestion pricing strategy would generate $77.8 billion from 2030 to 2045. Investment of these funds is not yet programmed toward specific projects, but SCAG anticipates these to support some of the SCS transportation and new mobility strategies[59]. While commitment of these

[56] Notes: $ amounts in billions. Local highway includes: arterials, and regionally significant local streets and roads Operation and Maintenance (O&M). State highways includes: High Occupancy Vehicle/Express Lanes, Mixed-Flow and Interchange Improvements, and State Highways (O&M), Transit/Passenger Rail includes: Transit, Passenger Rail, Transit (O&M), and Passenger Rail (O&M). Other includes: Goods Movement, TSM, Active Transportation, TDM, Other (Capital), and Debt Service.

[57] For financial analysis purposes, SCAG does not include pre-2020 projects, recognizing that the projects are complete. However, the Financially Constrained Project List, includes some pre-2020 projects, simply reflecting the programming of these projects in the current FTIP. These projects have already been obligated. Nevertheless, sponsoring agencies often keep the projects programmed during final contract close out.

[58] This section refers to investment information provided in SCAG's 2020 RTP/SCS Transportation Finance Technical Report.

[59] SCAG, Off-Model Trip and Emissions Data documentation.

potential funds toward SCS-supportive projects is helpful, CARB staff remains concerned that if the SCS pricing strategies are delayed or not implemented, transit and active transportation projects envisioned to be constructed between 2031 and 2035 will not be delivered on time or at all.

In addition, SCAG includes revenue assumptions around the Cap-and-Trade Program auction proceeds. Specifically, SCAG assumes the region will get $2.2 billion from Cap-and-Trade proceeds[60]. This forecast is based on current funding levels reported by the State Controller for the Low Carbon Transit Operations Program and award lists as reported by Caltrans. Given the uncertainty about future allowance prices, SCAG assumes annual growth to be flat and ends after 2030. CARB staff is concerned with these assumptions, as these dollars would be applied to support SCS implementation but are also not firm funding amounts, as program dollars are competitive and total amounts available vary by time period. SCS project funding could be further impacted based on changes to available transportation revenues due to the COVID-19 pandemic.

On the whole, CARB staff finds that the 2020 RTP/SCS project investments support the implementation of the 2020 SCS strategies and achievement of the SCS's estimated GHG reduction benefits. However, CARB staff have identified considerable risk to delivery of SCS-supportive projects on the project list by 2035, as they are not associated with any firm funding, particularly due to reliance on pricing strategies.

Plan Adjustment Analysis

The Plan Adjustment Analysis evaluates whether and what measures are being taken, as necessary, to correct course to meet an MPO's target if the region is falling behind on implementation of its SCS strategies. CARB staff reviewed how the implementation of SCAG's SCS performed to date using observed land use and transportation system data[61]. CARB staff found that SCAG is not on track to achieve its previous 2016 SCS planned outcomes for 2020 and 2035. Observed land use and travel data for the region shows declines in transit ridership and significant unrealized new development within infill areas in the region, which are inconsistent with the trends and values assumed in the 2016 SCS to meet the region's GHG reduction targets.

[60] SCAG, 2020 RTP/SCS Transportation Finance Technical Report.
[61] See "Tracking Implementation" section of Appendix C: MPO Reporting.

Given this finding, CARB staff looked for evidence that SCAG's 2020 SCS considered these challenges and either changed its SCS strategies, or put additional measures in place to accelerate implementation of its SCS strategies in order to stay on track to meet its GHG reduction target[62].

CARB staff's review of the 2020 SCS found that SCAG builds upon and expands land use and transportation strategies established over several planning cycles. SCAG also included several new strategies in the plan such as the transit/TNC partnership program, co-working, average vehicle ridership at job centers, parking deregulation in transit priority areas, new transit capital projects, TNC user fees, and congestion pricing. These new strategies are intended to help SCAG close the gap in order to meet its GHG reduction goals[63].

While preparing the 2020 SCS, SCAG reassessed strategies and benefits claimed in the last plan. SCAG removed the off-model strategy Neighborhood Electric Vehicles that was included in the 2016 RTP/SCS due to low market penetration and lack of implementation and incentives at the regional level[64]. SCAG also no longer anticipates GHG reduction from general TNC activity in the region based on new information about TNC trips[65], which suggested TNCs may not necessarily reduce VMT. SCAG only assumes reductions associated with TNCs through user fees and transit/TNC partnerships. The sections below describe other adjustments SCAG made to its assumptions, models, and strategies.

Key Assumption Changes

SCAG adjusted its 2035 baseline due to changes in e-commerce[66] and telemedicine[67], which reflects fewer light-duty vehicle trips. Under e-commerce, car trips may be replaced with heavy vehicle trips, while telemedicine is forecasted to replace certain types of medical trips. SCAG claims a combined 0.35 percent reduction of GHG

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[62] See "Incremental Progress" section of Appendix C: MPO Reporting for SCAG's assessment of how changes to its SCS strategies between the 2016 SCS and 2020 SCS contributed to achievement of its 2035 target.
[63] SCAG, 2020 RTP/SCS, Chapter 0 Making Connections, page 4.
[64] Technical Methodology to Estimate Greenhouse Gas Emissions for Connect SoCal (2020-2045 Regional Transportation Plan/Sustainable Communities Strategy)
Southern California Association of Governments
[65] SCAG SCS Submittal Overview document.
[66] E-commerce refers to the buying and selling of goods or services using the internet.
[67] Telemedicine refers to the use of telecommunication technology for the use of virtual doctor's visits.

emissions from these activities by 2035. This is comparable to the region-wide bike share and micromobility strategy, which is envisioned to achieve a 0.30 percent reduction of GHG emissions. These baseline adjustments result in GHG emission reductions from non-SCS strategies.

Model Changes

SCAG developed and maintained a traditional four-step travel demand forecasting model for its first-and second-round RTP/SCSs. Due to the limitations in the model sensitivity to policies, SCAG introduced its newly developed ABM for the 2020 RTP/SCS. This enhanced SCAG's travel demand model sensitivities to land use and transportation policies, including newly introduced transportation services such as bus rapid transit and high-speed rail. The ABM was calibrated and validated to 2016 travel conditions using multiple data sources including traffic counts from Highway Performance Monitoring System (HPMS) and speed data from the Performance Measurement System (PeMS). The modeled results are consistent with those data sources and concluded by the model peer-review committee to meet current state of practice comparing to peer MPOs[68].

CARB staff observed the following policy changes and adjustments between SCAG's 2020 SCS and 2016 SCS.

Land Use and Development

- To overcome previous challenges, address community feedback, and accelerate its efforts to meet its target, SCAG has expanded its priority growth areas and added new constrained areas, to help catalyze infill development.

- SCAG included a new policy to support the creation of EIFDs to pave the way for economic development and reduce the cost of housing construction in transit-oriented locations.

Transportation

SCAG introduced five new transportation strategies compared to the 2016 SCS, which include job center parking, co-working, average vehicle ridership for job centers,

[68] SCAG, 2016 Regional Travel Demand Model and Model Validation. April 2020.

multimodal dedicated lanes, and parking deregulation in transit priority areas. SCAG also updated its assumptions for transportation strategies from the 2016 SCS as follows:

- Adjusted its transit assumptions between the 2016 SCS and the 2020 SCS for the 2035 target year. Total transit operational miles assumptions increased from 715,412 to 765,171 (7 percent) in 2035.

- Increased active transportation, bike and pedestrian lane mile assumptions for the 2035 target year from 11,500 to 18,150 (58 percent increase) between the 2016 SCS and 2020 SCS.

Roadway Pricing

- SCAG introduced two new pricing assumptions compared to the 2016 SCS, which include congestion pricing and the TNC user fees that are intended to both help address long-term transportation funding sustainability concerns, while also helping to support achievement of VMT reduction. As part of this SCAG is working with Caltrans and other local partners to identify options for governance and administration of revenues from congestion-based pricing, in coordination with ongoing studies. SCAG also continues to collaborate with local jurisdictions and LA Metro, community-based organizations (CBOs), business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. SCAG also updated its assumptions around mileage-based user fees and express lanes, which were already part of the 2016 SCS. Specifically, in the 2016 SCS, the mileage user fee was assumed to be 2.8 cents per mile whereas in the 2020 SCS it assumed to be 2.0 cents per mile[69], which includes the new TNC user fee.

New Mobility Policies

SCAG has adopted three new strategies compared to the 2016 SCS, which include new EV incentives, bike share and micromobility, and transit/TNC partnerships. SCAG has also adopted new actions in support of incorporating these new mobility options into the region, including:

[69] The 2.0 cents per mile includes 1.5 cents per mile as a regional VMT fee and 0.5 cents per mile for a TNC user fee.

- Work with local partners to identify revenue streams to provide local EV purchase incentives.

- Promote research, and analysis of best practices and proposed policies that address barriers to safe deployment of shared micromobility in the target areas. SCAG will leverage increased active transportation infrastructure such as protected bike lines to facilitate more usage of micromobility. SCAG has completed a study of docked publicly run bike share systems, and will continue to analyze deployment of dockless shared bikes, e-bikes, and e-scooters.

- Continue to analyze the costs and benefits of subsidized, pooled TNC trips within targeted areas. SCAG will address barriers to safe and efficient pick up and drop off strategies through its curbside management studies. If warranted, SCAG will develop funding for a full program implementation as part of the next Connect SoCal cycle.

CARB staff finds that the 2020 SCS shows evidence of changes and adjustments made that are intended to help meet the region's more aggressive targets and are based on lessons learned from the previous SCS.

CARB's Determination

ACCEPT

(WITH SIGNIFICANT CONCERNS REGARDING IMPLEMENTATION)

Based on a review of all available evidence and in consideration of CARB's 2019 Evaluation Guidelines, CARB staff accepts SCAG's determination that its 2020 SCS would meet the target of a 19 percent reduction by 2035, compared to 2005 levels, when fully implemented.

CARB staff commends SCAG and its member jurisdictions for the innovative thinking and leadership shown in adopting new pathways for the region to address smart growth and increase mobility choices in its 2020 SCS. Furthermore, the region's addition of pricing mechanisms in the 2020 SCS, through express lanes, congestion pricing, and mileage-based/TNC user fees demonstrates leadership on strategies that can help provide mobility benefits to residents and achieve the region's GHG target. CARB staff's policy evaluation of the 2020 SCS concludes that the plan includes: sufficiently supportive indicator trends; near-term policy support actions; active transportation, transit, and other SCS-supportive project investments; and adjustments in response to observed implementation challenges that when fully implemented, will lead the Southern California region to achieve its 2035 GHG reduction target.

CARB staff, however, continues to have serious concerns with the 2020 SCS regarding SCAG's approach to its 2020 target determination and whether SCAG and its local members are putting in place the actions necessary to fully implement the region's SCS strategies by 2035. Specific to the 2020 target determination, SCAG made a determination as to whether its 2020 SCS meets the 8 percent GHG reduction target by 2020 compared with 2005 levels based on modeled 2020 forecast values, which it submitted to CARB as evidence for its determination. While SCAG appropriately provided a determination to CARB, its reliance on modeled evidence without consideration of observed data, as called for in CARB's SCS evaluation guidelines, was inappropriate. Statute requires MPOs to show how they will meet the CARB-set targets for years 2020 and 2035. The overarching intent of SB 375 was to enact the magnitude of change that would lead to actual GHG reductions from passenger vehicles and light trucks in line with the targets set by CARB. Failing to adequately evaluate and determine whether the strategies would meet the 2020 target could hinder this goal by allowing backsliding on GHG reductions achieved or back loading of strategies to meet the 2035 target, both of which threaten the ability of the region to meet the targets.

This would be counter to the intent of SB 375 and frustrate California's ability to meet its climate commitments, which depend on local land use and transportation actions to reduce transportation GHG emissions. For these reasons, SCAG and every MPO should submit a determination as to whether it will meet the 2020 target in every SCS. As with the 2035 target, for the 2020 target determination, SCAG would review the modeling data and identify measures and strategies utilized to meet the 2020 target. Consistent with the 2019 Evaluation Guidelines, SCAG would also compare available observed data with performance indicators in accordance with the Tracking Implementation reporting component to understand whether the region is moving in a direction consistent with the planned outcomes from the SCS to meet the 2020 target. If the region is not on track to meet the target, SCAG would then need to identify policy and investment interventions to get the region on track to meet the 2020 target and identify when the target would be met, consistent with the Plan Adjustment section of the 2019 Evaluation Guidelines.

While SCAG's plan forecasts bold changes to the region's infill, transit and roadway network management by 2035, the implementation actions identified present concerns about whether they can or will be implemented as described. Many of the SCAG's key actions rely on others to implement them and there are no existing commitments to do so. For example, the average vehicle ridership for job centers, parking deregulation in transit priority areas, co-working, and job center parking strategies require local or private support and buy-in to implement. Additionally, many of the funding sources identified to support the SCS strategies, key actions, and projects, rely on legislative authority for implementing its congestion pricing and mileage-based user fee strategies that may or may not be forthcoming. Furthermore, transit and active transportation projects that will support GHG emission reductions are back loaded to occur around or after 2035, suggesting they will not be implemented in time to meet the 2035 target.

To support successful implementation of the SCS and achievement of SB 375's goals, and to continue fully supporting the GHG benefits claimed in the 2020 SCS, SCAG and its local members will need to undertake additional actions to deliver and monitor its SCS strategies, as well as quickly adjust its strategies for any lost opportunities that need to be replaced or mitigated. To address these concerns, CARB staff has the following recommendations and requests SCAG set up regular monitoring of the implementation actions associated with its SCS strategies in consultation with CARB and other relevant agencies.

Recommendations

- Deprogram Capacity Expansion Projects and Prioritize Funding for Transportation Projects that Advance SCS Implementation and Goals

  SCAG should develop a more rigorous vetting process for the project list, including developing a project analysis tool for local agencies to use when submitting projects for consideration in the RTP project list. Specifically, the analysis tool should consider how the proposed transportation projects fit in with the SCS's identified priority growth areas and constrained areas, as well as SCS strategy deployment assumptions. Projects that are well-aligned with the SCS should be prioritized over projects that are not well-aligned, and SCAG should work with its members to deprogram capacity expansion projects, especially those that are counter to the region's adopted SCS land use and housing strategy, and will increase VMT.

  SCAG should prioritize projects that will support growth in the region's priority growth areas (which include job centers, high-quality transit areas, and neighborhood mobility areas) that foster lower VMT when seeking funding through the Solutions for Congested Corridors Program (SCCP) and Trade Corridor Enhancement Program (TCEP), under SB 1.

  To help maintain the years of regional collaboration that informed SCAG's SCS and both the region's and the State's ability to meet their respective climate and air quality targets, future local sales tax measures in the region should limit funding for roadway capacity expansion projects that are not well-aligned with the region's adopted SCS land use and housing strategy. Local sales tax measures comprise approximately 57 percent of the Southern California region's projected local funding. These measures list specific projects, locking them in for years or decades. Often, these measures do not fully fund their listed projects, and go on to capture a region's otherwise-flexible State and federal funds. Within the SCAG region, some of these measures have been supportive of SB 375 goals, while other projects have not. Prioritizing projects that decrease VMT is more important than ever to achieve the region's GHG reductions targets and SB 375's goals. Going forward, investments should focus on transit, active transportation, transportation electrification, and increasing mobility options that discourage solo driving and reduce VMT.

- Monitor Implementation of the Adopted SCS Strategies, Actions, and Transportation Project List

  SCAG continues to include carry-over strategies from its previous 2012 and 2016 SCSs, however, it is unclear how successful these strategies have been. SCAG should track and report on the implementation of all strategies, including off-model strategies, and provide data-supported metrics to better assess them. For example, SCAG mentioned to CARB staff that there are challenges around data collection around Safe Routes to School and that while many agencies currently operate Safe Routes to School programs, there is no centralized database for California or the SCAG region. CARB staff encourages SCAG to pursue a regional central database to track program development. Tracking of these strategies like this will help inform SCAG, its member agencies, and the public on what strategies are performing well, what strategies should be adjusted, or if strategies should be removed. This will also help inform what types of projects and investments the region should consider making in order to achieve the SB 375 GHG emission reduction targets.

  SCAG will need to be vigilant about monitoring the balance of transportation projects through 2035 to ensure planned reductions are achieved. Delays or removals of transit and active transportation projects will prevent SCAG from meeting its GHG emission reduction target. Amendments to the project list should be accompanied by recalculation and discussion of whether and how SCS target achievement is maintained.

- Accelerating Infill to Further SCS Implementation and Goals

  SCAG's SCS provides important growth assumptions regarding regional growth constraints to preserve natural and working lands, and limit development in potentially risky locations such as at the wildland urban interface. However, these growth constraints are not yet based on local zoning restrictions. Jurisdictions should align planning and local policies and actions that support development/redevelopment for growth with the goals of the SCS and RHNA. Examples include actions to update general and specific plans, zoning for higher density, conservation protections of natural and working lands, zoning for development away from high-risk locations such as those that are vulnerable to fire, flood, or sea level rise areas, and site inventory and feasibility studies for infill potential.

In the next SCS, SCAG's Open Space and Natural Lands Mitigation Program should be fully developed to support growth constraint assumptions in the model. Furthermore, SCAG should provide CARB staff with development by SCAG's place types, not just by priority growth areas, to allow better comparison of planned and projected development in the region.

- State and Regional Partnership on Pricing Pilot Options

  SCAG will need to engage in close collaboration with State partners at Caltrans and CalSTA, local partners, and private companies to ensure successful implementation of the pricing mechanisms identified in the 2020 SCS. Given that SCAG's pilot project grant application was not funded this round, SCAG needs to work with both Caltrans and CalSTA on identifying alternative joint actions for advancing pilot work in the next four years. Furthermore, SCAG needs to work with local jurisdictions across the region to rapidly implement TNC user fees in order to meet the assumed 2021 implementation timeframe. CARB expects SCAG to identify further progress on implementation of these strategies in its next SCS in order to continue receiving credit for the full GHG emission reductions assumed in this 2020 SCS.

