



October 10, 2022

To: Members of the Board of Directors
From: Darrell E. Johnson, Chief Executive Officer
Subject: Long-Range Transportation Plan Workshop

Overview

The Long-Range Transportation Plan defines a vision for Orange County's transportation system that reflects established plans and policies and responds to forecasted system needs. This vision also guides the Orange County Transportation Authority's input into the Regional Transportation Plan, prepared by the Southern California Association of Governments. The Measure M2 projects and programs and the Orange County Transportation Authority's public transit services are key elements of the Long-Range Transportation Plan. However, consideration of additional strategies is warranted to ensure that the established goals are addressed. Strategies to fulfill this need are presented for discussion.

Recommendations

- A. Provide input to staff on the Long-Range Transportation strategies and Short-Term Action Plan.
- B. Direct staff to prepare the draft Long-Range Transportation Plan for public review starting November 28, 2022.

Background

The Orange County Transportation Authority (OCTA) is preparing the Long-Range Transportation Plan (LRTP) as input into the Southern California Association of Governments' (SCAG) 2024 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). This LRTP analyzes travel conditions based on a 2045 horizon year, which assumes a nine percent growth in population and a 12 percent growth in employment over the 2019 base year. The population and employment forecasts were developed by the California State University of Fullerton's (CSUF) Center for Demographic Research (CDR),

in consultation with Orange County local agencies and the Orange County Council of Governments.

The LRTP goals were presented to the Board of Directors (Board) in September 2021. The goals focus on delivering existing commitments identified in Measure M2 (M2), providing safe and reliable transit service, improving system performance, expanding system choices, and supporting sustainability. These goals respond to several factors that are influencing Orange County's transportation system, such as growing travel demand and built-out roadways, evolving travel trends, increasing climate-related risks, a changing funding outlook, and ensuring equity is incorporated in the transportation planning process.

In July 2022, a scenario was presented to the Board that highlighted the need to begin planning for Orange County's future transportation system beyond the 2041 sunset of the M2 local sales tax. In response, the Board supported a proposed set of seven conceptual strategies known as the Paths to Success. This report will provide more detail on the elements and benefits associated with each of the Paths to Success and present potential next steps for discussion.

Discussion

The Paths to Success are intended to chart a course for OCTA that responds to the previously noted factors influencing transportation in Orange County, including the loss of several key programs and services that are currently funded by M2. By doing so, the Paths to Success identify the types of projects and programs that effectively address the LRTP goals and respond to state and federal policies. These additional strategies are included in the draft 2045 Preferred Plan , outlined below.

Draft 2045 Preferred Plan

The draft 2045 Preferred Plan scenario is founded on the M2 program of projects. This includes delivery of 13 freeway improvement projects, enhanced Metrolink service, OC Streetcar service, and funding M2 local streets and roads programs, local transit services, and environmental cleanup projects through at least 2041. Several projects and services also carry over from the 2018 LRTP, including continuation of safe and reliable countywide bus transit service, buildout of the city circulation elements, expansion of the active transportation network, and select highway improvements. A listing of the projects included in the draft 2045 Preferred Plan model network is included in Attachment A.

The draft 2045 Preferred Plan also assumes that the California Department of Transportation (Caltrans) will transition Orange County's carpool lane system over time to a tolled express lane system. The tolled express lane assumption involves increasing the high-occupancy vehicle (HOV) requirement from two to

three persons and allowing non-HOVs access for a fee. This transition is intended to address the many segments of Orange County's carpool network that are not or will not be meeting federal performance standards. Caltrans is currently advancing a project-level environmental analysis study on Interstate 5 (I-5), approximately from State Route 55 (SR-55) to the Los Angeles County Line.

In 2020, OCTA completed an Express Lanes Network Study (ELNS) that identified a preferred phasing strategy for the conversion to tolled express lanes should Caltrans proceed with this approach. In summary, the ELNS recommends corridors for three prioritized phases, as depicted in Attachment B. It should be noted that the years associated with the phases only represent the model year used to analyze performance and do not represent a target implementation date. The following segments are recommended in Phase 1:

- I-5 from State Route 57 (SR-57) to the Los Angeles County Line,
- State Route 91 from SR-55 to the Los Angeles County Line, and
- SR-57 from I-5 to the Los Angeles County Line.

