



Central Maintenance Facility Community Update

June 26, 2021



METROLINK®

SMARTER. BETTER. ESSENTIAL.

Meeting Agenda



1. Welcome
2. Improvements at CMF
3. CMF Action Plan
4. CMF Action Plan Updates
 - Short-Term Goals
 - Mid-Term Goals
 - Long-Term Goals
5. Ground Power Stations Video
6. Questions and Answers
7. Next Steps

Welcome

- Spanish language translation is available / Traducción en Español disponible :

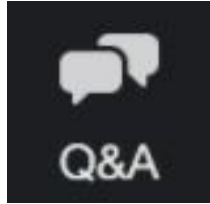
- ID del seminario web: 898 8240 7184
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During the presentation all attendees will remain muted. Please hold all questions until the Q&A segments of the presentation.

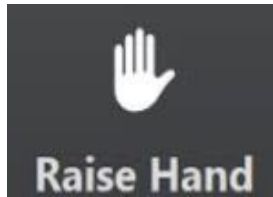


Questions and Answers

Facilitated by: Todd McIntyre, Chief Strategy Officer



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Improvements at CMF

- 39 out of 40 Tier 4 locomotives are in service.
 - 40th Tier 4 locomotive has been delivered; expected in service by end of June
- Permanent on and off-site sound monitor installation with public monitoring options
- Climate Action Plan adopted by Metrolink Board in March 2021
- Facility improvements:
 - Semi-permanent sound barrier pilot underway
 - Phase 1 completed May 29, 2021
 - Phase 2 is projected to end June 27, 2021
- Fleet improvements:
 - Renewable diesel demonstration



CMF Action Plan



- Metrolink's 11-point plan to be a better neighbor by reducing noise and emissions and to be more accountable to surrounding communities.
- Adopted May 2019
- Goals:
 - Short-term = 0 – 6 months
 - Mid-term = 6 – 18 months
 - Long-term = 18+ months
- All action plan updates can be found at metrolinktrains.com/cmfi in the “community resources” section.

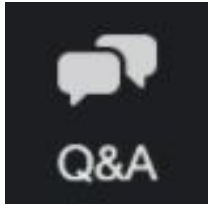
CMF Action Plan Update: Short-Term Goals

All short-term goals are completed. The completed short-term goals are listed below:

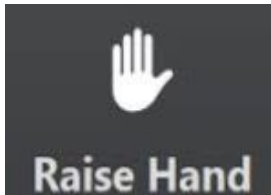
- Optimized use of ground power stations
- Installed sound monitors
- Completed Internal Audit
- LA Metro completed independent new noise study: final report can be viewed at MetroCMFStudy.com
- Expedited 8 Tier 4 locomotives into service
- Changed the Accountability Metrics of the Equipment Maintenance Contractor

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CMF Action Plan Update: Mid-Term Goals

Mid-Term Goal (6-18 Months)	Status	Highlights
7) Fleet Modernization Study		<p>Study is completed. Staff recommends seeking grant funding for the replacement of the Tier 2 fleet with new Tier 4 locomotives as well as a demonstration of zero-emissions locomotive technology. Funding has not yet been secured to advance the study recommendations.</p>
8) CMF Modernization Study		<p>Next steps include continued community engagement, and briefings with elected officials to advocate for the funding of projects contained within the study. A contract for the installation of two semi-permanent sound barriers at the north and south ends of the service and inspection tracks was executed on April 1st. Phase one of sound barrier construction was completed.</p> <p>Funding has not yet been secured to advance the remaining study recommendations.</p>
9) Complete deployment of 40 Tier 4 Locomotives	97%	<p>39 of 40 locomotives have been deployed. The 40th Tier 4 locomotive arrived May 14, 2021 and is expected to go into service in June.</p>

Goal 7: Fleet Modernization Study

Benefits: Cleaner air and less noise

Progress:

- Metrolink Board of Directors approved Locomotive Fleet Modernization Study staff recommendations in April 2021

Findings:

- Findings included in the final report: [Locomotive Fleet Modernization Study Update](#)

Next steps:

- Staff is seeking grant funding for the replacement of the Tier 2 fleet with new Tier 4 locomotives as well as a demonstration of zero-emissions locomotive technology on at least one locomotive.