- Improve GHG Benefit Estimates for 2020 SCS New Strategies

  SCAG should use assumptions supported by evidence through local data for all strategies. Strategy development should consider the existing level of participation and implementation status, and be tracked for future implementation. SCAG should be more specific in the next SCS about what its strategies are, how its strategies are distinct from one another, and how its policy commitments align with its quantification assumptions and plan outcomes. CARB staff expects SCAG to provide more details on how supporting actions are consistent with and reflected through strategy deployment assumptions in the next SCS to continue to fully support the GHG benefits claimed by SCAG. For more information, refer to the "Policy Analysis" section.

- Provide All Trend Analysis Metrics

  SCAG's SCS submittal lacks data on transit seat utilization as well as 2005 data on average vehicle trip length, daily transit ridership, and average travel time by mode, which are part of the eight trends that CARB staff analyzes as part of the trend analysis. This information is necessary to demonstrate the growth in public

transit ridership, mode shift and support transit, and active transportation strategies in the SCS. Providing more meaningful performance indicators like these may require SCAG to backcast the 2005 performance indicators and estimate the missing indicators using its new activity-based travel demand model. CARB requests that these metrics be included in SCAG's next SCS.

- Improve Modeling and Data

  SCAG's activity-based travel demand model (ABM) is relatively new and therefore requires continuous improvements as new data emerge. CARB staff recommends that SCAG improve the sensitivity of the model to household income and pricing strategies. In addition, SCAG should conduct the sensitivity analysis to modeled strategies such as work-from-home, cordon pricing, transportation demand management, and mileage-based user fee. Specifically, CARB staff recommends that the model incorporate TNCs and autonomous vehicles as part of the mode choice model of the ABM.

  In terms of off-model strategies, SCAG may have overestimated the GHG emission reduction benefits due to conflicting and inaccurate assumptions. For example, SCAG assumes that on average 65 percent of household vehicles are used in a typical day as part of travel demand modeling, however, when estimating benefits for electric vehicle (EV) incentives program, it assumes that 100 percent of the new EVs will be used for calculating the electric vehicle miles traveled (eVMT). Similarly, SCAG has also assumed zero-vehicle households will have zero-VMT for quantifying off-model strategies. These assumptions may have overestimated the benefits from some of the off-model strategies. CARB staff recommends that SCAG make its assumptions consistent across both modeling and off-model quantifications, and support them with local data. In addition, SCAG should provide the detailed VMT and GHG reductions for individual strategies and document its estimation process, assumptions, and current participation rate for each off-model strategy.

  In the current SCS, SCAG has incorporated two baseline adjustments (i.e., telemedicine and e-commerce) to demonstrate its achievement of the 2035 target. However, as indicated above, several key assumptions related to both baseline adjustments are not well-supported by local data. Therefore, CARB staff recommends that SCAG also collect local data prior to including any baseline GHG and VMT adjustments, such as through before and after travel surveys for things such as telemedicine and e-commerce or due to COVID-related impacts.

CARB staff will only consider baseline adjustments that are well-supported by local, regional, or state travel survey data.

- Analyze Induced Travel Demand

  Induced travel is a phenomenon that is caused by roadway expansion that increases VMT when drivers reroute from congested roads to longer, uncongested roads, shift from alternative modes to driving, or make more frequent trips. Road expansion projects can also lead to long-term induced travel in the region. Long-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. Induced travel is important to analyze as it can affect VMT and GHG emissions. SCAG has included several road expansion projects in its 2020 SCS. Currently SCAG is using an elasticity-based approach to assess the long-term effect of induced travel. While this approach can estimate the magnitude of VMT change, it cannot identify the geographic areas of induced travel or synergistic effects of induced travel with other strategies, and thus may not be directly helpful to future planning and mitigation actions. CARB staff recommends that SCAG continue to explore methods that can analyze the long-term induced travel demands of road expansion more thoroughly in future SCSs, using an integrated land use and travel demand model that captures change in transportation investments or neighborhood changes (residential and employment locations). Further, this will improve the capability to analyze the impact of land use policies such as smart growth strategies, transit-oriented development, and bike/pedestrian-friendly developments on travel demand.

Appendix A: SCAG's 2020 SCS Strategy Table

This is a summary table based on SCAG's submittal that compares the key land use and transportation strategies between the 2016 and 2020 SCSs. This table also illustrates how GHG emissions were estimated for each strategy.

Category: 2020 SCS Strategy Name	New/Carryover Strategy from 2016 SCS	Analysis Type	Estimated GHG Emission Reduction in 2035
Land Use & Housing: Infill Development & Increased Density Near Transit Infrastructure and Shorter Trips Through Jobs/Housing Balance and Complete Communities *Transportation:* Transportation Demand Management, New Transit Capital Projects *Local & Regional Pricing*: Congestion Pricing, Mileage-Based User Fee/ TNC User Fee, Express Lane Pricing	Congestion Pricing (New) , Mileage-Based User Fee/ TNC User Fee (New) All Other Strategies (Carryover)	On-Model	-14.2%

Category: SCS Strategy	New/Carryover Strategy from 2016 SCS	Analysis Type	Estimated GHG Emission Reduction in 2035
Transportation: Average Vehicle Ridership for Job Centers	New	Off-Model	-0.64%
Transportation: Parking Deregulation in Transit Priority Areas	New	Off-Model	-0.43%
Transportation: Co-Working	New	Off-Model	-0.14%
Transportation: Improved Pedestrian Infrastructure	Carryover	Off-Model	-0.10%
Transportation: Safe Routes to School	Carryover	Off-Model	-0.20%
Transportation: Multimodal Dedicated Lanes	New	Off-Model	-0.40%
New Mobility: Electric Vehicle Charging Infrastructure	Carryover	Off-Model	-1.16%
New Mobility: Electric Vehicle Incentives	New	Off-Model	-0.60%

New Mobility: Transit/TNC Partnership Program	New	Off-Model	-0.04%
New Mobility: Bike Share & Micromobility	New	Off-Model	-0.30%
New Mobility: Car Share	Carryover	Off-Model	-0.44%
Telemedicine[70]	New	Baseline Adjustment*	-0.15%
On-line Shopping/E-Commerce[71]	New	Baseline Adjustment*	-0.20%
Total Reduction			**19%**

[70] SCAG is claiming GHG reductions from Telemedicine, which is a baseline adjustment.
[71] SCAG is claiming GHG reductions from On-Line Shopping/ E-Commerce, which is a baseline adjustment.

Appendix B: Data Table

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Socioeconomic and Demographic Data									
Modeled Population	17,498,000	18,832,000	19,518,000	19,518,000	21,445,000	21,443,000	22,506,000	22,504,000	Travel Demand Model Input
Modeled Residents	17,161,000	18,512,000	19,194,000	19,194,000	21,115,000	21,109,000	22,172,000	22,164,000	Travel Demand Model Input
Vehicle Operating Costs (2011$/mile)	17.4500	16.7037	19.8945	19.8945	22.9429	24.4929	23.5147	25.0647	Travel Demand Model Input
Average Toll Price ($/mile)	N/A(e)	$0.540 to $6.440 fixed tolls; $0.240 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $2.651 per-mile tolls; $3.407 fixed cordon tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $2.651 per-mile tolls; $3.407 fixed cordon tolls	Travel Demand Model Input
Average median Household Income ($/year) ($2011)	$52,712	$57,079	$57,963	$57,963	$57,650	$57,555	$56,609	$57,269	Travel Demand Model Input
Total Number of Households	5,650,000	6,012,000	6,334,000	6,333,000	7,174,000	7,170,000	7,639,000	7,633,000	Travel Demand Model Input
Total Number of Jobs	7,771,000	8,389,000	8,696,000	8,695,000	9,567,000	9,566,000	10,050,000	10,049,000	Travel Demand Model Input
Land Use Data									

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Total Developed Acres	1,695,000	2,375,000	N/A	N/A	N/A	N/A	2,772,000	2,654,000	Travel Demand Model Input/ GIS
Total Housing Units	5,650,000	6,531,000	6,892,000	6,894,000	7,828,000	7,830,000	8,346,000	8,346,000	Travel Demand Model Input
Total Single-Family Housing Units (du)	3,090,000	3,601,000	3,808,000	3,680,000	4,353,000	3,994,000	4,654,000	4,150,000	Travel Demand Model Input
Share of Single-Family Housing Units (%)	N/A	55.1%	55.3%	53.4%	55.6%	51.0%	55.8%	49.7%	Calculated (Total single-family units/ total housing units)
Total Multi-Family Housing Units (du)	2,560,000	2,930,000	3,084,000	3,214,000	3,475,000	3,836,000	3,692,000	4,197,000	Travel Demand Model Input
Share of Multi-Family Housing Units (%)	N/A	44.9%	44.7%	46.6%	44.4%	49.0%	44.2%	50.3%	Calculated: (Total multi-family units/ total housing units)
Total Housing Units Within ½-Mile of a High-Quality Transit Station	N/A	2,102,606	2,229,822	2,243,518	2,654,445	2,838,525	2,825,188	3,336,191	Travel Demand Model Input/GIS
Total Jobs Within ½-Mile of a High Quality Transit Station	N/A	3,556,044	3,698,996	3,727,315	4,159,169	4,590,854	4,330,974	5,247,264	Travel Demand Model Input
Transportation Network Data									
Freeway and General Purpose Lanes –Mixed	10,795	11,148	11,194	11,194	11,319	11,558	11,336	11,676	Travel Demand Model Input

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Flow, auxiliary, etc., (lane miles)									
Freeway Toll Lanes (lanes miles)	N/A	414	493	493	754	1,370	754	1,464	Travel Demand Model Input
Freeway HOV Lanes (lane miles)	N/A	936	933	933	966	749	966	866	Travel Demand Model Input
Arterial/Expressway (lane miles)	N/A	36,495	36,813	36,813	36,968	38,861	37,049	39,848	Travel Demand Model Input
Collector (lane miles)	N/A	22,464	22,495	22,501	22,565	23,598	22,569	24,060	Travel Demand Model Input
Average Transit Headway (minutes)	N/A	70.5	70.1	70.1	67.9	65.8	67.9	64.8	Travel Demand Model Input
Total Transit Revenue (Operation) miles	N/A	615,067	625,984	625,987	663,664	765,171	663,673	841,099	Travel Demand Model Input
Transit Total Daily Vehicles Service Hours	N/A	47,556	48,163	48,163	50,563	53,978	50,564	59,485	Travel Demand Model Input
Bike and Pedestrian Lane (Class I, II, & IV) miles	N/A	7,992	8,973	10,107	12,762	18,150	15,288	23,512	Travel Demand Model Input
Plan Performance Indicators									
Household Vehicle Ownership	1.97	1.90	1.93	1.91	1.91	1.88	1.91	1.86	Travel Demand Model Output
Average Trip Length (miles/day):									
Drive Alone	11.4	12.1	11.9	11.9	11.5	11.7	11.3	11.5	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Shared Ride	N/A	7.6	7.4	7.4	7.4	7.3	7.3	7.2	Travel Demand Model Output
Public Transit	N/A	7.3	7.5	7.6	8.2	8.8	8.2	8.9	Travel Demand Model Output
Bike	N/A	1.7	1.7	1.7	1.8	1.8	1.8	1.9	Travel Demand Model Output
Walk	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.3	Travel Demand Model Output
Average Travel Time by Trip Purpose (minutes)									
Commute Trip	N/A	32.3	31.9	31.7	31.8	30.4	32.1	30.3	Travel Demand Model Output
Non-Commute Trip	N/A	13.3	13.1	13.1	13.2	13.2	13.4	13.3	Travel Demand Model Output
Average Travel Time by Mode (minutes):									
Drive Alone	19.3	20.0	19.6	19.5	19.1	17.9	19.1	17.1	Travel Demand Model Output
Shared Ride	N/A	13.0	12.8	12.7	12.8	12.2	13.0	12.2	Travel Demand Model Output
Public Transit	N/A	39.1	40.1	40.4	43.4	45.4	44.0	46.3	Travel Demand Model Output
Bike	N/A	8.5	8.6	8.7	8.9	9.1	9.1	9.4	Travel Demand Model Output
Walk	22.7	24.8	24.8	24.9	24.9	25.1	25.0	25.1	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Average Travel Time for Low-income Populations (minutes) (Household income <$28,000 in 2011$	N/A	16.8	16.6	16.6	16.9	17.2	17.1	17.5	Travel Demand Model Output
Mode Share (%)									
Drive Alone	46.5%	36.0%	36.8%	36.6%	36.8%	35.8%	37.0%	35.4%	Travel Demand Model Output
Shared Ride	41.9%	51.7%	50.9%	50.8%	50.2%	49.5%	50.1%	49.2%	Travel Demand Model Output
Public Transit	2.3%	3.2%	3.3%	3.4%	3.8%	4.7%	3.6%	4.8%	Travel Demand Model Output
Bike	0.9%	1.3%	1.3%	1.4%	1.5%	1.8%	1.6%	2.1%	Travel Demand Model Output
Walk	8.4%	7.8%	7.7%	7.9%	7.7%	8.3%	7.7%	8.6%	Travel Demand Model Output
Transit Ridership (Average daily boardings)	N/A	2,074,697	2,312,950	2,356,182	3,156,267	4,469,295	3,030,909	5,070,390	Travel Demand Model Output
Total VMT per weekday (all vehicle classes: LM + HDT+Others) (miles)	N/A	462,912,495	468,587,665	465,543,311	507,300,450	489,908,219	539,097,782	514,683,804	Travel Demand Model Output
Total SB375VMT per weekday for passenger vehicles	399,661,000	426,710,974	430,202,438	427,182,651	459,381,311	418,738,693	480,763,666	431,393,513	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
(CARB vehicle classes LDA, LDT1, LDT2, and MDV) (miles) (a)									
Total LM VMT per weekday for passenger vehicles (ARB vehicle classes of LDA, LDT1, LDT2, MCY and MDV) (miles)	N/A	428,985,427	432,588,134	429,553,186	461,959,567	444,644,860	483,459,311	459,428,299	Travel Demand Model Output
Total II (Internal) LM VMT per weekday for passenger vehicles (miles)	365,374,000	394,027,371	394,684,677	391,639,899	414,401,050	399,312,344	426,791,054	406,309,573	Travel Demand Model Output
Total IX/XI LM VMT per weekday for passenger vehicles (miles)	31,269,000	31,997,613	34,818,112	34,827,285	43,929,775	41,745,530	52,602,986	49,093,189	Travel Demand Model Output
Total XX LM VMT per weekday for passenger vehicles (miles)	3,018,000	2,960,442	3,085,345	3,086,002	3,628,742	3,586,986	4,065,271	4,025,537	Travel Demand Model Output
SB 375 VMT per capita (a),(b)	23.29	23.05	22.41	22.26	21.76	19.84	21.68	19.46	Calculated: Total SB375VMT / Modeled residents
GHG Emissions Data									
Total CO2 emissions per weekday	N/A	235,512	217,290	216,180	175,955	170,792	189,230	181,569	EMFAC Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
(all vehicle class: LM + HDT+Others, w/ all measures)) (tons/day)									
Total SB375 CO2 emissions per weekday for passenger vehicles (CARB vehicle classes LDA, LDT1, LDT2, and MDV) (tons/day) (a)	204,040	205,049	205,567	204,251	219,862	198,099	231,494	204,416	EMFAC Model Output
Total LM CO2 emissions per weekday for passenger vehicles (ARB vehicle classes LDA, LDT1, LDT2, MCY and MDV w/ all measures) (tons)	N/A	188,447	167,828	166,753	115,868	111,014	114,848	108,150	EMFAC Model Output
Total II (Internal) LM CO2 emissions per weekday for passenger vehicles w/ all measures (tons)	187,090	173,090	153,123	152,035	103,939	99,696	101,386	95,646	EMFAC Model Output
Total IX/XI trip LM CO2 emissions per weekday	16,010	14,056	13,508	13,520	11,018	10,423	12,496	11,557	EMFAC Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
for passenger vehicles w/ all measures (tons)									
Total XX trip LM CO2 emissions per weekday for passenger vehicles w/ all measures (tons)	1,550	1,300	1,197	1,198	910	896	966	948	EMFAC Model Output
SB 375 CO2 per capita (lbs./day) (a),(b)	23.7801	22.1532	21.4201	21.2833	20.8252	18.7694	20.8814	18.4454	Calculated: Total SB375 CO2 /Modeled residents * 2000 lbs./ton
EMFAC Adjustment Factor	N/A	N/A	2.21%	2.21%	1.95%	1.95%	N/A	N/A	CARB Methodology for Estimating CO2 Adjustment
Off-Model CO2 Emissions Reductions (%)									
Tele-Medicine and E-Commerce	N/A	N/A	N/A	N/A	N/A	-0.35%	N/A	-0.38%	MPO Estimated
Electric Vehicle Strategies (e.g. charging stations, incentive)	N/A	N/A	N/A	N/A	N/A	-1.76%	N/A	-1.87%	MPO Estimated
Emerging Technology (e.g. car share)	N/A	N/A	N/A	N/A	N/A	-0.78%	N/A	-0.77%	MPO Estimated
Job Center and Commute Strategies (e.g. co-working)	N/A	N/A	N/A	N/A	N/A	-1.21%	N/A	-1.12%	MPO Estimated

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Alternative Mode Strategies (e.g. Safe Routes to School, dedicated Transit Lanes)	N/A	N/A	N/A	N/A	N/A	-0.70%	N/A	-0.74%	MPO Estimated
Induced Demand	N/A	N/A	N/A	N/A	N/A	0.56%	N/A	0.55%	
Investment (billions) (d)									
Total RTP Expenditure ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roads & Highway Capacity Expansion ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Roads & Highway Operations and Maintenance ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Transit & Passenger Rail Capital Projects ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Transit & Passenger Rail Operations and Maintenance ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Active Transportation Capital Projects ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Other Capital Projects (including TSM, ITS, TDM, etc.) ($),	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Debt Service ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

(a) SB375 VMT and CO2 excluded Motorcycle VMT, X-X VMT and Included Off-models (if applicable).

