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# TABLE OF CONTENTS

## INTRODUCTION & APPROACH
- Introduction ........................................................................................................8
- Background .........................................................................................................8
- Regional Strategy Approach ..........................................................................9
- Regional Strategy Organization ..................................................................10

## REGIONAL PARK & RIDE DATA CENTER

## SUMMARY OF GOALS AND OBJECTIVES
- Multimodal Access and Amenities ...............................................................18
- Safety, Security, and Operations .................................................................19
- Sustainable Funding .......................................................................................19
- System Awareness .........................................................................................20

## GUIDANCE FOR SITE ANALYSIS
- Guidance for Site Analysis Overview .......................................................25
- Guidance for Existing Site Analysis ...........................................................26
- Guidance for New Site Analysis .................................................................32

## COMMUNITY PARTNERSHIPS

## PARK & RIDE TOOLKIT

## MOVING PARK & RIDES FORWARD
- Performance .....................................................................................................73
- Planning ............................................................................................................74
- Property ...........................................................................................................75
- Pricing and Technology ..................................................................................76

## LOOK AHEAD
- Data Collection and Analysis ......................................................................80
- Mobility Hubs ...............................................................................................80
- System Awareness .........................................................................................80
APPENDIX

<table>
<thead>
<tr>
<th>APPENDIX</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>EXISTING POLICIES &amp; FACILITIES</td>
<td>83</td>
</tr>
<tr>
<td>B</td>
<td>STAKEHOLDER WORKSHOP SUMMARY</td>
<td>93</td>
</tr>
<tr>
<td>C</td>
<td>LITERATURE REVIEW MEMO</td>
<td>101</td>
</tr>
<tr>
<td>D</td>
<td>CASE STUDIES MEMO</td>
<td>109</td>
</tr>
<tr>
<td>E</td>
<td>PARK &amp; RIDE/ COMMUTE SURVEY</td>
<td>135</td>
</tr>
<tr>
<td>F</td>
<td>PRIVATE SECTOR SURVEY</td>
<td>173</td>
</tr>
<tr>
<td>G</td>
<td>FUNDING SOURCES</td>
<td>195</td>
</tr>
<tr>
<td>H</td>
<td>EXISTING SITE RECOMMENDATION EXAMPLES</td>
<td>205</td>
</tr>
<tr>
<td>I</td>
<td>DATA CENTER</td>
<td>243</td>
</tr>
<tr>
<td>J</td>
<td>HELPFUL LINKS</td>
<td>253</td>
</tr>
<tr>
<td>K</td>
<td>BASELINE INSTRUCTIONS</td>
<td>257</td>
</tr>
</tbody>
</table>
INTRODUCTION & APPROACH
INTRODUCTION & APPROACH

INTRODUCTION

Park & Ride facilities are a critical piece of a well-balanced transportation network that supports San Diego and Western Riverside counties’ Sustainable Communities Strategy (SCS) goals of improving person throughput and increasing time-competitive travel alternatives to single occupant vehicle travel. Various regional stakeholders, including the San Diego Association of Governments (SANDAG) and Riverside County Transportation Commission (RCTC) have supplemented their existing Park & Ride networks by constructing new Park & Ride lots and/or leasing parking spaces to accommodate Park & Ride demand. Both regions also have made major investments in transit and HOV/Express lanes projects, and Park & Ride is important to the success of those regional transportation investments.

Although both regions continue to see an increase in utilization and demand, there are still challenges in prioritizing and seeking funding or staff time to support investment in Park & Ride operations, management, and development. This underinvestment can undermine the regions’ ability to efficiently and strategically manage Park & Ride assets. If Park & Rides continue to be a low priority for investment in the overall transportation network, the regions may begin to see an impact on trip behaviors, which may include:

- Shifts in commute behavior and potentially increasing single-occupant trips
- Uncaptured latent demand for transit, carpool, and vanpool
- Spillover parking into nearby communities or retail facilities (i.e. “hide and ride” and informal lots)
- Wasted spending to operate and maintain underutilized lots
- Potential loss of valuable Park & Ride land assets due to lack of data to justify continued investment
- Ineffective corridor congestion management without balanced incentives for regional commute decision-making

With the ultimate goal of shifting commuter behavior to reduce greenhouse gas emissions throughout the region, Park & Rides provide an option that can encourage a person to consider alternative modes of transportation by providing a familiar and convenient first-mile/last-mile solution. This Park & Ride Regional Strategy details the tools available to stakeholders to enhance their Park & Ride systems, provides action steps for the regions to more fully embrace the benefits of Park & Rides, and highlights innovative Park & Ride solutions that have been implemented elsewhere – all contributing to more informed decision-making.

BACKGROUND

The San Diego region is a large metropolitan area with dispersed regional work sites throughout the county which causes continuous increases in congestion during commute periods. Riverside County has a significant number of residents who commute to jobs out of the county, including Los Angeles, Orange County, and San Diego. Access to Park & Ride facilities is a critical feature of transportation investments that support fulfilling SCS targets in both regions.

There are over 130 Park & Ride facilities (nearly 24,000 parking spaces) in the San Diego and Western Riverside counties, managed by California Department of Transportation (Caltrans), San Diego Metropolitan Transportation System (MTS), North County Transit District (NCTD), and Riverside County Transportation Commission (RCTC). Several of these facilities have support from SANDAG and/or local jurisdictions for management and policy development; however, data collection and enforcement procedures, performance metrics, siting methodologies, and user rules and regulations are developed and deployed variously by each stakeholder.

Through a grant awarded by Caltrans, SANDAG partnered with RCTC and community stakeholders, including NCTD, MTS, Caltrans Districts 8 and 11, and local municipalities to develop the Regional Park & Ride Strategy (Regional Strategy) to proactively address investment considerations for Park & Ride operation and management demands.
INTRODUCTION & APPROACH

WHAT IS A PARK & RIDE?

Park & Ride facilities are conveniently located facilities that serve as a parking lot and/or meet up point for commuters to leave their personal vehicles and transfer to alternative transportation modes such as transit, carpool, or vanpool for the remainder of their trip. Park & Ride facilities may also include drop-off locations and additional amenities that support other transportation alternatives (e.g., bike lockers, electric vehicle charging, and transfer services).

Park & Ride facility operations may vary from location to location—some may serve only transit, carpool, or vanpool users, while others may have shared uses with nearby community needs or multiple transportation uses (e.g., truck, university, residential, commercial, or shared transit and carpool/vanpool parking).

REGIONAL STRATEGY APPROACH

To complete the Regional Strategy, stakeholders were engaged through project development meetings, workshops, and deliverable reviews. The project team included staff members from SANDAG, RCTC, MTS, NCTD, and Caltrans.

The project team engaged local, regional, public, and private stakeholders to develop a multi-pronged and holistic approach to the regional strategy that resulted in actionable recommendations identified in this report. To inform the Regional Strategy, the following was conducted: Literature Review, Commute Behavior Survey, Private Sector Market Research, and Goals and Objectives Workshop.

As part of the literature review, peer agencies were interviewed to identify best practices and lessons learned for addressing Park & Ride challenges. The Commute Behavior Survey identified commute behaviors of employees in both regions, their interest, and willingness to use alternative modes for their commute—factors that would make them more likely to use alternative commutes in the future and amenities and improvements that they desire for Park & Ride lots to help inform the agencies’ Transportation Demand Management (TDM) and Park & Ride programs. The Private Sector Market Research included an online survey and phone interviews with developers and property managers to identify private sector stakeholders’ interests, motivations, and willingness to partner (including their perceived conditions for success). Staff members from local jurisdictions participated in the Goals and Objectives Workshop to identify regional priorities and opportunities to strengthen agency partnerships and priority needs relating to Park & Ride.

To support future decision-making, the Park & Ride Data Center, Guidance for Site Analysis, Park & Ride Toolkit and Moving Park & Rides Forward were developed. The Park & Ride Data Center is a web-based, geo-coded database to facilitate regional data collection, sharing, and analysis. The Guidance for Site Analysis provides key considerations when planning for future Park & Ride investments, and it is supported by the Park & Ride Toolkit that synthesizes promising strategies. The project team drew on the foundational knowledge from these deliverables to develop recommendations that will improve existing regional asset management and equip the agencies and their partners to adapt to a shifting transportation landscape.

Using the performed research and identified best practices, the Regional Strategy aims to provide the necessary information, tools, and recommended action steps for SANDAG, RCTC, and their stakeholders to leverage existing and future Park & Ride facilities investments to:

- achieve regional and state GHG goals
- meet the needs of the changing commuter environment
- provide options to support effective management and operations
- attract more commuters to use alternative transportation options
- support community needs (affordable gathering places for farmers markets, event shuttles, etc.)
REGIONAL STRATEGY ORGANIZATION

The Regional Strategy is divided into the following sections to help provide context, information, and recommended tools and action steps for SANDAG, RCTC, and their stakeholders.

- Regional Park & Ride Data Center
- Summary of Goals and Objectives
- Guidance for Site Analysis
  - Guidance for Existing Site Analysis
  - Guidance for New Site Analysis
- Community Partnerships
- Park & Ride Toolkit
- Moving Park & Rides Forward
- Look Ahead

The detailed findings, best practices, and lessons learned gathered through literature review, case study research, stakeholder workshop, and market research were used to inform and develop the above sections of the Regional Strategy. The summaries of these items can be found in the Appendix of this report. Examples of the application for the How-To Guide for evaluating an existing individual Park & Ride lot is also available in the Appendix. A list of the appendix is provided below.

- Appendix A: Existing Conditions and Policies
- Appendix B: Stakeholder Workshop Summary
- Appendix C: Literature Review Memo
- Appendix D: Case Studies Memo
- Appendix E: Park & Ride Commute Survey
- Appendix F: Private Sector Survey
- Appendix G: Funding Sources
- Appendix H: Existing Site Recommendation Examples
- Appendix I: Data Center
- Appendix J: Helpful Links
- Appendix K: Baseline Instructions

HOW TO USE THIS DOCUMENT

The Park & Ride Strategy and Toolkit is an interactive document and is intended to provide the reader with a number of tools, resources, and guidance to implement promising strategies at Park & Ride locations. Areas in the document that are associated with a hyperlink are indicted in the following styles:

Sample hyperlink text to jump to a section within this document.

Sample hyperlink text to jump to a resource not within this document.

This document is also organized chronologically, allowing the reader to work through the report's approach and process on the way to identify context-sensitive Park & Ride strategies and tools.
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REGIONAL PARK & RIDE DATA CENTER
THE COMPLEXITY OF PARK & RIDE DECISION MAKING

To maximize effectiveness of regional Park & Ride investments, a cohesive database was identified as an early action strategy for the San Diego and Western Riverside regions. Effective data collection and sharing allows local agencies to leverage investments and direct scarce resources to where they are likely to make the greatest impact. Historic comparisons of utilization and incident reporting can justify investments in new strategies, including capacity expansion and educational outreach efforts that identify the value of Park & Ride for both public and private stakeholders. Most importantly, data will allow for the improved use of Park & Ride facilities and enhanced system management by identifying prevailing issues so that corrective action can be taken promptly and allow for proactive management of the available resources.

There are over 130 Park & Ride facilities (nearly 24,000 parking spaces) in San Diego and Western Riverside counties, managed by Caltrans, MTS, NCTD, SANDAG, and RCTC. Their disparate geographic and operational contexts inform how they each contribute to the region’s transportation network. From transit lots to carpool/vanpool lots, urban facilities to suburban ones, and leased spaces to owned ones, Park & Ride managers must employ a comprehensive perspective to manage demand effectively. As the transportation system becomes increasingly multi-modal and reliant on digital services, Park & Ride data is primed to support an evolution toward a seamlessly integrated and optimized mobility network.

### SAN DIEGO AND WESTERN RIVERSIDE PARK & RIDE CHARACTERISTICS

<table>
<thead>
<tr>
<th>REGIONAL STATISTICS</th>
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<tbody>
<tr>
<td>Total # P&amp;R Spaces</td>
<td>23,821</td>
</tr>
<tr>
<td>Leased or Shared Use Lots</td>
<td>38%</td>
</tr>
<tr>
<td>Average Occupancy</td>
<td></td>
</tr>
<tr>
<td>Transit Lots</td>
<td>63%</td>
</tr>
<tr>
<td>Park &amp; Pool Lots</td>
<td>41%</td>
</tr>
<tr>
<td>Combined Lots</td>
<td>41%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Utilization of Network</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overutilized Lots (&gt;85%)</td>
<td>17% of network</td>
</tr>
<tr>
<td>30-85% Utilization</td>
<td>47% of network</td>
</tr>
<tr>
<td>Underutilized Lots (&lt;30%)</td>
<td>36% of network</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPERATOR (% OF NETWORK)</th>
<th>TRANSIT LOTS</th>
<th>PARK &amp; POOL LOTS</th>
<th>COMBINED LOTS</th>
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<tbody>
<tr>
<td>Caltrans (43%)</td>
<td>0</td>
<td>30</td>
<td>31</td>
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<tr>
<td>MTS (22%)</td>
<td>31</td>
<td>1</td>
<td>0</td>
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<td>NCTD (13%)</td>
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<tr>
<td>RCTC (22%)</td>
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<td>15</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL:</td>
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<td>48</td>
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</table>

Park & Ride Strategy and Toolkit
July 2019 (FINAL)
USING GIS TO ENHANCE SYSTEM PERFORMANCE MONITORING

The Regional Park & Ride Data Center (Data Center) was developed as part of this project to enable regional system performance monitoring and support proactive planning. This tool will increase transparency and inform policy makers, grant applications, planners, and the public about the characteristics of the Park & Ride system. It can be accessed from any internet connected device and is designed to facilitate data sharing among all Park & Ride stakeholders, including the public and private sector. Over the course of this project, staff utilized the tool to manually input occupancy counts from the field. In the future, as connected infrastructure is deployed, the Data Center could receive real-time occupancy data and reduce labor costs associated with manual data collection.

The Data Center supports the following features and functions:

- Real time data updates
- Integration with local and regional datasets such as existing transit and land use
- Historic occupancy trends
- Reporting
- Comprehensive Park & Ride inventory information
- Web and mobile app accessibility

See Appendix I for a more in-depth guide to the Data Center.

CASE STUDY: ANNUAL SYSTEM PERFORMANCE REPORT

For nearly 20 consecutive years Metro Transit (Minnesota) - in conjunction with eight other regional transit and state authorities – has produced an annual Park & Ride system performance report that summarizes trends, complements their long-term planning documents, and informs policy makers.

Key reporting metrics from this report are:

- Occupancy trends (owned and leased lots)
- % change in utilization each year
- Capacity changes (spaces gained and lost)
- System utilization by corridor
- Planned capacity expansions
- User travel behavior derived from LPR data
- Cost per leased space
- Parking costs at destination

The 2012 annual report noted that “vehicle data and user home origin data are invaluable to the management of the overall network.”
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SUMMARY OF GOALS AND OBJECTIVES
During the development of the Regional Strategy, a stakeholder workshop was held to help define the goals and objectives of the Regional Strategy. The project goals and objectives outlined in this section provided guidance and direction for the developed tools in the Park & Ride Toolkit and the identified action steps in the Moving Park & Rides Forward.

The following goals and objectives reflect the feedback received from the stakeholder workshop (see Appendix B) and the input from the project team. Goals and objectives represent a preferred situation for a Park & Ride facility. Given sites are subject to unique characteristics and restrictions; it is unlikely that every goal and objective can be achieved at every site.

### MULTIMODAL ACCESS AND AMENITIES

During the workshop, stakeholders clearly communicated that Park & Rides should be as accessible as possible to the greater transportation network and offer amenities to enhance the Park & Ride experience (see Appendix B). Many of the current Park & Rides are sited in locations that are convenient for implementation, but not always where they would be the most useful. Effectively planning for current and future Park & Rides into pedestrian, bicycle, transit, and highway networks will expand the service areas and open the system to new users. Additional amenities like electric vehicle charging, package lockers, WiFi, bike parking, bikeshare, carshare, and other amenities identified in the Regional Mobility Hub Features Catalog, many of which align with regional priorities and would further leverage investments made in the Park & Ride system.

**GOAL STATEMENT:**

INCREASE ACCESS AND USABILITY OF PARK & RIDES THROUGH OPTIMIZED SITING AND BY PROMOTING MULTIMODAL ACCESS FEATURES AND AMENITIES.

**OBJECTIVES:**

- Maximize investment in existing Park & Ride locations
- Partner with jurisdictions to create Park & Ride siting and design guidelines
- Develop guidance to balance Park & Ride amenities and supportive modes
- Manage demand at overutilized Park & Ride locations
- Utilize technology to promote the efficient use of Park & Rides
- Leverage emerging transportation modes and services provided by private and public sectors
- Provide cost effective amenities at Park & Ride locations
- Site Park & Rides in locations with access to pedestrian, bicycle, transit, and highway networks
- Address underutilized locations with new strategies
SAFETY, SECURITY, AND OPERATIONS

One major barrier to greater utilization of the Park & Ride system is the perceived lack of safety and security measures at lots. The Regional Strategy considers both active measures like cameras and security checks as well as passive measures like locating lots in high traffic areas and removing landscaping screening. These strategies would promote safety and security and enhance operations during the typical commuter periods that Park & Rides primarily serve as well as during non-peak periods.

**GOAL STATEMENT:**
ENHANCE SAFETY, SECURITY, AND OPERATIONS OF PARK & RIDES DURING AND OUTSIDE COMMUTER PERIODS.

**OBJECTIVES:**
- Implement Crime Prevention through Environmental Design (CPTED) principles at current and future Park & Ride facilities (natural surveillance, natural access control, territorial reinforcement, and maintenance)
- Encourage on-site activities (retail/donation centers) at Park & Rides or siting of facilities within commercial environments
- Prioritize shared-use or leased parking agreements that include security, enforcement, and maintenance
- Leverage technology to improve operation for users and maintenance
- Develop a regional incident reporting database to support operations and policy decision-making

SUSTAINABLE FUNDING

Current funding sources for Park & Ride expansion, operations, and maintenance are limited and often inadequate to provide more than the basic levels of service. Because of constrained funding, enforcement and maintenance are often reactionary and complaint-based. Restrictive policies, distributed management responsibilities, and competition for transportation funds all contribute to a limited funding environment. New sources of funding combined with existing financial support could be used to enhance existing assets and provide opportunities to expand the Park & Ride system.

**GOAL STATEMENT:**
GENERATE SUSTAINABLE FUNDING STREAMS FOR NEW LOCATIONS AND EXISTING PARK & RIDE OPERATIONS AND MAINTENANCE THROUGH EXISTING AND NEW SOURCES.

**OBJECTIVES:**
- Consolidate the ownership and management of Park & Rides to maximize funding opportunities with policy control and decision making
- Right-size facilities to appropriate demands through utilization monitoring and piloting of new strategies
- Secure dedicated funding sources for capital and long term operations, maintenance, and replacement life cycle needs
- Work with private sector to identify public-private partnership (P3) opportunities that maximize value and use of Park & Ride right-of-way
Hurdles to increase Park & Ride system utilization include lack of public knowledge or awareness. Inconsistent branding, marketing of the system, and lack of a comprehensive “one stop shop” for Park & Ride information reduces the potential of a facility. Effective marketing methods, consistent branding, and targeted marketing would help educate the public about the location of Park & Rides, how to use them, and the benefits they offer to users and communities.

Objective:
- Update the public facing Park & Ride map with complete information on all types of Park & Ride lots and information about lots and availability
- Create a consistent brand for Park & Rides to enhance awareness of available locations and supportive services (e.g., carpool and vanpool, and transit)
- Develop methodology to quantify the environmental impacts and user benefits of Park & Ride locations
- Create a marketing campaign to enhance awareness of the system targeting three different audiences: public/community, local agencies, and private sector property managers
- Provide real-time information to users where conditions are applicable
- Develop a regional database that includes statistical info to allow agencies to more effectively calculate Park & Ride investments and partnership benefits

Goal Statement:
Consistently promote the benefits, availability, and locations of Park & Ride to the Public.
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GUIDANCE FOR SITE ANALYSIS

GUIDANCE FOR SITE ANALYSIS OVERVIEW

The Guidance for Site Analysis compiles supportive considerations for addressing challenges at existing Park & Ride sites and planning new Park & Ride sites. Using information from the case study research, literature review, stakeholder workshop, and project team meetings, the following two guides were developed:

- **Guidance for Existing Site Analysis** provides direction for analyzing identified challenges and developing promising strategies to consider implementing at an existing Park & Ride location. It outlines recommended steps to assess the conditions of an existing Park & Ride site, identify its challenges, and utilize the Park & Ride Toolkit to develop recommendations to address those challenges.

- **Guidance for New Site Analysis** provides baseline steps for selecting a new Park & Ride location and estimating the potential demand and size of the new site. It outlines recommended steps to begin the initial process for creating a new Park & Ride site.

The above guidance provides a basic overview for addressing challenges at an existing site or developing a new site. However, there may be hurdles for existing and new sites that need to be addressed on a more regional level, such as data collection and monitoring, policies that affect the development and long-range planning of Park & Rides. Refer to the identified action steps in the Moving Park & Rides Forward section for guidance on how to address these regional challenges.
GUIDANCE FOR EXISTING SITE ANALYSIS

There are three stages for the existing site analysis – Assessment Stage, Identification Stage, and Development Stage. These stages and their supporting resources are listed below.

**ASSESSMENT STAGE:** Assess Existing Conditions

Supporting Resource: 
- Park & Ride Data Center

**IDENTIFICATION STAGE:** Identify Key Challenges

Support Resource: 
- Relinquishment Assessment

**DEVELOPMENT STAGE:** Develop Recommendations

Supporting Resource: 
- Park & Ride Toolkit

Suggestions and recommendations on how to complete each stage are provided in this guidance. Examples of the Guidance for Existing Site Analysis for six existing Park & Ride sites are provided in the Existing Site Recommendation Examples (see Appendix H).

**ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS**

It is important to compile an existing conditions summary to inform a full and accurate assessment of a site’s challenges. When possible, key information should be gathered about the site’s history, current conditions, and user profiles. Consider gathering information for existing site conditions outlined on the following page.

When developing the site’s existing conditions summary, it is recommended to use both empirical and anecdotal information. Existing empirical data about a site’s conditions can be found in the Park & Ride Data Center (see Appendix I). Anecdotal information can be obtained from a site visit, field surveys of the lot’s users, and/or coordination with supporting agencies such as the local transit agency or Metropolitan Planning Organization (MPO). The assessment stage should also include a virtual and/or in-person site visit to assess how local, sub-regional, and regional factors are potentially influencing the existing site’s performance.

Field surveys are excellent opportunities to obtain information about a Park & Ride from its users. Field surveys can help provide insight on the location’s challenges, which may reveal unique or previously unidentified barriers. Consider using a survey to determine:

- User origin and/or destination
- Perception of lot safety, quality of transit service, and efficiency of wayfinding
- Reason for using Park & Ride (e.g., proximity to express lanes, parking at employment is expensive, access to transit)
### EXISTING CONDITIONS TO ASSESS:

<table>
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<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
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<tr>
<td>Parking Spaces:</td>
<td>What are the number and type of parking spaces available?</td>
</tr>
<tr>
<td>User Types:</td>
<td>What type of users utilize the site?</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>Is the Park &amp; Ride under shared ownership?</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>Is the site leased or owned?</td>
</tr>
<tr>
<td>Utilization:</td>
<td>What is the utilization of the site? What count collection period was used to develop the utilization rate?</td>
</tr>
<tr>
<td>Egress/Ingress:</td>
<td>Is egress/ingress Good/Fair/Poor?</td>
</tr>
<tr>
<td>Curb Space:</td>
<td>Is there a designated pick-up/drop-off area?</td>
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<table>
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<tr>
<th>SITE AMENITIES</th>
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<tr>
<td>Lighting:</td>
<td>Does the lighting make it feel secure at night?</td>
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<tr>
<td>Mobile Retail/Package Delivery Service:</td>
<td>Is mobile retail or package delivery service available to help reduce user trips?</td>
</tr>
<tr>
<td>Information Kiosks:</td>
<td>What type of information do the kiosks provide users?</td>
</tr>
<tr>
<td>Signs:</td>
<td>Is there proper wayfinding signage?</td>
</tr>
<tr>
<td>Bike Parking:</td>
<td>Is bike parking available? What kind?</td>
</tr>
<tr>
<td>Paving/Striping:</td>
<td>What is the pavement of the site like? Are the spaces striped?</td>
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### OTHER CONDITIONS

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<td>Surrounding Land Uses:</td>
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<td>Surrounding Roadway Network:</td>
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<td>Access:</td>
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### ADDITIONAL CONSIDERATIONS

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<th>NOTES</th>
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<td>Nearby Activity Centers:</td>
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<td>User Travel Patterns:</td>
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<tr>
<td>Adjacent Park &amp; Ride Lots:</td>
</tr>
<tr>
<td>Regional Transportation Plan, Sustainable Communities Strategy, General Plan</td>
</tr>
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</table>
GUIDANCE FOR EXISTING SITE ANALYSIS

IDENTIFICATION STAGE: KEY CHALLENGES

Refer to the existing conditions summary developed in the Assessments Stage to identify relevant key challenges and their potential causes from the list below.

- **Overutilization (Utilization > 85%):** nearing or at maximum capacity during peak periods
  - Not enough parking to support the demand of a facility
  - Competition between users to park in the available spaces and between eligible and illegal parkers
  - Users can get frustrated with parking situation and not return

- **Utilization 30% - 85%:** potential to increase utilization and use of lot
  - Diminished economic return in Park & Ride investment as there is excess land not being utilized
  - Parking supply may need to be reduced to reflect geographic, demographic, and management factors affecting lot

- **Underutilization (Utilization < 30%):** low utilization for the amount of parking provided
  - Land dedicated to parking could be put to a higher and better use
  - People may not be aware of facility
  - Facility may be perceived as unsafe or inconvenient

- **Modal Competition (Utilization > 85%):** multiple modes competing for limited space at site
  - Facility accommodates several different modes of transportation including carpool/vanpool, transit, biking, and rideshare
  - Modes compete with one another in terms of cost, speed, accessibility, frequency, safety, comfort, and time
  - Users comparing modes available and choosing the ones that best fit their requirements and needs

- **Operations and Management:** challenging operations and management requirements
  - Operations are the responsibility of multiple agencies, making defining roles and responsibilities cumbersome and creating confusion for users
  - Maintenance issues such as waste disposal, landscaping meeting public safety guidelines, on-going maintenance and repair costs, and aging

- **System Management:** difficult maintenance and operation of parking system
  - Lack of efforts to maintain data and parking counts
  - Varying procedures and policies between owners and operators

- **Funding:** difficulties securing funding for improvements and/or operations
  - Limited funding and resources
  - High costs to maintain or high operation costs

- **Partnerships and Policy:** Building successful partnerships and creating necessary policy to improve Park & Ride usage presents a challenge
  - Difficult to form private-public partnerships as private stakeholders do not see the benefit of Park & Rides
  - Lack of consistent policy and requirement for Park & Ride lots between local municipalities
  - Owner may wish to terminate the contract
  - Problems that may arise when Park & Ride users of a location expand into non-designated spaces

It may not be necessary to develop recommendations for a site due to the existing conditions and key challenges. Before proceeding to the next step of this guidance (the Development Stage), it is recommended to go through the relinquishment assessment on the following page.
RELINQUISHMENT ASSESSMENT

The Relinquishment Assessment takes the site through an evaluation that determines if the site should proceed to the next stage of reviewing tools and developing site recommendations (the Development Stage).

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP ONE</strong></td>
<td></td>
</tr>
<tr>
<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Utilization 30% - 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Utilization &lt; 30%</td>
<td>Continue step two to assess continued need for facility.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP TWO</strong></td>
<td></td>
</tr>
<tr>
<td>Lack of Awareness</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Safety Concern</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Inconvenient</td>
<td>Continue step three to assess continued need for facility.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDITIONAL CHALLENGE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP THREE</strong></td>
<td></td>
</tr>
<tr>
<td>Can the facility size be reduced?</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>If no to previous questions.</td>
<td>Consider discontinuing operation at facility and investing in a new site. Proceed to the Guidance for New Site Analysis.</td>
</tr>
</tbody>
</table>
### DEVELOPMENT STAGE: RECOMMENDATIONS

Using the strategy identification matrix below, review the strategies in *Park & Ride Toolkit* that correspond to the site’s key challenges. Each strategy in the *Park & Ride Toolkit* identifies several tools that could be leveraged when developing recommendations for the site.

**STRATEGY IDENTIFICATION MATRIX**

<table>
<thead>
<tr>
<th>STRATEGIES IN PARK &amp; RIDE TOOLKIT</th>
<th>KEY CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overutilization (&gt;85%)</td>
</tr>
<tr>
<td>Maximizing Capacity at Facilities</td>
<td>●</td>
</tr>
<tr>
<td>Managing Parking Demand</td>
<td>●</td>
</tr>
<tr>
<td>Secure Facilities and Enforcement</td>
<td>●</td>
</tr>
<tr>
<td>Incentivize Target Users</td>
<td>●</td>
</tr>
<tr>
<td>Create Partnerships with Local</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Jurisdictions and</td>
</tr>
<tr>
<td></td>
<td>Planning with Local</td>
</tr>
<tr>
<td></td>
<td>and Regional Goals</td>
</tr>
</tbody>
</table>

### RECOMMENDATIONS FOR THE SITE

Implementing new strategies may cause additional challenges to arise. Consider creating a suite of tools to anticipate and address these new challenges.

Review the action steps outlined in the *Moving Park & Ride Forward* to identify and address challenges that may require regional solutions.
GUIDANCE FOR NEW SITE ANALYSIS

Planning for a new Park & Ride site involves a multi-step process for selecting a viable location (siting) and rightsizing the site to meet estimated demand (forecasting). In order to properly site and size a new site, case study research suggests Park & Ride planners utilize the local Travel Demand Model (if available) along with data from existing Park & Rides since the best sources for siting and sizing are predictive analytics and historical precedent. While siting and forecasting demand is traditionally driven by a Travel Demand Model, often times there is a need for an alternative analysis solution since the modeling process can be lengthy, intensive, and requires operation by modeling professionals. The process for siting and forecasting demand can be done by performing a commonsense approach based on analyzing existing conditions such as informal Park & Ride activity, land use contexts, and distance between major residential areas and employment centers.

Baselining is another alternative to using a Travel Demand Model. This approach does not require such intensive processes and can be completed by transportation professionals with access to Geographic Information Systems (GIS) and census data to produce a simplified estimation of demand. Baselining is the process of using existing key performance indicator (KPI) data and historical data to estimate the performance of similar future sites. An example of the baselining process as a tool for siting and sizing can be found in the Baselining Exercise. Baselining, however, is not a good fit for all estimation situations due to the retrospective process it utilizes and has difficulty accounting for future development. Additionally, baselining is only as good as the data it is built upon. High-quality, comprehensive data is necessary to produce strong estimates.

To help agencies and stakeholders with developing a new Park & Ride facility, the Guidance for New Site Analysis provide information for the following:

- **REGIONAL SITING**
- **COMPARATIVE ANALYSIS**
- **LOCAL SITING**

When developing a new Park & Ride site, consider employing strategies from the Park & Ride Toolkit to proactively leverage opportunities and mitigate challenges that may occur at the proposed location.

**REGIONAL SITING**

This stage in the process is designed to help the user identify areas with a strong propensity for successful Park & Rides. The user should use the following KPI to generate a “heat map” of locations that have characteristics of ideal Park & Ride locations. With GIS software, the key performance indicators and the associated Search Parameters can be used to scan the region for preferred sites. Each desired KPI will act as a layer on the map. Areas with more overlapping layers are the stronger candidates for Park & Rides. If some or all of the KPIs are unavailable in GIS format, they may still be used when combined with local knowledge, existing mapping tools, and professional planning judgment to identify areas of interest that exhibit qualities of successful Park & Ride locations.

<table>
<thead>
<tr>
<th>KEY PERFORMANCE INDICATOR</th>
<th>SEARCH PARAMETER (FILTER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from Employment Center</td>
<td>5-minute driveshed</td>
</tr>
<tr>
<td>Distance from Highway</td>
<td>10-minute driveshed</td>
</tr>
<tr>
<td>Proximity to High-Capacity Transit/Direct Access Ramp (DAR)</td>
<td>15-minute driveshed</td>
</tr>
<tr>
<td>Population</td>
<td>Density by Census Block Group (CBG) above regional average</td>
</tr>
<tr>
<td>Vehicle Ownership</td>
<td>Density of 2+ vehicles owned by CBG above regional average</td>
</tr>
<tr>
<td>Park &amp; Pool Utilization</td>
<td>Zip codes with Park &amp; Pool usage above regional average</td>
</tr>
</tbody>
</table>

Additional factors for consideration include commuter behavior and existing transit characteristics, which are outlined in greater detail on the next page.


**SELECT AN AREA OF INTEREST**

This stage in the process uses the heat map created within Regional Siting to allow the user to identify an area of interest. This area of interest is where several KPI layers are overlapping spatially.

**APPLICABLE TYPOLOGY**

Using the area of interest, the user should create an applicable typology, which the user will use to identify analogous existing Park & Rides. Consider the following factors when creating a typology:

- Community Context (Density, Land Uses, Distance from Employment)
- Proximity to Transit and Carpool/Vanpool supportive infrastructure (Direct Access Ramps, Express Lanes)
- Transit Service Frequency and Type (Local, Express, Park & Pool, etc.)
- Proximity to other Park & Rides (Are they sharing demand?)

**COMPARE BASE STATISTICS**

This stage in the process is focused on compiling and comparing utilization and population data to estimate demand. By comparing the utilization rate and population captured in the chosen analogous sites, planners can estimate future utilization for the area of interest. The steps for using the baselining approach to compare base statistics are outlined in the Baselining Exercise.

**LOCAL SITING**

This stage in the process is to search and select a viable new Park & Ride site within the area of interest. When evaluating potential local sites, successful Park & Rides typically exhibit the indicators listed below. While these indicators are typical of successful lots, it is not necessary to meet all them to be successful.

- Accessible Location
  - Consider the safety, lighting, and walkability of the site and surrounding community. Also, consider the presence of active transportation facilities.
- Easy-to-Access from Regional Roadway Network
  - Consider the visibility of the site from nearby major roads.
  - Park & Rides at the nexus of many collector roads will benefit from being a natural location for trip consolidation.
- Non-Residential Parcels
  - Park & Rides are most compatible as a stand-alone use or incorporated into non-residential uses (e.g., retail, commercial, institutional)
- Owned by the public sector or easily acquirable via partnerships.

Additionally, consider the following to encourage local siting feasibility:

- General Activity Density in Surrounding Area
  - What is the job/housing density of surrounding area?
  - Consider any anticipated developments that will put large demand on roadways and create the need for a Park & Ride. These developments offer the opportunity for public-private partnerships. Consult community plans and smart growth areas.
  - Are there other attractions (retail, entertainment) nearby?
- Presence of Informal Lots
  - Are there known informal lots where the space is currently or planned to be developed? Informal lots can indicate demand at specific sites.

**COMMUTER BEHAVIOR**

- Where are commuters traveling within and between jurisdictions?
  - Understanding existing origin and destination patterns, along with the existing transportation services available to commuters (i.e. Transit) can help indicate whether Park & Rides are an appropriate commuting solution.
- Are the commuter corridors congested?
  - More congestion typically leads to higher Park & Ride usage; lots sited upstream of congestion tend to outperform lots sited downstream.

**EXISTING TRANSIT**

- Is there existing transit near or at the potential site?
  - Consider if the new site would be targeting Park & Ride users to utilize transit for the rest of their commute or to be a meet-up for carpools/vanpools. Incorporation of existing transit service into a new Park & Ride impacts the site’s catchment area and design of the lot.
- What are the transit headways?
  - 10 minutes or less is best for Park & Ride.
- Does existing transit have low ridership?
  - A Park & Ride can help boost ridership by concentrating rider demand to a centralized location.

---

33 Park & Ride Strategy and Toolkit July 2019 (FINAL)
In the following fictional scenario, baselining is utilized to forecast demand for a lot that will have new LRT service. This is intended to highlight how the baselining approach can be applied. Each individual application of the baselining approach will need to consider the unique characteristics of the site in question.

**SCENARIO:**
A new LRT alignment is planned to implement service between the US-Mexico border at San Ysidro and Kearny Mesa. The LRT will run through eastern Chula Vista and provide a more direct connection for the South Bay community to one of the region’s most significant employment centers. Currently, South Bay residents must take the Blue Line trolley into downtown and transfer to a bus that serves Kearny Mesa. A new stop is proposed at H Street adjacent to the I-805.

**BASELINING APPROACH APPLICATION:**
A typology was developed with the following criteria:
- Light Rail with frequent peak hour service
- Near to single family housing with little walk-up density
- Adjacent major arterial
- Serves major employment area

Lots identified that match this typology are listed below:
- Palomar (MTS, 245sp – Avg 216)
- Palm Ave (MTS, 481 spaces – avg 187)
- Iris Ave (MTS, 173sp – 153 Avg)
- Bayfront/E St (MTS, 246sp – Avg 223)

Using these locations, mutually exclusive market areas were identified and developed using the recommended drivesheds (shown in the map below).
By comparing the population within these market areas with the occupied spaces at existing Park & Ride sites, a baseline ratio of 0.272% was calculated.

<table>
<thead>
<tr>
<th>PARK &amp; RIDE LOT</th>
<th>CURRENT POPULATION</th>
<th>OCCUPIED SPACES</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Street</td>
<td>78,831</td>
<td>223</td>
<td>0.283%</td>
</tr>
<tr>
<td>Iris</td>
<td>84,839</td>
<td>153</td>
<td>0.180%</td>
</tr>
<tr>
<td>Palm</td>
<td>54,535</td>
<td>187</td>
<td>0.343%</td>
</tr>
<tr>
<td>Palomar</td>
<td>68,263</td>
<td>216</td>
<td>0.316%</td>
</tr>
<tr>
<td>Total</td>
<td>286,468</td>
<td>779</td>
<td>0.272%</td>
</tr>
</tbody>
</table>

Mutually exclusive market areas and populations were measured with the inclusion of the proposed I-805 and H Street Park & Ride location. Using adjusted market areas to avoid assigning specific populations to multiple Park & Ride sites, projected demand was calculated for each station:

<table>
<thead>
<tr>
<th>PARK &amp; RIDE LOT</th>
<th>EXISTING POPULATION</th>
<th>PROPOSED POPULATION</th>
<th>CHANGE</th>
<th>PROJECTED DEMAND</th>
<th>DEMAND CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Street</td>
<td>78,831</td>
<td>54,796</td>
<td>(24,035)</td>
<td>158</td>
<td>(65)</td>
</tr>
<tr>
<td>Iris</td>
<td>84,839</td>
<td>84,795</td>
<td>(44)</td>
<td>153</td>
<td>(0)</td>
</tr>
<tr>
<td>Palm</td>
<td>54,535</td>
<td>54,533</td>
<td>(2)</td>
<td>187</td>
<td>(0)</td>
</tr>
<tr>
<td>Palomar</td>
<td>68,263</td>
<td>49,865</td>
<td>(18,398)</td>
<td>166</td>
<td>(50)</td>
</tr>
<tr>
<td>H (New)</td>
<td>-</td>
<td>105,304</td>
<td>105,304</td>
<td>286</td>
<td>286</td>
</tr>
<tr>
<td>Total</td>
<td>286,468</td>
<td>349,292</td>
<td>62,824</td>
<td>950</td>
<td>171</td>
</tr>
</tbody>
</table>

The new Park & Ride at H Street and I-805 is projected to have demand for 286 spaces based on the calculated baseline ratio. 115 of these spaces come from existing Park & Rides within the selected typology locations and 171 spaces are new Park & Ride demand.