A discussion of the recommended ELNS phasing strategy is anticipated to be included in the draft LRTP. The intent is to communicate a locally preferred phasing approach to Caltrans and SCAG for consideration in their phasing strategies. A summary of the ELNS is provided in Attachment C.

In addition to the assumptions described above, the draft 2045 Preferred Plan includes projects, programs, and services for each of the seven Paths to Success, as outlined below.

1. Extend or Modify Select M2 Programs

As previously noted, M2 will sunset in 2041. The LRTP explores and suggests that M2-funded programs that provide operational support for our transit system are important to the functionality of the transportation system. Therefore, their continuation should be considered independent of how they would be funded in the future. This includes but is not limited to the following services:

- Community circulators,
- Metrolink service,
- Transit accessibility and senior mobility programs, as well as,
- Environmental programs.

It may also be necessary to revisit and modify some programs to ensure their relevancy through 2045 and beyond. For example, the signal synchronization program should be reviewed to ensure that it is flexible enough to adapt to new technologies that support more dynamic responses to traffic patterns and for real-time communication with vehicles and other devices. Also, roadway

improvement programs could be modified to help fund complete street projects that help improve safety and quality of life.

The process to define which programs to retain or revamp is envisioned to begin following the completion of the LRTP. This could be a comprehensive effort that would require a significant level of engagement by the Board, members of the public, and stakeholders. For the purposes of this LRTP, it is assumed that most programs would continue at the current scale. One exception is that Metrolink service is assumed to expand beyond the 55-weekday trains operated in 2019 to 86-weekday trains by 2045. This is dependent on Metrolink successfully implementing the capacity and operational improvements included in the Southern California Optimized Rail Expansion program. It should also be noted that some of the Paths to Success below include elements that could complement and potentially be folded into some of these programs through the revamping process noted above.

2. Expand Transit Services and Accessibility

The draft 2045 Preferred Plan looks to go beyond the near-term improvements proposed in the Making Better Connections effort by further enhancing bus service (increasing revenue vehicle hours by 18 percent and expanding the types of service available to the public. These enhancements reflect plans developed as part of the 2018 OC Transit Vision, which primarily includes expanding the number of corridors served by OCTA's Bravo! rapid bus service in the core of the county. In addition, new freeway bus rapid transit services would be added along the I-5 and SR-55 corridors.

The OC Transit Vision also recommends considering high-capacity transit services, such as bus rapid transit or streetcar along corridors with high demand. In addition, the draft 2045 Preferred Plan includes expansion of on-demand microtransit service within certain portions of the county. This could be in the form of additional OC Flex service or partnerships with transportation network companies, which provide subsidies for users of the service within a defined area.

The draft 2045 Preferred Plan also considers strategies that are gaining momentum at the state level and in other parts of the country related to removing cost burdens for transit riders as well reducing barriers to use transit through unified fare systems. Therefore, the LRTP includes a concept to significantly reduce or remove transit fares. This assumption is dependent on increased operational revenues from state and federal sources, and it would require plans and procedures that preserve or enhance the quality of the transit experience.

3. Enhance Active Transportation

To support and encourage more active transportation in Orange County, the draft 2045 Preferred Plan includes implementation of additional planned bikeways identified in OC Active. These planned facilities will help make active transportation a safer and more attractive choice for Orange County travelers. The relationships with local jurisdictions are critical for advancing the planning and implementation of these regional and local active transportation facilities. While OCTA often takes the lead on planning regional facilities, like the OC Loop, it takes working with local jurisdictions to form consensus and advance the plans to implementation.

Additionally, the draft 2045 Preferred Plan supports exploring opportunities to expand active transportation facilities on strategic segments of the Master Plan of Arterial Highways (MPAH). An initial analysis identified approximately 60 miles of the MPAH where there appeared to be enough available opportunity to repurpose a vehicle lane for a bikeway. It is anticipated that the Short-term Action Plan within the LRTP will recommend exploring these types of opportunities further with local jurisdictions.

