The San Diego Association of Governments (SANDAG) created this Regional Parking Management Toolbox as a means of providing the communities, jurisdictions, and destinations within the San Diego region a framework for evaluating, implementing, managing, and maintaining parking management strategies to support community growth and stakeholder desires. This document represents the culmination of that work, providing a blueprint for community leaders to better understand the potential solutions that can best serve their parking needs and the needs of their businesses, residents, and visitors alike.

This document provides a broad set of tools to help shape the implementation of successful parking management strategies now and into the future. The document should be used to identify issues and corresponding overarching management strategies, and, to some extent, can aid communities with identifying goals, objectives, and directives of a larger parking program.

The toolbox is presented in a manner that leads the reader from defining existing problems, through choosing potential solutions, and finally providing support for the management, communication, and ongoing maintenance of program strategies and policies. The document is intended to be interactive—the HOW TO USE SECTION to the right will lead the reader through the proper utilization of this document.

Finally, the RESOURCES guide at the end of this document provides a number of tools and literature to support this document. The implementation of parking management strategies and programs is a constantly evolving practice and the reader should remain in tune with the program’s effectiveness and applicability. These resources will provide the reader a conduit for understanding the changing business of parking management, as well as resources for the discussion of ideas and practices going forward.

HOW TO USE THIS DOCUMENT

The Regional Parking Management Toolbox is interactive in nature and is intended to provide the reader with a number of definitions, resources, and tools to implement parking management strategies within their local jurisdiction or service area. Areas in the document that are interactive are indicated by "Sample Hyperlink Text". The reader simply needs to click on the "Sample Hyperlink Text" to activate the interactive materials, which will provide more depth related to the subject matter. Two examples are shown below. Note: Interactive features may not be compatible with all devices. Use of a desktop computer to download or view in a web browser is recommended.

This document is also organized chronologically, allowing the reader to work through a series of deliberate steps on the way to identifying context-sensitive parking management strategies. The steps include:

1. **STEP** Identify Your Community Typology
   - Characterize your community or portions of your community to help address issues with spatially appropriate strategies.

2. **STEP** Identify Common Parking Issues
   - Learn about common issues faced by parking programs, including overarching problems and the subsequent issues they create. Learn how to collect and analyze data to identify these common issues.

3. **STEP** Explore Overarching Management Strategies
   - Understand overarching management strategies intended to help mitigate these issues.

4. **STEP** Review the Solutions Matrix
   - For each overarching strategy, understand parking management solutions, their impacts, and where they are most applicable.

5. **STEP** Evaluate Parking Program Options
   - Learn how successful implementation of parking management strategies depends on ongoing programmatic management.

6. **STEP** Understand Communication Tools
   - Evaluate communication strategies that are critical in the implementation of parking management strategies.
The Regional Parking Management Toolbox uses a distinct group of typologies to help understand the impacts of parking management strategies for different community types. Understanding the typologies is the first step in using this Toolbox. Each of these typologies experience unique parking related issues which require unique mitigation strategies. Throughout this document, issues, strategies, and programmatic components are defined by which of these typologies are most impacted.

It is important to note that the communities within the greater San Diego region are unique and often encompass more than one typology. Likewise, a single strategy can sometimes be successfully employed across multiple typographies. Therefore, it is important for the reader to not only explore the strategies associated with their primary typology, but also other strategies which might complement or strengthen the primary management approaches in their area. This is especially true as communities build parking management programs around these strategies. As time passes and the programs become more effective, it may prove useful to expand the implementation of strategies to meet new challenges or opportunities related to the program.

**WHO SHOULD USE THIS DOCUMENT?**

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**TYPOLOGIES**

- Metropolitan Center
- Urban Center
- Community/Town Center
- Suburban Employment Center
- Transit Stations and TOD
- University/College
- Stadiums
- Coastal Community
- Parks and Beaches
- Ports
- Military Bases
- Regional Parking Strategy

**METROPOLITAN CENTER**

The metropolitan center is the region’s primary business, commercial, civic, and cultural destination with a regional draw and a highly interconnected network of transit services. It also provides a variety of residential uses and high levels of mixed uses. Metropolitan centers experience a large influx of people including residents, commuters, visitors, and service providers, often with regional significance, making available parking a commodity in high demand.