(b) ARB formula for SB 375 VMT per capita and CO2 per capita: (II + IX/XI passenger VMT) / population is inapplicable.

(c) 2005 is based on trip based travel demand model and definition of work trip and other parameters may be different from Activity based travel demand model.

(d) SCAG did not provide investment information in the data table provided to CARB. Instead, SCAG referred CARB to the 2020 RTP/SCS Transportation Finance Technical Report. The investment information in this table reflects information found in that report https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Transportation-Finance.pdf

(e) N/A means not available.

Appendix C: MPO Reporting Components

This section will focus on discussing the three reporting components of the 2019 Evaluation Guidelines: tracking implementation, incremental progress, and equity. The three reporting components are included to identify the effectiveness of prior SCS implementation and increase overall transparency of the SCS for the public and other stakeholders. These reporting components will demonstrate the efforts put forward by MPOs and the progress made towards meeting their SB 375 GHG targets.

Tracking Implementation

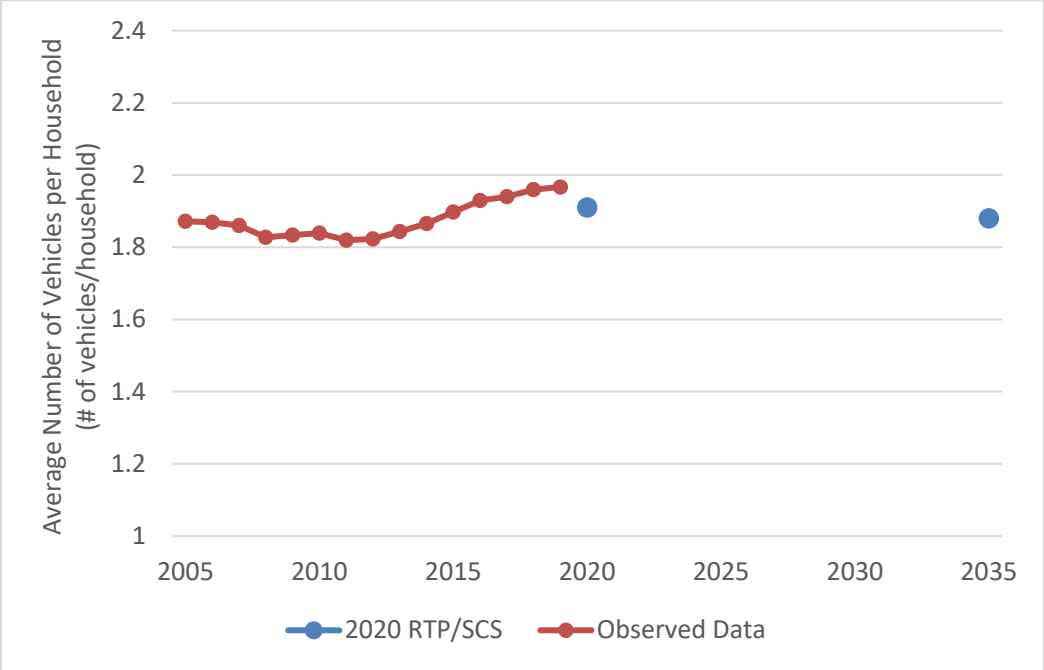
The purpose of this section is to report on the progress the SCAG region has made implementing its SCS. Specifically, staff compared observed data for transportation, housing, and land use performance metrics to plan performance to determine whether the region is on track to meet its targets. Performance metrics used in this analysis were chosen based on the availability of observed data and plan performance indicators provided by SCAG and represent a snapshot of where the region is currently. Metric trends that are not heading in the right direction relative to expected plan outcomes are areas that CARB staff look at in the Plan Adjustment analysis, to understand whether the current SCS modifies or adds strategies or actions to get the region on track with expected plan outcomes.

Regional Average Household Vehicle Ownership

CARB staff analyzed the trend in household vehicle ownership for SCAG from 2005 to 2019. This indicator reports the average number of private vehicles owned by each household in SCAG (i.e. the total number of household vehicles divided by the number of households). Total county-level, privately-owned vehicle and household data for 2005 to 2016 were obtained from the American Community Survey (ACS) reports[72] and Department of Finance[73] respectively. Figure 8 shows historical SCAG average household vehicle ownership from 2005 to 2019 in comparison to SCAG's 2035 forecasted household vehicle ownership from its travel demand model (See Appendix B: Data Table). While average household vehicle ownership increased by 5.1 percent in SCAG from 2005 to 2019, there was a decline between 2005 and 2012, with a subsequent rebound. The 2035 forecasted SCS household vehicle ownership is 4 percent below the observed 2019 household vehicle ownership, and the trend in observed data is heading in the wrong direction relative to expected plan outcome for 2035.

[72] U.S. Census Bureau, American Community Survey, 2005 – 2019 ACS 1-year Estimates. Available at: https://www.census.gov/programs-surveys/acs.
[73] Department of Finance, Demographics. Available at: http://www.dof.ca.gov/Forecasting/Demographics/.

Figure 8. SCAG Region Average Household Vehicles



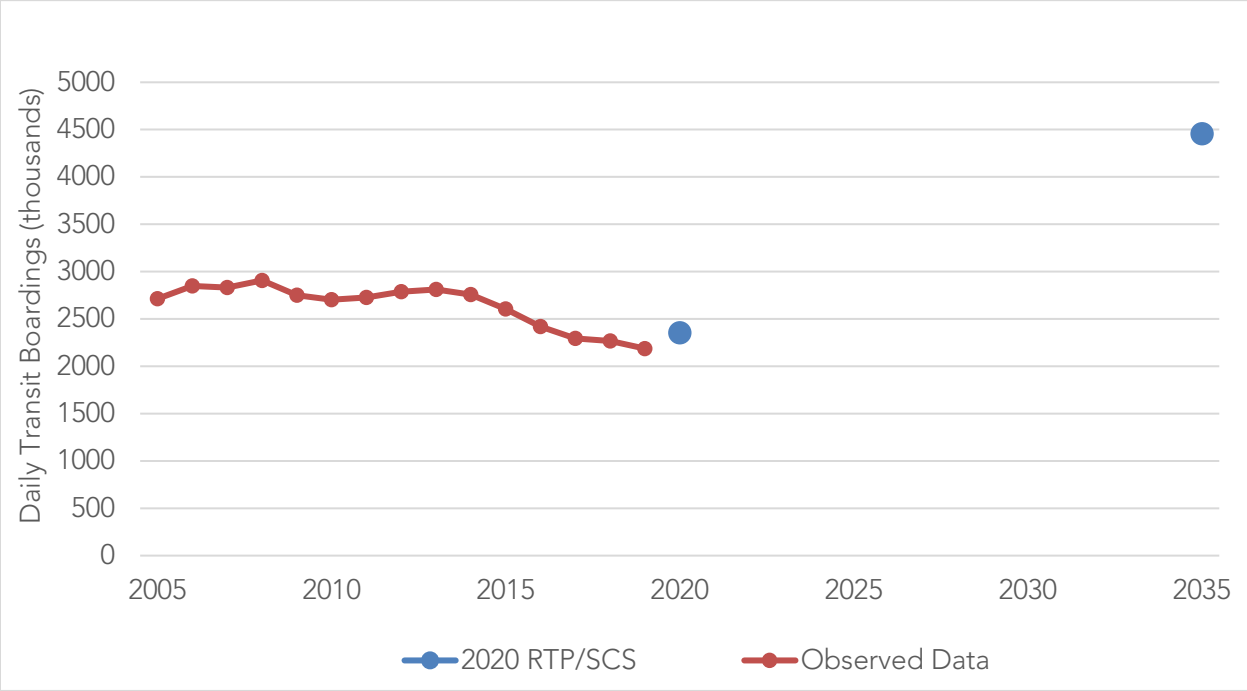
Annual Transit Ridership

CARB staff used the National Transit Database (NTD)[74] published monthly transit boarding numbers (unlinked trips) reported by local transit agencies to determine the historical monthly and annual boarding numbers in the SCAG region. This dataset cover 2005 to 2019.

Figure 9 shows observed annual transit ridership in SCAG in comparison to 2035 plan performance. The observed data are generally flat from 2005 to 2013 and then decrease through 2019, while SCAG's RTP/SCS forecasted transit ridership in 2035 is more than twice the observed 2019 value. The trend between 2013 and 2019 is heading in the wrong direction relative to the expected plan outcomes.

[74] National Transit Database, NTD data. Available at: https://www.transit.dot.gov/ntd/ntd-data.

Figure 9. SCAG Region Annual Transit Ridership



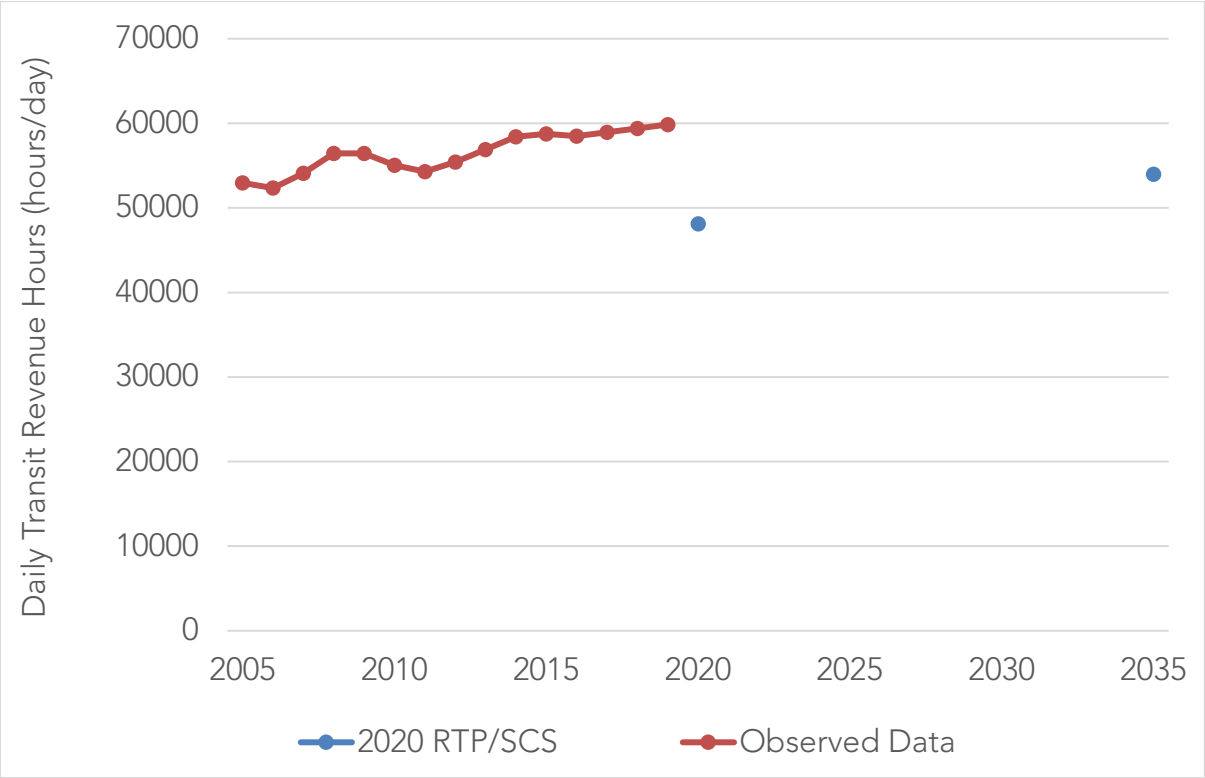
Daily Transit Service Hours

The National Transit Database (NTD) publishes monthly boarding numbers (unlinked trips) reported by local transit agencies. CARB staff calculated the monthly and annual revenue hours in SCAG region based on this NTD dataset from 2005 to 2019[75]. Total transit revenue hours in SCAG were then adjusted to daily transit revenue hours.

Observed NTD transit revenue hours increases from 2005 to 2019 as shown in Figure 10. However, SCAG's 2020 SCS forecasts transit revenue hours to be less than the observed data, since it only covers fixed-route transit services and it does not include demand response services. According to NTD, demand response service accounted for about 25 percent of the regional transit service hours in 2016.

[75] National Transit Database (NTD). Available at: https://www.transit.dot.gov/ntd/ntd-data.

Figure 10. SCAG Daily Transit Service Hours



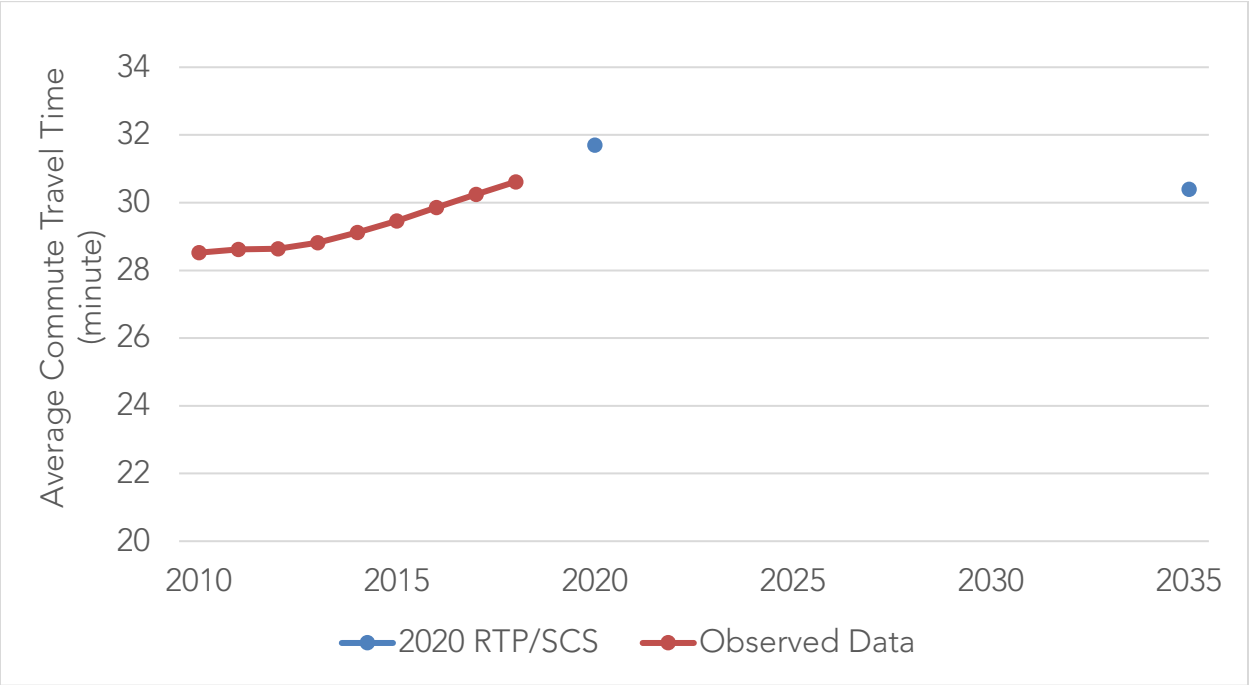
Commute Trip Travel Time

CARB staff analyzed commute trip travel times from 2010 to 2018 using data from the American Community Survey[76] data. A population-weighted approach was used to calculate total travel times by county and then aggregated to the SCAG region.

Figure 11 shows historical commute time in comparison to SCAG's 2020 RTP/SCS average commute time. SCAG's 2020 RTP/SCS forecasts a 1.3-minute reduction in commute time from 2020 to 2035, while the observed data increase from 2010 to 2018, away from the expected plan outcome for 2035.

[76] U.S. Census Bureau, American Community Survey. Available at: https://data.census.gov/cedsci/table?q=ACSST1Y2019.S0801&g=0400000US06.050000&tid=ACSST5Y2018.S0801&hidePreview=true.