**CONCLUSION:**

The baselining approach is a simple approach to estimating demand at potential Park & Ride sites. It requires knowledge of local transportation needs and access to existing data. With these assets, Park & Ride managers can use this approach to quickly and effectively assess the potential success of a Park & Ride.
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COMMUNITY PARTNERSHIPS
Park & Ride lots can be an asset for many community partners such as local municipalities, private entities, and the general public. Thus, it is important to develop targeted messaging and marketing materials that are supported by sufficient data to strategically demonstrate the benefits of Park & Ride partnerships to each stakeholder. This section provides initial guidance on educational materials that could help community partners see the value of Park & Rides and encourage them to be involved with developing, operating, and maintaining Park & Ride lots.

**EDUCATING POTENTIAL PARTNERS**

Community partners can play a pivotal role in the development, operations, and maintenance of Park & Rides. If partners are not actively engaged, the Park & Ride system may not fully maximize potential investments and miss out on opportunities. According to the private sector survey conducted (see Appendix F), 80% of private sector stakeholder participants are open to learning more about the benefits of Park & Rides. According to the commuter behavior survey (see Appendix E), commuters—especially interregional commuters—are interested in using Park & Rides as part of their commute.

Although both private stakeholder participants and commuters are interested in Park & Rides, most are not fully aware of the benefits of Park & Ride, which contributes to hesitation for partnerships and the lack of support from these community partners. To bring awareness of Park & Ride to community partners, it is recommended to develop an effective marketing plan that shows the value and benefits of Park & Rides.

Creating an effective marketing plan will help provide a framework for when, how, and to whom Park & Rides should be promoted. The primary purpose of this marketing plan is to outline potential strategies that educate community partners about Park & Ride benefits, and ultimately, increase engagement for future partnerships. When developing the marketing plan, it is important to think about each community partner’s needs, how they benefit from Park & Rides, how they can be involved, and why they need to be involved.

- Developing a marketing plan to build and improve partnerships is identified as a key action in *Moving Park & Rides Forward*.

**SUPPORTIVE DATA & ANALYSIS**

Community partners, especially private entities, desire quantified benefits that support statistical information like cost savings, parking demand reduction, or increase in sales. Investing in strategies that also support data collection and analysis will contribute to the success of Park & Ride marketing efforts and potential partnerships.

- Marketing to community partners is essential to the future of Park & Rides. Community partners can be more effectively engaged and partner on the development, operations, and maintenance of Park & Rides for the benefit of all community members when using this guidance, the tools identified in the *Park & Ride Toolkit*, and the action steps identified in *Moving Park & Rides Forward*. 
**COMMUNITY PARTNERSHIPS**

**POTENTIAL PARTNERSHIP BENEFITS & OPPORTUNITIES**

### BENEFITS FOR LOCAL MUNICIPALITIES

- Park & Rides can support the implementation of Climate Action Plans by supporting services that facilitate the reduction of greenhouse gas emissions (GHG), vehicle miles traveled, and congestion by providing convenient first-mile / last-mile opportunities that incentivize alternative transportation mode choices.
- Park & Rides may support mobility hub enhancements including transit services, electric vehicle charging, bike amenities, or pick-up / drop-off zones for passengers or goods.
- Reduced parking requirements for new developments could be more effective with shared parking policies that support Park & Ride needs.
- Shared mobility policies at employment destinations encourages carpool, vanpool and carshare trips to those communities and reduce overall parking demands.
- Park & Ride lots could provide multi-purpose community spaces for social gatherings (e.g., farmers markets or movie nights) or shuttle services to major events.

### POTENTIAL OPPORTUNITIES

- Refer to the Mobility Management Strategy, which includes a VMT Reduction Calculator Tool for services provided at Park & Ride.
- Distribute digital and printed marketing materials that identify Park & Ride benefits for developers, property managers, employers, and community members. Strategically market these materials with existing TDM marketing efforts. Participate in opportunities to educate private sector and communities about Park & Ride and TDM benefits.
- Consider updating policies to alleviate barriers for public-private partnerships. Consider potential incentivizing partnerships with developers and property managers through parking policy reductions, conditional zoning opportunities, reduced liability, flexible covenants, conditions and restrictions (CCRs), Mobility Hubs development, marketing/advertising, transit incentives and discounts, or shared-parking guidelines.
- Consider implementing a Transportation Demand Management (TDM) Program that includes Park & Ride policy for new development and mandatory monitoring and reporting requirements.
- Consider an agreement with agency partners to leverage existing enforcement and data collection efforts for the Park & Ride system. Develop a process to update regional inventory, utilization, and amenity updates on an annual basis. Quantify benefits to support marketing materials.
- Encourage volunteer opportunities to enhance Park & Ride facilities (e.g., neighborhood security patrol, public art installation, and maintenance).
- Consider using Park & Ride lots to support community events and raise awareness.
**BENEFITS FOR PRIVATE ENTITIES**
*(DEVELOPERS, PROPERTY MANAGERS, LAND OWNERS, EMPLOYERS)*

- Park & Ride partnerships help the region achieve sustainability goals by reducing greenhouse gas (GHG), local air pollutant emissions, and other related public health and environmental impacts, while also reducing parking demand and traffic congestion. Incorporating Transportation Demand Management (TDM) strategies can also contribute to Leadership in Environmental and Energy Design (LEED) certification. Property managers should consider shared mobility parking policies that encourage carpool, vanpool, and carshare trips and/or shared parking with Park & Ride dedicated spaces. Additionally, employers and property managers should work with regional planning agencies, transit agencies, and/or local municipalities to promote Park & Rides and other TDM strategies to their employees and customers.
- Current parking allocations could be repurposed for future development and provide the flexibility to accommodate future changes to travel behavior and goods movement; shared Park & Rides could support mitigation.
- Park & Ride users are customers who are more likely to support nearby businesses.
- Successful Park & Ride lots could transition into future Smart Growth opportunities that also encourage multimodal travel choices.
- Park & Ride efforts can also be supported through the payment of impact fee assessments with new development.

**POTENTIAL OPPORTUNITIES**

- Distribute digital and printed marketing materials that identify Park & Ride and TDM benefits for tenants and/or employees. This could be included as part of employees’ on-boarding process.
- Consider partnership pilot programs where perceived lack of excess parking is a concern. Pilot programs should include before/after parking demand analysis, combined with strategic TDM strategies, and marketing efforts that support multimodal transportation choices. Share “success stories” as examples for other developers and land owners.
- Create a financial incentives package that is developed in collaboration with local municipalities and transit agencies. This may include opportunities for shared operations & maintenance costs, decrease in number of required parking spaces for new development, or opportunities for traffic mitigation by incorporating Park & Ride spaces.
- Identify statistical datasets that would be useful for business decisions and partner with local municipalities to collect and analyze datasets, including but not limited to:
  » Identifying foot-traffic statistics that could support advertising,
  » Average money spent by Park & Ride users/customers of shared retail spaces,
  » Decrease in parking utilization and demands, creating future development opportunities,
  » Annual savings for maintenance with shared partnership, and
  » Additional travel incentives for private entities’ consumer base (e.g., transit services, EV Charging, and/or shared mobility).
COMMUNITY PARTNERSHIPS

**BENEFITS FOR GENERAL PUBLIC**

- Park & Rides provide convenient first-mile / last-mile travel options for community members who would like to leave their car and take transit, carpool, or vanpool for the rest of their trip. These benefits provide options that help the environment, save money, and alleviate commuting stress.
- Park & Rides reduce traffic congestion throughout the region by encouraging multimodal travel choices. Community members should support new projects that increase Park & Ride opportunities in their region.
- Park & Ride lots could provide multi-purpose community spaces for social gatherings (e.g. farmers markets or movie nights). Community members should work with local municipalities to encourage activating Park & Ride spaces in the community.
- Park & Rides encourage investments in Mobility Hub amenities that enhance the movement of people and goods including Electric Vehicle charging, bike lockers, transit services, mobile retail services, and package delivery stations.

**POTENTIAL OPPORTUNITIES**

- Utilize services at existing Park & Ride locations and share the benefits with community members and local municipalities. Benefits may include time savings, cost savings, convenience and/or lifestyle changes attributed to Park & Ride. Consider sharing benefits on social media to support TDM campaigns.
- Support future investments that support overall transportation efforts, including smart parking considerations to support full-featured transportation app for trip planning.
- Enhance Park & Ride community value by volunteering to provide neighborhood security patrol, public art installation and maintenance, and/or data collection.
- Consider using Park & Ride lots to support community events and raise awareness.
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PARK & RIDE TOOLKIT
The Park & Ride Toolkit (Toolkit) is a resource for operators and owners to refer to when addressing prevailing regional challenges identified by stakeholders through the stakeholder workshop (see Appendix B). Using best practices and lessons learned through the literature review, case study research, commuter survey, and private sector survey (see Appendix C, D, E, and F), the Toolkit provides strategies and respective tools for implementation to better plan, operate, and manage Park & Ride facilities. The strategies and their respective tools are outlined on the following page.

Each strategy identifies tools that can be implemented at a Park & Ride facility. The following information is provided for each tool:

<table>
<thead>
<tr>
<th>Name of Tool</th>
<th>Recommended Phasing:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEAR-TERM</td>
</tr>
</tbody>
</table>

| DEFINITION | TYPICAL CHALLENGES |
| What is the tool? | What barriers should the owner or operator plan for when choosing to implement the new tool or strategy? |

| BENEFIT | RISKS |
| What are the benefits for implementing the tool? | What potential negative consequences may co-occur if an owner or operator chooses to implement the tool? |

| COST | EXAMPLES |
| What are the low/medium/high options for implementing the tool? | What are some examples of the tool? |

**Preferred Conditions**
What top considerations warrant an investment in the new tool or strategy?

**Tool in Action**

> 2-5 sentence summary of an applicable case study for the tool. Additional relevant case studies can be found in the Case Studies Memo (Appendix D).

For each tool, there is a recommended phasing for implementation as shown above with the green, orange, and blue circles. Near-Term describes improvements having minimal cost and policy barriers. Mid-Term describes improvements having average costs and policy barriers. Long-Term describes improvements having significant costs and policy barriers.
From the research, the following strategies and respective tools are described in the Toolkit:

### Maximizing Capacity at Facilities
- Dedicate Space for Alternative Access Modes
- Proactive Siting
- Increase Number of Parking Spaces
- Annual Reporting and Performance Monitoring
- Pilot Programs to Test Potential Maximizing Capacity Solutions

### Managing Parking Demand
- Implement Paid Parking System
- User Type Management
- Smart Parking Systems

### Secure Facilities and Enforce Rules
- Focused Enforcement to Deter Abuse
- Reduce Security Concerns

### Incentivize Target Users
- Enhance Access Modes
- Supporting Mobility Hub Amenities
- Marketing Park & Ride Benefits

### Create Partnerships with Local Jurisdictions and Private-Sector
- Campus Employer Partnerships
- Activate, Lease, or Reuse Excess Capacity
- Advertising at Park & Ride Facilities
- Relinquishment

### Align Park & Ride Planning with Local and Regional Goals
- Encourage Transit-Oriented Development (TOD)
- Park & Ride Policy Integration
- Transitory Park & Ride Facilities
- Inter-Agency Coordination
## Implementation Tools

### Dedicate Space for Alternative Access Modes

<table>
<thead>
<tr>
<th>NEAR-TERM</th>
<th>MID-TERM</th>
<th>LONG-TERM</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Neat.png" alt="Icon" /> <strong>DEFINITION</strong></td>
<td><img src="Neat.png" alt="Icon" /> <strong>TYPICAL CHALLENGES</strong></td>
<td><img src="Neat.png" alt="Icon" /> <strong>RISKS</strong></td>
</tr>
<tr>
<td>• Provide and prioritize dedicated space for travel alternatives to single occupancy vehicles</td>
<td>• Requires regular enforcement of existing assets to warrant new investment</td>
<td>• New alternative access space may require reconfiguration of existing lot, resulting in a loss of parking capacity for existing users</td>
</tr>
</tbody>
</table>

| ![Icon](Neat.png) **BENEFIT** | ![Icon](Neat.png) **COST** | ![Icon](Neat.png) **PREFERRED CONDITIONS** | ![Icon](Neat.png) **EXAMPLES** |
| • Increase utilization without increasing automobile parking | ![Icon](Low.png) LOW - Re-striping and signage; secure bike parking installation | • Utilization > 85% | • Providing dedicated vanpool/carpool spaces for transit users |
| • Encourage existing/new users to travel using alternative modes | | • Within walking/biking distance (0.25 mile - 0.5 mile) of residential community, employment area, or transit stop | • Providing dedicated curb space for Transportation Network Companies (TNCs) |
| | | • High visibility locations with potential mobility hub conversion | • Provide specific spaces for compact modes of transportation (e.g. motorcycle, bicycle) |

### TOOL IN ACTION

- BART is working with the Metropolitan Transportation Commission (MTC) and Scoop Technologies to incentivize BART users to carpool to BART stations. Since parking at these stations fill early in the morning, carpool vehicles will have a guaranteed parking spot at the station until 10am.

*Source: Scoop Technologies*
**Proactive Siting**

**DEFINITION**
- Effectively site a new Park & Ride for better access from the adjacent catchment area using factors such as available right-of-way, perceived area atmosphere, site size, visibility from adjacent travel routes, site access, existing transit service, road congestion, and lot design (Refer to Guidance for New Site Analysis for additional information)

**BENEFIT**
- Identify future sites with the greatest cost-benefit
- Meet expectations for demand while integrating facility with the surrounding community

**COST**
- LOW - Developing lots on existing agency right-of-way
- MEDIUM - Developing lots by entering agreements with local governments and private property owners
- HIGH - Construction of structured lot at a major transit station

**TYPICAL CHALLENGES**
- Establishing a set criteria for evaluating and scoring candidate sites
- Securing funding to build and operate new lot
- Property owners may require additional incentives or requirements to allow Park & Ride operations (e.g., demonstrate increase in sales, shared maintenance of parking lot costs)

**RISKS**
- Incomplete data in siting process, resulting in under-informed decisions
- Variables and utility of Park & Ride may change over the time of site selection

**EXAMPLES**
- Common-sense approach and review of existing conditions (e.g. informal Park & Ride activity, density of residential and employment areas, and distance between residential areas and employment centers)
- Create a site suitability evaluation that assesses each potential Park & Ride lot

**TOOL IN ACTION**
- Washington State DOT prepared a Park & Ride System plan that incorporated proactive forecasting and siting into planning. Travel forecast models were used to forecast future demand for Park & Ride assets using measured variables.

**Increase Number of Parking Spaces**

**DEFINITION**
- Create additional parking spaces by restriping, expanding or relocating existing lot

**BENEFIT**
- Additional parking spaces can accommodate existing and latent demand

**COST**
- LOW - Reconfigure and restripe
- MEDIUM - Lease agreements at adjacent lots
- HIGH - New construction for lot/parking structure

**PREFERRED CONDITIONS**
- Utilization > 85%
- Locations of high latent demand
- Available adjacent land to expand lot size

**TYPICAL CHALLENGES**
- Temporary loss of capacity during construction
- Agreements with adjacent land owners for shared parking are not permanent
- Reconciling different peak demand times for adjacent activities and land uses

**RISKS**
- May not be as cost effective as subsidizing other first-mile/last-mile transportation service options
- Additional spaces may not reach optimal utilization to justify investment
- May need to investment in other amenities and access points combined with paid parking system

**EXAMPLES**
- Change from parallel to angled parking; Develop new or expand lots; Offer on-street parking; Structured parking; Lease parking

**TOOL IN ACTION**
- Michigan DOT partnered with Meijer supercenter stores to provide carpool Park & Ride spaces in exchange for added signs for Meijer stores on adjacent highways.
### Annual Reporting and Performance Monitoring

#### DEFINITION
- Monitor, analyze, and report data relating to Park & Ride performance metrics in an accessible regional geo-coded database

#### BENEFIT
- Identify inefficiencies and improvement areas
- Provide decision-grade data and information
- Potential to utilize data for modeling
- Develop Park & Ride dashboard to monitor success, challenges, and opportunities

#### COST
- LOW - Data maintenance and staff reporting; Software platforms to house performance data and key performance metrics
- HIGH - Real-time data collection with smart parking technology

#### PREFERRED CONDITIONS
- Existing database on Park & Ride system that can be updated easily from year-to-year

#### TYPICAL CHALLENGES
- Commitment across agencies for consistent data collection and reporting
- Determine variables to collect, report & share
- Update policies as necessary for cross-agency data sharing

#### RISKS
- Inconsistent data collection and not prioritizing need for annual reporting
- Low priority for agencies compared to other maintenance and operations efforts

#### EXAMPLES
- Park & Ride dashboard to monitor region wide performance; Status reports containing performance metrics (e.g., utilization and incident reports)

#### TOOL IN ACTION

- Metro Transit performs an Annual Regional Park & Ride System Report that summarizes utilization trends in the Twin Cities. This effort has propelled the current Park & Ride initiatives in the Minnesota Metro Region.

### Pilot Programs to Test Potential Maximizing Capacity Solutions

#### DEFINITION
- Evaluate potential strategies to maximize parking utilization at Park & Rides with short-term testing prior to major investment decisions

#### BENEFIT
- Able to test effectiveness of different strategies in the short-term without long-term commitment
- Implement successful strategies using lessons learned from pilots

#### COST
- LOW - Short-term implementation costs
- MEDIUM - Data collection of performance metrics

#### PREFERRED CONDITIONS
- Utilization >85%
- Current challenges outweigh the policy concerns that prevent agency support for pilot programs

#### TYPICAL CHALLENGES
- Receiving agency support and contractual approvals for pilot project
- Lack of funding and staff resources to support pilot project
- Determining the type of pilot project that is most appropriate

#### RISKS
- Unsuccessful pilot program can be seen as a waste of resources and deter continuing new pilot efforts

#### EXAMPLES
- Pilot Incentive Programs; Mobility Hub Features Catalog; Permit/Smart/Paid parking

#### TOOL IN ACTION

- Metro has partnered with Via to offer on-demand rides to select transit stations in three service zones. Via will match passengers with other riders going their way to the same transit station.
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### Implementation Tools

#### MANAGING PARKING DEMAND

Manage parking spaces as a resource to leverage and achieve agency and regional goals.

## Implementation Tools

### Implement Paid Parking System

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<th>NEAR-TERM</th>
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#### DEFINITION

- Charge parking fees to control utilization and support Park & Ride operations and management

#### BENEFIT

- Parking availability during peak periods
- Additional revenue to offset maintenance and operations costs or reinvest in amenities, security, and services

#### COST

- **LOW** - Paper Permit System with Signage & Pavement Marking
- **MEDIUM** - Smart Parking Technology; Revenue control

#### PREFERRED CONDITIONS

- Consistent utilization > 85% during peak periods
- Existing management and enforcement programs with localized presence
- Smart Parking integration with Regional ITS Infrastructure
- Surveyed users willing to pay to ensure space availability

#### TYPICAL CHALLENGES

- Effective real-time enforcement is necessary for the success of this program
- Impacts on low-income or minority customers at existing facilities
- Difficult to implement for leased or shared use lots
- Impacts on neighboring land uses & lots through “hide & ride” behavior
- Caltrans policy prevents the implementation of a paid parking system at Park & Ride lots

#### RISKS

- Potential loss of Park & Ride users
- Cost and time of using Park & Ride may exceed cost of driving alone for choice users
- Smart paid parking system goes out of order

#### EXAMPLES

- Demand Based Pricing; Event Parking Fee; Duration escalating rates; Subscription/Parking Pass Service; Incorporate Parking Fee into Monthly Pass

### TOOL IN ACTION

- At select Park & Ride locations with high demand, LA Metro has implemented a reserved monthly parking and/or a paid daily parking system. With monthly parking, users have the option of purchasing a METRO Monthly Permit, CARPOOL Monthly Permit, and the FLEX Permit. This system has been so successful that LA Metro has adopted these systems at most existing Park & Rides.
User Type Management

**DEFINITION**
- Incentivize and manage desired parking behaviors through user limitations/restrictions, policies, and enforcement

**BENEFIT**
- Controls parking capacity for desired parking behaviors
- Discourages non-Park & Ride users

**COST**
- **LOW** - Re-striping; Signage; Paper Permit System; Decal Sticker; Enforcement
- **MEDIUM** - Smart Parking Technology; Enforcement

**PREFERRED CONDITIONS**
- Utilization > 85%
- High amounts of policy violation and/or undesired parking behavior

**TOOL IN ACTION**
Dallas DART Pilot program provides free reserved stalls for residents who display a valid resident parking permit on their vehicle.

Smart Parking Systems

**DEFINITION**
- Parking system providing users real-time space location and availability

**BENEFIT**
- Collect real-time space occupancies
- Allows users to interact more efficiently with the parking system
- Passive enforcement and integrates with other toolkit strategies
- Improves system management and staff efficiencies
- Improves customer perception of facility through “actively managed” information
- Improve demand allocation for limited parking

**COST**
- **MEDIUM** - Real-Time Sensing & Signage; Access Control; Mobile App Integration; Management and Operations of Smart Parking System

**PREFERRED CONDITIONS**
- Utilization > 85%

**TOOL IN ACTION**
Smart parking systems were installed at Park & Ride facilities at heavy rail stations. These smart parking systems included VMS on a nearby freeway that shows Park & Ride availability and allows users to reserve Park & Ride spots by phone or Internet.
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## Implementation Tools

### Focused Enforcement to Deter Abuse

<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>TYPICAL CHALLENGES</th>
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<tbody>
<tr>
<td>Discourage unwanted parking behaviors by controlling access and utilization of Park &amp; Ride lot through focused enforcement</td>
<td>Enforcement may lead to short-term drop in utilization</td>
</tr>
<tr>
<td>Ability to implement Park &amp; Ride restrictions &amp; policies</td>
<td>Real time enforcement can be costly</td>
</tr>
<tr>
<td>Increase capacity for desired users of facilities</td>
<td>Some policies difficult to enforce (carpool one way, transit back)</td>
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### BENEFIT
- Ability to implement Park & Ride restrictions & policies
- Increase capacity for desired users of facilities

### COST
- **MEDIUM** - Parking enforcement officers/staff to patrol; Smart parking technology

### PREFERRED CONDITIONS
- Utilization > 85% by desired users
- High rates of non-permitted or unwanted parking
- Policy supports enforcement with existing program to enforce

### RISKS
- Violators may adapt to exploit enforcement procedures
- Enforcement inconveniences may affect existing users
- May increase usage of “informal” lots

### EXAMPLES
- Citations; Active Enforcement; Access control, Subscription parking service; Cameras for remote enforcement; partnerships for enforcement with highway patrol or local jurisdictions

### TOOL IN ACTION

Denver RTD has implemented cameras at half of their facilities. CCTV cameras assist with real-time enforcement as it allows RTD to take a proactive approach to security and customer complaint investigations.
Reduce Security Concerns

**DEFINITION**
- Implement security features to improve safety for all users

**BENEFIT**
- Decreased real and perceived security concern at facilities
- Possible increased usage of facility due to lowered security issues

**COST**
- MEDIUM - Design lots to include Community Planning and Economic Development features; Parking enforcement officers/staff; Security Monitoring Systems; Frequent & consistent maintenance

**PREFERRED CONDITIONS**
- Utilization < 15%
- Near other lots or other parking enforced areas to leverage existing security patrol investments

**TYPICAL CHALLENGES**
- Prioritizing facilities
- Funding for ongoing security
- Developing a process to track incidents, identify trends, and efficiently respond to address concerns

**RISKS**
- Criminal activity may adjust to new security protocol
- Response to problems/concerns not quick enough for users

**EXAMPLES**
- Security Patrol; Safety Infrastructure (e.g. Emergency-phone availability, Increase lot visibility through siting or removing obstructive landscaping); Cameras and Real Time Enforcement; Donation Centers

**TOOL IN ACTION**
- LA Metro has created monthly reserved spots at select Park & Ride locations. Enforcement is managed through the usage of TAP card and license plate recognition software. These automated systems are an effective tool to ensure only system users are parking at lots.

Source: LA Metro
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Enhance Access Modes

**DEFINITION**
- Provide fast, frequent, and reliable transit service and micromobility services and modes to connect Park & Rides to surrounding land uses

**BENEFIT**
- Increase the number of users the lot can serve while reducing the parking demand
- Enhance transit for existing commuting patterns

**COST**
- MEDIUM - New and/or enhanced transit service; Subsidized transit passes; Subsidized rideshare to transit

**PREFERRED CONDITIONS**
- Utilization < 50%
- Located along high-frequency transit commuter route
- Within walking/biking distance from residential and/or employment areas

**TYPICAL CHALLENGES**
- Funding to implement, operate & maintain
- Awareness of enhanced/new service

**RISKS**
- New transit service and amenities are initially underutilized
- New amenities are vandalized
- Potential users continue to drive alone

**EXAMPLES**
- Enhanced Transit Waiting Areas; Passenger Loading Zones; Real-Time Travel Information; Dedicated transit lanes/signal priority; Subsidized transit passes; Subsidized rideshare; Microtransit; Neighborhood Electric Vehicles; Micromobility vehicles (e.g., e-bikes, bikes, scooters)

**TOOL IN ACTION**
- When Park & Ride facilities are underutilized, New Mexico Department of Transportation incentivizes lot utilization by offering free bus services at a specific location for one week to stimulate ridership.
Supporting Mobility Hub Amenities

**DEFINITION**
- Dedicating space and infrastructure for Mobility Hub service amenities at Park & Ride lot to eliminate additional trips and/or incentivize new users at that location

**BENEFIT**
- More users accessing the Park & Ride from the surrounding community
- Access to convenient first/last mile services to complete errands and reduce vehicle trips

**COST**
- **LOW** - Micromobility options; Mobile retail; EV Charging Infrastructure
- **MEDIUM** - Construct enhanced bicycle and pedestrian facilities

**PREFERRED CONDITIONS**
- Utilization < 85%
- Supportive policy for amenities at Park & Ride
- Close proximity to residential/commercial areas

**TYPICAL CHALLENGES**
- Tailoring features to the existing and targeted users
- Identifying most impactful features
- Partnering with private sector to implement
- Funding

**RISKS**
- Competition between modes for space
- Remaining limited capacity may cause undesired behaviors
- Getting private partnerships and vendors to locate at Park & Rides

**EXAMPLES**
- Signage and Wayfinding; Package Delivery; Mobile Retail; Universal Transportation Account; EV Charging; Infrastructure for cars and micromobility vehicles; Improved Active Transportation Facilities; Bikeshare/scootershare/carshare

**TOOL IN ACTION**
- SANDAG developed a Mobility Hub Features Catalog along with a Regional Mobility Hub Strategy and Mid-Coast Mobility Hub Strategy for the new stations on the Mid-Coast Trolley Blue Line Extension.

Marketing Park & Ride Benefits

**DEFINITION**
- Communicate Park & Ride benefits to users, private sector, and general public (Refer to Community Partnerships for additional information)

**BENEFIT**
- Increase utilization of lots
- Increase awareness/participation of potential users and community partners

**COST**
- **LOW** - Digital Marketing; Stakeholder Outreach
- **MEDIUM** - Printed Marketing

**PREFERRED CONDITIONS**
- Utilization < 50%
- Lot located along high-demand commuter routes

**TYPICAL CHALLENGES**
- Funding
- Identifying benefits for each audience type
- Assessing behavior shifts resulting from effort

**RISKS**
- Ineffective or incongruent with existing experience
- Unable to reach targeted audience

**EXAMPLES**
- Facility Branding; Print/Digital media; Social Media; TDM App; Online Mapping; PR Campaign; Website; Print Collateral; Park & Ride Ambassadors

**TOOL IN ACTION**
- RTA (Chicago) has launched a multi-year marketing campaign to promote usage of park-and-ride and transit in the area. Campaign extends to TV, radio, social media, digital billboards.
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**CREATE PARTNERSHIPS WITH LOCAL JURISDICTIONS AND PRIVATE-SECTOR**

- Partner with local government to meet shared goals and objectives
- Partner with private-sector to cost-share in a joint-effort to provide parking for users

### Implementation Tools

#### Campus Employer Partnerships

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**DEFINITION**
- Partner with large employment and university campuses to encourage use of Park & Rides

**BENEFIT**
- Decrease demand for campus parking on-site and surrounding neighborhoods
- Increase use of alternative modes of transportation through Park & Rides
- Promote alternative transportation options
- Increase Park & Ride user base to campus populations

**COST**
- LOW: Partnership agreement with campus and employer
- MEDIUM: Providing shuttles service from campus or employment site

**PREFERRED CONDITIONS**
- Campuses with high off campus commuter population
- Campus with heavily restricted and limited parking facilities

**TYPICAL CHALLENGES**
- Long-term stability of partnership
- Promoting Park & Ride to campus population
- Understanding user base through targeted origin data analysis and outreach
- Student desire to carpool/vanpool

**RISKS**
- Demand for Park & Ride exceeds existing capacity

**EXAMPLES**
- Joint development of Park & Ride; Shared maintenance & operation costs at Park & Ride primarily used by campus population; Reserved Parking & Subscription Services

**TOOL IN ACTION**

Website: [uh.edu/COAST](http://uh.edu/COAST)

COAST Program at the University of Houston incentivizes students and employees to use transit and Park & Ride. The goal of the program was to help alleviate on-campus parking demand. Park & Ride students paid a 35% of full price and received 50% discount on bus/light rail tickets.

*Source: University of Houston*
### Advertising at Park & Ride Facilities

**Q DEFINITION**
- Use Park & Ride assets to promote local community or adjacent businesses

**BENEFIT**
- Public benefit through community advertising
- Potential revenue source to offset operations and maintenance costs
- Integration with local functions and/or community groups

**COST**
- **LOW** - Outreach and coordination with stakeholders
- **MEDIUM** - Implement dynamic displays at high activity locations

**PREFERRED CONDITIONS**
- Near freeway and major arterials to increase Daily Effective Circulation (DEC)
- Policy allows for advertisement to offset Operations and Maintenance costs

**TYPICAL CHALLENGES**
- Low number of viewers at each facility
- Over signage causing confusion among users
- Policy and zoning obstructions/restrictions
- Potential conflict with existing branding guidelines of Park & Ride program
- Right-of-Way challenges at shared lots
- Policy for revenue generation

**RISKS**
- Keeping up with changing marketing trends
- Lack of interest in advertising
- Protecting advertising assets

**EXAMPLES**
- Bus shelter advertisements; Signage; Billboards; Marketing on Park & Ride website; Park & Ride sponsorship packages

**TOOL IN ACTION**
- The City of Portsmouth, UK, has created a comprehensive guide for private companies to purchase advertising space at their facilities and on their vehicles.

---

### Activate, Lease, or Reuse Excess Capacity

**Q DEFINITION**
- Excess Park & Ride space is activated, leased to other entities or reused to meet other community needs

**BENEFIT**
- More efficient use of land/parking spaces
- Creation of community spaces
- Possible revenue stream from leasing excess capacity

**COST**
- **LOW** - Lease agreements; Outreach and coordination with stakeholders

**PREFERRED CONDITIONS**
- Consistent utilization < 50% at similar times on weekdays and weekends
- Surrounded by lots with limited parking available

**TYPICAL CHALLENGES**
- May require changes in Park & Ride policies for asset owner or transfer to public or private owner
- May require additional dedicated staff

**RISKS**
- Roles and responsibilities of different activated uses
- Increased operations and maintenance costs
- Lack of communication, signage, and marketing can cause confusion for users

**EXAMPLES**
- Lease to nearby employers or shopping centers, farmers markets and community groups; Use space for special events

**TOOL IN ACTION**
- The City and County of Honolulu has partnered with the People’s Open Market to provide Park & Ride space on weekends for use by the market.

---

**TOOL IN ACTION**
- The City of Portsmouth, UK, has created a comprehensive guide for private companies to purchase advertising space at their facilities and on their vehicles.
DEFINITION
- The transfer of an asset within the public sector

BENEFIT
- Re-establishing agency goals & processes regarding Park & Ride system with partners
- More flexible management of assets

COST
- LOW - Staff time for coordination between agencies and handling process to hand over state assets to local authorities

PREFERRED CONDITIONS
- Utilization < 30%
- Major policy changes needed for implementing another tool such as Implement Paid Parking System

TYPICAL CHALLENGES
- Local or state funding of Park & Ride relinquishment
- Potential policy changes needed beyond relinquishment
- Differing goals of state and local authorities

RISKS
- Agency coordination becomes difficult, burdensome, or non-productive
- Lost opportunities from relinquishing right-of-way (e.g. land value)

EXAMPLES
- Caltrans Relinquishment Process is outlined on their website

TOOL IN ACTION

LA Metro was able to establish paid parking at Caltrans-owned Park & Ride locations through the relinquishment of operations and management responsibilities.
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ALeGN PARK & RIDE PLANNING WITH LOCAL AND REGIONAL GOALS

Encourage Transit-Oriented Development (TOD)

DEFINITION
- Incorporate housing at existing or near Park & Rides locations or provide Park & Ride spaces at TOD locations

BENEFIT
- Decrease greenhouse gas emissions (GHG)
- Maximizes use of Park & Ride footprint
- Decreased costs for agency due to private partnership at TODs

COST
- LOW - Management of private-public partnerships
- MEDIUM - Public incentives to encourage construction of TOD/housing at Park & Rides

PREFERRED CONDITIONS
- Parking is decoupled/unbundled from housing costs
- Large, underutilized lots that can be joint-developed
- Regional need for housing adjacent to transit
- Existing presence of a shared-use management program to support administration and enforcement

TYPICAL CHALLENGES
- Acquiring data and information on location of planned TOD
- Incentivizing developers to incorporate Park & Ride footprint
- Policy preventing TOD development at Park & Rides
- Effectively forecasting demand for each shared user type to ensure parking amount is adequate

RISKS
- Potential costs, management responsibilities, and additional liability associated with Park & Rides could be discouraging for developers
- Loss of real estate to expand when utilization of Park & Ride spaces increases

EXAMPLES
- Revised parking standards in Transit Priority Areas (TPAs) to encourage shared-use with Park & Ride; Smart Growth policies; Joint Use and Development of Property Policies and Procedures

TOOL IN ACTION
- Calgary removed all but 500 of the 1,750 Park & Ride spaces at its suburban Anderson light rail station, and gradually converted the space into a mixed-use development.

Source: City of Calgary
**Park & Ride Policy Integration**

### DEFINITION
- Incorporate Park & Ride initiatives into local, regional, & state policy framework to encourage Park & Ride considerations in future planning efforts

### BENEFIT
- Highlight role of Park & Ride in local/regional planning efforts
- Continuity of investment across multiple jurisdictions
- Possible increased commitment for Park & Ride development/improvement from policymakers

### COST
- **LOW** - Staff time to support integration of Park & Ride policies into local/regional plans

### PREFERRED CONDITIONS
- Planning authorities desire to integrate Park & Ride policies into planning efforts

### TYPICAL CHALLENGES
- Institutional commitment to incorporate Park & Ride initiatives
- Development of greenhouse gas (GHG) reduction estimates for Park & Ride services

### RISKS
- Framework policy plans not carried out
- Park & Ride policies conflict with other priorities

### EXAMPLES
- Climate Action Plan; Local Transportation Demand Management (TDM) Planning Integration of Park & Rides; Area Wide Parking Policy (Policy/Ordinance)

---

**Transitory Park & Ride Facilities**

### DEFINITION
- Create temporary Park & Ride lots at future Transit-Oriented Development (TOD) locations along major corridor improvement projects

### BENEFIT
- Land is already owned by public sector, so no new land is needed to create the temporary Park & Ride
- Land does not sit vacant while TOD is being planned and designed
- Building ridership prior to operations of new transit service

### COST
- **LOW** - Striping and signage
- **MEDIUM** - Conversion of lots from construction or development purposes to Park & Ride

### PREFERRED CONDITIONS
- Parking availability for at least one year

### TYPICAL CHALLENGES
- Determining which light rail construction staging lots are feasible for use
- Metrics to determine lots that are TOD candidates
- Agreements for Park & Ride operations at construction site

### RISKS
- Eventual conversion of lot from Park & Ride to TOD will reduce transit usage and can anger users
- Lack of use of Park & Ride

### EXAMPLES
- Establishing Park & Rides at interim end-of-line stations as transit networks are being built out

---

**TOOL IN ACTION**

- Sound Transit implemented a successful permitting program within their Park & Ride lots as a result of their Regional Parking Management Working Group. The working group was established by the local MPO and allows for the regional coordination of Park & Rides.

- The City of Edmonton strategically incorporates Park & Ride lots into project planning and construction. The agency plans to be cost effective by being mindful of land and construction costs for facilities and will focus on improving equity with the addition of Park & Ride facilities in an area.
### Inter-Agency Coordination

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<th>DEFINITION</th>
<th>BENEFIT</th>
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| • Coordinate and collaborate with local stakeholders to align policies, processes, and goals | • Compatible and harmonized strategies can eliminate regional inefficiencies  
• Increase communication between stakeholders  
• Maximize regional investment |

<table>
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<tr>
<th>COST</th>
<th>PREFERRED CONDITIONS</th>
<th>RISKS</th>
</tr>
</thead>
</table>
| • LOW - Stakeholder staff time | • Similar goals and policies  
• Policymaker to champion | • Wasted resources if unable to agree upon next steps or unable to show results  
• Interdependencies of internal and external stakeholders making relationship and discussions more complicated |

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<tr>
<th>TYPICAL CHALLENGES</th>
</tr>
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</table>
| • Turnover of policymakers and institutional leadership  
• Keeping Park & Rides relevant with political and transportation trends |

#### EXAMPLES
- Technical Working Group; Regional Working Group

#### TOOL IN ACTION

Maine DOT owns and operates Park & Ride lots in the state, but coordinates heavily with local jurisdictions to ensure alignment of priorities.

*Source: Q106.5*
MOVING PARK & RIDES FORWARD:
ACTION STEPS TO IMPROVE THE PARK & RIDE SYSTEM
Moving Park & Rides Forward: Action Steps to Improve the Park & Ride System (Moving Park & Rides Forward) is a roadmap for planning and managing Park & Ride facilities for San Diego and Riverside counties. Park & Ride facilities provide numerous benefits for the San Diego and Riverside regions such as increasing access to transit, consolidating rider demand for transit services, providing convenient meeting points to promote carpools and vanpools, and reducing single-occupancy trips while also reducing associated vehicle miles traveled and greenhouse gas emissions. Park & Ride facilities are an asset that require continued planning, development, monitoring, assessment, and management to leverage these facilities and meet regional and state goals.

