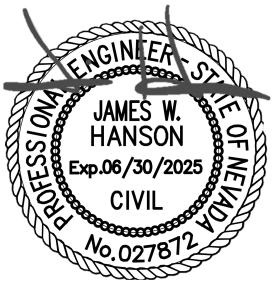
City of Las Vegas

Advanced Mobility Plan

2024



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COMMONLY USED
TERMS AND ACRONYMS

Advanced Mobility: Using innovative methods to enhance traditional transportation assets (signing, pavement markings, ITS, and so on) and developing a strategic approach for investing in emerging transportation trends and technologies that best address mobility challenges.

Autonomous Vehicles (AV): Vehicles that are able to operate without direct human intervention by using various technologies such as sensors, artificial intelligence, and advanced control systems to navigate and make driving decisions.

Communities of Concern (CoC): An area identified as having higher levels of socioeconomic disadvantage and environmental challenges than other areas in the same city. A high proportion of low-income households, ethnic and racial minorities, and limited access to resources and services typically characterize these communities.

Connected Vehicles (CV): Vehicles that are equipped with advanced communication technology that enables them to share information with other vehicles, infrastructure, and devices.

Countermeasure: An action to counteract a danger or threat. For example, the Federal Highway Administration's (FHWA) Proven Safety Countermeasures is a collection of countermeasures and strategies effective in reducing road fatalities and serious injuries.

Dedicated Short Range Communications (DSRC): A technology for wireless exchange of data between vehicles, other road users, and roadside infrastructure.

Electric Vehicle (EV): A type of vehicle that is propelled by one or more electric motors using energy stored in rechargeable batteries.

Intelligent Transportation Systems (ITS): Applying advanced technologies and management techniques to optimize mobility, transportation safety, operations, and efficiency.

Light Detection and Ranging (LiDAR): A method for calculating ranges that involves using a laser to target an item or surface and measuring the time it takes for the reflected light to return to the receiver.

Micromobility: A variety of small, generally low-speed vehicles operated by users over short distances, such as bicycles, e-bikes, and scooters.

Mobility: The ability of individuals to move between origin and destination on the transportation network.

Multimodal: A transportation system that supports travel and mobility using multiple modes of transportation including, but not limited to, automobiles, buses, walking, micromobility vehicles (which includes bicycles), and so on.

Programmatic Solution: Strategic actions that integrate advanced mobility planning into a city's daily operations, such as defining internal roles and responsibilities, institutionalizing business processes, and formalizing internal and external coordination.

Strategy: A recommended approach to achieve a solution.

Solution: Specific action or outcome that addresses a city's needs and objectives.

Tactical Solution: Physically deploying or implementing specific advanced mobility programs, services, and priorities to address a city's mobility challenges.

Technical Advisory Committee (TAC): A group of city staff and local partners assembled to provide guidance and recommendations to validate decisions and provide direction for the Advanced Mobility Plan.

Transportation Infrastructure Assets: Roads, bridges, tunnels, overpasses, conduits, traffic-control devices, or other infrastructure for conveying telecommunications cables, lines, fibers, or wires. Transportation Infrastructure Assets include the information and data collected by these devices and the systems required to process these data.

Vision Zero: A road safety program aimed at eliminating fatalities and serious injuries caused by road crashes through design and engineering, education, enforcement, and policy initiatives. The strategy takes a holistic approach to road safety, prioritizes the safety of vulnerable road users, and seeks to create a safe and accessible transportation system.

Vulnerable Road User (VRU): Road users traveling without the protection of an automobile who have the highest safety risk in traffic, such as pedestrians, bicyclists, and so on.

CITY OF LAS VEGAS
PUBLIC WORKS

DIRECTOR'S LETTER

Dear Residents and Stakeholders,

The City of Las Vegas is excited to present the Advanced Mobility Plan, an ambitious vision for the city to guide strategic investment in emerging transportation trends and technology. This plan exemplifies the collaborative efforts of various city departments and regional partners who are working together to create a more connected, efficient, and sustainable transportation system for our community.

The City of Las Vegas Departments of Public Works, Community Development, and Innovation and Technology have worked together with our partners at the Regional Transportation Commission of Southern Nevada, Clark County, the City of Henderson, the Nevada Department of Transportation, the Las Vegas Metropolitan Police Department, and the University of Nevada Las Vegas to develop this plan. This collaborative approach fostered the development of a comprehensive plan that addresses current and future transportation challenges while optimizing operations and enhancing the quality of life for all residents.

The Advanced Mobility Plan establishes a programmatic, strategic, and tactical framework that integrates advanced mobility technology solutions into existing and upcoming city initiatives. The identified strategies are designed to improve internal collaboration, stakeholder engagement, technology asset maintenance, and technology life cycle management, thereby contributing to 'successfully implementing the plan and maintaining resiliency.

We are grateful to have partnered with everyone involved in this transformative project. The Advanced Mobility Plan represents a significant step forward for our city, and we are committed to promoting its adoption and implementation. We are confident that the Advanced Mobility Plan will be instrumental in implementing advanced mobility solutions for the City of Las Vegas and guiding the way for a more integrated and technologically advanced transportation network. Together, we can apply the plan to shape the future of mobility in our city.

Sincerely,

Joey Paskey
City of Las Vegas Public Works Director

CHAPTER 1

INTRODUCTION

Emerging transportation technologies have resulted in significant safety, reliability, resiliency, and efficiency advancements that benefit cities across the United States, including the City of Las Vegas (City or Las Vegas). However, agencies face challenges in determining the most strategic investments amid the abundance of these technologies. These innovations range from physical infrastructure like smart streetlights and electric vehicle (EV) infrastructure to sophisticated solutions like asset management and data analytics tools.

This Advanced Mobility Plan (AMP) is a strategic framework that will serve as an actionable roadmap to guide the City of Las Vegas in effectively investing in and adopting innovative transportation technologies. Addressing the city's unique mobility challenges, the AMP prioritizes infrastructure, safety, efficiency, and sustainability solutions by evaluating and catering to both current and future transportation needs. The AMP builds on and supports other city plans like the 2050 Master Plan and the Vision Zero Action Plan (VZAP) by using a holistic Transportation Systems Management and Operations (TSMO) approach that emphasizes short-term improvements over 1 to 5 years. This approach aligns the AMP with the City's mobility goals and existing initiatives. The AMP defines a clear mission, a vision, guiding principles, goals, and objectives that are each purposefully crafted to address a specific mobility challenge in the city. In addition to outlining tactical and programmatic solutions, the AMP also includes comprehensive strategies for implementing solutions, including a timeline, a deliverables checklist, roles and responsibilities, and measures of success. This approach provides the City of Las Vegas with the necessary guidance and tools to enact each solution, thereby making it more than a conceptual document.

Throughout the AMP development process, stakeholders provided input on local, regional, and state advanced mobility initiatives. The City created a Technical Advisory Committee (TAC), a multidisciplinary group formed to guide the development of the AMP. The TAC had four meetings throughout the project. Invited to the meetings were representatives from the following City departments and partner agencies:

City of Las Vegas

- Department of Public Works — Transportation Engineering Division
- Department of Neighborhood Services
- Department of Innovation and Technology

Regional Transportation Commission (RTC) of Southern Nevada

- Freeway & Arterial System of Transportation (FAST)
- Information Technology (IT)

The City also invited a group of key stakeholders to participate in a series of three half-day workshops to gather input and feedback on the mobility challenges, issues, barriers, and solutions in Las Vegas. The stakeholders provided valuable feedback on technology and innovation initiatives, policies, and lessons learned to align the components of the AMP with ongoing statewide and partner agency efforts. The AMP stakeholders include:

City of Las Vegas

- Public Works — Transportation Engineering Division
- Community Development
- Innovation and Technology

RTC of Southern Nevada

- FAST
- IT
- Planning

City of Henderson

- Traffic
- IT

Nevada Department of Transportation

- Traffic Safety
- Traffic Operations Technology Services
- District 1

Clark County

- Traffic Safety

Las Vegas Metropolitan Police Department

University of Nevada Las Vegas (UNLV)

Developing the AMP followed a comprehensive and structured process that involved three key stages: Needs and Objectives, Solutions and Barriers, and Strategies. Each stage of the process is built on the previous one, and stakeholders provided valuable feedback leveraging their institutional knowledge at each stage. By following the systematic approach shown in **Figure 1**, the AMP provides a well-rounded understanding of the current state and future direction of transportation in Las Vegas, which enables creating an effective strategic plan to advance mobility throughout the city.

Figure 1: Advance Mobility Plan Development Process

CHAPTER 2

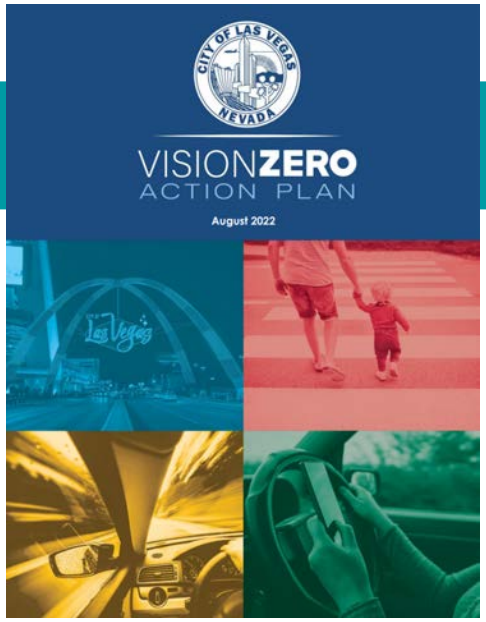
EXISTING CONDITIONS

To properly identify the future needs of Las Vegas, it is crucial to understand the current state of advanced mobility in the City. This section presents the key findings from a literature review of the City's planning documents and an overview of the existing advanced mobility partnerships, projects, and initiatives in the City. Additionally, it outlines the current state of the practice for advanced mobility in Las Vegas, regionally and nationwide, based on interviews with industry experts and peer public agencies.

Literature Review

The City regularly develops and updates plans that establish priorities and set the course for the City. These plans are developed with input from elected officials, the public, and other stakeholders and reflect the goals and desires of the people of Las Vegas. The AMP is intended to further the goals of these existing plans and address identified mobility challenges in the City. For these reasons, these plans were used to identify needs and objectives and develop the mission, vision, and guiding principles for the AMP. These documents include the following:

- The City of Las Vegas Vision Zero Action Plan (2022)
- USDOT's Research, Development, and Technology Strategic Plan FY 2022–2026 (2022)
- The City of Las Vegas 2050 Master Plan (2021)
- Smart Vegas: A Forward-Focused Plan (2019)



CITY OF LAS VEGAS VISION ZERO ACTION PLAN (2022)

The City has seen an increase in crashes caused by distracted driving, impaired driving, high-speed driving, and roadway design. On average there is one fatality and three and a half serious injuries each week. To address this issue, the City recognized the need to develop a comprehensive strategy to improve safety on its streets by establishing a goal of becoming a Vision Zero City by 2050. The City of Las Vegas Vision Zero Action Plan (VZAP) provides a data-driven approach to the following concerns:

1. Reform the City's Approach to Transportation Safety
2. Create Safe Streets for All
3. Implement Safe Speeds
4. Promote a Culture of Safety
5. Enhance Communication, Transparency, & Accountability

Framework for Developing the AMP's Mission, Vision, and Guiding Principles

The VZAP outlines strategies to help guide the City toward its goal of eliminating traffic fatalities and serious injuries by 2050 by promoting safe, healthy, and equitable mobility for all road users. The strategic priority defined in the VZAP, providing safe and equitable mobility for all road users, influenced developing the AMP mission and vision statement. The AMP is committed to implementing transportation solutions that prioritize all road users' safety, regardless of their mode of transportation, income level, or other socioeconomic factors. To achieve this goal, the AMP developed two guiding principles: (1) Equitable and Sustainable Mobility and (2) Protect Vulnerable Road Users (VRUs). These principles were used to establish specific goals and objectives that advance these guiding principles. By incorporating these goals and objectives into the AMP, the advanced mobility solutions recommended in this AMP are advancing the goals of the City's VZAP.

CITY OF LAS VEGAS 2050 MASTER PLAN (2021)

The City of Las Vegas 2050 Master Plan, the City's statutorily required comprehensive plan, provides a clear vision and framework for the future of Las Vegas. The Master Plan is guided by five key principles: equitable, healthy, innovative, resilient, and livable. These principles provide a framework for measuring success, weighing recommendations, fostering a community-driven approach, and improving the quality of life for all residents. The Master Plan highlights transportation as a key system and service and establishes three goals to create safe and efficient roadway networks:

1. Connect and enhance accessible bike and pedestrian facilities as part of a safe, efficient complete street and road network that moves people and goods.
2. Make seamless transit options more convenient and better integrated with vibrant neighborhoods and employment centers, better connecting people to their destinations.
3. Strengthen smart transportation systems and infrastructure to foster economic development efforts.

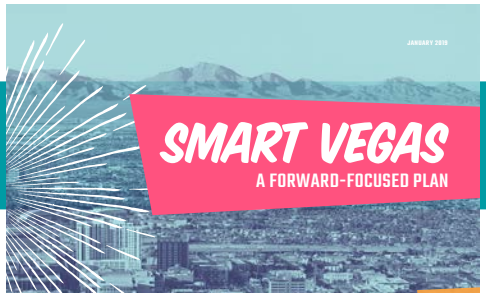
> ***As a leading early adopter in Intelligent Transportation System Management, the City must further connect smart city efforts with mobility planning.***

Framework for Developing the AMP's Mission, Vision, and Guiding Principles

The City of Las Vegas 2050 Master Plan vision statement played a significant role in shaping and developing the AMP mission statement. The 2050 Master Plan vision of being a leader in resilient, healthy cities influenced the AMP strategic focus on remaining a recognized national leader through implementing advanced mobility solutions. By aligning the mission statement with the 2050 Master Plan vision statement, the AMP is better positioned to support the City's long-term goals and objectives.

The City of Las Vegas 2050 Master Plan also outlines specific actions that the City needs to take to achieve its long-term goals, one of which is to strengthen the connection between smart city initiatives and mobility planning.

To further support the goal of strengthening the connection between smart City initiatives and mobility planning, the mission statement of the AMP focuses on developing cost effective, sustainable, and innovative solutions that enhance mobility throughout the city's transportation network. The AMP has identified infrastructure and operations as two of its guiding principles to consider mobility planning for the City's future and existing transportation assets. By incorporating the commitment to smart city initiatives and mobility planning from the 2050 Master Plan into the AMP mission and vision statement, the City can take a more comprehensive and integrated approach to transportation planning and optimize its existing and future infrastructure with advanced mobility technology.



SMART VEGAS
A FORWARD-FOCUSED PLAN (2019)

The 2019 Smart Vegas Plan focuses on connecting the people of Las Vegas by using innovative technologies to enhance mobility, strengthen infrastructure, gather insightful data, and promote inclusive communications. The Smart Vegas Plan focuses on the following six areas:

- Public Safety
- Mobility
- Social Benefit
- Economic Growth
- Education
- Healthcare

The Smart Vegas Plan holistically identifies technology-centric future projects that address the challenges of a modern city. The mobility pillar of The Smart Vegas Plan proposes, "implementing connected vehicle (CV) infrastructure and data analytics to enhance the existing infrastructure." To achieve this goal, The Smart Vegas Plan identifies future projects for CV pilots, autonomous shuttles, EV infrastructure, and data analytics applications.

Framework for Developing the AMP's Mission, Vision, and Guiding Principles

The data analytics component of The Smart Vegas Plan identified the importance of establishing guiding principles in the city for collecting and analyzing relevant data. The City can make informed decisions based on data-driven insights by advancing its data program management and implementing robust data analytics. For this reason, data application was identified as one of the AMP's guiding principles. Data application as a guiding principle will help the City optimize infrastructure investments and enhance the transportation network's efficiency and effectiveness.

U.S. DEPARTMENT OF TRANSPORTATION'S RESEARCH, DEVELOPMENT, & TECHNOLOGY STRATEGIC PLAN FY 2022 – 2026 (2022)

The U.S. Department of Transportation's (USDOT)' Research, Development, and Technology Strategic Plan FY 2022–2026 defines the agency's strategic priorities for advancing transportation innovation to create a safer, more sustainable, and connected transportation system. The Plan highlights several key focus areas, such as enhancing mobility and accessibility through innovative technologies, improving safety, promoting environmental sustainability, and advancing transportation infrastructure resilience.

Framework for Developing the AMP's Mission, Vision, and Guiding Principles

The AMP shares a vision that closely aligns with the vision of USDOT's Research, Development, and Technology Strategic Plan FY 2022–2026. Both plans prioritize developing a transportation network that meets the needs of those who use the facilities rather than for advancing technology. This approach enables the AMP to provide inclusive and equitable transportation solutions tailored to the needs of the Las Vegas community that would make transportation more accessible, reliable, and efficient for all road users regardless of income, ability, or other factors.

The AMP approach can act as a catalyst for economic prosperity by drawing increased interest from businesses and tourists because of enhanced, efficient transportation infrastructure. Moreover, these forward-thinking strategies, underpinned by data-driven insights and sustainability, equip the City with the means to proactively manage and future-proof its transportation infrastructure, which promotes a resilient city capable of navigating evolving mobility demands and challenges.

Existing Conditions Assessment

The AMP was developed based on the understanding that optimizing existing advanced mobility assets, initiatives, and investments could lead to a more efficient use of technology. Optimizing mobility assets, initiatives, and investments covers areas like traffic data collection, curb management, surveillance, CV infrastructure and systems, as well as existing EV policies and infrastructure. To achieve optimizing these areas, the City of Las Vegas' current advanced mobility technology deployments were documented through an existing conditions assessment. The assessment process involved evaluating existing technology and innovation to ascertain their effectiveness, identify areas for improvement and advancements through the AMP, and avoid duplicating ongoing city advanced mobility efforts.

ADVANCED MOBILITY PARTNERSHIPS WITH VENDORS OR PRIVATE ENTITIES

The City of Las Vegas has deployed various advanced mobility strategies. These deployments are primarily pilot projects to evaluate the accuracy and effectiveness of specific advanced mobility strategies and compare technologies. The existing advanced mobility strategies deployed include:

- **GridSmart** — A pilot deployment to evaluate traffic data collection software and analytics
- **Derq/Motional** — A pilot deployment for traffic count data collection with autonomous vehicle company's new partner
- **Cox/Sensen** — A curb management project to minimize idling of rideshare vehicles and taxis
- **Sensen** — A pilot deployment for collecting vehicle volume, speed data, and bicycle and pedestrian data
- **NTT, COX, Hitachi** — A pilot deployment for surveillance cameras in partnership with Las Vegas Metropolitan Police Department to evaluate

  vehicle and pedestrian counts, crowd counting, and wrong-way driving
- **Verkada** — A pilot deployment to evaluate software and analytics

A key takeaway from this assessment is that deploying emerging technologies on a small scale helps mitigate the investment risk while providing meaningful insights into the performance of a product or strategy via real-world testing scenarios. This approach allows the City to evaluate a technology's return on investment, determine if it meets defined goals, develop best practices, and determine if the strategy should be scaled. These takeaways led to the development of programmatic solutions that prioritize and continuously evaluate deploying advanced mobility technologies in the field for optimal performance and effectiveness.

ADVANCED MOBILITY PROJECTS

Existing City of Las Vegas projects with an advanced mobility scope were evaluated to determine opportunities for advancement in the AMP. By analyzing and understanding the existing initiatives, the AMP solutions can build on their successes, address any gaps or limitations, and use the information and insights gained from implementing them. Three projects in the City of Las Vegas have an extensive advanced mobility technology scope:

1. **GoMed** is a federal demonstration project led by the RTC of Southern Nevada and the City of Las Vegas that deploys a system of advanced mobility technology solutions, such as autonomous transit vehicles, smart

transit shelters equipped with smart lighting and public Wi-Fi, and passive pedestrian detection at 20 key intersections to improve safety and connectivity between Downtown Las Vegas and Las Vegas Medical District. The design was completed in 2023 and construction is scheduled for June 2024 to June 2025.

2. **Project Blackjack** was a City of Las Vegas intelligent intersection project from 2020 to 2021 that implemented advanced traffic signal control, LiDAR pedestrian detection, and high-bandwidth communications to manage traffic flow and support deploying connected and autonomous vehicles. The project included installing Dedicated Short-Range Communications (DSRC) Roadside Units, which are actively being converted to C-V2X.
3. **Innovation District** was adopted by the City of Las Vegas Council as part of the USDOT Smart City Challenge in February 2016 (Resolution Number R-4-2016). The main goal of the Innovation District is to establish a hub for testing and implementing new technologies and transportation infrastructure that will foster long-term economic growth and improve the overall quality of life.
4. **Above-ground Light Detection and Ranging (LiDAR) Asset Management Scan** is a project that uses LiDAR technology to collect data on the location and characteristics of above ground City owned assets and infrastructure, such as light poles, traffic signals, and pavement markings. This project, completed in 2023, provides the City with a comprehensive view of its assets and current condition to improve the City's asset management capabilities while also proactively informing maintenance decision-making processes.

ONGOING ADVANCED MOBILITY INFRASTRUCTURE INITIATIVES

Connected and Autonomous Vehicles

The City of Las Vegas has actively participated in implementing and testing connected and autonomous vehicle technologies by deploying infrastructure in collaboration with industry technology companies and partner agencies. The City began deploying infrastructure for CVs through its partnership with Cisco and Project Blackjack. However, as technology evolved and new options emerged, the City recognized the potential of C-V2X technology for CVs and began converting existing DSRCs to C-V2X. C-V2X uses cellular networks, which provide advantages for increased coverage and faster communications and enhanced capabilities, such as support for vehicle-to-vehicle, vehicle-to-infrastructure, and vehicle to pedestrian communication. The City has installed 150 new intersection devices that use Internet of Things (IoT) technology to collect data that can be sent to the City's cloud for monitoring and analysis. The City's IoT network includes cloud infrastructure, cameras, air-quality sensors, and LiDAR sensors that capture 3D data about traffic counts, vehicle proximity, and wrong-way driving.

The City has an opportunity to optimize its CV infrastructure by using existing C-V2X technology and AMP solutions. Integrating advanced technologies, such as the IoT networks and edge computing into the cellular network communications, the City can expand its potential to have a more connected network and become an early adopter of CVs. To achieve this, the City needs to maintain regional coordination with partner agencies and stay up to date on national standards.

Electric Vehicles

Significant advancements in transportation electrification have occurred in the past decade, and the City of Las Vegas has been actively exploring EVs and support infrastructure, which has the benefits of mitigating air quality and greenhouse gas emissions. Policy and actions from

the city, regional, state, and federal governments; non-governmental organizations; and the private sector further accelerated adopting and growing EVs in the marketplace and developing the associated EV charging infrastructure. By 2032, EV ownership will likely increase from 2 to 7.4% in Nevada.[1] This upward trend will likely continue as more people opt for sustainable and environmentally friendly transportation options. This section includes an overview of the policies and infrastructure in place to support EV use in the city. Understanding the current state of the practice for EVs in Las Vegas allows the City to identify gaps and opportunities to support adopting and growing EVs and EV infrastructure.

Policy Context

Policy for EVs in Las Vegas is informed by several local, regional, state, and federal key initiatives and legislative actions focused on sustainable transportation and climate action:

- City of Las Vegas Plug-in Hybrid Electric Vehicle Demonstration Program
- City of Las Vegas 2050 Master Plan
- RTC's On Board Mobility Plan
- Clark County's Sustainability and Climate Action Plan
- Nevada Senate Bill 448
- Electrifying Nevada's 21st Century Transportation System: Actions, Opportunities, Aspirations

These policies and programs collectively emphasize a commitment to promoting EVs, reducing greenhouse gas emissions, and enhancing sustainable transportation options in Las Vegas.

Current Conditions of EVs in Las Vegas and Surrounding Area

In addition to a network of over 200 publicly accessible EV charging station locations in southern Nevada, shown in **Figure 2**, the current state of EVs in the region includes:

- Nearly all resorts in Downtown Las Vegas and on the Las Vegas Strip have EV charging infrastructure at their properties.
- Deploying charging as a part of the State's Nevada Electric Highway (I-11) linking Las Vegas to Reno with EV charging stations; and the I-15 Alternative Fuel Corridors between the California state line at Primm and the Arizona state line at Mesquite.
- NV Energy, the state's investor-owned utility, proactively deployed a time of use EV retail rate that allows customers to pay a discounted rate if they charge the vehicle during the utility's off-peak hours.
- Some of the key barriers to adopting EVs in the city include gaps in EV charging infrastructure, significant cost of installing EV infrastructure, and lack of education about EVs to members of the public. Although the City was one of the first to adopt EV technology over 10 years ago and maintains its citywide EV chargers with in-house, dedicated electricians, approximately 20% of the City's EV chargers are at the end of their life cycle and no longer functional.

The City faces barriers to adopting EVs and has significant EV infrastructure gaps in meeting the demand associated with the forecasted growth in EV vehicle use. The Nevada Department of Transportation's (NDOT) National Electric Vehicle Infrastructure Plan, the Nevada State Plan for Electric Vehicle Infrastructure Deployment, forecasts that 5.6% to 8.4% of the vehicle fleet will be EVs by 2032.[2]

[1] Nevada State Plan for Electric Vehicle Infrastructure Deployment: https://www.fhwa.dot.gov/environment/nevi/ev_deployment_plans/nv_nevi_plan.pdf (2022)

[2] Nevada State Plan for Electric Vehicle Infrastructure Deployment. https://www.dot.nv.gov/home/showpublisheddocument/20723/637947099699800000. (2022)

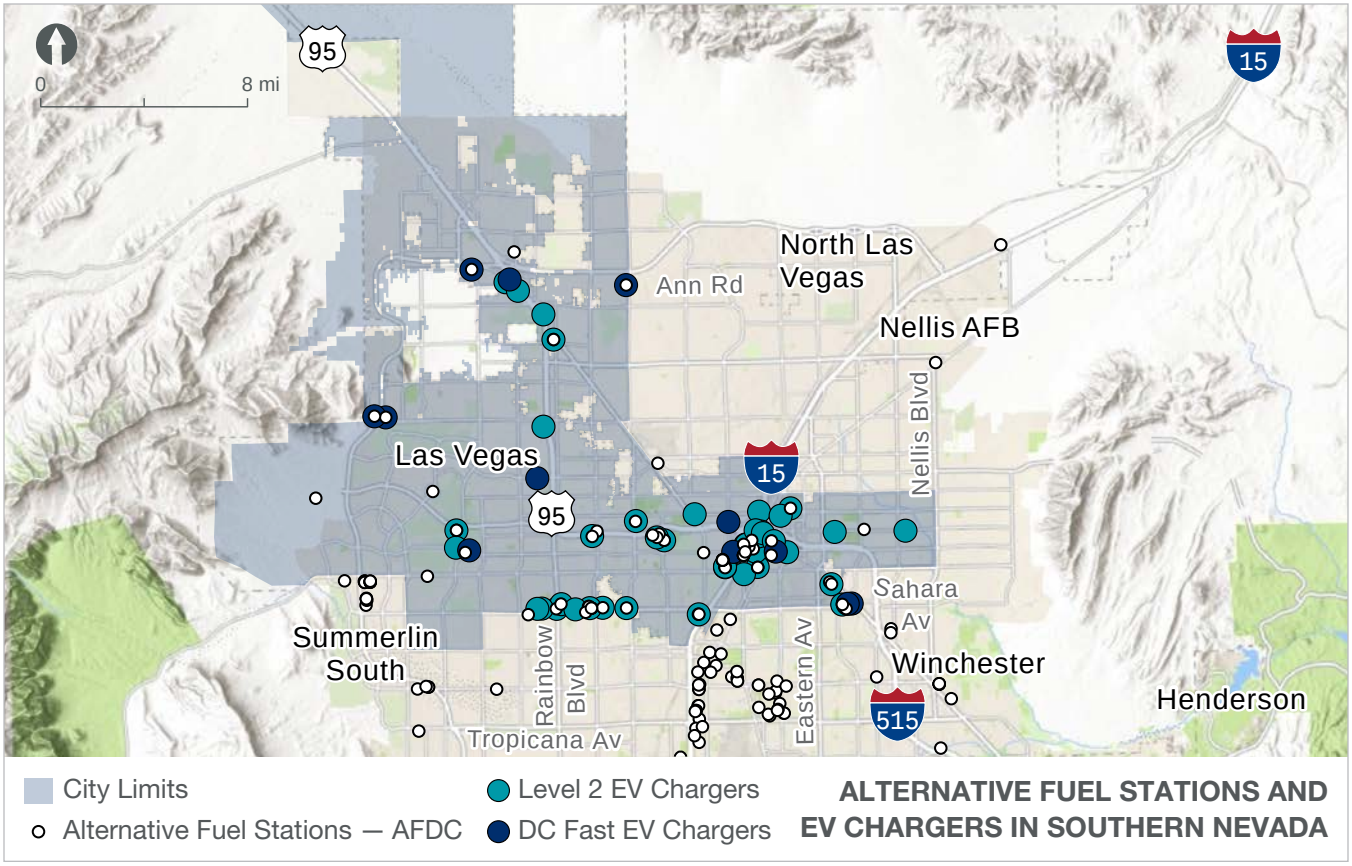


Figure 2: Alternative Fuel Stations and EV Chargers in Southern Nevada

To meet this forecasted demand, the Department of Energy's Electric Vehicle Infrastructure Projection Tool[3] indicates that 950 to 1,350 public Level 2 chargers will be needed in addition to Direct Current (DC) Fast Chargers and substantial increases in workplace charging. The City currently has 76 Level 2 public chargers in operation.

In addition, to inform the Clark County Regional Transportation Electrification (TE) Strategy,[4] a survey was administered to Transportation Electrification Working Group (TEWG) member organizations and interested parties. A total of 28 organizations responded.

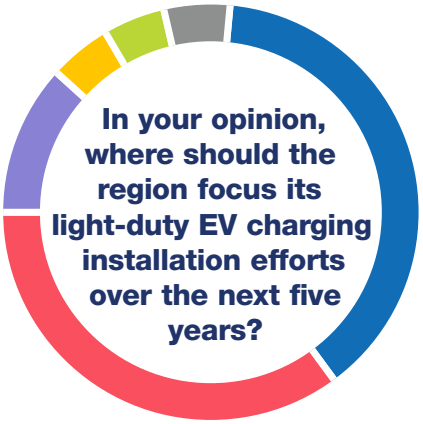
The survey results indicated that the most significant impact on adopting light-duty EV would be through charging infrastructure planning (75%), followed closely by education and outreach, and accelerating adopting EV in underserved communities. In addition, the survey results indicated that public and multifamily EV charging locations should be the most significant focus of the group's efforts because public locations and multi family locations garnered the top two categories of where survey respondents thought the region should focus on installing light-duty EV charging, as shown in **Figure 3**. The TE Strategy also identified public education as important for reducing perceived barriers to adopting EVs for underserved communities by demonstrating benefits and cost reduction incentives.