Goal 8: CMF Modernization Study

Benefits: Cleaner air and less noise

Progress:

- Metrolink Board of Directors received and filed the CMF Modernization Final Report in March 2021

Findings:

- The final report can be viewed here: [CMF Modernization Study Update](#)

Next steps:

- Continued community engagement, and briefings with elected officials to advocate for the funding of these important projects. Funding to continue development has not yet been secured.
- Semi-permanent sound barrier pilot construction was completed May 29, 2021.



Central Maintenance Facility Existing Layout





Central Maintenance Facility
Recommended Projects
(Unfunded)

Load Testing
Building

Sound
barrier

Central Maintenance Facility Existing Layout



Central Maintenance Facility
Long Term Projects (Unfunded)

Improved
warehouse and
Solar Panels

Relocated
Train Wash

Pedestrian Bridge to
Parking and San
Fernando Road



Semi-Permanent Sound Barrier Pilot Status

- Three-Dimensional Acoustical Modeling Performed
 - Data collected on April 8, 2021
 - During the survey, an F125 was load tested as a proxy for operation on a very hot day
 - Each measurement was performed approximately 1-2 feet away from the locomotives
 - Three Scenarios modeled
- Construction began on May 24, 2021
 - Phase 1 construction was completed May 29, 2021.
 - Phase 2 is projected to end June 27, 2021