In response to changing land uses, a rapidly evolving mobility landscape, and new technology, SANDAG and RCTC are re-evaluating the role Park & Ride facilities will play in the transportation system moving forward. Using literature review, peer agency document review, case study research, stakeholder engagement, feedback from commuter surveys, and site-specific recommendations, an outline of regional action steps has been developed for SANDAG’s and RCTC’s consideration for future implementation. Each individual stakeholder has different policies that limit the types of actions that they can take when addressing Park & Ride challenges. The actions below should be implemented within the parameters of agency policy. By incorporating some or all of the following regional action steps, both agencies and their partners can leverage existing and future Park & Ride assets to enhance a transportation system to accommodate future growth in the regions, enable more travel options, and establish safer, greener options for the regions.

The following action steps have been organized into four categories:

PERFORMANCE

PLANNING

PROPERTY

PRICING AND TECHNOLOGY

Several specific actions have been identified as early action candidates. These actions could be initiated with minimal funding or policy changes while having notable impact.

These actions are marked with:
MOVING PARK & RIDES FORWARD: ACTION STEPS TO IMPROVE THE PARK & RIDE SYSTEM

PERFORMANCE

Measuring the performance and effectiveness of Park & Ride strategies is necessary to determine where continued investment is warranted and what efforts need to change to better meet the needs of stakeholders. Evaluating performance will also allow Park & Ride operators to analyze this impacts of new technologies and services over time. The following performance related actions focus on creating continued dialogue amongst stakeholders and maintaining robust data about the Park & Ride system.

Meet with relevant stakeholders regularly to discuss the success of existing strategies and develop strategies for implementing future recommendations.

- Share agency research on travel behavior data collection.
- Identify, monitor, and share information regarding informal Park & Ride formation and use.

Create a coordinated marketing strategy that can be leveraged to increase public/private partnerships.

- Work with transit agencies and local jurisdictions to develop a list of incentives and benefits for private sector partners. Incentives may include minimum parking requirement if certain amount of parking spaces are designated for Park & Ride use, marketing/advertising (agencies’ websites, bus signage, Park & Ride maps), and transit incentives/discounts for employees.
- Create printed and digital material of Park & Ride benefits for the private sector such as potential for transit service at site, increased number of people per space, etc. Additional benefits are described in Community Partnerships section.

Coordinate an enforcement strategy that meets the safety and compliance needs of the system.

- Identify available resources for enforcement among agencies and jurisdictional partners.
- Identify cost effective and practical monitoring options for leased lot locations.
- Create a plan for enforcement that focuses resources on high-need areas with compliance and/or security concerns.
- Implement technologies that allow for remote monitoring of sites (CCTV).

Establish an integrated digital database and performance asset management platform. Utilize the platform to consistently and frequently assess the state of the Park & Ride system.

- Collect and document data points for the Park & Ride Data Center such as number of parking spaces by type, parking counts, restrictions, signage, available amenities, reported incidents, and other relevant information. Utilize a centralized platform accessible for all agencies to upload, review, confirm, and utilize data.
- Create annual summary reports from the Park & Ride Data Center to compare data for capacity, utilization, incidents, and other considerations that support Park & Ride planning efforts (e.g., corridor, sub-regional analysis, administrative expenditures, marketing partnerships and incentive programs). This report should also document related efforts including marketing and incentive programs including the results of these strategies.
- Assign ownership and management of the database to a single agency with support from partner agencies to collect, review, and provide data.
- Document occupancies during peak periods quarterly. Increase observation frequency as sensing technology is incorporated into facilities.
PLANNING

Transportation investments require sufficient planning in order to leverage existing developments to their fullest potential and to maximize the impact of future investments. Strategic and deliberate planning for Park & Rides will help to serve more users efficiently while helping to advance agency goals. The following actions focus on developing detailed planning studies that address specific aspects of the Park & Ride system, integrating Park & Ride components into other transportation related planning processes, and using best practices to inform decision-making.

Develop a Park & Ride Facility Master Plan to identify and evaluate existing and potential Park & Ride locations in the system.

- Utilize historic and existing data to evaluate the performance of specific Park & Ride facilities. Evaluate station access, ridership catchment, facility use, and need for existing or new facilities.
- Use Facility Master Plan to identify lots for repurpose, relinquishment, or closure.
- Estimate the long-term cost of operating and maintaining existing Park & Ride facilities. Consider the trade-offs between investing in new technologies and maintaining traditional management and operations.
- Include recommendations into long-range plans for the region, transit authority, and local jurisdictions

Update regional travel demand model to incorporate Park & Ride facilities, help assess the travel mode choice for travelers in the station’s area, and identify potential areas that will benefit from a Park & Ride service.

- Establish key factors to estimate the demand for Park & Ride services such as baseline performance metrics of existing lots, proximity of alternative transportation modes to Park & Ride location, peak commuting congestion levels, and parking costs relative to transit service destinations. Additional information about estimating demand is provided in the Guidance for New Site Analysis.
- Utilize model to determine how much parking supply is needed at a given Park & Ride facility and identify facilities where spaces can be activated for other uses such as transit-oriented development (TOD).
- Reference occupancy surveys to calibrate forecasts and projections.

Integrate and prioritize Park & Ride facilities into long-range plans. Establish a regular time for the regions to reflect on existing Park & Ride policies or establish new ones, prioritize identified new facilities within available funding sources, and include Park & Rides in the future visions for the regional transportation system.

- Establish criteria for when and where Park & Ride spaces at transit stations and new development is appropriate. See Guidance for New Sites section for more information.
- Work with transit agencies, local jurisdictions, and the development community to coordinate regional Park & Ride/Park & Pool needs.
- Incorporate Park & Ride strategies into local and regional Transportation Demand Management (TDM) ordinances.
- Provide guidance for Park & Ride integration into local jurisdictional commercial and residential development processes.
- Identify opportunities to change station-area priorities of Park & Ride facilities including potential for TOD.
- Create standard Memorandum of Understanding (MOU) templates for public/public and public/private partnerships.
- Assign a stakeholder with the responsibility to consolidate and showcase funding opportunities that relate to Park & Rides as they arise.
- The placement of new or expanded Park & Ride facilities must keep pace with the expansion of High-Occupancy Vehicle (HOV) lanes and Express Lanes. These new lanes can only be filled to intended capacity if commuters have options on locations to join carpools/vanpools, and access transit.
MOVING PARK & RIDES FORWARD: ACTION STEPS TO IMPROVE THE PARK & RIDE SYSTEM

PROPERTY

Park & Rides are physical assets that support agency and regional transportation and service goals. Through these real estate assets, agencies are exploring new mechanisms to achieve the highest possible return on investment to sustain and grow transportation services and operations. The following actions aim to make existing Park & Ride assets as productive as possible, through dynamic usage, formalization of facilities, and strategic investment.

Activate the highest and best use of lot space that is underutilized based on existing occupancy counts.

- Update policies and regulations to allow for achievement of the highest and best use of space (vacant lot converting to transit-oriented development).
- Initiate relationships with development partners and property managers that preserve access while incenting additional demand for non-Single-Occupancy-Vehicle (SOV) travel modes.
- Leverage revenue streams (leases, user fees, etc.) to reinvest back into the system.
- Owners of lots share professional real-estate services (brokering and marketing) to facilitate development.
- Promote alternative uses of lot excess capacity including special events and mobile retail.
- Relinquish specific lots to other agencies to better align with site specific goals, where necessary, and relinquish to the private sector if investment is no longer aligned to Park & Ride goals.

Establish formal Park & Ride facilities from known informal lots or develop nearby alternatives to increase Park & Ride system capacity, awareness, and use.

- Identify land owners of informal lots and coordinate with owners to designate formal Park & Ride spaces.
- Create an internal inventory of parking behaviors and the location of informal lots.
- Create a standard liability agreement that alleviates concerns of existing owners while meeting the region’s needs.

Invest in high-potential locations.

- Assess latent demand potential for existing lots in the system.
- Invest in (focused) mobility hub strategies that incentivize new users of the system.
- Lease and/or purchase property in areas that are un/under-served.
- Create a dedicated source of funding for system investment (capital and operations & maintenance).
- Acquire property near new transitway corridors for future Park & Ride facilities and potential for future joint development (P3) opportunities. Example P3 models can be found in Appendix G: Funding Sources.
PRICING AND TECHNOLOGY

Mass adoption of rapidly evolving consumer technologies is changing the way users interact with the transportation system. Future innovation will continue to create opportunities for the Park & Ride system to better meet the needs of users while increasing user expectations of the same system. The following actions focus on integrating technologies to enhance Park & Ride operations for the user while empowering agencies to strategically allocate parking resources congruent with their goals.

**Implement strategic technologies that advance multiple system and agency goals.**

- Leverage sensing technologies for data collection and enforcement.
- Utilize access control for demand management and compliance.
- Explore technologies that could supplement and/or replace traditional Park & Ride operations (signage, permits, payment, if applicable).
- Partner with third-party technology developers to integrate Park & Ride information (trip planning services, parking availability, etc.) Additional information about partnering with the private-sector are described in *Community Partnerships*.

**Develop a system that allows pricing parking spaces as a limited resource.**

- Initiate a paid parking feasibility study at lots with sustained high occupancies.
- Utilize the travel demand model for Park & Rides to test the effects of parking pricing and improvements to other access modes on facility parking demand.
- Determine appropriate technologies for users to interact with the parking system.
- Develop marketing campaign that communicates the benefits of a paid parking system and the alternative to parking in paid lots.
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Park & Ride facilities provide a comfortable and convenient first-mile connection to transit, carpooling, and vanpool services. However, emerging technologies, changing commuter preferences, and increasing e-commerce will change the way Park & Rides serve the communities in which they reside. In order to effectively leverage these facilities, the current notion of Park & Ride may continually need to be monitored and evolve to meet these new technologies and commuter preferences, which continue to impact the transportation network in the future. This Regional Strategy identifies the framework for improving the Park & Ride system through more informed decision-making. The following trends highlight factors to consider as the regions look ahead.

**DATA COLLECTION AND ANALYSIS**

Consistent and robust data collection is foundational to informed decision-making. Continuous data collection and analysis at the regional level will support future Active Transportation and Demand Management (ATDM) efforts and encourage optimization of the roadway network to move people more efficiently by identifying Park & Ride space availability and sub-regional demands. Historic utilization analysis will support the identification of commute behavior trends and provide supporting evidence that could be leveraged for future management decisions and potential partnership opportunities. Collecting and analyzing incident reports also supports the effectiveness of supportive management and security programs. By collecting this information in one database, regional operators can identify and implement more effective crime prevention measures to minimize unwanted activities and provide active surveillance through both site personal and/or on-site activities that will discourage unwanted activity.

**MOBILITY HUBS**

Planning for mobility hub features at Park & Ride locations allows local agencies to demonstrate how transportation services, amenities and supporting technologies can work together to make it easier for communities to access transit and other shared mobility choices. Park & Rides may serve as transitory access locations that capture new riders and connect to the region’s major residential, employment, and regional attractions while the rest of the transportation network evolves. Additionally, there may be opportunity to leverage funding needs through incentive programs that support new mobility hub features (e.g. electric vehicle charging infrastructure, smart growth, active transportation, etc.). Many communities are now looking at parking lots as the next development potential, and some existing Park & Ride lots may be considered for future transit-oriented development. Additionally, the assumptions for passenger and cargo vehicles are starting to align with several prototypes emerging that can accommodate both — with most Park & Ride facilities adjacent to freeway on/off-ramps, there may be opportunity in the future to share exchanges of both goods and passengers at Park & Ride locations.

**SYSTEM AWARENESS**

The unknown benefits of Park & Ride to varying audiences including commuters, property managers, local jurisdictions and major employers is a major challenge for future partnerships and expansion of Park & Ride. Capturing data and publishing collateral that identifies the benefits of Park & Ride information in strategic marketing materials and outreach to specified audiences across targeted platforms is essential for maximizing current and future investments in the transportation network. Smart applications are also changing the way we plan trips for goods and people, and analysis that supports understanding utilization and behavior of existing users and assets will support optimizing the effectiveness of future trip-planning applications. Understanding the value of Park & Ride investments at a regional and more localized level will create opportunities to leverage other smart city investments, including in smart parking, tolling or communications infrastructure.
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APPENDIX A: EXISTING POLICIES & FACILITIES
Existing Park & Ride facilities and policies help provide context for the current Park & Ride environment. It builds the foundation for proposed improvements and regional recommendations. The following presents an overview of agency policies and initiatives that support Park & Ride facilities, into the existing environment of facilities, planning initiatives, and management policies for each agency. It also defines agency differences as it relates to resources, policies, and planning efforts for Park & Ride facilities.

There are over 140 facilities in San Diego and Riverside counties combined that are operated and managed by Caltrans, San Diego Association of Governments (SANDAG), Riverside County Transportation Commission (RCTC), San Diego Metropolitan Transit System (MTS), and North County Transit District (NCTD). These agencies provide various services and operate their facilities differently from one another. Additionally, monitoring, surveillance, and equipment of individual lots varies between agencies and the lots operated by them. Table 1 summarizes these facilities and their overseeing agencies.

**Table 1. Park & Ride Lots by Operating Agency**

<table>
<thead>
<tr>
<th>OPERATING AGENCY</th>
<th>TRANSIT</th>
<th>PARK AND POOL</th>
<th>COMBINED</th>
<th>AGENCY TOTALS</th>
</tr>
</thead>
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<td>Caltrans</td>
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<td>30</td>
<td>31</td>
<td>61</td>
</tr>
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<td>5</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>NCTD</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>RCTC</td>
<td>0</td>
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<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>49</td>
<td>46</td>
<td>48</td>
<td>143</td>
</tr>
</tbody>
</table>

**CALTRANS**

Caltrans operates over 60 Park & Ride lots that often border freeway interchanges along commuter corridors. These facilities were developed in conjunction with the freeway build-out to accommodate commuter needs. With changes in commuting patterns, the demand for parking at specific locations has changed. Some lots now experience high demand, whereas others do not. Half of Caltrans’ lots have been designated for carpool / vanpool spaces, whereas the other half are designated as combination of carpool / vanpool services and transit services. Additional information about Caltrans Park & Ride lots can be found [here](#).

**PLANNING**

**CALIFORNIA TRANSPORTATION PLAN 2040**

In June 2016, Caltrans developed The California Transportation Plan 2040 (CTP). This document is a statewide long-range policy plan that presents a vision for California’s future transportation system. It defines goals, policies, and strategies to achieve the organization’s transportation vision and recommends performance measures for assessing projects after implementation. Park & Rides are discussed in the Active Transportation and Demand Management section of this document. The CTP endorses Park & Rides to support alternative modes of transportation other than single occupancy vehicles (SOV). The CTP also supports Active Parking Management (APM) to maximize utilization of existing park and ride assets through overflow transit parking, parking reservations, wayfinding, and priced parking. APM strategies are considered a short-term goal.

**INTEGRATED CORRIDOR MANAGEMENT**

Caltrans will continue to incorporate park & rides through its Integrated Corridor Management (ICM) approach to corridor implementation. ICM leverages information technologies to increase the efficiency of existing corridors. Combined with Park & Rides, this can increase multimodal ridership and decrease travel times for commuters.
DISTRICT 11 SYSTEM MANAGEMENT PLAN

The District 11 System Management Plan (DSMP) identifies two strategies related to Park & Ride lots. The first is to improve asset management of Park & Ride facilities by utilizing GIS mapping technology to track lot attributes and asset condition. The second strategy is to identify pilot locations for an Adopt-a-Park & Ride program and to solicit participation from local businesses.

MANAGEMENT

Park & Rides are managed at the district-level. San Diego is managed by District 11 and Western Riverside is managed by District 8. Both districts have a webpage that identifies the location of the lots in their jurisdiction. Both areas also have interactive maps that give limited details about lot attributes including number of spaces, owner, and hours of operation. These maps are not inclusive of all Park & Rides in their respective areas as most facilities operated by transit agencies are absent. Caltrans conducts counts of their lots on a quarterly basis.

Caltrans has the following rules for usage of their lots:

- Park & Ride lots are for the ride share commuter (vanpool/carpool) parking and are not intended for residential, commercial, or long-term parking. Daily commuter parking at Caltrans operated Park & Ride lots is free of charge; no permits are required.
- Some Park & Ride lots are limited to Monday through Friday, 5:30 am to 6:00 pm. There are signs posted at each of these lots.
- 24-hour parking is not recommended. Vehicles parked outside of designated spaces or left in excess of 72-hours may be ticketed and towed at the owner’s expense (California Vehicle Code Section 22651(k)).
- No loitering, camping, vending, or parking of vehicles 30-feet or longer is permitted at any Park & Ride lot (California Vehicle Code Section 22518).

The above map shows the existing active and inactive lots from the Park & Ride Data Center for Caltrans operated lots. Colors behind the Park & Ride lots indicate last recorded utilization with red showing almost full capacity.
SANDAG emphasizes the importance of mode shift through various transportation demand management (TDM) strategies. The SANDAG rideshare program iCommute matches commuters with similar travel needs. Their transit services, MTS and NCTD, provide both regional and local coverage, while their Park & Ride lots support commuters who engage in both rideshare and transit services. SANDAG has over five lots and over 1,340 Park & Ride spaces, some of which are managed in partnership with MTS and private sector stakeholders. Additional information about the Park & Ride program in the San Diego region can be found here.

PLANNING

SANDAG has demonstrated a commitment to promoting mode shift through its agency outreach and planning efforts. They have considered innovative approaches to mobility challenges in the area, while publishing literature to support it. Their planning initiatives incorporates transit, transportation technology, and park & ride. This Regional Park & Ride Strategy builds from these previous efforts and supports future projects. The following section summarizes some of the key planning documents that SANDAG has recently released.

SAN DIEGO FORWARD

San Diego Forward: The Regional Plan (Regional Plan) serves as a blueprint for how San Diego will grow, and how SANDAG will invest in transportation infrastructure for the decades to come. This document’s vision focuses on sustainable communities, innovative mobility, and a vibrant economy.

INTEGRATING TDM INTO THE PLANNING AND DEVELOPMENT PROCESS

This study was developed to provide municipal governments with the tools to implement and monitor TDM policies as part of their local plans and projects. This document explains how TDM can be effectively incorporated into urban design, site development, and parking strategies. The TDM study presents case studies and recommendations, which can be tailored and applied to local jurisdictions. The study was accepted by the Transportation Committee in May 2012, for inclusion as a resource in the SANDAG Smart Growth Toolbox.

REGIONAL PARKING MANAGEMENT TOOLBOX

SANDAG has created a Regional Parking Management Toolbox to provide cities with tools for evaluating, implementing, and managing parking management strategies that support their individual economic development, sustainability, and mobility goals. This interactive initiative provides a broad set of tools and step-by-step instructions for shaping successful parking management programs.

EMERGING TECHNOLOGIES WHITEPAPER

In January 2018, the Emerging Technologies White Paper was updated to reflect research and current trends in transportation. The White Paper presents technological and social trends that can radically impact the region’s transportation system in the future. The document outlines policy considerations that enable the region to harness the benefits and reduce the negative aspects of these trends.

MOBILITY HUBS

SANDAG is currently planning to implement mobility hubs at locations across the region. Mobility hubs are places of connectivity where different modes of travel—walking, biking, transit, and shared mobility—converge. They typically coincide with places where there is a concentration of employment, housing, shopping, and/or recreation attractions.

Mobility hubs provide an integrated suite of mobility services, amenities, and technologies, including:

- Bikeshare / carshare
- Neighborhood electric vehicles
- Bike parking
- Dynamic parking management strategies
- Real-time traveler information / wayfinding
- Real-time ridesharing
- Microtransit services
- And urban design enhancements that specifically supports active and public transportation
These features help travelers connect to regional transit services and make short trips within the neighborhood and beyond. Future technology advancements, including connected and automated transportation services will present new opportunities for mobility hubs. Additional information about mobility hubs can be found [here](#).

**MANAGEMENT**

Transportation Demand Management (TDM) refers to programs and strategies that manage and reduce traffic congestion by encouraging the use of transportation alternatives. SANDAG coordinates many programs such as iCommute for carpooling and vanpooling programs and the Guaranteed Ride Home program. The Bike to Work Day and Rideshare Week are some of SANDAG's outreach initiatives to support mode shifts away from the single-occupancy vehicles. Most of SANDAG's lots are managed in partnership with MTS. SANDAG conducts counts on their lots, but this does not occur on a regular basis. For monitoring, SANDAG uses a compliant-based system to address issues.

The above map shows the existing active and inactive lots from the Park & Ride Data Center for SANDAG operated lots. Colors behind the Park & Ride lots indicate last recorded utilization with red showing almost full capacity.

**RCTC**

RCTC is responsible for planning highway and transit projects as well as identifying projects for state and federal funding. RCTC executes lease agreements and operates over 20 Park & Ride lots. Of these lots, about half are designated for park and pool (588 spaces), and the other half are combined (359 spaces) park and pool with transit operations. Most lots are distributed along I-15 and I-215 corridors serving commuters travelling out of the county to San Diego, Orange, and Los Angeles. Additional information regarding Park & Ride lots in Riverside can be found [here](#).

**PLANNING**

**REGIONAL TRANSPORTATION PLAN / SUSTAINABLE COMMUNITIES STRATEGY**

RCTC is the agency charged with recommending projects proposed for funding under the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS identifies strategies to meet mobility needs of all modes, legislative, financial and air quality requirements in the six-county area of Southern California and is overseen by the Southern California Association of Governments (SCAG). This plan is updated every four years, most recently in June 2016.
RCTC’s role in the development of the RTP/SCS is to identify long range transportation improvement projects beyond those already programmed in the six-year federal funding plan. RCTC coordinates the input provided to SCAG with local agencies and transit operators in order to ensure consistency with city and county transportation plans and projects.

**LONG-RANGE TRANSPORTATION PLAN**

RCTC is starting to develop the first countywide Long-Range Transportation Plan (LRTP). The LRTP kicked off in mid-2017 and will be completed in 2019. It will provide a vision for what an integrated transportation system will look like in Riverside County in the next 20 years. The plan is taking a comprehensive review of projects on the state highway, regional arterials, rail and bus, freight network, and active transportation. It also will identify potential “bundles” of projects that can be developed in a systematic approach, demonstrate environmental benefits, and put RCTC and its member agencies in a more competitive position for funding opportunities.

**MANAGEMENT**

RCTC engages in a variety of activities to manage and operate their Park & Ride facilities. They are actively balancing high-demand for park & ride spaces with limited resources to construct new facilities. As such, RCTC regularly negotiates with private property owners to lease spaces for Park & Ride operations. These spaces are typically contracted on a pay-per-space basis and have restrictions on certain times of day and, occasionally, days of the year. Despite offering generous cash payments, leased parking can still be difficult to find.

Locations and lot attributes are communicated to the public using the Inland Empire 511 system (IE511.com). This helps users better plan their trip while also having access to other commuter resources on the 511 website including real-time traffic and road closure information.

To measure the performance of Park & Ride lots, RCTC conducts regular occupancy counts. These are recorded for historical tracking and to help inform decisions to add or remove spaces from certain regions. RCTC conducts customer service surveys to receive feedback from users of their facilities.

The above map shows the existing active and inactive lots from the Park & Ride Data Center for RCTC operated lots. Colors behind the Park & Ride lots indicate last recorded utilization with red showing almost full capacity.
NCTD

NCTD offers dedicated Park & Ride spaces at over 15 transit service locations, consisting of over 3,500 dedicated spaces along the COASTER and SPRINTER rail lines. These lots were developed in conjunction with transit to support ridership. NCTD currently offers electric vehicle charging stations at the Oceanside Transit Center. Additional information about NCTD stations can be found here.

PLANNING

While NCTD is not currently planning for further expansion of its transit network, the agency is working toward planning initiatives to improve services. In coordination with SANDAG, NCTD is considering mobility hubs to provide further transportation services. This effort hopes to increase access through additional modes of transportation and increase ridership.

COASTER SMART PARKING PILOT

NCTD conducted an analysis of the cost effectiveness of smart parking features at COASTER Park & Ride lots and passengers’ willingness to pay for them. The report builds on Smart Parking Pilot Project on COASTER Commuter Rail, which analyzes information obtained during test research at the Rockridge San Francisco Bay Area Rapid Transit (BART) District station. The report identified two key challenges for NCTD COASTER lots. For one, non-users of the system will park in the lots without permission. These non-users fall into two categories: non-transit riders and Amtrak / MetroLink riders. The second challenge is to maximize unused parking spaces by providing greater certainty with lot availability. This can be achieved through carpooling, delivering accurate traveler information, and by discouraging long-term parkers to generate more daily trips out of spaces.

MANAGEMENT

Current policy allows 96-hour parking at most SPRINTER stations and two-week parking at most COASTER Stations.

The above map shows the existing active and inactive lots from the Park & Ride Data Center for NCTD operated lots. Colors behind the Park & Ride lots indicate last recorded utilization with red showing almost full capacity.
MTS

MTS offers transit-only Park & Ride facilities at over 25 locations consisting of over 11,000 Park & Ride spaces along the Orange, Blue, and Green Trolley lines. These lots were developed in conjunction with transit to support ridership from neighboring residential areas. Additional information about MTS stations can be found here.

PLANNING

MTS is currently planning for an expansion of 800 spaces of parking at four locations to support the Blue Line Extension project. In coordination with SANDAG, MTS is considering mobility hubs to expand the suite of amenities offered to passengers, increase access through additional modes of transportation, and increase ridership.

JOINT DEVELOPMENT PROPERTY INVENTORY

MTS has had an active Joint Development Program for the past three decades. MTS is actively planning new developments for MTS properties. MTS revised MTS Board Policy 18 in 2018 to incorporate sustainability, active transportation, parking, and housing at MTS properties while improving transit ridership.

MANAGEMENT

MTS communicates the location and space capacity of its lots on the MTS website. Current policy limits parking at any Trolley station to 24 hours. Parked vehicles that exceed 24 hours are ticketed and towed. There is no overnight parking for RVs or campers. The MTS conducts monthly counts on their lots.

The above map shows the existing active and inactive lots from the Park & Ride Data Center for MTS operated lots. Colors behind the Park & Ride lots indicate the last recorded utilization with red showing almost full capacity.
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San Diego and Western Riverside Counties Regional Park and Ride Strategy

Introduction
The San Diego Association of Governments (SANDAG) and Riverside County Transportation Commission (RCTC) are developing recommendations for managing and developing Park & Ride facilities in the region.

Stakeholders identified specific issues with existing management strategies, including a patchwork policy framework, constrained funding, unclear roles and responsibilities, limited enforcement, and a lack of a marketing identity for the system. Through research and engagement with stakeholders, the project will identify recommended management strategies for addressing these issues and others, including forecasting, siting, technology, enforcement, and pricing. Innovative strategies from academic literature and case studies will be inventoried for consideration as recommendations. Using a toolkit format, strategies will be organized by various Park & Ride typologies, using utilization, service type, and ownership status to group similar facilities. Goals and objectives were developed to help direct the research priorities and recommendations of the Regional Park & Ride Strategy. Potential strategies to improve the Park & Ride system requires a dynamic approach that acknowledges the unique variables that impact each facility. The project goals and objectives provide guidance to the Project Development Team (PDT) in weighing those trade-offs.

Goal statements describe what the project is trying to achieve in aspirational terms. The objectives describe the specific ways each goal will be achieved. This memorandum defines each project goal and objective and documents the process of how the goals and objectives were developed.

Stakeholder Outreach
To help inform the development of the goals and objectives, a project workshop was held on November 6, 2017. The workshop solicited input from Caltrans, SANDAG, Riverside County Transportation Commission (RCTC), San Diego Metropolitan Transportation System (MS), North County Transit District (NCTD), Riverside Transit Agency (RTA), and many of the local jurisdictions in San Diego and western Riverside Counties. Major issues that were brought up included:

Funding: Each agency has a different role pertaining to implementing, operating, and managing Park & Rides. Resources are limited, so the study will help identify creative funding opportunities to support regional needs. The following points are for the project team to consider:

- Pay to Park – Caltrans is not allowed to “make a profit” on public right-of-way, so charging for parking in Caltrans-owned lots could be challenging, unless policy is changed. The MTS has considered charging for parking in lots that are at capacity. The RCTC owns all of the Metrolink station in Riverside County; maintenance of these facilities is a major expense, and like MTS, there is opportunity and a benefit of charging for parking in lots that are at capacity in the future; it may also be used as an incentive for commuters to arrive in higher density alternatives for free parking.
- Activating the Space – Farmers’ Markets or food truck events could be a way to introduce communities to Park & Ride locations. Opportunities to develop public-private partnerships that could contribute funds toward operations and maintenance should also be considered.
Other Opportunities – Can we leverage Park & Ride needs with other existing/planned projects? (e.g., CMAQ, Smart Growth Incentives, SB1) What are some developer incentives that should be considered?

**Operations:** Regional Park & Ride operations are the responsibility of multiple agencies, which makes defining roles and responsibilities cumbersome and creates confusion for potential users seeking information on the facilities. Since locations are spread throughout the region, management of the assets can be a challenge. The following points are for the project team to consider:

- **Ownership** – Private owners who are aware of informal Park & Rides (e.g. Walmart) are becoming less accommodating of Park & Ride operations when highly utilized. Private owners of leased lots don't mind high utilization if it doesn't exceed the allocated spaces. Commercial property owners, are less likely to accommodate any kind of Park & Ride arrangement for a variety of reasons, including but not limited to perceived liability, hassle, wanting to maintain their capacity regardless of actual usage, etc.) Agency-owned lots seem to be preferred over leased lots, from an operations standpoint, because they are not at the mercy of the property owners, which can sometimes lead to an uncertain future for the lot. There was a consensus that property managers do not effectively promote the location of Park & Ride spaces at sites with shared uses (ie. shopping malls). However, they enforce robustly adjacent spaces not available to Park & Ride users. Lack of signage and significant enforcement at nearby parking spaces can be very discouraging to Park & Ride users.

- **Maintenance and Security** – Dumping is an issue at some Park & Ride lots because citizens have realized that Caltrans maintenance crews will clean up for "free" as part of their maintenance duties. Users have complained about a significant number of RVs and that some lots draw unwanted activity. Many Park & Ride lots don’t have security or cameras, but most have lighting. As part of the existing conditions research, the project team should contact local authorities and request activity reports from lots with multiple complaints.

- **Access Control** - All lots in both regions are free. Permit requirements have been introduced in some locations that are at capacity. Street parking is being used as informal Park & Rides. A solution for parking access control could be identified. This solution should be integrated with the transit payment systems to verify users.

- **Marketing** – A map with all Park & Ride locations (transit lots, carpool/vanpool lots, hybrid lots) does not exist in San Diego. Some Caltrans parcels don’t have addresses and Google doesn’t recognize them or list them accurately, which adds another layer of frustration. It can be difficult to know where facilities are located and what their operating hours are; not all are well identified, especially shared-use lots in a retail centers. Although electric vehicle infrastructure is available to the public, signage, websites, and marketing collateral is not explicitly clear. A centralized database of Park & Rides would be highly valuable. In concept, each agency could be responsible for their own data. This regional database could then feed into whatever 511 systems have Park & Ride information.

- **Enforcement** – There are limited resources for enforcement and parking capacity cannot be determined remotely; smart parking could be an opportunity to more effectively manage assets
remotely. Policies relating to enforcement need to be revised and clarified according to regional goals and objectives.

- Planning – Most Caltrans Park & Rides were established in the 1980s and ‘90s; the outlook on mobility has drastically changed since then. There is a need to update the definition and uses of Park & Ride to better meet current and future demand. What tools can we provide to local jurisdictions to engage developers about Park & Ride for specific sites? Perhaps through the development services Intergovernmental Review process? Provide something similar to Regional Complete Streets Checklist or the Regional Parking Management Toolbox? Can we incentivize business owners to build, operate, and maintain spaces?

Forecasting: The regional models are better suited for forecasting larger-scale impacts to the region, so it has been challenging to accurately forecast demand for specific Park & Ride parcels. More specifically, reliable vanpool/carpool data is hard to come by since they form randomly. These are some discussion points for the project team to consider:

- Air Pollution and Control District – Park & Ride facilities can be thought of as a component of climate action plans and as an option for reducing VMT by encouraging commuters to choose an alternative transportation mode. It would be interesting to capture Park & Ride ancillary uses, such as meeting spots for community bike rides, and then quantify the emission reductions resulting from those activities. Additional data, such as how far people travel to lots, would also be useful.

- Performance metrics – How can we capture Park & Ride performance? It would be nice to see the return on investment for Park & Ride facilities so we can analyze whether the costs associated with operating and maintaining them are helping the region achieve their climate action plan and transit ridership goals. When MTS invests in a Park & Ride at a transit station, what are they giving up (e.g., additional bus island, Kiss & Ride, dedicated curb space, etc.)? For leased lots, what are the usage rates for the spaces? How can we measure that?

- Demand – When pursuing leased spaces, what is the appropriate parking ratio? How can modeling account for future technology like autonomous vehicles? When is parking for freight required? Perhaps geotargeting and location based services can capture when people arrive and when they return to make strategic decisions.

- Looking ahead – Need to consider the future of vehicles, given advancements in automation. Will there still be a need for regions to construct new Park & Rides?

Siting: It is difficult for agencies to increase Park & Ride capacity for locations with high demand because vacant land is hard to come by and property managers are hesitant to share/lease available parking spaces. These are some discussion points for the project team to consider:

- Commuter Preference/Security – People are more comfortable leaving their cars in commercial areas where there are witnesses throughout the day. Locating lots near coffee shops, eateries, retail, mixed-use, and TOD is attractive to commuters.

- Connections – As an example, Del Lago isn’t well connected to the active transportation network; it is hard to get there by other modes, such as walking and biking. Some lots have
accessibility issues and can be hard to get in and out of because of traffic signals, school drop-off queues, etc.

Other: These are additional discussion points for the project team to consider:

- **Electric Vehicle Investment – San Diego Forward**: The Regional Plan and EIR call for EV charging for passenger vehicles. How can we guide investment in infrastructure and public awareness? This is potentially a strategy for increasing EV ownership. Are there EV amenities that could attract more drivers to use Park & Ride? Perhaps maybe “EV” charging lounge or a mobile app with EV locations, which could support carpool formation? EV charging is planned for new Mid-Coast trolley stations.

- **Coronado Ferry**: There is limited parking for ferry commuters, since parking is geared toward residential and business uses.

- **Enhanced Trip Planners – Metrolink**: Has done a good job of augmenting their trip planner so it notifies commuters how much money they save in fuel by using alternative modes. Is this something that’s possible for Park & Ride? Can using a trip planner to support first-last-mile choices be a gateway for commuters to use transit? Some users may find this valuable while others may not.

- **Biking Amenities – It would be ideal for people to park their vehicle, then use bikeshare. Or, ride their bike to facilities, park it securely, and then connect to transit. Facilities also need to consider accommodating charging and storing electric bikes. SANDAG is planning for e-bikes in the Regional Mobility Hub Strategy, specifically at Mid-Coast trolley stations.**

- **Re-Opening of State Route 76 Park & Ride**: The lot is located near a weigh station and the Temecula border. Enhancements were made through a partnership with the local tribe in hopes to increase casino attendance. 11 spaces are dedicated to freight parking since semis use this lot while traveling Route 76. This interests RCTC because there is a need for semi parking in Moreno Valley.

- **Park & Ride for Airport Travel**: There are currently no policies for Park & Ride use that would allow for long-term travel (parking over 72 hours to take transit to the airport).
Goals and Objectives
The following goals and objectives reflect the feedback received from the stakeholder workshop and the input from the PDT. Goals and objectives represent a preferred situation for a Park & Ride facility. Given sites are subject to unique characteristics and restrictions, it is unlikely that every goal and objective can be achieved at every site.

Multimodal Access and Amenities
Stakeholders clearly communicated that Park & Rides should be as accessible as possible to the greater transportation network and offer amenities to enhance the Park & Ride experience. Many of the current Park & Rides were sited in locations that were convenient for implementation, but not always where they would be most useful. Tying current and future Park & Rides into pedestrian, bicycle, transit, and highway networks will expand the service areas and open the system to new users. Additional amenities like electric vehicle charging, package lockers, Wi-Fi, bike parking, bikeshare, carshare, and other amenities identified in the Regional Mobility Hub Catalog, many of which align with regional priorities, would further leverage investments made in the Park & Ride system.

Goal Statement: Increase access and usability of Park & Rides through optimized siting and by promoting multimodal access features and amenities.

Objectives:
- Site Park & Rides in locations with access to pedestrian, bicycle, transit, and highway networks
- Partner with jurisdictions to create Park & Ride siting and design guidelines for enhanced implementations
- Provide cost effective amenities at Park & Ride locations
- Develop guidance to balance preference for different Park & Ride amenities and supportive modes (pick-up / drop-off area vs. bikeshare station vs. more parking spaces etc.)
- Leverage emerging transportation modes and services provided by private and public sector
- Maximize investment in existing Park & Ride locations
- Manage demand at over-utilized Park & Ride locations
- Utilize technology to promote the efficient use of Park & Rides
- Address underutilized locations with new strategies

Safety, Security, and Operations
One major barrier to greater utilization of the Park & Ride system is the perceived lack of safety and security measures at lots. The Park & Ride Strategy should consider both active measures like cameras and security checks as well as passive measures like locating lots in high traffic areas and removing landscaping screening. These strategies would promote safety and security and enhance operations during the typical commuter periods that Park & Rides primarily serve as well as during non-peak periods.

Goal Statement: Enhance safety, security, and operations of Park & Rides during and outside commuter periods.
Objectives:
- Implement Crime Prevention through Environmental Design (CPTED) principles at current and future Park & Ride facilities (natural surveillance, natural access control, territorial reinforcement, and maintenance)
- Encourage on-site activities (retail/donation centers) at Park & Rides or siting of facilities within commercial environments
- Prioritize shared-use or leased parking agreements that include security, enforcement, and maintenance
- Leverage technology to improve operation for users and maintenance

Sustainable Funding
Current funding sources for Park & Ride expansion, operations, and maintenance is limited and often inadequate to provide more than basic levels of service. Because of constrained funding, enforcement and maintenance are often reactionary and complaint-based. Restrictive policies, distributed management responsibilities, and competition for transportation funds all contribute to a limited funding environment. New sources of funding combined with existing financial support could be used to enhance existing assets and provide opportunities to expand the Park & Ride system.

Goal Statement: Generate sustainable funding streams for new locations and existing Park & Ride operations and maintenance through existing and new sources.

Objectives:
- Consolidate the ownership and management of Park & Rides
- Right-size facilities to demand
- Secure dedicated funding sources for the short-term and long-term
- Work with private sector to identify public-private partnership opportunities

System Awareness
One of the largest hurdles to increase Park & Ride system utilization is a lack of public knowledge. There is inconsistent branding and marketing of the system and no comprehensive “one stop shop” for Park & Ride information. Effective tools, consistent branding, and targeted marketing would help educate the public about the location of Park & Rides, how to use them, and the benefits they offer to users and communities.

Goal Statement: Consistently promote the benefits, availability, and locations of Park & Ride to the public.

Objectives:
- Update the public facing Park & Ride map with complete information on all types of Park & Ride lots and information about lots and availability
- Create a consistent brand for Park & Rides to enhance awareness of available locations and supportive services (carpool and vanpool)
- Develop methodology to quantify the environmental impact and user benefits of Park & Ride locations
- Create a marketing campaign to enhance awareness of the system
- Provide real-time information to users where conditions are applicable
LITERATURE REVIEW

The literature review documents key findings and information of previously published reports and studies from readily available industry sources. The research in the literature review explore practices for Park & Ride planning, management, and operations.