Figure 11. SCAG Commute Time



New Homes Built by Type

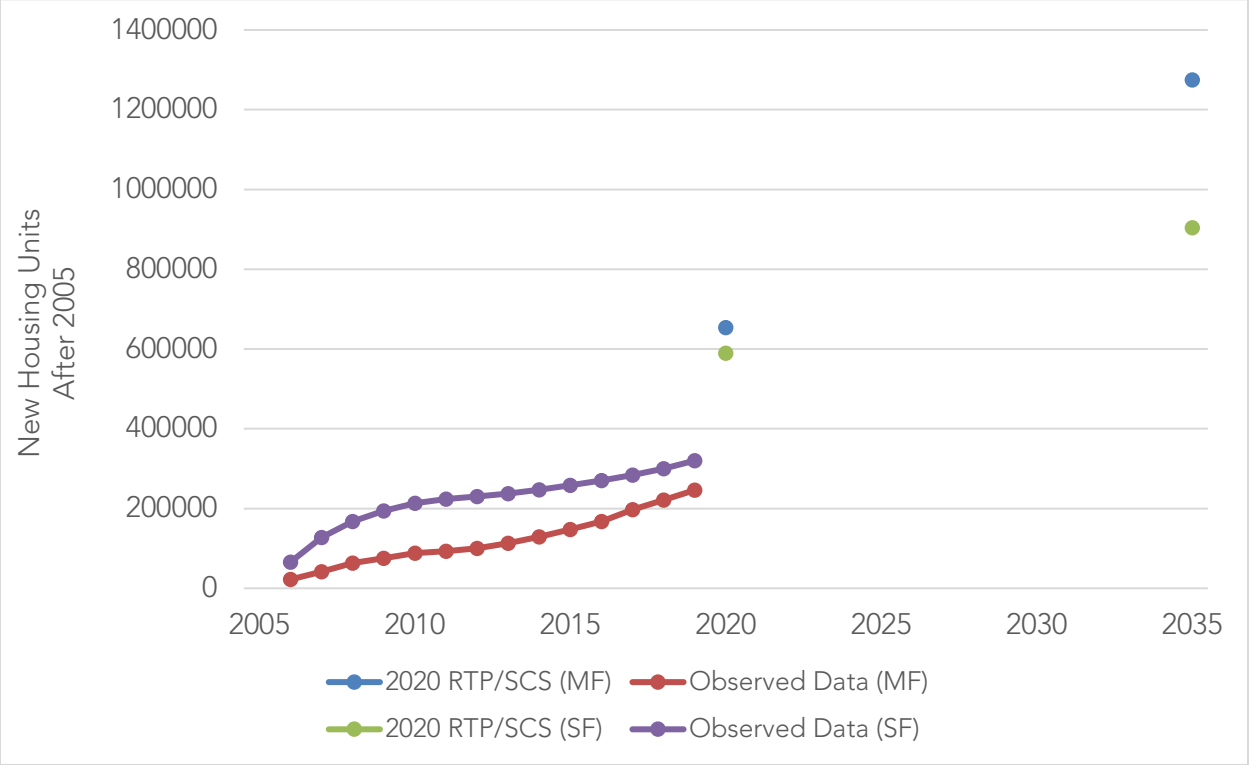
CARB staff analyzed the rate of new homes being built by type in the SCAG region from 2005 to 2019 using the California DOF datasets including E-5 (for years 2011 to 2019) and E-8 (for years 2005 to 2010)[77]:

Figure 12 shows the historical number of new single-family and multi-family housing units in the SCAG region. Since 2005, there have been 589,338 new single-family and 653,850 new multi-family housing units built in the region. During this period, single-family housing has represented a greater share of the new housing units built and that share has stayed relatively constant. In 2019, 320,147 new single-family housing units and 246,249 new multi-family housing units were built. The 2020 SCAG RTP/SCS forecasts 903,877 new single-family housing units and 1,275,295 multi-family housing units to be built in 2035, with multi-family housing units representing a much greater

[77] California Department of Finance, rate of new homes being built by type. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/.

share of housing than single-family housing units. While the total number of observed housing units is increasing consistent with the plan, the share of single-family is heading in the wrong direction relative to the expected plan outcomes.

Figure 12 New Single- and Multi-Family Housing Units Built in the SCAG Region



In summary, CARB staff compared the observed data for regional average household vehicle ownership, annual transit ridership, daily transit service hours, commute trip travel time, and new homes built by type with the projected plan performance indicators provided by SCAG. Based on the analysis none of the observed data are heading in the right direction, toward the expected plan outcomes. Therefore, CARB staff concluded that SCAG is not on track to meet its GHG target.

Incremental Progress

CARB staff reviewed the incremental progress of SCAG's 2020 SCS compared to its 2016 SCS in place in October 2018, in accordance with Board direction and the 2019 Evaluation Guidelines.[78] As background, during the 2018 regional GHG target update process, some of the MPOs reported to CARB that, due to external factors, even greater effort would be required to achieve the same level of per capita GHG emission reduction reported in the current SCSs. According to the MPOs, simply staying on course to achieve the previously demonstrated regional SB 375 GHG emission reduction targets would be a stretch of current resources, let alone achieving the more aggressive targets adopted by the Board in 2018. At that time, SCAG determined that the 2016 SCS would achieve approximately 4 to 5 percent less reductions than when it was adopted in 2016 simply due to changes in exogenous assumptions (e.g. auto operating cost)[79]. In other words, if during the target setting process SCAG had updated its 2016 SCS with exogenous assumptions current at the time, it would only achieve 13 to 14 percent per capita GHG reduction in 2035, well below the plan performance (and target) of 18 percent. SCAG's data indicated that in order to meet the new target of 19 percent, it would need to include another 5 to 6 percent GHG reductions in new and/or enhanced SCS strategies (i.e. incremental progress) in its 2020 SCS.

To determine whether SCAG is achieving the level of incremental progress consistent with what it reported during the target setting process, CARB staff intended to rely on analysis provided by SCAG consistent with methods put forward in the updated SCS Program and Evaluation Guidelines. That methodology called for a comparison of the 2016 SCS to the 2020 SCS under varying assumptions, controlling for as many exogenous factors as possible. For a variety of reasons, SCAG staff were not able to provide CARB with the information and data to conduct the incremental progress analysis envisioned. SCAG developed the 2020 SCS using a brand new modeling platform[80], and this shift from a trip-based model to an activity-based model made it

[78] Board Resolution 18-12 (March 22, 2018). Available at: https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Final_Target_Staff_Report_%202018_Resolution_18-12.pdf.
[79] California Air Resources Board. Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets: Appendix B. MPO Scenario and Data Submittals. October 2017. Available at: https://www.arb.ca.gov/cc/sb375/appendix_b_mpo_scenario_and_data_submittals_october_2017.pdf
[80] SCAG, 2016 Regional Travel Demand Model and Model Validation. April 2020.

more difficult for them to conduct the analysis CARB requested. For this reason, CARB staff evaluated incremental progress for SCAG's 2020 SCS by comparing strategy assumptions between the 2016 and 2020 SCSs. While this type of analysis does not allow CARB to determine whether the magnitude of incremental progress is consistent with what SCAG reported during the target setting process, it still provides insights into whether SCAG is including new and or enhanced strategies.

Table 10 below provides a list of strategies included in the 2016 and 2018 SCSs, and the assumptions for those strategies. There are a number of new or enhanced strategies around transportation, pricing, new mobility, and land use. For example, bus and rail service miles increased by 32 percent and 5 percent respectively between the 2016 and the 2020 SCSs, along with a slight decrease in freeway lane miles. SCAG also included new pricing strategies in its 2020 SCS that were not in the 2016 SCS, including cordon pricing and TNC fees. In addition, SCAG added a number of new off-model strategies, including parking deregulation in transit priority areas, co-working, multimodal dedicated lanes, bike share/micromobility, transit/TNC partnerships, and EV incentives.

While incremental progress is not used for CARB's SCS determination, CARB expects MPOs to achieve incremental progress due to its SCS land use and transportation strategy commitments from its second SCS to its third SCS consistent with information shared during the GHG emission reduction target setting process. Information SCAG submitted during the 2018 target setting process indicated they would achieve 5 to 6 percent incremental progress as part of the 2020 SCS. While the information presented suggests that the 2020 SCS includes additional and enhanced strategies relative to the 2016 SCS, it is not sufficient to determine whether the magnitude of those new/enhanced strategies is consistent with the information SCAG shared during the 2018 target setting process.

Insufficient information to determine whether SCAG's incremental progress is consistent with the information it shared during the 2018 target setting process.

Table 10. SCAG's Incremental Progress

SCS Strategies	Strategy Assumptions		Change Supportive of New/Enhanced Strategies
	2016 SCS	2020 SCS	
Transportation			
Freeway (Lane Miles)	11,716	11,558	*Supportive*
Bus (Transit Service Miles)	599,602	627,485	*Supportive*
Rail (Transit Service Miles)	104,310	137,686	*Supportive*
Pricing			
Cordon Pricing[81] ($/entry)		4.00[82]	*Supportive*
Express Lane Pricing[83] ($/mile)	0[84]-2.65	0-2.65[85]	
Mileage User Fee ($/mile)	0.028	0.020[86]	
Job Center Parking ($/hour)		50% of base fare[87]	*Supportive*

[81] Cordon pricing, also known as congestion pricing, is reflected in the activity-based modeling to reduce VMT and is explicitly accounted as a revenue source in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions).
[82] SCAG Model Sensitivity Test Report, page 21.
[83] Express lane pricing is reflected in the activity-based modeling to reduce VMT and accounted as an existing revenue source in the Transportation Finance Technical Report (in Table 3.1 Core & Reasonably Available Revenue Projections—Local Core Revenue Sources, in Nominal Dollars, Billions).
[84] Pricing varies by time of day, and some periods may not be priced at all (i.e. zero price).
[85] SCAG, Connect SoCal SCS Submittal Tables, Table 1 SCS Data.
[86] The mileage user fee consists of three components, which are reflected in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions): $0.025 per mile is to replace gas taxes from 2030 (and therefore not included as an SCS strategy); $0.015 per mile as regional VMT fee from 2030; and $0.05 per mile as TNC user fee. In the activity-based modeling 1% (i.e., $0.005) of TNC user fee is applied to all VMT in the region in order to capture the proportional TNC population.
[87] Job center parking price is reflected in the activity-based modeling to reduce VMT and is accounted as a revenue source in the Transportation Finance Technical Report.

Work from Home/Telecommute (% of workers)	10%	0%	
Transportation Demand Management		1.5%	*Supportive*
Off-model Strategies	Improved Pedestrian/bike Infrastructure, Safe Routes to School, Electric Vehicle Charging Infrastructure, Car Share	Improved Pedestrian Infrastructure, Safe Routes to School, Electric Vehicle Charging Infrastructure, Car Share Average Vehicle Ridership for Job Centers, Parking Deregulation in Transit Priority Areas, Co-Working, Multimodal Dedicated Lanes, Electric Vehicle Incentives, Transit/TNC Partnership Program, Bike Share & Micromobility	*Supportive*
Land Use and Demographics	Transit Priority Areas, High Quality Transit Areas and Livable Corridors	Transit Priority Areas, High Quality Transit Areas, Livable Corridors	*Supportive*

		Job Center Strategy & Neighborhood Mobility Areas	

Equity

MPOs may report to CARB a summary of how they conducted equity analyses as part of the development of their SCSs in accordance with the California Transportation Commission's *2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations*.[88] The Environmental Justice (EJ) Technical Report[89] of SCAG 2020 SCS documented SCAG's equity analysis. CARB staff reviewed this EJ Technical Report and prepared this section to summarize SCAG's 2020 SCS equity work, including identified communities of concern, equity performance measures, equity analysis, and public participation efforts.

Identifying Vulnerable Communities

SCAG's 2020 SCS states that its EJ Technical Report not only meets legal requirements, but goes beyond them in considering other population characteristics such as children, elderly populations, vehicle-less households, individuals without a high school diploma, and areas designated as disadvantaged by Senate Bill (SB) 535 (DeLeon).[90] SCAG staff conducted extensive outreach to EJ stakeholders and the general public during the EJ Working Group meetings, targeted EJ outreach, and Connect SoCal Public Workshops to gather feedback. For both the outreach and analysis process, EJ communities were identified to include all low-income[91] and minority populations.[92] SCAG also analyzed other demographic categories as shown in Figure 13, Figure 13.as well as income by quintiles as shown in Figure 14. Figure 15Figure 15shows all the EJ communities identified in the SCAG region, which include EJ Areas, SB 535 Disadvantaged Communities, and Communities of Concern. Based on these criteria, key characteristics of the region's EJ analysis areas include[93]:

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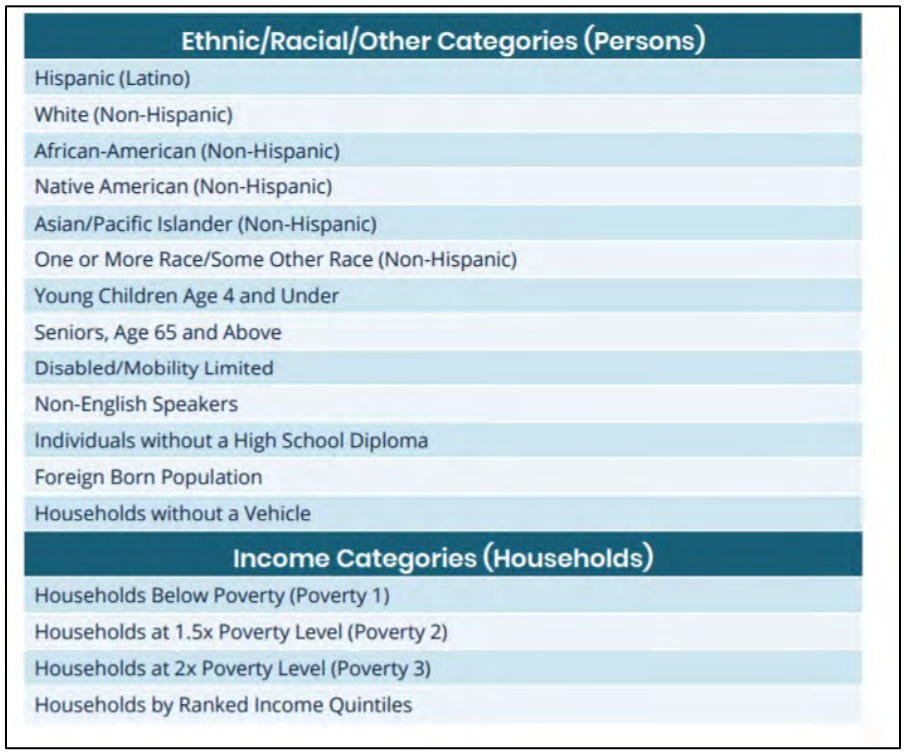
[88] California Transportation Commission. *2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations*. January 2017. Available at: http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/docs/2017RTPGuidelinesforMPOs.pdf.
[89] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report: Available at: https://www.connectsocal.org/Documents/Adopted/fConnectSoCal_Environmental-Justice.pdf.
[90] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 4.
[91] The poverty classification is a federally established income guideline used to define persons who are economically disadvantaged as outlined by the U.S. Department of Health & Human Services guidelines.
[92] Executive Order 12898, U.S Department of Transportation, and Federal Highway Administration Orders on EJ define "minority" as persons belonging to any of the following groups, as well as "other" categories that are based on the self-identification of individuals in the Census: African American, Hispanic, Asian/Pacific Islander, and Native American and Alaskan Native.
[93] This section includes summary information from SCAG's Environmental Justice Technical Report.

- In 2016, about 69 percent of the population in the SCAG region belonged to a racial or ethnic group other than White, non-Hispanic, while about 15 percent of the population was in poverty.
- Since 2000, the share of households living in poverty has increased from about 13 percent to about 15 percent in the SCAG region.
- About 62 percent of the region's population (about 12 million people) live in an EJ area.
- About 34 percent of the region's population (about 6 million people) live in a disadvantaged community.
- About 21 percent of the region's population (4 million people) live in a community of concern.

Since 2000, the share of households without a vehicle has gone down, from about 10 percent to about 7 percent. Meanwhile, the share of households with more than three vehicles has increased from about 18 percent to about 24 percent.

Figure 13. Demographic Categories Analyzed by SCAG

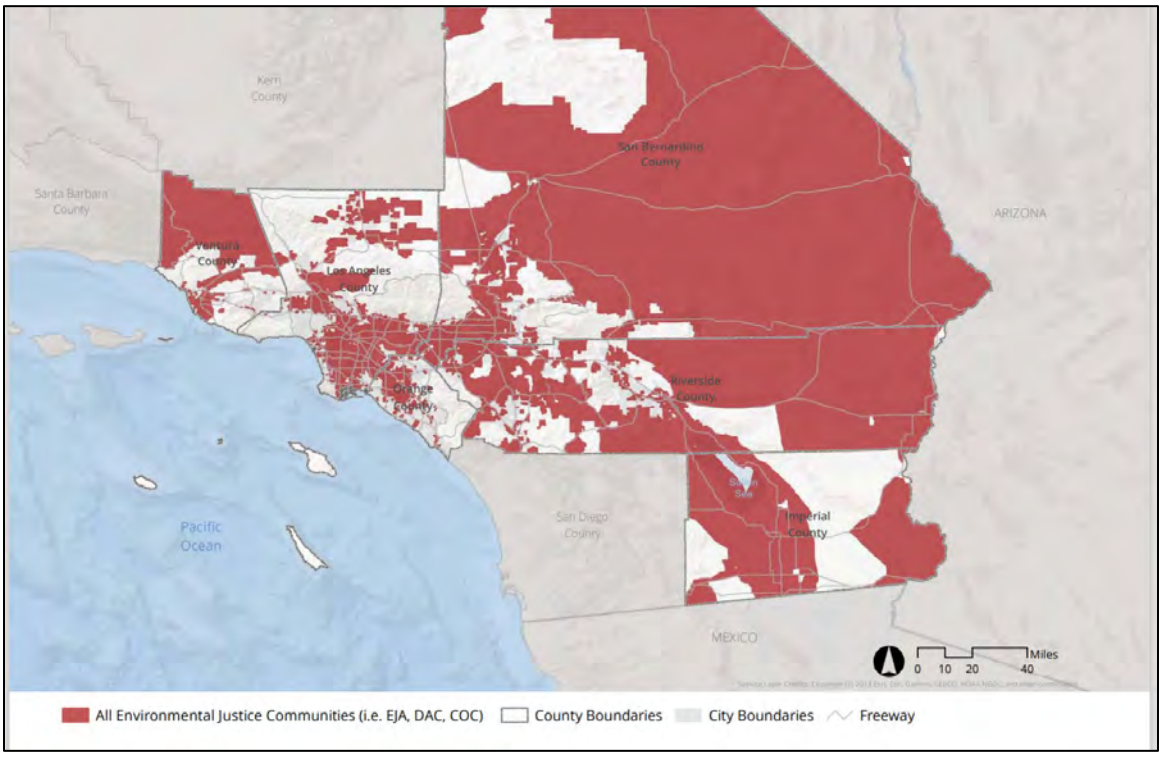


Ethnic/Racial/Other Categories (Persons)
Hispanic (Latino)
White (Non-Hispanic)
African-American (Non-Hispanic)
Native American (Non-Hispanic)
Asian/Pacific Islander (Non-Hispanic)
One or More Race/Some Other Race (Non-Hispanic)
Young Children Age 4 and Under
Seniors, Age 65 and Above
Disabled/Mobility Limited
Non-English Speakers
Individuals without a High School Diploma
Foreign Born Population
Households without a Vehicle
Income Categories (Households)
Households Below Poverty (Poverty 1)
Households at 1.5x Poverty Level (Poverty 2)
Households at 2x Poverty Level (Poverty 3)
Households by Ranked Income Quintiles

Figure 14. Income Distribution by Quintiles Analyzed by SCAG

Income Quintiles	Income Range
Quintile 1	$0 to $28,000
Quintile 2	$28,001 to $52,000
Quintile 3	$52,001 to $82,000
Quintile 4	$82,001 to $128,000
Quintile 5	$128,000 and Higher

Figure 15. All Environmental Justice Communities in the SCAG Region



Equity Performance Measures

SCAGs EJ analysis attempted to determine if the SCS has a disproportionate negative impact on the low-income population and/or minority populations in identified communities in the region and if there are any disparate impacts specifically based on race, color, national origin, etc. SCAG's EJ analysis identified 18 performance indicators to understand the RTP/SCS impacts on environmental justice areas, disadvantaged communities, and communities of concern, including:

1. Jobs-Housing Imbalance
2. Neighborhood Change and Displacement
3. Accessibility to Employment Services
4. Accessibility to Parks and Educational Facilities
5. Active Transportation Hazards
6. Climate Adaptation
7. Public Health Analysis
8. Aviation Noise Impacts
9. Roadway Noise Impact

10. Emissions Impacts Analysis (PM2.5 & CO):
11. Emissions Impacts Along Freeways
12. Travel Time & Travel Distance Savings
13. Rail Related Impacts
14. Share of Transportation System Usage
15. Connect SoCal Revenue Sources in Terms of Tax Burdens
16. Connect SoCal Investments vs. Benefits:
17. Geographic Distribution of Transportation Investments
18. Impacts from Funding Through Mileage-Based User Fees

In this document, CARB focused on the effect of the SCS on land use equity, access, and public health[94].