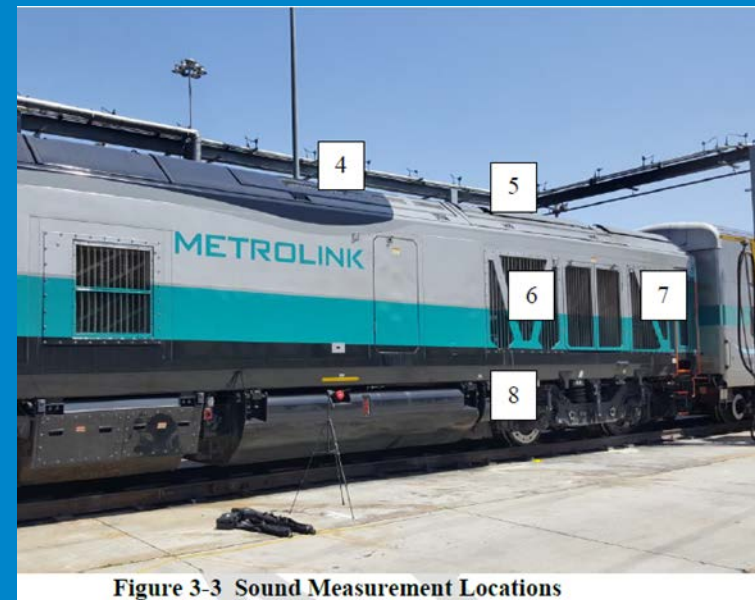


Figure 3-3 Sound Measurement Locations



Figure 3-2 Sound Measurement Locations

Central Maintenance Facility Existing Layout



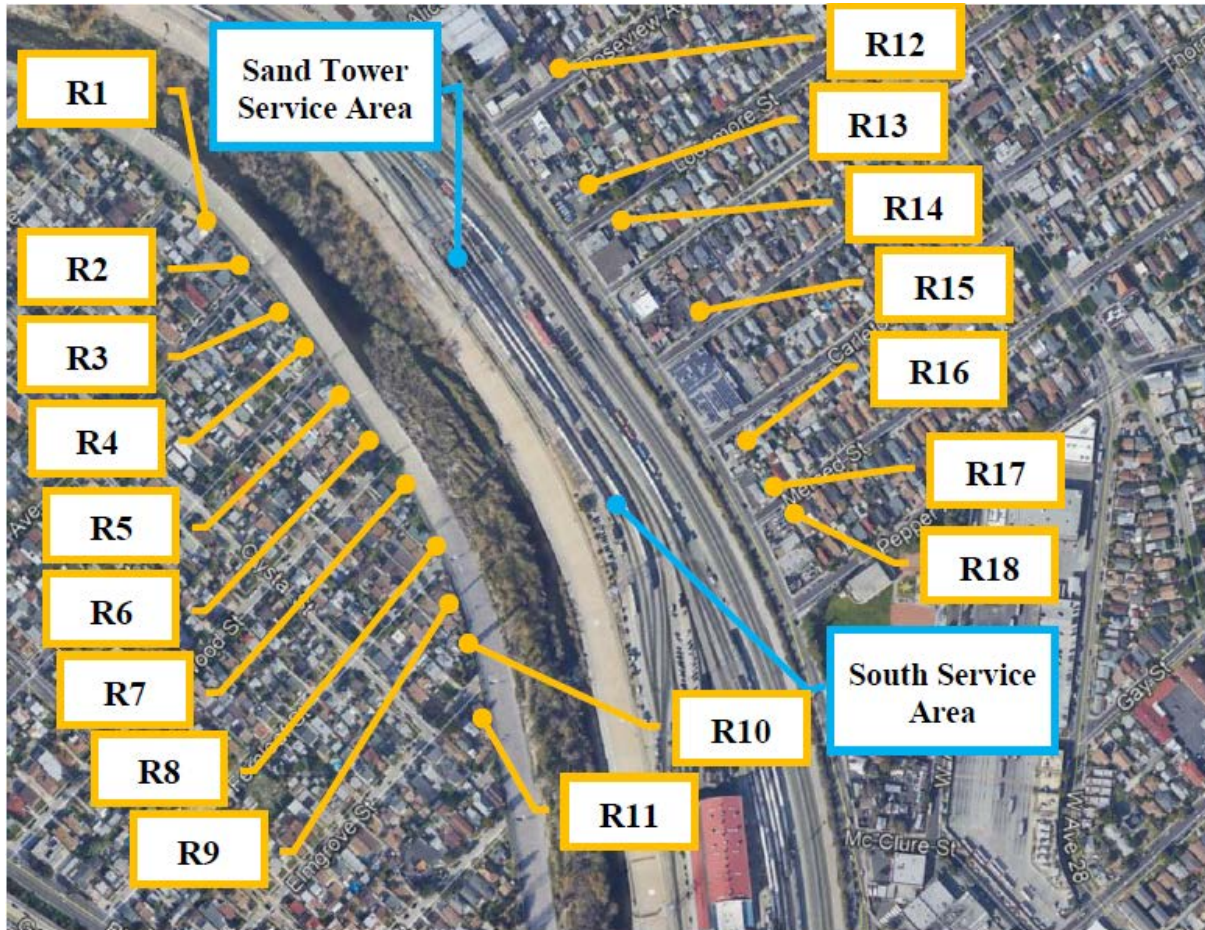
Central Maintenance Facility
Semi-Permanent
Sound Barrier Pilot Underway

Sound Barrier Pilot
South S&I
(96 ft long, 24 ft high)

Sound Barrier Pilot
(96 ft long, 24 ft high)

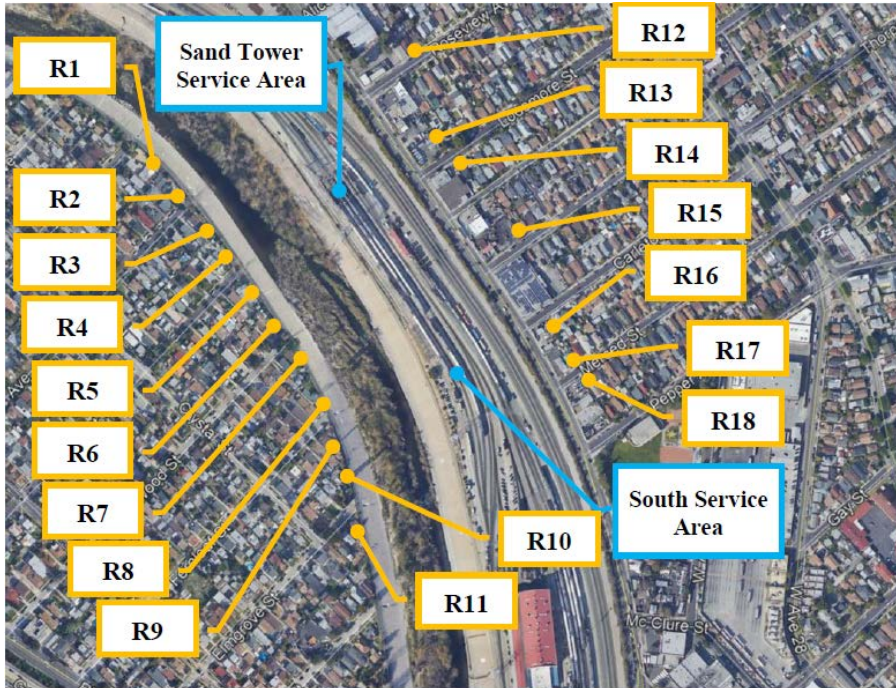


Acoustical Modeling Summary



Scenario	Sand Tower Service Area	South Service Area
1	Four (4) F125 Locomotives load testing	Four (4) F125 Locomotives load testing
2	Two (2) F125 Locomotives load testing	Two (2) F125 Locomotives load testing
3	One (1) F125 Locomotives load testing	One (1) F125 Locomotives load testing