- Transportation Cooperative Research Program (TRCP) Report 153 - Guidelines for Providing Access to Public Transportation Stations
- TCRP Report 95 - Park & Ride/Pool: Traveler Response to Transportation System Changes
- TCRP Report 192 - Decision-Making Toolbox to Plan and Manage Park & Ride Facilities for Public Transportation
- Assessing Park & Ride Efficiency and User Reactions to Parking Management Strategies

TRCP REPORT 153: GUIDELINES FOR PROVIDING ACCESS TO PUBLIC TRANSPORTATION STATIONS

SUMMARY

Park & Ride TRCP Report 153 consolidates data on existing facilities and provides guidelines for design, placement and operation of efficient Park & Rides. These guidelines are relevant in developing new Park & Rides and in evaluating the successes and shortfalls of existing facilities. The report outlines the objectives, key characteristics, design guidelines, and technical specifications of successful Park & Ride facilities. These recommendations are summarized in Table 1.

Table 1: Design guidelines for Park & Ride facilities

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from activity center sarvey (minimum)</td>
<td>5-8 miles</td>
</tr>
<tr>
<td>Maximum size</td>
<td></td>
</tr>
<tr>
<td>Lot (typical)</td>
<td>900 – 1,200 spaces</td>
</tr>
<tr>
<td>Garage (typical)</td>
<td>1,200 –1,500 spaces</td>
</tr>
<tr>
<td>Parking spaces per acre</td>
<td>125 – 135</td>
</tr>
<tr>
<td>Square foot per space</td>
<td>400 – 425</td>
</tr>
<tr>
<td>Location of bus loading area</td>
<td>On-street or within lot</td>
</tr>
<tr>
<td>Separate bus access</td>
<td></td>
</tr>
<tr>
<td>Less than 350 spaces</td>
<td>Optional</td>
</tr>
<tr>
<td>More than 350 spaces</td>
<td>Yes</td>
</tr>
<tr>
<td>Maximum passenger accumulation/shelter</td>
<td>80 – 150 people</td>
</tr>
<tr>
<td>Dus loading borths (typical)</td>
<td>1 to 4</td>
</tr>
<tr>
<td>Maximum desirable pedestrian walking distance</td>
<td>1,200 feet</td>
</tr>
<tr>
<td>Kiss-and-ride spaces (percent of total spaces)</td>
<td>2 – 6%</td>
</tr>
<tr>
<td>Parking characteristics</td>
<td></td>
</tr>
<tr>
<td>Peak hour directional movement as a percent of daily traffic</td>
<td>30 – 40%</td>
</tr>
<tr>
<td>Peak 15 minutes as a percent of peak hours</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: H.S. Levinson, adapted from various sources
All guidelines and recommendations are based on the data gathered from existing Park & Ride systems nationwide. Key focus cities include Atlanta, Boston, Chicago, Cleveland, San Francisco, Washington DC, Portland, and Toronto.

**KEY TAKEWAYS**

Additional relevant takeaways include:

- At rapid transit stations that mainly rely on auto access, there are typically 2.0 transit-boardings per parking space.
- Park & Ride facilities do well in low density areas; 15-40 miles from a central business district.
- The walking distance to most remote parking spaces should not exceed 600 feet.
- Numbered parking spaces are helpful for future considerations of pricing parking.
- For attractive costs, the Park & Ride fee + bus fare should be less than the downtown parking fee average.
- For efficient entrance and exit, busses should have separate roadway access to station entrances if more than 500 parking spaces exist.

**SUMMARY**

TRCP Report 95 provides a large amount of case-studies and the responses to different Park & Ride systems. The report also includes studies of international Park & Ride systems, primarily those found in Europe. The report also analyzes the success of park-and-pool operations, which are typically no more than 50% occupied. The best practices are consolidated below in Table 2.

Some additional takeaways include:

- Park & Ride top demand indicators:
  - Saving money
  - Avoiding driving stress
- 87% of Park & Ride users take 5 or more round trips per week.
- Best catchment area:
  - 5 miles outwards from station, primarily upstream.
  - At least 10 miles from activity center.
### Table 2: Characteristics of the "Most Successful" Park & Ride Lot at Each of 24 Transit Agencies

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>System</th>
<th>Facility</th>
<th>Distance (miles) from CBD</th>
<th>Transit Service</th>
<th>Parking-and-Ride Amenities</th>
<th>Lot Capacity - Spaces</th>
<th>Weekday Occupancy</th>
<th>Other Corridor P&amp;R Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austin, TX</td>
<td>Capital Metro</td>
<td>Northwest</td>
<td>25</td>
<td>Freeway bus</td>
<td>S, L, K</td>
<td>135</td>
<td>135</td>
<td>250</td>
</tr>
<tr>
<td>Columbus, GA</td>
<td>MEKRA</td>
<td>River Center</td>
<td>15</td>
<td>Arterial bus</td>
<td>S, L, G</td>
<td>685</td>
<td>475</td>
<td>0</td>
</tr>
<tr>
<td>Corpus Christi, TX</td>
<td>Corpus Christ RTA</td>
<td>Calallen</td>
<td>14</td>
<td>Freeway bus</td>
<td>S, L, K</td>
<td>100</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>DART</td>
<td>Mockingbird</td>
<td>3</td>
<td>LRT, art. bus</td>
<td>S, L, K, B</td>
<td>750</td>
<td>750</td>
<td>3,000</td>
</tr>
<tr>
<td>Dayton, OH</td>
<td>Greater Dayton RTA</td>
<td>South Hub</td>
<td>12</td>
<td>Arterial bus</td>
<td>S, L, G, R, K</td>
<td>150</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>Hamilton, WA</td>
<td>Hampton Roads Transit</td>
<td>Silverleaf</td>
<td>15</td>
<td>Freeway bus</td>
<td>S, L, K, R, K, B</td>
<td>225</td>
<td>150</td>
<td>0</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>METRO</td>
<td>Northwest</td>
<td>n/a</td>
<td>Freeway HOV lane bus</td>
<td>S, L, G, K, B</td>
<td>2,631</td>
<td>2,034</td>
<td>2,625</td>
</tr>
<tr>
<td>Miami, FL</td>
<td>Miami-Dade, Tri-Rail</td>
<td>Golden Glades</td>
<td>12</td>
<td>Freeway HOV lane bus</td>
<td>S, L, K, G, K, B</td>
<td>5</td>
<td>750</td>
<td>No</td>
</tr>
<tr>
<td>Milwaukee, WI</td>
<td>MCTS</td>
<td>College Ave.</td>
<td>8</td>
<td>Freeway, HOV bus, other bus</td>
<td>S, L, K, B</td>
<td>651</td>
<td>352</td>
<td>204</td>
</tr>
<tr>
<td>Tacoma, WA</td>
<td>Pierce Transit Sound Transit</td>
<td>Tacoma Dome</td>
<td>15</td>
<td>Freeway, HOV bus, other bus</td>
<td>S, L, K, R, K, B</td>
<td>2,400</td>
<td>1,600</td>
<td>5,000</td>
</tr>
<tr>
<td>Nashville, TN</td>
<td>MTA</td>
<td>Bellevue</td>
<td>14</td>
<td>Art &amp; fwy. bus</td>
<td>S, L, R</td>
<td>65</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Oakland, CA</td>
<td>BARTD</td>
<td>Hercules</td>
<td>25</td>
<td>Freeway HOV lane bus</td>
<td>S, L, B</td>
<td>276</td>
<td>476</td>
<td>100</td>
</tr>
<tr>
<td>Orlando, FL</td>
<td>Expressway Authority</td>
<td>BeeLine at Narcosse</td>
<td>2</td>
<td>Freeway bus</td>
<td>S, L, K</td>
<td>15</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Philadelphia, PA</td>
<td>SEPTA</td>
<td>Cornwells Heights</td>
<td>14</td>
<td>Freeway bus</td>
<td>S, L, R</td>
<td>1,600</td>
<td>725</td>
<td>922</td>
</tr>
<tr>
<td>Pittsburgh, PA</td>
<td>Port Auth. of Allegheny Co</td>
<td>South Hills Village</td>
<td>11</td>
<td>LRT</td>
<td>S, L, G, K</td>
<td>1,000</td>
<td>1,000</td>
<td>2,200</td>
</tr>
</tbody>
</table>

Notes:  

- CRR = commuter rail, LRT = Light Rail Transit.  
- Peak period "frequency of transit" serving park-and-ride lot in minutes.  
- S = shelter, C = covered parking, L = lighting, G = security guard, R = Restrooms, K = kiss-and-ride spaces, B = bicycle racks.  
- Total number of cars parked at other park-and-ride lots in the same corridor ("0" = no other lots in the corridor).  
- This peripheral parking facility (see Chapter 18, "Parking Management and Supply") — “Response by Type of Strategy” —  
- Peripheral Parking, Around Central Business Districts — is the only one of the 24 "lots" reported to have a parking fee ($1.00).  
- Although peripheral parking in part, this facility also serves the 30-mile Tacoma to Seattle commuter rail and bus corridor.

Source: Adapted and condensed from “This Week’s Survey Results” tabulation, Urban Transportation Monitor (2003b).
KEY TAKEAWAYS

TRCP Report 95 is a study of Park & Ride/Pool facilities that focuses more upon the decision-making process for users. This information is relevant in determining how best to attract users to new Park & Ride facilities.

TRCP REPORT 192: DECISION-MAKING TOOLBOX TO PLAN AND MANAGE PARK & RIDE FACILITIES

SUMMARY

TRCP Report 192 presents the most recent toolbox among the literature that was published in 2017. Key focus areas include:

- Financial planning and demand estimation
- Parking pricing
- The community and transit-oriented development

Some key takeaways include:

- Walking distance from vehicle to station should not exceed 600 feet.
- BART adjusts rates every 6 months by $0.50 if a facility is over 95% utilized, up to a $3.00 maximum.
- UTA prohibits multiday parking when a facility reaches 80% utilization.
- DART completes crime prevention through environmental design (CPTED) assessment of each Park & Ride every 3 years.

KEY TAKEAWAYS

TRCP Report 192 is a set of guidelines for the planning, design, implementation, and operation of Park & Ride facilities. The included study of effects on the community and TOD, the guidelines for implementing pricing, and the updating capital cost recommendations and data are relevant to the planning of future Park & Rides.

ASSESSING PARK & RIDE EFFICIENCY AND USER REACTIONS TO PARKING MANAGEMENT STRATEGIES

SUMMARY

This report collected survey data that confirmed that most vehicles parked at Park & Ride stations were driven by a single occupant for transit purposes. Additionally, the survey revealed reactions to potential parking management systems. Some key reactions include:

- Users are generally not willing to pay at already free Park & Rides, but they are more willing if the fee would reserve a parking space in advance.
- 25% of users would consider carpooling to avoid a fee.
- Users did not indicate that improving bike/pedestrian facilities would change their primary access mode to the facility.

KEY TAKEAWAYS

The data gathered on person-efficiency and user reactions is very relevant in efforts to improve the usage and efficiency of existing Park & Ride facilities.
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TABLE OF CONTENTS

Table of Contents ................................................................. 2
Overview ...................................................................................... 3
Methodology ............................................................................ 3

- Sound Transit ........................................................................ 4
- LA County Metro ................................................................ 5
- Utah Transit Authority (UTA) ............................................. 6
- Metro Transit (Minnesota) ....................................................... 7
- Virginia Department of Transportation (VDOT) ................... 8
- Edmonton ............................................................................. 8
- King County ........................................................................ 9
- Denver Regional Transportation District (RTD) ..................... 10
- San Joaquin RTD ................................................................. 11
- Washington State DOT – maximizing efficiency .................. 11
- Washington State DOT – Ridership Forecasting .................. 12
- Michigan State DOT with Meijer Supercenter Stores .......... 13
- Dallas Dart Pilot Program Case Study .................................. 13
- BART Smart Parking System Case Study ............................. 14
- Capital Metro (Austin) Case Study ........................................ 15
- RTA (Chicago) Case Study ................................................... 15
- COAST Program at University of Houston ......................... 16
- LinkNYC Case Study ............................................................. 17

- Additional Case Studies ....................................................... 17
- Sources .................................................................................. 20
OVERVIEW

The San Diego and Western Riverside regions initiated case study research to gather insight from peer agencies on best practices for planning and managing Park & Ride facilities. The findings from these case studies were used to outline the tools and strategies in the Park & Ride Toolkit.

METHODOLOGY

The project development team performed an industry review of published material by peer agencies. Select agencies were interviewed over the phone to gather additional key details. Seventeen case studies are identified and documented in this memo:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound Transit*</td>
<td>Central Puget Sound Regional Transit Authority</td>
</tr>
<tr>
<td>LA Metro*</td>
<td>Los Angeles County Metropolitan Transportation Authority</td>
</tr>
<tr>
<td>UTA*</td>
<td>Utah Transit Authority</td>
</tr>
<tr>
<td>Metro Transit</td>
<td>Minnesota Metro Transit</td>
</tr>
<tr>
<td>VDOT</td>
<td>Virginia Department of Transportation</td>
</tr>
<tr>
<td>Edmonton</td>
<td>City of Edmonton</td>
</tr>
<tr>
<td>King County*</td>
<td>King County Metro</td>
</tr>
<tr>
<td>Denver RTD</td>
<td>Denver Regional Transportation District</td>
</tr>
<tr>
<td>San Joaquin RTD*</td>
<td>San Joaquin Regional Transit District</td>
</tr>
<tr>
<td>Washington DOT</td>
<td>Washington State Department of Transportation</td>
</tr>
<tr>
<td>Michigan DOT</td>
<td>Michigan State Department of Transportation</td>
</tr>
<tr>
<td>DART</td>
<td>Dallas Area Regional Transit</td>
</tr>
<tr>
<td>BART</td>
<td>Bay Area Rapid Transit</td>
</tr>
<tr>
<td>Capital Metro (Austin)</td>
<td>Capital Metropolitan Transportation Authority</td>
</tr>
<tr>
<td>RTA (Chicago)</td>
<td>Chicago Regional Transportation Authority</td>
</tr>
<tr>
<td>COAST (University of Houston)</td>
<td>Coogs On Alternative &amp; Sustainable Transportation</td>
</tr>
<tr>
<td>LinkNYC</td>
<td>City of New York and CityBridge</td>
</tr>
</tbody>
</table>

*Phone interview conducted
This case study looks at Sound Transit to determine how their permit system, real-time parking pilot, and dedicated spaces for alternate modes impact the agency’s Park & Ride lots.

AGENCY CHALLENGES

Sound Transit experiences a high demand for their park and ride facilities at certain lots. Some of these lots are consistently parked at 97% capacity or more. However, these same Park & Ride lots are typically empty during off-peak hours.

SUMMARY

Sound Transit owns Park & Ride lots in East County, Snohomish County, Pierce County, South King County, Seattle & North King County. In 2015, the agency launched into a pilot program for permitting, which provides permits to single-occupancy vehicles (SOV) (at $33 per quarter) and carpool vehicles (at $5 per quarter). Carpool spaces are open to permit holders between 4:30-8:30 AM. After this time, these spaces become available for general riders. These permits are implemented at lots where Sound County has full control and not at shared-use lots with other agencies. Initially, Sound Transit was open to technology for their permit system but decided on a hang-tag system, based on responses. The permit program is administered through a private firm called Republic Parking.

A real-time parking pilot program was also released to test out parking technologies. This system implemented video camera feeds with the University of Washington to test the reliability of the technology.

KEY TAKEAWAY #1

Generally, the permitted carpool spaces to permit holder ratio is about 50-70%. Lots continue to be full, and Sound Transit thinks this could be linked to latent demand of newly-available general spaces. The system uses general operating funds toward the permit system. They are hoping to exceed their break-even amount through SOV sales, but this has not happened yet.

KEY TAKEAWAY #2

Sound Transit offers free parking permits to vehicles that regularly carpool (two or more individuals) to a station to access the bus or train during the morning rush hour.

KEY TAKEAWAY #3

The real-time parking pilot found that the technology was unreliable. While people liked the concept of the system, they were generally unsatisfied with the program due to distrust with the technology. Sound Transit found that the pilot program was expensive to implement. The pilot program has not been abandoned and Sound Transit is considering real-time parking at new facilities but will have to consider different alternatives that could be more reliable and less costly.

KEY TAKEAWAY #4

The MPO for this area, Puget Sound Regional Council, established the Regional Parking Management Working Group, which allows for regional coordination of park & ride facilities. By establishing a
coordinated park & ride system, customers have expressed an interest in having a single payment system.

INTERVIEW WITH AGENCY

Sound Transit provided information on partnerships with other agencies. The agency shared that maintenance and operation costs are divided at shared lots. One agency will take responsibility for maintaining and operating the facility, whereas the other agency will take on the costs. In the future, they may consider how to use lots during off-peak hours for event parking.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Align Park & Ride Planning with Local and Regional Goals

LA COUNTY METRO

This case study looks at LA County Metro and describes how their parking management pilot and enforcement technologies impacts the agency’s Park & Ride lots.

AGENCY CHALLENGES

Los Angeles faces congestion issues like most major cities. LA Metro’s Park & Ride facilities have experienced a high demand. On the other hand, if drivers find themselves circling lots looking for a parking space, they eventually will decide to drive to work. Some lots have also been challenged by non-transit riders who use the lots for their convenient location, but not for their intended purpose.

SUMMARY

LA Metro owns Park & Ride lots connected to their facilities and transit system. LA Metro’s lots can be found throughout the region and along the Blue, Expo, Gold, Green, Orange, Purple Red, and Silver Lines. Many of these lots have both free and paid reserved spots. The free spaces are on a first-come, first-served basis. Monthly reserved spots are at select locations. The project uses an integrated payment system through the TAP card and license plate recognition software for enforcement. Their goals are to manage congestion, capture revenue, and ensure that only system users are parking at lots. The LA Metro Park & Ride system integrates various technologies at some of their stations.

KEY TAKEAWAY #1

LA Metro found that $40 per month for reserved parking until 11AM was not successful. Some people used this service as a parking convenience, but did not ride the metro. They found that in other locations Park & Ride lots could be used as general parking during non-commuting hours. They established an MOU in the City of Monrovia to use the Park & Ride lot for evening parking for attractions such as movie theaters and restaurants. They set the price at $3 per night. They have also been able to implement enforcement at some stations, where there are repeat offenses. It costs the agency about $1 million per year for enforcement.

KEY TAKEAWAY #2

LA Metro determined that stations within 2 miles from one another should have the same fare structure. Otherwise, commuters will drive to the other station to avoid the higher fees or to get free parking.
KEY TAKEAWAY #3

Collaborating with the Getaround application, more than 25 LA Metro stations reserve parking spots for privately-owned vehicles participating in the car-sharing Getaround app to be used to complete first- and last mile trips.

INTERVIEW WITH AGENCY

LA Metro explained in their interview that they are cautious with setting prices, despite the high demand for parking along transit lines. They need Board approval to increase prices, and there can often be moral and institutional limits to how high a public agency can set pricing. They have spent a considerable amount in campaigning and providing educational programs to the public on how to use park & ride.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Managing Parking Demand, Secure Facilities and Enforce Rules, Align Park & Ride Planning with Local and Regional Goals

UTAH TRANSIT AUTHORITY (UTA)

This case study looks at the Utah Transit Authority and describes how agreements with outside entities and residents’ resistance to paid parking has impacted the agency’s Park & Ride lots.

AGENCY CHALLENGES

UTA has experienced high demand at specific locations and non-riders will utilize their lots to meet personal parking needs. They have parking garages, where they should recapture their construction costs, but currently cannot get most people to pay for parking where free parking surrounds their lots. This causes spillover and problems with nearby businesses and attractions.

SUMMARY

UTA has Park & Ride lots throughout their Salt Lake region. Lots can best be categorized as free extended parking lots, free day parking only, non-rail park & ride lots, and Latter Day Saints (LDS) Church parking lots, which are executed through an agreement.

KEY TAKEAWAY #1

UTA has tried to implement paid parking at Park & Ride lots to recoup construction costs of parking garages, but have found that even with a $1 charge, people will try to avoid paid parking. This could be linked to the selected locations, which were at low demand to begin with. People often resort to parking on the street or somewhere else nearby with available free parking.

KEY TAKEAWAY #2

UTA has found that agreements work best with churches, where their parking needs are typically restricted to weekends, especially Sundays. This means these lots can serve other uses during their off-peak times such as transit riders during typical commute days (Monday-Friday). The agency currently holds one agreement with the LDS Church, which allows them to use 99 lots.
INTERVIEW WITH AGENCY

UTA provided details about their agreements. Along with establishing a partnership with churches, they also provide a service to Utah Valley University. Students park at the Orem Commuter Station take UTA shuttles to the campus. This station provides free parking and regional rail and bus service. This tends to be a high-demand parking facility. UTA also leases 70 spaces at the Salt Lake Central Station, which provides service to Amtrak and Greyhound customers, along with UTA. UDOT is also an owner of many lots in the area.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Managing Parking Demand, Align Park & Ride Planning with Local and Regional Goals

METRO TRANSIT (MINNESOTA)

This case study looks at Metro Transit and describes how the rider demand and smart parking system impact the transit agency’s Park & Ride lots.

AGENCY CHALLENGES

In 2016, a survey illustrated that 15 of the Park & Ride facilities were at 90% or above capacity. This illustrated a new opportunity for parking management in the Park & Ride network. Additionally, freeway congestion has shown an upward trend from 2008-2016, where park & ride utilization has remained relatively the same.

SUMMARY

Currently, the Minnesota Metro regional Park & Ride network holds 34,172 spaces at 109 park-and-ride facilities and 43 park-and-pool facilities. The Minnesota Metro Transit only owns and operates a portion of these lots, while other agencies and private companies manage the remaining lots. Minnesota Metro developed the Park & Ride Plan, which was adopted in 2010. This Plan has propelled the current park & ride initiatives in the Minnesota Metro region. The agency also found that the Park & Ride utilization is impacted by express bus usage, freeway congestion, motor fuel costs, employment, and the housing market.

KEY TAKEAWAY #1

Annual Park & Ride reports are generated to assess current trends in the regional Park & Ride system and provide performance updates corresponding to the Metropolitan Council long-term planning documents for the area.

KEY TAKEAWAY #2

Minnesota Metro Transit focuses on siting Park & Ride lots that have good visibility from primary roadways or cross-roadways. The lots are also located on the right side of the roadway so arriving commuter can turn right in. The agency has a policy to build lots concurrent with new projects. In addition, the agency aims to preserve areas even if demand is low.
### KEY TAKEAWAY #3

Along with building an efficient Park & Ride transportation service, Metro Transit also provides advertisers with various platforms to reach audiences. Not only are exterior and interior advertisements used, but Metro Transit provides unique marketing opportunities through rail advertising, fully branded interior/exterior systems, and station advertisements.

*Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Managing Parking Demand, Incentivize Target Users, Align Park & Ride Planning with Local and Regional Goals*

### VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT)

*This case study looks at VDOT and describes how partnerships with nearby businesses can provide opportunities for riders and park & ride lots.*

**SUMMARY**

In the state of Virginia there are approximately 300 park & ride lots that are state-owned and privately owned. Lots will provide space for vehicles, and some have designated spaces for bicycles. VDOT provides free ride-matching services to promote carpooling. In Virginia, informal carpooling is an issue.

**KEY TAKEAWAY #1**

Park & Ride spaces should be clearly marked and, where applicable, retailers or other corporations may place their logos on Park & Ride lot signs to inform that they are providing the spaces to users.

**KEY TAKEAWAY #2**

Park & Ride users can add an additional $1,000 / user / year to adjacent retailers. This can develop strong partnerships with nearby retailers as they have a vested interest in Park & Ride success.

*Applicable Strategies in the Park & Ride Toolkit: Incentivize Target Users*

### EDMONTON

*This case study looks at Edmonton and describes how the agency plans to expand park & ride services as the light rail network grows.*

**AGENCY CHALLENGES**

Currently, Edmonton offers Park & Ride facilities at either little to no cost. Facilities are already reaching capacity. Therefore, they would like to open opportunities to increase costs at new and existing facilities.

**SUMMARY**

Edmonton currently has a total 6,365 parking spaces in its Park & Ride network throughout the City. 2,435 of these stalls are paid stalls. Four of their lots offer these reserved spots at $50 per month, whereas one lot provides the service at $40 a month. Four of the remaining lots are free. Edmonton
provides a few key objectives for their Park & Ride program. The agency plans to be cost effective by being mindful of land and construction costs for facilities. Edmonton plans to expand services as the park & ride network grows. This includes integrating technologies and services such as carsharing and ridesharing to support riders.

KEY TAKEAWAY #1

Park & Ride facilities should be a service for residential communities that do not have direct access to transit services. They should be strategically placed to meet the needs of these commuters.

KEY TAKEAWAY #2

Park & Ride can either improve or reduce equity in an area. Edmonton suggests that to improve equity at Park & Ride facilities free or subsidized parking should be provided to disadvantaged groups such as their unemployed, low income, and disabled riders.

Applicable Strategies in the Park & Ride Toolkit: Align Park and Ride Planning with Local and Regional Goals

KING COUNTY

This case study looks at King County Metro and how lease agreements, space for alternate modes, and enforcement impacts the use of park & ride facilities.

AGENCY CHALLENGES

King County Transit regularly enforces their lots, but still finds it challenging to regulate all parking lots. They have various mechanisms in place to see if invalid users are parked. Enforcement is also costly and it takes multiple steps to get a vehicle removed for illegally parking in a lot.

SUMMARY

There are around 150 park & ride lots that are available in the King County Metro area. These lots are owned by both public agencies and private entities. Park & Ride lots with private firms are established through the Park by Transit Program, which establishes agreements between Diamond Parking and property owners to sell permits to park & ride users. King County Metro lots reserve spaces for carshare services and for carpools to enhance their services. They typically implement these strategies at lots that are 90%, or above, capacity. They have enforcement staff, who will patrol lots once a day. King County Transit provides parking discounts for low-income riders.

KEY TAKEAWAY #1

Through the Diamond Partnership, property owners with vacant spaces are eligible to create monthly Park & Ride permit agreements with costumers.

KEY TAKEAWAY #2

King County Metro has found that providing additional services at high-volume lots is effective. They currently have food services at the Northgate Transit Center.
KEY TAKEAWAY #3

In the past, King County has found it challenging to gauge drop off / pick up demands. Their goal is to do a better job of studying these needs to designate these areas at appropriate lots.

INTERVIEW WITH AGENCY

King County Transit is experimenting with new strategies at their Park & Ride lots. At the Northgate Transit Center, they have newly implemented carsharing as a pilot program. They are working with developers to determine what is the right amount of parking to meet both building and Park & Ride needs. The King County Right Size Parking Calculator can help developers determine these numbers.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Secure Facilities and Enforce Rules, Incentivize Target Users

DENVER REGIONAL TRANSPORTATION DISTRICT (RTD)

This case study looks at Denver Regional Transportation District’s innovative approach to parking technology and how it impacts the agency’s Park & Ride lots.

AGENCY CHALLENGES

Denver RTD faces security, enforcement, and capacity issues like most park & ride lots. They take a proactive approach to mitigating these issues through the issue of technology and expanded resources.

SUMMARY

Denver RTD has implemented various technologies to support their over 70 park & ride facilities. This includes cellular phone technology to provide real-time bus schedules. They provide automated pay stations that accept various forms of payment. Geographic Information Systems (GIS) is used to locate the residence status of parked vehicles based on their license plates. This integrates with cameras and computer technology to interpret license plates numbers. One-half of RTD lots have cameras and the rest have real-time enforcement. Denver RTD also provides performance monitoring and reporting to keep an updated database on their facilities.

KEY TAKEAWAY #1

Cameras can serve as a real-time enforcement strategy. This allows RTD to take a proactive approach to enforcement and investigate customer service complaints, ADA issues, liability claims, and security concerns. Cameras can also reduce manpower requirements.

KEY TAKEAWAY #2

Additional services can be applied to popular park & ride lots, especially when capacity is reached. These services may include carshare, carpooling, and food services.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Secure Facilities and Enforce Rules
SAN JOAQUIN RTD

This case study looks at San Joaquin RTD to examine how agency partnerships, leasing agreements, and monthly data capture impacts the agency’s Park & Ride facilities.

AGENCY CHALLENGES

San Joaquin RTD relies on leasing agreements to establish parking facilities in the area. They have a limited budget for contracts, so they need to think carefully about when to use leasing agreements. Retailers will also sometimes complain that riders are occupying their ideal retail parking spaces. Enforcement and security are typically not issues, with the exception of the Lodi parking lot.

SUMMARY

San Joaquin RTD has a Park & Ride network of 11 facilities that are established through agency owned property, agency partnerships, and privately-owned land. They develop MOUs with retail owners, churches, and the agencies to lease parking spaces. Parking typically costs about $3.75-$5 per space.

KEY TAKEAWAY #1

Conducting monthly counts at the Park & Ride facilities provides the agency with an understanding of the average demand. This can also help justify funding for Park & Ride facilities.

KEY TAKEAWAY #2

The agency uses special striping and logos to delineate their spaces in shared lots. People typically obey this signage and striping, making enforcement not an issue.

INTERVIEW WITH AGENCY

San Joaquin RTD shared that churches can make the best partners due to their limited demand for parking on the weekdays. San Joaquin RTD is looking to expand their Park & Ride network and pair this with expanded transit and commuter service.

Applicable Strategies in the Park & Ride Toolkit: Align Park & Ride Planning with Local and Regional Goals

WASHINGTON STATE DOT – MAXIMIZING EFFICIENCY

Washington State DOT prepared a Park-and-Ride Study focused on maximizing efficiency at overcrowded locations.

AGENCY CHALLENGES

The purpose of this project is to provide the Washington State Department of Transportation (WSDOT), King County Metro Transit, and Sound Transit with more detailed information on the use of 17 of the busiest park and ride facilities in the Central Puget Sound Region. These Park & Ride lots, like a large fraction of lots across the region, are currently operating at or near capacity. The agencies would like to obtain detailed information on their use to inform potential parking management strategies in the future. In
particular, the agencies’ long-term objective is to eventually implement strategies to increase the number of people served by the limited parking spaces.

SUMMARY

Two empirical data collection efforts were performed. The first was an on-site audit of the existing use of 10 of the 17 facilities. During this audit, field data collectors visited each location to measure vehicle (and person) entries and exits to these facilities. The second data collection effort was a user intercept survey administered both in-person at all 17 lots and electronically to the set of registered vanpool users at these facilities and those who could not complete the survey on site. The survey collected more detailed information from individual Park & Ride users, including: trip purpose, origin-destination information, mode of entry and exit, and reasons for using Park & Rides.

KEY TAKEAWAY #1

Having Park & Ride data affords the WSDOT, King County Metro Transit, and Sound Transit with information on parking lot operation. The database can be referenced to establish effective management strategies.

KEY TAKEAWAY #1

First, it appears that single-occupant vehicles tend to dominate parking spaces at these facilities. While this result is not unexpected, the empirical data provide a clear justification to implement strategies designed to improve the efficiency per person of parking spaces at these lots.

KEY TAKEAWAY #2

Second, people parking at the Park & Ride facilities tend to use the lots for transit purposes—very little non-transit use was noted. Of the transit uses, fixed-route transit (such as bus or train service) was dominant, although at several lots heavy carpool or vanpool use was noted.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities

WASHINGTON STATE DOT – RIDERSHIP FORECASTING

Washington State DOT prepared a Park & Ride System plan that incorporated proactive forecasting and siting into planning. Travel forecast models were used to forecast future demand for Park & Ride assets using measured variables.

AGENCY CHALLENGES

Washington State DOT faced challenges incorporating Park & Ride systems into the Ridership Forecasting Report.

SUMMARY

The 2015 ST model version relies on a matrix estimation process for the development of base-year trip tables that is based on using a seed matrix with a high number of non-zero cells. The process includes seeding of counts on appropriate segments to capture potential demand at each Park & Ride facility.
These considerations, together with the fact that existing Park & Ride facilities are adequately represented throughout the region provide a good database from which to calculate access shares.

KEY TAKEAWAY #1

Park & Ride lots are an integral piece of a successful transit system and the impact they have on ridership should be utilized in development of all ridership forecasting.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities

MICHIGAN STATE DOT WITH MEIJER SUPERCENTER STORES

Michigan DOT collaborated with Meijer supercenter stores to create additional outlets for carpoolers. For example, one Meijer stores allocated 50 spaces for Park & Ride use, which MDOT marked as potential Park & Ride spaces. In return, MDOT added signs for Meijer stores on adjacent highways directing drivers to the lots.

AGENCY CHALLENGES

Michigan State DOT was looking to expand its Carpool Parking Lot Program, which began in 1974 with just 11 carpool lots. Acquiring or developing lots, however, was an expensive process.

SUMMARY

Through a partnership with Meijer Stores and general expansion, the system now has 235 carpool parking lots with more than 9000 spaces. The collaboration requires Meijer Supercenter Stores to offer carpool parking in their existing parking lots, and in return Michigan DOT places signs advertising the stores at nearby freeway off-ramps.

KEY TAKEAWAY #1

Partnerships with existing private entities can be an effective method of increasing parking spaces within a park-and-ride system without building any additional capacity.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities

DALLAS DART PILOT PROGRAM CASE STUDY

Dallas DART Pilot program at one station providing free reserved stalls for residents who display a valid resident parking permit on their vehicle.

AGENCY CHALLENGES

Plano’s Parker Road Station consistently reached over 85% capacity during peak periods, and local residents were frustrated that they couldn’t find parking in the facility which was most local to them. In response, DART created a reserved parking system for area residents.

SUMMARY

Standards for Reserved Parking for Service Area Residents
DART offers free reserved parking for service area residents in the following instances only:

- The maximum lot utilization must be at least 85% of available spaces on an average weekday;
- The percent of non-service area vehicles in the lot must exceed 45% of the vehicles parked in the lot;
- DART must have onsite concierge staff at the parking lot on weekdays.

As of April 3, 2014, the only DART park & ride lot which meets the requirements for reserved parking is Parker Road Station in the City of Plano.

**KEY TAKEAWAY #1**

Managing parking demand is an effective way to increase the user-satisfaction of nearby residents.

**KEY TAKEAWAY #2**

Reserved parking can create additional incentive for carpool usage as a means of arrival to the Park & Ride.

**KEY TAKEAWAY #3**

Along with Park & Ride lot utilization, DART performs Crime Prevention Through Environmental Design (CPTED) reports every three years. The analysis provides security assessments and risk ratings to guide amenity, safety, and security updates to the lots.

*Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Managing Parking Demand*

**BART SMART PARKING SYSTEM CASE STUDY**

*BART*- Smart parking systems were installed at Park & Ride facilities at heavy rail stations. These smart parking systems included VMS on a nearby freeway that showed Park & Ride availability and allowed users to reserve Park & Ride spots by phone or Internet.

**AGENCY CHALLENGES**

In the San Francisco Bay Area, parking has recently been at or near capacity at many of the 31 Bay Area Rapid Transit (BART) District stations with parking facilities. Smart parking management technologies may provide a cost-effective tool to address near-term parking constraints at BART transit stations.

**SUMMARY**

This report presents early findings from an application of advanced parking technologies to maximize existing parking capacity at the Rockridge BART station, which was launched in December 2004 in the East San Francisco Bay Area. The smart parking system includes traffic sensors that count the number of vehicles entering and exiting the parking lots at the station. A reservation system allows travelers to reserve spaces by Internet, personal digital assistant (PDA), phone, and cell phone. The real-time information obtained from the sensors and the reservation system is displayed on variable message signs (VMS) (on Highway 24 leading to the station) to alert drivers of parking space availability.
KEY TAKEAWAY #1

Reserved parking is a very attractive attribute to commuters who often park at stations which reach maximum capacity.

KEY TAKEAWAY #2

The largest complaint about Park & Rides on the BART system was that it filled up too early in the morning.

Applicable Strategies in the Park & Ride Toolkit: Maximizing Capacity at Facilities, Managing Parking Demand

CAPITAL METRO (AUSTIN) CASE STUDY

Capital Metro (Austin, TX) has a system of mobility hubs at their Park & Ride rail stations.

AGENCY CHALLENGES

In Austin, roadways are at capacity, so transit improvements are a priority. The agency is focused on creating a system that benefits the diverse population in Central Texas, including those who do not currently take transit.

SUMMARY

The Mobility Hub program for Austin includes thirteen different locations that are each designated as one of three different hub types. Gateway hubs are centrally located within the regional transportation network and have the highest density of mobility options on site. Anchor hubs are important transfer points and terminus locations where riders can make seamless connections to a variety of travel modes. Neighborhood hubs are critical access points for the regional transportation network where most trips within the network begin and end.

KEY TAKEAWAY #1

Categorizing mobility hubs as “Neighborhood,” “Anchor,” or “Gateway” allows for a more standardized system of investments.

KEY TAKEAWAY #2

Mobility Hubs must be developed as a system, not individually. A coordinated system of amenities creates a more tangible incentive for targeted users.

Applicable Strategies in the Park & Ride Toolkit: Incentivize Target Users

RTA (CHICAGO) CASE STUDY

RTA (Chicago) has launched a multi-year marketing campaign to promote usage of Park & Ride and transit in the area. Campaign extends to TV, radio, social media, and digital billboards.
AGENCY CHALLENGES

The Regional Transportation Authority in Chicago faces low transit ridership and general lack of awareness of transit services.

SUMMARY

The transit agencies’ “Ride On.” campaign highlights the benefits and convenience of riding public transit in Cook, DuPage, Kane, Lake, McHenry and Will counties juxtaposed against the challenges drivers face in the nation’s third-most congested region. The ads, developed by Chicago-based Downtown Partners Communications, Inc., will be on cable television, radio, social media, digital billboards throughout the region, and online. They highlight the shared real-life pain points of driving, such as traffic and parking costs, as opposed to the money saving and low-stress experience of more than two million people who ride the nation’s third largest transit system each weekday.

KEY TAKEAWAY #1

Engaging target users with ads highlighting the pain points of driving alone is an effective strategy to promote Park & Ride usage, which is a lower stress and lower cost option.

Applicable Strategies in the Park & Ride Toolkit: Incentivize Target Users

COAST PROGRAM AT UNIVERSITY OF HOUSTON

COAST Program at the University of Houston incentivizes students and employees to use transit and Park & Ride. The goal was to reduce the demand for parking on campus. Park & Ride students paid 35% of full price and received 50% discount on bus/light rail tickets.

AGENCY CHALLENGES

The University of Houston consistently oversells student parking by a factor of 1.7+, and the campus is anticipated to grow. Additionally, Houston is not friendly for alternative transportation, with walkability, bike-ability, and transit scores all falling below 50 out of 100.

SUMMARY

Coogs On Alternative & Sustainable Transportation (COAST) is an integrated program to incentivize student usage of alternative modes of transportation. Launched in the summer of 2016, this program had the goal of reducing demand for parking on campus by 2,000 spaces. By providing discounts for students who carpooled or used transit, COAST worked to make transit the more logical option.

KEY TAKEAWAY #1

Cost is a large factor in commute choices. When driving alone becomes less convenient and costlier than using transit, the choice is simple for students.