Figure 4 shows the DC Fast and Level 2 Chargers in the Las Vegas limits. This inventory provides a high-level understanding of the gaps in the City's EV

[3] Department of Energy Alternative Fuels Data Center. https://afdc.energy.gov/evi-pro-lite

[4] All-In Clark County Regional Transportation Electrification Strategy (TE Strategy). https://ops.allinclarkcounty.com/resource/373-regional-transportation-electrification-strategy

Figure 3: Transportation Electrification Working Group Survey Results, 2023



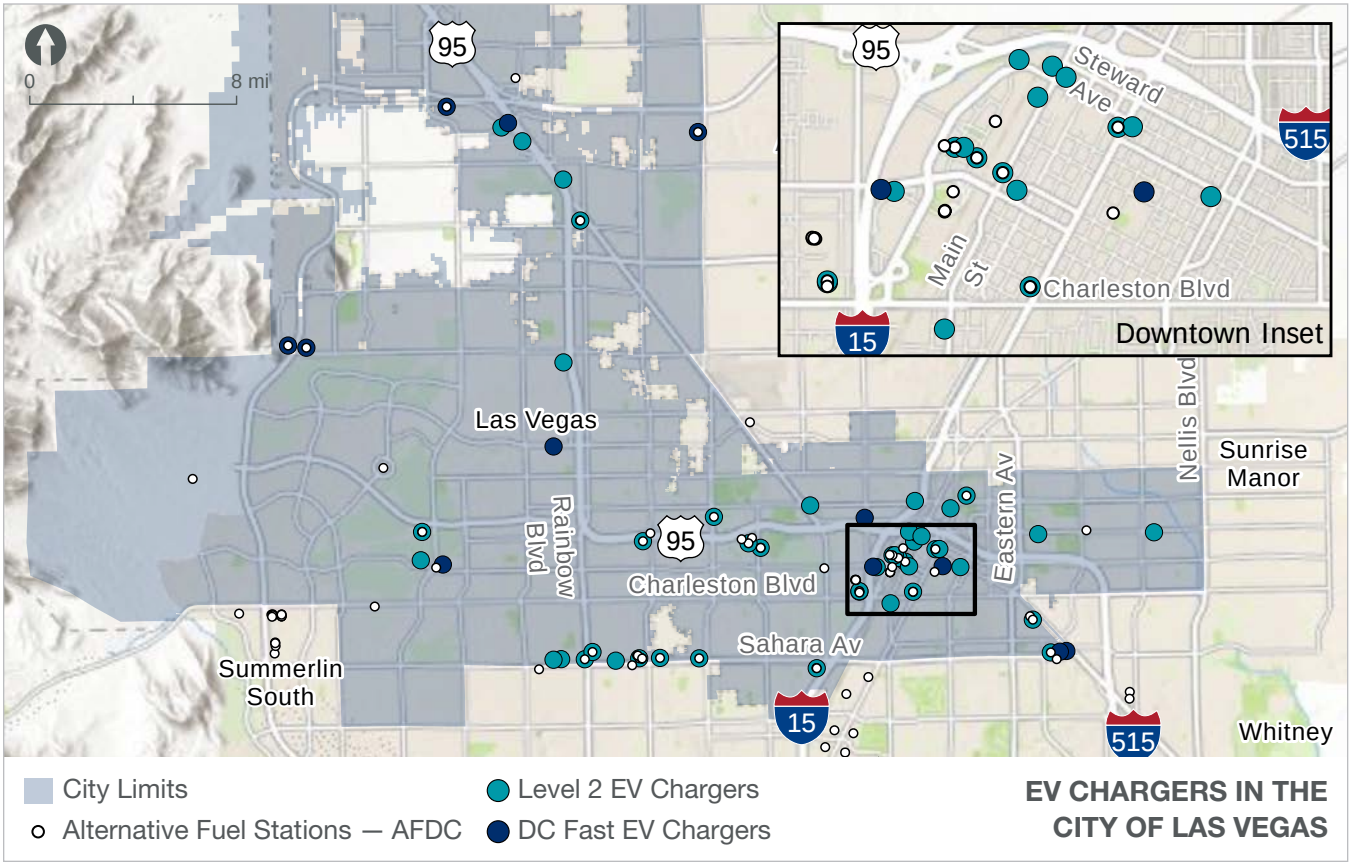
- Public Locations **40%**
- Multifamily Communities **35%**
- Workplaces **10%**
- Single Family Home **5%**
- Underserved Communities **5%**
- Not Sure **5%**
- Other **0%**

Source: S Curve Strategies

infrastructure and helps identify potential solutions and considerations to provide a more efficient, accessible, and equitable EV network that will reduce infrastructure barriers to adopting EVs.

After successfully completing its scope of work, the TEWG became inactive, and the Southern Nevada Clean Cities Coalition took over the responsibility for promoting sustainability initiatives in Southern Nevada. The City is an active member of this coalition and will continue to contribute to the success of sustainability efforts in this region.

Figure 4: Public and Private EV Chargers in the City of Las Vegas



State of the Practice

As part of developing the AMP, industry experts and public agencies were consulted to evaluate the current state-of-the-practice for advanced mobility in Las Vegas, regionally, and nationwide.

INDUSTRY INTERVIEWS

While developing the AMP, the project team consulted with four industry technology leaders currently working in Southern Nevada to gain insight into the recent transportation technologies and innovations, solutions, and trends. These meetings provided valuable insights into the current state of transportation technology in Southern Nevada, as well as the industry's perspectives on the region's future and the infrastructure or system barriers that might impede implementing future technology. The key takeaways include:

- In 2022, INRIX partnered with the City for its Safe Streets and Roads for All Grant Application, leveraging the use of Safety View, a collaborative analytics platform, to meet reporting requirements and highlight best practices. Safety View simplifies access to comprehensive safety insights by using data from CVs, public sources, and a local crash data repository. The City has an opportunity to leverage one of Safety View's key features to identify and compare high VRU index and high pedestrian and/or bike crash areas, which helps prioritize and implement safety strategies and initiatives.
- As a partner with NDOT, the City has access to the Statewide NDOT Roadway Analytics platform provided by INRIX. This web-based platform offers transportation insights, including standard Federal Highway Administration (FHWA) performance metrics, speed, and travel-time data. This collaborative platform provides the City with current statewide trends and industry advancements.
- The City has an opportunity to assess and evaluate the features and capabilities of Rekor Artificial Intelligence traffic management solutions. This provider offers a range of Software-as-a-Service solutions that leverage data, including crowdsourcing information from CVs and police computer-aided dispatch safety events, to deliver actionable intelligence. These solutions aim to enhance incident awareness, facilitate quicker incident detection, provide insights for event management planning, and identify areas of high crash risk and congestion. By evaluating Rekor's offerings, the City can explore how these solutions can effectively support its traffic management objectives and improve overall transportation operations.
- To help advance the research and development of Motional's autonomous vehicle detection, the City has an opportunity to publicly provide transportation maps specific to the City of Las Vegas, such as an inventory of near real-time work zones. Improving accessibility to work zone data was identified as a top need during USDOT's Data for Automated Vehicle Integration initiative. By establishing a Work Zone Data Exchange that offers real-time information on construction events and traffic conditions, researchers and developers can enhance the detection capabilities of autonomous vehicles.

The AMP was developed with the following considerations in mind: the available data sources, necessary prerequisites for implementing future technology, and the importance of near real-time transportation information, which based on the discussions from the industry interviews. This approach was tailored to address the current and anticipated needs and capabilities of advanced mobility technology in the city, region, and state while simultaneously building on existing

investments. As a result, the AMP has been designed to address the city's unique transportation landscape and leverage existing partnerships.

PEER REVIEW

Public agencies are acknowledging the potential benefits of emerging transportation trends in their transportation system and recognize the need for strategic planning to make effective investments. As a result, agencies are developing advanced and/or smart mobility plans to guide their investments in transportation technology. To inform developing the AMP, a peer review was conducted on advanced and/or smart mobility plans from cities nationwide. This review analyzed goals, strategies, and implementation outcomes to identify opportunities and best practices for developing the AMP.

The review identified common challenges and best practices of peer cities and provided four key insights. The first insight validated the guiding principles and goals of the AMP, and the remaining three were used to enhance the plan further. This distinction highlights how the insights provided both validation and actionable guidance, that contributed to developing the AMP.

1. **The AMP's guiding principles align with national priorities to advance and expand mobility and technology.**
2. **Programmatic planning that focuses on the organizational structure and business processes of implementing the AMP is just as important to program success as its tactical solutions.**
3. **The AMP should be a living document with an emphasis on considering additional solutions to incorporate other best practices into future city advanced mobility planning efforts.**
4. **Early deployment and pilot programs serve as implementation processes that can effectively address challenges and identify best practices on a smaller scale before citywide application.**

The purpose of the peer review was to verify the elements of the AMP were developed in accordance with standard industry practices, and to demonstrate that the document is aligned with established practices nationwide. By incorporating best practices, considering pilot programs, and maintaining the document's adaptability, the AMP is designed to be relevant and well-positioned to address the mobility challenges of the city.

CHAPTER 3

MISSION, VISION, GUIDING PRINCIPLES, GOALS, AND OBJECTIVES

The transportation industry has experienced significant transformation because of emerging technologies and innovative practices that has resulted in improved safety, efficiency, and reliability of transportation networks and internal workflow processes and procedures. The AMP leverages these advancements to improve the City's transportation network by identifying current and future needs while recommending advanced mobility solutions specific to the Las Vegas community.

The AMP is an actionable plan that builds on the City's existing advanced mobility initiatives and goals. The mission, vision, guiding principles, goals, and objectives of the AMP were shaped by a thorough review of City plans adopted over the past 7 years, which provided insight into ongoing mobility initiatives and current challenges. The input provided by the TAC during the stakeholder engagement helped identify key themes and made specific references to relevant city plans, which resulted in a more informed and targeted approach in developing the mission, vision, and guiding principles. Using the City's existing initiative as a foundation and incorporating the TAC's perspective, the AMP will address the unique mobility challenges and drive advancement to City of Las Vegas' existing advanced mobility work.

Mission

The City of Las Vegas will continue to be a recognized leader in resilient, healthy cities by providing cost-effective, sustainable, and innovative mobility solutions while delivering equitable access to services, education, and jobs by enhancing safety and mobility throughout our transportation network.

Vision

The City of Las Vegas will thoughtfully invest in mobility solutions and technologies to advance sustainable, equitable, safe, reliable, efficient, and resilient mobility for the people of Las Vegas.

Guiding Principles

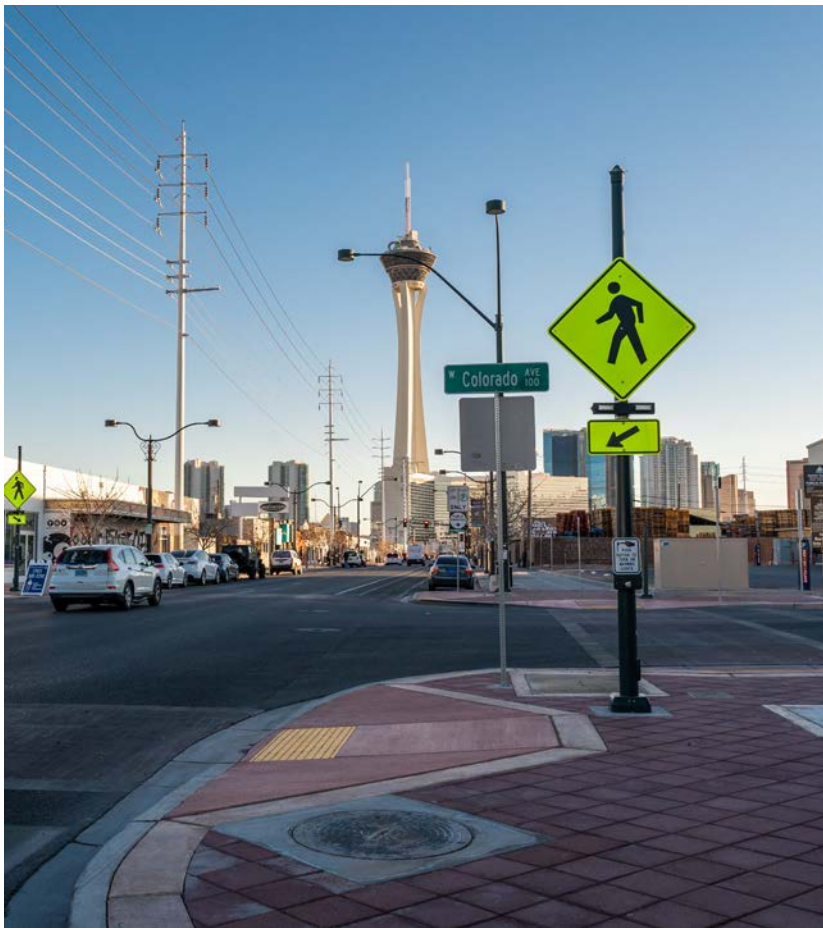
The guiding principles of the AMP include six key categories that highlight the City's prioritized mobility focus areas. These categories were developed with input from the TAC and other stakeholders to advance the mission and vision of the AMP. The City's most pressing mobility needs, challenges, and the ongoing initiatives were carefully evaluated and prioritized based on this input. The guiding principles are intended to align with the goals and objectives derived from these principles and contribute to achieving the mission and vision of the AMP.

- Equitable and Sustainable Mobility
- Vulnerable Road Users
- Transportation Infrastructure
- Transportation System Operations
- Data Application
- Maintenance and Internal Workflow

More information about the Guiding Principles can be found in the Guiding Principles, Goals, and Objectives Descriptions section of Chapter 3.

STAKEHOLDER INPUT

The TAC held its first meeting on June 21, 2022, to refine the initial mission, vision, and guiding principles for the AMP. The TAC took inspiration from the previously published City of Las Vegas plans to reflect the needs and desired outcomes for advanced mobility. Six guiding principles were identified based on current city initiatives, such as Vision Zero, as well as key themes from existing plans. This collaborative process created a shared vision for the future of transportation in Las Vegas and provided a framework for developing the AMP.



Goals and Objectives

The AMP's mission, vision, and guiding principles provide a foundation for creating the plan's goals and objectives. These goals and objectives were developed by incorporating information from the literature review and identifying the city's transportation mobility needs and challenges through collaboration with city staff, the TAC, and stakeholders. The AMP goals establish the desired outcomes, and the objectives define specific, measurable performance metrics that must be met to address AMP goals. These carefully crafted goals and objectives ultimately guide developing solutions that address the city's advanced mobility needs. The goals and objectives for each guiding principle, are described in the Guiding Principles, Goals, and Objectives Descriptions section in Chapter 3.

STAKEHOLDER INPUT

The City held its first half-day stakeholder workshop on July 26, 2022, to gather feedback from a diverse group of stakeholders on the mobility challenges, issues, and barriers faced by the city. The purpose of this meeting was to develop goals and objectives for the AMP. The stakeholders discussed various mobility challenges, such as mode shift, safety, asset management, and data management, and ranked them according to priority. Existing plans were referenced for additional information on ongoing initiatives. The prioritized challenges were then used to develop the AMP goals and objectives. For a more in-depth understanding of the mobility challenges discussed, refer to the Guiding Principles, Goals, and Objectives Descriptions in section in Chapter 3.

The TAC held its second meeting on August 31, 2022. The purpose of this meeting was to review and refine the goals and objectives that were developed in the stakeholder workshop held in July. One of the key outcomes of the meeting was expanding the infrastructure, data applications, and maintenance and internal workflow guiding principles to include specific and relevant attributes that would help advance the progress made in previous city initiatives. To further enhance the effectiveness of the AMP objectives, it was suggested to include a time-bound component to measure progress. After the TAC meeting, the goals and objectives were refined and added to the AMP.

EQUITABLE AND SUSTAINABLE MOBILITY

Provide access to reliable mobility choices that consider climate, air, energy consumption, and noise impacts, regardless of one's location, ability, ethnicity, or income level.

Current Mobility Challenges

Transportation Inequity: Network Configuration and High Injury Locations in Communities of Concern

Historically, Las Vegas roads were designed with a focus on cars. Many of the City's roads are straight and wide to maximize vehicular traffic flow. When the roads were constructed decades ago, little consideration was given to multimodal users. As population and demand have shifted, these thoroughfares have become obstacles to mobility for Las Vegas residents and workers, particularly those who must walk, bike, or take public transportation.

According to the 2020 United States Census, the population of the City of Las Vegas is 641,903. Based on USDOT's Climate and Economic Justice Screening Tool,[5] nearly 267,500 people, or roughly 40% of the population, live in historically disadvantaged communities. A total of 58% of High Injury Network locations, where crash fatalities and serious injuries are most prevalent, are located in the same communities that rely on biking, walking, or public transportation as their primary mode of transportation.[6]

The City is committed to advancing transportation equity by proposing AMP goals and objectives that provide access to transportation facilities irrespective of socioeconomic factors such as income, ethnicity, or race. This commitment through the AMP aims to address the transportation challenges faced by historically marginalized communities and promote equal access to transportation facilities for all residents.

Extreme Heat Vulnerability

As noted in the City of Las Vegas 2050 Master Plan, the City of Las Vegas has seen an increase in extreme heat events. This trend is expected to continue, which increases the risk of heat-related illnesses and deaths for residents and visitors. In response, the RTC of Southern Nevada released an Extreme Heat Vulnerability Report, which included a map highlighting the area's most vulnerable to extreme heat in Las Vegas. The results show the locations of the highest-scoring areas in the Las Vegas urban core, which include disproportionate numbers of people of color and historically disadvantaged communities. To address the challenges posed by extreme heat and prioritize the safety and mobility access of all transportation network users, the AMP recommends specific goals and objectives to account for and mitigate the effects of extreme heat.

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[5] Climate and Economic Justice Screening Tool. https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5 (2023)

[6] City of Las Vegas Vision Zero Action Plan. https://files.lasvegasnevada.gov/parking/visionzero/ActionPlan.pdf (2022)

Table 1: Equitable and Sustainable Mobility Goals and Objectives

Goals	Objectives	Descriptions
Reduce physical barriers to accessing multimodal choices.	Plan, fund, and construct two projects to improve access to mobility choices within 0.25 mile of Communities of Concern (CoC) by 2030.	This goal addresses the historic design of Las Vegas roads, which primarily catered to car centric transportation. The objective aims to mitigate the impact of the traditional design and address the disproportionate effects of the High Injury Network on historically disadvantaged communities.
Reduce administrative barriers to accessing multimodal choices.	Implement a system or explore public and private partnership opportunities that allows disadvantaged populations to have seamless access to mobility options citywide by 2026.	This goal and objective address transportation inequity, especially in marginalized communities, by partnering with various stakeholders. This strategy expands transportation options and explores forming strategic partnerships, which contributes to improving the overall quality of life and health of Las Vegas residents.
Minimize impacts of environmental factors on multimodal mobility.	Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030.	This goal and objective recognize the importance of providing access to multimodal mobility options under various environmental conditions, including extreme heat vulnerability. The solutions developed in the AMP will consider heat mitigation measures or heat resilience for transportation mobility infrastructure.
Advance quality transportation job creation.	Ensure that all City of Las Vegas Public Works Transportation Engineering Division projects align with and comply with the RTC's RiSE goal by 2025.	This goal and objective address the identified challenges by promoting job growth and economic development in transportation by including local small or diverse businesses that have historically faced barriers to accessing such opportunities.

VULNERABLE ROAD USERS

Implement transportation safety enhancements to improve safety and mobility operation for vulnerable road users such as pedestrians, bicycles, motorcyclists, and transit and micromobility vehicle users.

Current Mobility Challenges

Vulnerable Road User Safety

Compared to automobile incidents, pedestrian crashes are 15 times more likely to end in a fatality and eight times more likely to result in a serious injury in Las Vegas.[6] A motorbike crash is ten times more likely to result in a fatality or serious injury, but a bicycle crash is five times more likely to result in a fatality and four times more likely to result in serious injury. The City's VZAP was developed in response to the crash statistics involving VRUs in the city. The AMP proposes goals and objectives that focus on improving safety for VRUs by enhancing VRU infrastructure connectivity, continuity, and access regardless of time of day, which promotes using these facilities.

Vulnerable Road User Infrastructure

The Southern Nevada Regional Walkability Plan published by the RTC of Southern Nevada identifies common issues with pedestrian infrastructure in Las Vegas, such as narrow sidewalks, utility poles and boxes blocking sidewalks, and large gaps in the sidewalk network. To improve the safety of VRUs, it is essential to establish a baseline for VRU infrastructure conditions in the city. The AMP includes goals and strategies that identify, optimize, and prioritize the deficiencies of the existing VRU infrastructure to improve and expand the connectivity of an accessible VRU network.

Table 2: Vulnerable Road Users Goals and Objectives

Goals	Objectives	Descriptions
Improve roadway crossings to enhance safety and accessibility for all users.	Reduce crashes for VRUs at crossings by 15% within 3 years of deploying the solution. Reduce fatal and serious injury crashes by 10% within 3 years of deploying the solution.	This goal and its associated objectives prioritize improving roadway crossings to create a safer environment for VRUs. As a result, the goal and objectives aim to reduce crashes and VRU fatalities and injuries, which addresses the mobility challenge for VRU safety.
Make transportation facilities safer for VRUs at all times of the day.	Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors.	This goal and objective address the mobility challenge for VRU safety and consider improvements to transportation facilities for day and night conditions, such as smart lighting or security enhancements, so that VRUs can reach their destinations safely. The goal and objective also aim to provide increased awareness of VRUs and reduce the number of incidents regardless of the time of day.
Use data to inform safety improvements.	Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution.	This goal and objective builds on the mobility challenge for VRU safety by establishing a structured process for evaluating, prioritizing, and improving the safety of VRUs. The goal and objective aim to use data sources, such as crash or asset management data, to inform decision-making and identify areas in need of safety enhancements.
Increase connectivity and access to transit hubs and other modes of transportation.	Implement two projects projected to reduce crashes involving VRUs accessing a specific transit hub or facility by 2030.	This goal and objective align with the VRU and Equitable and Sustainable guiding principles by assessing ways to enhance existing VRU infrastructure deficiencies, such as access to crosswalks and available signage, to provide safe, equitable, and accessible connections between different modes of transportation for VRUs.

TRANSPORTATION INFRASTRUCTURE

Optimize the City of Las Vegas' existing transportation assets, including signals, ITS, lighting, pavement markings, and signage infrastructure, to enhance mobility while maintaining consistency throughout the transportation network.

Current Mobility Challenges

Asset Management

Building a foundation for advanced mobility infrastructure is reliant on understanding the existing assets in the City of Las Vegas. To identify the needs and opportunities associated with implementing advanced mobility technology and innovation, the infrastructure goals and objectives are built around understanding existing infrastructure conditions. The proposed strategies will use the information and data collected from the LiDAR scan of above-ground city assets to determine where things are located, how they are being used, and where opportunities exist to fill gaps in the existing network. Optimizing the City's asset management processes through the AMP infrastructure goals and objectives will enable proactive planning and resource allocation for design, operations, and maintenance, which will result in an increased asset lifecycle and cost savings for the City.

Table 3: Transportation Infrastructure Goals and Objectives

Goals	Objectives	Descriptions
Understand transportation assets by developing a continuous process to identify where infrastructure is located, where gaps exist, how infrastructure is being used, and the infrastructure's age.	Identify a prioritized list of infrastructure needs by 2025. Document 100% of the City of Las Vegas transportation infrastructure by 2030 and develop a process to keep it updated.	This goal and objectives use the data gathered from the City's LiDAR scan of above-ground assets to identify gaps in the existing transportation network. Leveraging this data will provide the City with a comprehensive understanding of the current state of the transportation infrastructure to identify where priority improvements are needed. The goal and objectives will address the asset management challenge by establishing a process to keep the asset management inventory updated. Additionally, the goal and objectives will improve asset lifecycle by proactively identifying when operations and maintenance will be needed. This will also help the City effectively plan and allocate its budget and resources efficiently for asset management activities.

Goals	Objectives	Descriptions
Close transportation system gaps.	Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data.	Using the data derived from the previous goal and objectives, the City can address the asset management challenge by proactively closing transportation infrastructure gaps to provide asset consistency. Using data-driven insights to make informed decisions, the City can strategically plan to address transportation system gaps and create a network that benefits the community, promotes safe and efficient travel for residents and visitors, and standardizes assets for future technology applications, such as connected and autonomous vehicles.
Interoperability of City and regional infrastructure and systems.	Define key objectives the City and region hope to achieve during the technology adoption process by 2025.	Data sharing enables partner agencies to exchange valuable information about local and regional assets. This goal and objective address the asset management mobility challenge by focusing on evaluating how existing and future data sources can be formatted and shared so that partner agencies can comprehensively understand the City's maintained assets and data sources. Efficiently sharing these data sources will facilitate informed decision-making and implementing coordinated strategies that benefit the Southern Nevada region.
Develop a technology-driven transportation ecosystem.	Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026.	By developing a strategic asset maintenance plan and aligning investment with the City's advanced mobility goals, this goal and objective address the challenges related to procuring, maintaining, and operating new transportation technologies and innovations, which will address the asset management mobility challenge.
Integrate advanced mobility technology considerations into the City's project development process.	Create a standard process that each project will go through that help identify opportunities to add advanced mobility considerations to the scope of work for existing projects by 2026.	Previously, integrating advanced mobility technology into projects was not part of the planning process. However, by establishing this goal and objective, the City will be able to develop a standard procedure or checklist that will proactively prioritize integrating these opportunities on each project during the scope development phase. This process aligns with the overall goal of advancing the City's asset management program by using the gaps and strategies developed in previously defined goals and objectives to identify potential opportunities.

TRANSPORTATION SYSTEM OPERATIONS

Operate city transportation infrastructure assets in a manner that provides safe and reliable mobility for all people on the City of Las Vegas' transportation network.

Current Mobility Challenges

Safety

USDOT released the National Roadway Safety Strategy (NRSS) to outline a comprehensive approach to reducing serious and fatal injuries on America's roads. The strategy emphasizes implementing a Safe System Approach, which focuses on addressing the root cause of a crash by taking proactive and comprehensive measures to build a roadway network with multiple safety redundancies. The goal is to achieve zero roadway deaths by creating a safe transportation system that accounts for safer people, roads, vehicles, speeds, and post-crash care. The City of Las Vegas' partner agency, NDOT, developed a Speed Management Action Plan to address speeding and aggressive driving behaviors in Nevada. This plan includes a variety of strategies, such as education and outreach, engineering improvements, and technology applications, to monitor traffic flow and identify speeding vehicles.

The City of Las Vegas, as a Vision Zero City, is committed to eliminating traffic-related fatalities and serious injuries by 2050. The AMP will build on and align with the City's VZAP, Safe Systems Approach, and NDOT Speed Management Plan to achieve this goal by implementing advanced mobility technology and innovation that prioritizes safe roadway facilities for all users.

Mode Shift

The transportation mode split refers to the distribution of trips made by various modes of transportation, such as walking, biking, public transit, and private vehicles. The City of Las Vegas set a goal in its 2050 Master Plan to achieve a mode split of 40% single-occupant vehicles, 20% for public transit, and 5% for walking and biking.[7]

According to the City of Las Vegas 2050 Master Plan: 2022 Annual Report, there has been a shift in mode split from 2020 to 2021. The percentage of drive-alone trips decreased from 77.8% in 2020 to 76.3% in 2021. The share of transit decreased, and the share of walking and/or biking and telecommuting increased.[8] These trends are indicative of the City's ongoing efforts to promote sustainable transportation options and reduce reliance on single occupancy vehicles, which improves mobility access and enhances the City's transportation network efficiency. The AMP goals and objectives align with these efforts and propose strategies to encourage a mode shift towards public transportation, walking, and biking.

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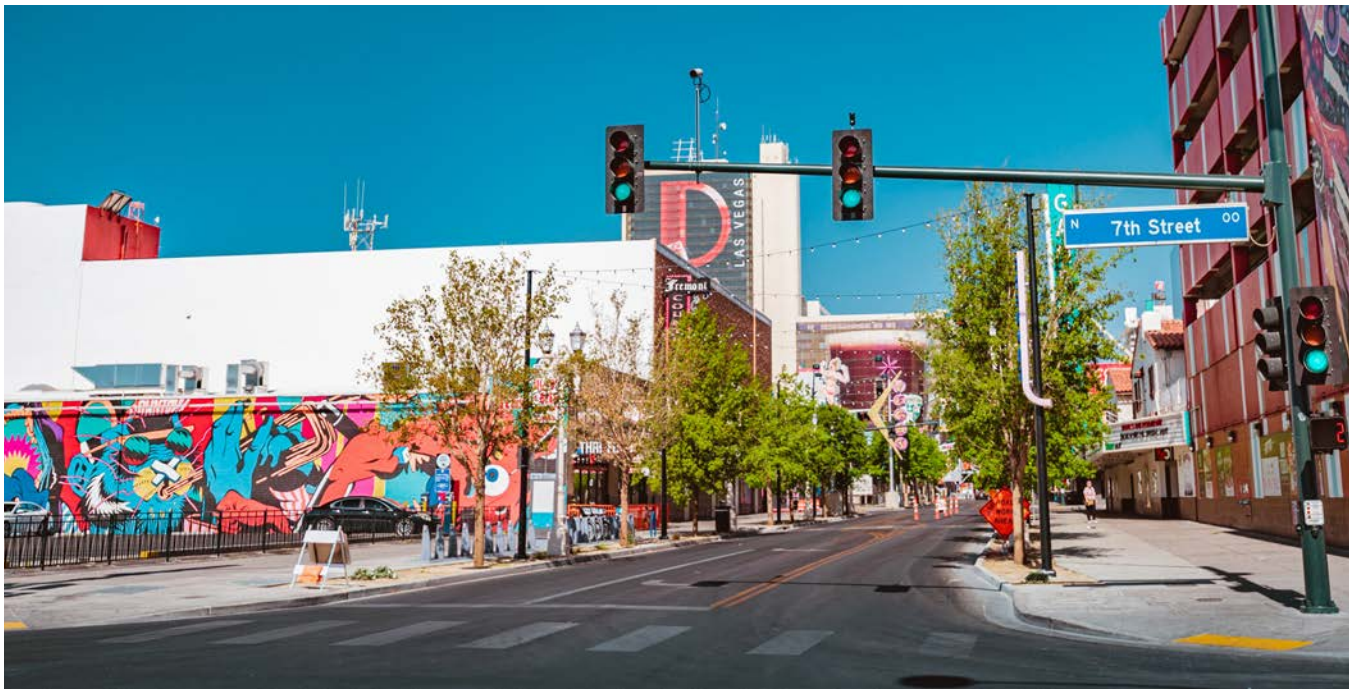
[7] City of Las Vegas 2050 Master Plan. files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf. (2021)

[8] City of Las Vegas 2050 Master Plan 2022 Annual Report. CLV_2050_Master_Plan_2022-Annual-Report.pdf (lasvegasnevada.gov). (2022)

Table 4: Transportation Systems Operations Goals and Objectives

Goals	Objectives	Descriptions
Address excessive speeding on arterial roadways.	Implement projects to reduce speed on the High Injury Network by 10% or modify operations to bring speeds within 5 miles per hour of the posted speed limit by 2030.	This goal and objective will build on and align with the City's VZAP, Safe Systems Approach, and NDOT's Speed Management Plan to address the safety mobility challenge by implementing advanced mobility technology and innovation to provide safe speeds on roadway facilities and increase the safety of the City's transportation network. In addition, mobility will increase by smoothing traffic flow with established safe speeds.
Operate infrastructure to optimize all modes of transportation.	Increase multimodal transportation ridership by 10% within 3 years of deploying the solution.	This goal and objective are consistent with the City's 2050 Master Plan goal of shifting mode split away from drive-alone trips and towards walking, biking, and transit by increasing access, efficiency, and reliability for multimodal trips by using advanced mobility tools such as mobility hubs and dynamic wayfinding, to addresses the mode split mobility challenge. This goal and objective also support the City's Vision Zero goal of improving transportation safety and improving mode split by providing safer facilities for all modes of travel. As a result, more people are likely to use alternative modes of transportation.