Predicted Unmitigated Noise Levels (dBA)



Receptor	Scenario 1	Scenario 2	Scenario 3
R1	81.4	80.6	79.7
R2	82.1	81.2	80.0
R3	83.3	82.2	80.8
R4	84.5	82.9	81.5
R5	84.6	83.3	81.9
R6	81.7	80.5	79.8
R7	83.1	82.4	80.6
R8	81.2	79.7	78.2
R9	83.0	81.4	79.9
R10	81.4	80.5	79.5
R11	78.7	78.2	77.7
R12	75.0	70.0	66.6
R13	83.9	80.9	78.4
R14	80.0	74.4	70.0
R15	72.1	67.7	64.9
R16	82.7	79.0	75.7
R17	79.9	73.3	69.6
R18	76.3	69.1	63.9

Semi-Permanent Sound Barrier Pilot Overview

- Two sound barriers are in the process of being installed at the service and inspection area at CMF
- 96 feet long and 24 feet tall – the barrier is intended to shield noise generated by locomotive which is 69 feet long and 14 feet tall
- A 20-foot and 24-foot option were analyzed
- Acoustical panel mounted sound barrier system using highly absorptive acoustical panels fabricated from galvanized steel with mylar encapsulated mineral wool.



Image provides an example of the sound barrier construction. Note that the CMF barrier will be galvanized, whereas this has been painted.

Barrier specification STC-43 / NRC 1.1

Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans [Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol](#)

Predicted Mitigated Noise Levels (dBA)



Resident	Scenario 2	
	Unmitigated	Op 2 24 ft
1	80.6	72.5
2	81.2	71.6
3	82.2	71.5
4	82.9	71.8
5	83.3	69.7
6	80.5	70.8
7	82.4	68.4
8	79.7	65.7
9	81.4	67.3
10	80.5	69.7
11	78.2	68.8
12	70.0	70.0
13	80.9	80.9
14	74.4	74.4
15	67.7	67.7
16	79.0	79.0
17	73.3	73.3
18	69.1	69.1

Central Maintenance Facility
Recommended Projects (Unfunded)

Sound Barriers and
Improved Ground Power

Sound Barriers and
Improved Ground Power



Goal 9: Complete deployment of 40 Tier 4 Locomotives

Benefits: Cleaner air

Progress:

- 39 locomotives have been deployed as of December 2020
- All legacy Tier 0 locomotives (30 total) decommissioned and removed from service
- Two Tier 2 locomotives have been decommissioned and removed from the yard

Findings:

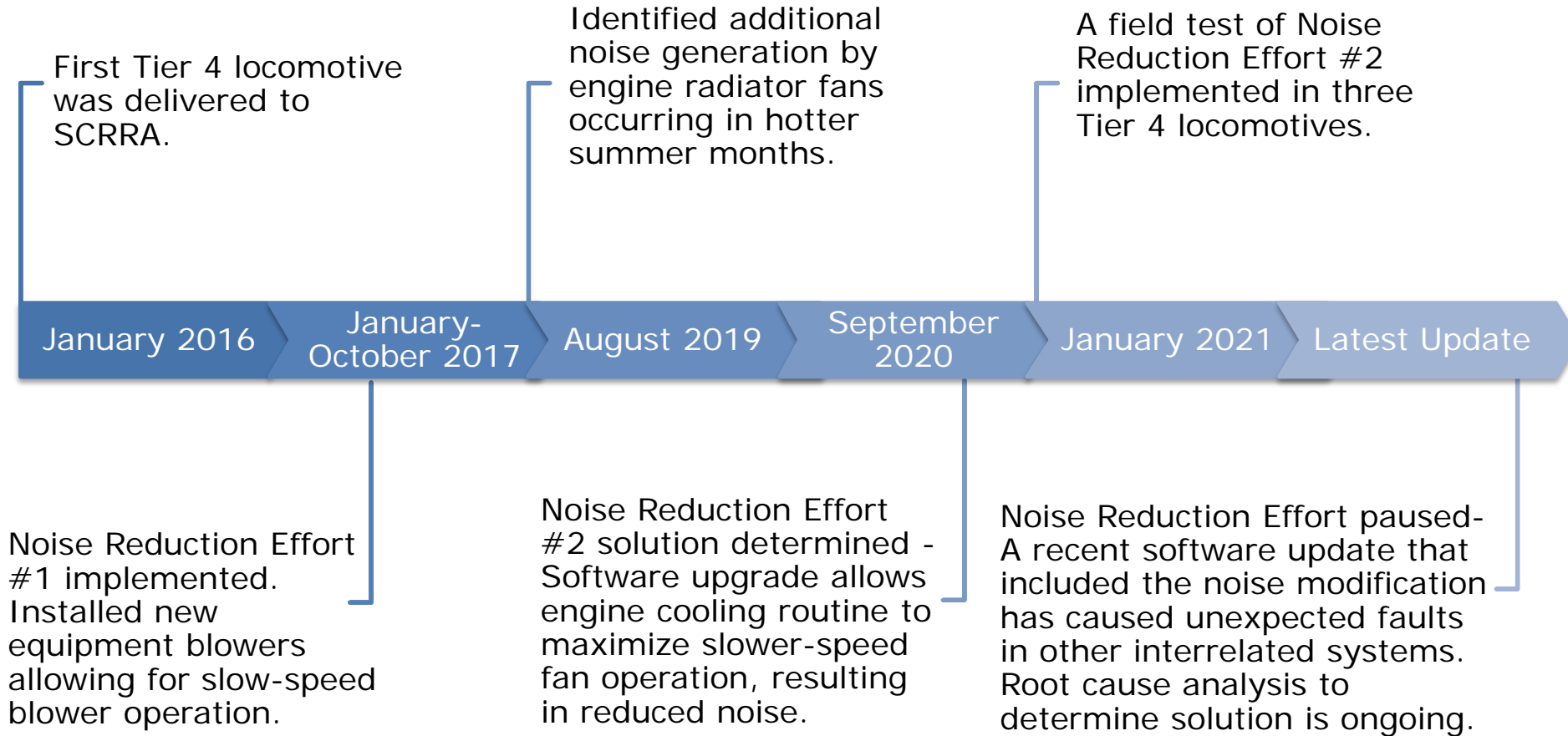
- On September 1, 2020, California Air Resources Board (CARB) certified that Tier 4 locomotives meet the required emissions standards after more than 100,000 service miles.

Next steps:

- The 40th Tier 4 locomotive arrived May 14, 2021 and is expected to go into service in June.



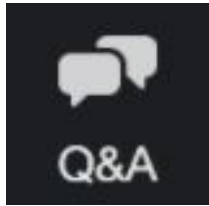
Tier 4 Noise Modifications



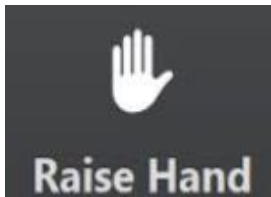
Note: During deployment of Noise Reduction Effort #2 to remaining fleet, Metrolink will continue to monitor the upgrade to ensure no detrimental impact to Tier 4 operation. Fans will still need to run at higher speeds at times, particularly on the hottest days.

Questions and Answers

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CMF Action Plan Update: Long-Term Goals

Long-term Goal (18+ months)	Status	Highlights
10) Work towards a Zero-Emissions Future	45%	The renewable diesel demonstration on a Tier 2 locomotive was completed in May. The California Air Resources Board (CARB) is partnering with Metrolink to measure and calculate the emissions improvement of using this non-fossil fuel-based diesel. Phase 2 of the pilot test will advance to a Tier 4 locomotive by July 1st. If that demonstration is successful, Metrolink may expand renewable diesel across the entire fleet.