KEY TAKEAWAY #2

Student schedules vary and can be extreme. This can make carpooling or the schedules of transit very inconvenient. Oftentimes, driving alone is the only option.
Applicable Strategies in the Park & Ride Toolkit: Create Partnerships with Local Jurisdictions and Private-Sector

**LINKNYC CASE STUDY**

LinkNYC is not currently transit based but could easily be. The program leverages downtown pylons for targeted advertising.

**AGENCY CHALLENGES**

With a large population of transit users, New York struggles to keep users informed of transit options, changes, or delays.

**SUMMARY**

New York City has partnered with LinkNYC to provide more than 2,200 informational kiosks for the use of city residents. When not in use for information, the kiosks display attractive advertisements in densely populated areas.

**KEY TAKEAWAY #1**

Advertising space can be an incentive for private companies to assist with amenities at Park & Ride facilities.

**ADDITIONAL CASE STUDIES TO CONSIDER**

**BAY AREA**

*BART is working with the Metropolitan Transportation Commission (MTC) and Scoop Technologies to incentivize BART users to carpool to the Dublin/Pleasanton station. Since parking at these stations fill early in the morning, carpool vehicles will have a guaranteed parking spot at the station until 10 am.*

**KEY TAKEAWAY**

Collaborating with other companies and agencies can promote and optimize use of Park & Ride facilities.

**CITY OF RENTON**

The City Center Parking Garage reserves over 100 free parking spots in the morning for customers using the Park & Ride services.

**KEY TAKEAWAY**

Partnerships with private parking garages allow for additional overflow for Park & Rides lots.
**Applicable Strategies in the Park & Ride Toolkit: Create Partnerships with Local Jurisdictions and Private-Sector**

**CALGARY**

The regional interest in Transit Oriented Development (TOD) has removed all but 500 of the 1,750 original Park & Ride spots at its Anderson Light Rail Station. This provides space for retail, office, and commercial uses at this suburban site.

**KEY TAKEAWAY**

The intent of this TOD is to make use of off-peak capacity of the station and attract individuals to the site through various mixed-use amenities.

**Applicable Strategies in the Park & Ride Toolkit: Align Park & Ride Planning with Local and Regional Goals**

**SANTA CLARA VALLEY TRANSPORATION AUTHORITY**

Ohlone-Chynoweth Commons is a 194-unit medium- and high-density affordable housing and mixed-use development project. It was built along the Guadalupe light-rail line in San Jose, California on an underused 1,100 spot Park & Ride lot. The project was established under the coordination of the Santa Clara Valley Transportation Authority and the Eden Housing Inc.

**KEY TAKEAWAY**

Understanding the utilization of Park & Ride lots and recognizing community needs allows for public and private partnerships to form and build useful development projects.

**Applicable Strategies in the Park & Ride Toolkit: Align Park & Ride Planning with Local and Regional Goals**

**LAKETRAN CLEVELAND**

The “Adventure of Commuting” is a marketing video for the Laketran Park & Ride service. This information video identifies the benefits and ways to access the Laketran service.

**KEY TAKEAWAY**

Using various mediums of marketing, a broader audience can be reached which increases awareness of the Park & Ride service and grows ridership. Certain platforms such as video advertising suggest that the service is up to date and efficient.
PORTSMOUTH UNITED KINGDOM

With the proximity of Portsmouth to London, the amount of commuters using various transportation systems presents a large market for advertising. Some of these marketing platforms include outdoor graphics, on departure screens for transit, and terminal displays on Park & Ride spots.

KEY TAKEAWAY

Optimizing Park & Ride services can provide advertising opportunities that can not only stimulate the local economy but also use these marketing relationships to fund Park & Ride operation and maintenance.

Applicable Strategies in the Park & Ride Toolkit: Create Partnerships with Local Jurisdictions and Private-Sector

CITY AND COUNTY OF HONOLULU

The City and County of Honolulu has partnered with the People’s Open Market to provide Park & Ride space on weekends for use by the market.

KEY TAKEAWAY

On the weekends, Park & Ride space can be used for activities which benefit the community. This, in turn, can create community awareness of Park & Ride locations.

Applicable Strategies in the Park & Ride Toolkit: Create Partnerships with Local Jurisdictions and Private-Sector

METROPOLITAN COUNCIL MINNESOTA

In 2010, the Metro Council in Minneapolis approved the 2030 Park-and-Ride Plan: a comprehensive master plan for Park & Ride development throughout the system.

KEY TAKEAWAY

Park & Ride Master Plans create the opportunity to evaluate existing facilities, identify areas of need, and plan future changes and additions to an agency’s Park & Ride network which will address needs and expand upon successes.

Applicable Strategies in the Park & Ride Toolkit: Create Partnerships with Local Jurisdictions and Private-Sector
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PORTSMOUTH UK

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This page has been intentionally left blank.
The following pages contain the Introduction, Key Findings, and Park & Ride sections of the 2018 Park & Ride/Commute Survey prepared for SANDAG.

The link to the full survey can be found here: https://www.sandag.org/uploads/publicationid/publicationid_4549_24879.PDF
INTRODUCTION

The San Diego Association of Governments (SANDAG) and the Riverside County Transportation Commission (RCTC) are the transportation planning agencies for San Diego County and Riverside County, respectively. The agencies’ primary function is to plan and invest in the transportation system so that it best meets the mobility needs of their region—now and in the future. By better integrating the regions’ freeway, transit, and road networks, linking land-use and transportation planning, and strategically investing in infrastructure improvements where they are most needed, SANDAG and RCTC help to promote a sustainable, high quality of life.

MOTIVATION FOR STUDY

To successfully fulfill their planning roles, both SANDAG and RCTC must have up-to-date information regarding the travel behaviors of residents and others who place demands on the transportation infrastructure and transit systems in their respective regions. Although the need for travel-related information applies to residents in general, it is especially true for employees who commute for their jobs, as this subgroup accounts for a large percentage of the trips and vehicle miles traveled (VMT) in both regions. By profiling employees’ commute characteristics (frequency, mode, distance, destination, and timing) and estimating the prevalence of teleworking and use of alternative modes, the study described in this report will help SANDAG and RCTC better plan and manage the regions’ transportation and transit systems.

In addition to the general goal of profiling employee commute behavior, this study was also designed to help inform the agencies’ Transportation Demand Management (TDM) and Park & Ride programs. Understanding employees’ interest and willingness to use alternative modes, the conditions/factors that would make them more likely to use alternative modes in the future, and the amenities and improvements that they desire for Park & Ride lots is key to estimating the latent market/potential growth for alternative modes in general, and rideshare in particular. It will also help SANDAG and RCTC better manage existing Park & Ride lots and locate new lots where they will be most effective.

Finally, although the study gathered the aforementioned information for commuters in general, both SANDAG and RCTC were particularly interested in the subgroup of commuters that live and work in different counties. Known as interregional commuters, these employees typically endure longer commutes with respect to both distance and time, often travel congested corridors, and are thus thought to be prime candidates for alternative modes including transit and rideshare. For the purposes of this study, the interregional commuters of interest included San Diego residents who travel outside of the county for their employment, as well as Western Riverside County residents who commute to San Diego or other counties for their jobs.

OVERVIEW OF METHODOLOGY

For a full discussion of the research methods and techniques used in this study, turn to Methodology on page 97. In brief, the survey was administered in two phases to a random sample of 4,337 employees who reside in San Diego County or Western Riverside County. During Phase 1, all qualified employees were eligible to participate in the survey regardless of their commute destination. Phase 2 involved screening to identify and oversample for interregional commuters. The survey followed a mixed-method design that employed multiple recruiting methods (telephone and email) and multiple data collection meth-

1. Park & Ride lots serve carpools, vanpools, and transit.
ods (telephone and online). Administered in English and Spanish between February 23 and May 3, 2018, the average interview lasted 18 minutes.

To accommodate SANDAG’s and RCTC’s interest in obtaining reliable parameter estimates for the regions as a whole, as well as within the various subregions identified in Figures 1 and 2, the study employed a strategic oversample by subregion to balance the statistical margins of error associated with estimates at the subregion level. Oversampling was also used to increase the number of interregional commuters in the sample, as the incidence rate for this type of commuter is generally quite low. To adjust for the oversampling, the raw data were weighted according to American Community Survey (ACS) estimates of the number of employed persons in each subregion (by age) prior to analyses and presentation. Interregional commuters were also weighted down to match their natural proportions by subregion based on the findings of the Phase 1 data collection effort. The results presented in this report are the weighted results, which are representative for the San Diego and Riverside regions combined, by county, as well as within each subregion.

**FIGURE 1  SAN DIEGO SUBREGIONS MAP**

![San Diego Subregions Map](image)
ORGANIZATION OF REPORT  This report is designed to meet the needs of readers who prefer a summary of the findings as well as those who are interested in the details of the results. For those who seek an overview of the findings, the section titled **Key Findings** is for you. It provides a summary of the most important factual findings of the survey and a discussion of their implications. For the interested reader, this section is followed by a more detailed question-by-question discussion of the results from the survey by topic area (see **Table of Contents**), as well as a description of the methodology employed for collecting and analyzing the data. And, for the truly ambitious reader, the questionnaire used for the interviews is contained at the back of this report (see **Questionnaire** on page 104) and a complete set of crosstabulations for the survey results is contained in Appendix A.

ACKNOWLEDGMENTS  True North thanks SANDAG and RCTC for the opportunity to assist the agencies in this important study. The collective expertise, local knowledge, and insight provided by SANDAG and RCTC staff improved the overall quality of the research presented here.

DISCLAIMER  The statements and conclusions in this report are those of the authors (Dr. Timothy McLarney and Richard Sarles) at True North Research, Inc. and not necessarily those of SANDAG or RCTC. Any errors and omissions are the responsibility of the authors.

ABOUT TRUE NORTH  True North is a full-service survey research firm that is dedicated to providing public agencies with a clear understanding of the values, opinions, priorities and behaviors of their residents and customers. Through designing and implementing scientific sur-
veys, as well as expert interpretation of the findings, True North helps its clients to move with confidence when making strategic decisions in a variety of areas—such as planning, policy evaluation, performance management, organizational development, establishing fiscal priorities, and developing effective public information campaigns. During their careers, Dr. McLarney (President) and Mr. Sarles (Principal Researcher) have designed and conducted over 1,000 survey research studies for public agencies, including more than 500 studies for councils of government, transportation planning agencies, municipalities, and special districts.
As noted in the Introduction, this study was designed to provide up-to-date and reliable information to SANDAG and RCTC regarding the commute behaviors of employees, their interest and willingness to use alternative modes for their commute, the conditions/factors that would make them more likely to use alternative modes in the future, and the amenities and improvements that they desire for Park & Ride lots to help inform the agencies’ Transportation Demand Management (TDM) and Park & Ride programs. Whereas subsequent sections of this report are devoted to conveying the detailed results of the survey, in this section we attempt to “see the forest through the trees” by noting how the collective results of the survey answer some of the key questions that motivated the research.

What are the commute characteristics of employees in the study region? Across the study region (San Diego County and Western Riverside County), nearly nine-in-ten employees (88%) commute to a work destination outside of their home, with the average one-way commute to work being 19.77 miles and taking 33.57 minutes to complete. Among these commuters and as shown in Table 1, by far the most common primary mode for their commute was driving alone in a car, truck, SUV or van (84%). Ridesharing via carpool (5%), vanpool (<1%), and on-demand rideshare services such as Uber, Lyft, or Waze Carpool (<1%) accounted for approximately 6% of commutes, while a similar percentage was represented by transit services including a local bus (2%), express bus (<1%), train (2%), and the San Diego Trolley (1%). Active transportation modes (biking, walking, jogging, running) were mentioned by just over 2% of employees as their primary method of commuting to work. All other modes were mentioned by less than 2% of respondents, collectively.

### Table 1 PRIMARY COMMUTE MODE BY OVERALL, REGION & INTERREGIONAL COMMUTE STATUS

<table>
<thead>
<tr>
<th>Mode</th>
<th>Overall</th>
<th>San Diego County</th>
<th>Western Riverside County</th>
<th>Not Interregional Commuter</th>
<th>Out of San Diego County</th>
<th>Out of Riverside County Southbound</th>
<th>Out of Riverside County Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive alone in a car, truck, SUV, or van</td>
<td>83.9</td>
<td>84.4</td>
<td>82.9</td>
<td>84.9</td>
<td>82.3</td>
<td>77.4</td>
<td>78.7</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>0.9</td>
<td>1.0</td>
<td>0.5</td>
<td>0.9</td>
<td>0.2</td>
<td>1.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Carpool (ride together 2 to 4 people)</td>
<td>5.1</td>
<td>4.6</td>
<td>6.1</td>
<td>4.6</td>
<td>0.6</td>
<td>11.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Vanpool (ride together with 5 to 15 people)</td>
<td>0.7</td>
<td>0.5</td>
<td>1.1</td>
<td>0.3</td>
<td>3.5</td>
<td>5.9</td>
<td>1.4</td>
</tr>
<tr>
<td>On-demand rideshare service like Uber, Lyft, or Waze Carpool</td>
<td>0.6</td>
<td>0.7</td>
<td>0.4</td>
<td>0.7</td>
<td>0.2</td>
<td>0.9</td>
<td>-</td>
</tr>
<tr>
<td>Pooled rideshare service (Uber Pool, Lyft Line)</td>
<td>0.2</td>
<td>0.4</td>
<td>-</td>
<td>0.3</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zipcar</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Taxi</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Employer-provided shuttle/bus</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
<td>0.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Local bus</td>
<td>2.4</td>
<td>2.2</td>
<td>2.8</td>
<td>2.7</td>
<td>2.6</td>
<td>-</td>
<td>1.4</td>
</tr>
<tr>
<td>Express bus/premium bus/Rapid/CommuterLink</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>1.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Train: Metrolink/Metro Rail/COASTER/Amtrak</td>
<td>1.8</td>
<td>1.2</td>
<td>3.3</td>
<td>0.9</td>
<td>5.0</td>
<td>-</td>
<td>9.1</td>
</tr>
<tr>
<td>San Diego Trolley</td>
<td>1.2</td>
<td>1.8</td>
<td>0.0</td>
<td>1.4</td>
<td>-</td>
<td>0.5</td>
<td>-</td>
</tr>
<tr>
<td>SPRINTER</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other public transit</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>-</td>
</tr>
<tr>
<td>Bike</td>
<td>1.4</td>
<td>1.6</td>
<td>1.0</td>
<td>1.7</td>
<td>-</td>
<td>0.1</td>
<td>-</td>
</tr>
<tr>
<td>Walk/jog/run</td>
<td>0.8</td>
<td>0.6</td>
<td>1.2</td>
<td>0.9</td>
<td>-</td>
<td>0.2</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>0.2</td>
<td>0.3</td>
<td>0.1</td>
<td>0.1</td>
<td>5.9</td>
<td>0.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>0.1</td>
<td>0.1</td>
<td>-</td>
<td>0.1</td>
<td>1.4</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

2. These percentages reflect the mode respondents indicated they use most often when commuting to work. For respondents who used multiple modes, they were asked to report on the mode they use for the longest portion of their commute.

3. Other responses primarily consisted of flying via airplane or helicopter. Additional responses included being an Uber or Lyft driver or citing multiple commute modes instead of the one used most often.
With respect to work destination, nearly all employees who reside in San Diego County (97%) reported that they also work in San Diego County. Less than 1% of employees commute to a work destination in Los Angeles County, Orange County, Riverside County, or other location, respectively.

The patterns are much different among employees who reside in Western Riverside County. Being an area that is rich in affordable housing (comparatively speaking) but lacking the job markets found in neighboring counties, Riverside County exports a sizeable percentage of its workforce on a daily basis to work outside of the County. Overall, just six-in-ten employees (61%) who reside in Western Riverside County commute to a work destination within the County. The remainder commute to Orange County (12%), San Bernardino County (11%), San Diego County (8%), Los Angeles County (7%), or other destinations (2%) for their work.  

**Do employees' commute characteristics vary substantially by destination?** Commute distance, duration, and primary mode choice all varied by commute destination (intraregional or interregional), as well as by type of interregional commuter. With respect to distance and duration, interregional travelers reported an average one-way commute distance nearly three times as long as their intraregional counterparts (42.4 miles vs. 15.4 miles), and more than twice as long in terms of average duration (64.6 minutes vs. 27.6 minutes). Among interregional commuters, those traveling into/out of San Diego County reported the longest average trip lengths and durations (see Figure 3).

**FIGURE 3 MEAN COMMUTE DISTANCE & TIME**

<table>
<thead>
<tr>
<th>Respondents That Commute Outside Home</th>
<th>Mean Commute Distance in Miles</th>
<th>Mean Commute Time in Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>19.8</td>
<td>43.2</td>
</tr>
<tr>
<td>San Diego County</td>
<td>33.6</td>
<td>64.6</td>
</tr>
<tr>
<td>Western Riverside County</td>
<td>29.1</td>
<td>42.4</td>
</tr>
<tr>
<td>Yes</td>
<td>27.0</td>
<td>15.4</td>
</tr>
<tr>
<td>No</td>
<td>27.6</td>
<td>19.8</td>
</tr>
<tr>
<td>Out of San Diego County</td>
<td>55.8</td>
<td>52.2</td>
</tr>
<tr>
<td>Out of Riverside County Southbound</td>
<td>69.5</td>
<td>71.6</td>
</tr>
<tr>
<td>Out of Riverside County Other</td>
<td>61.9</td>
<td>37.7</td>
</tr>
</tbody>
</table>

---

4. It is also worth noting that the percentages reported in this section for interregional commuters include teleworkers, which means that—among those who commute outside of the home—the prevalence of interregional commuting is somewhat higher.

5. For this study, three types of interregional commuters were of interest: those who reside in San Diego County and commute out of the County for their employment, those who reside in Western Riverside County and commute southbound out of the County for their employment, and those who live in Western Riverside County and commute out of the County in a direction ‘other’ than southbound.
In addition to enduring longer commutes in terms of both time and distance, interregional commuters were also more likely than intraregional commuters to report using alternative modes as their primary method of traveling to/from work. As previously shown in Table 1, interregional commuters who reside in Western Riverside County and commute south into/through San Diego County were the most likely to report carpooling (11%), vanpooling (6%), and using an express bus (2%) for their commute. Their counterparts who commute out of Western Riverside County west or north were the most likely to report using a train (9%) for their commute, and also exhibited comparatively high rates of carpooling (8%). San Diego-based interregional commuters, on the other hand, reported moderately high rates for vanpooling (4%), using a train (5%), and ‘other’ modes not represented (6%) for their commute.

For more details on the commute characteristics of those who live and work in the study region, see Commute Status on page 21.

**Why do commuters select a particular primary mode for their commute?** Among those who drive alone to work in the study region, convenience was the most common reason mentioned for why they select their primary commute mode (30%), followed by timing/scheduling for their work (17%), it is the fastest option (12%), and it provides flexibility (11%). The reasons offered by those who use alternative modes were generally quite different, with 32% mentioning cost/being cheaper as the primary reason they use an alternative mode for their commute. Other top reasons mentioned for using an alternative mode for their commute included convenience (28%), avoiding traffic (13%), and that it is the fastest option (10%).

**FIGURE 4 MOST IMPORTANT FACTORS IN CHOOSING PRIMARY COMMUTE MODE BY DRIVE ALONE VS. ALL OTHERS**
Which alternative modes would work best for drive-alone commuters? When employees who currently drive alone to work were asked to choose an alternative mode that would work best for their commute, one-quarter (26%) preferred an on-demand rideshare service like Uber, Lyft or Waze Carpool, one-in-five (20%) preferred a traditional carpool, and 3% selected vanpool. Nearly one-third of respondents selected a form of public transit including a train (13%), local bus (7%), San Diego Trolley (7%), express bus such as Rapid or CommuterLink (5%), and SPRINTER (1%). Active transportation modes including a bike (7%) and walking, jogging or running (2%) were preferred by nearly one-in-ten solo drivers as their preferred alternative commute method.

![Figure 5 Preferred Alternative Commute Mode Among Those Who Drive Alone](image)

Here again, however, we see important differences between intraregional and interregional commuters (see Table 2 on the next page). At a general level, interregional commuters were much more likely than intraregional commuters to prefer using a train, carpooling, and vanpooling for their commute. This general pattern, however, does not hold across all types of interregional commuters. Western Riverside County residents who commute into San Diego County for their work showed a distinct preference for carpooling and vanpooling, whereas residents of Western Riverside County who commute to other areas (typically Orange, San Bernardino, and Los Angeles counties) were most likely to prefer using a train. San Diego County residents who commute out of the County for their jobs, meanwhile, preferred using a train or on-demand rideshare services.

6. Pooled vs. non-pooled on-demand rideshare services were not differentiated at Question 10.
### Table 2 Preferred Alternative Commute Mode Among Those Who Drive Alone by Region, Interregional Commuter & Interregional Commute Status

<table>
<thead>
<tr>
<th>Region</th>
<th>Interregional Commuter</th>
<th>Interregional Commute Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>On-demand rideshare service like Uber, Lyft, or Waze Carpool</td>
<td>28.8</td>
<td>20.3</td>
</tr>
<tr>
<td>Carpool</td>
<td>18.8</td>
<td>23.7</td>
</tr>
<tr>
<td>Train such as COASTER, METROLINK, METRO RAIL, or AMTRAK</td>
<td>8.2</td>
<td>22.2</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>7.4</td>
<td>10.9</td>
</tr>
<tr>
<td>Bike</td>
<td>8.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Local bus</td>
<td>7.3</td>
<td>7.4</td>
</tr>
<tr>
<td>San Diego Trolley</td>
<td>9.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Express bus such as Rapid or CommuterLink</td>
<td>4.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Vanpool</td>
<td>2.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Walking, jogging, or running</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>SPRINTER</td>
<td>1.6</td>
<td>0.4</td>
</tr>
</tbody>
</table>

What percentage of drive-alone commuters are willing to consider an alternative mode?

Employees who currently drive alone to work were asked to choose which statement best matches their overall attitude about using their preferred alternative mode at least once per week to commute to work: I would only do it if I had no other options, or I would do it under the right circumstances. Because the second statement allows the respondent to define what they consider the right circumstances, this question is a useful litmus test for identifying employees who are not in the potential market for their preferred alternative mode because they are unwilling to use it at least once per week for their work commute even under the right circumstances.

**Figure 6 Would Use Alternative Mode at Least Once Per Week Under Right Circumstances by Overall, Preferred Alternative Commute Mode, Interregional Commuter & Interregional Commute Status Among Those That Drive Alone**

Overall, 56% of employees who reside in the study region and currently drive alone to work indicated that they would commute to work at least once per week using their preferred alternative mode under the right circumstances, whereas 44% were unwilling to do so unless they had no other options. In general, a willingness to use an alternative mode for their work commute at least once per week was highest for those who preferred active transportation and public transit, interregional commuters, those who reside in Western Riverside County and commute out of the San Diego County.
County for their work in a direction other than southbound, those who work at a location that does not have free parking available, employees over the age of 34, and males (see Figures 6 & 7).

**FIGURE 7 WOULD USE ALTERNATIVE MODE AT LEAST ONCE PER WEEK UNDER RIGHT CIRCUMSTANCES BY FREE PARKING AT WORK SITE, AGE & GENDER**

What factors would make drive alone commuters more likely to use alternative modes? In terms of what would incentivize drive-alone commuters to make the switch to an alternative mode for their work commute at least one day per week, the answers varied depending on their preferred mode.

Among those who indicated *carpooling* or *vanpooling* was their preferred alternative mode, the most impactful factors were: finding people to travel with that have the same schedule/having people they know to carpool with, a guaranteed ride home in case of emergencies or unscheduled overtime, a $50 per month incentive for not driving to and parking at your work site, and being able to get to work in about the same amount of time as driving alone were viewed as the conditions most likely to increase their use of carpooling/vanpooling for their work commute (see Figure 8).

When compared to commuters in general, those who were identified as having the highest potential for conversion to carpooling or vanpooling for their work commute at least once per week (Top Targets) were at least 5% *more* likely to reside in Western Riverside County, have three or more vehicles in their household, have five or more individuals in their household, be female, and work for a government agency (see Table 3).7

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7. Only those variables for which there was a difference of 5% or more in the subgroup results when comparing all commuters with Top Targets are presented in Tables 3-7. Industry and occupation are not shown due to small samples sizes within each industry or occupation group.
Drive-alone commuters who preferred public transit as their alternative mode rated having stations/stops closer to their work and/or home, more frequent transit service, being able to get to work in about the same amount of time as driving alone, and having a convenient way to get from a transit station to their work and home as being the changes most likely to increase their use of public transit for their work commute (see Figure 9).
FIGURE 9  FACTORS INFLUENCING USE OF PUBLIC TRANSIT TO WORK AT LEAST ONCE PER WEEK AMONG THOSE THAT DRIVE ALONE

TABLE 4  DEMOGRAPHIC COMPARISON OF COMMUTERS AND PUBLIC TRANSIT ALTERNATIVE MODE TARGETS

<table>
<thead>
<tr>
<th>Region</th>
<th>All Commuters</th>
<th>Public Transit Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego County</td>
<td>67.9</td>
<td>59.4</td>
</tr>
<tr>
<td>Western Riverside County</td>
<td>32.1</td>
<td>40.6</td>
</tr>
<tr>
<td>Interregional Commuter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16.3</td>
<td>27.4</td>
</tr>
<tr>
<td>No</td>
<td>83.7</td>
<td>72.6</td>
</tr>
<tr>
<td>Interregional Commute Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of San Diego County</td>
<td>2.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Out of Riverside County Southbound</td>
<td>2.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Out of Riverside County Other</td>
<td>11.3</td>
<td>20.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commute Duration in Minutes (Q7)</th>
<th>All Commuters</th>
<th>Public Transit Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>6.4</td>
<td>1.5</td>
</tr>
<tr>
<td>10 to 19</td>
<td>23.8</td>
<td>15.9</td>
</tr>
<tr>
<td>20 to 29</td>
<td>21.1</td>
<td>18.5</td>
</tr>
<tr>
<td>30 to 44</td>
<td>20.2</td>
<td>22.7</td>
</tr>
<tr>
<td>45 to 60</td>
<td>17.7</td>
<td>24.7</td>
</tr>
<tr>
<td>More than 60</td>
<td>10.2</td>
<td>16.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Working Vehicles in Hsld (QD1)</th>
<th>All Commuters</th>
<th>Public Transit Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>16.7</td>
<td>16.9</td>
</tr>
<tr>
<td>Two</td>
<td>38.9</td>
<td>45.8</td>
</tr>
<tr>
<td>Three or more</td>
<td>41.0</td>
<td>36.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (QD4)</th>
<th>All Commuters</th>
<th>Public Transit Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 to 24</td>
<td>14.7</td>
<td>7.4</td>
</tr>
<tr>
<td>25 to 34</td>
<td>25.4</td>
<td>26.1</td>
</tr>
<tr>
<td>35 to 44</td>
<td>21.0</td>
<td>22.6</td>
</tr>
<tr>
<td>45 to 54</td>
<td>19.7</td>
<td>25.6</td>
</tr>
<tr>
<td>55 to 64</td>
<td>13.2</td>
<td>12.7</td>
</tr>
<tr>
<td>65 and older</td>
<td>3.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Type (QD8)</th>
<th>All Commuters</th>
<th>Public Transit Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private sector</td>
<td>53.5</td>
<td>55.3</td>
</tr>
<tr>
<td>Gov agency</td>
<td>22.1</td>
<td>20.1</td>
</tr>
<tr>
<td>Not-for-profit org</td>
<td>14.0</td>
<td>19.4</td>
</tr>
</tbody>
</table>

When compared to commuters in general, those who were identified as having the highest potential for conversion to public transit for their work commute at least once per week (Top Targets) were at least 5% more likely to reside in Western Riverside County, be an interregional commuter, commute out of Riverside County for the work in a direction other than southbound, have commute durations in excess of 44 minutes, have two working vehicles in the home, be between 45 and 54 years of age, and work for a not-for-profit organization (see Table 4).

Solo drivers who indicated that their preferred alternative mode for their work commute was an on-demand rideshare service like Uber, Lyft, or Waze Carpool were cost sensitive, citing cheaper prices/discounts for service and a $50 per month incentive for not driving to and parking at their work site as being the changes most likely to increase their use of an on-demand
rideshare service for their work commute, followed by a guaranteed ride home in case of emergencies or unscheduled overtime, and being able to get to work in about the same amount of time as driving alone (see Figure 10).

**Figure 10** Factors Influencing Use of On-Demand Rideshare Service to Work at Least Once per Week Among Those That Drive Alone

![Bar chart showing factors influencing use of on-demand rideshare service to work at least once per week among those that drive alone.]

**Table 5** Demographic Comparison of Commuters and Rideshare Alternative Mode Targets

<table>
<thead>
<tr>
<th>Region</th>
<th>All Commuters</th>
<th>Rideshare Top Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego County</td>
<td>67.9</td>
<td>78.8</td>
</tr>
<tr>
<td>Western Riverside County</td>
<td>32.1</td>
<td>21.2</td>
</tr>
<tr>
<td>Interregional Commuter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16.3</td>
<td>10.1</td>
</tr>
<tr>
<td>No</td>
<td>83.7</td>
<td>89.9</td>
</tr>
<tr>
<td>Commute Duration in Minutes (Q7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10</td>
<td>6.4</td>
<td>4.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>23.8</td>
<td>22.4</td>
</tr>
<tr>
<td>20 to 29</td>
<td>21.1</td>
<td>28.6</td>
</tr>
<tr>
<td>30 to 44</td>
<td>20.2</td>
<td>24.3</td>
</tr>
<tr>
<td>45 to 60</td>
<td>17.7</td>
<td>10.3</td>
</tr>
<tr>
<td>More than 60</td>
<td>10.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Working Vehicles in Hsld (QD1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>16.7</td>
<td>18.0</td>
</tr>
<tr>
<td>Two</td>
<td>38.9</td>
<td>45.2</td>
</tr>
<tr>
<td>Three or more</td>
<td>41.0</td>
<td>36.3</td>
</tr>
<tr>
<td>Number of People 16+ in Hsld (QD3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>14.2</td>
<td>12.8</td>
</tr>
<tr>
<td>Two</td>
<td>47.0</td>
<td>58.2</td>
</tr>
<tr>
<td>Three</td>
<td>18.3</td>
<td>18.6</td>
</tr>
<tr>
<td>Four</td>
<td>10.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Five or more</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Age (QD4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 24</td>
<td>14.7</td>
<td>0.8</td>
</tr>
<tr>
<td>25 to 34</td>
<td>25.4</td>
<td>28.1</td>
</tr>
<tr>
<td>35 to 44</td>
<td>21.0</td>
<td>34.5</td>
</tr>
<tr>
<td>45 to 54</td>
<td>19.7</td>
<td>15.2</td>
</tr>
<tr>
<td>55 to 64</td>
<td>13.2</td>
<td>13.9</td>
</tr>
<tr>
<td>65 and older</td>
<td>3.1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

When compared to commuters in general, those who were identified as having the highest potential for conversion to an on-demand rideshare service for their work commute at least once per week (Top Targets) were at least 5% more likely to reside in San Diego County, not be an interregional commuter, have a commute duration of 20 to 29 minutes, have two working vehicles and two individuals of driving age in the household, and be between 35 and 44 years of age (see Table 5).
With respect to active transportation, those who considered biking to work as their preferred alternative mode were most apt to cite a $50 per month incentive for not driving to and parking at their work site, better/safer roads and dedicated bike lines for most of their route to work, and a guaranteed ride home in case of emergencies or unscheduled overtime to be the conditions most likely to get them to use that alternative mode for their work commute (see Figure 11). Those who preferred to walk, jog, or run to work as their alternative commute mode found a $50 per month incentive for not driving to and parking at their work site to be the condition most likely to get them to use that alternative mode for their work commute, followed by a guaranteed ride home in case of emergencies or unscheduled overtime, and being able to get to work in about the same amount of time as driving alone (see Figure 12).

**Figure 11 Factors Influencing Biking to Work at Least Once per Week Among Those That Drive Alone**

**Figure 12 Factors Influencing Walking, Jogging, or Running to Work at Least Once per Week Among Those That Drive Alone**
When compared to commuters in general, those who were identified as having the highest potential for conversion to active transportation for their work commute at least once per week (Top Targets) were at least 5% more likely to reside in San Diego County, not be an interregional commuter, have commute distances of less than 5 miles and durations of less than 20 minutes, have at least three working vehicles in their household, have at least five members of their household, be under the age of 25, male, work at mid-sized companies (20 to 99 employees), and work in the private sector.

For more on the size and demographic makeup of the potential markets for alternative modes among commuters who currently drive solo, see Market Target Summary on page 60 and Demographic Comparison of Commuters and Market Targets on page 63.

How frequently are commuters using Park & Ride lots? Although 16% of commuters in the study area primarily use an alternative mode for their work commute, it appears that comparatively few are making regular use of Park & Ride lots for their commute.

Among all commuters, approximately 3% indicated they used a local Park & Ride lot weekly during the preceding 12 month period, 2% one to three times per month, 3% once every two to three months, and 9% estimated they used a local Park & Ride lot one to three times during the preceding year. The remainder (83%) offered that they did not use a local Park & Ride lot during the period of interest (see Figure 13). Even among those subgroups that expressed the highest frequency of using Park & Ride lots (those who use carpool and public transit, and interregional commuters), fewer than one-in-five reported that they use a local Park & Ride lot on a weekly basis (see Figure 14).

| TABLE 6 DEMOGRAPHIC COMPARISON OF COMMUTERS AND ACTIVE TRANSPORTATION ALTERNATIVE MODE TARGETS |
|-------------------------------|-----------------|-----------------|
| Region                        | All Commuters   | Active Top Targets |
| San Diego County              | 67.9            | 80.9            |
| Western Riverside County      | 32.1            | 19.1            |
| Interregional Commuter        |                 |                 |
| Yes                           | 16.3            | 2.0             |
| No                            | 83.7            | 98.0            |
| Commute Distance in Miles (Q6)|                 |                 |
| Less than 5                   | 16.9            | 64.4            |
| 5 or more                     | 82.5            | 35.6            |
| Commute Duration in Minutes (Q7)|               |                 |
| Less than 10                  | 6.4             | 38.5            |
| 10 to 19                      | 23.8            | 42.3            |
| 20 to 29                      | 21.1            | 9.3             |
| 30 to 44                      | 20.2            | 7.3             |
| 45 to 60                      | 17.7            | 2.5             |
| More than 60                  | 10.2            | 0.1             |
| Working Vehicles in Hsld (QD1)|                 |                 |
| One                          | 16.7            | 14.1            |
| Two                          | 38.9            | 32.6            |
| Three                        | 41.0            | 53.3            |
| Number of People in Hsld (QD2)|                 |                 |
| One                          | 11.7            | 13.8            |
| Two                          | 30.0            | 26.5            |
| Three                        | 19.1            | 14.8            |
| Four                         | 19.4            | 17.2            |
| Five or more                 | 16.8            | 23.4            |
| Age (QD4)                    |                 |                 |
| 16 to 24                      | 14.7            | 25.8            |
| 25 to 34                      | 25.4            | 19.4            |
| 35 to 44                      | 21.0            | 23.6            |
| 45 to 54                      | 19.7            | 20.8            |
| 55 to 64                      | 13.2            | 8.3             |
| 65 and older                  | 3.1             | 0.9             |
| Gender (QD9)                  |                 |                 |
| Male                         | 50.6            | 62.7            |
| Female                       | 49.4            | 37.3            |
| Employees at Primary Workplace (QD7)|         |                 |
| 1 to 4                        | 7.5             | 6.4             |
| 5 to 9                        | 7.5             | 8.6             |
| 10 to 19                      | 11.3            | 23.7            |
| 20 to 49                      | 14.8            | 21.5            |
| 50 to 99                      | 12.2            | 10.5            |
| 100 or more                   | 40.5            | 27.4            |
| Business Type (QD8)           |                 |                 |
| Private sector                | 53.5            | 61.6            |
| Gov agency                    | 22.1            | 19.8            |
| Not-for-profit org            | 14.0            | 11.4            |

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8. Due to the comparatively small percentage of commuters who preferred a form of active transportation for their work commute, all forms of active transportation were combined when identifying market targets.
What conditions would increase commuters’ use of Park & Ride lots? Although the most common reasons cited for not using a Park & Ride lot were no need (30%) and no particular reason (26%), the study found that offering amenities and improvements at Park & Ride lots was attractive to some commuters. Having on-site security personnel and security cameras, frequent transit service and real-time transit arrival and departure information, and easy access to freeways and carpool/transit lanes were the features that respondents indicated were most likely to positively influence their use of Park & Ride lots for their work commute (see Figure 15). At least one-third of respondents also indicated that having convenient drop-off/pick-up lanes to avoid delays, that the lot can be easily seen from surrounding streets and properties, and offering a variety of on-site services including dry cleaning, grocery pick-up, day care services, storage lockers, and food and retail shops would make them at least somewhat more likely to use a Park & Ride lot in the future for their commute.
At the other end of the spectrum, fewer respondents found the presence of electric vehicle charging stations, covered bike lockers and a repair station, and the ability to reserve parking as amenities that would make them more likely to use a Park & Ride lot for their work commute.

**Are there any distinguishing characteristics of those most likely to use Park & Ride lots for their commute?** Based on how drive-alone commuters responded to potential amenities and improvements that could be incorporated into Park & Ride lots, as well as their own suggested improvements, the most promising candidates for using Park & Ride lots were most often found among interregional commuters, those who reside in Western Riverside County and commute to a destination outside of the County in a direction other than southbound, commuters who have one-way commutes exceeding 60 minutes, those living in larger households (4+ people) with three or more vehicles, younger employees (under the age of 35), and individuals who work for a private or not-for-profit organization (see Table 7).

For more on the size and demographic make-up of the potential market for Park & Ride lots, see *Market Target Summary* on page 74 and *Demographic Comparison of Commuters and Market Targets* on page 75.
How are commuters using their smart phones for travel-related purposes? The advent of the smart phone and mobility apps has had a substantial impact on travel choices and travel behaviors in recent years. Although Uber and Lyft are perhaps the most prominent examples of how a smart phone app can transform how people travel, there are dozens of widely-used mobility apps, vehicle connectivity apps, smart parking apps, and courier network services apps that have fundamentally changed the way people plan for trips, get real-time transportation information, and connect with on-demand vehicle services. Moreover, as impactful as these apps have been to date, the potential for change is arguably even greater over the next decade with contin-
ued advances in technology, real-time data sharing, multimodal aggregators, and public-private partnerships.9

The smart phone is nearly ubiquitous among commuters in the study region, with 98% reporting that they currently utilize a smart phone.10 At least nine-in-ten commuters indicated that they use their smart phone to get driving directions (97%) and check traffic conditions (90%), and nearly two-thirds (66%) reported that they occasionally use their phone to request a ride from Uber, Lyft, Waze Carpool, or a similar rideshare service (see Figure 16). Although less common, many commuters also reported using their smart phone to check transit schedules or options (49%), request motorist aid assistance (43%), and purchase a transit pass or pay a fare (27%).