*Example: Downtown San Diego*
Understanding the parking system is complex. There are a number of components that work in concert that, if managed properly, can create a cohesive and successful parking system. However, the task of understanding the parking system can be daunting when it is unclear where or how to begin. Good parking management is dependent upon solid parking data, data interpretation, and preliminary decision making. The purpose of this section is to break down different types of data collection methods and the purpose for collecting such data.

It is important to understand that it is not always necessary to collect data on every detail of the parking system. The type of data collected depends on what one hopes to get out of it. So before conducting field data collection, it is first important to understand two aspects of the community:

- **WHAT ARE YOUR PARKING GOALS** – this may tie directly to goals stated in a plan (e.g. a comprehensive plan, transportation plan, specific plan, or parking plan). Determining the parking goals first focuses the rest of the process.
- **KNOWLEDGE OF THE COMMUNITY CHARACTERISTICS** – what issues are occurring in the community and what strategies would be most appropriate.

Understanding the above information can lead to identifying what you want to accomplish by conducting parking data collection.

### Community Characteristics

**DEMOGRAPHICS**
- Understand the people in the area and their preferences. This can be accomplished through stakeholder and public outreach to solicit input. Involving stakeholders when making parking decisions (whether it is new technology or management practices) can shed light onto parking patterns that may not be easy to discern from the data. Public input can provide the “why” component to what is seen in the data. Likewise, the public often has a particular perception of the parking system. Stakeholder outreach presents an opportunity to inform and educate the users as to what is actually happening in the system.

**MIXTURE OF USERS/LAND USES**
- Areas that have a greater mixture of uses may require a multifaceted approach to management to help balance competing needs. Likewise, multiple uses or users may present competing parking needs, which creates the perception of a parking issue. By understanding the types of uses and users, the parking planner can implement parking solutions that fit the context of the community.

### ALTERNATIVE TRANSPORTATION
- Looking at access to transit, carshare, and bike and pedestrian infrastructure can provide a greater understanding of the parking demands. In areas where there is good potential for multimodal activity, there may be less of a demand for parking and investments in these areas can be made more economically. In the absence of time or funds to do counts in each area, the census data can be used to determine how people commute to work. Understanding how these trends change will allow the parking program to expand or contract with changing motorist behaviors.

### PARKING REGULATIONS
- Understand existing parking regulations to determine opportunities and limitations to how the parking system can be managed. This is the first step to determining how regulations might have to be changed to meet community goals and balance parking demands.

### ENFORCEMENT PRACTICES
- A review of the existing enforcement practices would be beneficial to determine how enforcement is performed and how the existing components of the parking system can be leveraged to streamline enforcement practices.
Now that data has been collected, the next step is to analyze the data to identify potential problems and understand the capabilities of the parking system.

**WHAT TO DO WITH YOUR DATA?**

**Analyzing the Data**

Now that data has been collected, the next step is to analyze the data to identify potential problems and understand the capabilities of the parking system.

- Parking Occupancy
- Parking Turnover

**HOW DO YOU KNOW A PROBLEM EXISTS?**

**Interpreting the Data**

**WHAT TO DO NOW?**

Once the data has been analyzed and it is understood what problems may exist within the community, appropriate solutions can be reviewed, discussed, piloted, and implemented in order to balance the parking system.

- Now that you have identified the problem, it’s time to tailor a solution to fit the needs of the users and community while aiming to mitigate the problem. The first step is to review the list of common issues on the following pages of this document and begin to relate them to specific parking management strategies. Many times, small changes to policy or management can have a large impact on the perception of a parking problem.

- Many parking programs are taking an iterative approach to parking management, using pilot studies to try out new strategies or technologies before making a large scale investment. This can be a good way to involve the community in the decision making process, using user feedback to evaluate successful implementation of projects.

- Communication is key. Once you have a better understanding of the data and the problem, it’s good to inform the community about the findings to help educate and shift poor perceptions of parking.