Goal 10: Work towards a Zero-Emissions Future

Benefits: Cleaner air and less noise

Progress:

- Staff launched renewable diesel demonstration
- Fuel contract successfully procured renewable diesel at a lower rate
- Climate Action Plan approved by board

Next steps:

- Staff will continue to seek funding for zero emissions projects and to perform pilot tests of zero emission technologies
- Staff to continue pilot demonstration of renewable diesel fuel



Renewable Diesel Demonstration

- Commenced March 1st
- Tier 2 locomotive on Antelope Valley Line
- Drop-in petroleum replacement
- Derived from plant & animal oils
- Emission reduction estimates:
10% NO_x, 30% PM, 80% CO₂
- Tier 4 pilot estimated to start mid July
- CARB performing independent emissions testing of renewable diesel pilot project performance

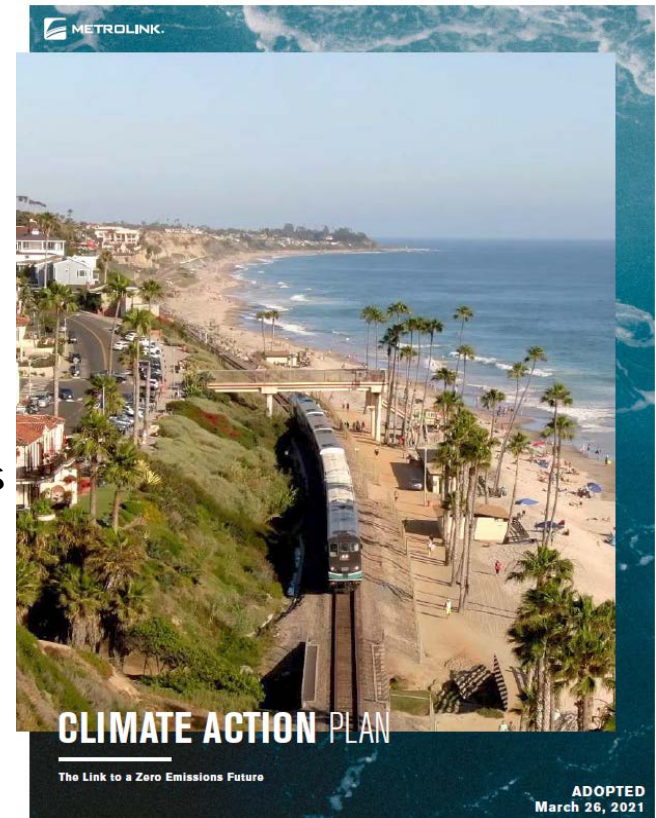


Climate Action Plan

- Approved by Metrolink Board on March 26, 2021
- The plan addresses climate change, air quality, and other pressing sustainability issues to help advance Metrolink's goal for zero emissions by 2028.

TOP MEASURES TOWARD A ZERO EMISSIONS FUTURE:

1. Transition locomotives to 100% petroleum-free fuel
2. Reduce idling and improve efficiencies of locomotives
3. Upgrade Tier 2 to fuel-efficient Tier 4 locomotives
4. Conduct a zero-emissions pilot on AV Line
5. Pilot electrification of dual mode locomotive or conversion to a Tier 4 locomotive
6. Transition 100% of non-revenue fleet light duty vehicles to zero emission models
7. Install zero emission vehicle charging infrastructure
8. Install solar panels and battery storage equipment at facilities where operationally feasible

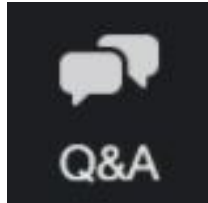


Ground Power Station Video

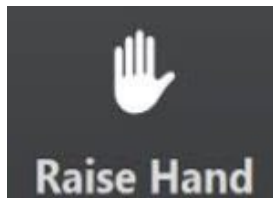


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Next Steps

How to Access the Virtual Meeting Room

We invite you to visit our CMF Virtual Meeting Room (VMR)

- Simply click on the link in the “chat” section of your screen
- Scan the QR code on the screen by using your phone or tablet device






- Or visit www.virtualeventroom.com/metrolink-cmf/

The CMF Virtual Meeting Room (VMR) will be live for 30 days. Materials will be available for viewing on the Metrolink Community website afterwards.

Thank You

Keep in Touch

Our next community meeting will be held on September 2021. We are planning facility tours in the coming months; please contact us at community relations email below if you are interested in a CMF tour.

	<p>metrolinktrains.com/community To view past meeting materials, action plans, newsletters, and background information.</p>
	<p>24/7 Public Affairs Hotline: (213) 452-0400</p>
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