Land Use Equity Performance Measures

SCAG acknowledged that neighborhood gentrification and displacement resulting from transportation investments on a region-wide basis is challenging and that attention should be given on a project-by-project basis to carefully understand local neighborhood dynamics and ensure equitable access to the benefits of improved infrastructure.

To understand where the region currently is and to understand where to monitor, SCAG conducted a historical jobs-housing imbalance analysis as well as an analysis on neighborhood change and displacement. The jobs-housing imbalance analysis looked at median commute distance of low wage workers as well as jobs-housing fit between available housing types and the income level of residents. To assess neighborhood change, SCAG looked at criteria around gentrification, including; increase in college educated, increase in non-Hispanic white, increase in median household income, and increase in median gross rent. SCAG analyzed displacement by looking at data on moving and migration flows.

The trends for both jobs-housing imbalance and change and displacement in the region appear to be somewhat improving. The commute distance grew in all six counties between 2002 and 2016, while it slightly decreased between 2012 and 2016.

[94] For more information on the other performance indicators see SCAG's Environmental Justice Technical Report.

From 2010 to 2016, the ratio of jobs to housing increased from 1.10 to 1.19, but the ratio of low wage jobs to affordable rental units decreased from 0.94 to 0.89 during the period.

SCAG's analysis of neighborhood change across the region identified 40 census tracts[95] that have been persistently changing across recent decades. However, these tracts are not disproportionately located in EJ areas, Disadvantaged Communities, or Communities of Concern.

Accessibility Performance Measures

SCAG assessed accessibility impacts from the RTP/SCS to important destinations such as employment, shopping, parks and schools for the region's EJ population. For both transit and auto accessibility performance measures, SCAG used a 30 minute benchmark for travel time to the destinations by automobile, and 45 minutes of travel time to destinations by transit during the evening peak period.

Based on these performance measures, SCAG found that the share of the region's total employment and shopping destinations that are accessible to each EJ group within 30 minutes of travel by auto, or 45 minutes on transit and accessibility will improve. SCAG's EJ analysis, suggests that the overall accessibility to parks and natural lands will improve because of the RTP/SCS, both for the region as a whole and for the EJ population.[96] SCAG also acknowledges that its results show local parks and other natural lands are less accessible by public transportation than by automobile, especially to National Forests. However, with the implementation of the RTP/SCS, accessibility to local parks and other natural lands will increase more for public transit modes than for automobiles at all levels of analysis[97].

[96] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report: Table 25 (pages 81-86) and Table 29 (pages 93, 94).
[97] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report: Figures 11-16 (pages 87-88).

Health and Environment Performance Measures

SCAG's EJ analysis also looked at human health and environmental effects measures living and working within 500 feet of major roadways as an indicator of risk of exposure to toxic air contaminants from proximity to major roadways from the RTP/SCS.

SCAG's EJ analysis projected that by 2045, approximately 5 percent of the region's population will live within 500 feet of freeways and high traffic roads and 9 percent of the population will work within it.

The results showed that most EJ population groups show higher concentrations in areas near freeways and high-traffic roads than is seen in the greater region, except for seniors over age 65, African Americans, and those identifying as "Other Race." Based on the analysis, SCAG projects that the share of most EJ population groups in areas adjacent to freeways and high traffic roads will increase in 2045.

The SCS documented that concerns were raised[98] by environmental groups, the health community, housing groups, and air quality regulation agencies about incompatible land uses, including sensitive receptors such as hospitals, senior/daycare centers, and housing near freeways and busy roadways. According to SCAG[99], the land use strategies in the SCS call for redirecting future growth into high-quality transit areas (HQTAs) and as a result, part of this growth will occur in areas where high-quality transit areas overlap with areas within a distance of 500 feet from freeways and high-traffic roads. Neighborhoods where HQTAs overlap with areas within 500 feet of freeways and high-traffic roads accommodate about 3 percent of all regional households and about 5 percent of regional employment by 2045.[100]

Public Outreach and Engagement

SCAG held 28 public workshops for the SCS along with other activities[101]. Workshops were held in all of the region's six counties. Feedback and comments from the

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[98] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 138.
[99] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 138.
[100] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 141.
[101] SCAG, 2020 RTP/SCS, Public Participation and Consultation. Available at: https://www.connectsocal.org/Documents/Adopted/fConnectSoCal_Public-Participation-Consultation.pdf.

workshops were incorporated into the technical analysis. In addition, an online survey was conducted that reduced barriers of having to attend in person to participate.

In 2018, SCAG also convened an EJ Working Group (EJWG) to vet ideas and receive feedback on its EJ analysis, in addition to other workgroups on the RTP/SCS. SCAG held five EJWG meetings to discuss development of Connect SoCal, its EJ technical analysis, and gather input from EJ stakeholders.

In addition, SCAG developed "Community Partner Toolkits" as an outreach resource. The toolkits contained workshop fliers in various languages, adaptable sample letters, email blasts and social media posts—and were distributed by SCAG staff and the outreach team to elected officials, community based organizations and other grassroots organizations to create awareness about Connect SoCal.

AGENDA ITEM 4
REPORT

Southern California Association of Governments
Remote Participation Only
January 7, 2021

To: Energy & Environment Committee (EEC)
Regional Council (RC)

From: Sarah Jepson, Planning Director,
(213) 236-1955, Jepson@scag.ca.gov

Subject: Climate Change Action Resolution

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

RECOMMENDED ACTION FOR EEC:
Recommend that the Regional Council adopt Resolution No. 21-628-1 on Climate Change Action.

RECOMMENDED ACTION FOR RC:
Adopt Resolution No. 21-628-1 on Climate Change Action.

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:
At the October 1, 2020 meeting of the Energy and Environment Committee (EEC), the Chair and members of the Committee requested that SCAG staff prepare a resolution affirming a climate change crisis in Southern California. A draft version was prepared and presented to the EEC on November 5, 2020, at which time Committee members provided guidance and suggestions emphasizing SCAG's unique role in the region. Members of the EEC provided feedback that additional emphasis be placed on the economic and workforce benefits of climate adaptation and mitigation strategies within the Resolution, that further information on climate hazards be included (e.g. extreme heat impacts, drought, sea level rise, etc.), that planning for zero-emission vehicles be integrated, and that resources for climate mitigation and adaptation include multiple sectors (e.g. energy and land use). Overall, Members of the EEC asked that SCAG consider calling on local and regional partners to join together to further reduce greenhouse gas (GHG) emissions, improve regional resilience, and reduce hazards from a changing climate. Accordingly, staff has prepared a revised Resolution for consideration and action as appropriate by the EEC and Regional Council.

BACKGROUND:
Climate change mitigation and adaptation planning have become more pressing with each passing year as the SCAG region experiences extreme climate-related health, safety and economic impacts from intensified wildfires, inland flooding and mudslides from torrential rainstorms, coastal flooding

exacerbated by sea level rise, and intensified urban heat island effects from unusually high temperatures. Loss of life, destruction of property and infrastructure, transportation system interruptions, and diminished natural resources have been accelerated by our rapidly changing climate.

Extended dry heat days and extreme wildfires represent the most tangible and immediate examples of how climate change is impacting our region's health, safety and economic welfare. In 2020, California's record number of dry heat days increased overall fire risk to the highest degree that the state has ever endured. Moreover, California experienced over 6,000 fires that burned millions of acres, making 2020 the largest wildfire season recorded in the state's modern history, according to the California Department of Forestry and Fire Protection.[1] Economic costs attributable to these wildfires are estimated to sum to $10 billion dollars in 2020[2] with impacts also including damage to property, increased costs of health care, business disruption, lost tax revenue, and decreased property values. There have been more than 1,200 preventable deaths from respiratory illnesses directly linked to this year's wildfire smoke.[3] Those experiencing the most severe COVID-19 outcomes are even more vulnerable to respiratory maladies exacerbated by long-term wildfire smoke exposure. Residents in SB 535 Disadvantaged Communities (DACs), who have historically been over-burdened by environmental hazards, are particularly vulnerable.

Events like California's wildfires have become persistent reminders to local governments, residents, workers and businesses throughout the SCAG region that systematic climate adaptation, mitigation, and resilience planning for *all* climate stressors is achievable – but must become a higher priority. This is especially clear when considering where people live in the region, since roughly 1.8 million people reside in very high fire hazard severity zones, over 300,000 people live in "100-year"[4] flood hazard areas, more than 350,000 residents live in areas estimated to be impacted by three feet of sea level rise (conservatively projected to occur by 2050), and over 6 million people live in areas subject to extreme heat health events. Looking ahead to 2050, annual costs from climate change hazards are projected to exceed $113 billion by 2050 – an expense of thousands of dollars per resident in California each year.[5]

Since greenhouse gas emissions and climate stressors do not follow jurisdictional boundaries, effective mitigation, management, and adaptation to risks posed by climate change will require

[1] https://www.fire.ca.gov/stats-events/; Accessed October 12, 2020

[2] Cowan, Jill. "How Much Will the Wildfires Cost?" https://www.nytimes.com/2020/09/16/us/california-fires-cost.html. Accessed October 12, 2020.

[3] Burke, Marshall and Sam Heft-Neal. Indirect mortality from Wildfires in California. http://www.g-feed.com/2020/09/indirect-mortality-from-recent.html. Accessed October 12, 2020.

[4] Areas known as Special Flood Hazard Areas (SFHAs) defined as areas that will be inundated by a flood event having a 1-percent chance of being equaled or exceeded in any given year.

[5] California's Fourth Climate Change Assessment Summary Report; California Energy Commission; 2019

cross-jurisdictional coordination and collaboration. SCAG's most recent long-range plan, "Connect SoCal," features strategies that can reduce the region's GHG emissions if implemented. Connect SoCal includes goals for the region to adapt to a changing climate, promote conservation of natural and agricultural lands and restoration of habitats, promote healthy and equitable communities, and encourage regional economic prosperity.

Further, SCAG has developed a SoCal Climate Adaptation Planning Guide for local jurisdictions to utilize in identifying vulnerable areas and implementing adaptation strategies to reduce climate related hazards in their communities. As part of a larger Climate Adaptation Framework, SCAG launched a Climate Talks Outreach Strategies Toolkit for local jurisdictions and community-based organizations to engage with residents and better understand how climate change is affecting local communities. The Framework also includes tools that help the region to work together to plan and prepare for the impacts of sea level rise, extreme heat, increasingly frequent and damaging wildfires, and other climate-related issues.

Southern California's natural and working lands – forests, rangelands, farms, wetlands, coast, deserts, and urban greenspaces – sustain the region's economy, help to reduce greenhouse gas emissions in the atmosphere, support the region's unique biodiversity, and provide opportunities for land management strategies. Thus, SCAG is also developing a Southern California Greenprint that will be a new online regional mapping tool that highlights the benefits of natural lands, waters and agricultural lands, including access to parks and trails, habitat protection and connectivity, food production and increased resilience to climate change.

In moving forward with implementation of the Connect SoCal plan and Program Environmental Impact Report (PEIR), and in light of recommendations from members of the Energy and Environment Committee (EEC), the Resolution states that SCAG will pursue a number of activities to address climate change, including mitigation and adaptation, to strengthen regional resilience. These include developing a regional resilience framework to help the region plan and prepare for a changing climate and other potential near- and long-term disruptions to Southern California; initiating a regional climate planning network that will provide technical assistance for local climate adaptation and mitigation initiatives; providing resource support and technical assistance for local jurisdictions to integrate climate planning in their local planning activities; initiating a regional advanced mitigation program (RAMP) as described in the Connect SoCal PEIR; developing a work plan to advance the Accelerated Electrification strategy envisioned in Connect SoCal; and, evaluating the economic and job creation benefits of climate adaptation and mitigation practices for inclusion in regional planning efforts. Further, the Resolution states that the 2024 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) will include mitigation analysis and strategies, and that SCAG will continue to develop programs and outreach strategies to support adaptation to address regionally significant vulnerabilities and long-term regional resilience

planning at the local level. Finally, SCAG's Planning Director will report to the EEC on a quarterly basis on the progress of these efforts.

With over 40 jurisdictions in the SCAG region having incorporated climate adaptation and mitigation strategies in local planning efforts, this Resolution follows regional and local actions that advance the State of California's Global Warming Solutions Act of 2006, known as AB 32, as well as its associated legislation, SB 32 (2016), which established targets for GHG reductions from all sources in California 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

FISCAL IMPACT:
Work for this effort is funded in SCAG's Fiscal Year 2020-2021 Overall Work Program (OWP) under project 065-4092.01 (Adaptation Analysis).

ATTACHMENT(S):
1. Resolution No. 21-628-1

SCAG
INNOVATING FOR A BETTER TOMORROW

SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS
900 Wilshire Blvd., Ste. 1700
Los Angeles, CA 90017
T: (213) 236-1800
www.scag.ca.gov

RESOLUTION NO. 21-628-1

A RESOLUTION OF THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS AFFIRMING A CLIMATE EMERGENCY IN THE SCAG REGION AND CALLING ON LOCAL AND REGIONAL PARTNERS TO JOIN TOGETHER TO IMPROVE REGIONAL RESILIENCE AND REDUCE HAZARDS FROM A CHANGING CLIMATE

WHEREAS, the Southern California Association of Governments (SCAG) is the largest metropolitan planning organization (MPO) in the United States covering six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura), and serving approximately 19 million people within 197 jurisdictions pursuant to 23 USC § 134 et seq. and 49 USC § 5303 et seq.; and

WHEREAS, SCAG is responsible for bringing Southern California's diverse residents and local partners together with unifying regional plans, policies, and programs that result in more healthy, livable, sustainable, and economically resilient communities; and

WHEREAS, our changing climate represents a threat to the region's economic security, public safety, health and wellness, transportation system, infrastructure, natural systems, and overall quality of life; and

WHEREAS, steadily increasing global temperatures attributable to climate change have heightened the severity, duration, cost and risk of wildfires; are escalating rising sea levels; and are contributing to more frequent extreme weather including intense precipitation, prolonged drought, and excessive heat events; and

WHEREAS, California experienced a record number of dry heat days in 2020 due to a changing climate, and experienced over 6,000 fires that burned millions of acres, making 2020 the largest wildfire season recorded in the state's modern history according to the California Department of Forestry and Fire Protection[1]; and

WHEREAS, economic costs from wildfires include resources involved in fighting the fires, damage to property, health care bills, costs of disrupted business, lost tax revenue, and decreased property values, and are estimated to sum to $10 billion dollars in 2020[2]; and

[1] https://www.fire.ca.gov/stats-events/; Accessed October 12, 2020
[2] Cowan, Jill. "How Much Will the Wildfires Cost?" https://www.nytimes.com/2020/09/16/us/california-fires-cost.html. Accessed October 12, 2020.