DATA APPLICATIONS

Collect, store, use, and share data in a manner that achieves meaningful insights and informs planning and operations to improve the transportation system.

Current Mobility Challenges

Transportation Data Management

In today's digital environment, data and information are being generated at an unprecedented rate. The challenge is managing what information is necessary to make informed data-driven decisions that benefit the City of Las Vegas and its transportation network users. The data applications' goals and objectives aim to address this challenge by proposing a transportation data management program that critically evaluates the City's existing data sources and defines a procurement process for potential data vendors, thereby resulting in more thoughtful transportation investments for data. This process will help the City approach transportation technology investments strategically.

Table 5: Data Applications Goals and Objectives

Goals	Objectives	Descriptions
Define what insights the City needs to know.	Identify 6 to 12 key mobility areas the City needs to evaluate to address its mobility challenges by 2025.	This goal and objective serve as the first step in effectively managing the City's transportation data. This objective focuses on conducting a data needs assessment by identifying the specific types of data required to evaluate the City's transportation challenges and goals.
Identify barriers to collecting data.	Compile a list of data and product needs, outline the necessary sources for procurement, and assess potential gaps in the City's existing assets by 2026.	This goal and objective address the transportation data management challenge by identifying specific data sources that can be used to collect the data types outlined in the first goal and defining what insights the City needs to know. The goal and objective also address the need for the City to assess its existing data sources to determine whether certain data sources should be continued based on their relevance and value, which helps identify where additional data sources are required to address gaps and barriers.

Goals	Objectives	Descriptions
Identify barriers to data sharing.	Evaluate what needs to be done to enable data sharing by 2026.	This goal and objective consider interoperating and standardizing data sources to consider integrating and exchanging data with partner agencies in the future. By proactively addressing interoperating and standardizing data and evaluating the barriers that might impact effective data sharing, the City can plan next steps to overcome the barriers to advancing its transportation data program.
Increase data-driven decision-making.	Define what tools are needed to incorporate data in decision-making by 2026.	This goal and objective of increasing data-driven decision-making addresses the Transportation Data Management challenge by incorporating data tools so decision makers can leverage insights from transportation data and make informed and optimized decisions regarding infrastructure, operations, safety, and other relevant mobility areas.
Increase transparency and agency accountability.	Determine the performance measures the City needs to see on an internal and external dashboard by 2027. Provide active transportation routes on the City of Las Vegas website and GoVegas app by 2026.	This goal and objective involve increasing transparency and agency accountability for internal and external stakeholders by providing access to relevant and reliable mobility data. By determining performance measures for a dashboard, the City can collect, organize, and share key data. As a result, the data addressing the transportation management challenge will be more readily available and usable. By providing available transportation routes on the City of Las Vegas website and GoVegas app to the public, the City is being transparent about the available transportation options and promoting accountability to provide residents and visitors with access to up-to-date information about mobility options.

MAINTENANCE AND INTERNAL WORKFLOW

Optimize internal processes by proactively and systematically evaluating the effectiveness of transportation assets and improving the efficiency of staff resources for asset management and customer service requests.

Current Mobility Challenges

Advanced Mobility Technology and Innovation Procurement

With innovations used to monitor and improve the transportation network's safety, reliability, resiliency, and efficiency, transportation technology is rapidly advancing. As a result, new advanced mobility technology and innovation vendors have emerged on the market, and the City's Transportation Engineering Division has seen a significant increase in vendor solicitation requests. The Maintenance and Internal Workflow goals and objectives were developed to help the City streamline the selection process and standardize procedures to improve the transportation technology procurement process and strategically invest in advanced mobility technology and innovation.

Maintenance and Training for New Transportation Technology

When a new transportation technology or innovation is procured, new and seasoned city employees must remain current on asset operations and maintenance requirements. Understanding these requirements will lead to efficient asset use and maximize longevity, durability, and performance. The maintenance and internal workflow goals and objectives prioritize the City's maintenance and operations program so that all new transportation technologies are properly maintained for efficient roadway operations.

Table 6: Maintenance and Internal Workflow Goals and Objectives

Goals	Objectives	Descriptions
Prioritize standardizing a technology and innovation procurement process that considers all factors, not just cost.	Develop and implement a process to institutionalize advanced mobility procurement in the City of Las Vegas by 2024. Demonstrate a positive return on investment, where the benefits of the implemented advanced mobility technology outweigh the associated costs by 2026.	The goal and objective associated with prioritizing a standardized technology and innovation procurement process address the identified challenges by improving procurement efficiency, enabling strategic investment in advanced mobility technology, anticipating maintenance and training needs, and institutionalizing advanced mobility in the City's infrastructure.

Goals	Objectives	Descriptions
Develop a strategy or plan to maintain assets.	Identify barriers with current asset configuration that prevent improvement by 2025. Develop and implement the Transportation Technology Manual within 2 years of implementing the AMP.	This goal and objectives address the asset management challenge by identifying the existing limitations and obstacles that limit advanced mobility technology improvements. Developing a technology manual will serve as a comprehensive resource that provides guidelines, standards, specifications, maintenance requirements, and operational protocols for transportation technology assets. This objective develops a plan to maintain assets by implementing a standardized manual for city staff.
Keep the workforce current with existing and future needs.	When adding new assets, identify how these fit into existing workloads and/or contracts for maintenance by 2025. Increase employee participation in training programs by 10% every 6 months.	This goal and objective address the identified challenges by planning for proper maintenance of new assets through resource allocation and regular training, promotes workforce development, improving operational efficiency, and effectively integrating advanced mobility technologies into the City's infrastructure.
Optimize the functionality of electronic service requests.	Increase transparency of service requests with internal and external customers by 2027.	By optimizing electronic service requests and enhancing transparency, this goal improves procurement processes and facilitates informed decision-making. This approach directly aids maintenance and training efforts for new technologies and is crucial in seamlessly integrating advanced mobility into the City's infrastructure.


Castle
NYE
80's PARTY
PIZZA BAR
SOUVENIRS
T-SHIRTS
BEVERAGES

CHAPTER 4

SOLUTIONS AND STRATEGIES

This section provides details on the solutions and strategies developed for the AMP. Solutions are specific outcomes or actions that addresses the City's needs and objectives and strategies are recommended approaches to achieve the solutions. Fact sheets were developed for each solution to facilitate implementing the AMP solutions and strategies and can be found in the Solution and Implementation Strategy Fact Sheets section.

Solutions

The AMP takes a comprehensive approach to address mobility issues in Las Vegas. To achieve the mission, vision, guiding principles, goals and objectives, the AMP outlines two key components — tactical and programmatic solutions. Tactical solutions deploy or implement advanced mobility programs, services, and priorities that address mobility challenges in the city. Programmatic solutions are strategic actions that integrate advanced mobility planning into the city's daily operation. By implementing both tactical and programmatic solutions, the AMP provides a relevant solution that allows the City to address mobility challenges, leverage advanced mobility technology, and foster a culture of transportation innovation.

TACTICAL SOLUTIONS

The AMP identifies five tactical solutions, shown in **Table 7**, that integrate advanced mobility technology and innovation from city initiatives to address mobility challenges and improve transportation operations. These solutions are practical steps that contribute to the AMP mission and vision, aligning with the following guiding principles: equitable and sustainable mobility, vulnerable road users, infrastructure, transportation system operations, and data applications. By implementing these solutions, the AMP lays the groundwork for optimizing the City's existing transportation infrastructure by applying advanced mobility technology and innovation.

Table 7: AMP Tactical Solutions

AMP Tactical Solutions	
Solution 1	Mobility Hub
Solution 2	Traveler Information Website and GoVegas Application
Solution 3	Vulnerable Road User (VRU) Service Index
Solution 4	Develop Design Standards and Design for Safer Speeds
Solution 5	Inventory Existing Data and Physical Assets

PROGRAMMATIC SOLUTIONS

Additionally, the AMP identifies seven programmatic solutions, shown in **Table 8**, to foster a culture of advanced mobility and promote giving thought to adopting new transportation technologies in Las Vegas. By incorporating these solutions, the City can facilitate adopting advanced mobility solutions by improving internal processes, optimizing resource allocation, and creating an environment that fosters innovation and learning. This approach promotes collaboration, addresses financial considerations, strategically evaluates vendors, and sets the stage for successfully implementing long term, sustainable advanced mobility solutions.

Table 8: AMP Programmatic Solutions

AMP Programmatic Solutions	
Solution 6	Transportation Resource Training
Solution 7	Advanced Mobility Sensitive Design Group
Solution 8	Technology and Innovation Steering Committee
Solution 9	Cost-Benefit Analysis
Solution 10	Advanced Mobility Technology Vendor Solicitation Process
Solution 11	Transportation Technology Manual and Training
Solution 12	Advanced Mobility Skills Training

STAKEHOLDER INPUT

During the second workshop on October 6, 2022, stakeholders reviewed and provided feedback on potential solutions for addressing mobility challenges outlined by the AMP guiding principles, goals, and objectives. The draft solutions were developed based on existing conditions assessment and state of the practice research. The workshop allowed stakeholders to contribute their perspectives and help refine the AMP solutions to align with the City's needs and objectives. Solutions discussed are shown in **Figure 5** and were used to develop the recommended solutions.

Figure 5: Advanced Mobility Plan Solutions Word Cloud

Strategies

Each solution in the AMP is supported by strategies for implementing the solution that directly align with the guiding principles, goals, and objectives.

Guiding Principles

GOALS ▶ OBJECTIVES ▶ SOLUTIONS

The solutions are actions that address the City's needs and objectives, and strategies are the recommended approaches to achieve them. The strategies for the AMP were developed collaboratively with input from stakeholders. This approach allowed various perspectives, expertise, and best practices to inform the strategies developed.

The strategies in the AMP were designed to be actionable, meaning they were created to clearly define the necessary activities and steps that need to occur to advance the goals and achieve the objectives of the AMP. These strategies include identifying activities for implementing the strategies, defining timelines, and assigning responsibilities to city departments and partner agencies. This level of specificity allows the City to understand what should be completed, when it should be completed, and by whom it should be completed. This actionable approach uses the strategies for implementing as a practical roadmap and offers a realistic and structured path for the City to effectively execute the solutions and achieve the AMP goals and objectives.

STAKEHOLDER INPUT

TAC and stakeholders played a vital role during the five-month strategy development process. During the four meetings, they expanded and validated each approach for implementing solutions. The TAC provided input to align the efforts for implementing the solutions with ongoing projects and planning work in the City, and the stakeholders provided valuable regional perspectives and insights from similar initiatives. This collaborative engagement enriched the approach for implementing solutions and incorporated local expertise and regional considerations that enhanced the effectiveness and relevance of the AMP solutions.

In addition to developing the AMP solutions in the stakeholder meeting on October 6, 2022, the engagement provided insights into potential barriers to implementing solutions, such as legislative restrictions, proof of concept for emerging technology, or lack of resources, to support implementing proposed solutions. For example, barriers to implementing solutions

like a shared regional asset management system included the need for standardizing data collection and available resources or funding to support developing and maintaining a regional asset management system. Identifying potential barriers enabled the City and its stakeholders to proactively consider the challenges of implementing solutions and develop strategies or intermediate solutions to overcome the challenges as part of the AMP.

STAKEHOLDER INPUT *(continued)*

The City held its third TAC meeting on November 2, 2022. This meeting focused on defining the timeline for implementing the solutions identified in Stakeholder Workshop #2. These strategies included short-term tactical and programmatic steps aimed at achieving the goals and objectives of the guiding principles. During the meeting, the TAC identified ongoing initiatives in the city that aligned with the proposed strategies, such as the location siting of mobility hubs in the 2050 Master Plan and the Vision 2045 Downtown Master Plan. The input and discussions from the meeting were used to refine the timeline for implementing solutions based on existing work completed and the progress of current city initiatives. This approach provided insights on how to implement the AMP efficiently by leveraging existing initiatives and investments while proactively addressing potential implementation challenges to implementing solutions that might arise during the implementation process.

The final stakeholder workshop was held on January 5, 2023. During this meeting, stakeholders reviewed and gathered feedback on the steps for implementing solutions, timeline, resources, and responsibilities for the prioritized solutions refined at TAC Meeting #3. Stakeholders provided feedback on adding additional steps for implementing solutions, such as public engagement and education campaigns, to help establish a culture of advanced mobility in the city and community. Stakeholders also shared insights from previous reports and similar initiatives conducted by partner agencies, which contributed to understanding best practices and lessons learned. The feedback received during this workshop informed developing solution and implementation strategy fact sheets.

The final TAC meeting on February 23, 2023, was a collaborative working session that reviewed the drafted solution and implementation strategy fact sheets. During this meeting, the TAC provided input on the content of each of the 12 fact sheets, including revisions to the timelines for implementing solutions and the strategies' context to make them achievable. A significant portion of the meeting was devoted to discussing the Responsibility Assignment Matrix to clearly define who is responsible for implementing the strategy, who is responsible for overseeing that a strategy is completed, who is responsible for reviewing the work for the strategy before it is delivered, and who should be updated on the progress for a strategy. This matrix is critical for an actionable plan because it establishes responsibility and accountability, improves communication and coordination among divisions, and helps monitor a strategy's progress. The comments and feedback gathered from the final TAC meeting were incorporated into finalizing the AMP solution and implementation strategy fact sheets.

Solution and Implementation Strategy Fact Sheets

OVERVIEW

The **Solution and Implementation Strategy Fact Sheets** section provides detailed information to support implementing the AMP solutions and strategies. The fact sheets are a valuable tool for communicating each solution's benefits to stakeholders, city leadership, and elected officials. They provide a summary of each solution's benefits and identify key components to implementing each solution, such as strategies, timelines, measures of success, and roles and responsibilities to facilitate transparent decision-making and evaluate the progress of implementing each solution. This section provides an overview of the various components included in each fact sheet.

Figure 6: Page 1 of an example fact sheet with the "Context" section highlighted.

Context

This section provides a comprehensive description of each solution, including a description of what it is, its purpose, and its relevance to the City's previous work from existing plans. The context section highlights how the proposed solution builds on and aligns with the City's past initiatives and leverages the existing efforts to advance these solutions.

Guiding Principles

The AMP was created to align with the City's transportation priorities, and each solution and strategy for implementing the solution corresponds with at least one AMP guiding principle. This section defines the relationship between each solution and its specific benefits in relation to the guiding principles. The guiding principles of the AMP are:

- **Equitable and Sustainable Mobility**
- **Vulnerable Road Users**
- **Transportation Infrastructure**
- **Transportation System Operations**
- **Data Application**
- **Maintenance and Internal Workflow**

Context (continued)

Zones using Tax Increment Financing. The purpose was to allow cities and counties throughout Nevada to establish special zones along transportation corridors and create transit oriented development, infill, mixed-use, multi-family, and income-accessible housing. While the bill did not pass, introducing and considering the bill signifies a positive step towards advancing transit-oriented development, which is a key component to optimizing the functionality of mobility hubs. The Housing and Transportation Investment Zone concept is still worth pursuing, and it might be refined further in 2025.

The Advanced Mobility Plan (AMP) builds on the City's mobility hub conceptual planning and the concepts proposed in AB10 (2023) to create an actionable roadmap for developing siting, design, and plans for implementing solutions to improve connectivity for Vulnerable Road Users (VRUs). Mobility hubs will also consider transportation amenities that increase residents' and tourists' access to low-cost multimodal options such as public transit, car sharing, bike sharing, and ride-hailing services. Other mobility hub amenities could improve the safety of VRUs by constructing pedestrian infrastructure connections such as well-lit crosswalks and sidewalks. Mobility hubs can serve as a central location for electric vehicle charging infrastructure, which would make it easier for owners to find and access charging stations. To introduce the benefits of the mobility hub to the public, this solution includes creating an educational campaign to raise awareness and understanding among residents and visitors about the advantages of using a mobility hub. Post-implementation assessments will also occur to evaluate the effectiveness and impact of implementing the mobility hub. This assessment will involve gathering feedback from users, conducting surveys, and analyzing relevant transportation data to measure the extent to which the mobility hubs have achieved their intended goals, identify any areas for improvement, and inform future decision-making processes.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Equitable and Sustainable Mobility
A mobility hub improves access to multimodal options for all users, including those in traditionally disadvantaged communities, to help address transportation inequities by providing convenient and reliable connectivity to various modes of transportation.

Vulnerable Road Users
A mobility hub improves safe access to multimodal options for active transportation users of all ages and abilities by placing the mobility hub in locations with connectivity to dedicated infrastructure and amenities for pedestrians, bicyclists, and other active transportation modes, which enhances safety and convenience.

Infrastructure
A mobility hub enhances access to multimodal options, such as public transit, bicycle and pedestrian infrastructure, and car sharing services to reduce congestion by enabling convenient alternatives to single occupant vehicle use.

[1] City of Las Vegas 2050 Master Plan (2021). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

Figure 7: Page 2 of an example fact sheet with the "Guiding Principles" section highlighted.

Responsibility

Each fact sheet contains a responsible, accountable, consulted, informed (RACI) chart to establish responsibility and enhance coordination between those involved in implementing each solution. RACI stands for:

R **RESPONSIBLE**

Those directly responsible for performing the work.

A **ACCOUNTABLE**

Those with overall responsibility and ownership for completing the solution.

C **CONSULTED**

Those who will offer guidance or expertise on the solution.

I **INFORMED**

Those who must be involved at a high level and kept up to date on progress of each solution.

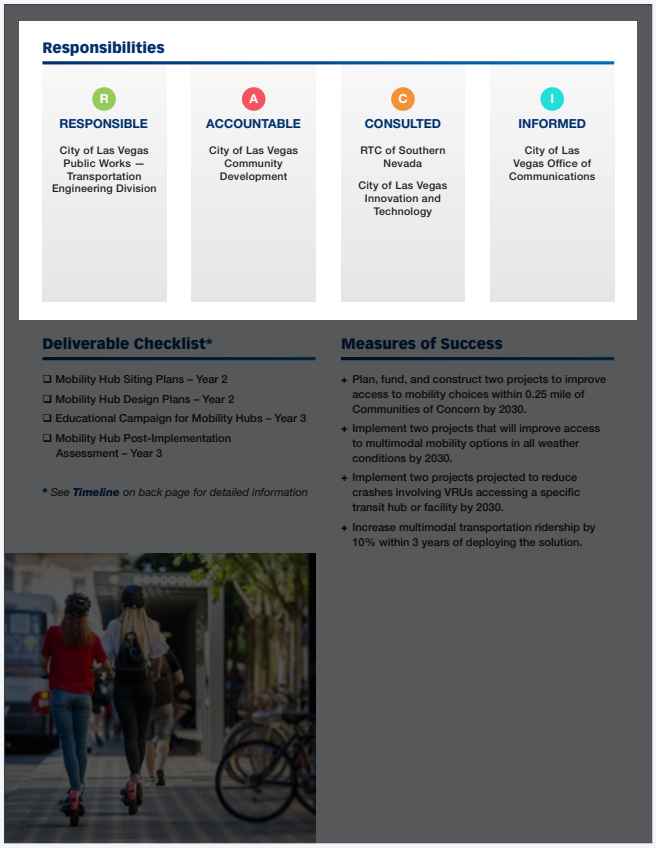


Figure 8: Page 3 of an example fact sheet with the "Responsibilities" section highlighted.

Each RACI chart will help the City identify who is responsible for completing tasks, who has decision-making authority, who should be consulted for input, and who must be kept informed. This tool will also assist the City in determining if there is a gap in the availability of resources where specific roles are assigned. Identifying gaps will allow the City to proactively address and guarantee adequate support for each task. By clearly identifying who is responsible for implementing the strategies and their roles, the fact sheets guide the City with regard to who is accountable for advancing the AMP. These responsibilities were discussed with city staff and resulted in a commitment from the identified groups for their participation in implementing the solutions as identified in each RACI chart.

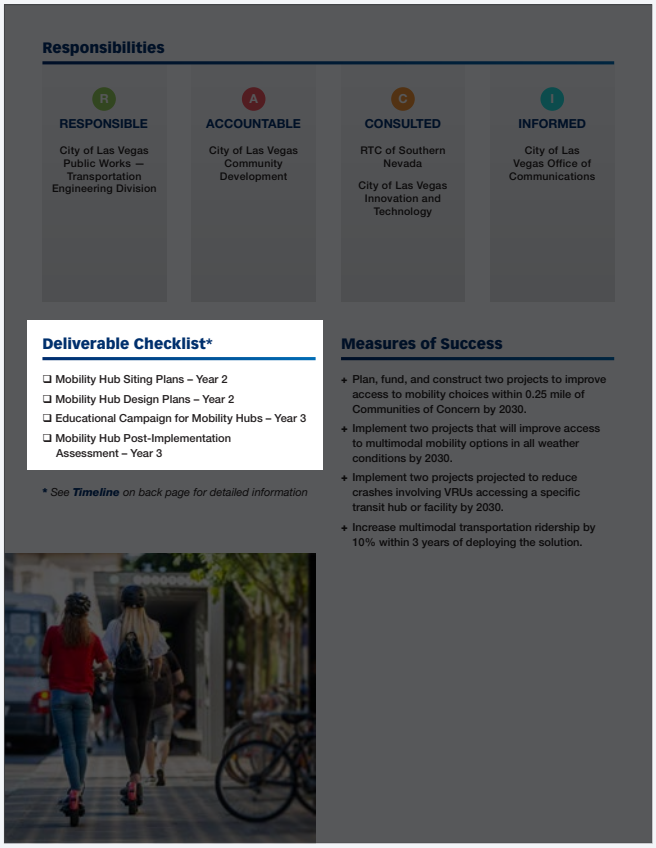


Figure 9: Page 3 of an example fact sheet with the "Deliverable Checklist" section highlighted.

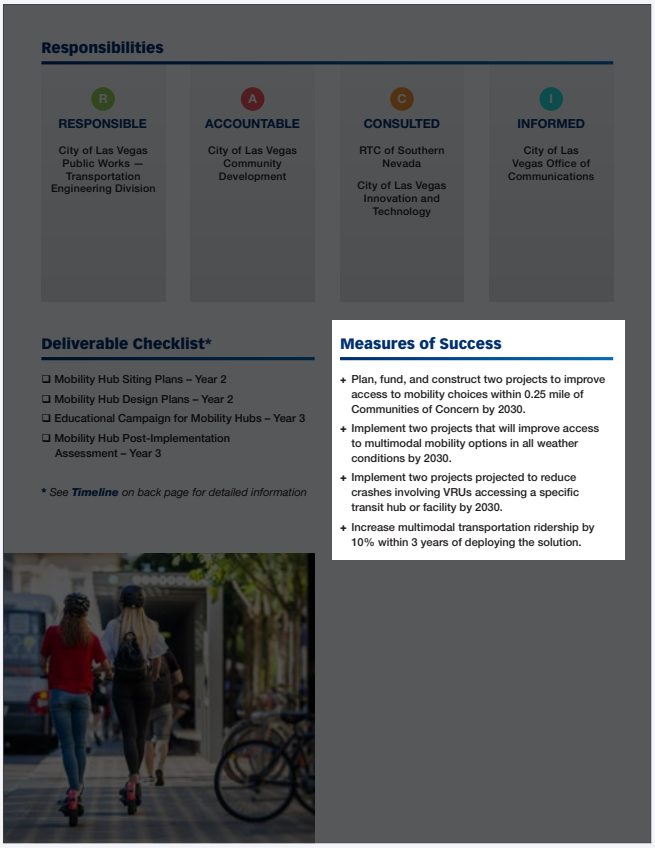


Figure 10: Page 3 of an example fact sheet with the "Measures of Success" section highlighted.

Deliverable Checklist

In addition to the timeline, each fact sheet includes a checklist that defines the expected deliverables and milestones for each solution. The checklist aids in effectively managing the solution so the project stays on track, milestones are met, and desired outcomes are achieved.

Measures of Success

Each solution includes measures of success based on AMP goals and objectives and defining clear metrics to track progress and evaluate each solution's effectiveness. This process involves regularly assessing the performance of each solution to predefined metrics and identifying areas of success and potential improvement. Incorporating these metrics into the fact sheets provides accountability for each solution's progress and enables evaluating continually to monitor progress and evaluate success.

Timeline

A short-term, 5-year timeline was developed to create an actionable framework that outlines strategies for implementing for each AMP solution. Breaking the solution into yearly steps provides better guidance of the required actions for each solution. This timeline also allows the City to plan and allocate resources as well as track the progress of implementing each solution. The fact sheets provide a clear description of when actions need to be performed to advance the solutions.

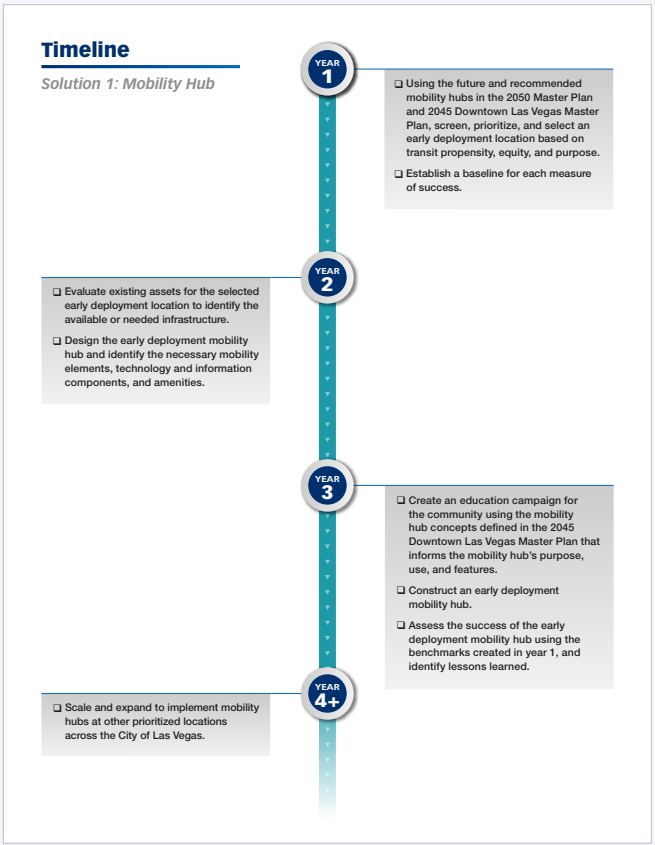


Figure 11: Page 4 of an example fact sheet showing the "Timeline" section.

SOLUTION 1

MOBILITY HUB

This solution will deploy mobility hubs throughout Las Vegas to enhance transportation safety, connectivity, and accessibility. Through strategic planning, designing, and including various technology amenities, these mobility hubs will facilitate seamless transfers between multiple modes of transportation, which improves the overall mobility experience for residents and visitors.

Context

A mobility hub is a centralized location that integrates multiple modes of transportation, such as public transit, bicycles, and ride-hailing services, to provide people with a convenient and efficient multimodal travel experience. The objective is to promote safe, reliable, and efficient connectivity of various modes of transportation while reducing reliance on private vehicles and congestion. The City of Las Vegas defined a mobility hub concept in the 2045 Downtown Las Vegas Master Plan that identifies general locations for three types of mobility hubs: lifestyle, employment, and cultural and tourism.[9] The 2050 Master Plan identifies existing, future, and recommended mobility hub locations and transit-oriented development improvements in specific areas around the city and indicates the name or location, RTC Routes Served, and Future OnBoard High-Capacity Transit Routes.[10] Assembly

[9] City of Las Vegas Downtown Master Plan Vision 2045. files.lasvegasnevada.gov/planning/Downtown-Master-Plan-Vision-2045.pdf. (2016)

[10] City of Las Vegas 2050 Master Plan. files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf. (2021)

Bill 10 (AB 10) 2023 was sponsored by the City at the Nevada Legislature and aimed to create Transportation and Housing Reinvestment Zones using Tax Increment Financing. The purpose was to allow cities and counties throughout Nevada to establish special zones along transportation corridors and create transit-oriented development, infill, mixed-use, multi-family, and income-accessible housing. While the bill did not pass, introducing and considering the bill signifies a positive step towards advancing transit-oriented development, which is a key component to optimizing the functionality of mobility hubs. The Housing and Transportation Investment Zone concept is still worth pursuing, and it might be refined further in 2025.