4. Explore Mobility Integration

The draft 2045 Preferred Plan includes a strategy for mobility integration to improve access to mobility options and reduce barriers that detract from transit ridership. This is accomplished through a concept that proposes a network of mobility hubs at major transit stops and stations, and at employment and activity areas throughout the county.

Mobility hubs provide a menu of services at a single location to support travel needs within a local area. Common features include connections to regional and local transit services, wayfinding information, rideshare services, and micromobility options. Micromobility consists of services like bike share and shared E-scooters that make it easier for travelers to access the mobility hub or to arrive at their destination. The services available at mobility hubs can also be supported by the concept of Mobility as a Service, or MaaS. Trip planning, real-time travel information, payment for transit, micromobility, or rideshare services can all be consolidated within a single MaaS application that is accessible through a smart device or kiosk. These strategies are intended to work together to provide easier and more equitable mobility alternatives to solo driving options for Orange County travelers.

5. Eliminate Select Freeway Chokepoints

While opportunities to add significant capacity to freeways are diminishing, a study is underway to identify opportunities where improvements can be made with minimal right-of-way requirements to enhance the safety and efficiency of the freeway system. These improvements may include additional auxiliary lanes and braided ramps that help to reduce weaving and other merge conflicts. There may also be opportunities to eliminate lane drops by filling short gaps between ramps. Recommendations from the ongoing study are anticipated to be incorporated into the LRTP.

Technology can also play a role. System management tools are continuing to advance, which creates opportunities for less capital-intensive treatments that can enhance the safety and efficiency of the freeway system. These treatments may include variable speed limits, shoulder-running lanes, and changeable message signs. These system management strategies are proposed to be monitored and further considered in future planning efforts as the technology and state and federal policies evolve.

6. Embrace Technology

Over the past decade, technology has made significant impacts on travel. From trip planning applications with real-time traffic information to the rise of transportation network companies to electric bicycles (E-bikes) and cloud-based networks making remote work a possibility for many. Based on these experiences, the ability to forecast the impacts of technology for 2045 in 2022 is limited. However, planning for flexibility and monitoring developing technologies can allow opportunities to be leveraged when they come along.

There are several technologies that are currently being monitored or studied that may provide opportunities to enhance Orange County's transportation system. Currently, OCTA considers these future possibilities as part of current projects, such as installation of upgraded traffic signal controllers as part of the ongoing signal synchronization program. These controllers can be utilized to support elements of connected vehicle technology driving as such vehicles enter the market. Tracked trends and technologies include, but are not limited to:

- Remote work trends,
- E-bikes, E-scooters, and neighborhood electric vehicles,
- Advanced signal synchronization,
- Connected vehicles, and .
- Electric vehicle charging infrastructure needs.

The trends or technologies noted above are anticipated to be discussed within the draft LRTP and, where feasible, they are reflected in the draft 2045 Preferred Plan modeling analysis. Beyond these, there are also emerging technologies being studied and developed that will also be included for discussion within the LRTP. These may include concepts like fully autonomous vehicles, hyperloop concepts, and urban air taxi services that could develop into new travel options or could lead to other transportation breakthroughs that have not yet been imagined.

7. Elevate System Maintenance and Resilience Priorities

Many of the technologies noted above provide zero-emission transportation options, which are becoming more necessary as wildfires, extreme heat, flooding, and coastal erosion are becoming more frequent threats to travelers and transportation infrastructure. Putting climate-related risks aside, regular maintenance of the transportation system can be challenging and costly on its own. Fortunately, the voter approved M2 sales tax provides funding to local jurisdictions to help offset investments in pavement maintenance. Currently, Orange County has the best pavement quality in the state. One reason for this is because M2 not only provides supplemental funding for this purpose, but it has also encouraged local agencies to make protecting road investments a top priority. Additionally, the M2 Freeway program helps maintain freeway infrastructure when and where projects are implemented. Consistent with the past practice, the draft 2045 Preferred Plan continues to prioritize maintaining and protecting past and future infrastructure investments.