FIGURE 16 SPECIFIC USES FOR SMART PHONE

![Bar chart showing specific uses for smart phone]

Given that many commuters are already using their smart phone to enhance their travel experience, it is not surprising that the vast majority also expressed interest in a user-friendly smart phone app that would allow them to plan a trip, book the trip, and pay for the trip on any transportation mode or service. Overall, 41% of commuters stated that they would be very interested in this full-featured transportation app, 44% were somewhat interested, whereas just 14% expressed no interest in the app. Interest in the user-friendly smart phone app was widespread, with at least two-thirds of respondents in every identified commuter subgroup expressing interest in the app. For more details, see Transportation Information & Smart Phone Apps on page 78.

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10. Even among the subgroup with the lowest rate of smart phone usage (seniors), approximately 9-in-10 commuters indicated they currently use a smart phone.
To what extent are employers offering commute benefits? Employer-offered commute benefit programs encourage the use of alternative modes by offering monetary and other types of incentives. For the employer, such programs can help boost employee morale, job satisfaction, and retention by reducing the burden of the work commute for employees. Employer-offered commute benefits can also be influential in decreasing motor vehicle travel and traffic congestion, reducing emissions of greenhouse gases and other pollutants, and ultimately help protect the climate and public health.

Given the above, it was of interest to develop an up-to-date understanding of the extent to which employers are offering commute benefits, as well as the type of benefits being offered. Unfortunately, the dominant response for every commute benefit tested in the survey was that it is not offered by their employer (see Figure 17).

Among the most commonly offered benefits were on-site facilities for employees who bike or walk to work, such as showers and lockers (29%), priority parking locations for carpools and vanpools (18%), and free or discounted transit passes (14%). Approximately one-in-ten commuters reported that their employer offers the opportunity for employees to purchase transit passes or pay for vanpool services pre-tax (11%), cash or other incentives for not driving alone to work (10%), free employee shuttles (9%), and a guaranteed ride home in case of emergencies or unscheduled overtime (8%).
**Park & Ride**

Having profiled commuters’ willingness to use alternative modes for their work commute, the survey transitioned to the topic of Park & Ride lots. Specifically, commuters were asked to describe their recent experiences using a local Park & Ride lot, their reasons for not using a Park & Ride lot (if applicable), and the amenities or improvements that could be made to Park & Ride lots that would increase their likelihood of use.

**USE OF LOCAL PARK & RIDE LOT**  
The first question in this series simply asked respondents to describe the frequency with which they have used a local Park & Ride lot in the 12 months preceding the interview. As shown in Figure 80, more than eight-in-ten respondents (83%) indicated they had not used a Park & Ride lot during the period of interest. Approximately 3% indicated they used a local Park & Ride lot weekly, 2% one to three times per month, 3% once every two to three months, and 9% estimated they used a local Park & Ride lot one to three times during the past 12 months.

**Question 16**  
Have you used a local Park & Ride lot in the past 12 months? If yes, ask: How often have you used a local Park & Ride lot during this period?

**FIGURE 80  USE OF LOCAL PARK & RIDE LOT IN PAST YEAR AMONG THOSE WHO COMMUTE OUTSIDE HOME**

The following figures show how frequency of using a local Park & Ride lot varied among subgroups of commuters in the study region overall (Figure 81), among San Diego County residents who commute to work (Figures 82 & 83), and among commuters who reside in Western Riverside County (Figures 84 & 85). Among all commuters in the study, it is worth noting that those who primarily commute to work by carpool/vanpool or public transit, as well as interregional commuters, were the most likely to report using a Park & Ride lot on a weekly basis.
FIGURE 81  USE OF LOCAL PARK & RIDE LOT IN PAST YEAR AMONG THOSE WHO COMMUTE OUTSIDE HOME BY PRIMARY COMMUTE MODE, REGION, INTERREGIONAL COMMUTER & INTERREGIONAL COMMUTE STATUS

FIGURE 82  USE OF LOCAL PARK & RIDE LOT IN PAST YEAR BY SUBREGION, INTERREGIONAL COMMUTER & INTERREGIONAL COMMUTE DESTINATION AMONG SAN DIEGO COUNTY RESIDENTS WHO COMMUTE OUTSIDE HOME
FIGURE 83 USE OF LOCAL PARK & RIDE LOT IN PAST YEAR BY AGE, GENDER & WORKING VEHICLES IN HOUSEHOLD AMONG SAN DIEGO COUNTY RESIDENTS WHO COMMUTE OUTSIDE HOME

FIGURE 84 USE OF LOCAL PARK & RIDE LOT IN PAST YEAR BY SUBREGION, INTERREGIONAL COMMUTER & INTERREGIONAL COMMUTE DESTINATION AMONG WESTERN RIVERSIDE COUNTY RESIDENTS WHO COMMUTE OUTSIDE HOME

26. Given the small number of Mid County East commuters who have used a Local Park & Ride Lot in the past year, this subgroup is not shown on Figure 89 displaying responses to the follow-up question about using Park & Ride Lots for reasons other than commuting to work.
Questions 16 and 17 were asked of respondents who had used a local Park & Ride lot in the 12 months preceding the interview. As shown in Figure 86, 75% of respondents who had used a local Park & Ride lot in the past year stated that they had used it for reasons other than commuting to work—such as going to a sporting event, a concert, or jury duty. This pattern suggests that those who use Park & Ride lots frequently for work purposes are also more likely to be one-dimensional in their use of the lots (work trips only).

**Question 17**  Have you ever used a local Park & Ride lot for something other than commuting to work - such as when going to a sporting event, a concert, or jury duty?
**Figure 87** Use of Local Park & Ride Lot in Past Year for Reason Other Than Commuting to Work by Region, Interregional Commuter, Interregional Commute Status & Commute Distance in Miles

**Figure 88** Use of Local Park & Ride Lot in Past Year for Reason Other Than Commuting to Work by Primary Commute Mode, Frequency of Park & Ride Use, Subregion & Interregional Commuter Among San Diego County Residents That Have Used Park & Ride
REASONS FOR NOT USING A PARK & RIDE LOT Commuters who indicated they hadn’t used a Park & Ride lot were subsequently asked in an open-ended manner to describe their reasons. The verbatim answers were categorized and are presented below in Figure 90.

**Question 18** Is there a particular reason why you haven’t used a local Park & Ride lot in the past 12 months?

**Figure 90 Main Reason for Not Using Local Park & Ride Lot in Past Year**

<table>
<thead>
<tr>
<th>Reason</th>
<th>% Respondents That Have Not Used Local Park &amp; Ride Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t need them</td>
<td>30.2</td>
</tr>
<tr>
<td>No particular reason</td>
<td>26.4</td>
</tr>
<tr>
<td>No convenient option</td>
<td>10.0</td>
</tr>
<tr>
<td>Don’t know about them</td>
<td>8.5</td>
</tr>
<tr>
<td>None in area, where needed</td>
<td>6.0</td>
</tr>
<tr>
<td>Destination is near, close by</td>
<td>4.5</td>
</tr>
<tr>
<td>Safety concerns</td>
<td>3.1</td>
</tr>
<tr>
<td>I don’t carpool or use public transportation</td>
<td>2.8</td>
</tr>
<tr>
<td>Do not have a car, bike</td>
<td>2.7</td>
</tr>
<tr>
<td>Don’t know where they are</td>
<td>2.1</td>
</tr>
<tr>
<td>Don’t know anyone to carpool with</td>
<td>2.0</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Overall, the most common reasons reported for not using a local Park & Ride lot in the 12 months preceding the interview were no need (30%), no particular reason (26%), not having a convenient option locally (10%), not knowing about them (9%), and a perception that there are none in the area/where needed (6%). Aside from 3% mentioning safety concerns, no respondents mentioned an operational aspect or lack of amenities as their reason for not using a Park & Ride lot.

The following tables list the top five reasons offered for not using a local Park & Ride lot according to region of residence, interregional commute status, and primary commute mode.

**Table 25** Top 5 Reasons for Not Using Local Park & Ride Lot in Past Year by Region & Interregional Commute Status

<table>
<thead>
<tr>
<th>Region</th>
<th>Interregional Commute Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Interregional Commuter</td>
</tr>
<tr>
<td></td>
<td>Don't need them</td>
</tr>
<tr>
<td></td>
<td>No particular reason</td>
</tr>
<tr>
<td></td>
<td>No convenient option</td>
</tr>
<tr>
<td></td>
<td>Don't know about them</td>
</tr>
<tr>
<td></td>
<td>None in area, where needed</td>
</tr>
</tbody>
</table>

**Table 26** Top 5 Reasons for Not Using Local Park & Ride Lot in Past Year by Primary Commute Mode

<table>
<thead>
<tr>
<th>Primary Commute Mode (Q2)</th>
<th>Drive alone</th>
<th>Carpool / Vanpool</th>
<th>Public transit</th>
<th>Active transportation</th>
<th>Other mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't need them</td>
<td>Don't need them</td>
<td>No particular reason</td>
<td>Don't need them</td>
<td>Don't need them</td>
<td></td>
</tr>
<tr>
<td>No particular reason</td>
<td>No particular reason</td>
<td>Do not have a car, bike</td>
<td>Do not have a car, bike</td>
<td>No particular reason</td>
<td></td>
</tr>
<tr>
<td>No convenient option</td>
<td>No convenient option</td>
<td>Don't need them</td>
<td>No particular reason</td>
<td>No convenient option</td>
<td></td>
</tr>
<tr>
<td>Don't know about them</td>
<td>Don't know about them</td>
<td>Don't know about them</td>
<td>No convenient option</td>
<td>Prefer not to answer</td>
<td></td>
</tr>
<tr>
<td>None in area, where needed</td>
<td>Carpool partners live close by</td>
<td>Have own parking spot, park in other places</td>
<td>Don't know about them</td>
<td>Do not have a car, bike</td>
<td></td>
</tr>
</tbody>
</table>

27. Only responses cited by at least 1.5% of respondents who had not used a local Park & Ride lot in the past 12 months are displayed in Figure 90.
CONDITIONS THAT WOULD INCREASE USE OF PARK & RIDE LOT  Similar to the method used previously to identify conditions that would increase a respondent’s likelihood of using alternative modes for their commute, Question 19 presented a list of specific conditions and asked respondents to indicate, for each condition, whether it would make them more likely to use a Park & Ride lot for their work commute, or if it would have no impact. The list of conditions, and respondents’ answers, are shown in Figure 91.

Question 19  If a local Park & Ride lot: __________, would you be more likely to use it for your work commute, or would it have no impact? If says 'yes, more likely', ask: Would that be much more likely, or somewhat more likely?

FIGURE 91  INFLUENCE OF FACTORS IN LIKELIHOOD OF USING LOCAL PARK & RIDE LOT FOR WORK COMMUTE

Having on-site security personnel and security cameras (55%), frequent transit service and real-time transit arrival and departure information (53%), and easy access to freeways and carpool/transit lanes (48%) were the features that respondents indicated were most likely to positively influence their use of Park & Ride lots for their work commute. At least one-third of respondents also indicated that having convenient drop-off/pick-up lanes to avoid delays (45%), that the lot can be easily seen from surrounding streets and properties (41%), and offering a variety of on-site services including dry cleaning, grocery pick-up, day care services, storage lockers, food, and retail shops (37%) would make them at least somewhat more likely to use a Park & Ride lot in the future for their commute.

At the other end of the spectrum, fewer respondents found the presence of electric vehicle charging stations (19%), covered bike lockers and repair station (22%), and the ability to reserve parking (32%) as amenities that would make them more likely to use a Park & Ride lot for their work commute.
Table 27 shows how the percentage who listed a condition as making them much more likely to use a Park & Ride lot for their commute differed by region of residence. Although the percentages varied somewhat, the general ranking of conditions was similar.

**TABLE 27  INFLUENCE OF FACTORS IN LIKELIHOOD OF USING LOCAL PARK & RIDE LOT FOR WORK COMMUTE BY REGION SHOWING % MUCH MORE LIKELY**

<table>
<thead>
<tr>
<th>Q19d Had on-site security personnel and security cameras</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>31.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19c Had frequent transit service and real-time transit arrival and departure information</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>28.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19h Offered easy access to freeways and carpool and transit lanes (HOV lanes)</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>24.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19b Had convenient drop off/pick-up lanes to avoid delays</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>21.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19e Could be easily seen from surrounding streets and properties</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>19.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19i Had a variety of services offered on-site including dry cleaning, grocery pickup, day care services, storage lockers, food, retail shops</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>17.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19a Offered reserved parking spaces</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>13.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19g Had covered bike lockers and a bike repair station</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>9.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q19f Offered electric vehicle charging stations</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td></td>
<td>9.7</td>
</tr>
</tbody>
</table>

Recognizing that the list of conditions tested in Question 19 was not exhaustive, the survey followed-up by asking respondents to describe any amenity or improvement not already mentioned that would make them more likely to use a Park & Ride lot for their work commute. Question 20 was administered in an open-ended manner, which allowed respondents to mention any amenity or improvement that came to mind, without prompting or constraint. True North later reviewed the verbatim responses and grouped them into the categories shown in Figure 92 on the next page.

Nearly eight-in-ten respondents (79%) indicated that no additional amenities or improvements come to mind that would make them more likely to use a Park & Ride lot for their work commute, and 6% declined to answer the question or stated flatly that they are not interested in using a Park & Ride lot. Among the specific amenities and/or improvements that were mentioned in response to Question 20, improved security/security cameras/security lighting was most common (3%), followed by more/better lot locations (2%).
**Question 20**  *Is there an amenity or improvement that I didn’t mention that would make you more likely to use a local Park & Ride lot for your work commute? If yes, ask: Please describe it to me.*

**Figure 92  Amenity or Improvement to Increase Likelihood of Using Local Park & Ride Lot for Work Commute**

<table>
<thead>
<tr>
<th>Amenities/Improvements</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, none come to mind</td>
<td>79.3</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>3.2</td>
</tr>
<tr>
<td>Not interested in Park &amp; Ride, no need</td>
<td>3.0</td>
</tr>
<tr>
<td>Security, cameras, lighting</td>
<td>2.6</td>
</tr>
<tr>
<td>More, better locations</td>
<td>1.7</td>
</tr>
<tr>
<td>Other (unique responses)</td>
<td>1.7</td>
</tr>
<tr>
<td>More public, stops transportation available</td>
<td>1.4</td>
</tr>
<tr>
<td>Food services, restaurants, coffee place, convenience store, lounge area</td>
<td>1.3</td>
</tr>
<tr>
<td>Public transportation available to take you to work</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Market Target Summary**  Recognizing that not every commuter is in the potential market for Park & Ride lots, we developed a tiered-market profile for Park & Ride lots using an approach similar to that described previously for alternative modes (see Market Target Summary on page 60). A respondent’s position in the market for Park & Ride lots was based on how they responded to the amenities and improvements tested in Question 19 and their suggestions in response to Question 20. The four tiers are described below.

**Top Targets**  The most promising potential users of Park & Ride lots for their work commute indicated that at least half of the amenities/improvements tested in Question 19 would cause them to be much more likely to use a Park & Ride lot for their work commute, and they offered a meaningful suggestion in Question 20 when asked to describe additional improvements that would positively influence their use of Park & Ride lots.

**Mid-Level Targets**  Individuals qualified as Mid-Level Targets if they found at least half of the amenities/improvements tested in Question 19 would cause them to be much more likely to use a Park & Ride lot for their work commute, but they did not offer a meaningful suggestion in

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28. Only responses cited by at least 1% of commuters who indicated whether or not they use Park & Ride lots for their work commute are shown in Figure 92.
response to Question 20 when asked to describe additional improvements that would positively influence their use of Park & Ride lots.

**Lower Priority** Individuals in this group indicated that one to four of the amenities tested in Question 19 would cause them to be much more likely to use a Park & Ride lot for their work commute or don’t meet this condition, but have used a Park & Ride lot for their work commute at least one time in the past year.

**Not Targets** Individuals in this group did not find any of the amenities or improvements tested in Question 19 to be compelling reasons (much more likely) to use a Park & Ride lot for their work commute.

Figure 93 presents the market tiers for Park & Ride lots among all commuters in the study, as well as by region. Among all commuters, 4% qualified as Top Targets for Park & Ride lots, 13% as Mid-Level Targets, and 31% as Lower Priority Targets. Just over half (52%) were classified as not being a target for Park & Ride lots for their work commute. The distribution of market tiers was generally similar when comparing San Diego County residents to those in Western Riverside County.

**Figure 93  Park & Ride for Work Commute Target Tiers**

<table>
<thead>
<tr>
<th>Region</th>
<th>All Commuters</th>
<th>San Diego County Commuters</th>
<th>Western Riverside County Commuters</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Respondents That Commute Outside Home &amp; Indicated Whether They Use Park &amp; Ride Lots</td>
<td>51.5</td>
<td>52.2</td>
<td>50.0</td>
</tr>
<tr>
<td>% Respondents That Use Park &amp; Ride Lots</td>
<td>13.2</td>
<td>11.8</td>
<td>16.3</td>
</tr>
<tr>
<td>Region</td>
<td>All Commuters</td>
<td>San Diego County Commuters</td>
<td>Western Riverside County Commuters</td>
</tr>
<tr>
<td>Top Targets</td>
<td>4.3</td>
<td>4.4</td>
<td>4.0</td>
</tr>
<tr>
<td>Mid-Level Targets</td>
<td>31.0</td>
<td>31.6</td>
<td>29.8</td>
</tr>
<tr>
<td>Lower Priority</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Targets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DEMOGRAPHIC COMPARISON OF COMMUTERS AND MARKET TARGETS** For the interested reader, Tables 28 and 29 present individual, household, and workplace information for all commuters, as well as each market tier for Park & Ride lots. Within the tables, differences of at least five percent between an individual target group and all commuters are highlighted in grey. When compared to commuters in general, Top Targets were somewhat more likely to be interregional commuters, reside in Western Riverside County and commute to a destination outside of the County (but not San Diego County), have one-way commutes exceeding 60 minutes, live in larger households (4+ people) with three or more vehicles, be under the age of 35, and work for a private or not-for-profit organization.
<table>
<thead>
<tr>
<th>Region</th>
<th>All Commuters</th>
<th>Top Targets</th>
<th>Mid-Level Targets</th>
<th>Lower Priority</th>
<th>Not Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego County</td>
<td>67.9</td>
<td>70.4</td>
<td>60.6</td>
<td>69.2</td>
<td>68.9</td>
</tr>
<tr>
<td>Western Riverside County</td>
<td>32.1</td>
<td>29.6</td>
<td>39.4</td>
<td>30.8</td>
<td>31.1</td>
</tr>
<tr>
<td>Interregional Commuter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16.3</td>
<td>21.9</td>
<td>20.9</td>
<td>15.1</td>
<td>15.3</td>
</tr>
<tr>
<td>No</td>
<td>83.7</td>
<td>78.1</td>
<td>79.1</td>
<td>84.9</td>
<td>84.7</td>
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<tr>
<td>Interregional Commute Status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of San Diego County</td>
<td>2.1</td>
<td>2.5</td>
<td>2.5</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Out of Riverside County Southbound</td>
<td>2.9</td>
<td>2.0</td>
<td>3.0</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Out of Riverside County Other</td>
<td>11.3</td>
<td>17.4</td>
<td>15.5</td>
<td>9.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Commute Distance in Miles (Q6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Less than 5</td>
<td>16.9</td>
<td>18.4</td>
<td>15.6</td>
<td>14.0</td>
<td>18.9</td>
</tr>
<tr>
<td>5 to 9</td>
<td>11.4</td>
<td>10.3</td>
<td>4.8</td>
<td>10.7</td>
<td>13.6</td>
</tr>
<tr>
<td>10 to 14</td>
<td>17.9</td>
<td>17.7</td>
<td>15.5</td>
<td>19.0</td>
<td>18.0</td>
</tr>
<tr>
<td>15 to 19</td>
<td>13.0</td>
<td>10.5</td>
<td>15.9</td>
<td>13.0</td>
<td>12.6</td>
</tr>
<tr>
<td>20 to 29</td>
<td>17.6</td>
<td>16.9</td>
<td>21.4</td>
<td>18.0</td>
<td>16.6</td>
</tr>
<tr>
<td>30 to 49</td>
<td>15.3</td>
<td>16.5</td>
<td>18.9</td>
<td>17.0</td>
<td>13.0</td>
</tr>
<tr>
<td>50 or more</td>
<td>7.2</td>
<td>8.9</td>
<td>7.9</td>
<td>7.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Commute Duration in Minutes (Q7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10</td>
<td>6.4</td>
<td>5.9</td>
<td>3.9</td>
<td>5.3</td>
<td>7.8</td>
</tr>
<tr>
<td>10 to 19</td>
<td>23.8</td>
<td>26.6</td>
<td>25.5</td>
<td>20.7</td>
<td>25.0</td>
</tr>
<tr>
<td>20 to 29</td>
<td>21.1</td>
<td>17.1</td>
<td>18.7</td>
<td>23.1</td>
<td>21.0</td>
</tr>
<tr>
<td>30 to 44</td>
<td>20.2</td>
<td>19.1</td>
<td>18.8</td>
<td>19.7</td>
<td>20.9</td>
</tr>
<tr>
<td>45 to 60</td>
<td>17.7</td>
<td>15.5</td>
<td>20.5</td>
<td>20.2</td>
<td>15.5</td>
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<tr>
<td>More than 60</td>
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<td>12.4</td>
<td>10.1</td>
<td>9.2</td>
</tr>
<tr>
<td>Working Vehicles in Hsld (QD1)</td>
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<tr>
<td>None</td>
<td>1.5</td>
<td>1.2</td>
<td>1.1</td>
<td>0.9</td>
<td>1.9</td>
</tr>
<tr>
<td>One</td>
<td>16.7</td>
<td>16.2</td>
<td>16.3</td>
<td>19.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Two</td>
<td>38.9</td>
<td>30.5</td>
<td>42.3</td>
<td>41.0</td>
<td>37.6</td>
</tr>
<tr>
<td>Three or more</td>
<td>41.0</td>
<td>51.5</td>
<td>38.9</td>
<td>37.7</td>
<td>42.4</td>
</tr>
<tr>
<td>Number of People in Hsld (QD2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>11.7</td>
<td>6.3</td>
<td>8.2</td>
<td>12.6</td>
<td>12.4</td>
</tr>
<tr>
<td>Two</td>
<td>30.0</td>
<td>21.9</td>
<td>27.7</td>
<td>30.9</td>
<td>31.0</td>
</tr>
<tr>
<td>Three</td>
<td>19.1</td>
<td>19.3</td>
<td>18.3</td>
<td>19.4</td>
<td>19.0</td>
</tr>
<tr>
<td>Four</td>
<td>19.4</td>
<td>29.3</td>
<td>17.7</td>
<td>17.9</td>
<td>20.0</td>
</tr>
<tr>
<td>Five or more</td>
<td>16.8</td>
<td>20.5</td>
<td>23.8</td>
<td>16.6</td>
<td>14.9</td>
</tr>
<tr>
<td>Number of People 16+ in Hsld (QD3)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>One</td>
<td>14.2</td>
<td>11.0</td>
<td>13.2</td>
<td>14.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Two</td>
<td>47.0</td>
<td>33.4</td>
<td>40.3</td>
<td>47.7</td>
<td>49.7</td>
</tr>
<tr>
<td>Three</td>
<td>18.3</td>
<td>21.3</td>
<td>19.1</td>
<td>17.9</td>
<td>17.9</td>
</tr>
<tr>
<td>Four</td>
<td>10.5</td>
<td>19.7</td>
<td>9.8</td>
<td>11.0</td>
<td>9.8</td>
</tr>
<tr>
<td>Five or more</td>
<td>6.5</td>
<td>12.0</td>
<td>11.7</td>
<td>5.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Age (QD4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 24</td>
<td>14.7</td>
<td>21.1</td>
<td>16.9</td>
<td>15.3</td>
<td>13.3</td>
</tr>
<tr>
<td>25 to 34</td>
<td>25.4</td>
<td>29.9</td>
<td>30.0</td>
<td>30.3</td>
<td>21.0</td>
</tr>
<tr>
<td>35 to 44</td>
<td>21.0</td>
<td>20.3</td>
<td>20.8</td>
<td>22.6</td>
<td>20.2</td>
</tr>
<tr>
<td>45 to 54</td>
<td>19.7</td>
<td>18.0</td>
<td>17.7</td>
<td>16.4</td>
<td>22.2</td>
</tr>
<tr>
<td>55 to 64</td>
<td>13.2</td>
<td>7.8</td>
<td>10.1</td>
<td>11.0</td>
<td>15.6</td>
</tr>
<tr>
<td>65 and older</td>
<td>3.1</td>
<td>1.4</td>
<td>1.8</td>
<td>2.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Gender (QD9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50.6</td>
<td>51.0</td>
<td>44.8</td>
<td>51.0</td>
<td>51.6</td>
</tr>
<tr>
<td>Female</td>
<td>46.9</td>
<td>46.6</td>
<td>50.3</td>
<td>46.6</td>
<td>46.3</td>
</tr>
</tbody>
</table>
### Table 29  Demographic Breakdown of All Commuters and Park & Ride Target Tiers continued

<table>
<thead>
<tr>
<th>Employees at Primary Workplace (QD7)</th>
<th>All Commuters</th>
<th>Top Targets</th>
<th>Mid-Level Targets</th>
<th>Lower Priority Targets</th>
<th>Not Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4</td>
<td>7.5</td>
<td>10.1</td>
<td>3.0</td>
<td>6.8</td>
<td>8.8</td>
</tr>
<tr>
<td>5 to 9</td>
<td>7.5</td>
<td>9.2</td>
<td>7.5</td>
<td>8.5</td>
<td>6.9</td>
</tr>
<tr>
<td>10 to 19</td>
<td>11.3</td>
<td>9.4</td>
<td>14.4</td>
<td>11.0</td>
<td>10.8</td>
</tr>
<tr>
<td>20 to 49</td>
<td>14.8</td>
<td>17.1</td>
<td>16.7</td>
<td>12.8</td>
<td>15.5</td>
</tr>
<tr>
<td>50 to 99</td>
<td>12.2</td>
<td>14.1</td>
<td>10.5</td>
<td>13.5</td>
<td>11.5</td>
</tr>
<tr>
<td>100 or more</td>
<td>40.5</td>
<td>35.8</td>
<td>40.3</td>
<td>42.9</td>
<td>39.7</td>
</tr>
<tr>
<td>Business Type (QD8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private sector</td>
<td>53.5</td>
<td>58.7</td>
<td>46.0</td>
<td>52.7</td>
<td>55.6</td>
</tr>
<tr>
<td>Gov agency</td>
<td>22.1</td>
<td>18.3</td>
<td>24.4</td>
<td>23.7</td>
<td>20.9</td>
</tr>
<tr>
<td>Not-for-profit org</td>
<td>14.0</td>
<td>21.6</td>
<td>14.7</td>
<td>12.6</td>
<td>13.9</td>
</tr>
<tr>
<td>Occupation (QD5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator / Fabricator / Laborer</td>
<td>4.9</td>
<td>2.9</td>
<td>4.5</td>
<td>5.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Craft and repair</td>
<td>3.8</td>
<td>0.7</td>
<td>2.1</td>
<td>4.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Food preparation, serving</td>
<td>2.1</td>
<td>2.1</td>
<td>1.8</td>
<td>1.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Protective services</td>
<td>3.4</td>
<td>2.0</td>
<td>3.3</td>
<td>3.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Physician</td>
<td>1.1</td>
<td>0.7</td>
<td>1.3</td>
<td>1.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Nurse</td>
<td>3.1</td>
<td>4.1</td>
<td>4.8</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Medical assistant</td>
<td>2.5</td>
<td>4.2</td>
<td>4.7</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Sales</td>
<td>5.5</td>
<td>3.1</td>
<td>6.8</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Customer service / Telemarketer</td>
<td>2.9</td>
<td>8.2</td>
<td>2.4</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Professional specialty (not IT)</td>
<td>24.2</td>
<td>33.0</td>
<td>26.0</td>
<td>25.4</td>
<td>22.5</td>
</tr>
<tr>
<td>Professional specialty (IT)</td>
<td>1.5</td>
<td>0.4</td>
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## Contents

Introduction .................................................................................................................................. 3  
Overview of Survey Methodology .............................................................................................. 3  
Summary of Key Findings ........................................................................................................... 3  
Survey Results ............................................................................................................................ 5  

Q1. Would you consider Park & Ride operations at future sites? .............................................. 5  
Q2. Below are a list of characteristics that might be supportive of Park & Ride operations.  
   Do any of these apply to new developments you are considering? ........................................ 6  
Q3. What would make you interested in partnering with a public agency to allow Park & Ride  
   operations at your future development? ................................................................................ 7  
Q4. What obstacles are preventing you from pursuing partnerships for Park & Ride lots? .... 9  

Next Steps ................................................................................................................................ 10 

## Figures

Figure 1. Q1 Results .................................................................................................................. 5  
Figure 2. Q2 Top Results ........................................................................................................... 6  
Figure 3. Q3 Top Results ........................................................................................................... 8  
Figure 4. Q4 Top Results ........................................................................................................... 9
INTRODUCTION

As part of the San Diego and Western Riverside Park & Ride Strategy (Park & Ride Strategy), strategies and regional recommendations are being developed to help the Park & Ride program adapt to the Region’s changing mobility needs. One strategy of interest is:

*Developing public-private partnerships to incorporate and improve Park & Ride facilities within private property.*

To support SANDAG’s and RCTC’s efforts to engage in more effective public-private partnerships, private sector stakeholders were engaged through an online survey and phone interviews. These engagement tools were used to enhance the understanding of private sector stakeholders’ interests, motivations, and willingness to partner (including their perceived conditions for success). This memorandum summarizes key findings and recommendations for SANDAG and RCTC to incorporate into the Regional Park & Ride Strategy.

OVERVIEW OF SURVEY METHODOLOGY

Survey development was implemented in three steps:

1) A draft survey was developed collaboratively with members of the project development team (PDT) of the Park & Ride Strategy.

2) The draft survey was tested with a developer, a property owner, and a property manager separately via phone interviews.

3) After the phone interviews were complete, the survey was refined and finalized for distribution to a wider list of stakeholders.

The final survey was administered in two rounds: 1) an online survey distributed to a list of private sector stakeholders developed by PDT members (July 2018); and 2) an online survey distributed to existing partnerships and professional organization membership lists (between September 2018 and February 2019). Between the two rounds, the survey was distributed to over 200 private sector stakeholders. The survey tool can be found in Appendix A.

SUMMARY OF KEY FINDINGS

The phone interviews and online survey results revealed the private sector’s interest in better understanding and learning more about Park & Ride facilities. This was primarily demonstrated in the results of the first question where nearly 80% of participants selected the option of “open to learning more about the benefits [of Park & Rides].” This represents a clear opportunity for RCTC and SANDAG to actively engage the private sector into the future.

Shared maintenance costs and conditional zoning for additional development were the top incentives highlighted by participants for accommodating Park & Ride operations at their respective sites. However, the lack (or perceived lack) of excess parking was reported as the largest obstacle for the private sector to enter a Park & Ride partnership.
Based on this feedback, it is recommended for SANDAG and RCTC to engage in the following activities:

- **Develop readily accessible digital and printed marketing material to inform the private sector of what Park & Rides are and how each audience type can benefit.**

  Participants wanted to be more informed about what benefits they can receive. It was also pointed out by property owners and managers that it would help to be able to give their tenants a marketing brochure on the Park & Ride program as each tenant is allocated a certain number of parking spaces through their lease agreements. Tenants would need to be engaged for parking spaces to be reserved for Park & Ride operations.

- **Collaborate with transit operators and jurisdictions to develop additional financial incentives and mobility services for private sector partners. Quantify benefits for private sector stakeholders to create a sense of value for Park & Ride facilities by developing and including relevant data (e.g. how much Park & Rides can increase foot traffic). Advertise the benefits that help private sector financially and ways partnership could reduce parking demand while increasing foot traffic at their sites.**

  The private sector cares about how they can financially benefit and how they can meet their parking demand. If one or both of these criteria are met, they are more likely to partner.

  The private sector cares about data. Multiple participants pointed out about wanting to know exactly how much a Park & Ride can benefit them.

- **Review and update existing policies to identify and mitigate barriers private sector stakeholders have that prevent them from partnering.**

  The private sector pointed out several barriers that prevent them from partnering such as lack of excess parking, parking restrictions, increased liability, and covenants, conditions and restrictions (CCRs).

Responses from the private sector are encouraging and suggest that continued engagement could lead to new, mutually-beneficial partnerships.
SURVEY RESULTS

The private sector survey was designed to identify potential strategies to increase private-public partnerships in the context of Park & Ride development. The following section describes the questions that were asked of participants and provides a summary of the primary results. The questions are presented in the order participants were asked. Figures showing the detailed responses are included in Appendix B.

Q1. WOULD YOU CONSIDER PARK & RIDE OPERATIONS AT FUTURE SITES?

Question 1 (Q1) was included to understand the current interest of Park & Ride among private sector stakeholders.

RESULTS

Nearly 80% of survey respondents were open to learning more about the benefits to Park & Ride facilities (see Figure 1). About 7% were already interested in hosting a Park & Ride facility at their site.

Participants from the phone interviews indicated being interested in learning more about the benefits. One participant asked if there was accessible material that informed what a Park & Ride is and what the benefits are. This participant highlighted the need for this material to inform their tenants and have them be part of the process.

Figure 1. Q1 Results

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Familiar with Park &amp; Ride agreements and am interested in hosting on my site</th>
<th>Not open to considering how a Park &amp; Ride lot can complement my site</th>
<th>Open to learning more about the benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>13%</td>
<td>80%</td>
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Q1 Key Highlights

Results:
- 80% of survey participants interested in learning benefits

Recommendations:
- Improve existing marketing program to effectively target developers, property owners, property managers, and their tenants
- Develop accessible and persuasive digital and/or printed marketing material
- Focus on marketing how private sector stakeholders can benefit

RECOMMENDATIONS

The online survey and phone interviews show that most private sector stakeholders are interested in Park & Ride lots but may not be aware of how they can benefit from them. This lack of awareness shows that SANDAG and RCTC should investigate ways to improve the marketing of the Park & Ride program to
effectively target private sector stakeholders. Currently, neither agency has printed or digital marketing material to easily deliver to a potential private sector partner or their tenants.

SANDAG and RCTC should consider developing marketing material that succinctly displays key information and reasons for having Park & Ride operations. Some information to consider including in the material are:

- What is a Park & Ride?
- Who uses a Park & Ride?
- What are the benefits?
- How can a Park & Ride bring you success?
- Who should you contact for more information?
- What are examples of successful Park & Ride partnerships

Q2. BELOW ARE A LIST OF CHARACTERISTICS THAT MIGHT BE SUPPORTIVE OF PARK & RIDE OPERATIONS. DO ANY OF THESE APPLY TO NEW DEVELOPMENTS YOU ARE CONSIDERING?

Question 2 (Q2) helps gauge whether or not new developments for the private sector align with characteristics of an ideal Park & Ride lot. Through this question, SANDAG and RCTC can understand what type of developments the private sector is moving forward with.

RESULTS

Many survey participants have sites that meet one or more characteristics for ideal Park & Ride locations. The top site characteristics selected by survey participants were:

- near a freeway,
- places where travel times from nearby communities to employment centers is high,
- nearby populated residential neighborhoods, and
- places where peak demand for existing customers is during evenings or weekends.

Figure 2. Q2 Top Results

Q2 Key Highlights

Results:

- Site locations of participants meet several characteristics of ideal locations for Park & Ride operations
- Peak demand for parking at many sites was during evenings or weekends

Recommendations:

- Develop characteristics of an ideal Park & Ride location to be included in marketing material
- Develop a process to engage jurisdictions in identifying Park & Ride lots
- Create an inventory of potential Park & Ride locations
RECOMMENDATIONS

SANDAG and RCTC should consider adding the characteristics of Park & Ride lots to any marketing material. Informing the private sector about what makes an ideal Park & Ride lot may help them understand which of their sites might work for this program.

If possible, the regions should investigate creating an inventory of potential sites that fit the characteristics. This could be achieved through the following ways:

- performing a GIS analysis of parcels in the regions that align with high performing characteristics
- create a platform that jurisdictions can access to add "strong candidate" sites currently going through the entitlement process or have been approved

Q3. WHAT WOULD MAKE YOU INTERESTED IN PARTNERING WITH A PUBLIC AGENCY TO ALLOW PARK & RIDE OPERATIONS AT YOUR FUTURE DEVELOPMENT?

Question 3 (Q3) addresses a key purpose for this survey effort which is to identify the ways which the public sector might motivate private sector stakeholders to partner for the implementation of Park & Ride lots.

RESULTS

From the online survey results, the top incentives selected by survey participants were:

- shared maintenance cost,
- conditional zoning to allow additional development on site,
- increased security,
- increase in customer sales and customer base,
- one-time cost reimbursements (e.g. implementation costs, enhancements costs, and tax breaks), and
- the opportunity for transit to serve areas closer to my site.

Participants were also allowed to suggest incentives not listed as an option. Some of the written-in responses included:

- free transit for team members,
- provide a built-in customer base,
- a reduction in employee expenses,
- quicker commute times to draw from a broader employee base,
- reducing greenhouse gas (GHG) emissions, and
- quantifying benefits.

The phone interviews also re-enforce the online survey results. The top incentives from the phone interviews were conditional zoning to allow additional development on site and reducing parking requirements for a site.
**RECOMMENDATIONS**

The incentives highlighted by participants in the online survey and phone interviews show that financial benefits are important to private sector stakeholders. They are more inclined to partner with public agencies and develop Park & Ride operations at their site if they can offset existing maintenance costs or receive in-kind payments. Some ideas for financial benefits included:

- reimbursements,
- leasing spots for a fee, and
- a reduction in their parking footprint to make available more square footage for future development.

SANDAG and RCTC should consider working with their respective jurisdictions and transit operators to identify and develop a list of feasible benefits they can offer to private sector stakeholders. This list can then be advertised in marketing material, be included in the entitlement process, and used in future Park & Ride negotiations with private sector stakeholders. Private sector stakeholders are financially motivated, and data driven. If an identified benefit can be quantified or include a cost-saving/monetary value, it would be important to do so. Some benefits that can be quantified include:

- increase in sales and customers,
- cost savings for people who use Park & Ride facilities, and
- reduction in parking if a Park & Ride facility is included at the site.
Q4. WHAT OBSTACLES ARE PREVENTING YOU FROM PURSUING PARTNERSHIPS FOR PARK & RIDE LOTS?

The next question (Q4) in the survey identifies the challenges private sector stakeholders have for developing Park & Ride operations at their existing and future sites.

RESULTS

The online survey results show that the top obstacles for participants are:

- lack of excess parking capacity
- increased liability, and
- covenants, conditions, and restrictions (CC&Rs) make it too difficult.

The participants from the phone interviews pointed out similar obstacles in addition to lease agreements. Participants mentioned that existing standing lease agreements guarantee a specific number of parking spots for their tenants, making it hard to find additional parking spots for Park & Ride operations.

Figure 4. Q4 Top Results

RECOMMENDATIONS

The results from questions 3 and 4 highlight that parking is an important consideration for private sector stakeholders when pursuing partnerships for Park & Ride lots. Meeting parking requirements and parking demand make it difficult for private sector stakeholders to allocate spaces for Park & Ride operations. If SANDAG and RCTC find a site that has potential for being a Park & Ride location, both agencies can investigate the following:

- add provisions to the shared-use agreement to provide mobility services
- perform a shared parking study to demonstrate parking availability
Provisions for additional transit service, bikeshare, transportation network company (TNCs) pick up/drop off areas, a shuttle program, and other shared mobility services, can help alleviate parking demand at the site. This in turn would make the private sector stakeholders more inclined to allocate spaces at their site for Park & Ride operations.