In the following pages of this document, common issues facing parking management agencies are presented along with potential strategies that can be implemented to mitigate the issues.
PREVAILING ISSUES FACED BY COMMUNITY PARKING PROGRAMS

Over time, the characteristics of a community evolve with changes in size, population, density, development, and transportation patterns. These changes have a substantial influence on the characteristics of a community's parking needs. As a result, new challenges in the parking system will emerge, which will require the parking program to adapt. The nature of parking problems will vary on a community-by-community basis, but there are a number of common issues that consistently emerge in the evolution of a parking program.

PREVAILING ISSUE

Provision of Parking
Providing parking is often one of the bigger obstacles faced by communities. It is usually not feasible to construct new parking to meet parking demands due to funding, space, political, or public challenges. However, an appropriate amount of parking, respective to the needs of the community, is a key component to supporting businesses, residents, and visitors by providing access to destinations.

Parking Demand
Communities often face the challenge of either having too much parking or not enough. Demands can be higher in some areas and lower in others. Areas where there is not enough parking can lead to conflicts between residents and businesses and create a negative image of the parking system. Areas with too much parking result in valuable space that is underutilized.

Use of Parking
Communities can make the most of their parking supply by ensuring that it is used properly to meet the needs of the surrounding destinations. If the use of parking is not being managed properly, it can result in restricted access to businesses and increased public frustration.

Cultural Changes
Communities over time will face challenges as the characteristics of their population change. Changes with the community character often mean a shift in parking needs or how parking needs are met. This can be a significant change for some communities as they start to address new issues and meet new challenges that were not necessarily concerns previously.

Technology
Technology plays a critical role in improving the parking experience for all users as well as improving the management of the parking system. Outdated technology can limit the capabilities of the parking system (e.g., inefficient enforcement and maintenance practices, lack of parking data, etc.). Additionally, outdated technology may not align with the needs of the community. For instance, people do not always carry coins on them anymore, and coin meters can deter some parkers from visiting a community. Additionally, too much technology or not the right technology for a community can also become an issue. Using all of the latest technology can become overwhelming and/or confusing for users, and won’t necessarily improve parking management. Technology should be a tool that is appropriate for the community and helps manage the parking system.

Explore the different issues faced by parking programs by clicking on the Prevailing Issue topic in the table below. As you click on an issue topic, a more in-depth discussion on sub-issues that correspond with the issue topic will appear in the box below. While these sub-issues are not likely the only issues a community might face, they are common amongst the typologies included in this toolbox. Typologies that are most likely to face these issues are noted under each issue discussion.

Provision of Parking

PROVISION OF PARKING FOR SMALL BUSINESSES
- Smaller businesses often face the issue of not being able to provide enough parking for their patrons or must compete for spaces with other businesses or other curb lane users. Additionally, restrictive parking regulations can become a hindrance to small businesses, requiring them to have more parking on site than they are able to provide. This particular issue is prevalent for businesses located in a more urban or higher density setting.

ACCOMMODATING PARKING WHILE PROMOTING NEW DEVELOPMENT
- For communities to attract new development, it is important to be able to support that development with parking. However, new developments often face high parking requirements that promote parking areas larger than the development itself. As a result, the community regulations inadvertently hinder growth and encourage drive alone trips. Providing shared parking and smaller “right-sized” parking regulations can help to promote sustainable transportation and higher density development.

FINANCING PARKING PROGRAM
- Installing, managing, and operating a parking program is costly. Lack of a constant and stable funding source to maintain the parking system and level of service for the customers can lead to gaps in the parking system which can result in confusion, increased citations, and a negative perception of the parking program.

LACK OF AVAILABLE LAND FOR PARKING
- Many communities are plagued by a lack of land to construct new parking. In those communities where land is scarce, there is often a conflict between providing new development or parking. In mixed-use situations, the conflict often arises of whether to provide only site-specific parking versus public parking for surrounding demand generators.
Parking Management Strategies

Parking needs, characteristics, and resources can vary greatly between different communities, agencies, and institutions. However, there are a number of common parking management strategies that, if implemented appropriately for that community, agency, or institution, can be of great benefit for that parking program. These common strategies are shown to the right.

They can be implemented individually or together, depending on the needs of the community and the characteristics and goals of the parking program.

Each of these nine strategies is discussed in greater detail in this document.
Balancing Competing Users

Most parking programs serve an evolving group of users that could include residents, employees, businesses, service providers, event goers, tourists, or government users. To accommodate these users, parking program managers must implement a variety of policies that complement one another. This is best exemplified at the street curb, where curb lanes are utilized by several groups of users, where each has various parking needs that relates to conducting activity at the curb.