With respect to transit operations, and in addition of expanded service levels, the draft 2045 Preferred Plan reflects OCTA's planned transition to a fully electric bus fleet by 2040 consistent with state requirements.

Finally, it is anticipated that the LRTP will recommend regular transportation system assessments to identify proactive steps necessary for adapting to the changing environment and protecting the traveling public, infrastructure investments, and quality of life in Orange County.

Model Results

Initial model results for the 2019 Base Year, 2045 No-Build scenario, and the draft 2045 Preferred Plan scenario are presented in the following table.

	2019 Base Year	2045 No-Build	Draft 2045 Preferred Plan
Daily Transit Trips	131,000	138,000	185,000
Total Vehicle Hours of Delay	341,000	454,000	316,000
Delay as Percent of Travel Time	15%	18%	14%
Daily Vehicle Miles Traveled (VMT)	76,400,000	81,900,000 (7% increase vs 2019)	82,100,000 (7% increase vs 2019)
Average Speed – Freeways – Peak Period	41	40	42
Average Speed – Arterials – Peak Period	26	25	27

The 2045 No-Build scenario, referenced in the above table, assumes no changes to the 2019 transportation system in Orange County, but it does account for the projected growth of population, housing, and employment through 2045, based on the 2018 Orange County projections developed by the CDR.

In summary, the benefits of the draft 2045 Preferred Plan scenario over the 2045 No-Build scenario are highlighted by higher daily transit trips, lower total vehicle delay, lower delay as a percent of travel time, and better average freeway and arterial speeds during the peak period. The minor (0.3 percent) increase in daily VMT is due to planned capacity improvements on freeways and arterials that had been in place prior to more recent state guidelines. Given the minor change in VMT, it is evident that the strategies included in the Paths to Success are effective and responsive to the realities of how to manage a built-out system and maintain our quality of life.

It is estimated that the Paths to Success provide the equivalent congestion reduction of adding over 100 freeway lane miles but without any physical construction nor the related impacts. This results in some metrics outperforming 2019 Base Year conditions despite growth in population, housing, and employment. This comparison and the metrics presented above highlight how the Paths to Success contribute toward the goal to improve system performance.

It is important to note that the Paths to Success were able to contribute to this goal by also addressing the goal to expand system choices through investments in transit, active transportation, technology, and innovative concepts like mobility hubs. Finally, the commitment to maintaining investments made in Orange County's infrastructure, taking actions to reduce climate-related risks, and investing in zero-emission solutions, the Paths to Success also contribute toward the goal to support sustainability. Taken together, the Paths to Success chart a course that allows the Orange County transportation system to provide all travelers with accessible, safe, and reliable mobility options.

Short-Term Action Plan

While credible resources and methods were used to model 2045 conditions with the Paths to Success, additional studies are required to better understand the efficacy and specifics for implementation of the strategies. This highlights the potential for some strategies to meet or outperform current assumptions, while others may fall short. By including a variety of strategies in the LRTP that contribute to similar goals, options are maintained to evaluate specific applications in Orange County and advance the strategies that work best.

With this in mind, an initial listing of planning efforts for inclusion in the LRTP Short-Term Action Plan is presented in Attachment D. The Short-Term Action Plan is intended to advance the Paths to Success and address additional planning needs anticipated over the coming four years that will inform the next iteration of the LRTP. These will likely be refined through feedback received from the Board on this item and through input received during the upcoming public review period.

Another key element of the Short-Term Action Plan is to coordinate with partner agencies on regional transportation plans. This includes working closely with the Los Angeles County Metropolitan Transportation Authority to coordinate plans for the 2028 Olympics. This also includes collaboration with SCAG to ensure that OCTA's plans are accurately reflected in the 2024 RTP/SCS. Additionally, OCTA will continue to coordinate with other regional partners to develop unified message positions on regional planning policies and strategies, as well as on relevant legislative proposals.