WHEREAS, wildfires have a direct linkage to respiratory health, and researchers at Stanford University found that recent wildfire smoke in California resulted in over 1,200 preventable deaths[3]; and

WHEREAS, as witnessed during the COVID-19 pandemic, long-term exposure to poor air quality exacerbated by wildfires increases vulnerability to those experiencing the most severe COVID-19 outcomes; and

WHEREAS, a changing climate presents many potential hazards to Southern California residents now and into the future, since roughly 1.8 million people live in very high fire hazard severity zones, over 300,000 people reside in "100-year"[4] flood hazard areas, more than 350,000 residents live in areas estimated to be impacted by three feet of sea level rise (conservatively projected to occur by 2050), and over 6 million people live in areas subject to extreme heat health events; and

WHEREAS, heat-related events occurring from 1999 to 2009 resulted in about 11,000 excess hospitalizations in California, and indicators show that the number and intensity of extreme heat-health events will worsen drastically throughout the state by midcentury; and

WHEREAS, the recent 2012-2016 drought was exacerbated by unusual warmth and disproportionately low Sierra Nevada snowpack levels, serving as indicators of projected dry spells in future decades where impacts will likely be worsened by increased heat[5]; and

WHEREAS, one-third of the SCAG region's residents live in areas recognized as disadvantaged communities and are disproportionately vulnerable to shocks and stresses to their resilience, including heightened health risks from worsening air quality and extreme heat, as well as the resulting economic instability from climate hazards, amongst other concerns[6]; and

WHEREAS, annual costs from climate change hazards are projected to exceed $113 billion by 2050 – an expense of thousands of dollars per resident in California each year[7]; and

WHEREAS, climate-safe infrastructure offers sustainable and adaptive solutions that can improve resilience in the face of shocks and stresses caused by a changing climate, and can provide well-paying jobs and workforce training opportunities for local residents since every dollar invested in infrastructure generates more than two dollars in economic output and jobs[8]; and

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[3] Burke, Marshall and Sam Heft-Neal. Indirect mortality from Wildfires in California. http://www.g-feed.com/2020/09/indirect-mortality-from-recent.html. Accessed October 12, 2020.

[4] Areas known as Special Flood Hazard Areas (SFHAs) defined as areas that will be inundated by a flood event having a 1-percent chance of being equaled or exceeded in any given year.

[5] California's Fourth Climate Change Assessment Summary Report; California Energy Commission; 2019

[6] ibid

[7] ibid

[8] Paying it Forward: The Path Toward Climate-Safe Infrastructure in California; California Natural Resources Agency; 2018

WHEREAS, impacts from climate change in the SCAG region will be most acutely felt by children, seniors, low income populations, communities of color, and residents with unstable economic or housing situations; and

WHEREAS, disruptions from a changing climate will impact to varying degrees our region's public health, vulnerable populations, economy, natural resources, built environment, transportation system, housing and water supplies, utility infrastructure and emergency services; and

WHEREAS, the Office of the Governor has issued a series of executive orders that seek to address a range of aspirational climate mitigation and adaptation related goals for achieving carbon neutrality; conserving and managing land and coastal waters; supporting robust zero-emission vehicle deployment; providing cleaner energy sources; forging partnerships and taking actions to help achieve these goals; and

WHEREAS, SCAG has been a leader in advancing the State of California's Global Warming Solutions Act of 2006 known as AB 32 and the Clean Energy and Pollution Reduction Act of 2015 known as SB 350, through its implementation of Senate Bill 375 (2008), as well as greenhouse gas reduction programs that advance objectives of Senate Bill 32 (2016), which establish targets for greenhouse gas reductions from all sources in California 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050; and

WHEREAS, Southern California will require transformative change across every sector of the economy in order to achieve 2030 and 2050 greenhouse gas reduction targets, and building a low-carbon economy requires an early start and continuous progress on decarbonization; and

WHEREAS, SCAG's most recent long-range plan, Connect SoCal, features strategies that will reduce the region's greenhouse gas emissions and includes goals for the region to adapt to a changing climate, promote conservation of natural and agricultural lands and restoration of habitats, promote healthy and equitable communities, and encourage regional economic prosperity; and

WHEREAS, the Southern California region has successfully adopted a Sustainable Communities Strategy (SCS) that has addressed the California Air Resources Board's established per-capita greenhouse gas reduction targets since the enactment of Senate Bill 375 over three quadrennial planning cycles; and

WHEREAS, Southern California's natural and working lands – forests, rangelands, farms, wetlands, coast, deserts, and urban greenspaces – sustain the region's economy, help to reduce greenhouse gas emissions in the atmosphere, support the region's unique biodiversity; and

WHEREAS, SCAG is developing a Southern California Greenprint that will be a new online regional mapping tool that will highlight the benefits of natural lands, waters and agricultural lands, including access to parks and trails, habitat protection and connectivity, food production and increased resilience to climate change; and

WHEREAS, SCAG conducted a long-term greenhouse gas reduction analysis for Southern California, i.e. the 2050 Pathways Report, which suggested common areas where local and regional policy actions could focus on decarbonization efforts including energy efficiency, smart growth, and electric vehicles; and

WHEREAS, SCAG has long recognized innovative planning and local planning projects that best coordinate land use and transportation actions to improve the mobility, livability, prosperity, and sustainability within the region through the Green Region Initiative Sustainability Indicators; and

WHEREAS, SCAG established the Sustainable Communities Program to fund local jurisdictions' natural resource plans, climate action plans (CAPs), and greenhouse gas reduction programs among other initiatives, and has supported over 200 projects since 2005; and

WHEREAS, over 40 jurisdictions in the SCAG region have adopted climate action plans at the local level to reduce their greenhouse gas emissions and better prepare their communities for a changing climate; and

WHEREAS, in parallel to greenhouse gas reduction efforts, it has become clear the region needs to prepare to increase its resilience and adapt to a changing climate; and

WHEREAS, Southern California will need to adapt and become more resilient to the impacts of climate change by implementing strategies and programs at the regional and local level to tackle environmental, social and economic challenges; and

WHEREAS, SCAG has developed a SoCal Climate Adaptation Planning Guide for local jurisdictions to utilize in identifying vulnerable areas and implementing adaptation strategies to reduce climate related hazards in their communities; and

WHEREAS, SCAG launched a Climate Talks Outreach Strategies Toolkit for local jurisdictions and community-based organizations to engage with residents and better understand how climate change is affecting local communities; and

WHEREAS, SCAG's Climate Adaptation Framework includes tools that help the region to work together to plan and prepare for the impacts of sea level rise, extreme heat, increasingly frequent and damaging wildfires, and other climate-related issues; and

WHEREAS, SCAG is a founding member of the Governor's Technical Advisory Council for California's Integrated Climate Adaptation and Resiliency Program (ICARP), established by

SB 246, (2015) to develop a cohesive and coordinated response to the impacts of climate change across the state; and

WHEREAS, consistent with Regional Council Resolution 20-623-2, health, socio-economic, and racial equity considerations should be included in regional policymaking addressing climate hazards and SCAG will work in partnership with others to close the gap of racial injustice and better serve our communities of color, and in so doing, serve all the people of the region.

NOW, THEREFORE, BE IT RESOLVED that the Regional Council of SCAG affirms a commitment to promote regional climate adaptation and resilience, and reduce greenhouse gas emissions, which represent a threat to the region's economic security, public safety and health, transportation infrastructure, natural systems, and overall quality of life.

BE IT FURTHER RESOLVED:

1. SCAG shall develop a regional resilience framework to help the region plan and prepare for a changing climate, as well as potential near- and long-term disruptions to Southern California, such as earthquakes, extreme weather, drought, wildfires, pandemics and economic shocks.

2. SCAG shall initiate a regional climate planning network that will provide technical assistance for local jurisdictions' climate planning initiatives – including consensus building exercises and an information hub featuring a framework of effective mitigation strategies for cities and counties to use in climate action plans (CAPs) as well as a library of model policies that collectively foster climate change mitigation, adaptation, and resilience.

3. SCAG shall establish partnerships to support local jurisdictions' climate adaptation and mitigation initiatives, including identifying funding resources to support Climate Action Plans, General Plan Safety Element updates, local hazard mitigation infrastructure financing plans, electric vehicle permitting, urban heat mitigation plans, organic waste reduction plans, wildlife corridor restoration plans, greenway connectivity master plans, among other efforts.

4. SCAG shall develop a regional advanced mitigation program (RAMP) as envisioned in Connect SoCal for regionally significant transportation projects to mitigate environmental impacts.

5. SCAG shall develop a work plan to advance the Accelerated Electrification strategy adopted in Connect SoCal to provide a holistic and coordinated approach to de-carbonizing or electrifying passenger vehicles, transit and goods movement vehicles to go beyond benefits achieved through state mandates alone.

6. SCAG shall evaluate the economic and job creation benefits of climate adaptation and mitigation practices for inclusion in regional planning efforts, and an inclusive economic recovery strategy for Southern California.

7. SCAG shall include climate adaptation and mitigation analysis and strategies in the 2024 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS).

8. SCAG shall develop programs and outreach strategies to support near-term adaptation to address regionally significant vulnerabilities in the region and long-term regional resilience planning.

9. SCAG's Planning Director shall report to the EEC on a quarterly basis on the progress of these efforts.

PASSED, APPROVED AND ADOPTED by the Regional Council of the Southern California Association of Governments at its regular meeting this seventh day of January, 2021.

_____

Rex Richardson
President, SCAG
Councilmember, Long Beach

Attested by:

_____

Kome Ajise
Executive Director

Approved as to Form:

_____

Ruben Duran
Board Counsel

AGENDA ITEM 5
REPORT

Southern California Association of Governments
Remote Participation Only
January 7, 2021

To: Energy and Environment Committee (EEC)

From: Grieg Asher, Program Manager
(213) 236-1869, asher@scag.ca.gov

Subject: Changing Energy Marketplace

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

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.

EXECUTIVE SUMMARY:
Ted Bardacke, Executive Director, Clean Power Alliance (CPA), will brief the Committee on the changing energy marketplace (e.g. distributed energy, decarbonization, battery storage, etc.) in the SCAG region and in the State, such as new California Energy Commission (CEC) and California Public Utilities Commission (CPUC) actions that will affect the energy landscape in coming years. The CPA is the largest Community Choice Aggregation (CCA) energy provider in California, serving over 3 million people in the SCAG region.

BACKGROUND:
The Clean Power Alliance (CPA) provides clean energy service to over 30 jurisdictions in the SCAG region. CPA is working with communities to meet California's ambitious state goal of 100% renewable energy, as well as helping communities procure electric vehicle charging infrastructure, solar panels and battery storage. The CPA also monitors the ever-changing legislative and regulatory landscape of the energy marketplace.

Ted Bardacke, CPA Executive Director, will brief the Committee on the changing energy market and energy system trends in the SCAG region and in the State. State actions and trends in recent years will shape and change the energy landscape in 2021 and beyond in three (3) core policy areas: climate change/decarbonization, reliability, and affordability. In addition, Mr. Bardacke will address how different stakeholders such as regulators, the Legislature, investor owned utilities (IOU), and CCAs can respond to the changes. The CPAs unique priorities and approaches in response to these changes in the energy landscape will be highlighted.

FISCAL IMPACT:
No Fiscal Impact. This is not a SCAG funded project.

Southern California Association of Governments
Remote Participation Only
January 7, 2021

To: Energy & Environment Committee (EEC)

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

From: Rongsheng Luo, Program Manager,
(213) 236-1994, LUO@scag.ca.gov

Subject: Overview of 2022 South Coast Air Quality Management Plan and Near-term Air Quality Planning Challenges

RECOMMENDED ACTION FOR EEC:
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:
Despite much progress over the past decades, our region still faces significant air quality challenges with serious implications for funding and implementation of important transportation projects. Dr. Philip Fine, Deputy Executive Officer at the South Coast Air Quality Management District (SCAQMD), will provide a presentation on the recent and upcoming air quality planning efforts for the South Coast Air Basin (Basin) and Coachella Valley. Two draft air quality plans have been prepared to address the 2006 24-hour PM2.5 standard in the Basin and the 1997 8-hour ozone standard in the Coachella Valley. Both plans show attainment of these standards by 2023 based on continued implementation of existing regulations. The 2022 Air Quality Management Plan (AQMP) is also being prepared to address the attainment of the 2008 and 2015 8-hour ozone standard in the Basin and the Coachella Valley by attainment deadlines of 2033 and 2038, respectively. Attainment of the 1997 8-hour ozone standard in the Basin by the June 2024 attainment deadline continues to be very challenging because of the lack of federal actions to regulate federal sources and lack of adequate incentive funding.

BACKGROUND:
Pursuant to federal and state laws, the South Coast Air Quality Management District (SCAQMD) is developing several air quality plans for the South Coast Air Basin (Basin) and Coachella Valley including the 2022 Air Quality Management Plan (AQMP).

As required by California Health and Safety Code, SCAG is responsible for providing socio-economic growth forecast and travel activity projection data to SCAQMD for the development of the 2022

AQMP. SCAG is also required to prepare a portion of the AQMP, commonly known as the Appendix IV-C Regional Transportation Plan/Sustainable Communities Strategy and Transportation Control Measures.

The 2022 AQMP will include an important component relative to regional transportation planning and federal transportation conformity requirements, the motor vehicle emissions budgets, which set an upper limit for emissions permitted from on-road transportation activities. The new emission budgets established as part of the 2022 AQMP process and approved in the final plan will become the functioning emission budgets for transportation conformity for future Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and Federal Improvement Program (FTIP), and their amendments post the effectiveness date of the new emission budgets.

SCAG staff has been providing SCAQMD with the socio-economic growth forecast and travel activity projection data from the adopted Connect SoCal. Staff will also prepare our portion of the 2022 AQMP based on the Connect SoCal.

As presented in the Connect SoCal, it is a significant challenge to meet various federal health-based air quality standards in the SCAG region with potentially serious consequences. A particularly pressing challenge is for the South Coast Air Basin to meet the 2024 statutory deadline of attaining the 1997 ozone standard. An air quality plan has been prepared and recently submitted to U.S. Environmental Protection Agency (EPA) to specifically address the attainment challenge. However, if the U.S. EPA disapproves the air quality plan, a federal sanctions clock will be triggered which will lead to federal highway sanctions if the underlying deficiency cannot be resolved within 24 months. Highway sanctions restrict federal funding of transportation projects that expand highway capacity, nonexempt project development activities and any other projects that do not explicitly meet exemption criteria. If imposed, highway sanctions have the potential to impact billions of dollars of federal funding and tens of billions of dollars of important transportation projects in the SCAG region.

It is important to note that additional air quality plans are also being developed by the other four local air districts within the SCAG region in collaboration with the California Air Resources Board (ARB). Staff has been closely participating in and monitoring the various air quality planning efforts throughout the SCAG region and will report on any significant issues to EEC as appropriate.

FISCAL IMPACT:
Work associated with this item is included in the current FY20-21 Overall Work Program (21-025.0164.01: Air Quality Planning and Conformity).

ATTACHMENT(S):

1. PowerPoint Presentation Overview of Air Quality Planning Efforts and Near-term Air Quality Challenges

Overview of Recent and Upcoming Air Quality Planning Efforts and Near-term Air Quality Challenges

SCAG Energy and Environment Committee
January 7, 2021

Dr. Philip Fine
Deputy Executive Officer
Planning, Rule Development and Area Sources
South Coast AQMD

Cleaning The Air That We Breathe...

Presentation Outline

1. Recent Air Quality Planning Efforts
2. 2022 Air Quality Management Plan
3. 2023 Attainment Challenge

Recent Air Quality Planning Efforts

- 2006 24-hr PM2.5 standard – South Coast Air Basin
- 1997 8-hr Ozone standard – Coachella Valley

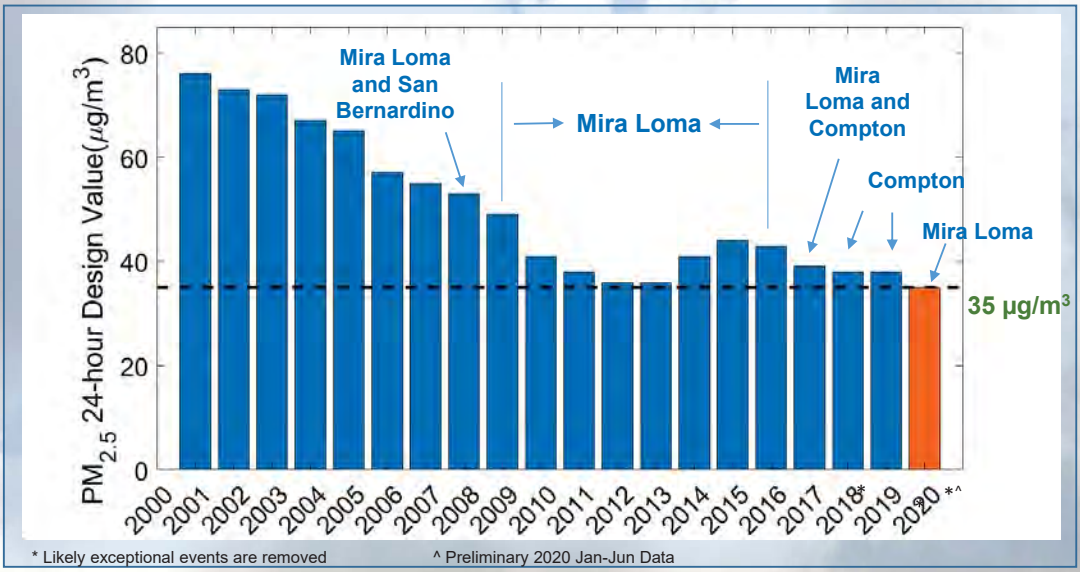
PM2.5 National Ambient Air Quality Standards – South Coast Air Basin

South Coast Air Basin Attainment Status

Standard	Level	Attainment Deadline	Attainment Status
1997 Annual PM2.5	15 µg/m^3	2015	Attained in 2013
1997 24-hour PM2.5	65 µg/m^3	2015	Attained in 2013
2006 24-hour PM2.5	**35 µg/m^3**	**2019**	**Serious Nonattainment**
2012 Annual PM2.5	12 µg/m^3	2025	Serious Nonattainment

- Missed deadline due to two sites still exceeding the standard
  - Mira Loma very close to the standard – 50/50 chance of attaining this year
  - Compton design value high due to 3 unexplained high days in 2017 – very likely will attain this year
  - Exceptional event demonstrations (wildfires) will be critical
- New Plan due to EPA this year