The AMP builds on the City's mobility hub conceptual planning and the concepts proposed in AB10 (2023) to create an actionable roadmap for developing siting, design, and plans for implementing solutions to improve connectivity for VRUs. Mobility hubs will also consider transportation amenities that increase residents' and tourists' access to low-cost multimodal options such as public transit, car sharing, bike sharing, and ride-hailing services. Other mobility hub amenities could improve the safety of VRUs by constructing pedestrian infrastructure connections such as well-lit crosswalks and sidewalks. Mobility hubs can serve as a central location for EV charging infrastructure, which would make it easier for owners to find and access charging stations. To introduce the benefits of the mobility hub to the public, this solution includes creating an educational campaign to raise awareness and understanding among residents and visitors about the advantages of using a mobility hub. Post-implementation assessments will also occur to evaluate the effectiveness and impact of implementing the mobility hub. This assessment will involve gathering feedback from users, conducting surveys, and analyzing relevant transportation data to measure the extent to which the mobility hubs have achieved their intended goals, identify any areas for improvement, and inform future decision-making processes.

Guiding Principles

This strategy advances the following AMP guiding principles:

Equitable and Sustainable Mobility

A mobility hub improves access to multimodal options for all users, including those in traditionally disadvantaged communities, to help address transportation inequities by providing convenient and reliable connectivity to various modes of transportation.

Vulnerable Road Users

A mobility hub improves safe access to multimodal options for active transportation users of all ages and abilities by placing the mobility hub in locations with connectivity to dedicated infrastructure and amenities for pedestrians, bicyclists, and other active transportation modes, which enhances safety and convenience.

Transportation System Operations

A mobility hub enhances access to multimodal options, such as public transit, bicycle and pedestrian infrastructure, and car sharing services to reduce congestion by enabling convenient alternatives to single occupant vehicle use.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Community Development	RTC of Southern Nevada and City of Las Vegas Innovation and Technology	City of Las Vegas Office of Communications

Deliverable Checklist*

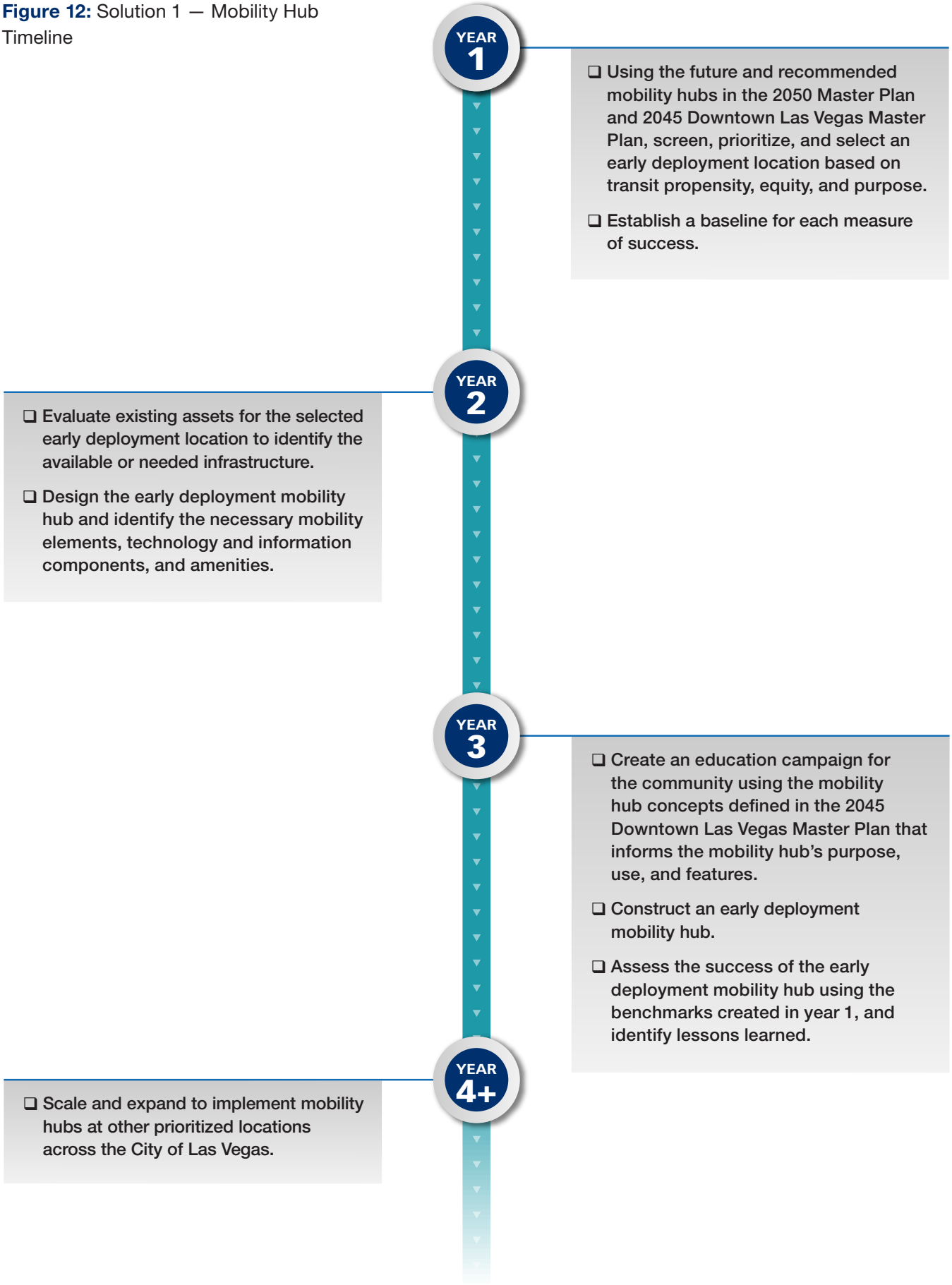
- ❑ Mobility Hub Siting Plans — Year 2
- ❑ Mobility Hub Design Plans — Year 2
- ❑ Educational Campaign for Mobility Hubs — Year 3
- ❑ Mobility Hub Post-Implementation Assessment — Year 3

* *Reference **Figure 12** for detailed information*

Measures of Success

+ Plan, fund, and construct two projects to improve access to mobility choices within 0.25 mile of CoC by 2030.
+ Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030.
+ Implement two projects projected to reduce crashes involving VRUs accessing a specific transit hub or facility by 2030.
+ Increase multimodal transportation ridership by 10% within 3 years of deploying the solution.

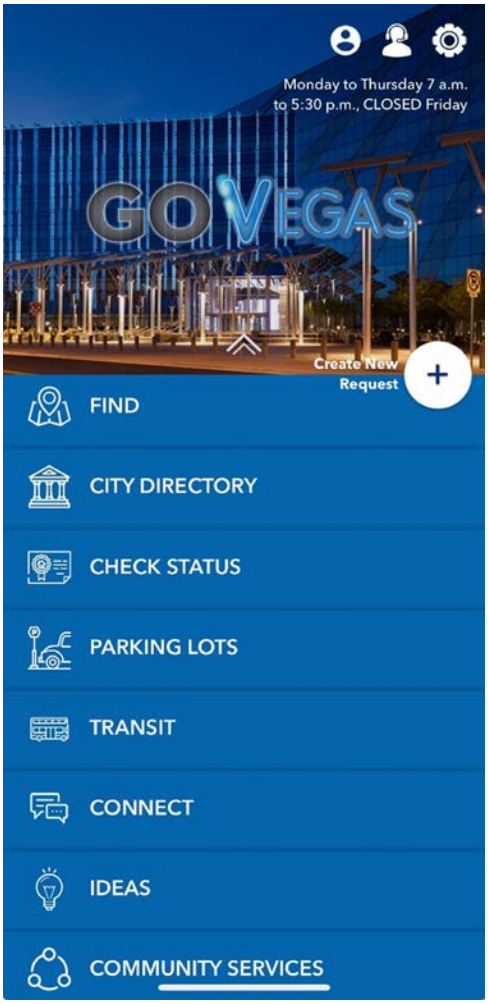
Figure 12: Solution 1 — Mobility Hub Timeline



SOLUTION 2

TRAVELER INFORMATION WEBSITE AND GoVEGAS APPLICATION

This solution will develop a data exchange to share important mobility information via the GoVegas app with residents and visitors. This information will need to be maintained so it is current and relevant. Public Wi-Fi will enable this information to be available to all users.



Context

The City of Las Vegas' website (lasvegasnevada.gov) provides information for various city services, including transportation-related services such as parking lot locations, suggested routes to school, payment services for parking tickets, and the Downtown Loop transit stops, schedules, and live vehicle tracker. The City's website also links to RTC of Southern Nevada's transit services page and live freeway traffic camera footage to provide visitors with regional transportation information for Southern Nevada. The website offers valuable information to the public, and with effective marketing strategies, such as geofencing and QR codes, even more visitors and residents traveling through and in the City of Las Vegas can learn of these helpful resources.

This strategy intends to increase the visibility and accessibility of traveler information on the City's existing website and enhance the GoVegas app by incorporating key transportation elements. By increasing visibility and accessibility, the objective is to provide users with comprehensive transportation

information about the City of Las Vegas to help them make informed decisions about the available mobility options. This strategy proposes enhancing the City's website and mobile application by identifying opportunities to increase the platform's use to disseminate information to users about available city and regional transportation by providing information that supplements the rideRTC app. To implement this solution, the City needs to identify the data required for data exchange, identify any existing gaps, and develop a platform for the exchange. Possible opportunities could include the addition of pedestrian routes and dedicated and protected bike lanes in the City of Las Vegas to spread awareness of available active transportation networks in the city. The City will also need to establish a maintenance process so the traveler information website and GoVegas application provide up-to-date information on available transportation routes. There is also an opportunity to provide public Wi-Fi to facilitate the accessibility of transportation information to a wider audience. By offering public Wi-Fi connectivity in key locations, such as mobility hubs and parks, the City can provide residents and visitors with access to transportation maps on the City's traveler information website and GoVegas application to explore the available mobility options.

Guiding Principles

This strategy advances the following AMP guiding principles:

Equitable and Sustainable Mobility

Optimizing the traveler information website and GoVegas application gives individuals access to transportation information, such as bike routes, to make informed decisions about available mobility options regardless of their locations or transportation preferences.

Vulnerable Road Users

By optimizing traveler information and the GoVegas application, pedestrians and bicyclists will have access to specific information, such as the locations of bike lanes, pedestrian-friendly paths, and alternative routes, which will help them make decisions that prioritize safety and enhance their travel experience.

Transportation System Operations

Optimizing the traveler information website and GoVegas application will provide individuals with a range of transportation options, which enables them to choose efficient and reliable transportation options and routes.

Data Applications

Enhancing the information on the traveler information website and GoVegas application will improve public access to relevant transportation information, which empowers individuals to make more informed decisions about their transportation choices.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Innovation and Technology	City of Las Vegas Office of Communications and RTC of Southern Nevada	Las Vegas City Council

Deliverable Checklist*

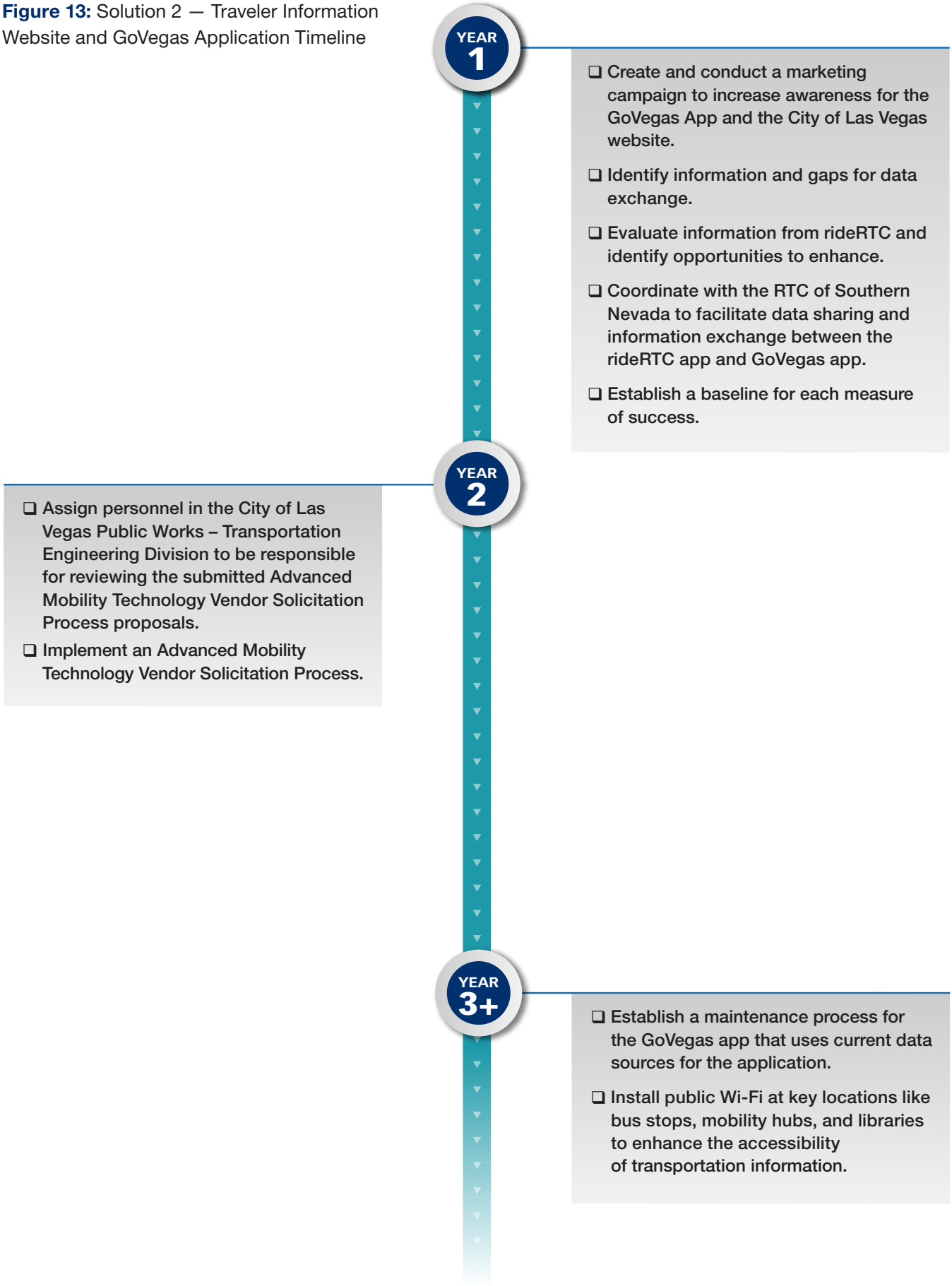
- ❑ Information for Data Exchange and Gaps — Year 1
- ❑ Platform for Exchange — Year 2
- ❑ Maintenance process for GoVegas — Year 3
- ❑ Design Plans for Public Wi-Fi — Year 3

* *Reference **Figure 13** for detailed information*

Measures of Success

+ Implement a system or explore public and private partnership opportunities that allows disadvantaged populations to have seamless access to mobility options citywide by 2026.
+ Provide active transportation routes on the City of Las Vegas website and GoVegas app by 2026.
+ Determine the performance measures the City identifies to assess on an internal and external dashboard by 2027.
+ Increase multimodal transportation ridership by 10% within 3 years of deploying the solution.
+ Evaluate what needs to be done to enable data sharing by 2026.
+ Define what tools are needed to incorporate data in decision making by 2026.

Figure 13: Solution 2 — Traveler Information Website and GoVegas Application Timeline



SOLUTION 3

VRU SERVICE INDEX

This solution develops a VRU Service Index to assess the conditions of existing and proposed VRU infrastructure to identify locations for improvement through a Unified Planning Work Program Study with the RTC of Southern Nevada. This index will seek to increase safety, reliability, and accessibility for VRUs by prioritizing their needs in transportation planning and infrastructure development projects.

Context

The transportation mode split refers to the percentage of trips made by each mode of transportation, such as walking, biking, public transportation, and private vehicle. The City of Las Vegas 2050 Master Plan identifies a mode split goal of 40% for drive alone, 20% for transit, and 5% for walking and biking as a potential outcome. Current data indicates a shift in mode split from 2020 to 2021.[11] The City of Las Vegas 2050 Master Plan 2022 Annual Report states that drive-alone shares decreased from 77.8% in 2020 to 76.3% in 2021, while transit share declined and walking and/or biking and telecommuting increased.[12] The 2050 Master Plan sets a goal of having 75% of the region's residents within a 0.5 mile of bus service and that 100% of the region has access to some type of public

[11] City of Las Vegas 2050 Master Plan. files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf. (2021)

[12] City of Las Vegas 2050 Master Plan 2022 Annual Report. CLV_2050_Master_Plan_2022-Annual-Report.pdf (lasvegasnevada.gov). (2022)

transportation service by 2050.[13] The 2022 Annual Report indicates a positive trend, showing an increase in proximity and transit service coverage from 78% to 80%.[14] Promoting a mode split that prioritizes alternative modes of transportation can improve VRU safety, if the existing VRU infrastructure supports it.

The VRU Service Index will evaluate the conditions of existing and proposed VRU infrastructure, including sidewalk widths, lighting, obstructions blocking walkaways, and pedestrian amenities like sidewalks, benches, and shade, to identify priority locations that would benefit from improvements. This approach to asset management will help increase safety, reliability, and accessibility and advance efforts to achieve the City's goal of reducing reliance on drive-alone trips and encourage the use of transit, walking, and biking. To establish the VRU Service Index, the City and the RTC of Southern Nevada have agreed to collaborate through a Unified Planning Work Program study. This partnership will involve jointly defining the methodology and data sources required for this assessment. Together, the City and RTC of Southern Nevada can use their expertise and resources to develop a comprehensive and standardized index for evaluating the condition of the VRU infrastructure in Las Vegas and throughout Southern Nevada. Once the VRU Service Index is established, the City can create an education campaign for communities and regional partners to raise awareness about the improvements identified and implemented based on the index.

Guiding Principles

This strategy advances the following AMP guiding principles:

Equitable and Sustainable Mobility

The VRU Service Index will assist the City in prioritizing making improvements for pedestrians, bicyclists, and transit-dependent individuals who are most impacted by weather, traffic, and other environmental factors, with improvements such as weather shelters.

Vulnerable Road Users

To improve VRU safety, this solution will identify existing and proposed infrastructure that could benefit from improvements that optimize pedestrian and bicycle mobility, including enhanced crosswalks, wider sidewalks, and protected bike lanes.

Infrastructure

The VRU Service Index will assess the state of existing and proposed VRU infrastructure to increase safe and reliable access to facilities by evaluating factors such as sidewalk conditions and crosswalk visibility.

[13] City of Las Vegas 2050 Master Plan. files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf. (2021)

[14] City of Las Vegas 2050 Master Plan 2022 Annual Report. CLV_2050_Master_Plan_2022-Annual-Report.pdf (lasvegasnevada.gov). (2022)

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Community Development	RTC of Southern Nevada	Advanced Mobility Sensitive Design Group and Technology and Innovation Steering Committee

Deliverable Checklist*

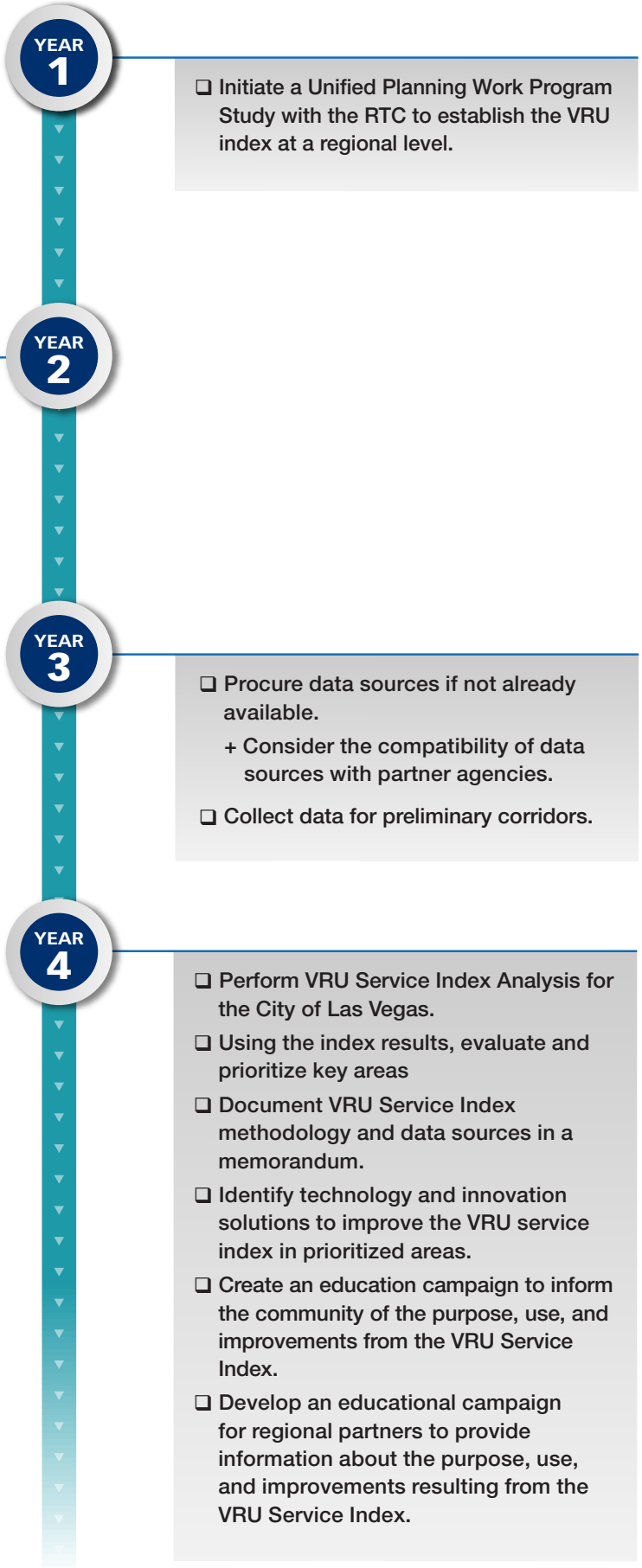
- ❑ Unified Planning Work Program Application — Year 1
- ❑ Methodology and Data Source Memorandum for VRU Service Index — Year 4
- ❑ Education Campaign for the Community — Year 4
- ❑ Education Campaign for Regional Partners — Year 4

* *Reference **Figure 14** for detailed information*

Measures of Success

+ Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030.
+ Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors.
+ Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution.
+ Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data.

Figure 14: Solution 3 — VRU Service Index Timeline



SOLUTION 4

DEVELOP DESIGN STANDARDS AND DESIGN FOR SAFER SPEEDS

This solution revises or establishes transportation design standards that incorporate advanced mobility technology to establish safe speeds for transportation facilities. Implementing the solution includes design plans, specifications, and estimates (PS&E) and a request for information to procure contractors to deploy the improvements. Post implementation studies and public surveys will be conducted to determine which solutions should be incorporated into design standards for safer speeds.

Context

Transit, biking, walking, and other modes of transportation were not widely used when many of the City's main arterials were built. As demands have shifted and automobile congestion has increased, a new dynamic has emerged and resulted in varying speeds among drivers. According to the City's VZAP, between 2015 and 2019, speeding was a contributing factor in 22% of traffic fatalities in Las Vegas.[16] This solution builds on Strategy 3 of the VZAP and focuses on establishing publicly safe speeds for transportation facilities. The goal of this solution is to mitigate the risk of collisions, serious injuries, and fatalities caused by sudden speed changes, thereby increasing the safety of road users and advancing the City's Vision Zero initiative to eliminate traffic-related fatalities and serious injuries by 2050. This can be accomplished by implementing advanced mobility technology, such as speed-regulating signal progression, queue detection, passive pedestrian detection, and speed feedback

[16] City of Las Vegas Vision Zero Action Plan. https://files.lasvegasnevada.gov/parking/visionzero/ActionPlan.pdf (2022)

signs, to optimize the efficiency and reliability of roadways. Data and reporting requirements for this strategy will be completed under the VZAP.

Engineering standards are technical documents that establish a baseline for designing and building transportation infrastructure. Revising or establishing new transportation standards that incorporate successful advanced mobility strategies will provide a consistent and uniform approach to improving the safety and efficiency of roadways in Las Vegas. Successfully implementing advanced mobility technologies will be fostered through design PS&E and construction projects. Post-implementation studies and public surveys will be conducted to evaluate the effectiveness of implementing advanced mobility technologies. These assessments will provide insights into the impact of the implemented strategies on the transportation system and provide informed decision-making on whether to establish standard practices. The City has begun this initiative by developing standards for Complete Streets to advance this type of improvement standardization through its 2050 Master Plan.[17] The City's Complete Streets Policy emphasizes that streets should be designed in accordance with Titles 11 and 19 of the Las Vegas Municipal Code and PROWAG and ADA standards. The City has also incorporated the Complete Street Standards into its Unified Development Code Title 19.04 as of 2022 to apply to all new development projects in the City. Historically, the Clark County Area Uniform Standard Drawings have governed any new construction. This strategy aims to ultimately bridge the gap between the standards and the design of roadways in Las Vegas for safer, consistent speeds. This process will require cooperation with partner agencies and decision-makers. Once the selected technologies are standardized, an educational campaign will be conducted to inform regional partners about the change and provide a clear explanation of updated or new standards. The campaign's objective will be to create an understanding of the benefits and requirements associated with the standardized technology and to foster buy-in and support from partners.

Guiding Principles

This strategy advances the following AMP guiding principles:

Equitable and Sustainable Mobility

Developing design standards and designing for safer speeds will enhance the safety of CoC, 58% of which are situated on the High Injury Network.[16] Developing design standards and designing for safer speeds will also reduce greenhouse gas emissions and improve air quality by reducing vehicle idling and accelerating.

Vulnerable Road Users

Developing design standards and designing for safer speeds will enhance the safety of transportation arterials for pedestrians and bicyclists by implementing advanced mobility technology. Implementing technology, such as, speed regulated signal progression to establish publicly safe speeds for transportation facilities, will provide a safer environment for VRUs.

Infrastructure

Developing design standards will establish consistency for the design and construction through standardizing technology improvements. As a result, transportation facilities will be designed and constructed in a uniform manner, promote compatibility, and ease use for the residents and visitors.

Transportation Systems Operations

Enhancing safety on roadways by developing design standards and designing for safer speeds using advanced mobility will establish publicly safe speeds for transportation facilities.

[17] City of Las Vegas 2050 Master Plan. files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf. (2021)

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Vision Zero Task Force	City of Las Vegas Public Works — Transportation Engineering Division	RTC of Southern Nevada FAST and City of Las Vegas Office of Communications	City of Las Vegas Innovation and Technology

Deliverable Checklist*

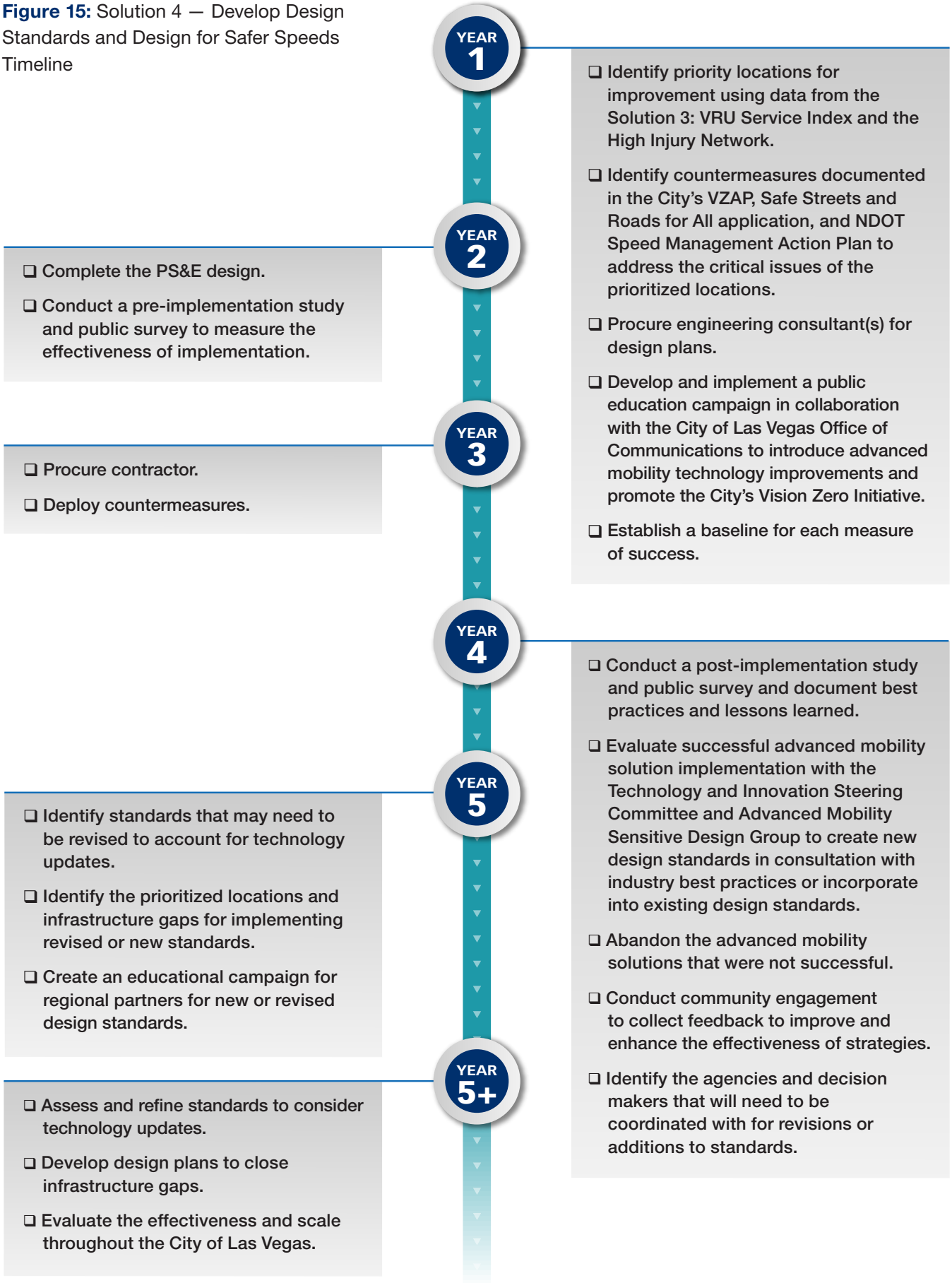
- ❑ Plans, Specifications, and Estimates for Design — Year 2
- ❑ Request for Information for Contractor — Year 3
- ❑ Post Implementation Study and Public Survey — Year 4
- ❑ Revise or Create New Design Standards for Safer Speeds — Year 4
- ❑ Educational Campaign for Regional Partners — Year 5

* *Reference **Figure 15** for detailed information*

Measures of Success

+ Reduce crashes for VRUs at crossings by 15% within 3 years of deploying the solution at locations where the improvement is implemented.
+ Reduce fatal and serious injury crashes by 10% within 3 years of deploying the solution at locations where the improvement is implemented.
+ Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors.
+ Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution.
+ Implement projects to reduce speed on the High Injury Network by 10% or modify operations to bring speeds within 5 miles per hour of the posted speed limit by 2030.
+ Ensure that all City of Las Vegas Public Works Transportation Engineering Division projects align with and comply with RTC's RiSE goal by 2025.