Community Engagement

During fall 2021, OCTA began the first phase of public outreach to help identify transportation options, priorities, and challenges for 2045. The goal was to actively engage the community through an online survey, public webinar, community leaders' roundtables, telephone helpline, print and online resources, and digital media. Due to the coronavirus (COVID-19) pandemic, the LRTP team primarily utilized digital tools, such as E-blasts, texts, and social media messaging to promote the survey and virtual community meetings to abide by

COVID-19 health and safety protocols. More than 1,800 online surveys were collected, and the full survey analysis report can be viewed in Attachment E.

To align with OCTA's diversity, equity and inclusion goals, methods were used to ensure all voices had the opportunity to be heard, regardless of ethnicity, language preference, or socioeconomic background. The survey and project collateral, such as fact sheets, E-blasts, and text messaging were made available in English, Spanish, and Vietnamese. Newspaper, Facebook, and radio advertisements were placed to connect with the Spanish and Vietnamese language communities. A telephone helpline offered in English and Spanish provided an alternative for commenting by telephone, and print versions of the survey were also available. Closed captioning and interpretation were made available during the community meeting. A video recording of the webinar also was posted online and made available for the public to view at any time. Finally, community and pop-up events were held to promote the survey in cities with the highest populations of residents with English as a second language to help reduce barriers to engagement.

In addition, two Community Leader Roundtables were held. These included participation by representatives from: Asian Pacific Islander Community Council, CSUF, Orange County Hispanic Chamber of Commerce, Orange County Human Relations Council, Orange County United Way, Santa Ana College, Friends of Harbors, Beaches, and Parks. The LRTP team also regularly conducts facilitated discussions with OCTA's Citizens Advisory Committee and Diverse Community Leaders Group. Finally, the LRTP team engaged Planning and Public Works Directors at a Transportation Planning Forum in July and met with local elected officials at an LRTP Roundtable in September to gather local insights and perspectives related to the LRTP. The input from these events will be considered in the development of the draft LRTP.

Next Steps

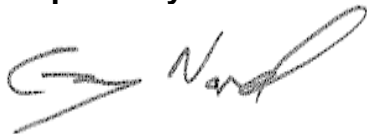
An initial LRTP project list for input into the RTP/SCS will be submitted to SCAG in early November that is consistent with the attached model list, and staff will incorporate input received from this workshop as directed. Additionally, the draft LRTP document will be completed in November. The draft LRTP will reflect the material covered in this and previous LRTP items presented to the Board, and it will reflect feedback received from the Board and other stakeholders. Once completed, a 45-day public review period will be initiated following the Thanksgiving holiday. A status report on the public review process will be provided to the Board in January 2023. It is expected that the draft final LRTP will come before the Board in March 2023, after reviewing and responding to feedback received during the public review.

Summary

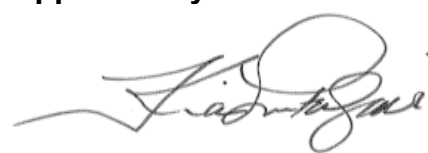
The LRTP is being updated to respond to public input and several factors that are anticipated to have long-term transportation impacts. To effectively respond to public input and the identified factors, including the sunset of the M2 sales tax in 2041, seven Paths to Success were presented to the Board in July 2022. The Paths to Success outline the approach used to develop and model a draft 2045 Preferred Plan. The results indicate that the strategies associated with the Paths to Success do well to address the LRTP goals. However, more work is needed to develop and better understand the efficacy of the proposed strategies. Therefore, a draft Short-Term Action Plan has been developed that highlights the next steps that could be taken to advance the Paths to Success and inform the next iteration of the LRTP. Input received from the Board will be incorporated into the draft LRTP that will be released for public review starting November 28, 2022 through January 23, 2023. .

Attachments

- A. Draft 2045 Preferred Plan - Modeled Projects
- B. Recommended Express Lanes Network Phasing
- C. Orange County Transportation Authority, Express Lanes Network Study Summary Report, December 2020
- D. Draft Long-Range Transportation Plan Short-Term Action Plan
- E. Directions 2045, Long Range Transportation Plan, Survey Analysis Report, April 2022

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