Overall Progress Towards Attainment



Attainment Demonstration

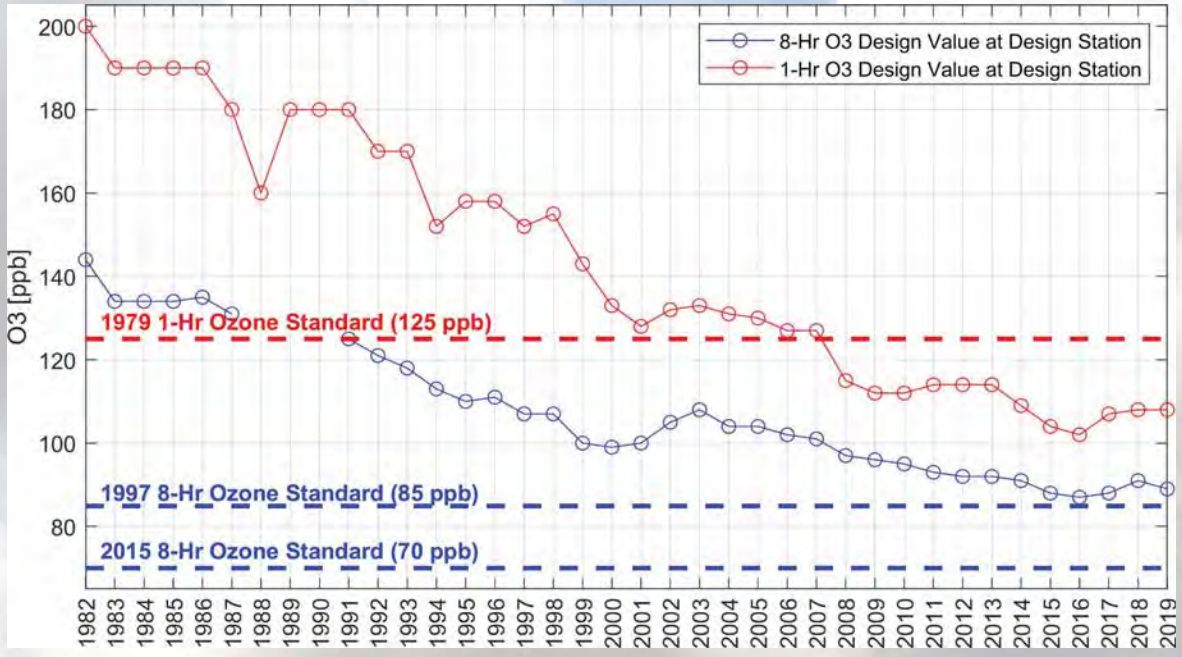
- Compton – Supplemental weight of evidence and air quality trend analysis based on monitoring data
  - Traditional attainment demonstration using chemical transport modeling is not appropriate
    - High PM episodes observed in 2017 were likely driven by anomalous human activities which are not reflected in the emissions inventory
    - If local emissions causing non-attainment are unknown, difficult to develop an effective control strategy
    - Traditional control strategy for Compton would require unrealistic levels of regional emissions reductions and may not be effective
  - Compton will very likely be in attainment before U.S. EPA considers plan
- Mira Loma – Traditional Approach - Updated emissions inventory/regional air quality modeling
  - Modeling analysis indicates attainment by 2023 with baseline emissions (existing regulations) with recently adopted regulations providing further assurances

Ozone National Ambient Air Quality Standards – Coachella Valley

Coachella Valley Attainment Status

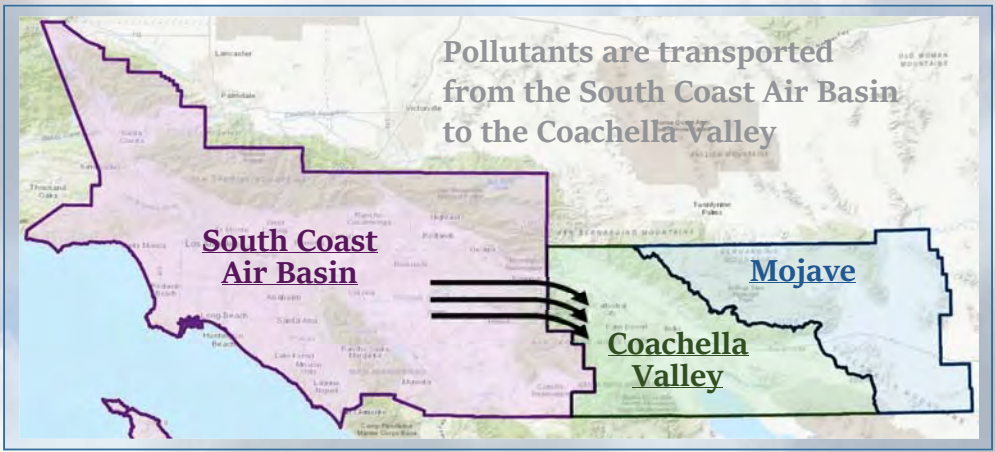
Criteria Pollutant	Averaging Time	Designation	Attainment Date
Ozone (O_3)	(1979) 1-Hour (0.12 ppm)	Attainment	11/15/2007 (attained 12/31/2013)
	(1997) 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	(2008) 8-Hour (0.075 ppm)	Nonattainment (Severe)	7/20/2027
	(2015) 8-Hour (0.070 ppm)	Nonattainment (Severe)	8/3/2033

Ozone Trend in Coachella Valley (design value)



Air Quality Setting

- Ozone exceedances in Coachella Valley are primarily due to the direct transport of ozone and its precursors from the South Coast Air Basin



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Pathway to Attainment

- Attainment by 2023 is expected to be achieved based on baseline emissions
  - Adopted rules and regulations provide continued emission reductions in future years
- Recently adopted rules and regulations since 2016 AQMP as well as continued implementation of 2016 AQMP measures provide further assurance for 2023 attainment
- Based on preliminary modeling, attainment may be earlier (2022), but 2023 is retained as attainment year given uncertainties in meteorology, emissions inventory and modeling approach

2022 Air Quality Management Plan

Ozone National Ambient Air Quality Standards

Attainment Status

Standard	Level	South Coast Classification	Coachella Valley Classification	Attainment Date
2015 8-hour Ozone	70 ppb	Extreme	Severe	August 3, 2038 (South Coast) August 3, 2033 (Coachella Valley)
2008 8-hour Ozone	75 ppb	Extreme	Severe	July 20, 2032 (South Coast) July 20, 2027 (Coachella Valley)
1997 8-hour Ozone	80 ppb	Extreme	Extreme*	June 15, 2024 (both South Coast and Coachella Valley)
1979 1-hour Ozone	120 ppb	Extreme	Attainment	February 6, 2023 (South Coast)

**Voluntary reclassification from severe to extreme in July 2019*

Key SIP Elements for 2015 8-hour Ozone Standard

	8/3/2020	8/3/2021	8/3/2022	8/3/2028
Severe and Extreme Areas	Baseline Year Emissions Inventory	Nonattainment New Source Review	Attainment Demonstration	Section 185 Fee Program (Failure to Attain)
	Emissions Statement		Reasonably Available Control Measures	
	Reasonably Available Control Technology Demonstration		Reasonable Further Progress	
			Conformity	
			Contingency Measures	
	Vehicle Miles Traveled Offset		Enhanced Inspection and Maintenance Program	
Extreme Area Only		Clean Fuels for Boilers		

2022 AQMP

Overall Control Strategy for Attaining 2015 8-hour Ozone Standard

- Extensive transition to near-zero (NZE) and zero-emissions (ZE) technologies in mobile and stationary sources, where feasible
- Transition to cleanest available technologies if NZE/ZE not feasible
- Regulatory measures; Incentive programs
- Eliminate/minimize reliance on 182(e)(5) measures
- Seek legislative authority where applicable
- Seek new sources of funding for new/existing incentive programs
- Work closely with state and local governments to maximize reductions from residential and commercial buildings

2022 AQMP Control Measure Development

- Initiating three working Groups

Mobile Source – On Road

Mobile Source – Off Road

Residential and Commercial Buildings

- Bimonthly meetings (more frequent meetings as needed)
- November 2020 to October 2021 (expected)
- Open to all

2022 AQMP Overall Schedule

2020 Spring
Initiate emissions inventory and modeling preparation

2020-2021
Control Strategy Development/Working Groups

2021 Fall
Release Draft AQMP / Regional Workshops

2022 Spring
Release Draft Final AQMP

Due to EPA August 3 2022

Initiate Advisory Group Meetings
- AQMP
- STMPR

2020

Control Strategy Symposium

2021 Spring

Release Revised Draft AQMP / Regional Hearings

2021 Winter

South Coast AQMD and CARB Public Hearings (June/July)

2022 Summer

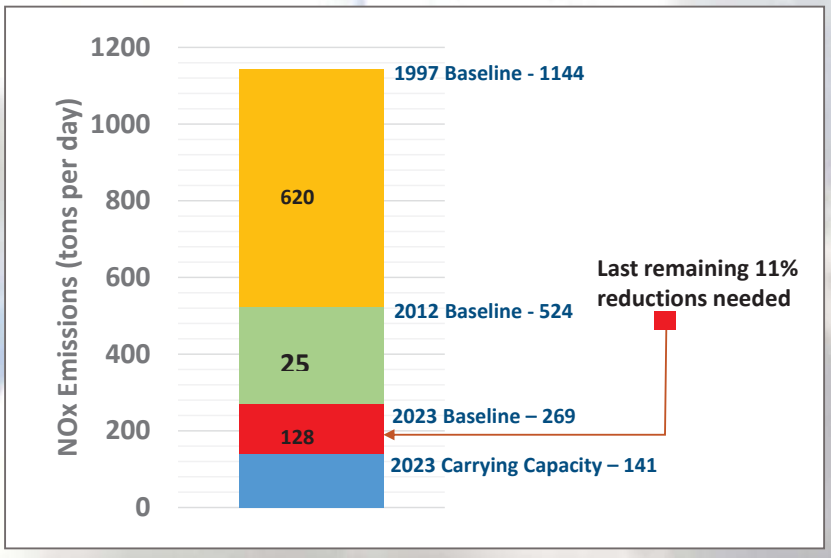
2023 Ozone Attainment Challenge

Ozone National Ambient Air Quality Standards – South Coast Air Basin

Attainment Status

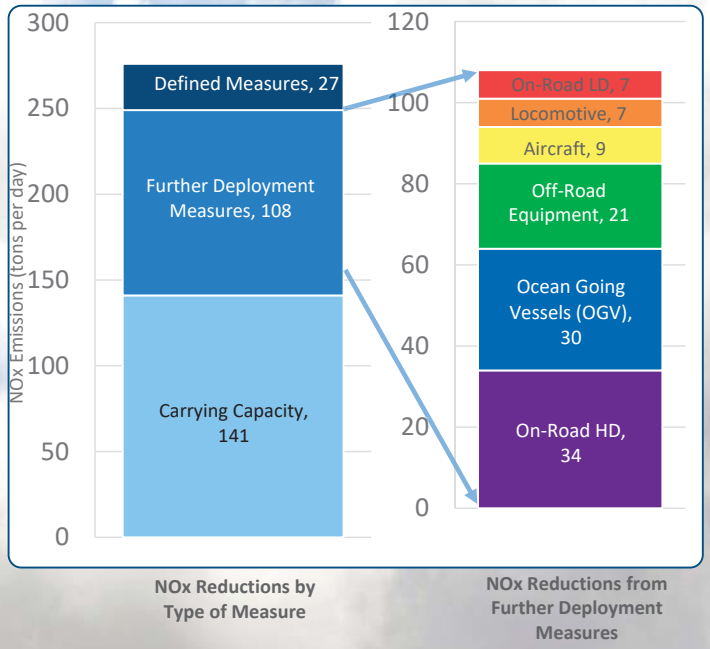
Standard	Level	South Coast Classification	Attainment Date
2015 8-hour Ozone	70 ppb	Extreme	August 3, 2038
2008 8-hour Ozone	75 ppb	Extreme	July 20, 2032
1997 8-hour Ozone	80 ppb	Extreme	June 15, 2024
1979 1-hour Ozone	120 ppb	Extreme	February 6, 2023

Progress in Overall NOx Reductions Since 1997

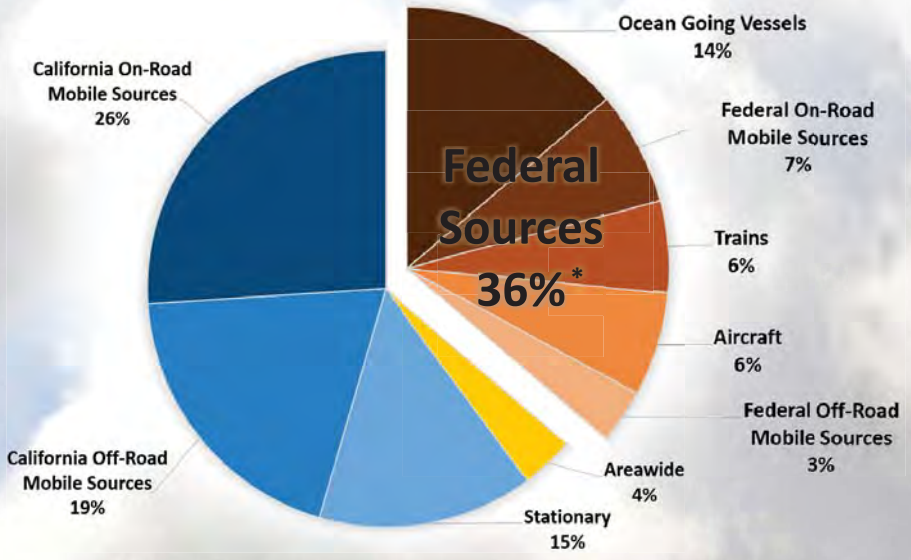


CAA Section 182(e)(5) for Extreme Non-Attainment Areas

- Allows for reliance on emission reductions from anticipated new technologies or improvement of existing technologies
- EPA approved Further Deployment measures in the 2016 AQMP under section 182(e)(5) – 108 tpd
- Contingency measures required 3 years prior to implementation of plan provisions (i.e., 2023 attainment date)
  - Provide full reductions assigned to 182(e)(5) measures



Contribution of Federal Sources (2023 NOx emissions)



** Includes international sources under the responsibility of federal government*

Contingency Measure Plan for Further Deployment Measures Reductions*

Strategy	2023 Reductions (tpd)
Identified Emissions Reduction Strategies	24 – 26
Additional Incentive Funding	15
Federal Measures and / or Funding	67 – 69
All Strategies	**108**

* Submitted to the U.S. EPA in December 2019

Additional Incentive Funding

- 2016 AQMP
  - Estimated need over $1 billion per year over 14 years
  - Current effort will update this estimate based on latest information
- Expected Future Funding (approximately $800 M over 4 years)
  - AB 617-Related Incentives – $80-90 M/yr.
  - Carl Moyer - $40-50 M/yr.
  - Prop 1B - $30 M
  - VW Settlement - $67 M
  - AB2766 Subvention Fund - $22 M/yr.
  - Mobile Source Air Pollution Reduction Review Committee - $17 M/yr.
- Additional Funding Needed
  - Voting District Authorization Legislation - $1.4 B/yr.
  - Other Mechanisms - TBD
  - Expected 2023 NOx Reductions: 15 tons per day

Potential Federal Measures

Measures	Measure Description	2023 NOx Reductions (tpd)
Low-NOx Heavy-Duty Vehicles	Heavy-duty vehicles (above 14,000 lbs. GVWR) powered by low-NOx engines in 2023	Up to 35
Low-NOx Ocean-Going Vessels	Ocean-going vessels coming to California powered by Tier 3 engines in 2023	Up to 28
Low-NOx Locomotives	Locomotives coming to California powered by Tier 4 engines in 2023	Up to 11
Low-NOx Aircraft	Aircraft NOx reductions assumption of 20% if emissions are held at 2012 levels.	Up to 4
Total Possible Reductions Towards Further Deployment Commitment		Up to 78

2023 Attainment Challenge

- Attainment of the 1997 8-hour ozone standard continues to represent a major challenge for the region
  - Regulations/programs adopted since 2016 AQMP fall significantly short of needed reductions
- South Coast AQMD is doing all we can to reduce emissions with current funding and authority
- Significantly more incentive funding is needed to accelerate turnover of existing fleet to cleaner technologies
- Without federal action and/or funding to address federal sources, attainment is not likely

Additional Challenge

- 2020 has experienced some of the highest ozone levels in decades
- Extreme, unusual, early and late season heat waves, wildfire emissions, and COVID impacts are all important factors
- Emissions continue to decline
- Very complicated to assess, but ongoing research:
  - Research contract with UC Riverside to evaluate “Air Quality Modeling and Big Data analysis of Meteorological and Emissions Impact on Air Quality”
  - Changing climate scenarios, “Representative Concentration Pathway (RCP) “, as adopted in IPCC reports being evaluated
  - Evaluating biogenic VOC emissions from urbanized areas and year-to-year changes due to meteorological variations
  - On-going, in-house research in collaboration with academic institutes and research laboratories on the impact of COVID19 shelter-in-place order on Basin air quality

Southern California Association of Governments
Remote Participation Only
January 7, 2021

To: Community, Economic & Human Development Committee (CEHD)
Energy and Environment Committee (EEC)

From: Rongsheng Luo, Program Manager,
213) 236-1994, LUO@scag.ca.gov

Subject: Update on AB 617 Community Plans in the South Coast AQMD

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

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.