### Strategic Users

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ADA on-street parking provides accessible parking to surrounding land uses. Many locations debate the provision of “free” ADA spaces, versus the provision of “paid” ADA only spaces. Many communities are implementing paid ADA parking, which discourages the illegal use of ADA placards or plates.

- Improves accessibility to area businesses for all users, but especially for those with disabilities

Go Back to the List of Common Parking Management Strategies
Effective enforcement of parking regulations is essential to reaching compliance and efficiency in your parking system. Enforcement often carries a negative connotation, but when performed properly it can be an invisible component of your program that improves turnover, manages demand, deters habitual or repeat offenders, and improves the efficiency of your entire program. Proper enforcement should be focused on education and promoting a change in behavior, rather than the generation of additional revenues for the parking program.

Enforcement and Regulation

Booting and Towing
Some communities use booting and/or towing to target habitual or repeat offenders or those who have not paid overdue citations. This practice should not be abused as it promotes a negative perception of the program. However, in certain instances, the practice of booting or towing can deter poor parking behaviors.

- Improves parking compliance

Go Back to the List of Common Parking Management Strategies
Parking Demand Management

Parking demand management strategies are focused on meeting and mitigating parking demands to promote balance and efficiency within the parking system. These include a variety of strategies rooted in the provision of parking, coordination of parking with transit and other non-vehicular modes, use of technology to balance demands, and regulations that focus on minimizing parking demands.

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**High Parking Demand:**
- Underutilized Parking
- Event Demands
- Long Turnover
- Non-Compliance
- Small Businesses
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Underutilized Parking:**
- Facilities
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Event Demands:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Seasonal Parking:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Long Turnover:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Non-Compliance:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Slow Birthplace:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Lack of Affordable Land:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Small Parking Areas:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Negative Parking Program:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Cruising:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Aging Population:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Changing Vehicle Ownership:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Development Patterns do not Support Smart Growth:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
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- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system

**Outdated Technology:**
- Unbalanced Demand
- Event Demands
- Seasonal Parking
- Long Turnover
- Non-Compliance
- Slow Birthplace
- Lack of Affordable Land
- Small Parking Areas
- Negative Parking Program
- Cruising
- Aging Population
- Changing Vehicle Ownership
- Development Patterns do not Support Smart Growth
- Outdated Technology hindering efficiency in the parking system


Eliminate Parking Minimum

Many communities are eliminating parking minimums in their central business district (CBD), allowing developers to determine the right size for parking based on market demand. When coupled with parking maximums, these tools can effectively control the amount of private, inaccessible parking built in a community.

- Promotes a well utilized parking system
- Allows for denser development in the same land area
- Promotes shared public parking supply as an alternative to overbuild
Parking Demand Management

Parking demand management strategies are focused on meeting and mitigating parking demands to promote balance and efficiency within the parking system. These include a variety of strategies rooted in the provision of parking, coordination of parking with transit and other non-vehicular modes, use of technology to balance demands, and regulations that focus on minimizing parking demands.

### PARKING SYSTEM CHALLENGES

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### STRATEGIES

**PARKING PERMITS**
- Implement Parking Permits
- Virtual Permitting

**EVENT PARKING MANAGEMENT**
- Demand-Based Pricing
- Online Mapping
- Prepaid Parking/On-Site Credit Card Payment
- Promote Non-Vehicular Attendee Arrival
- Special Event Signal Timing
- Wayfinding Signage

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### Implement Parking Permits

Permits govern parking privileges by user, location, time, and price. The implementation of parking permits can help to better define allocation of available parking, as well as a structure between short-term demands and more recurring users.

- Balances parking demands by user, time, and location
- Promotes better utilization of parking facilities
Managing Parking Supply Effectively

Often times, the first step in combating a perceived parking deficit is to manage existing parking supply more effectively. This could include improved wayfinding, better dissemination of information about available parking, initiating shared parking with private supply, or allocating existing spaces differently. Throughout the life of a parking program, demands, supplies, and perceived deficits will ebb and flow with the changing dynamic of the surrounding community. It is vitally important to effectively manage the program’s existing parking assets to minimize unnecessary investment.