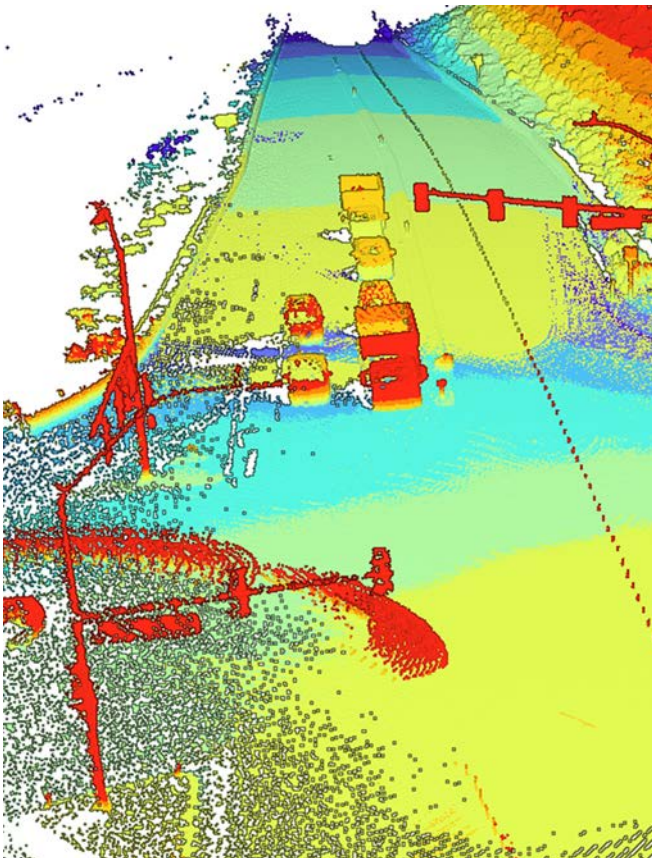
Figure 15: Solution 4 — Develop Design Standards and Design for Safer Speeds Timeline



SOLUTION 5

INVENTORY EXISTING DATA AND PHYSICAL ASSETS

This solution will develop an asset management database to effectively manage and maintain the City's transportation assets. It will involve creating a database of transportation technology assets, implementing processes for updating and maintaining the database, integrating asset management with service requests, and using geolocation for as-builts plans and service requests. Asset management maps with traffic data will provide users with access to comprehensive information about the City's transportation assets, their conditions, and relevant traffic data.



Context

To build the advanced mobility program, it is critical to understand and identify the existing data and physical assets in Las Vegas. Asset management can maximize an asset's lifecycle by effectively operating, maintaining, and upgrading data and infrastructure to reduce the risk of downtime and asset failure. Asset management will also help streamline the City's maintenance budgeting and planning by proactively scheduling recurring maintenance. The City can leverage its existing asset inventory from the above-ground LiDAR asset management scan to identify various City-owned assets, such as light poles, traffic signals, detectors, and cameras. By developing a list of all assets and data sources, the City can better manage its technology investments and make informed decisions regarding maintenance, upgrades, and future investments.

The City envisions its asset management database will store and geolocate all relevant information for traffic infrastructure, including as-built design plans, construction plans, land development projects, Capital Improvement Plan (CIP) projects, transportation service requests, and maintenance schedules. To guide developing an asset management database, a process memorandum identifying the methodology for updating the asset management database will be required. The asset management database could be optimized to analyze operations and evaluate the technology's effectiveness by overlaying the asset management database map with traffic congestion and crash data. This integration will help the City gain valuable insights into the correlation between asset performance, traffic congestion, and crash occurrences and provide additional opportunities for analysis to assess the impact of assets.

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

Establishing an asset management program to maximize the lifecycle of the City's transportation assets through comprehensive strategies for inventory, condition assessment, maintenance planning, and performance monitoring.

Data Applications

Taking inventory of existing data and physical assets will improve accessibility to relevant information for transportation assets by creating a centralized database for city staff to easily access and retrieve asset management information for decision-making and planning.

Maintenance and Workflow

Optimizing maintenance for transportation assets is a proactive approach that will be adopted by scheduling recurring maintenance for transportation assets for timely inspections, repairs, and replacements.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Transportation Engineering Field Operations	City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Innovation and Technology	City of Las Vegas Risk Management and RTC of Southern Nevada FAST

Deliverable Checklist*

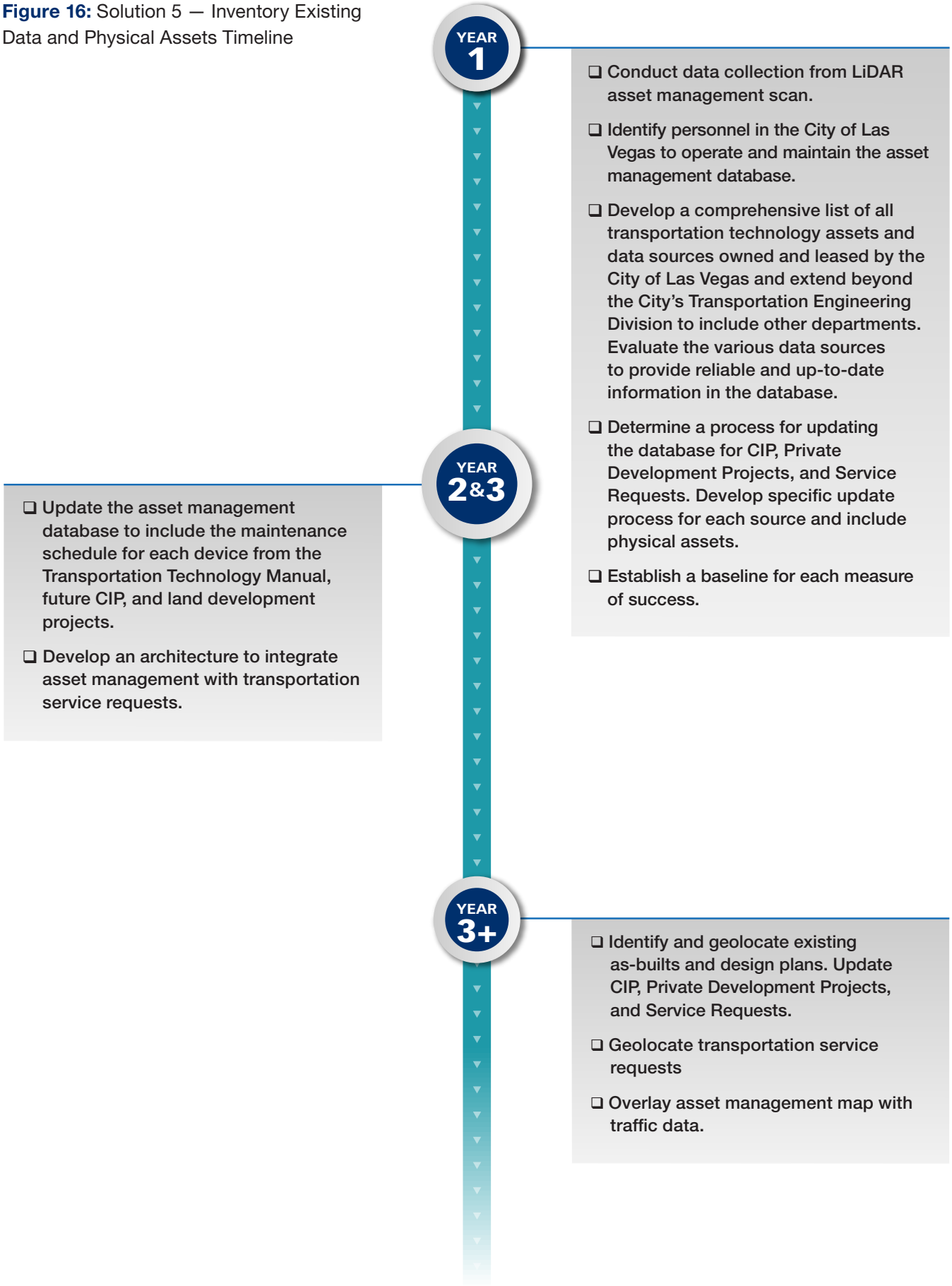
- ❑ List of all Transportation Technology Assets and Data Sources (Owned and Leased by the City of Las Vegas — Year 1
- ❑ Process Memorandum for updating the database for Capital Improvement Project, Private Development Projects, and Service Request — Year 1
- ❑ Architecture for asset management integration with transportation service requests — Year 2
- ❑ Geolocate existing as-builts and design plans — Year 3
- ❑ Geolocate transportation service request — Year 3
- ❑ Asset Management Map with Traffic Data — Year 3

* *Reference **Figure 16** for detailed information*

Measures of Success

+ Identify a prioritized list of transportation infrastructure needs by 2025.
+ Document 100% of the City of Las Vegas transportation infrastructure by 2030 and develop a process to keep it updated.
+ Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data.
+ Determine the performance measures the City needs to evaluate on an internal and external dashboard by 2027.
+ Increase transparency of service requests with internal and external customers.

Figure 16: Solution 5 — Inventory Existing Data and Physical Assets Timeline



SOLUTION 6

TRANSPORTATION RESOURCE TRAINING

This solution will develop and implement an internal training resource program for city staff to understand the available transportation data sources. To create this program, cases for transportation data sources owned and leased by the City will be used and serve as practical examples and scenarios to facilitate effective use and management.

Context

It is critical for organizations to use and share data in today's data-driven society to make informed decisions, enhance efficiency, and foster internal collaboration. This strategy builds from the data sources identified in Solution 5: Inventory Existing Data and Physical Assets to train city staff to use the available data sources and resources effectively. This strategy establishes a Transportation Resource Training curriculum and schedule to increase knowledge and understanding of the data available, how it can be used, how the data are being stored, and where to find it in the City's internal departments and divisions. With a better understanding of available data and resources through use cases for transportation data sources, city staff can make data-driven decisions that benefit Las Vegas residents and visitors.

Guiding Principles

This strategy advances the following AMP guiding principles:

Data Applications

The Transportation Resource Training will optimize the use of available resources and data sets by training staff on how to collect, manage, maintain, and analyze data to increase data-driven decision making.

Maintenance and Workflow

The Transportation Resource Training will improve data literacy in the agency and help staff learn and optimize the capabilities of available resources and data sets.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division and City of Las Vegas Innovation and Technology	City of Las Vegas Transportation Engineering Field Operation	RTC of Southern Nevada	City of Las Vegas Community Development

Deliverable Checklist*

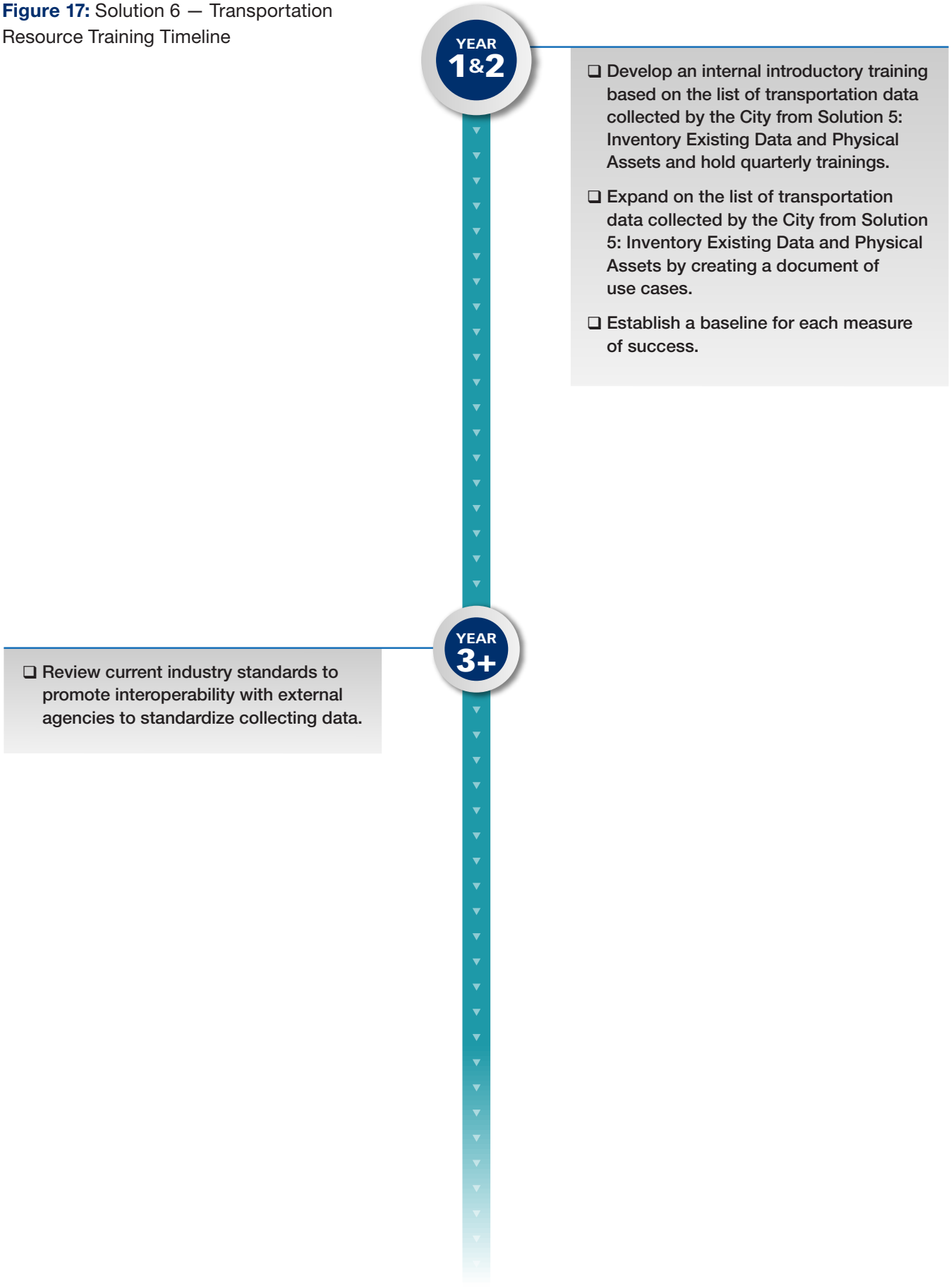
- ❑ Transportation Resource Training Curriculum — Year 1
- ❑ Transportation Resource Training Schedule — Year 1
- ❑ Use Cases for Transportation Data Sources and Assets Owned and Leased by the City of Las Vegas — Year 2

* *Reference **Figure 17** for detailed information*

Measures of Success

+ When adding new assets, identify how these fit into existing workloads and/or contracts for maintenance by 2025.

Figure 17: Solution 6 — Transportation Resource Training Timeline



SOLUTION 7

ADVANCED MOBILITY SENSITIVE DESIGN GROUP

This solution establishes a multidisciplinary team of internal city departments and external stakeholders that meet regularly to establish and implement procedures and best practices to prioritize and integrate advanced mobility solutions into the City's project development process.

Context

Building a strong culture of advanced mobility in the City of Las Vegas involves a multifaceted approach relying on collaboration with various internal departments and external stakeholders. Previously, coordination for advanced mobility efforts was done on an ad-hoc basis. To address this and implement a proactive approach, this solution establishes an Advanced Mobility Sensitive Design Group. This group will consist of a team of city staff and partner agencies working on planning and design projects. As introductory steps to form the Advanced Mobility Sensitive Design Group, the City will create an attendee list and establish foundation elements such as a mission, vision, and goals. The purpose of this group is to develop a screening tool that prioritizes and integrates advanced mobility solutions for all city transportation projects. The tool will evaluate the feasibility of integrating advanced mobility solutions by evaluating the mobility needs and challenges in the project limits to determine the appropriate solutions. A solution implementation tracking and reporting process will also be created to monitor and report

on the progress and outcomes of implementing the solution. The Advanced Mobility Sensitive Design Group will be essential in integrating advanced mobility considerations into the City's planning and project development phase and contributing to the overall growth of the Advanced Mobility Program and culture in the City of Las Vegas.

Guiding Principles

This strategy advances the following AMP guiding principles:

Maintenance and Workflow

The Advanced Mobility Sensitive Design Group will prioritize and improve implementing advanced mobility technology to meet the mobility needs of the City of Las Vegas.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Community Development, City of Las Vegas Innovation and Technology, and RTC of Southern Nevada	Las Vegas City Council, RTC of Southern Nevada FAST and NDOT

Deliverable Checklist*

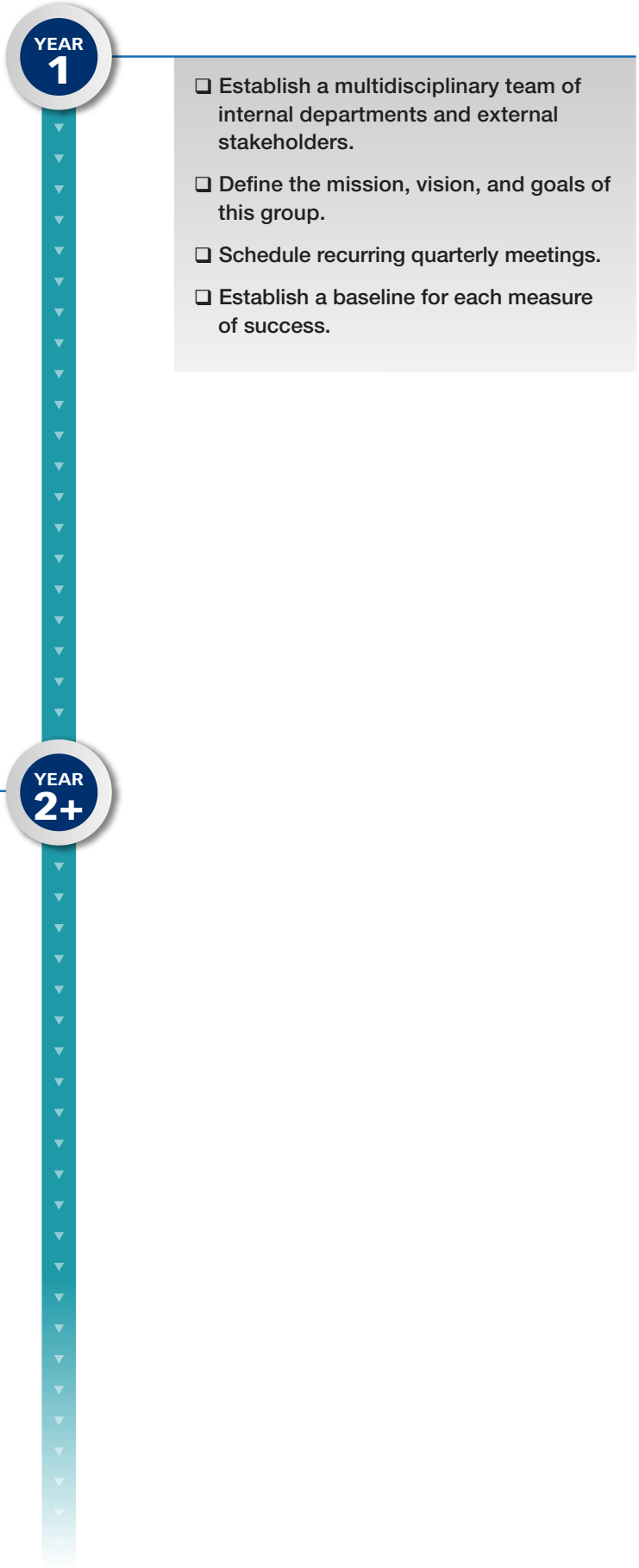
- ❑ Advanced Mobility Sensitive Design Group Attendee List — Year 1
- ❑ Advanced Mobility Sensitive Design Group Mission, Vision, and Goals — Year 1
- ❑ Advanced Mobility Sensitive Design Group Meeting Minutes — Year 1
- ❑ Pre-screening Tool/Checklist for Project Scoping — Year 2
- ❑ Solution Implementation Tracking and Reporting Results — Year 2

* *Reference **Figure 18** for detailed information*

Measures of Success

+ Create a standard process that each project will go through that help identify opportunities to add advanced mobility considerations to the scope of work for existing project by 2026.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.

Figure 18: Solution 7 — Advanced Mobility Sensitive Design Group Timeline



SOLUTION 8

TECHNOLOGY AND INNOVATION STEERING COMMITTEE

This solution will create a group of internal and external stakeholders that provide guidance, direction, and expertise to guide effectively integrating and using advanced mobility technology in the City of Las Vegas.

Context

The Technology and Innovation Steering Committee will be a group of internal and external stakeholders responsible for overseeing and guiding adopting and implementing advanced mobility technology strategies. To establish the Technology and Innovation Steering Committee, the City will identify the key stakeholders and individuals to participate in this committee. Once formed, the committee will create a mission, vision, and goals that will serve as guiding principles and provide a clear direction and purpose for the group. This committee will meet quarterly to discuss the effectiveness of the implemented mobility technology based on performance metrics, best practices, and lessons learned. To stay well-informed of the most recent advancements and critically evaluate their benefits and limitations, the committee will have a standing agenda item at each meeting to discuss emerging advanced mobility technology. An example agenda item could be connected and autonomous vehicle infrastructure and the findings from Solution 10: Advanced Mobility Technology Vendor Solicitation

Process. One of the outcomes of this committee will be establishing and formalizing an after-action review procedure to evaluate the impacts, outcomes, and opportunities of the advanced mobility technology used in projects throughout the city, Southern Nevada, and Nevada as a whole.

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

The Technology and Innovation Steering Committee will evaluate if technology investments are delivering the anticipated benefits to the City by assessing their efficiency through an after-action implementation review.

Maintenance and Workflow

The Technology and Innovation Steering Committee will increase coordination with regional and state partner agencies for implementing advanced mobility technology and innovation, collect key takeaways and lessons learned, and discuss the advantages and limitations of emerging technologies to guide technology investments.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division and City of Las Vegas Innovation and Technology	City of Las Vegas Public Works — Transportation Engineering Division and City of Las Vegas Community Development	RTC of Southern Nevada FAST, NDOT, and City of Henderson	Las Vegas City Council

Deliverable Checklist*

- ❑ Technology and Innovation Steering Committee Attendee List — Year 1
- ❑ Technology and Innovation Steering Committee Mission, Vision, and Goals — Year 1
- ❑ Technology and Innovation Steering Committee Agenda and Meeting Minutes — Year 1
- ❑ After-action Review Methodology Memorandum for Implementing Advanced Mobility Technology and Innovation — Year 1

* *Reference **Figure 19** for detailed information*

Measures of Success

+ Define key outcomes the City and region hopes to achieve during the technology adoption process by 2025.
+ Create key focus areas to identify City needs during the technology adoption process by 2024.
+ Identify barriers with current asset configuration that prevent improvement by 2025.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.
+ Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026.

Figure 19: Solution 8 — Technology and Innovation Steering Committee Timeline

- ❑ Establish a Technology and Innovation Steering Committee with internal and external stakeholders.
- ❑ Set up recurring quarterly meetings.
- ❑ Define the mission, vision, and goals of this group.
- ❑ Outline an agenda for each meeting that includes the following information:
  - + Implementing advanced mobility technology and innovative.
  - + Conducting before- and after-implementation studies
  - + Collecting best practices and lessons learned
  - + Discussing performance measures gathered from implementing advanced mobility technology
  - + Discussing cost
  - + Discussing emerging advanced mobility technology
  - + Discussing findings from Solution 10: Advanced Mobility Technology Vendor Solicitation Process
- ❑ Formalize after-action reviews from implementing advanced mobility technology and innovation.
- ❑ Summarize each meeting and provide a summary to decision-makers.
- ❑ Establish a baseline for each measure of success.

SOLUTION 9

COST-BENEFIT ANALYSIS

This solution implements a cost-benefit analysis for new and existing advanced mobility technologies to evaluate the financial investment necessary for implementing these technologies and assess the anticipated benefits.

Context

Conducting a cost-benefit analysis for new and existing advanced mobility technologies reported by the Solution 8: Technology and Innovation Steering Committee is essential for determining whether their benefits outweigh their costs. This strategy proposes analyzing all new advanced mobility technologies and innovations that might be implemented in the city on a case-by-case basis to make an informed decision about whether to invest in certain advanced mobility technologies. This process will help guide decision-making by identifying potential costs associated with the technology throughout its lifespan, including initial procurement, operational costs, recurring maintenance, and data storage costs. To effectively plan and manage budgets, the City will create a cost-benefit spreadsheet for existing and proposed advanced mobility technologies. This spreadsheet will enable the City to conduct ongoing cost-benefit analyses and consider factors, such as price increases and inflation to estimate the financial impacts of technology, to help plan and manage budgets.

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

Conducting a cost-benefit analysis for new and existing advanced mobility technologies to evaluate if the benefits of new and existing technology and innovation outweigh the asset's lifecycle cost guide intentional investments.

Maintenance and Workflow

Implementing a cost-benefit analysis provides a structured approach for decision-making on advanced mobility technology and innovation by identifying cost-effective improvements.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	Advanced Mobility Sensitive Design Committee and Technology and Innovation Steering Committee	City of Las Vegas Innovation and Technology	City of Las Vegas Community Development

Deliverable Checklist*

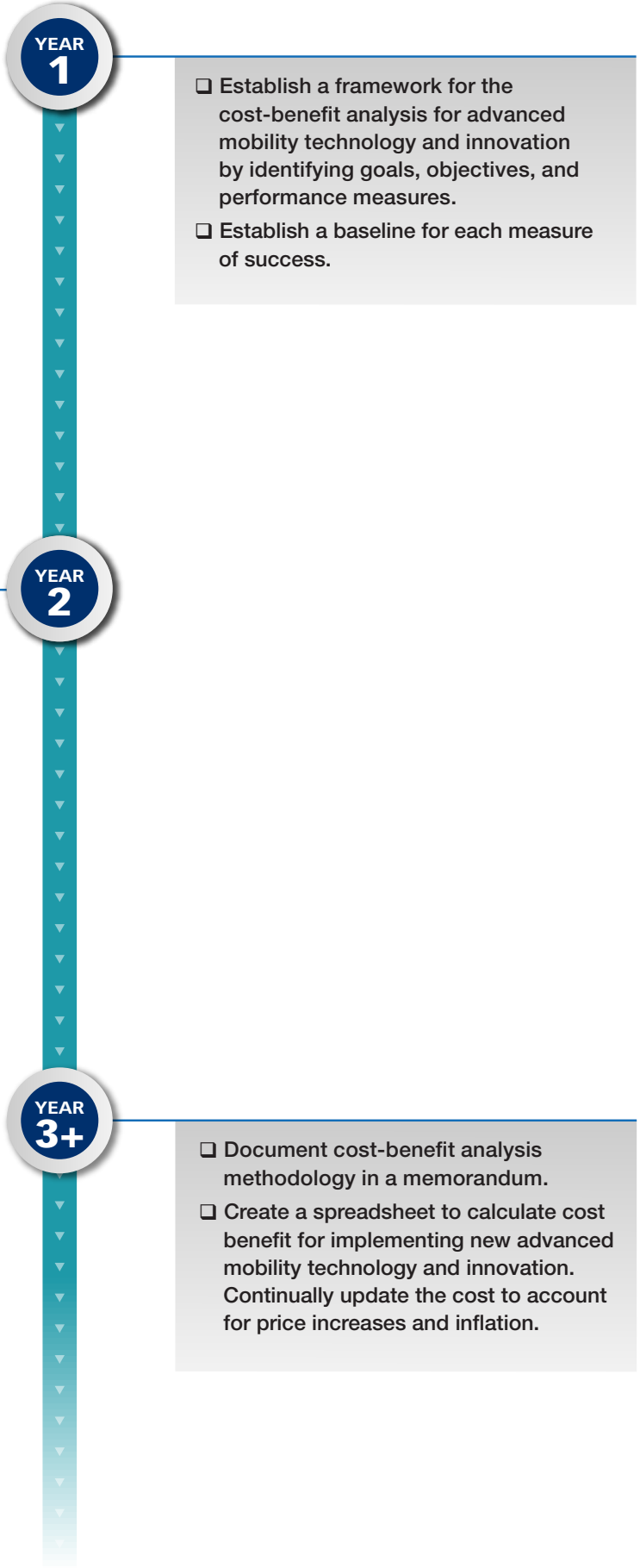
- ❑ Cost-Benefit Analysis Methodology Memorandum — Year 3
- ❑ Cost-Benefit Spreadsheet for Existing and Proposed Advanced Mobility Technology — Year 3

* *Reference **Figure 20** for detailed information*

Measures of Success

+ Demonstrate a positive return on investment, where the benefits of the implemented advanced mobility technology outweigh the associated costs by 2026.