EXECUTIVE SUMMARY:
In 2017, Assembly Bill (AB) 617 was signed into law and requires the California Air Resources Board and local air districts in California to conduct community level air monitoring and/or to develop and implement community emission reduction plans. In efforts to achieve AB 617 requirements, the South Coast Air Quality Management District (South Coast AQMD) conducted extensive outreach to gather input for the community selection process and community air monitoring plans. South Coast AQMD chose three communities in Year 1, two communities in Year 2 and one community in Year 3 that are in the SCAG region. Dr. Jo Kay Ghosh, South Coast AQMD Director of Community Air Programs/Health Effects Officer will present an update on the District's AB 617 Community Programs.

BACKGROUND:
South Coast AQMD's mission is to clean the air and protect the health of all residents in the South Coast Air District through practical and innovative strategies. They are a regional government agency tasked with achieving federal and California clean air standards in order to protect public health in Southern California. Their jurisdiction covers 4 counties, over 10,000 square miles, nearly 17 million people, and over 12 million vehicles.

Signed in 2017, AB 617 establishes requirements for a new community focused program to more effectively reduce exposure to air pollution and preserve public health. AB 617 includes five (5) central components, including community-level air monitoring, a state strategy and community

specific emission reduction plans, accelerated review of retrofit pollution control technologies on industrial facilities subject to Cap-and-Trade, enhanced emission reporting requirements, and increased penalty provisions for polluters.

In efforts to comply with AB 617 requirements, South Coast AQMD staff have hosted numerous workshops and meetings to gather input for the community selection process. Three communities were selected for AB 617's first year of implementation: (i) the Muscoy community in San Bernardino, (ii) the Wilmington, Carson, West Long Beach area, and (iii) the Boyle Heights, East Los Angeles, and West Commerce community. Two communities were selected for the second year of implementation: (i) the Southeast Los Angeles community which included South Gate, Huntington Park, Florence-Firestone, and (ii) the Eastern Coachella Valley community, which includes Indio, Coachella, Thermal, Oasis, Mecca and North Shore. Year 1 communities are currently finalizing and preparing for implementation of their Community Emissions Reduction Plans (CERPs) and Community Air Monitoring Plans (CAMPs), and Year 2 communities are currently developing their CERPs and CAMPs.

The process of selecting Year 3 communities was initiated in 2019, and 130 nominations were received from residents, elected official and community organizations. Nominated communities included the South Los Angeles, South Central Los Angeles and Inglewood community; Van Nuys community; and Santa Ana community. The South Los Angeles community was recommended by South Coast AQMD staff and approved by the South Coast AQMD Board in October 2020. The next steps for Year 3 implementation include establishing the Community Steering Committee, community boundary and emissions study area and identifying top air quality priorities.

FISCAL IMPACT:
Work associated with this item is included in the Fiscal Year 2020-2021 Overall Work Program (020. 0161.06: Environmental Justice Outreach and Policy Coordination).

ATTACHMENT(S):
1. PowerPoint Presentation AB 617 Community Air Program Update

AB 617 COMMUNITY AIR PROGRAM UPDATE

DR. JO KAY GHOSH
DIRECTOR OF COMMUNITY AIR PROGRAMS/HEALTH EFFECTS OFFICER
SOUTH COAST AQMD

SCAG Energy and Environment Committee
January 7, 2021

ASSEMBLY BILL (AB) 617

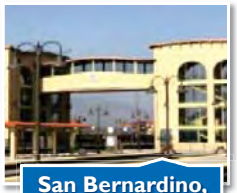
- Signed into law July 26, 2017
- Requires a statewide strategy to reduce toxic air contaminants and criteria pollutants in disadvantaged communities
- Requires the selection of additional communities or locations annually as appropriate*
  - Communities can be designated for a Community Emissions Reduction Plan (CERP) and/or a Community Air Monitoring Plan (CAMP)

*Health and Safety Code §44391.2(c)(1)

SOUTH COAST AQMD AB 617 COMMUNITIES

Designated in 2018 (Year 1)

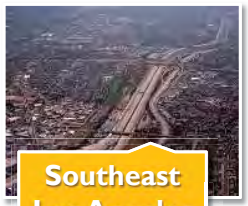
Wilmington, Carson, West Long Beach



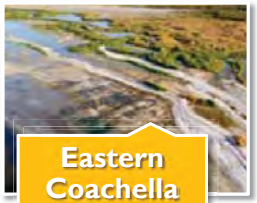
San Bernardino, Muscoy

East Los Angeles, Boyle Heights, West Commerce

Designated in 2019 (Year 2)

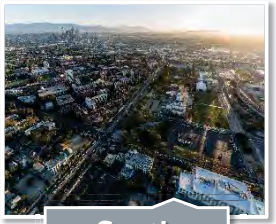


Southeast Los Angeles



Eastern Coachella Valley

Recommended* (Year 3



South Los Angeles

*Approved by South Coast AQMD Board October 2020

TIMELINE: CERP AND CAMP OVERVIEW

Launch	Development	Implementation
• Establish: – Community Steering Committee (CSC) – Community boundary – Emissions study area • Identify top air quality priorities	• CSC meetings and workshops to focus on: – Actions and strategies to meet emission reduction goals and targets – Air monitoring goals and objectives • Source attribution analysis	• CAMP is finalized by staff • CERP is required to be: – Adopted by South Coast AQMD Governing Board – Approved by CARB Board • Plans are implemented

TIMELINE: CERP AND CAMP OVERVIEW

Launch

- Establish:
  - CSC
  - Community boundary
  - Emissions study area
- Identify top air quality priorities

Development

- CSC meetings and workshops to focus on:
  - Actions and strategies to meet emission reduction goals and targets
  - Air monitoring goals and objectives
- Source attribution analysis

Implementation

- CAMP is finalized by staff
- CERP is required to be:
  - Adopted by South Coast AQMD Governing Board
  - Approved by CARB Board
- Plans are implemented

2018-Designated Communities

2020-Recommended Community

2019-Designated Communities

AIR QUALITY PRIORITIES IN THE ADOPTED CERP FOR SOUTHEAST LOS ANGELES

Truck traffic and freeways

Railyards and locomotives

Rendering facilities

Green spaces

Metal processing facilities

General industrial facilities

AIR QUALITY PRIORITIES IN THE ADOPTED CERP FOR EASTERN COACHELLA VALLEY*

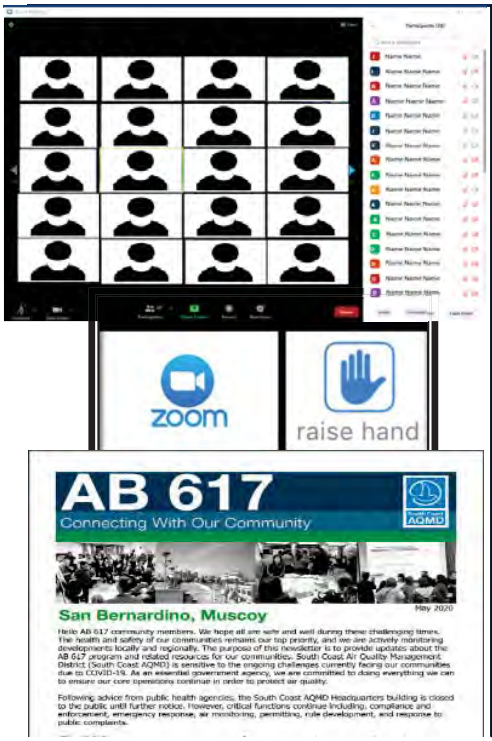
7

*Staff will work with the community to develop further detail in the CERP and CAMP during the first two quarters of 2021

IMPLEMENTATION OF CERP AND CAMP FOR 2018-DESIGNATED COMMUNITIES

South Coast AQMD

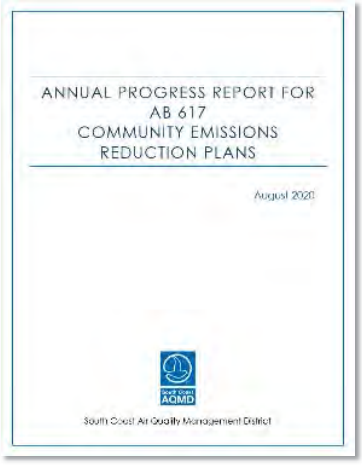
8



COMMUNITY MEETINGS AND OUTREACH IN 2020

- 12 CSC quarterly update meetings
  - 9 virtual meetings, 3 in-person meetings
- 6 community newsletters released
- One-on-one meetings (in-person, teleconference, virtual platforms)
  - Receive CSC input for implementation & quarterly meeting topics

ANNUAL PROGRESS REPORTS (SEP 2019-JUN 2020)



Report Elements

- Community Profile Updates
- Overview of CERP Framework
- Status of CERP Actions, Goals and Strategies
- Metrics for Tracking Progress
- Qualitative Assessment
- Summary of Key Plan Adjustments

SUMMARY OF CERP ACTIONS

- Summary of actions and goals requiring implementation efforts from September 6, 2019 to June 30, 2020

	East LA, Boyle Heights, West Commerce	San Bernardino, Muscoy	Wilmington, Carson, West Long Beach
Actions and Goals*	38	32	43
Initiated or Ongoing	30	22	27
Completed	1	2	5

*Deliverable required by each CERP from September 2019 to June 2020

CERP Actions: Wilmington, Carson, West Long Beach

Air Quality Priority	Examples of Actions, Goals, and Strategies Required (September 2019 – June 2020)	Status of CERP
 **Refineries**	• Improve refinery flaring notifications • Conduct refinery monitoring to identify and address VOC leaks	• Deployed public portal to view flaring event notifications • Rule 1180 monitoring initiated
 **Ports**	• Continue Port MOU development • Update CSC on demonstration projects for ships and harbor craft	• Port MOU initial concepts released, public hearing is TBD • 1 demonstration project initiated, another funded b U.S. EPA
 **Neighborhood Truck Traffic**	• Conduct idling truck sweeps • Conduct outreach events to inform the community members how to report idling trucks	• 4 enforcement sweeps, 219 trucks inspected, 4 NOV • Truck idling outreach conducted at Wilmington Neighborhood Council meeting
 **Oil Drilling and Production**	• Use CalGEM data to identify oil well status • Work with stakeholders to identify improvements for 1148.2	• Oil well status provided to CSC • CSC input received for notification updates, potential future rule development
 **Railyards**	• Provide incentive info to railyards (to replace diesel equipment) • Continue ISR development for railyards	• Incentive outreach provided via webcast • ISR community workshops conducted, initial concepts released, public hearing expected secon quarter 2021
 **Schools and Community Areas**	• Provide air quality related programs to schools or information on programs and partner with local entities and community-based organizations • Install new air filtration systems/replacement filters at schools	• Developing outreach in collaboration with community-based organizations • CAPP incentive funds received in second quarter 2020 for school air filtration systems

CERP Actions: San Bernardino, Muscoy

Air Quality Priority	Examples of Actions, Goals, and Strategies Required (September 2019– June 2020)	Status of CERP
 Neighborhood Truck Traffic	• Conduct truck idling sweeps • Develop Indirect Source Rules (ISR)	• 4 enforcement sweeps, 61 trucks inspected, 2 NOVs • Proposed Rule 2305 (ISR for warehouses) preliminary draft rule language released November 2019, public hearing expected first quarter 2021
 Railyard	• Conduct air measurements • Continue ISR development for railyards	• Monitoring conducted around BNSF railyard mid 2019 to Winter 2019, discussed with CSC • ISR community workshop for railyard conducted December 2019, initial concepts released, public hearing expected second quarter 2021
 Warehouses	• Develop Indirect Source Rules (ISR) and hold public meeting in Inland Empire to discuss • Conduct outreach to support zero emission equipment	• Proposed Rule 2305 preliminary draft rule language released November 2019, public hearing expected first quarter 2021, public meeting in Inland Empire delayed due to COVID-19 • Provided information to SCE for outreach to existing warehouses
 OmniTrans	• Conduct air measurements • Support transition to zero emission buses	• Monitoring conducted Summer 2019 and ongoing, discussed with CSC • Provided two letters of support for grant proposals
 Concrete Batch, Asphalt Batch, and Rock and Aggregate Plants	• Conduct air monitoring; if needed, follow-up investigations • Conduct public outreach on rules and complaint process	• Monitoring conducted Summer 2019, discussed with CSC • Provided complaint process information to CSC
 Schools and Community Areas	• Implement CARE and WHAM programs at schools • Install air filtration systems at schools	• Three schools signed up for WHAM program • CAPP incentive funds received in second quarter 2020 for school air filtration systems

CERP Actions: East LA, Boyle Heights, West Commerce

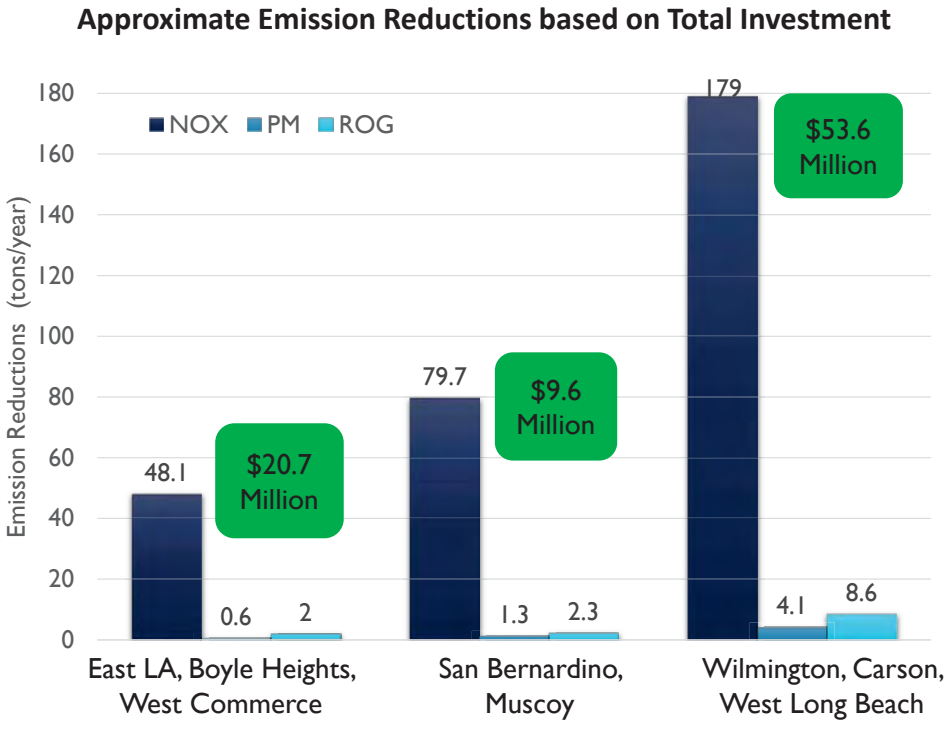
Air Quality Priority	Examples of Actions, Goals, and Strategies Required (September 2019 – June 2020)	Status of CERP
 Neighborhood Freeway and Truck Traffic	• Conduct truck idling sweeps • Continue Warehouse ISR development	• 4 enforcement sweeps, 114 trucks inspected, 1 NOV • Proposed Rule 2305 (warehouse ISR) preliminary draft rule language released Nov 2019, public hearing expected first quarter 2021
 Railyards	• Conduct air monitoring • Develop CARB regulations and Indirect Source Rules (ISR)	• Monitoring conducted around all railyards fall/winter 2019, discussed with CSC • ISR community workshops conducted, initial concepts release public hearing expected second quarter 2021
 Metal Processing Facilities	• Begin mobile air measurements near metal processing facilities • Reduce emissions through air monitoring, enforcement, incentives, outreach, and best management practices	• Stationary and mobile monitoring conducted between Novemb 2019 and March 2020 • CAPP incentive funds requested in April 2020 for control or conversion projects
 Rendering Facilities	• Begin outreach to provide information on Rule 415 requirements • Begin mobile air measurements for VOCs near rendering facilities	• Provided Rule 415 information to CSC in January 2020 • Mobile monitoring for VOCs near all rendering plants beginnin June 2019 and periodically occurring
 Auto Body Shops	• Begin air monitoring near auto body • Conduct targeted enforcement activities, as needed	• Monitoring initiated in Summer/Fall 2019, investigations ongoir • Enforcement efforts initiated, including those driven by monitor findings
 General Concerns about Industrial Facilities	• Address fugitive emissions, odors, and dust through improved public outreach and education on filing air quality complaints • Collaboration with land use agencies to cross-check facility permits	• Provided air quality compliant process information to CSC • Participated in LA County Green Zone ordinance development
 Schools and Community Areas	• Implement CARE and WHAM programs at schools • Install air filtration systems at schools	• Conducted 11 WHAM outreach events within the community • CAPP incentive fund requested in April 2020 for school air filtration systems

EMISSION REDUCTION TARGETS

- Emissions baseline (2017) and emission reduction targets established in each CERP (e.g., NOx, DPM, VOCs)
  - CARB Guidance requires targets for future years (5 and 10 years)
- Staff working with CARB, Technical Advisory Group, and CSC to quantify emission reductions for:
  - AB 617 incentives
  - CARB regulations
  - South Coast AQMD regulations
- Continue to refine metrics for AB 617 emission reductions
  - Status of targets will be evaluated annually

TOTAL INVESTMENT IN INCENTIVES (MOBILE SOURCE PROJECTS)

- Future incentive based emission reductions dependent on program funding



CONTINUING WORK

Community designation year	Upcoming work
2018	• Continue CERP and CAMP implementation, including rule development, incentives, focused enforcement and outreach. • Continue CSC engagement (quarterly meetings, newsletters)
2019	• Begin CERP and CAMP implementation in SELA • Continue working with ECV community to add detail to CERP and CAMP • Continue CSC engagement
2020	• Pending February 2021 CARB community designations • Begin community engagement groundwork