In addition, performing a shared parking study can help the private sector stakeholder better understand what their actual parking demand is and when it occurs. Private sector stakeholders have a perception that their parking lots are full when, they may not be a reality. A shared parking study can show that their parking demand occurs at a different time from Park & Ride operations. This can help alleviate the perception that there is no excess parking available. SANDAG and RCTC can also work with their respective jurisdictions to potentially make a shared parking study as a requirement for the entitlement process.

Despite the obstacles participants have about pursuing partnerships for Park & Ride lots, many of them are open to learning more about the benefits as shown in the results for question one (Q1). SANDAG and RCTC should consider ways to rebrand the perception of Park & Ride lots and bring more awareness to the benefits for partnering. Through marketing materials and presentations, there is an opportunity to show that the benefits of Park & Ride lots outweigh the obstacles. It is also an opportunity to inform private sector stakeholders that there are strategies and tools that can be implemented to address their concerns about parking demand and security.

NEXT STEPS

The key results and recommendations identified in this memorandum will be used to inform the Park & Ride Regional Strategy. This strategy will aim to outline the regional action steps for SANDAG and RCTC regarding the framework of the future Park & Ride program.
Appendix A

Distributed Survey
Public-Private Partnership

5-Minute Survey

The San Diego Association of Governments (SANDAG) and Riverside County Transportation Commission (RCTC) would like to gain a better understanding of how to improve current and potential public-private partnerships relating to Park & Ride lots.

Park & Ride lots allow commuters to leave their vehicles and transfer to a bus, rail system, or carpool/vanpool. A common trend in developing Park and Ride lots is the shared use of existing parking lots at commercial establishments such as shopping centers, movie theaters, and other businesses.

We are seeking your feedback on potential incentives that could encourage more partnerships between public agencies and private sector developers or property managers. We anticipate this survey to take less than five minutes.

1. Would you consider Park and Ride operations at future sites? (Select One) *
   - Familiar with Park & Ride agreements and am interested in hosting on my site
   - Open to learning more about the benefits
   - Not open to considering how a Park & Ride lot can complement my sites

2. Below are a list of characteristics that might be supportive of Park & Ride operations. Do any of these apply to new developments you are considering? (Select All that Apply) *
   - Lot(s) with more than 50 spaces
   - Current land is "over-parked"—more parking is provided than is needed
2. Below are a list of characteristics that might be supportive of Park & Ride operations. Do any of these apply to new developments you are considering? (Select All that Apply)*

- Lot(s) with more than 50 spaces
- Current land is “over-parked”—more parking is provided than is needed
- Peak demand for existing customers is during evenings or weekends
- Lot(s) are close (within 1 mile) or near (within 5 miles) of the freeway
- Travel times from nearby communities to employment centers is high
- Nearby populated residential neighborhoods
- Ample amenities available on-site (benches, bike racks, trash receptacles, shelter, etc.)

3. What would make you interested in partnering with a public agency to allow Park and Ride operations at your future development? (Select All that Apply)*

- Conditional zoning to allow additional development on site
- Shared maintenance cost (paving, striping, lighting, landscaping drainage, trash pick-up)
- One-time cost reimbursements (implementation costs, enhancement cost, tax breaks)
- Increase in customer sales & customer base from increase site activity
- Advertisement / Campaigns placed on trains, buses or high-visibility locations (hub transfer locations, freeway walls, etc.)
- Free marketing opportunity for strategic placement of advertising material (banners, signs, or online marketing) at high-traffic transportation sites or on relevant agency websites
- Public acknowledgement for helping the community (e.g. sign on freeway, recognition on public agency's social media)
- Increased security (security cameras, ridership "eyes and ears")
- Opportunity for transit to serve areas closer to my site
- Other (Please Specify Below)

4. Other reasons that would make you interested in partnering with a public agency to allow Park and Ride operations at your future development?
4. Other reasons that would make you interested in partnering with a public agency to allow/expand Park & Ride operations at your site?

Enter your answer

5. What obstacles are preventing you from pursuing partnerships for Park and Ride lots? (Select All that Apply) *

- My site will be too far from transit service
- Covenants, Conditions & Restrictions will make it too difficult to implement Park and Ride lot operations
- Standing lease agreements
- Lack of excess parking capacity
- Increased liability
- Limited knowledge about Park & Ride
- Other (Please Specify Below)

6. Other obstacles that are preventing you from pursuing partnerships for Park & Ride lots?

Enter your answer

7. Please provide any comments you wish for public partners to consider when it comes to Park & Ride facilities.

Enter your answer
6. Other obstacles that are preventing you from pursuing partnerships for Park & Ride lots?

Enter your answer

7. Please provide any comments you wish for public partners to consider when it comes to Park & Ride facilities.

Enter your answer

8. Please provide your name and email. *

Enter your answer

Submit

This content is created by the owner of the form. The data you submit will be sent to the form owner. Never give out your password.

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Appendix B

Detailed Breakdown of Survey Results
Response results to "Would you consider Park & Ride operations at future sites?"

- 80% Open to learning more about the benefits
- 13% Familiar with Park & Ride agreements and am interested in hosting on my site
- 7% Not open to considering how a Park & Ride lot can complement my sites

Response results to "Below are a list of characteristics that might be supportive of Park & Ride operations. Do any of these apply to new developments you are considering?"

- Ample amenities available on-site (benches, bike racks, trash receptacles, shelter, etc.) - 4
- Lot(s) are close (within 1 mile) or near (within 5 miles) of the freeway - 12
- Nearby populated residential neighborhoods - 6
- Peak demand for existing customers is during evenings or weekends - 5
- Travel times from nearby communities to employment centers is high - 7
- Current land is "over-parked"—more parking is provided than is needed - 4
- Lot(s) with more than 50 spaces - 1
Response results to "What would make you interested in partnering with a public agency to allow Park & Ride operations at your future development?"

- Opportunity for transit to serve areas closer to my site
- Advertisement / Campaigns placed on trains, buses or high-visibility locations (hub transfer locations, freeway walls, etc.)
- Other
- Free marketing opportunity for strategic placement of advertising material (banners, signs, or online marketing) at high-traffic transportation sites or on relevant agency websites
- Public acknowledgement for helping the community (e.g. sign on freeway, recognition on public agency's social media)
- Opportunity for transit to serve areas closer to my site
- One-time cost reimbursements (implementation costs, enhancement cost, tax breaks)
- Increase in customer sales & customer base from increase site activity
- Increased security (security cameras, ridership "eyes and ears")
- Conditional zoning to allow additional development on site
- Shared maintenance cost (paving, striping, lighting, landscaping drainage, trash pick-up)
Response results to "What obstacles are preventing you from pursuing partnerships for Park & Ride lots?"

- Covenants, Conditions & Restrictions will make it too difficult to implement Park and Ride lot operations
- Increased liability
- Lack of excess parking capacity
- Limited knowledge about Park & Ride
- My site will be too far from transit service
- Other (Please Specify Below)
- Standing lease agreements
APPENDIX G: FUNDING SOURCES
POTENTIAL FUNDING SOURCES

This section identifies potential funding sources that can be leveraged for planning, building, and improving Park & Ride facilities. Submitted funding applications compete with other agencies and other project types. It is recommended that applicants requesting funds for a Park & Ride lot include other critical transportation components and elements such as improvements and amenities for bikeways, pedestrian access, transit, freeway, and roadway safety. This will allow the application to be more competitive but potentially improve the conditions of the Park & Ride lots near other transportation assets.

Public Sources

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<tr>
<th>Program Name</th>
<th>Agency</th>
<th>Description</th>
<th>Eligible Projects</th>
</tr>
</thead>
</table>
| Federal Lands Access Program (FLAP) | FLAP, FHWA | Provides funds for projects on federal lands access transportation facilities that are located on or adjacent to, or that provide access to, federal lands. | • Transportation planning, research, engineering, preventive maintenance rehabilitation, restoration, construction, and reconstruction of federal lands access transportation facilities  
• Operation and maintenance of transit facilities  
• Any transportation project eligible under title 23 of the United States Code that is within or adjacent to, or that provides access to, federal lands open to the public |
| Federal Lands Transportation Program (FLTP) | FHWA | The FLTP funds projects that improve access within the federal estate (national forests, national parks, national wildlife refuges, national recreation areas, and other federal public lands) on transportation facilities in the national federal lands transportation inventory and owned and maintained by the federal government. | • Program administration, transportation planning, research, preventive maintenance, engineering, rehabilitation, restoration, construction, and reconstruction of federal lands transportation facilities  
• Operations and maintenance of transit facilities  
• Any transportation project eligible under title 23 of the United States Code that is within or adjacent to, or that provides access to, federal lands open to the public |
| Highway Safety Improvement Program (HSIP) | FHWA | The HSIP is a core federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands. | Any project on a public road, trail, or path that is consistent with the state’s Strategic Highway Safety Plan and corrects a safety problem is eligible for HSIP funding. Eligible projects include:  
• Intersection improvements  
• Construction of shoulders  
• Traffic calming  
• Improvements for bicyclists, pedestrians, and individuals with disabilities  
• Minimum standards of retro-reflectivity of traffic signs and pavement markings |
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Agency</th>
<th>Description</th>
<th>Eligible Projects</th>
</tr>
</thead>
</table>
| National Highway Performance Program (NHPP)      | FHWA   | The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a state’s asset management plan for the NHS. | • Construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, or operational improvements of NHS roadways and bridges  
• Bridge and tunnel inspection and evaluation  
• A project to reduce the risk of failure of critical NHS infrastructure  
• Construction, reconstruction, resurfacing, restoration, rehabilitation, and preservation of, and operational improvements for a federal aid highway or bridge not on the NHS, if the project is in the same corridor and in proximity to a fully access-controlled NHS route  
• Construction of a transit project eligible for assistance  
• Bicycle transportation and pedestrian walkways  
• Highway safety improvements  
• Capital and operating costs for traffic and traveler information, monitoring, management, and control facilities and programs  
• Infrastructure-based ITS capital improvements  
• Environmental restoration and pollution abatement  
• Control of noxious weeds and establishment of native species  
• Environmental mitigation related to NHPP projects  
• Construction of publicly owned intracity or intercity bus terminals |
<p>| Bus and Bus Facilities Program (Section 5339)    | FTA/Caltrans | The Grants for Buses and Bus Facilities program makes federal resources available to states and direct recipients to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities. Eligible recipients include direct recipients that operate fixed route bus service or that allocate funding to fixed route bus operators; state or local governmental entities; and federally-recognized Indian tribes that operate fixed route bus service. | • Capital projects to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities |</p>
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Agency</th>
<th>Description</th>
<th>Eligible Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Public Transportation Program (Section 5311)</td>
<td>FTA/Caltrans Division of Rail and Mass Transportation</td>
<td>This program provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000, where many residents often rely on public transit to reach their destinations. Funds may be used for public transit services operating: within small urban and rural communities, among small urban and rural communities, or between small urban and rural communities and urbanized areas (cities of 50,000 or more).</td>
<td>An eligible recipient may use the funding for capital, operating, and administrative expenses for public transportation projects that meet the needs of rural communities. Examples of eligible activities include capital projects; operating costs of equipment and facilities for use in public transportation; and the acquisition of public transportation services, including service agreements with private providers of public transportation services.</td>
</tr>
<tr>
<td>Rural Transit Assistance Program (RTAP)</td>
<td>FTA/Cal ACT</td>
<td>The RTAP provides a source of funding to assist in the design and implementation of training and technical assistance projects and other support services tailored to meet the needs of transit operators in nonurbanized areas. Eligible recipients include states, local governments, and providers of rural transit services.</td>
<td>An eligible recipient may use the funding for capital, operating, and administrative expenses for public transportation projects that meet the needs of rural communities. Examples of eligible activities include capital projects; operating costs of equipment and facilities for use in public transportation; and the acquisition of public transportation services, including service agreements with private providers of public transportation services.</td>
</tr>
</tbody>
</table>
| Surface Transportation Block Grant Program       | FHWA/Caltrans          | The STBGP provides flexible funding that may be used by states and localities for projects to preserve and improve the conditions and performance on any federal aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. | States and metropolitan regions may use these funds for highway, bridge, transit (including intercity bus terminals), and pedestrian and bicycle infrastructure projects. Eligible projects include:  
  - Construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements for highways, bridges, and tunnels on any public roadway  
  - Construction of new bridges and tunnels on a federal-aid highway  
  - Inspection and evaluation of bridges, tunnels, and other highway assets as well as training for bridge and tunnel inspectors  
  - Transit capital projects  
  - Bicycle, pedestrian, and recreational trails  
  - Environmental mitigation efforts |
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Agency</th>
<th>Description</th>
<th>Eligible Projects</th>
</tr>
</thead>
</table>
| Transportation Investment Generating Economic Recovery (TIGER) grants | U.S. DOT | The TIGER Discretionary Grant program provides a unique opportunity for the DOT to invest in road, rail, transit, and port projects that promise to achieve national objectives. | Eligible applicants for TIGER Discretionary Grants are state, local, and tribal governments, including US territories, transit agencies, port authorities, MPOs, and other political subdivisions of state or local governments. Funding is eligible for:  
  - Highway or bridge projects eligible under title 23, United States Code  
  - Public transportation projects eligible under chapter 53 of title 49, United States Code  
  - Freight rail projects  
  - High speed and intercity passenger rail projects  
  - Port infrastructure investments |
| Partnerships to Improve Community Health (PICH) | Centers for Disease Control and Prevention (CDC) | PICH is a three-year initiative that supports implementation of evidence-based strategies to improve the health of communities and reduce the prevalence of chronic disease. Awardees will address, in their communities, chronic conditions in tobacco use and exposure, poor nutrition, physical inactivity, and lack of access to opportunities for chronic disease prevention, risk reduction, and disease management. | Eligible transportation-related improvements include projects that improve community designs to make streets safe for pedestrians, bicyclists, and public transit users (e.g., neighborhood slow zones, community-wide traffic calming) |
| Transportation Alternatives Program (TAP) | FHWA | FAST Act replaced the TAP program with a set-aside of fund under the STBGP. The TA set-aside encompasses a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. | - Bicycle and pedestrian facilities  
- Safe routes projects for non-drivers  
- Construction of turnouts and overlooks  
- Community improvement activities including vegetation management and historic preservation  
- Environmental mitigation activity |
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Agency</th>
<th>Description</th>
<th>Eligible Projects</th>
</tr>
</thead>
</table>
| Caltrans Sustainable Transportation Planning Grant Program | Caltrans | New grant funding through Senate Bill 1                                    | Funds transportation planning studies of interregional and statewide significance, in partnership with Caltrans. Sustainable Communities Project Types:<br>  
  - Active transportation plans<br>  
  - Studies that advance a community’s effort to reduce transportation related greenhouse gases<br>  
  - Complete Streets Plans<br>  
  - First Mile / Last Mile project development planning<br>  
  - Jobs and affordable housing proximity studies<br>  
  - Studies that evaluate accessibility and connectivity of the multimodal transportation network |
| Urbanized Area Formula Grants – Section 5307        | FTA    | Federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning | - planning, engineering, design and evaluation of transit projects and other technical transportation-related studies<br>  
  - capital investments in bus and bus-related activities (e.g., replacement, overhaul and rebuilding of buses, crime prevention and security equipment and construction of maintenance and passenger facilities)<br>  
  - capital investments in new and existing fixed guideway systems (e.g., rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software)<br>  
  - associated transit improvements and certain expenses associated with mobility management programs are eligible under the program |
<table>
<thead>
<tr>
<th>Program Name</th>
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<th>Eligible Projects</th>
</tr>
</thead>
</table>
| Capital Investment Grants – Section 5309 | FTA    | Funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars and bus rapid transit | • Bus and Bus-related Facilities  
  • buses and other rolling stock, ferry boats, ancillary equipment, and the construction of bus facilities (e.g., maintenance facilities, garages, storage areas, waiting facilities and terminals, transit malls and centers, and transfer facilities and intermodal facilities)  
  • bus rehabilitation and leasing, Park & Ride facilities, parking lots associated with transit facilities, bus passenger shelters, and intercity bus stations and terminals  
  • Modernization of Fixed Guideway Systems  
  • infrastructure improvements such as track and right-of-way rehabilitation, modernization of stations and maintenance facilities, rolling stock purchase and rehabilitation, and signal and power modernization  
  • New Fixed Guideway Capital Projects (New Starts and Small Starts)  
  • preliminary engineering (PE), acquisition of real property (including relocation costs), final design and construction, and initial acquisition of rolling stock for the system  
  • corridor bus projects that either operate in a separate right-of-way during peak hours or contain significant investment in corridor-based bus improvements  
  • Corridors to Support New Fixed Guideway Projects  
  • protecting rights-of-way through acquisition  
  • construction of dedicated bus and high occupancy vehicle (HOV) lanes  
  • Park & Ride lot  
  • “nonvehicular” capital improvements that will increase transit use in the corridor (e.g., additional safety features that would encourage riders to use transit, walkways and pathways that make transit more readily available, bus shelters, and joint development projects that would improve the livability of a community and increase the benefits transit offers) |
<p>| Community Development Block Grants | HUD    | Flexible program that provides communities with resources to address a wide range of unique community development needs | Urban redevelopment, but Park &amp; Ride lot projects in urban redevelopment areas will be considered |</p>
<table>
<thead>
<tr>
<th>Program Name</th>
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<th>Description</th>
<th>Eligible Projects</th>
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</table>
| State Transportation Improvement Program (STIP) | CTC    | STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources. STIP programming generally occurs every two years. Local agencies work through their Regional Transportation Planning Agency (RTPA), County Transportation Commission, or Metropolitan Planning Organization (MPO), to nominate projects for inclusion in the STIP. | - Interregional Improvement Program  
  - State highway, intercity passenger rail, mass transit guideway, or grade separation projects. Non-capital costs for transportation system management or transportation demand management may be included where Caltrans finds the project to be a cost-effective substitute for capital expenditures  
  - intercity rail projects (including interregional commuter rail and grade separation projects) and to improvements outside urbanized areas on interregional road system routes  
- Regional Improvement Program  
  - capital projects (including project development costs) needed to improve transportation in the region  
  - improving State highways, local roads, public transit (including buses), intercity rail, pedestrian and bicycle facilities, grade separations, transportation system management, transportation demand management, soundwalls, intermodal facilities, and safety  
- Non-capital costs for transportation system management or transportation demand management may be included where the regional agency finds the project to be a cost-effective substitute for capital expenditures. Other non-capital projects (e.g. road and transit maintenance) are not eligible |
Public-Private Partnerships (P3)
In addition to pursuing funding from public sources, the private sector is an increasingly willing partner on transportation improvement projects. Public stakeholders can engage the private sector on one or more components of project delivery including planning, design, construction, finance, operations, and maintenance. The benefits and challenges of P3s for public stakeholders include:

<table>
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<tr>
<th>Benefits</th>
<th>Challenges</th>
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<tr>
<td>• Reduced financial risk</td>
<td>• Complex contracting</td>
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<tr>
<td>• Condensed project delivery timelines</td>
<td>• Matching expertise with project scope</td>
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<tr>
<td>• Quality assurances</td>
<td>• Management and oversight</td>
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<tr>
<td>• Lower ongoing costs</td>
<td>• Partner financial stability</td>
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<tr>
<td>• Innovation</td>
<td></td>
</tr>
<tr>
<td>• Greater access to financial resources</td>
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</table>

Figure 1 - Different P3 Models (LA METRO)
The Existing Site Recommendation Examples applies the recommended process shown in the Guidance for Existing Site Analysis to six existing sites in the regions of San Diego and Riverside. SANDAG and RCTC provided the six existing sites. Each site is taken through the three stages outlined in the Guidance for Existing Site Analysis to help users see what could be produced at each stage.

**ASSESSMENT STAGE:** Assess Existing Conditions

Supporting Resource:
- Park & Ride Data Center

**IDENTIFICATION STAGE:** Identify Key Challenges

Support Resource:
- Relinquishment Assessment

**DEVELOPMENT STAGE:** Develop Recommendations

Supporting Resource:
- Park & Ride Toolkit
SITE: HAMNER-NORCO PARK & RIDE
3945 Old Hammer Road, Norco, CA 91760

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS
Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site's transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

Although this city is considered "horse country," there are still a significant number of residents who commute to jobs in other parts of the county. Express lanes located on SR 91, provide access to the Park & Ride location, which is about four miles south of Norco. The 6th Street Park & Ride is sandwiched between two well utilized lots in nearby communities of Corona to the south and Mira Loma to the north. In 2020, 15-miles of express lanes are set to open on the I-15 between Cajalco Road and SR-60. This Park & Ride in Norco will be an ideal location that provides access to the future express lanes.
### EXISTING CONDITIONS TO ASSESS:

<table>
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<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
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</table>
| Parking Spaces:              | - 100 spaces (existing)  
- 74 spaces (new)  
- New lot serves as a spillover lot for a community center on the corner of Norco Dr. and Hamner Ave |
| User Types:                  | - Carpool and Vanpool Only                                          |
| Owner/Operator:              | - Owner of Existing: Caltrans  
- Operator of Existing: RCTC                                          |
| Leased or owned:             | - Caltrans owned                                                   |
| Utilization:                 | - 31% during field counts                                           |
| Egress/Ingress:              | - 2 entrance points from main road, but one entrance point into lot  
- 2 exit points onto main road, vehicles must turn right at both  
- 2 exit points for leaving lot                                        |
| Curb Space:                  | - None                                                              |

### SITE AMENITIES:

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<th>NOTES</th>
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<tbody>
<tr>
<td>Lighting: Does the lighting make it feel secure at night?</td>
<td>- Fair</td>
</tr>
<tr>
<td>Mobile Retail/Package Delivery Service: Is mobile retail or package delivery service available to help reduce user trips?</td>
<td>- No</td>
</tr>
<tr>
<td>Information Kiosks: What type of information do the kiosks provide users?</td>
<td>- No</td>
</tr>
<tr>
<td>Signs: Is there proper wayfinding signage?</td>
<td>- None</td>
</tr>
<tr>
<td>Bike Parking: Is bike parking available? What kind?</td>
<td>- None</td>
</tr>
<tr>
<td>Paving/Striping: What is the pavement of the site like? Are the spaces striped?</td>
<td>- Good Striped</td>
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</tbody>
</table>

### OTHER CONDITIONS:

<table>
<thead>
<tr>
<th>NOTES</th>
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</table>
| Wayfinding/Visibility: Is it easy to find the site from main roadways? Can the site be seen from the freeway or major arterial? | - No visibility from adjacent major arterials and freeway  
- Limited signs along main access roads (e.g., No signs on Hamner Ave designating “need to turn right” for entrance points, No signs for lot on the I-15 leading to Sixth St exit)  
- 1 wayfinding sign found at Sixth St/Hamner Ave intersection (heading westbound on Sixth Ave) but none for users travelling eastbound on Norco Dr |
| Surrounding Land Uses: What type of land uses surround the site?     | - Residential |
| Area Type: Is the site in an urban, suburban, or rural area?          | - Rural |
| Surrounding Roadway Network: Is the site far (>5+ minute drive) from freeway access ramps? What type of roadway provides access to the site? | - Bordered by I-15  
- Offramp is two blocks away |
| Access: Is the site easy to access? What types of modes can be used to access the site? (e.g., personal vehicle, transit, bike, walking, etc.) | - Personal Vehicle |

### ADDITIONAL CONSIDERATIONS:

<table>
<thead>
<tr>
<th>NOTES</th>
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<tbody>
<tr>
<td>Nearby Activity Centers: What activity centers are within 1 mile of the site?</td>
<td>- Norco Community Center</td>
</tr>
<tr>
<td>User Travel Patterns: What are the travel patterns (e.g., origin-destination pairs) of the users of the site?</td>
<td>- No travel pattern data available</td>
</tr>
<tr>
<td>Adjacent Park &amp; Ride Lots: What are the differences between the site being assessed and nearby Park &amp; Ride lots?</td>
<td>- No utilization available via Database</td>
</tr>
</tbody>
</table>
IDENTIFICATION STAGE: KEY CHALLENGES

- Underutilization (Utilization < 30%):
  » Currently averaging 31%. Because it is on the cusp, it is assumed that underutilization is a key challenge for the existing site analysis.

- Operations and Management:
  » Difficult to Access: The main arterials to access I-15 are Norco Avenue and Hamner Avenue, and this Park & Ride is not visible from either street because it is located behind the library, Chamber of Commerce, American Legion and Maverick Saloon buildings.
  » Security Concerns: Frequent RV and camping activity incident reports.

- System Management:
  » Lack of Awareness: Although this location is identified on the region’s 511 website and Google maps, there is no wayfinding signage on the main arterials or on the freeway. Although there is a small Park & Ride sign that is located at the entrance of the lot on Old Hamner Road, there are no wayfinding signs that direct users to turn right on Taft or Veterans American Street to access Old Hamner Road. The site is identified as “Park N Ride” in Google maps, which could allow users to direct them to the site. However, the user would need to know about the site and have an idea of its location to find it in Google maps.

RELINQUISHMENT ASSESSMENT

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Utilization 30% - 85%</td>
<td>Begin strategy identification tool in the Development Stage.</td>
</tr>
<tr>
<td>Utilization &lt; 30%</td>
<td>Continue step two to assess continued need for facility.</td>
</tr>
</tbody>
</table>
### Development Stage: Recommendations

**Strategy Identification Matrix**

<table>
<thead>
<tr>
<th>KEY CHALLENGES</th>
<th>Overutilization (&gt; 85%)</th>
<th>Utilization 30% - 85%</th>
<th>Underutilization (&lt;30%)</th>
<th>Modal Competition</th>
<th>Operations and Management</th>
<th>System Management</th>
<th>Funding</th>
<th>Partnerships and Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategies in Park &amp; Ride Toolkit</strong></td>
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<tr>
<td>Maximizing Capacity at Facilities</td>
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<tr>
<td>Managing Parking Demand</td>
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<td>Incentivize Target Users</td>
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<tr>
<td>Align Park &amp; Ride Planning with Local and Regional Goals</td>
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</table>
RECOMMENDATIONS FOR THE SITE

NEAR-TERM

- To increase awareness and usability of this lot, RCTC should work with the City of Norco and Caltrans District 8 to provide wayfinding signage on arterial streets and freeways for this Park & Ride lot.
  » Tools: Inter-Agency Coordination, and Supporting Mobility Hub Amenities

- Consider a pilot test of focused enforcement to deter abusive camping at the Park & Ride location. Enforcement may include warnings, ticketing or towing. Consider random security patrols to deter undesired users from loitering and vandalizing on-site. This is also an opportunity to work with the City of Norco Police Department to support this effort. Another option is to partner with donation centers like Salvation Army or Goodwill—these donation centers could provide staff at the Park & Ride lot throughout the day, which should deter undesired activity that occurs at vacant lots. Consider combining this effort with a strategic marketing outreach program to raise awareness for potential new users.
  » Tools: Focused Enforcement to Deter Abuse, Pilot Programs to Test Potential Maximizing Capacity Solutions, and Marketing Park & Ride Benefits

- Survey users of this location and adjacent Park & Ride locations to determine the neighborhood origins of users and the employment destinations. Understanding who is parking at the lot may also help identify where a targeted marketing campaign could be successful.
  » Tools: Proactive Siting, Annual Reporting and Performance Monitoring, and Marketing Park & Ride Benefits

MID-TERM

- Consider partnership pilot programs to activate the space and raise awareness of the Park & Ride location in the community. Examples may include Farmers markets, movie nights (e.g., New York Park & Ride lot hosts a Farmers Market; create a pop-up drive-in!).
  » Tools: Pilot Programs to Test Potential Maximizing Capacity Solutions and Activate, Lease or Reuse Excess Capacity

- Consider a targeted marking campaign with Caltrans District 8 to highlight the opportunity for commuters to carpool and utilize the Express Lanes that are planned to open in 2020.
  » Tools: Marketing Park & Ride Benefits and Inter-Agency Coordination

LONG-TERM

- Consider relocating this Park & Ride at a new location with better access and visibility to major arterials that access the freeway.
  » Tool: Proactive Siting
This page has been intentionally left blank.
SITE: CANYON COMMUNITY CHURCH (OF THE NAZARENE)
PARK & RIDE
1504 Taber St. Corona, CA 92881

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS
Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site’s transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

There are Express Lanes located on SR 91 between I-15 and SR 71, and this location is just south of that improvement. RCTC leases this location from Canyon Community Church for $8/space for 75 spaces to use Monday - Friday.
## EXISTING CONDITIONS TO ASSESS:

<table>
<thead>
<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces:</td>
<td>• 75 spaces</td>
</tr>
</tbody>
</table>
| User Types: | • Carpool & Vanpool  
| | • Transit |
| Owner/Operator: | • Operator of Existing: RCTC  
| | • Owner of New: Canyon Community Church |
| Leased or owned: | • Leased |
| Utilization: | • 53% during field counts |
| Egress/Ingress: | • Poor |
| Curb Space: | • None |

<table>
<thead>
<tr>
<th>SITE AMENITIES</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting:</td>
<td>• Fair</td>
</tr>
<tr>
<td>Mobile Retail/Package Delivery Service:</td>
<td>• No</td>
</tr>
<tr>
<td>Information Kiosks:</td>
<td>• No</td>
</tr>
</tbody>
</table>
| Signs: | • None  
| | • 1 entrance sign |
| Bike Parking: | • None |
| Paving/Striping: | • Good  
| | • Striped |

## OTHER CONDITIONS

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
</table>
| Poor  
| • No sign on the main road  
| • Sign at entrance |
| Residential  
| Commercial |
| Suburban |
| Bordered major arterial (California Ave)  
| Entrance along minor road  
| Freeway entrance is two blocks from station |
| Personal Vehicle |

## ADDITIONAL CONSIDERATIONS

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
</table>
| South of commercial center  
| East of Residential Neighborhood |
| No travel pattern data available |
| No utilization available via Data Center |
IDENTIFICATION STAGE: KEY CHALLENGES

- **Utilization 30%-85%:**
  » Currently averaging 53%.

- **Operations and Management:**
  » Security Concerns: This is a RCTC leased facility with good usage rate; however, it suffers from loitering and occasional vandalism.

- **System Management/Partnership and Policy:**
  » Lack of Awareness: Although this location is identified on the region’s 511 website, there is no wayfinding signage on the main arterials and none on the freeway. The only Park & Ride sign is on Taber Street. There is another sign within the lot, but users still need to travel through the church parking to get to the Park & Ride lot. The sign on Taber Street does not face the direction of drivers so it can easily be missed.

RELINQUISHMENT ASSESSMENT

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
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<tbody>
<tr>
<td><strong>STEP ONE</strong></td>
<td></td>
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<tr>
<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
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<td>Utilization &lt; 30%</td>
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</table>
## DEVELOPMENT STAGE: RECOMMENDATIONS

### STRATEGY IDENTIFICATION MATRIX

<table>
<thead>
<tr>
<th>KEY CHALLENGES</th>
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</table>
RECOMMENDATIONS FOR THE SITE

NEAR-TERM

- Survey users of this location and adjacent Park & Ride locations to determine the neighborhood origins of users and the employment destinations. Understanding who is parking at the lot may also help identify where a targeted marketing campaign could be successful.
  » **Tools:** *Proactive Siting, Annual Reporting and Performance Monitoring, and Marketing Park & Ride Benefits*

- To increase awareness and usability of this lot, RCTC should work with the City of Corona and Caltrans District 8 to provide wayfinding signage on arterial streets and freeways for this Park & Ride lot.
  » **Tools:** *Inter-Agency Coordination and Supporting Mobility Hub Amenities*

- To combat vandalism, loitering, and other safety related issues, it would be beneficial to look at implementing focused enforcement that can include both staffing and technology resources. Consider random security patrols to deter undesired users from loitering and vandalizing on-site. This is also an opportunity to work with the City of Corona Police Department to support this effort. Another option is to partner with donation centers like Salvation Army or Goodwill—these donation centers could provide staff at the Park & Ride lot throughout the day, which should deter undesired activity that occurs at vacant lots.
  » **Tools:** *Reduce Security Concerns and Inter-Agency Coordination*

MID-TERM

- Cameras could help with real-time surveillance and support enforcement. This does require capital improvements on right-of-way that is not owned by RCTC. Investment in cameras could also be combined with smart parking data collection and sharing. If this is investment is considered, it would need to be in partnership with Canyon Community Church to support funding, permitting installation and longer-term leases to justify the investment.
  » **Tools:** *Smart Parking Systems and Reduce Security Concerns*

LONG-TERM

- Consider relocating this Park & Ride at a new location with better access and visibility to major arterials that access the freeway.
  » **Tools:** *Proactive Siting*
SITE: NORTH MAIN CORONA METROLINK STATION PARK & RIDE

250 East Blaine Street Corona, CA 92879

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS

Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site’s transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

RCTC owns and operates all Metrolink facilities in Riverside County. This is an RCTC owned and operated facility where parking is primarily for Metrolink patrons, carpool and vanpool users. Of the 1,386 spaces, 118 are designated for carpool and vanpool. The structure and adjacent level lot benefit from 24/7 monitoring and on-site security. This location also has a “Rideshare 2 Rails” program with 27 spaces dedicated to commuters who carpool to this Metrolink facility. Rideshare 2 Rails participants are issued individually numbered parking permits that must be displayed to allow them to park in specially designated areas. This Metrolink Park & Ride is served by two Commuter Rail lines with connections to UC Riverside, San Diego, Anaheim and L.A. Union Station. The Corona Transit Center is located at this Park & Ride which provides additional local bus service to connect to the Commuter Rail network.
## EXISTING CONDITIONS TO ASSESS:

<table>
<thead>
<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces:</td>
<td>1,386 total spaces</td>
</tr>
<tr>
<td>User Types:</td>
<td>Carpool &amp; Vanpool</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>Owned &amp; Operated: RCTC</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>Owned</td>
</tr>
<tr>
<td>Utilization:</td>
<td>81% during field counts</td>
</tr>
<tr>
<td>Egress/Ingress:</td>
<td>Poor</td>
</tr>
<tr>
<td>Curb Space:</td>
<td>Yes</td>
</tr>
<tr>
<td>Parking Spaces:</td>
<td>118 designated Park &amp; Ride spaces</td>
</tr>
<tr>
<td>User Types:</td>
<td>Transit</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>Is the Park &amp; Ride under shared ownership?</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>Is the site leased or owned?</td>
</tr>
<tr>
<td>Utilization:</td>
<td>What is the utilization of the site? What count collection period was used to develop the utilization rate?</td>
</tr>
<tr>
<td>Egress/Ingress:</td>
<td>Is egress/ingress Good/Fair/Poor?</td>
</tr>
<tr>
<td>Curb Space:</td>
<td>Is there a designated pick-up/drop-off area?</td>
</tr>
</tbody>
</table>

## SITE AMENITIES:

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting:</td>
</tr>
<tr>
<td>Mobile Retail/Package Delivery Service:</td>
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<tr>
<td>Information Kiosks:</td>
</tr>
<tr>
<td>Signs:</td>
</tr>
<tr>
<td>Bike Parking:</td>
</tr>
<tr>
<td>Paving/Striping:</td>
</tr>
</tbody>
</table>

## OTHER CONDITIONS:

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayfinding/Visibility:</td>
</tr>
<tr>
<td>Surrounding Land Uses:</td>
</tr>
<tr>
<td>Area Type:</td>
</tr>
<tr>
<td>Surrounding Roadway Network:</td>
</tr>
<tr>
<td>Access:</td>
</tr>
<tr>
<td>Nearby Activity Centers:</td>
</tr>
<tr>
<td>User Travel Patterns:</td>
</tr>
<tr>
<td>Adjacent Park &amp; Ride Lots:</td>
</tr>
</tbody>
</table>

## ADDITIONAL CONSIDERATIONS:

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Vehicle</td>
</tr>
<tr>
<td>Transit</td>
</tr>
<tr>
<td>South of commercial center</td>
</tr>
<tr>
<td>East of Residential Neighborhood</td>
</tr>
<tr>
<td>No travel pattern data available</td>
</tr>
<tr>
<td>No utilization available via Data Center</td>
</tr>
</tbody>
</table>
IDENTIFICATION STAGE: KEY CHALLENGES

Refer to the existing conditions summary developed in the Assessments Stage to identify relevant key challenges and their potential causes from the list below.

- **Underutilization (Utilization < 85%):**
  » Currently averaging 81%. Because it is on the cusp, it is assumed that overutilization is a key challenge for the existing site analysis.

- **Modal Competition (Utilization > 85%) / System Management / Partnerships and Policy:**
  » This is a shared lot with varying user types and high utilization. Only the reserved “Rideshare 2 Rails” spaces are marked at this Park & Ride lot, which makes it difficult to distinguish between carpool, vanpool and transit users. Although station security provides parking counts, they cannot easily distinguish counts for each user type. Additionally, station counts must be conducted manually.