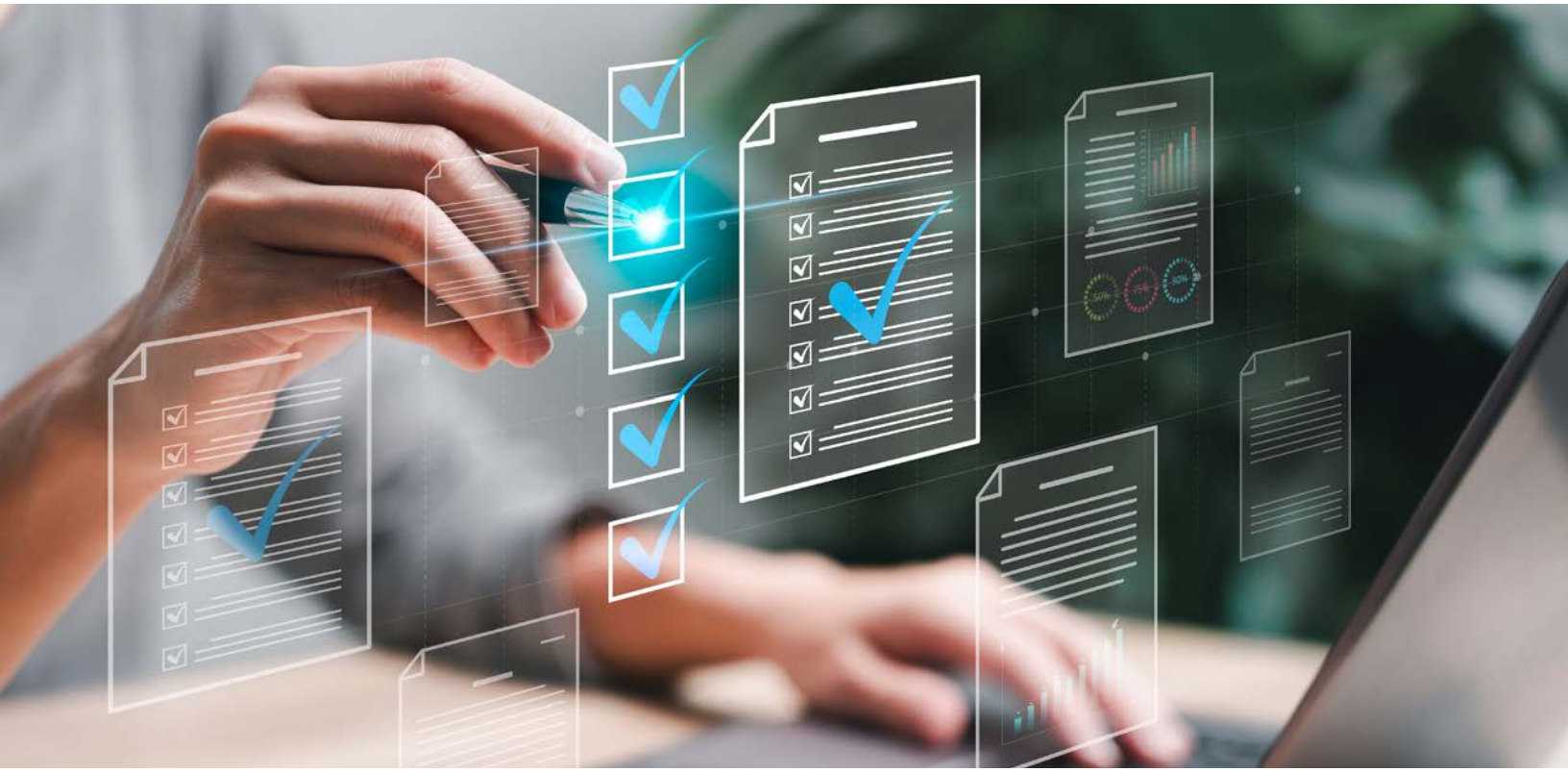
Figure 20: Solution 9 — Cost-Benefit Analysis Timeline



SOLUTION 10

ADVANCED MOBILITY TECHNOLOGY VENDOR SOLICITATION PROCESS

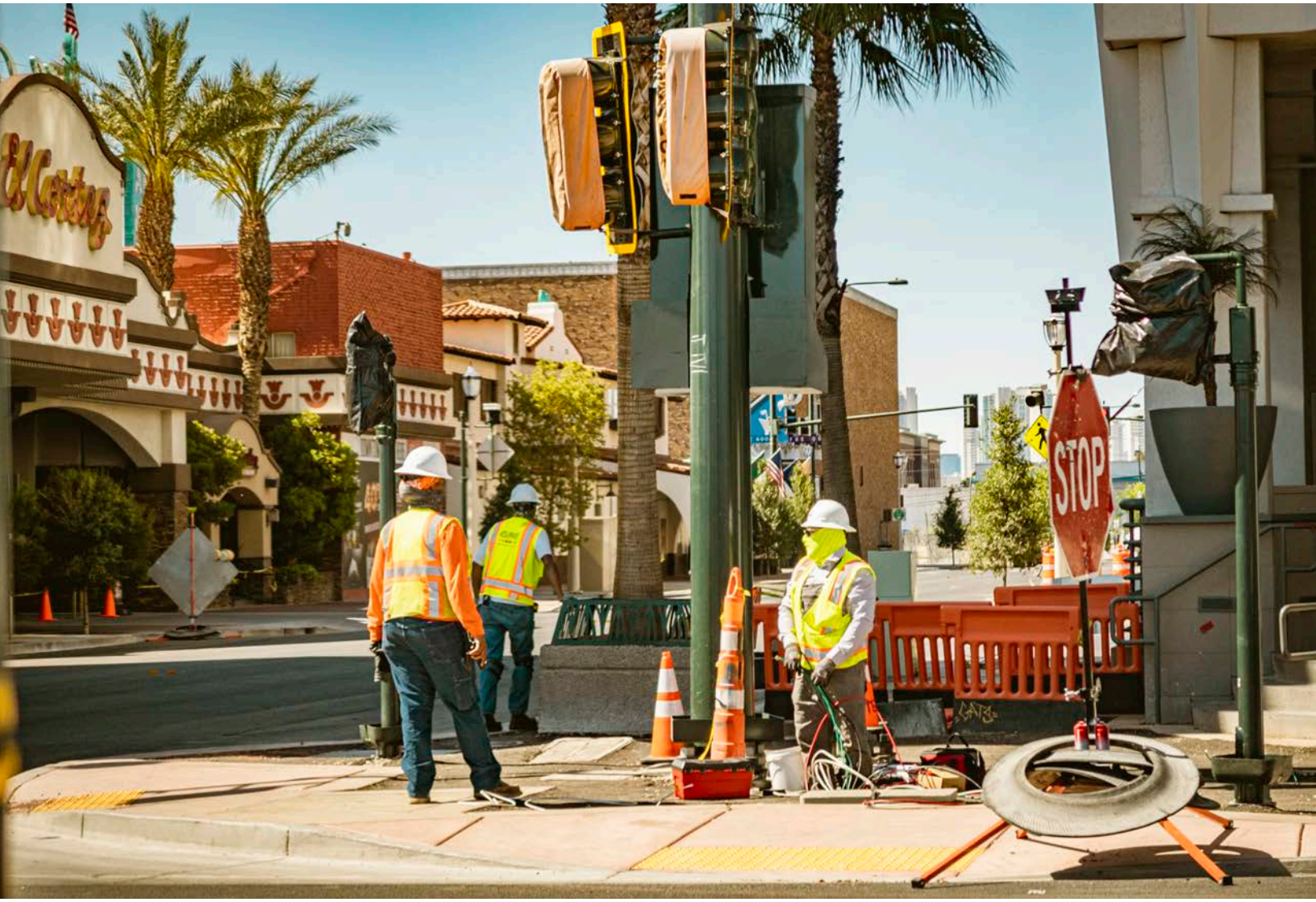
This solution will establish a Vendor Solicitation Process for advanced mobility technology to communicate advanced mobility objectives effectively with technology vendors, identify innovative solutions, and select the most suitable partners to address its unique mobility challenges. This strategic approach establishes the framework for accurately assessing the City's mobility requirements and a guide for procuring advanced mobility technologies, so they align with its mobility goals and objectives.



Context

Because of the rapid development of transportation technology, new vendors of advanced mobility applications have appeared on the market. To strategically invest in innovations and technologies that align with the guiding principles, goals, and objectives of the AMP, the City needs to develop a specific vendor solicitation process for advanced mobility technology. This solution will establish screening criteria for prospective transportation vendors to submit an unsolicited proposal that meets the City's needs. Criteria may include lifecycle costs, IT requirements, and proof of concept.

Evaluation based on the criteria will be used to recommend potential advanced mobility vendors for consideration by the Solution 8: Technology and Innovation Steering Committee for early deployment, field evaluation, and potential scaling in the city. This solution will act as a preliminary step before the existing City of Las Vegas Information Technology Vendor Solicitation and Software Approval Process, to provide the City with an initial evaluation and screening process for proposed advanced mobility technology strategies to assess the suitability and compatibility with the needs of the City of Las Vegas.



Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division and Technology and Innovation Steering Committee	Advanced Mobility Sensitive Design Group	City of Las Vegas Innovation and Technology and City of Las Vegas Community Development	Las Vegas City Council, Partner Agencies, and City of Las Vegas City Attorney

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

Implementing a vendor solicitation process for advanced mobility technology will guide vendor selection so that potential technology and innovation investments align with the AMP's guiding principles, goals, and objectives and offer long-term benefits to the city and transportation network users.

Maintenance and Workflow

The advanced mobility vendor solicitation process will establish a consistent and transparent approach to effectively screen potential vendors, which provides the City with evaluation tools to select the most suitable partners for its advanced mobility investments.

Deliverable Checklist*

- ❑ Advanced Mobility Technology Vendor Solicitation Form — Year 1

* *Reference **Figure 21** for detailed information*

Measures of Success

+ Identify 6 to 12 key mobility areas the City needs to evaluate to address its mobility challenges by 2025.
+ Define key objectives the City and region hopes to achieve during the technology adoption process by 2025.
+ Compile a list of data and product needs, outline the necessary sources for procurement, and assess potential gaps with the City's existing assets by 2026.
+ Establish measures of success for vendors to demonstrate how their product will contribute to achieving the desired outcomes by 2025.
+ Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026.

Figure 21: Solution 10 — Advanced Mobility Technology Vendor Solicitation Process Timeline

❑ Assign personnel in the City of Las Vegas Public Works – Transportation Engineering Division to be responsible for reviewing and creating a standard process for implementing new advanced mobility technology and innovation. The standard process should include the following:

+ Alignment with the City's challenges outlined in the City of Las Vegas AMP
+ Life cycle costs
+ Implementation timeline
+ Compatibility with the asset management system
+ Transportation safety goals
+ Information Technology requirements
+ Data ownership
+ Data storage
+ Performance measures

❑ Establish a baseline for each measure of success.

❑ Assign personnel in the City of Las Vegas Public Works – Transportation Engineering Division to be responsible for reviewing the submitted Advanced Mobility Technology Vendor Solicitation Process proposals.

❑ Implement an Advanced Mobility Technology Vendor Solicitation Process.

SOLUTION 11

TRANSPORTATION TECHNOLOGY MANUAL AND TRAINING

This solution creates a Transportation Technology Manual and Training for physical transportation assets and software to provide city employees with guidelines, standards, specifications, maintenance requirements and schedules, and IT operational and maintenance requirements. The Transportation Technology Manual and Training will provide the framework for establishing uniformity and standardization throughout the city and facilitate the transfer of knowledge to both new and seasoned employees, which will equip them with the necessary information and training to perform their roles successfully.

Context

Training on new and existing transportation technology, such as physical assets and software, has become necessary for agencies for both new hires and experienced employees. As the City implements new devices, data platforms, and analytic tools, staying current with technology operations and maintenance requirements is critical. A Transportation Technology Manual will be created to document the requirements for all existing and new technology and innovation in the city. This manual will have a packet for each device installed in the city with standards, specifications, maintenance requirements and yearly schedule, and IT operations and maintenance requirements. To start developing the transportation technology manual, the City will create a comprehensive template outlining the necessary information that will serve as a foundation for the manual's content and structure. Once the Transportation Technology Manual is created and finalized, biannual training will be scheduled and held to help city staff stay informed and up to date on technology operations and maintenance requirements.

Responsibility

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
Advanced Mobility Sensitive Design Group and Technology and Innovation Steering Committee	City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Transportation Engineering Field Operations and City of Las Vegas Innovation Technology	City of Las Vegas Community Development

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

The Transportation Technology Manual and Training will enhance asset management of existing and newly implemented technology by developing a strategy to maintain assets, optimize asset life cycles, and enhance operational efficiency.

Maintenance and Workflow

The Transportation Technology Manual and Training will establish a consistent maintenance program for deployed technology to routinely maintain and upgrade assets to minimize downtime. This solution will help city staff stay informed about the advanced mobility technology operations and maintenance requirements.

Deliverable Checklist*

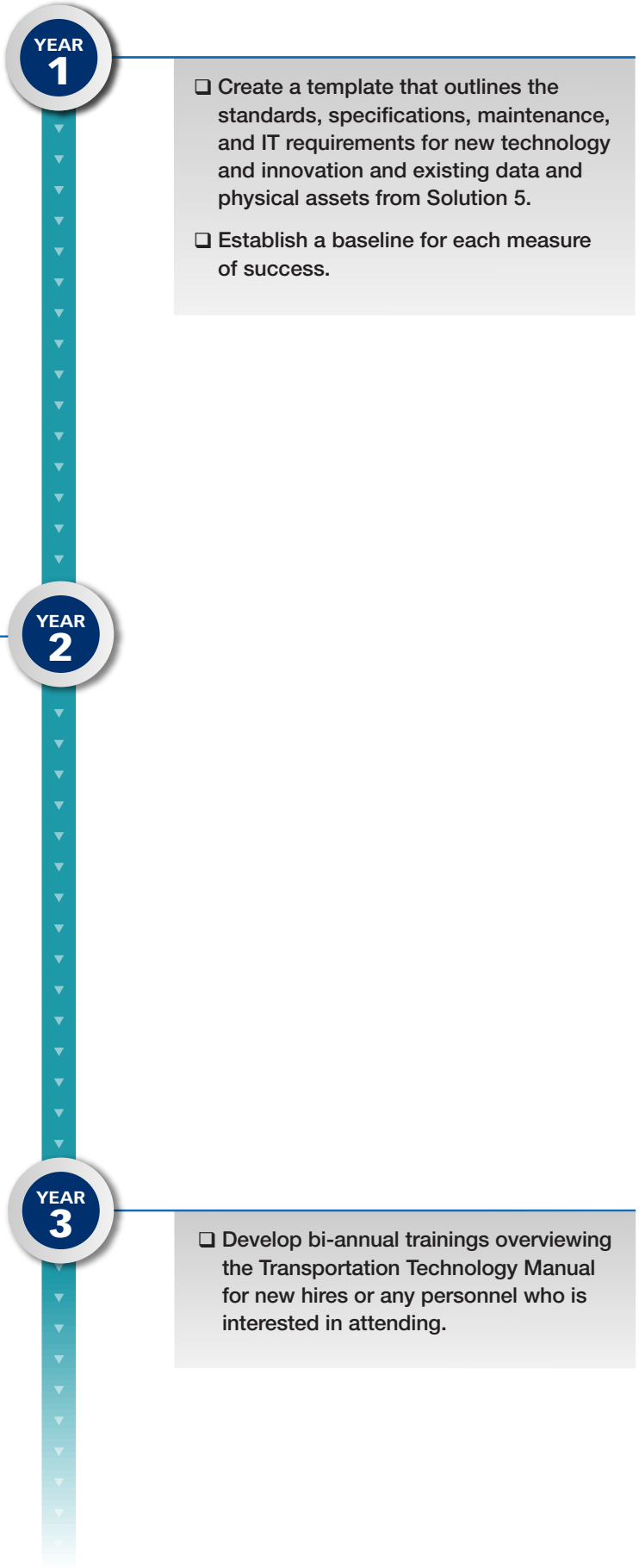
- ❑ Template for New and Existing Data and Physical Transportation Technology and Innovation Assets — Year 1
- ❑ Transportation Technology Manual — Year 2
- ❑ Bi-Annual Training Schedule — Year 3

* *Reference **Figure 22** for detailed information*

Measures of Success

+ Develop and implement the Transportation Technology Manual within 2 years of implementing the AMP.
+ Increase employee participation in trainings program by 10% every 6 months.

Figure 22: Solution 11 — Transportation Technology Manual and Training Timeline



SOLUTION 12

ADVANCED MOBILITY SKILLS TRAINING

This solution involves creating an Advanced Mobility Skills Training Program that pairs individuals from different city departments to enhance understanding of each department's specific roles and responsibilities in implementing advanced mobility technology. This program aims to create a shared knowledge base that encourages effective collaboration and efficient implementation across departments to maximize the city's benefits from advanced mobility technology.

Context

This program fosters cross-departmental collaboration in the City of Las Vegas to improve understanding of advanced mobility technology planning, design, implementing, operations, and maintenance. The Advanced Mobility Skills Training will group unlikely department pairings, like Public Works — Transportation Engineering Division with Transportation Engineering Field Operations or City of Las Vegas Innovation and Technology with Community Development, to better understand how to implement advanced mobility strategies that are effective, efficient, and beneficial to all departments. Bringing perspectives from various disciplines creates a more holistic approach to optimizing advanced mobility strategies' implementation, operation, and maintenance.

To implement this program, the City will undertake several key tasks. These tasks include developing the Advanced Mobility Skills Training curriculum,

which will outline the topics, learning objectives, and materials to be covered. A schedule will be established to determine the timing and duration of the training sessions, so they are conducted in a structured and organized manner. A participant list will be compiled and identify the individuals from different departments who will take part in the training program. An agenda will be created that specifies the sequence of topics, activities, and discussions during each session. Lastly, an evaluation form will be developed to assess the effectiveness and impact of the training program, to allow for continuous improvement. These elements will collectively facilitate successfully implementing the Advanced Mobility Skills Training program, fostering collaboration, efficiency, and knowledge sharing among departments.

Guiding Principles

This strategy advances the following AMP guiding principles:

Infrastructure

The Advanced Mobility Skills Training will improve effectiveness and efficiency of advanced mobility technology and innovation from other department's lessons learned and best practices.

Maintenance and Workflow

The Advanced Mobility Skills Training will enhance understanding of the various operations related to transportation in the City of Las Vegas to gain insights into the roles and responsibilities of other departments and keep the City's workforce current with existing practices.

Responsibility

R

RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division and Advanced Mobility Sensitive Design Group

A

ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

C

CONSULTED

City of Las Vegas IT, City of Las Vegas Community Development, City of Las Vegas City Attorney, City of Las Vegas City Clerk, City of Las Vegas Economic & Urban Development, City of Las Vegas Fire & Rescue, City of Las Vegas Government & Community Affairs, City of Las Vegas Innovation & Technology, City of Las Vegas Neighborhood Services, City of Las Vegas Public Works — Operations and Maintenance, Fleet, Waster Water Reclamation, Traffic Field Operations, and City Engineer Division.

I

INFORMED

Las Vegas Council and Partner Agencies

Deliverable Checklist*

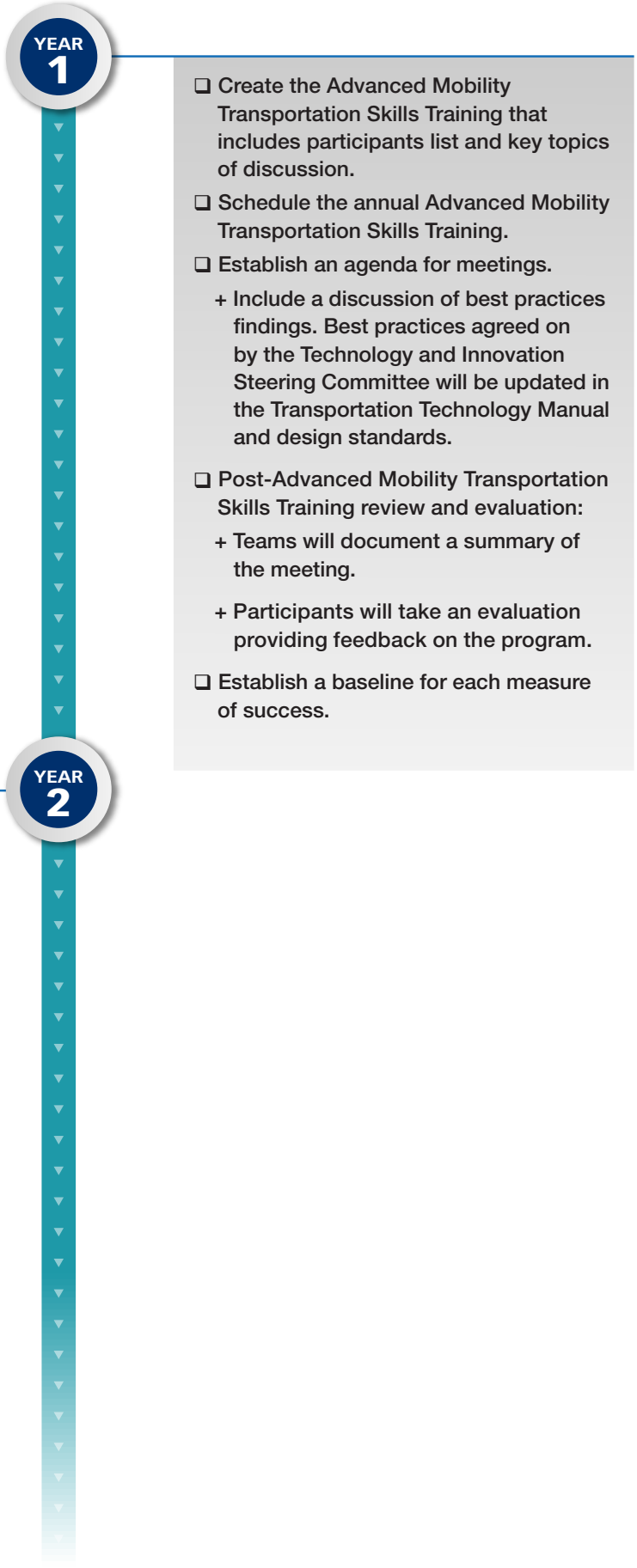
- ❑ Advanced Mobility Transportation Skills Training Curriculum and Schedule — Year 1
- ❑ Advanced Mobility Transportation Skills Training Participants List — Year 1
- ❑ Advanced Mobility Transportation Skills Training Agenda — Year 1
- ❑ Advanced Mobility Transportation Skills Training Evaluation — Year 1

* *Reference **Figure 23** for detailed information*

Measures of Success

+ Increase employee participation in training programs by 10% every 6 months.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.

Figure 23: Solution 12 — Advanced Mobility Skills Training Timeline



CHAPTER 5

CONCLUSION

The AMP is a strategic framework that provides the City of Las Vegas with an actionable roadmap to effectively invest in and adopt innovative transportation technologies. With a focus on addressing the city's unique mobility challenges, the AMP prioritizes solutions focusing on equity, VRUs, transportation infrastructure and operations, data management, and maintenance and internal workflow, considering the city's present and future mobility needs. Aligned with existing City plans, the AMP uses a holistic TSMO approach, emphasizing short term improvements within a 1- to 5-year timeframe. The AMP goes beyond a conceptual document by defining a clear mission, vision, guiding principles, goals, and objectives that are each designed to tackle specific mobility challenges. It outlines tactical and programmatic solutions and includes comprehensive strategies for implementing solutions, including a timeline, a deliverables checklist, roles and responsibilities, and measures of success. With the AMP, the City of Las Vegas has the guidance and tools to effectively implement the proposed solutions and drive significant progress in its mobility network. By leveraging the strategic roadmap, comprehensive implementation strategies, and clear goals and objectives outlined in this document, the City can implement solutions that will yield tangible benefits for its residents, visitors, and stakeholders.

The Guiding Principles, Goals, Objectives, and Solution Alignment Matrix in **Table 9** visually represents how the proposed solutions align with the guiding principles and contribute to achieving the AMP's goals and objectives. By highlighting the direct connection between the proposed solutions and the AMP foundational elements, the matrix reinforces the effectiveness and relevance of the planning document and solidifies its value as an actionable roadmap for the city's advanced mobility future. The document's thorough analysis, thoughtful planning, and actionable recommendations position the city toward a safer, reliable, and integrated mobility network, thereby enhancing the quality of life for the City of Las Vegas community.

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix

Guiding Principle: Equitable and Sustainable Mobility

GOALS	OBJECTIVES	SOLUTIONS
Reduce physical barriers to accessing multimodal choices	Plan, fund, and construct two projects to improve access to mobility choices within 0.25 mile of Communities of Concern (CoC) by 2030	Mobility Hub
Reduce administrative barriers to accessing multimodal choices	Implement a system or explore public and private partnership opportunities that allows disadvantaged populations to have seamless access to mobility options citywide by 2026	Traveler Information Website and GoVegas Application
Minimize impacts of environmental factors on multimodal mobility	Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030	Mobility Hub VRU Service Index
Advance quality transportation job creation	Ensure that all City of Las Vegas Public Works Transportation Engineering Division projects align with and comply with the RTC's RiSE goal by 2025	Develop Design Standards and Design for Safer Speeds

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix (continued)

Guiding Principle: Vulnerable Road Users

GOALS	OBJECTIVES	SOLUTIONS
Improve roadway crossings to enhance safety and accessibility for all users	Reduce crashes for VRUs at crossings by 15% within 3 years of deploying the solution at locations where the improvement is implemented	Develop Design Standards and Design for Safer Speeds
	Reduce fatal and serious injury crashes by 10% within 3 years of deploying the solution at locations where the improvement is implemented	Develop Design Standards and Design for Safer Speeds
Make transportation facilities safer for VRUs at all times of the day	Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors	VRU Service Index
		Develop Design Standards and Design for Safer Speeds
Use data to inform safety improvements	Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution	VRU Service Index
		Develop Design Standards and Design for Safer Speeds
Increase connectivity and access to transit hubs and other modes of transportation	Implement two projects projected to reduce crashes involving VRUs accessing a specific transit hub or facility by 2030	Mobility Hub

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix (continued)

Guiding Principle: Infrastructure

GOALS	OBJECTIVES	SOLUTIONS
Understand transportation assets by developing a continuous process to identify where infrastructure is located, where gaps exist, how infrastructure is being used, and the infrastructure's age	Identify a prioritized list of infrastructure needs by 2025	Inventory Existing Data and Physical Assets
	Document 100% of the City of Las Vegas transportation infrastructure by 2030 and develop a process to keep it updated	Inventory Existing Data and Physical Assets
Close transportation system gaps	Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data	VRU Service Index
		Inventory Existing Data and Physical Assets
Interoperability of City and regional infrastructure and systems	Define key objectives the City and region hope to achieve during the technology adoption process by 2025	Technology and Innovation Steering Committee
		Advanced Mobility Technology Vendor Solicitation Process
Develop a technology-driven transportation ecosystem	Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026	Advanced Mobility Technology Vendor Solicitation Process
		Technology and Innovation Steering Committee
Integrate advanced mobility technology considerations into the City's project development process	Create a standard process that each project will go through that help identify opportunities to add advanced mobility considerations to the scope of work for existing projects by 2026	Advanced Mobility Sensitive Design Group

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix (continued)

Guiding Principle: *Transportation System Operations*

GOALS	OBJECTIVES	SOLUTIONS
Address excessive speeding on arterial roadways	Implement projects to reduce speed on the High Injury Network by 10% or modify operations to bring speeds within 5 miles per hour of the posted speed limit by 2030	Develop Design Standards and Design for Safer Speeds
Operate infrastructure to optimize all modes of transportation	Increase multimodal transportation ridership by 10% within 3 years of deploying the solution	Mobility Hub
		Traveler Information Website and GoVegas Application

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix (continued)

Guiding Principle: Data Applications

GOALS	OBJECTIVES	SOLUTIONS
Define what insights the City needs to know	Identify 6 to 12 key mobility areas the City needs to evaluate to address its mobility challenges by 2025	Advanced Mobility Technology Vendor Solicitation Process
Identify barriers to collecting data	Compile a list of data and product needs, outline the necessary sources for procurement, and assess potential gaps in the City's existing assets by 2026	Advanced Mobility Technology Vendor Solicitation Process
Identify barriers to data sharing	Evaluate what needs to be done to enable data sharing by 2026	Traveler Information Website and GoVegas Application
Increase data-driven decision making	Define what tools are needed to incorporate data in decision-making by 2026	Traveler Information Website and GoVegas Application
Increase transparency and agency accountability	Determine the performance measures the City needs to see on an internal and external dashboard by 2027	Traveler Information Website and GoVegas Application
		Inventory Existing Data and Physical Assets
	Provide active transportation routes on the City of Las Vegas website and GoVegas app by 2026	Traveler Information Website and GoVegas Application

Table 9: Guiding Principles, Goals, Objectives, and Solution Alignment Matrix (continued)

Guiding Principle: Maintenance and Internal Workflow

GOALS	OBJECTIVES	SOLUTIONS
Prioritize standardizing a technology and innovation procurement process that considers all factors, not just cost	Develop and implement a process to institutionalize advanced mobility procurement in the City of Las Vegas by 2024	Advanced Mobility Sensitive Design Group
		Technology and Innovation Steering Committee
		Advanced Mobility Skills Training
	Demonstrate a positive return on investment, where the benefits of the implemented advanced mobility technology outweigh the associated costs by 2026	Cost-Benefit Analysis
Develop a strategy or plan to maintain assets	Identify barriers with current asset configuration that prevent improvement by 2025	Technology and Innovation Steering Committee
	Develop and implement the Transportation Technology Manual within 2 years of implementing the AMP	Transportation Technology Manual and Training
Keep the workforce current with existing and future needs	When adding new assets, identify how these fit into existing workloads and/or contracts for maintenance by 2025	Transportation Resource Training
	Increase employee participation in training programs by 10% every 6 months	Transportation Technology Manual and Training
		Advanced Mobility Skills Training
Optimize the functionality of electronic service requests	Define what tools are needed to incorporate data in decision-making by 2026	Traveler Information Website and GoVegas Application

APPENDIX A

POTENTIAL ADDITIONAL FUNDING SOURCES FOR TACTICAL SOLUTIONS

Mobility Hub

- USDOT's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Program
- USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) Program
- USDOT's Charging and Fueling Infrastructure (CFI) Program
- FHWA's Congestion Mitigation and Air Quality Improvement (CMAQ) Program
- FHWA's Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD) Program
- FTA's Transit-Oriented Development Planning Grant
- FTA's Accelerating Innovative Mobility (AIM) Grant
- FTA's Enhancing Mobility Innovation (EMI) Grant
- NV Energy Economic Recovery Transportation Electrification Plan (ERTEP)
- Nevada Revised Statutes 278C — Tax Increment Areas
- City of Las Vegas Capital Improvement Plan (CIP)

Traveler Information Website and GoVegas Application

- USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) Program
- FHWA's Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD) Program

Vulnerable Road User (VRU) Service Index

- USDOT's Safe Streets and Roads for All (SS4A) Program
- FHWA's Healthy Streets Program
- Nevada's Safe Routes to School Program

Develop Design Standards and Design for Safer Speeds

- USDOT's Safe Streets and Roads for All (SS4A) Program
- USDOT's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Program

Inventory Existing Data and Physical Assets

- USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) Program
- FHWA's Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD) Program

APPENDIX B

SOLUTION FACT SHEETS

Advanced Mobility Plan

SOLUTION 1

MOBILITY HUB

This solution will deploy mobility hubs throughout Las Vegas to enhance transportation safety, connectivity, and accessibility. Through strategic planning, designing, and including various technology amenities, these mobility hubs will facilitate seamless transfers between multiple modes of transportation, which improves the overall mobility experience for residents and visitors.

Context

A mobility hub is a centralized location that integrates multiple modes of transportation, such as public transit, bicycles, and ride-hailing services, to provide people with a convenient and efficient multimodal travel experience. The objective is to promote safe, reliable, and efficient connectivity of various modes of transportation while reducing reliance on private vehicles and congestion. The City of Las Vegas (City/ Las Vegas) defined a mobility hub concept in the **2045 Downtown Las Vegas Master Plan** that identifies general locations for three types of mobility hubs: lifestyle, employment, and cultural and tourism.[1] The **2050 Master Plan** identifies existing, future, and recommended mobility hub locations and transit-oriented development improvements in specific areas around the city and indicates the name or location, Regional Transportation Commission (RTC) Routes Served, and Future OnBoard High-Capacity Transit Routes.[2] Assembly Bill 10 (AB 10) 2023 was sponsored by the City at the Nevada Legislature and aimed to create Transportation and Housing Reinvestment

[1] 2045 Downtown Las Vegas Master Plan (2022). https://files.lasvegasnevada.gov/planning/Downtown-Master-Plan-Vision-2045.pdf

[2] City of Las Vegas 2050 Master Plan (2022). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

Context (continued)

Zones using Tax Increment Financing. The purpose was to allow cities and counties throughout Nevada to establish special zones along transportation corridors and create transit oriented development, infill, mixed-use, multi-family, and income-accessible housing. While the bill did not pass, introducing and considering the bill signifies a positive step towards advancing transit-oriented development, which is a key component to optimizing the functionality of mobility hubs. The Housing and Transportation Investment Zone concept is still worth pursuing, and it might be refined further in 2025.

The Advanced Mobility Plan (AMP) builds on the City's mobility hub conceptual planning and the concepts proposed in AB10 (2023) to create an actionable roadmap for developing siting, design, and plans for implementing solutions to improve connectivity for Vulnerable Road Users (VRUs). Mobility hubs will also consider transportation amenities that increase residents' and tourists' access to low-cost multimodal options such as public transit, car sharing, bike sharing, and ride-hailing services. Other mobility hub amenities could improve the safety of VRUs by constructing pedestrian infrastructure connections such as well-lit crosswalks and sidewalks. Mobility hubs can serve as a central location for electric vehicle charging infrastructure, which would make it easier for owners to find and access charging stations. To introduce the benefits of the mobility hub to the public, this solution includes creating an educational campaign to raise awareness and understanding among residents and visitors about the advantages of using a mobility hub. Post-implementation assessments will also occur to evaluate the effectiveness and impact of implementing the mobility hub. This assessment will involve gathering feedback from users, conducting surveys, and analyzing relevant transportation data to measure the extent to which the mobility hubs have achieved their intended goals, identify any areas for improvement, and inform future decision-making processes.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Equitable and Sustainable Mobility

A mobility hub improves access to multimodal options for all users, including those in traditionally disadvantaged communities, to help address transportation inequities by providing convenient and reliable connectivity to various modes of transportation.

Vulnerable Road Users

A mobility hub improves safe access to multimodal options for active transportation users of all ages and abilities by placing the mobility hub in locations with connectivity to dedicated infrastructure and amenities for pedestrians, bicyclists, and other active transportation modes, which enhances safety and convenience.

Infrastructure

A mobility hub enhances access to multimodal options, such as public transit, bicycle and pedestrian infrastructure, and car sharing services to reduce congestion by enabling convenient alternatives to single occupant vehicle use.

[2] City of Las Vegas 2050 Master Plan (2021). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

A — ACCOUNTABLE

City of Las Vegas Community Development

C — CONSULTED

RTC of Southern Nevada

City of Las Vegas Innovation and Technology

I — INFORMED

City of Las Vegas Office of Communications

Deliverable Checklist*

- ❑ Mobility Hub Siting Plans — Year 2
- ❑ Mobility Hub Design Plans — Year 2
- ❑ Educational Campaign for Mobility Hubs — Year 3
- ❑ Mobility Hub Post-Implementation Assessment — Year 3

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Plan, fund, and construct two projects to improve access to mobility choices within 0.25 mile of Communities of Concern by 2030.
+ Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030.
+ Implement two projects projected to reduce crashes involving VRUs accessing a specific transit hub or facility by 2030.
+ Increase multimodal transportation ridership by 10% within 3 years of deploying the solution.

Timeline

Solution 1: Mobility Hub

YEAR 1

- ❑ Using the future and recommended mobility hubs in the 2050 Master Plan and 2045 Downtown Las Vegas Master Plan, screen, prioritize, and select an early deployment location based on transit propensity, equity, and purpose.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Evaluate existing assets for the selected early deployment location to identify the available or needed infrastructure.
- ❑ Design the early deployment mobility hub and identify the necessary mobility elements, technology and information components, and amenities.

YEAR 3

- ❑ Create an education campaign for the community using the mobility hub concepts defined in the 2045 Downtown Las Vegas Master Plan that informs the mobility hub's purpose, use, and features.
- ❑ Construct an early deployment mobility hub.
- ❑ Assess the success of the early deployment mobility hub using the benchmarks created in year 1, and identify lessons learned.

YEAR 4+

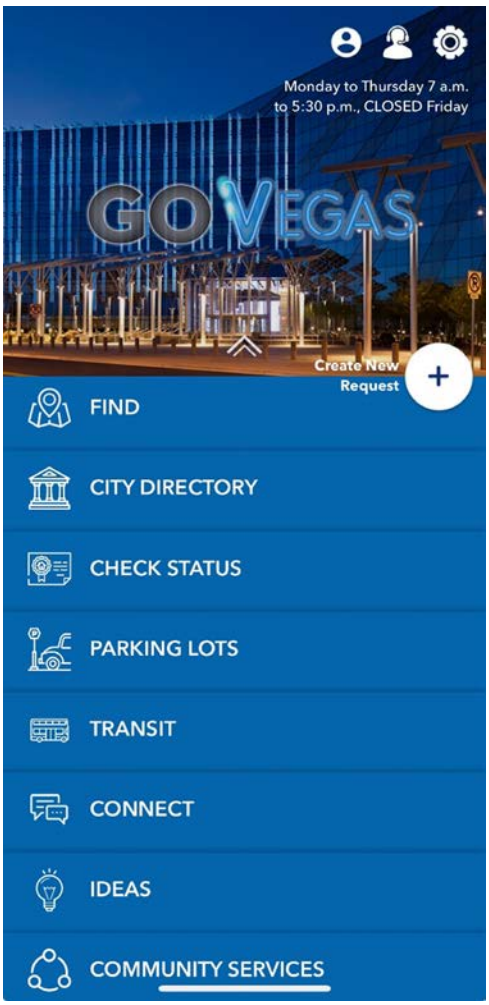
- ❑ Scale and expand to implement mobility hubs at other prioritized locations across the City of Las Vegas.

Advanced Mobility Plan

SOLUTION 2

TRAVELER INFORMATION WEBSITE AND GoVEGAS APPLICATION

This solution will develop a data exchange to share important mobility information via the GoVegas app with residents and visitors. This information will need to be maintained so it is current and relevant. Public Wi-Fi will enable this information to be available to all users.



Context

The City of Las Vegas' (City/Las Vegas) website (lasvegasnevada.gov) provides information for various city services, including transportation-related services such as parking lot locations, suggested routes to school, payment services for parking tickets, and the Downtown Loop transit stops, schedules, and live vehicle tracker. The City's website also links to Regional Transportation Commission (RTC) of Southern Nevada's transit services page and live freeway traffic camera footage to provide visitors with regional transportation information for Southern Nevada. The website offers valuable information to the public, and with effective marketing strategies, such as geofencing and QR codes, even more visitors and residents traveling through and in the City of Las Vegas can learn of these helpful resources.

This strategy intends to increase the visibility and accessibility of traveler information on the City's existing website and enhance the GoVegas app by incorporating key transportation elements. By increasing visibility and accessibility, the objective is to provide users with comprehensive transportation information about the City of Las Vegas to help

Context (continued)

them make informed decisions about the available mobility options. This strategy proposes enhancing the City's website and mobile application by identifying opportunities to increase the platform's use to disseminate information to users about available city and regional transportation by providing information that supplements the rideRTC app. To implement this solution, the City needs to identify the data required for data exchange, identify any existing gaps, and develop a platform for the exchange. Possible opportunities could include the addition of pedestrian routes and dedicated and protected bike lanes in the City of Las Vegas to spread awareness of available active transportation networks in the city. The City will also need to establish a maintenance process so the traveler information website and GoVegas application provide up-to-date information on available transportation routes. There is also an opportunity to provide public Wi-Fi to facilitate the accessibility of transportation information to a wider audience. By offering public Wi-Fi connectivity in key locations, such as mobility hubs and parks, the City can provide residents and visitors with access to transportation maps on the City's traveler information website and GoVegas application to explore the available mobility options.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Equitable and Sustainable Mobility

Optimizing the traveler information website and GoVegas application gives individuals access to transportation information, such as bike routes, to make informed decisions about available mobility options regardless of their locations or transportation preferences.

Vulnerable Road Users

By optimizing traveler information and the GoVegas application, pedestrians and bicyclists will have access to specific information, such as the locations of bike lanes, pedestrian-friendly paths, and alternative routes, which will help them make decisions that prioritize safety and enhance their travel experience.

Infrastructure

Optimizing the traveler information website and GoVegas application will provide individuals with a range of transportation options, which enables them to choose efficient and reliable transportation options and routes.

Data Applications

Enhancing the information on the traveler information website and GoVegas application will improve public access to relevant transportation information, which empowers individuals to make more informed decisions about their transportation choices.

Responsibilities

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Innovation and Technology	City of Las Vegas Office of Communications RTC of Southern Nevada	City of Las Vegas City Council

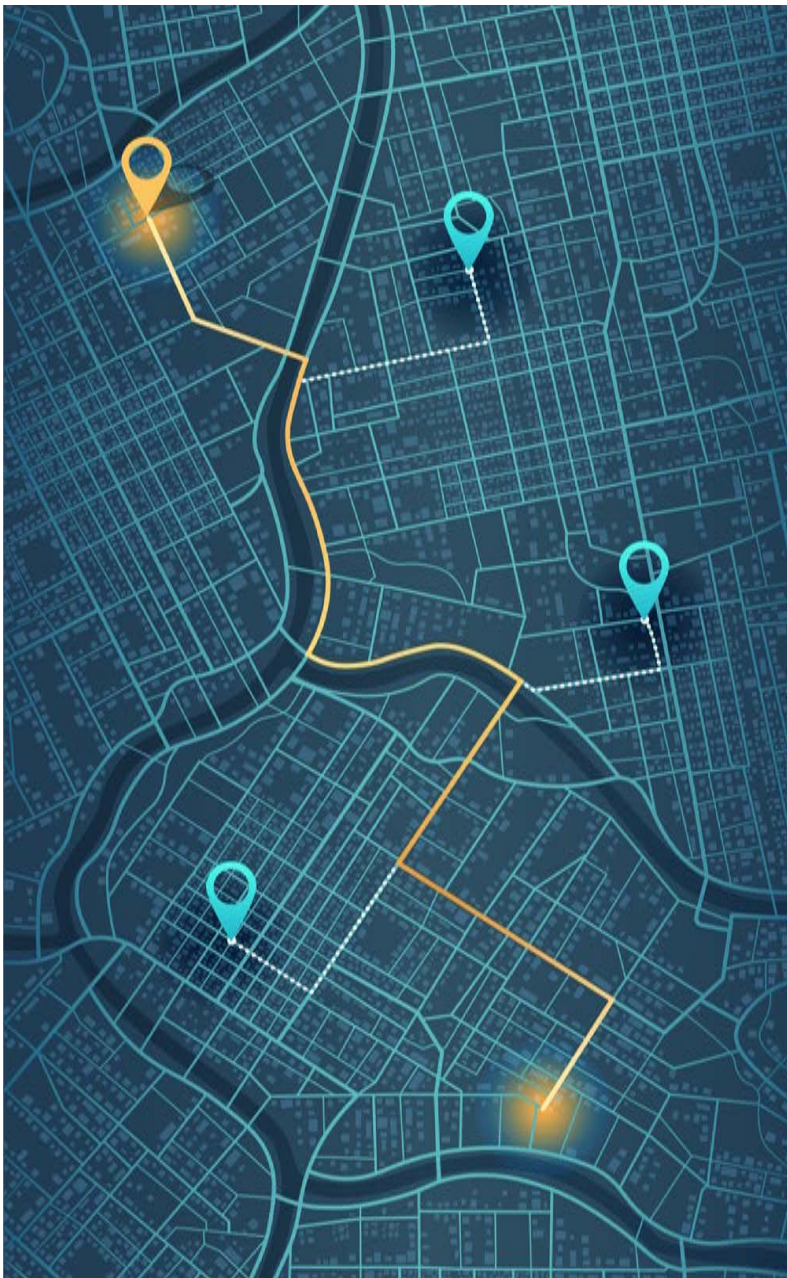
Deliverable Checklist*

- ❑ Information for Data Exchange and Gaps — Year 1
- ❑ Platform for Exchange — Year 2
- ❑ Maintenance process for GoVegas — Year 3
- ❑ Design Plans for Public Wi-Fi — Year 3

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Implement a system or explore public and private partnership opportunities that allows disadvantaged populations to have seamless access to mobility options citywide by 2026.
+ Provide active transportation routes on the City of Las Vegas website and GoVegas app by 2026.
+ Determine the performance measures the City identifies to assess on an internal and external dashboard by 2027.
+ Increase multimodal transportation ridership by 10% within 3 years of deploying the solution.
+ Evaluate what needs to be done to enable data sharing by 2026.
+ Define what tools are needed to incorporate data in decision-making by 2026.



Timeline

Solution 2: Traveler Information Website and GoVegas Application

YEAR 1

- ❑ Create and conduct a marketing campaign to increase awareness for the GoVegas App and the City of Las Vegas website.
- ❑ Identify information and gaps for data exchange.
- ❑ Evaluate information from rideRTC and identify opportunities to enhance.
- ❑ Coordinate with the RTC of Southern Nevada to facilitate data sharing and information exchange between the rideRTC app and GoVegas app.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Assign personnel in the City of Las Vegas Public Works – Transportation Engineering Division to be responsible for reviewing the submitted Advanced Mobility Technology Vendor Solicitation Process proposals.
- ❑ Implement an Advanced Mobility Technology Vendor Solicitation Process.

YEAR 3+

- ❑ Establish a maintenance process for the GoVegas app that uses current data sources for the application.
- ❑ Install public Wi-Fi at key locations like bus stops, mobility hubs, and libraries to enhance the accessibility of transportation information.

Advanced Mobility Plan

SOLUTION 3

VULNERABLE ROAD USER SERVICE INDEX

This solution develops a Vulnerable Road User (VRU) Service Index to assess the conditions of existing and proposed VRU infrastructure to identify locations for improvement through a Unified Planning Work Program Study with the Regional Transportation Commission (RTC) of Southern Nevada. This index will seek to increase safety, reliability, and accessibility for VRUs by prioritizing their needs in transportation planning and infrastructure development projects.

Context

The transportation mode split refers to the percentage of trips made by each mode of transportation, such as walking, biking, public transportation, and private vehicle. The City of Las Vegas **2050 Master Plan** identifies a mode split goal of 40% for drive alone, 20% for transit, and 5% for walking and biking as a potential outcome. Current data indicates a shift in mode split from 2020 to 2021.[1] The City of Las Vegas **2050 Master Plan 2022 Annual Report** states that drive-alone shares decreased from 77.8% in 2020 to 76.3% in 2021, while transit share declined and walking and/or biking and telecommuting increased.[2] The 2050 Master Plan sets a goal of having 75% of the region's residents within a 0.5 mile of bus service and that 100% of the region has access to some type of public transportation service by 2050. The 2022 Annual Report indicates a positive trend, showing an

[1] City of Las Vegas 2050 Master Plan (2021). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

[2] City of Las Vegas 2050 Master Plan 2022 Annual Report (2022). https://files.lasvegasnevada.gov/planning/2050-Master-Plan/CLV_2050_Master_Plan_2022-Annual-Report.pdf

Context (continued)

increase in proximity and transit service coverage from 78% to 80%. Promoting a mode split that prioritizes alternative modes of transportation can improve VRU safety, if the existing VRU infrastructure supports it.

The VRU Service Index will evaluate the conditions of existing and proposed VRU infrastructure, including sidewalk widths, lighting, obstructions blocking walkaways, and pedestrian amenities like sidewalks, benches, and shade, to identify priority locations that would benefit from improvements. This approach to asset management will help increase safety, reliability, and accessibility and advance efforts to achieve the City of Las Vegas' (City/Las Vegas) goal of reducing reliance on drive-alone trips and encourage the use of transit, walking, and biking. To establish the VRU Service Index, the City and the RTC of Southern Nevada have agreed to collaborate through a Unified Planning Work Program study. This partnership will involve jointly defining the methodology and data sources required for this assessment. Together, the City and RTC of Southern Nevada can use their expertise and resources to develop a comprehensive and standardized index for evaluating the condition of the VRU infrastructure in Las Vegas and throughout Southern Nevada. Once the VRU Service Index is established, the City can create an education campaign for communities and regional partners to raise awareness about the improvements identified and implemented based on the index.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Equitable and Sustainable Mobility

The VRU Service Index will assist the City in prioritizing making improvements for pedestrians, bicyclists, and transit-dependent individuals who are most impacted by weather, traffic, and other environmental factors, with improvements such as weather shelters.

Vulnerable Road Users

To improve VRU safety, this solution will identify existing and proposed infrastructure that could benefit from improvements that optimize pedestrian and bicycle mobility, including enhanced crosswalks, wider sidewalks, and protected bike lanes.

Infrastructure

The VRU Service Index will assess the state of existing and proposed VRU infrastructure to increase safe and reliable access to facilities by evaluating factors such as sidewalk conditions and crosswalk visibility.

[2] City of Las Vegas 2050 Master Plan (2021). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

A — ACCOUNTABLE

City of Las Vegas Community Development

C — CONSULTED

RTC of Southern Nevada

I — INFORMED

Advanced Mobility Sensitive Design Group

Technology and Innovation Steering Committee

Deliverable Checklist*

- ❑ Unified Planning Work Program Application — Year 1
- ❑ Methodology and Data Source Memorandum for VRU Service Index — Year 4
- ❑ Education Campaign for the Community — Year 4
- ❑ Education Campaign for Regional Partners — Year 4

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Implement two projects that will improve access to multimodal mobility options in all weather conditions by 2030.
+ Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors.
+ Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution.
+ Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data.

Timeline

Solution 3: Vulnerable Road User Service Index

YEAR 1

- ❑ Initiate a Unified Planning Work Program Study with the RTC to establish the VRU index at a regional level.

YEAR 2

- ❑ Identify desired and available indexes to quantify the VRU Service Index.
  - + Available indexes include RTC of Southern Nevada's pedestrian comfort, health composite, heat vulnerability index, and sidewalk inventory results.
- ❑ Identify the data sources that need to be measured and whether it is available or needs to be collected.
  - + The City of Las Vegas is undergoing an asset inventory that could be used as a potential data source.
- ❑ Define the criteria for prioritizing to evaluate preliminary corridors.
  - + Considerations might include heavy pedestrian volume areas with high crash locations, locations incompliant with the Americans with Disabilities Act or Public Right-of-way Accessibility Guidelines, or locations with access issues.
  - + Establish a baseline for each measure of success.

YEAR 3

- ❑ Procure data sources if not already available.
  - + Consider the compatibility of data sources with partner agencies.
- ❑ Collect data for preliminary corridors.

YEAR 4

- ❑ Perform VRU Service Index Analysis for the City of Las Vegas.
- ❑ Using the index results, evaluate and prioritize key areas
- ❑ Document VRU Service Index methodology and data sources in a memorandum.
- ❑ Identify technology and innovation solutions to improve the VRU service index in prioritized areas.
- ❑ Create an education campaign to inform the community of the purpose, use, and improvements from the VRU Service Index.
- ❑ Develop an educational campaign for regional partners to provide information about the purpose, use, and improvements resulting from the VRU Service Index.

Advanced Mobility Plan

SOLUTION 4

DEVELOP DESIGN STANDARDS AND DESIGN FOR SAFER SPEEDS

This solution revises or establishes transportation design standards that incorporate advanced mobility technology to establish safe speeds for transportation facilities. Implementing the solution includes design plans, specifications, and estimates (PS&E) and a request for information to procure contractors to deploy the improvements. Post implementation studies and public surveys will be conducted to determine which solutions should be incorporated into design standards for safer speeds.

Context

Transit, biking, walking, and other modes of transportation were not widely used when many of the City of Las Vegas' (City/Las Vegas) main arterials were built. As demands have shifted and automobile congestion has increased, a new dynamic has emerged and resulted in varying speeds among drivers. According to the City's **Vision Zero Plan** (VZAP), between 2015 and 2019, speeding was a contributing factor in 22% of traffic fatalities in Las Vegas.[1] This solution builds on Strategy 3 of the VZAP and focuses on establishing publicly safe speeds for transportation facilities. The goal of this solution is to mitigate the risk of collisions, serious injuries, and fatalities caused by sudden speed changes, thereby increasing the safety of road users and advancing the City's Vision Zero initiative to eliminate traffic-related fatalities and serious injuries by 2050. This can be accomplished by implementing advanced mobility technology, such as speed-regulating signal progression, queue detection, passive pedestrian

[1] City of Las Vegas Vision Zero Action Plan (2022). https://files.lasvegasnevada.gov/parking/visionzero/ActionPlan.pdf

Context (continued)

detection, and speed feedback signs, to optimize the efficiency and reliability of roadways. Data and reporting requirements for this strategy will be completed under the VZAP.

Engineering standards are technical documents that establish a baseline for designing and building transportation infrastructure. Revising or establishing new transportation standards that incorporate successful advanced mobility strategies will provide a consistent and uniform approach to improving the safety and efficiency of roadways in Las Vegas. Successfully implementing advanced mobility technologies will be fostered through design PS&E and construction projects. Post-implementation studies and public surveys will be conducted to evaluate the effectiveness of implementing advanced mobility technologies. These assessments will provide insights into the impact of the implemented strategies on the transportation system and provide informed decision-making on whether to establish standard practices. The City has begun this initiative by developing standards for Complete Streets to advance this type of improvement standardization through its **2050 Master Plan**.[2] The City's Complete Streets Policy emphasizes that streets should be designed in accordance with Titles 11 and 19 of the Las Vegas Municipal Code and Public Right-of-way Accessibility Guidelines and Americans with Disabilities Act standards. The City has also incorporated the Complete Street Standards into its Unified Development Code Title 19.04 as of 2022 to apply to all new development projects in the City. Historically, the Clark County Area Uniform Standard Drawings have governed any new construction. This strategy aims to ultimately bridge the gap between the standards and the design of roadways in Las Vegas for safer, consistent speeds. This process will require cooperation with partner agencies and decision-makers. Once the selected technologies are standardized, an educational campaign will be conducted to inform regional partners about the change and provide a clear explanation of updated or new standards. The campaign's objective will be to create an understanding of the benefits and requirements associated with the standardized technology and to foster buy-in and support from partners.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Equitable and Sustainable Mobility

Developing design standards and designing for safer speeds will enhance the safety of Communities of Concern, 58% of which are situated on the High Injury Network.[1] Developing design standards and designing for safer speeds will also reduce greenhouse gas emissions and improve air quality by reducing vehicle idling and accelerating.

Vulnerable Road Users

Developing design standards and designing for safer speeds will enhance the safety of transportation arterials for pedestrians and bicyclists by implementing advanced mobility technology. Implementing technology, such as, speed regulated signal progression to establish publicly safe speeds for transportation facilities, will provide a safer environment for Vulnerable Road Users (VRUs).

Infrastructure

Developing design standards will establish consistency for the design and construction through standardizing technology improvements. As a result, transportation facilities will be designed and constructed in a uniform manner, promote compatibility, and ease use for the residents and visitors.

Transportation System Operations

Enhancing safety on roadways by developing design standards and designing for safer speeds using advanced mobility will establish publicly safe speeds for transportation facilities.

[2] City of Las Vegas 2050 Master Plan (2021). https://files.lasvegasnevada.gov/planning/CLV-2050-Master-Plan.pdf

Responsibilities

R — RESPONSIBLE

City of Las Vegas Vision Zero Task Force

A — ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

C — CONSULTED

Regional Transportation Commission of Southern Nevada — Freeway and Arterial System of Transportation

City of Las Vegas Office of Communications

I — INFORMED

City of Las Vegas Innovation and Technology

Deliverable Checklist*

- ❑ PS&E for Design — Year 2
- ❑ Request for Information for Contractor — Year 3
- ❑ Post Implementation Study and Public Survey — Year 4
- ❑ Revise or Create New Design Standards for Safer Speeds — Year 4
- ❑ Educational Campaign for Regional Partners — Year 5

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Reduce crashes for VRUs at crossings by 15% within 3 years of deploying the solution at locations where improvement implemented.
+ Reduce fatal and serious injury crashes by 10% within 3 years of deploying the solution at locations where improvement implemented.
+ Deploy projects with proven countermeasures to reduce crashes for VRUs at all times of day by 20% within 3 years of deploying the solution on priority corridors.
+ Develop a data-informed process for systematically assessing and prioritizing safety improvements for VRUs within 3 years of deploying the solution.
+ Implement projects to reduce speed on the High Injury Network by 10% or modify operations to bring speeds within 5 miles per hour of the posted speed limit by 2030.
+ Ensure that all City of Las Vegas Public Works Transportation Engineering Division projects align with and comply with the Regional Transportation Commission's RiSE goal by 2025.

Timeline

Solution 4: Develop Design Standards and Design for Safer Speeds

YEAR 1

- ❑ Identify priority locations for improvement using data from the Solution 3: VRU Service Index and the High Injury Network.
- ❑ Identify countermeasures documented in the City's VZAP, Safe Streets and Roads for All application, and NDOT Speed Management Action Plan to address the critical issues of the prioritized locations.
- ❑ Procure engineering consultant(s) for design plans.
- ❑ Develop and implement a public education campaign in collaboration with the City of Las Vegas Office of Communications to introduce advanced mobility technology improvements and promote the City's Vision Zero Initiative.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Complete the PS&E design.
- ❑ Conduct a pre-implementation study and public survey to measure the effectiveness of implementation.

YEAR 3

- ❑ Procure contractor.
- ❑ Deploy countermeasures.

YEAR 4

- ❑ Conduct a post-implementation study and public survey and document best practices and lessons learned.
- ❑ Evaluate successful advanced mobility solution implementation with the Technology and Innovation Steering Committee and Advanced Mobility Sensitive Design Group to create new design standards in consultation with industry best practices or incorporate into existing design standards.
- ❑ Abandon the advanced mobility solutions that were not successful.
- ❑ Conduct community engagement to collect feedback to improve and enhance the effectiveness of strategies.
- ❑ Identify the agencies and decision makers that will need to be coordinated with for revisions or additions to standards.

YEAR 5

- ❑ Identify standards that may need to be revised to account for technology updates.
- ❑ Identify the prioritized locations and infrastructure gaps for implementing revised or new standards.
- ❑ Create an educational campaign for regional partners for new or revised design standards.

YEAR 5+

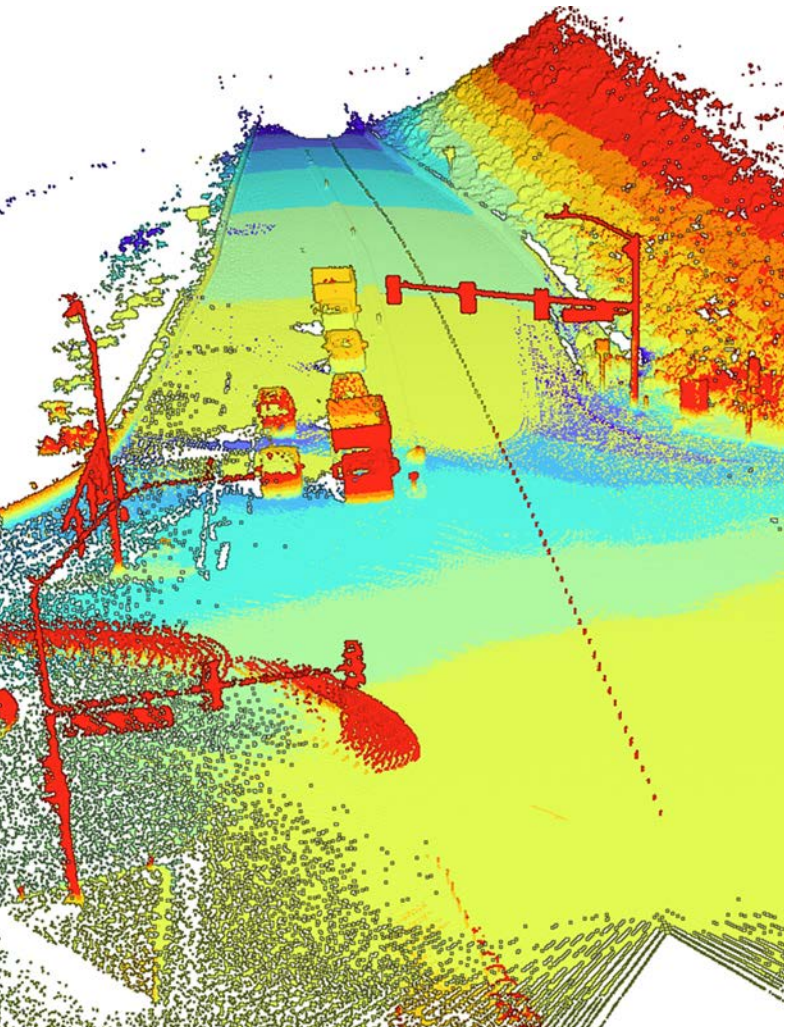
- ❑ Assess and refine standards to consider technology updates.
- ❑ Develop design plans to close infrastructure gaps.
- ❑ Evaluate the effectiveness and scale throughout the City of Las Vegas.

Advanced Mobility Plan

SOLUTION 5

INVENTORY EXISTING DATA AND PHYSICAL ASSETS

This solution will develop an asset management database to effectively manage and maintain the City of Las Vegas' (City/Las Vegas) transportation assets. It will involve creating a database of transportation technology assets, implementing processes for updating and maintaining the database, integrating asset management with service requests, and using geolocation for as-builts plans and service requests. Asset management maps with traffic data will provide users with access to comprehensive information about the City's transportation assets, their conditions, and relevant traffic data.