**RELINQUISHMENT ASSESSMENT**

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP ONE</strong></td>
<td></td>
</tr>
<tr>
<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Utilization 30% - 85%</td>
<td>Begin strategy identification tool in the Development Stage.</td>
</tr>
<tr>
<td>Utilization &lt; 30%</td>
<td>Continue step two to assess continued need for facility.</td>
</tr>
</tbody>
</table>
## Development Stage: Recommendations

### Strategy Identification Matrix

<table>
<thead>
<tr>
<th>Key Challenges</th>
<th>Overutilization (&gt;85%)</th>
<th>Utilization 30% - 85%</th>
<th>Underutilization (&lt;30%)</th>
<th>Modal Competition</th>
<th>Operations and Management</th>
<th>System Management</th>
<th>Funding</th>
<th>Partnerships and Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximizing Capacity at Facilities</strong></td>
<td>•</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Managing Parking Demand</strong></td>
<td></td>
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<tr>
<td><strong>Secure Facilities and Enforce Rules / Regulations</strong></td>
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<td></td>
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<tr>
<td><strong>Incentivize Target Users</strong></td>
<td></td>
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<td></td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Create Partnerships with Local Jurisdictions and Private-Sector</strong></td>
<td></td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Align Park &amp; Ride Planning with Local and Regional Goals</strong></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
EXISTING SITE RECOMMENDATION EXAMPLES

RECOMMENDATIONS FOR THE SITE

NEAR-TERM

- Survey users of this location and adjacent Park & Ride locations to determine the neighborhood origins of users and the employment destinations. Understanding who is parking at the lot may also help identify where additional access modes at the Corona Transit Center could be successful.
  » Tools: Proactive Siting, Annual Reporting and Performance Monitoring, and Enhance Access Modes

- Consider dedicating space for pick-up and drop-off for Transportation Network Companies that encourage ride-sharing like UberPool, Lyft Line and Waze Carpool. Strategize potential partnerships directly with these companies. In addition, consider re-routing local bus service to this site.
  » Tools: Enhance Access Modes and Supporting Mobility Hub Amenities

- Consider a pilot that expands the Dial-a-Ride service to all users and serves as an on-demand, door-to-door Microtransit option for the nearby community. This could also be implemented through a service like RideCo or Via.
  » Tools: Pilot Programs to Test Potential Maximizing Capacity Solutions, Enhance Access Modes, and Supporting Mobility Hub Amenities

MID-TERM

- Consider additional partnerships for the “Rideshare 2 Rails” program that encourages dedicated space for carpooling to this Park & Ride location. A partnership with a service like Scoop will provide ride-matching services for commuters who are driving to the Park & Ride from the same neighborhoods.
  » Tools: Marketing Park & Ride Benefits and Dedicate Space for Alternative Access Modes

- Consider a strategic marketing effort with other transit agencies and TDM programs or key campus destinations like UC Riverside to increase the number of potential new users who access this transit hub.
  » Tools: Campus Employer Partnerships and Marketing Park & Ride Benefits

LONG-TERM

- Consider investing in smart parking. This would provide real-time information that could be integrated into regional apps, dynamic freeway signage and throughout the parking lot and structure. Smart parking investment could be combined with a reservation or paid-parking system. Enforcement could be managed through license plate recognition software with a combined permit system. Revenue from a paid parking system could support other operations and management needs at this location or others in the system.
  » Tools: User Type Management, Smart Parking Systems, Inter-Agency Coordination, Annual Reporting and Performance Monitoring, and Implement Paid Parking System
This page has been intentionally left blank.
SITE: SOLANA BEACH TRANSIT STATION PARK & RIDE
105 N. Cedros Avenue, Solana Beach 92075

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS
Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site's transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

This location is considered a “Town Center” in SANDAG’s Smart Growth Concept Match, which allows for a variety of mixed-use development projects including multi-family residential of up to 20 dwelling units per acre.
### EXISTING CONDITIONS TO ASSESS:

<table>
<thead>
<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces:</td>
<td>- 319 regular, 6 ADA&lt;br&gt;- 325 total spaces</td>
</tr>
<tr>
<td>User Types:</td>
<td>- Carpool &amp; Vanpool&lt;br&gt;- Transit</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>- Owned &amp; Operated: NCTD</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>- Owned</td>
</tr>
<tr>
<td>Utilization:</td>
<td>- Near 100% utilization at peak periods</td>
</tr>
<tr>
<td>Egress/Ingress:</td>
<td>- Good</td>
</tr>
<tr>
<td>Curb Space:</td>
<td>- Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayfinding/Visibility:</td>
<td>- Good</td>
</tr>
<tr>
<td>Surrounding Land Uses:</td>
<td>- Retail&lt;br&gt;- Residential</td>
</tr>
<tr>
<td>Area Type:</td>
<td>- Urban</td>
</tr>
<tr>
<td>Surrounding Roadway Network:</td>
<td>- 1 mile of freeway ramps&lt;br&gt;- Adjacent to two major arterials</td>
</tr>
<tr>
<td>Access:</td>
<td>- Auto, Bike, Transit Connection, Pedestrian</td>
</tr>
</tbody>
</table>

### SITE AMENITIES |

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### ADDITIONAL CONSIDERATIONS |

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<tr>
<td>Adjacent Park &amp; Ride Lots:</td>
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</tbody>
</table>
IDENTIFICATION STAGE: KEY CHALLENGES
Refer to the existing conditions summary developed in the Assessments Stage to identify relevant key challenges and their potential causes from the list below.

- **Overutilization (Utilization > 85%)**
  » Frequently at 100% capacity. Nearby Coaster Park & Ride lots are also highly utilized

- **Modal Competition (Utilization > 85%) / System Management / Partnerships and Policy**
  » The lot is adjacent to retail locations and near the beach. It has been reported that this attracts unauthorized parking at the lot.
  » Much of the commuter demand may be generated from a very large market area that captures the southern and eastern parts of the county.

- **Funding / System Management**
  » NCTD does not have staff to support data collection to monitor utilization, and there is no funding available to support capital investments to increase the number of Park & Ride spaces.

### RELINQUISHMENT ASSESSMENT

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<tr>
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<td>Begin strategy identification tool in the Development Stage.</td>
</tr>
<tr>
<td>Utilization &lt; 30%</td>
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</tr>
</tbody>
</table>
**DEVELOPMENT STAGE: RECOMMENDATIONS**

**STRATEGY IDENTIFICATION MATRIX**

<table>
<thead>
<tr>
<th>STRATEGIES IN PARK &amp; RIDE TOOLKIT</th>
<th>KEY CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overutilization (&gt;85%)</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Maximizing Capacity at Facilities</td>
<td>•</td>
</tr>
<tr>
<td>Managing Parking Demand</td>
<td></td>
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<tr>
<td>Secure Facilities and Enforce Rules and Regulations</td>
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<tr>
<td>Incentivize Target Users</td>
<td>•</td>
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<tr>
<td>Create Partnerships with Local Jurisdictions and Private-Sector</td>
<td>•</td>
</tr>
<tr>
<td>Align Park &amp; Ride Planning with Local and Regional Goals</td>
<td></td>
</tr>
</tbody>
</table>
EXISTING SITE RECOMMENDATION EXAMPLES

RECOMMENDATIONS FOR THE SITE

NEAR-TERM

- Consider piloting focused enforcement examples to deter unauthorized users such as warnings, ticketing, towing, and on-site patrols at random. This is also an opportunity to work with the City of Solana Beach for shared parking enforcement efforts throughout the City.

  » **Tools:** Focused Enforcement to Deter Abuse, Pilot Programs to Test Potential Maximizing Capacity Solutions, and Marketing Park & Ride Benefits

- Survey users of this site and adjacent Park & Ride locations to determine the origins of users and their employment destinations. Validating origins of parking lot users may help identify where additional transportation access service opportunities could be successful. Consider strategic partnerships with microtransit companies to expand the first-mile/last-mile service opportunities.

  » **Tools:** Proactive Siting, Annual Reporting and Performance Monitoring, and Enhance Access Modes

- Consider renting camera equipment to evaluate ongoing uses at the Park & Ride location to better assess user behaviors. This will document the user types, when the lot fills as it relates to service times, and any potential latent demand or “hide and ride” activity. This data would help identify enforcement needs and times or justify potential partnerships and future investments.

  » **Tools:** Proactive Siting, Annual Reporting and Performance Monitoring, User Type Management, Smart Parking Systems, and Inter-Agency Coordination

- Consider a pilot permit program that guarantees a priority space for those who carpool to transit, which could increase the person per space utilization. A partnership with a service like Scoop will provide ride-matching services for commuters who are driving to the Park & Ride from the same neighborhoods.

  » **Tools:** Dedicate Space for Alternative Access Modes, Pilot Programs to Test Potential Maximizing Capacity Solutions, User Type Management, Enhance Access Modes, and Marketing Park & Ride Benefits

MID-TERM

- Consider a partnership with the City of Solana Beach for a Neighborhood Electric Vehicle Program that provides on-demand free rides that serve adjacent retail facilities and the beach. Companies like Circuit that has partnered with the City of San Diego could serve as a model for this Microtransit service.

  » **Tools:** Enhance Access Modes, Inter-Agency Coordination, and Supporting Mobility Hub Amenities

LONG-TERM

- Consider investing in smart parking and/or paid parking system. This would provide real-time information that could be integrated into regional apps, dynamic freeway signage and throughout the parking lot and structure. Smart parking investment could be combined with a reservation or paid-parking system. Enforcement could be managed through license plate recognition software with a combined permit system. Including real-time transit arrival and departure times could also help balance demand. Early and accessible information provides a more reliable service by helping re-route commuters to stations or lots with more capacity. Revenue from a paid parking system could support other operations and management needs at this location or others in the system.

  » **Tools:** User Type Management, Smart Parking Systems, Inter-Agency Coordination, Annual Reporting and Performance Monitoring, and Implement Paid Parking System

- This Park & Ride is located in SANDAG’s Smart Growth concept map. Thus, future Transit-Oriented Development is encouraged at this location. Until a robust mobility options become available, there may still be demand for Park & Ride users and may warrant shared-use parking at the TOD. Smart parking can support operations and enforcement to control different user types as it relates to shared-use policies.

  » **Tools:** Encourage Transit-Oriented Development (TOD), User Type Management, and Inter-Agency Coordination
This page has been intentionally left blank.
SITE: I-15 AT SR 76 PALA ROAD PARK & RIDE
3340 Old Hwy, Fallbrook, 92028

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS
Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site’s transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

This lot was relocated to the north side of SR 76 in 2017. It has a capacity of 223 spaces that are shared to accommodate carpool, vanpool, transit, and truck parking. It has fast electric vehicle charging stations and bike lockers. The SR 76 experiences sections of heavy peak hour congestion, particularly westbound. This area is a common stopover for goods movement trucks that sometimes park illegally on the freeway shoulders at night. There is a Mobil gas station and convenient store adjacent to this Park & Ride lot. This is not a designated truck rest stop, but there are no designated truck rest stops in this corridor so there is a significant number of truck activity in designated spaces and around the freeway since there are legal requirements that create the need to stop and rest. Utilization counts are only conducted twice per year, so the data relating to each user type is not available.

There are a significant number of Riverside commuters who are employed in San Diego. Because the I-15 is congested north of SR 76, some commuters informally use Pala Temecula Road to bypass traffic along I-15 and take SR 76 westbound, so there is a significant number of commuters who converge at the I-15 and SR 76 intersection. The ingress and egress of this Park & Ride connects to SR 76, following state policies. The shelter provided at this location was in partnership with the local tribal governments in both San Diego County and Riverside county. There is limited service at this transit facility and wayfinding signage, which may cause confusion.
# EXISTING SITE RECOMMENDATION EXAMPLES

## EXISTING CONDITIONS TO ASSESS:

<table>
<thead>
<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces:</td>
<td>• 223 total spaces</td>
</tr>
<tr>
<td>User Types:</td>
<td>• Carpool &amp; Vanpool • Transit</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>• Owned &amp; Operated: Caltrans</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>• Owned</td>
</tr>
<tr>
<td>Utilization:</td>
<td>• experiences 50-60% occupancy • As of 1/3 capacity increased from 163 spaces to 216. NOTE counts through Spring 217 based on old capacity (163). Updated on 11/22 to 223 spaces. Reopened Nov. 1 217 and now includes 11 spaces for semitrucks and 1 spaces for electric vehicles</td>
</tr>
<tr>
<td>Egress/Ingress:</td>
<td>• Good</td>
</tr>
<tr>
<td>Curb Space:</td>
<td>• None</td>
</tr>
</tbody>
</table>

## SITE AMENITIES | NOTES
| NOTES |
|----------------|-------|
| Lighting: Does the lighting make it feel secure at night? | • Poor |
| Mobile Retail/Package Delivery Service: Is mobile retail or package delivery service available to help reduce user trips? | • None |
| Information Kiosks: What type of information do the kiosks provide users? | • None |
| Signs: Is there proper wayfinding signage? | • Poor |
| Bike Parking: Is bike parking available? What kind? | • None |
| Paving/Striping: What is the pavement of the site like? Are the spaces striped? | • Good, Yes • Straight-in parking |

## OTHER CONDITIONS | NOTES
| NOTES |
|----------------|-------|
| Wayfinding/Visibility: Is it easy to find the site from main roadways? Can the site be seen from the freeway or major arterial? | • Poor |
| Surrounding Land Uses: What type of land uses surround the site? | • Residential (north) |
| Area Type: Is the site in an urban, suburban, or rural area? | • Rural |
| Surrounding Roadway Network: Is the site far (>5+ minute drive) from freeway access ramps? What type of roadway provides access to the site? | • near an intersection of a major on/off ramp to I-15 and SR-76 |
| Access: Is the site easy to access? What types of modes can be used to access the site? (e.g., personal vehicle, transit, bike, walking, etc.) | • Auto • Transit |

## ADDITIONAL CONSIDERATIONS | NOTES
| NOTES |
|----------------|-------|
| Nearby Activity Centers: What activity centers are within 1 mile of the site? | • Nearby truck rest stop and gas station |
| User Travel Patterns: What are the travel patterns (e.g., origin-destination pairs) of the users of the site? | • No travel pattern data available |
| Adjacent Park & Ride Lots: What are the differences between the site being assessed and nearby Park & Ride lots? | • High utilization at Park & Ride south of site |
IDENTIFICATION STAGE: KEY CHALLENGES

Refer to the existing conditions summary developed in the Assessments Stage to identify relevant key challenges and their potential causes from the list below.

- **Utilization 30% - 85%:**
  » Currently averaging 50-60% occupancy

- **Modal Competition (Utilization >85%) / System Management / Partnerships and Policy:**
  » There are a number of shared users at this location and significant congestion on SR 76. This Park & Ride accommodates commuters who are looking for fast charging, carpool and vanpool commuters, transit users and truck drivers and there is no data available to quantify the usage types and peak times of activity. There is a significant amount of congestion on SR 76 and limited service at this location. Wayfinding is limited and there are no official truck rest stops in this corridor area.

RELINQUISHMENT ASSESSMENT

<table>
<thead>
<tr>
<th>CHALLENGE</th>
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<tbody>
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<td><strong>STEP ONE</strong></td>
<td></td>
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<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
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<td><strong>Utilization 30% - 85%</strong></td>
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<td>Utilization &lt; 30%</td>
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### **DEVELOPMENT STAGE: RECOMMENDATIONS**

#### STRATEGY IDENTIFICATION MATRIX

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<tr>
<th>STRATEGIES IN PARK &amp; RIDE TOOLKIT</th>
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<tr>
<td></td>
<td>Overutilization (&gt;85%)</td>
</tr>
<tr>
<td>Maximizing Capacity at Facilities</td>
<td>•</td>
</tr>
<tr>
<td>Managing Parking Demand</td>
<td>•</td>
</tr>
<tr>
<td>Secure Facilities and Enforce Rules / Regulations</td>
<td>•</td>
</tr>
<tr>
<td>Incentivize Target Users</td>
<td>•</td>
</tr>
<tr>
<td>Create Partnerships with Local Jurisdictions and Private-Sector</td>
<td>•</td>
</tr>
<tr>
<td>Align Park &amp; Ride Planning with Local and Regional Goals</td>
<td>•</td>
</tr>
</tbody>
</table>
RECOMMENDATIONS FOR THE SITE

NEAR-TERM
- Survey users of this location to determine the neighborhood origins of users and the destinations of each user type. Validating the origins of parking lot users may also help identify where additional investments could be successful.
  » **Tools:** Proactive Siting, Annual Reporting and Performance Monitoring, and Enhance Access Modes
- Another option would be to consider renting camera equipment to evaluate ongoing uses at the Park & Ride location to better assess user behaviors. This data would help identify enforcement needs and times or justify potential partnerships and future investments. This effort could be combined with a truck parking needs assessment to determine the truck parking demand along the corridor and a supply and capacity assessment. Camera footage can provide utilization rates and demand activity over a longer period of time.
  » **Tools:** Proactive Siting, Annual Reporting and Performance Monitoring, User Type Management, Smart Parking Systems, and Inter-Agency Coordination
- Consider a pilot program to allow goods movement trucks to utilize the full lot overnight, when it is not utilized by regular commuters. This could increase safety of freeway drivers as well as the truck drivers.
  » **Tools:** Annual Reporting and Performance Monitoring, Pilot Programs to Test Potential Maximizing Capacity Solutions, User Type Management, Activate, Lease, or Reuse Excess Capacity, and Inter-Agency Coordination

MID-TERM
- Consider a partnership with the local tribal governments for potential Microtransit service solutions to this Park & Ride location. This could also be implemented through a service like RideCo or Via.
  » **Tools:** Enhance Access Modes, Inter-Agency Coordination, and Supporting Mobility Hub Amenities

LONG-TERM
- Consider investing in smart parking. This would provide real-time information that could be integrated into regional apps, dynamic freeway signage and throughout the parking lot and structure. The real-time information could also support websites like [www.americantrucparking.com](http://www.americantrucparking.com) that helps truck drivers make decisions on where to rest.
  » **Tools:** User Type Management, Smart Parking Systems, Inter-Agency Coordination, and Annual Reporting and Performance Monitoring
This page has been intentionally left blank.
SITE: GOVERNOR DRIVE PARK & RIDE
5196 Governor Drive San Diego, CA 92122

ASSESSMENT STAGE: ASSESSING EXISTING CONDITIONS
Using the Park & Ride Data Center, a virtual site visit was performed to review the influence of transportation conditions on the site. The following maps highlight the site’s transportation conditions at the regional, local, and site circulation perspectives. The site is identified with a blue outlined circle in the maps.

This Park & Ride Lot is owned and operated by Caltrans and is located in the City of San Diego adjacent to I-805 and just north of SR 52. Just north of this Park & Ride location is the Tier 1 employment centers of UTC/Sorrento Valley. South of this location is another Tier 1 employment center at Kearny Mesa. The lot counts are generally low, which is surprising since there are a significant number of residents in this area who add to the peak hour congestion on I-805, SR 52 and surrounding major arterials. There are a few business parks south of Governor Drive and suburban single-family homes surrounding this Park & Ride. To the east of I-805 are MCAS Miramar and village nurseries. There is a vacant parcel behind this Park & Ride lot that has potential for future development.
### EXISTING CONDITIONS TO ASSESS:

<table>
<thead>
<tr>
<th>SITE CONDITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces:</td>
<td>• 76 total spaces</td>
</tr>
<tr>
<td>User Types:</td>
<td>• Carpool &amp; Vanpool</td>
</tr>
<tr>
<td>Owner/Operator:</td>
<td>• Owned &amp; Operated: Caltrans</td>
</tr>
<tr>
<td>Leased or owned:</td>
<td>• Owned</td>
</tr>
</tbody>
</table>
| Utilization:    | • Experiences 32% occupancy  
                   • Tour Bus Passes - Dash Pass |
| Egress/Ingress: | • Good |
| Curb Space:     | • None |

<table>
<thead>
<tr>
<th>SITE AMENITIES</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting:</td>
<td>• Poor</td>
</tr>
<tr>
<td>Mobile Retail/Package Delivery Service:</td>
<td>• Salvation Army Donation Center</td>
</tr>
<tr>
<td>Information Kiosks:</td>
<td>• None</td>
</tr>
<tr>
<td>Signs:</td>
<td>• Poor</td>
</tr>
<tr>
<td>Bike Parking:</td>
<td>• None</td>
</tr>
</tbody>
</table>
| Paving/Striping: | • Good, Yes  
                    • Straight-in parking |

### OTHER CONDITIONS

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
</tr>
<tr>
<td>Residential (north)</td>
</tr>
<tr>
<td>Rural</td>
</tr>
<tr>
<td>Located near the Governor Drive on and off-ramps for I-805</td>
</tr>
<tr>
<td>Auto</td>
</tr>
</tbody>
</table>

### ADDITIONAL CONSIDERATIONS

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
</table>
| Office park south of site  
  Residential community to the west  
  Military base east of site |
| No travel pattern data available |
| High utilization at Park & Ride north and south of site  
  However, site has the same number of occupied spaces as the adjacent sites |
IDENTIFICATION STAGE: KEY CHALLENGES
Refer to the existing conditions summary developed in the Assessments Stage to identify relevant key challenges and their potential causes from the list below.

- **Underutilization (Utilization < 30%)**:  
  » Currently averaging 32%. Because it is on the cusp, it is assumed that underutilization is a key challenge in the site analysis.

- **System Management / Operations and Management / Partnerships and Policy**:  
  » This Park & Ride is in the middle of two Tier 1 regional employment centers and has direct access to two major freeway connections but still demonstrates poor utilization. There is no wayfinding signage on the major arterials or on the freeway streets leading to this location. Additionally, the Park & Ride is not visible from the street or freeway level.

## RELINQUISHMENT ASSESSMENT

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP ONE</strong></td>
<td></td>
</tr>
<tr>
<td>Utilization &gt; 85%</td>
<td>Begin strategy identification matrix in the Development Stage.</td>
</tr>
<tr>
<td>Utilization 30% - 85%</td>
<td>Begin strategy identification tool in the Development Stage.</td>
</tr>
<tr>
<td>Utilization &lt; 30%</td>
<td>Continue step two to assess continued need for facility.</td>
</tr>
</tbody>
</table>
**DEVELOPMENT STAGE: RECOMMENDATIONS**

**STRATEGY IDENTIFICATION MATRIX**

<table>
<thead>
<tr>
<th>KEY CHALLENGES</th>
<th>Overutilization (&gt;85%)</th>
<th>Utilization 30% - 85%</th>
<th>Underutilization (&lt;30%)</th>
<th>Modal Competition</th>
<th>Operations and Management</th>
<th>System Management</th>
<th>Funding</th>
<th>Partnerships and Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximizing Capacity</strong></td>
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<td><strong>Managing</strong></td>
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<td>Parking Demand</td>
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<tr>
<td><strong>Secure Facilities</strong></td>
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<td>and Enforce Rules /</td>
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<tr>
<td><strong>Incentivize Target</strong></td>
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<td>Users</td>
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<tr>
<td><strong>Create Partnerships</strong></td>
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<td>and Private-Sector</td>
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<td><strong>Align Park &amp; Ride</strong></td>
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<td>Planning with Local</td>
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<td>and Regional Goals</td>
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</tbody>
</table>
RECOMMENDATIONS FOR THE SITE

NEAR-TERM

- Survey users of this location to determine the neighborhood origins of users and the destinations of each user type. Validating the origins of parking lot users may also help identify where additional investments could be successful.
  - **Tools:** Proactive Siting, Annual Reporting and Performance Monitoring, and Enhance Access Modes

- To increase awareness and usability of this lot, RCTC should work with the City of San Diego and Caltrans District 11 to provide wayfinding signage on arterial streets and freeways for this Park & Ride lot.
  - **Tools:** Inter-Agency Coordination and Supporting Mobility Hub Amenities

MID-TERM

- Consider a partnership with employers in UTC/Sorrento Valley or Kearny Mesa for a shuttle service that provides direct access to major employer campuses combined with parking reduction policies. Shuttle service could relieve some of the parking demands at their employment locations.
  - **Tools:** Campus Employer Partnerships, Enhance Access Modes, Inter-Agency Coordination, and Supporting Mobility Hub Amenities

- Consider partnership pilot programs to activate the space and raise awareness of the Park & Ride location in the community. Examples may include Farmers markets, movie nights (New York Park & Ride program hosts a Farmers Market; create a pop-up drive-in).
  - **Tools:** Pilot Programs to Test Potential Maximizing Capacity Solutions and Activate, Lease or Reuse Excess Capacity

LONG-TERM

- Consider investing in smart parking. This would provide real-time information that could be integrated into regional apps, dynamic freeway signage and throughout the parking lot and structure. Work with well-used mapping applications to show Park & Ride as viable alternative to SOV usage.
  - **Tools:** User Type Management, Smart Parking Systems, Inter-Agency Coordination, and Annual Reporting and Performance Monitoring

- Consider plans for future infrastructure investments on I-805 or SR 52 to include plans for future land uses at this Park & Ride lot. With the addition of transit services or managed lanes, there are so many opportunities to maximize the available Caltrans-owned right of way at this Park & Ride lot. Because of its unique location, it could be a future mobility hub or transit-oriented development.
APPENDIX I: DATA CENTER
Regional Park & Ride Data Center

Part I: The project team developed the Data Center to enhance Park & Ride system performance monitoring capabilities and support efficient and effective regional planning strategies. Part I describes how the Data Center meets that goal.

Part II: The poster in Part II of this Appendix was presented at the 2019 California Transportation Planning Conference. It outlines the ways in which the project team envisions the Data Center can add functionality in the future given sustained regional coordination and funding.

Part I

The Challenge

The project team identified two key opportunities to improve regional Park & Ride decision making and developed a Data Center to address them.

1. Inefficient Data Collection

Many agencies throughout the region manage Park & Ride facilities and collect occupancy (count) data on those lots. However, the type of data collected and consistency in reporting varies. Much of this data collection and management is done through field visits using paper and pen and is documented on separate excel sheets which are emailed back and forth. A regional dataset founded on standardized collection procedures would reduce inaccuracies, inconsistencies, and incompatible performance measures.

- Improve and standardize data collection procedures
- Mitigate data transfer errors

2. Lack of Regional Visibility

Lack of data sharing limits the knowledge base stakeholders rely on to operate and manage their Park & Ride networks. Agencies that only assess their assets through the lens of jurisdictional boundaries are blinded to regional trends that are likely affecting their system performance.

Intra-agency and inter-agency data sharing is equally important. Many Park & Ride responsibilities, such as maintenance and security, may be under the purview of an external partner like a local jurisdiction or private developer (under a shared use agreement). These disparate roles and responsibilities contribute to gaps in data or a lack of data standardization.

- Improve data sharing between and within stakeholders
- Improve data analysis

Actionable Insights

The Data Center is a foundational step in strengthening regional knowledge and preparing for the role of the facilities in the future. By consolidating and standardizing Park & Ride data, the Data Center drives actionable insights on a local and regional scale.

The following pages describe how the Data Center was designed to address key challenges and opportunities. While the tool addresses these baseline challenges, it is designed to add functionality—particularly in analysis and reporting—to adapt to a stakeholder’s or region’s needs if funding were to become available to sustain its development.

Park & Ride data should not be considered in isolation. Paired with relevant datasets—such as transit service levels, ridership, peak hour congestion, land use, goods movement corridors, and commuter origin/destination (O/D) pairs—the role of Park & Ride is amplified, and a planner or manager’s perspective broadened.
### Data Center Walkthrough

1. Accessibility
2. Visualizing Data
3. Comprehensive Site Information
4. Regional Visibility
5. Virtual Site Visit
6. Collecting Data from the Field
7. System Performance Monitoring
8. Reporting

### Accessibility

The Data Center is hosted by ArcGIS online. It can be accessed through a web browser or the ArcGIS Collector App on a mobile device. It requires minimal GIS acumen, although some familiarity with filtering and exporting tables is desirable. A cloud-based system facilitates knowledge sharing between agencies and with the public.

### Visualizing Data

The Data Center visualizes the active, future, and inactive facilities in the regional Park & Ride network. These data points are accompanied by a host of layers to inform decision making, which will be described in depth later. The color behind each data point represents the last reported utilization and allows a user to quickly assess network health and corridor occupancy relationships. (yellow represents underutilized lots and the darkest red represents overutilized lots).

Symbology could be used to differentiate Park & Rides such as by operator, capacity, or service type; alternatively, users can establish quick-access filters such as “Only Show Active Lots” or “Only Show MTS Lots.”
Comprehensive Site Information

The Data Center consolidated data from several agencies and departments, creating a “one stop shop” that expedites information gathering and analysis. The type and breadth of data stored is scalable and adaptable to a region’s needs; a public version of the tool with restricted information could be published as a commuter resource.

A user can quickly view and edit a single lot’s characteristics in a pop-up window (pictured) or in an attribute table similar to an online Excel spreadsheet. The project team identified over 20 lot attributes to collect and maintain such as the existence of bike lockers, the number and type of spaces provided, and administrative information such as lease costs and service hours. The currently collected attributes are listed below.

Park & Ride Attributes Collected Currently:

- Status
- Operator
- Lot Name, Address, City, Zip Code
- Total Spaces (regular, designated carpool/vanpool, Kiss N Ride, ADA)
- Service Type
- Owner Note (State, private, city)
- Shared or Exclusive
- Shared With (Church, Retail, etc)
- Lease (Y/N)
- Lease Cost (Per space)
- Parking Permit Required
- Posted Service Hours/Days
- Donation Center (Y/N)
- Lighting (Y/N)
- CCTV (Y/N)
- Food/Beverage Kiosk (Y/N)
- Trash Can (Y/N)
- Public Restroom (Y/N)
- Notes/Comments
Regional Visibility

The tool allows the user to access several layers to increase their understanding of local and regional contexts. This information can be instrumental for siting and forecasting decisions. A list of included layers is below.

- Existing transit service
- SANDAG Smart Growth
- Lot utilization (last count)
- SANDAG Land Use
- 5-,10-, and 15-minute drive time travel shed from each lot
- Largest employment center in San Diego region
- Major roadway peak hour congestion (this is a draft layer), but helps give quick visual context

Given sustained funding, additional layers that could be developed and included:

- Peak-hour traffic conditions on major corridors and arterials
- Population density
- Location of Direct Access Ramps and High-Occupancy Vehicle lanes
- Location of Park & Ride wayfinding signs on freeways and local streets
- Electric Vehicle charging network
- IGR Projects to help provide context for potential development in the area of a new or existing Park & Ride
- Parcel data to show exact location of Park & Ride spaces (especially important for shared-use lots where spaces may not be marked clearly or individually at the site)
- Traffic Counts – Number of people who pass by the site every day (data to support an advertising public private partnership opportunity)

This layer (left) shows a 5-minute peak hour drive time catchment area from the circled lot. A travel shed, paired with assumptions about the distance people are willing to travel to a Park & Ride, can help inform siting decisions.
**A Virtual Site Visit**

Different basemaps, layers, and historic data can help a Park & Ride manager perform a virtual site visit to support siting decisions and operations strategies. Although in-person site visits are always recommended, satellite images can provide quick and basic insight such as a lot’s visibility from the street and surrounding land use.

**Collecting Data from the Field**

By facilitating data collection from the field, the tool allows a user to see and share updates in real-time. The collection form can be customized to match region’s field survey needs. In the future, smart systems like sensors or video analysis could feed into the Data Center to provide truly automated real-time system information. This would eliminate the extensive staff time spent visiting sites and performing counts in person in the region every year.

The Data Center currently allows pictures, counts of compliant and non-compliant users, and an option to include notes for things such as maintenance issues for review back in the office.
**System Performance Monitoring**

The ArcGIS Dashboard platform synthesizes Park & Ride Data Center inputs in real time, enabling regional system performance monitoring. A filter allows the user to view data by operator, lot, and/or timeframe. The Dashboard can be customized to show dynamic charts, graphs, and maps. At this time, ArcGIS Online does not support exporting reports from the Dashboard, but this may be part of a future feature update. Table exports are enabled from the Data Center map itself.

![Dashboard Screenshot](image.png)

**Reporting**

This Utilization Report can be accessed from the Data Center and exported into excel. The fields (Utilization by Year or Quarter) can be set up to fit an agency’s reporting standards. Summary tables can help identify trends and outliers per site and across the region.

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Owner</th>
<th>Spaces</th>
<th>Utilization Most Recent</th>
<th>Utilization Quarter (Past 3 months)</th>
<th>Utilization Year (Past 12 months)</th>
<th>Utilization 2018</th>
<th>Utilization 2017</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twin Peaks Rd (St. Gabriel Church)</td>
<td>18784 Twin Peaks Rd</td>
<td>PRIVATE</td>
<td>33</td>
<td>81.8</td>
<td>81.8</td>
<td>95.5</td>
<td>68.2</td>
<td>53.5</td>
<td></td>
</tr>
<tr>
<td>Grossmont Blvd</td>
<td>5230 Bancroft Dr</td>
<td>STATE</td>
<td>29</td>
<td>96.2</td>
<td>96.2</td>
<td>93.1</td>
<td>77.6</td>
<td>63.9</td>
<td></td>
</tr>
</tbody>
</table>
Part II
This poster was presented at the 2019 California Transportation Planning Conference (CTPC).
**Do you manage P&R by taking notes like this?**

<table>
<thead>
<tr>
<th>Station</th>
<th>意</th>
<th>Location</th>
<th>站点</th>
<th>意</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;R</td>
<td>1</td>
<td>San Diego</td>
<td>Park &amp; Ride</td>
<td>2</td>
<td>Regional</td>
</tr>
</tbody>
</table>

Or this?

<table>
<thead>
<tr>
<th>Station</th>
<th>意</th>
<th>Location</th>
<th>站点</th>
<th>意</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;R</td>
<td>1</td>
<td>San Diego</td>
<td>Park &amp; Ride</td>
<td>2</td>
<td>Regional</td>
</tr>
</tbody>
</table>

**Why GIS and not Excel?**

- Dynamic data: can be viewed and updated from the field using the cloud.
- Visualize and update data cleanly for internal and public use.
- Provide better management tools.
- Spatial analysis: supports siting, forecasting, and local and regional decision making.
- Make data more accessible.
- Improve resource allocation.
- Visualize and identify trends.
- Reduce data entry errors.

**By the numbers**

- 111 active P&R lots in the San Diego region managed and operated by transit agencies, local jurisdictions, and state and regional agencies.
- 31 Park & Pool lots
- 50 Transit lots
- 30 lots serve both users

- 1,295 paper or Excel counts inputted and visualized in our beta GIS map.
- 64% average utilization of P&R lots in the region in Fall 2018 (August - October).
- 9 lots consistently overutilized in Fall 2018 (average more than 80%).
- 23 lots consistently underutilized in 2018 (average less than 30%).

**Features coming soon**

- Automatic Quarterly Reporting
- Signage and Wayfinding Inventory
- Forecasting Analysis Tool
- Public Facing Version
- Security Trend Tracking

**Ask for a live iPad demonstration!**

Beta testing ways to display quarterly utilization.

---

Park & Ride Data provided by MTS, CALTRANS, SANDAG, RCTC, and NCTD
Poster prepared by:
- Allison Woodworth, Transit Planning Intern (SANDAG)
- GIS support from Adam Atas, Associate Researcher & Modeler (SANDAG)
- Rachel Graffeo, Graphic Design Intern (SANDAG)
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Helpful Links and Resources

There are a variety of useful resources to leverage when implementing Park & Ride strategies. The following links contain information related to previous agency plans/studies, transportation related data, policies, and existing programs.

511sd
- A service that consolidates regional transportation information and resources for San Diego
  - https://511sd.com/

Caltrans
- Statewide transportation resources
  - https://dot.ca.gov/

iCommute
- TDM for Local Governments
  - https://icommutesd.com/planners/TDM-local-governments
- TDM for Developers
  - https://icommutesd.com/planners/TDM-developers
- iCommute Mobility Management Toolbox
  - https://icommutesd.com/planners/TDM-local-governments

IE511
- A service that consolidates regional transportation information and resources for the Inland Empire
  - https://www.ie511.org/

MTS
- Transit information for central and southern San Diego County
  - https://www.sdmts.com/

NCTD
- Transit information for northern San Diego County
  - https://www.gonctd.com/

RCTC
- Transportation resources in Riverside County
  - https://www.rctc.org/

RTA
- Transit information for northern Riverside County
  - https://www.riversidetransit.com/
San Diego Forward

- SANDAG’s Regional Transportation Plan and supporting resources
  - [https://sdforward.com/](https://sdforward.com/)


- Explores technology trends that have the potential to get more out of our existing infrastructure, improve safety, and provide more mobility choices that reduce greenhouse gas emissions such as shared mobility, electrification, connectivity, and automation.
  - [https://www.sdforward.com/mobility-planning/emerging-technologies](https://www.sdforward.com/mobility-planning/emerging-technologies)

SANDAG Regional Climate Action Planning Framework (ReCAP)

- Establishes a technical framework for regionally-consistent climate action planning that preserves local policy flexibility for the unique needs and circumstances of each local jurisdiction.

SANDAG Regional Mobility Hub Strategy and Mobility Hub Features Catalog

- Demonstrates how transportation services, amenities, and supporting technologies can work together to make it easier for communities to access transit and other shared mobility choices.
  - [https://www.sdforward.com/mobility-planning/regionalmobilityhub](https://www.sdforward.com/mobility-planning/regionalmobilityhub)

SANDAG Regional Parking Management Toolbox

- Provides guidance on parking management using strategies, technologies, and best practices so that it benefits the economy as well as the overall transportation system.
  - [https://sdforward.com/mobility-planning/parking-toolbox](https://sdforward.com/mobility-planning/parking-toolbox)

SANDAG Smart Growth Tool Box

- Includes planning and financing tools to encourage smart growth development.
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Baselining: GIS Instructions

This appendix is a detailed walk-through of the methodology outlined in the Guidance for New Site Analysis section of this report. Please note: although a reasonable estimating tool, baselining is a guideline and is limited by the accuracy of the data inputs. This tool does not replace a travel demand model, but rather provides managers and planners a method by which to efficiently estimate demand for Park & Ride within an area.

Process Summary

- Create a typology which summarizes the area of interest. Consider the following factors:
  - Community Context (density, land uses, distance from employment)
  - Proximity to Transit and Carpool/Vanpool supportive infrastructure (Direct Access Ramps, Express Lanes)
  - Transit Service Frequency and Type (Local, Express, Park & Pool, etc.)
  - Amenities
  - Proximity to other Park & Rides (are they sharing demand)

- Collect info for several analogous lots in selected Typology
  - Occupancy (# parked cars)
  - Population within Market Area (census data)
  - Vehicles per Person (Occupancy / Pop in Market Area) = Ratio

- Average Ratio for all selected lots to get Baseline Ratio for selected Typology
- Apply Baseline Ratio to a PROPOSED NEW SITE within defined typology to determine expected occupancy

Process for Calculating [Baseline Ratio]

Data/Layers Needed

- Population by Census Block Group
  - Source: American Community Survey
- Existing Park & Ride inventory
  - M:\RES\DataSolutions\GIS\Projects\ParkandRide\Data\PnR_Backup.gdb
- [Market Areas]
  - Based on distance from site/proposed site
  - [BUFFER] of [drive distance] for each [P&R Lot] typology
    - Urban (1-3 miles)
    - Suburban (3-5 miles)
    - Rural (5+ miles)

Process in ArcMap

Do this process separately for each Typology.

1. Import [CBG], [Market Areas], P&R Layer (points)
2. Adjust the Areas for Accuracy
   i. Add field to [CBG] “CBG_Area”
   - Right click on header, use “Calculate Geometry” tool.
3. Clip the Population
   i. Overlay [CBG] on [Market Area Buffer*]
ii. [Clip] (mutually exclusive) [Market Areas] from [CBG]
   ▪ To achieve mutually exclusive population, please execute the following:
     ● IF [Market Areas] overlap:
       ○ Use Thiessen Polygon Function to determine accurate [CBG] population
     ● Else:
       ○ Calculate [CBG] normally

iii. NOTE: *Only do analysis for the analogous lots & Market Areas

iv. Achieves: [Clipped_CBG]

3. GIS Analysis
   a. Calculate Geometry of [Clipped_CBG]
      i. Add new (double) field in [Clipped_CBG] attribute table “A_Area”
         i. Right click on header, use “Calculate Geometry” tool.
         ii. NOTE: calculate same geometry as the units in “CBG_Area” (typically done in Square Meters)
   b. Calculate Overlap Ratio
      i. Add new (double) field in [Clipped_CBG] attribute table “Overlap”
      ii. Use Field Calculator to divide: “A_Area” / “CBG_Area”
         2. NOTE: After clip, Result should be 1 or less than 1
   c. Calculate Adjusted Population for [Clipped_CBG]
      i. Add new (double) field “A_Pop” for adjusted population
         1. Right click field header and use the Field Calculator to multiply “Population” x “Overlap”
         2. Achieves final statistic “A_Pop”

4. Sum adjusted population of each block group for market area
   i. [SUM] clipped population (A_Pop) for all selected Market Areas - “Sum Population”

Create Average Baseline Ratio
5. Divide “Sum Population” by “Occupancy” for each sample Park & Ride within Typology. (Create Baseline Ratio)
6. Average Baseline Ratio(s) to create Baseline Ratio for Typology [Baseline Ratio]

Application: Sizing a Facility
   ● [Sum Population*] / [Baseline Ratio] = Projected Site Occupancy
     ○ *Population of estimated new site facility