Context

To build the advanced mobility program, it is critical to understand and identify the existing data and physical assets in Las Vegas. Asset management can maximize an asset's lifecycle by effectively operating, maintaining, and upgrading data and infrastructure to reduce the risk of downtime and asset failure. Asset management will also help streamline the City's maintenance budgeting and planning by proactively scheduling recurring maintenance. The City can leverage its existing asset inventory from the above-ground LiDAR asset management scan to identify various City-owned assets, such as light poles, traffic signals, detectors, and cameras. By developing a list of all assets and data sources, the City can better manage its technology investments and make informed decisions regarding maintenance, upgrades, and future investments.

The City envisions its asset management database will store and geolocate all relevant information for

Context (continued)

traffic infrastructure, including as-built design plans, construction plans, land development projects, Capital Improvement Plan (CIP) projects, transportation service requests, and maintenance schedules. To guide developing an asset management database, a process memorandum identifying the methodology for updating the asset management database will be required. The asset management database could be optimized to analyze operations and evaluate the technology's effectiveness by overlaying the asset management database map with traffic congestion and crash data. This integration will help the City gain valuable insights into the correlation between asset performance, traffic congestion, and crash occurrences and provide additional opportunities for analysis to assess the impact of assets.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

Establishing an asset management program to maximize the lifecycle of the City's transportation assets through comprehensive strategies for inventory, condition assessment, maintenance planning, and performance monitoring.

Data Applications

Taking inventory of existing data and physical assets will improve accessibility to relevant information for transportation assets by creating a centralized database for city staff to easily access and retrieve asset management information for decision-making and planning.

Maintenance and Workflow

Optimizing maintenance for transportation assets is a proactive approach that will be adopted by scheduling recurring maintenance for transportation assets for timely inspections, repairs, and replacements.

Responsibilities

R — RESPONSIBLE

City of Las Vegas Transportation Engineering Field Operations

A — ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

C — CONSULTED

City of Las Vegas Innovation and Technology

I — INFORMED

City of Las Vegas Risk Management

Regional Transportation Commission of Southern Nevada — Freeway and Arterial System of Transportation

Deliverable Checklist*

- ❑ List of all Transportation Technology Assets and Data Sources (Owned and Leased by the City of Las Vegas — Year 1
- ❑ Process Memorandum for updating the database for Capital Improvement Project, Private Development Projects, and Service Request — Year 1
- ❑ Architecture for asset management integration with transportation service requests — Year 2
- ❑ Geolocate existing as-builts and design plans — Year 3+
- ❑ Geolocate transportation service request — Year 3+
- ❑ Asset Management Map with Traffic Data — Year 3+

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Identify a prioritized list of transportation infrastructure needs by 2025.
+ Document 100% of the City of Las Vegas transportation infrastructure by 2030 and develop a process to keep it updated.
+ Develop a strategy using the data collected from the LiDAR scan to address assessment gaps within 1 year of collecting 100% of the data.
+ Determine the performance measures the City needs to evaluate on an internal and external dashboard by 2027.
+ Increase transparency of service requests with internal and external customers.

Timeline

Solution 5: Inventory Existing Data and Physical Assets

YEAR 1

- ❑ Conduct data collection from LiDAR asset management scan.
- ❑ Identify personnel in the City of Las Vegas to operate and maintain the asset management database.
- ❑ Develop a comprehensive list of all transportation technology assets and data sources owned and leased by the City of Las Vegas and extend beyond the City's Transportation Engineering Division to include other departments. Evaluate the various data sources to provide reliable and up-to-date information in the database.
- ❑ Determine a process for updating the database for CIP, Private Development Projects, and Service Requests. Develop specific update process for each source and include physical assets.
- ❑ Establish a baseline for each measure of success.

YEAR 2&3

- ❑ Update the asset management database to include the maintenance schedule for each device from the Transportation Technology Manual, future CIP, and land development projects.
- ❑ Develop an architecture to integrate asset management with transportation service requests.

YEAR 3+

- ❑ Identify and geolocate existing as-builts and design plans. Update CIP, Private Development Projects, and Service Requests.
- ❑ Geolocate transportation service requests
- ❑ Overlay asset management map with traffic data.

Advanced Mobility Plan

SOLUTION 6

TRANSPORTATION RESOURCE TRAINING

This solution will develop and implement an internal training resource program for city staff to understand the available transportation data sources. To create this program, cases for transportation data sources owned and leased by the City of Las Vegas (City/Las Vegas) will be used and serve as practical examples and scenarios to facilitate effective use and management.

Context

It is critical for organizations to use and share data in today's data-driven society to make informed decisions, enhance efficiency, and foster internal collaboration. This strategy builds from the data sources identified in **Solution 5: Inventory Existing Data and Physical Assets** to train city staff to use the available data sources and resources effectively. This strategy establishes a Transportation Resource Training curriculum and schedule to increase knowledge and understanding of the data available, how it can be used, how the data are being stored, and where to find it in the City's internal departments and divisions. With a better understanding of available data and resources through use cases for transportation data sources, city staff can make data-driven decisions that benefit Las Vegas residents and visitors.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Data Applications

The Transportation Resource Training will optimize the use of available resources and data sets by training staff on how to collect, manage, maintain, and analyze data to increase data-driven decision-making.

Maintenance and Workflow

The Transportation Resource Training will improve data literacy in the agency and help staff learn and optimize the capabilities of available resources and data sets.

Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

City of Las Vegas Innovation and Technology

A — ACCOUNTABLE

City of Las Vegas Transportation Engineering Field Operation

C — CONSULTED

Regional Transportation Commission of Southern Nevada

I — INFORMED

City of Las Vegas Community Development

Deliverable Checklist*

- ❑ Transportation Resource Training Curriculum — Year 1
- ❑ Transportation Resource Training Schedule — Year 1
- ❑ Use Cases for Transportation Data Sources and Assets Owned and Leased by the City of Las Vegas — Year 2

* *See **Timeline** on back page for detailed information*

Measures of Success

+ When adding new assets, identify how these fit into existing workloads and/or contracts for maintenance by 2025.

Timeline

Solution 6: Transportation Resource Training

YEAR 1&2

- ❑ Develop an internal introductory training based on the list of transportation data collected by the City from Solution 5: Inventory Existing Data and Physical Assets and hold quarterly trainings.
- ❑ Expand on the list of transportation data collected by the City from Solution 5: Inventory Existing Data and Physical Assets by creating a document of use cases.
- ❑ Establish a baseline for each measure of success.

YEAR 3+

- ❑ Review current industry standards to promote interoperability with external agencies to standardize collecting data.

Advanced Mobility Plan

SOLUTION 7

ADVANCED MOBILITY SENSITIVE DESIGN GROUP

This solution establishes a multidisciplinary team of internal city departments and external stakeholders that meet regularly to establish and implement procedures and best practices to prioritize and integrate advanced mobility solutions into the City of Las Vegas' (City/Las Vegas) project development process.

Context

Building a strong culture of advanced mobility in the City involves a multifaceted approach relying on collaboration with various internal departments and external stakeholders. Previously, coordination for advanced mobility efforts was done on an ad-hoc basis. To address this and implement a proactive approach, this solution establishes an Advanced Mobility Sensitive Design Group. This group will consist of a team of city staff and partner agencies working on planning and design projects. As introductory steps to form the Advanced Mobility Sensitive Design Group, the City will create an attendee list and establish foundation elements such as a mission, vision, and goals. The purpose of this group is to develop a screening tool that prioritizes and integrates advanced mobility solutions for all city transportation projects. The tool will evaluate the feasibility of integrating advanced mobility solutions by evaluating the mobility needs and challenges in the project limits to determine the appropriate solutions. A solution implementation tracking and reporting

Context (continued)

process will also be created to monitor and report on the progress and outcomes of implementing the solution. The Advanced Mobility Sensitive Design Group will be essential in integrating advanced mobility considerations into the City's planning and project development phase and contributing to the overall growth of the Advanced Mobility Program and culture in the City of Las Vegas.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Maintenance and Workflow

The Advanced Mobility Sensitive Design Group will prioritize and improve implementing advanced mobility technology to meet the mobility needs of the City of Las Vegas.

Responsibilities

R	A	C	I
RESPONSIBLE	**ACCOUNTABLE**	**CONSULTED**	**INFORMED**
City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Public Works — Transportation Engineering Division	City of Las Vegas Community Development City of Las Vegas Innovation and Technology Regional Transportation Commission of Southern Nevada	Las Vegas City Council Regional Transportation Commission of Southern Nevada — Freeway and Arterial System of Transportation Nevada Department of Transportation

Deliverable Checklist*

- ❑ Advanced Mobility Sensitive Design Group Attendee List — Year 1
- ❑ Advanced Mobility Sensitive Design Group Mission, Vision, and Goals — Year 1
- ❑ Advanced Mobility Sensitive Design Group Meeting Minutes — Year 1
- ❑ Pre-screening Tool/Checklist for Project Scoping — Year 2
- ❑ Solution Implementation Tracking and Reporting Results — Year 2

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Create a standard process that each project will go through that help identify opportunities to add advanced mobility considerations to the scope of work for existing project by 2026.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.

Timeline

Solution 7: Advanced Mobility Sensitive Design Group

YEAR 1

- ❑ Establish a multidisciplinary team of internal departments and external stakeholders.
- ❑ Define the mission, vision, and goals of this group.
- ❑ Schedule recurring quarterly meetings.
- ❑ Establish a baseline for each measure of success.

YEAR 2+

- ❑ Develop a pre-screening tool and/or checklist for project scoping that builds on the existing City of Las Vegas checklist and provides a decision-making process to review and identify opportunities to implement advanced mobility solutions into projects.
- ❑ Track solution implementations, report on effectiveness, and address challenges.

Advanced Mobility Plan

SOLUTION 8

TECHNOLOGY AND INNOVATION STEERING COMMITTEE

This solution will create a group of internal and external stakeholders that provide guidance, direction, and expertise to guide effectively integrating and using advanced mobility technology in the City of Las Vegas (City/Las Vegas).

Context

The Technology and Innovation Steering Committee will be a group of internal and external stakeholders responsible for overseeing and guiding adopting and implementing advanced mobility technology strategies. To establish the Technology and Innovation Steering Committee, the City will identify the key stakeholders and individuals to participate in this committee. Once formed, the committee will create a mission, vision, and goals that will serve as guiding principles and provide a clear direction and purpose for the group. This committee will meet quarterly to discuss the effectiveness of the implemented mobility technology based on performance metrics, best practices, and lessons learned. To stay well-informed of the most recent advancements and critically evaluate their benefits and limitations, the committee will have a standing agenda item at each meeting to discuss emerging advanced mobility technology. An example agenda item could be connected and autonomous vehicle infrastructure and the findings from Solution 10: Advanced Mobility Technology Vendor Solicitation Process. One of the outcomes of this committee will be establishing and formalizing an after-action review procedure to evaluate the impacts, outcomes, and opportunities of the advanced mobility technology used in projects throughout the city, Southern Nevada, and Nevada as a whole.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

The Technology and Innovation Steering Committee will evaluate if technology investments are delivering the anticipated benefits to the City by assessing their efficiency through an after-action implementation review.

Maintenance and Workflow

The Technology and Innovation Steering Committee will increase coordination with regional and state partner agencies for implementing advanced mobility technology and innovation, collect key takeaways and lessons learned, and discuss the advantages and limitations of emerging technologies to guide technology investments.

Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

City of Las Vegas Innovation and Technology

A — ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

City of Las Vegas Community Development

C — CONSULTED

Regional Transportation Commission of Southern Nevada — Freeway and Arterial System of Transportation

Nevada Department of Transportation

City of Henderson

I — INFORMED

Las Vegas City Council

Deliverable Checklist*

- ❑ Technology and Innovation Steering Committee Attendee List — Year 1
- ❑ Technology and Innovation Steering Committee Mission, Vision, and Goals — Year 1
- ❑ Technology and Innovation Steering Committee Agenda and Meeting Minutes — Year 1
- ❑ After-action Review Methodology Memorandum for Implementing Advanced Mobility Technology and Innovation — Year 1

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Define key outcomes the City and region hopes to achieve during the technology adoption process by 2025.
+ Create key focus areas to identify City needs during the technology adoption process by 2024
+ Identify barriers with current asset configuration that prevent improvement by 2025.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.
+ Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026.

Timeline

Solution 8: Technology and Innovation Steering Committee

YEAR 1+

- ❑ Establish a Technology and Innovation Steering Committee with internal and external stakeholders.
- ❑ Set up recurring quarterly meetings.
- ❑ Define the mission, vision, and goals of this group.
- ❑ Outline an agenda for each meeting that includes the following information:
  - + Implementing advanced mobility technology and innovative.
  - + Conducting before- and after-implementation studies
  - + Collecting best practices and lessons learned
  - + Discussing performance measures gathered from implementing advanced mobility technology
  - + Discussing cost
  - + Discussing emerging advanced mobility technology
  - + Discussing findings from Solution 10: Advanced Mobility Technology Vendor Solicitation Process
- ❑ Formalize after-action reviews from implementing advanced mobility technology and innovation.
- ❑ Summarize each meeting and provide a summary to decision-makers.
- ❑ Establish a baseline for each measure of success.

Advanced Mobility Plan

SOLUTION 9

COST-BENEFIT ANALYSIS

This solution implements a cost-benefit analysis for new and existing advanced mobility technologies to evaluate the financial investment necessary for implementing these technologies and assess the anticipated benefits.

Context

Conducting a cost-benefit analysis for new and existing advanced mobility technologies reported by the **Solution 8: Technology and Innovation Steering Committee** is essential for determining whether their benefits outweigh their costs. This strategy proposes analyzing all new advanced mobility technologies and innovations that might be implemented in the city on a case-by-case basis to make an informed decision about whether to invest in certain advanced mobility technologies. This process will help guide decision-making by identifying potential costs associated with the technology throughout its lifespan, including initial procurement, operational costs, recurring maintenance, and data storage costs. To effectively plan and manage budgets, the City of Las Vegas (City/Las Vegas) will create a cost-benefit spreadsheet for existing and proposed advanced mobility technologies. This spreadsheet will enable the City to conduct ongoing cost-benefit analyses and consider factors, such as price increases and inflation to estimate the financial impacts of technology, to help plan and manage budgets.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

Conducting a cost-benefit analysis for new and existing advanced mobility technologies to evaluate if the benefits of new and existing technology and innovation outweigh the asset's lifecycle cost guide intentional investments.

Maintenance and Workflow

Implementing a cost-benefit analysis provides a structured approach for decision-making on advanced mobility technology and innovation by identifying cost-effective improvements.

Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

A — ACCOUNTABLE

Advanced Mobility Sensitive Design Committee

Technology and Innovation Steering Committee

C — CONSULTED

City of Las Vegas Innovation and Technology

I — INFORMED

City of Las Vegas Community Development

Deliverable Checklist*

- ❑ Cost-Benefit Analysis Methodology Memorandum — Year 3
- ❑ Cost-Benefit Spreadsheet for Existing and Proposed Advanced Mobility Technology — Year 3

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Demonstrate a positive return on investment, where the benefits of the implemented advanced mobility technology outweigh the associated costs by 2026.

Timeline

Solution 9: Cost-Benefit Analysis

YEAR 1

- ❑ Establish a framework for the cost-benefit analysis for advanced mobility technology and innovation by identifying goals, objectives, and performance measures.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Identify an outline of costs and benefits to consider new advanced mobility technology and innovation.
  - + For example, design costs, construction costs, life cycle costs, firmware updates, maintenance, data storage cost, operational costs, opportunity costs, safety costs, and training expenses

YEAR 3+

- ❑ Document cost-benefit analysis methodology in a memorandum.
- ❑ Create a spreadsheet to calculate cost benefit for implementing new advanced mobility technology and innovation. Continually update the cost to account for price increases and inflation.

Advanced Mobility Plan

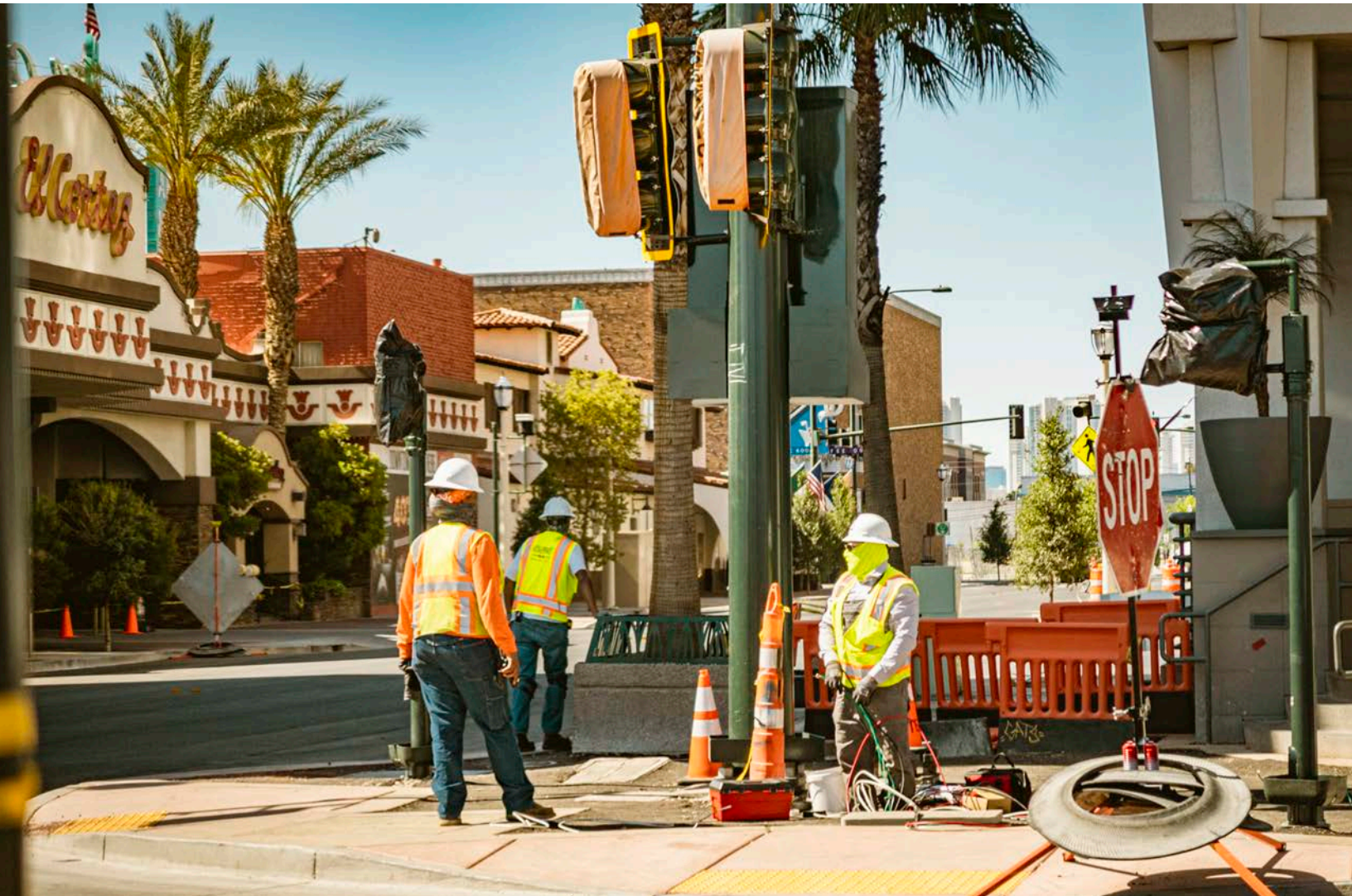
SOLUTION 10

ADVANCED MOBILITY TECHNOLOGY VENDOR SOLICITATION PROCESS

This solution will establish a Vendor Solicitation Process for advanced mobility technology to communicate advanced mobility objectives effectively with technology vendors, identify innovative solutions, and select the most suitable partners to address its unique mobility challenges. This strategic approach establishes the framework for accurately assessing the City of Las Vegas' (City/Las Vegas) mobility requirements and a guide for procuring advanced mobility technologies, so they align with its mobility goals and objectives.

Context

Because of the rapid development of transportation technology, new vendors of advanced mobility applications have appeared on the market. To strategically invest in innovations and technologies that align with the guiding principles, goals, and objectives of the Advanced Mobility Plan (AMP), the City needs to develop a specific vendor solicitation process for advanced mobility technology. This solution will establish screening criteria for prospective transportation vendors to submit an unsolicited proposal that meets the City's needs. Criteria may include lifecycle costs, information technology requirements, and proof of concept. Evaluation based on the criteria will be used to recommend potential advanced mobility vendors for consideration by the **Solution 8: Technology and Innovation Steering Committee** for early deployment, field evaluation, and potential scaling in the city. This solution will act as a preliminary step before the existing City of Las Vegas Information Technology Vendor Solicitation and Software Approval Process, to provide the City with an initial evaluation and screening process for proposed advanced mobility technology strategies to assess the suitability and compatibility with the needs of the City of Las Vegas.



Responsibilities

R — RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

Technology and Innovation Steering Committee

A — ACCOUNTABLE

Advanced Mobility Sensitive Design Group

C — CONSULTED

City of Las Vegas Innovation and Technology

City of Las Vegas Community Development

I — INFORMED

Las Vegas City Council

Partner Agencies

City of Las Vegas City Attorney

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

Implementing a vendor solicitation process for advanced mobility technology will guide vendor selection so that potential technology and innovation investments align with the AMP's guiding principles, goals, and objectives and offer long-term benefits to the city and transportation network users.

Maintenance and Workflow

The advanced mobility vendor solicitation process will establish a consistent and transparent approach to effectively screen potential vendors, which provides the City with evaluation tools to selects the most suitable partners for its advanced mobility investments.

Deliverable Checklist*

❑ Advanced Mobility Technology Vendor Solicitation Form — Year 1

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Identify 6 to 12 key mobility areas the City needs to evaluate to address its mobility challenges by 2025.
+ Define key objectives the City and region hopes to achieve during the technology adoption process by 2025.
+ Compile a list of data and product needs, outline the necessary sources for procurement, and assess potential gaps with the City's existing assets by 2026.
+ Establish measures of success for vendors to demonstrate how their product will contribute to achieving the desired outcomes by 2025.
+ Strategically invest in technology and innovation that aligns with the City of Las Vegas' advanced mobility goals by 2026.

Timeline

Solution 10: Advanced Mobility Technology Vendor Solicitation Process

YEAR 1

- ❑ Assign personnel in the City of Las Vegas Public Works – Transportation Engineering Division to be responsible for reviewing and creating a standard process for implementing new advanced mobility technology and innovation. The standard process should include the following:
  - + Alignment with the City's challenges outlined in the City of Las Vegas AMP
  - + Life cycle costs
  - + Implementation timeline
  - + Compatibility with the asset management system
  - + Transportation safety goals
  - + Information Technology requirements
  - + Data ownership
  - + Data storage
  - + Performance measures
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Assign personnel in the City of Las Vegas Public Works – Transportation Engineering Division to be responsible for reviewing the submitted Advanced Mobility Technology Vendor Solicitation Process proposals.
- ❑ Implement an Advanced Mobility Technology Vendor Solicitation Process.

Advanced Mobility Plan

SOLUTION 11

TRANSPORTATION TECHNOLOGY MANUAL AND TRAINING

This solution creates a Transportation Technology Manual and Training for physical transportation assets and software to provide city employees with guidelines, standards, specifications, maintenance requirements and schedules, and information technology (IT) operational and maintenance requirements. The Transportation Technology Manual and Training will provide the framework for establishing uniformity and standardization throughout the city and facilitate the transfer of knowledge to both new and seasoned employees, which will equip them with the necessary information and training to perform their roles successfully.

Context

Training on new and existing transportation technology, such as physical assets and software, has become necessary for agencies for both new hires and experienced employees. As the City of Las Vegas (City/Las Vegas) implements new devices, data platforms, and analytic tools, staying current with technology operations and maintenance requirements is critical. A Transportation Technology Manual will be created to document the requirements for all existing and new technology and innovation in the city. This manual will have a packet for each device installed in the city with standards, specifications, maintenance requirements and yearly schedule, and IT operations and maintenance requirements. To start developing the transportation technology manual, the City will create a comprehensive template outlining the necessary information that will serve as a foundation for the manual's content and structure. Once the Transportation Technology Manual is created and finalized, biannual training will be scheduled and held to help city staff stay informed and up to date on technology operations and maintenance requirements.

Responsibilities

R — RESPONSIBLE

Advanced Mobility Sensitive Design Group

Technology and Innovation Steering Committee

A — ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

C — CONSULTED

City of Las Vegas Transportation Engineering Field Operations

City of Las Vegas Innovation and Technology

I — INFORMED

City of Las Vegas Community Development

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

The Transportation Technology Manual and Training will enhance asset management of existing and newly implemented technology by developing a strategy to maintain assets, optimize asset life cycles, and enhance operational efficiency.

Maintenance and Workflow

The Transportation Technology Manual and Training will establish a consistent maintenance program for deployed technology to routinely maintain and upgrade assets to minimize downtime. This solution will help city staff stay informed about the advanced mobility technology operations and maintenance requirements.

Deliverable Checklist*

- ❑ Template for New and Existing Data and Physical Transportation Technology and Innovation Assets — Year 1
- ❑ Transportation Technology Manual — Year 2
- ❑ Bi-Annual Training Schedule — Year 3

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Develop and implement the Transportation Technology Manual within 2 years of implementing the AMP.
+ Increase employee participation in trainings program by 10% every 6 months.

Timeline

Solution 11: Transportation Technology Manual and Training

YEAR 1

- ❑ Create a template that outlines the standards, specifications, maintenance, and IT requirements for new technology and innovation and existing data and physical assets from Solution 5.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Develop a Transportation Technology Manual for implementing technology and innovation around the city.
- ❑ Set up an annual meeting to review the Transportation Technology Manual content for changes and updates in technology. Include findings from Solution 12: Advanced Mobility Skills Training.

YEAR 3

- ❑ Develop bi-annual trainings overviewing the Transportation Technology Manual for new hires or any personnel who is interested in attending.

Advanced Mobility Plan

SOLUTION 12

ADVANCED MOBILITY SKILLS TRAINING

This solution involves creating an Advanced Mobility Skills Training Program that pairs individuals from different city departments to enhance understanding of each department's specific roles and responsibilities in implementing advanced mobility technology. This program aims to create a shared knowledge base that encourages effective collaboration and efficiently implementing across departments to maximize the city's benefits from advanced mobility technology.

Context

This program fosters cross-departmental collaboration in the City of Las Vegas (City/Las Vegas) to improve understanding of advanced mobility technology planning, design, implementing, operations, and maintenance. The Advanced Mobility Skills Training will group unlikely department pairings, like Public Works — Transportation Engineering Division with Transportation Engineering Field Operations or City of Las Vegas Innovation and Technology with Community Development, to better understand how to implement advanced mobility strategies that are effective, efficient, and beneficial to all departments. Bringing perspectives from various disciplines creates a more holistic approach to optimizing advanced mobility strategies' implementation, operation, and maintenance.

To implement this program, the City will undertake several key tasks. These tasks include developing the Advanced Mobility Skills Training curriculum, which will outline the topics, learning objectives, and materials to be covered. A schedule will be established to determine the timing and duration of the training

Context (continued)

sessions, so they are conducted in a structured and organized manner. A participant list will be compiled and identify the individuals from different departments who will take part in the training program. An agenda will be created that specifies the sequence of topics, activities, and discussions during each session. Lastly, an evaluation form will be developed to assess the effectiveness and impact of the training program, to allow for continuous improvement. These elements will collectively facilitate successfully implementing the Advanced Mobility Skills Training program, fostering collaboration, efficiency, and knowledge sharing among departments.

Guiding Principles

This strategy advances the following Advanced Mobility Plan guiding principles:

Infrastructure

The Advanced Mobility Skills Training will improve effectiveness and efficiency of advanced mobility technology and innovation from other department's lessons learned and best practices.

Maintenance and Workflow

The Advanced Mobility Skills Training will enhance understanding of the various operations related to transportation in the City of Las Vegas to gain insights into the roles and responsibilities of other departments and keep the City's workforce current with existing practices.

Responsibilities

R
RESPONSIBLE

City of Las Vegas Public Works — Transportation Engineering Division

Advanced Mobility Sensitive Design Group

A
ACCOUNTABLE

City of Las Vegas Public Works — Transportation Engineering Division

I
INFORMED

Las Vegas Council and Partner Agencies

C
CONSULTED

City of Las Vegas IT

City of Las Vegas Community Development

City of Las Vegas City Attorney

City of Las Vegas City Clerk

City of Las Vegas Economic & Urban Development

City of Las Vegas Fire & Rescue

City of Las Vegas Government & Community Affairs

City of Las Vegas Innovation & Technology

City of Las Vegas Neighborhood Services

City of Las Vegas Public Works — Operations and Maintenance, Fleet, Waste Water Reclamation, Traffic Field Operations, and City Engineer Division

Deliverable Checklist*

- ❑ Advanced Mobility Transportation Skills Training Curriculum and Schedule — Year 1
- ❑ Advanced Mobility Transportation Skills Training Participants List — Year 1
- ❑ Advanced Mobility Transportation Skills Training Agenda — Year 1
- ❑ Advanced Mobility Transportation Skills Training Evaluation — Year 1

* *See **Timeline** on back page for detailed information*

Measures of Success

+ Increase employee participation in training programs by 10% every 6 months.
+ Develop and implement a process to institutionalize advanced mobility in the City of Las Vegas by 2024.

Timeline

Solution 12: Advanced Mobility Skills Training

YEAR 1

- ❑ Create the Advanced Mobility Transportation Skills Training that includes participants list and key topics of discussion.
- ❑ Schedule the annual Advanced Mobility Transportation Skills Training.
- ❑ Establish an agenda for meetings.
  - + Include a discussion of best practices findings. Best practices agreed on by the Technology and Innovation Steering Committee will be updated in the Transportation Technology Manual and design standards.
- ❑ Post-Advanced Mobility Transportation Skills Training review and evaluation:
  - + Teams will document a summary of the meeting.
  - + Participants will take an evaluation providing feedback on the program.
- ❑ Establish a baseline for each measure of success.

YEAR 2

- ❑ Consider scaling the Advanced Mobility Transportation Skills Training to other City of Las Vegas departments, partner agencies, and decision-makers to share lessons learned and best practices of implemented advanced mobility strategies.