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### MANAGEMENT PARKING SUPPLY EFFECTIVELY

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Commercials

Vehicle Parking

Provision of curb space for commercial vehicles ensures that adequate space is provided for deliveries for area businesses. The curb space for commercial vehicles can be managed in a number of ways (through permits, time restrictions, time of day restrictions, transitional spaces, etc.):

- Promotes effective use of the curb space by balancing competing needs for curb lane space
- Encourages delivery activities to occur in locations with adequate business access, during appropriate periods, and last for only as long as necessary
- Supports business operations by allowing for enhanced accessibility for major delivery vendors

Creating New Parking Supply

When parking demand exceeds parking supply (occupancy rates are consistently higher than 90% after a comprehensive parking management program has been implemented), the creation of new parking may be a necessity. Creating new parking supply could range from reconfiguring or repurposing existing assets to the creation of new parking resources. Constructing new parking should be a last resort as it is a major investment that often does not pay for itself without intensive parking management and rate collection.

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**Blocked Driveway Permit**

In residential areas with highly constrained parking conditions, communities can offer residents a blocked driveway permit, which allows them to block their own driveway with a parked vehicle. The resident must show proof of residence and the community must enforce the streets to ensure no one abuses the parking system.

- Increases residential parking supply without adding new capacity
- Maximizes underutilized space
### Implementing and Managing Paid Parking

Implementing or expanding paid parking is often the most difficult parking management strategy, because it is perceived negatively by users. However, when high demands, low turnover, and general poor parking conditions plague a program, it is often the best option to change behaviors and manage parking supply. Implementing paid parking should be done with the correct technology to support payment; stakeholder outreach to build consensus; programmatic support to manage paid parking; and marketing to educate consumers. Paid parking shouldn’t be implemented primarily to generate revenues—this is almost a guaranteed way to ensure failure and backlash. Additionally, paid parking can be implemented once other non-pricing strategies have been explored and possibly implemented in an effort to balance parking demands.

#### PARKING SYSTEM CHALLENGES

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#### General Demand Issues
- High Parking Demand
- Underutilized Parking
- Event Parking
- Low Turnover
- Long Term Parking
- Non-Compliance
- Slow Business Hours
- Financial Constraints
- Lack of parking
- Humor/Fun
- Non-Compliance
- Environmental Concerns
- Climate Change
- Development Pattern
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- Neighborhood Parking
- Negative Perception

#### Use of Parking

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#### Strategies
- **Implementing and Managing Paid Parking**
- **Balance On- and Off-Street Rates** Programs should strive to coordinate on-street and off-street parking rates so that short-term demands can be accommodated on-street, while longer term parking transactions are accommodated off-street. Pricing off-street lower than on-street is the traditional approach.
  - Promotes turnover and shorter durations on-street
  - Allocates longer term parking transactions off-street
  - Balances demands
Transportation Demand Management Strategies

There are many Transportation Demand Management (TDM) strategies that can be implemented to reduce the demand for parking by promoting alternative forms of travel for both commute and non-commute trips. Many communities have found that implementing these strategies has not only reduced parking demands but has led to other community benefits as well. The TDM toolkit related to parking is a mixture of alternative transportation provisions, improvements to non-vehicular networks, and commuter-based incentives designed to reduce demand.

**Bicycle and Pedestrian Amenities**

Providing enhanced facilities (e.g. bicycle lanes and cycle tracks, wide sidewalks, and benches) along with adequate wayfinding, beautification, bicycle parking, showers, and other infrastructure, will enhance the comfort and safety of bicyclists and pedestrians and encourage these as a daily form of transportation.

- Increases cycling
- Increases walking
- Reduces vehicular trips by 5-15%10
- Increases pedestrian safety

---

12 Winters and Rudge, 1995
### Sustainable Parking Strategies

Many cities are focused on reducing impacts to the environment by reducing the impact of parking (e.g. large lots that increase runoff and heat island effects) vehicle trips and encouraging the use of more environmentally friendly vehicles. This includes providing incentives for non-single occupancy vehicle travel or electric vehicle usage and setting policy that encourages less driving and a less drastic impact to the environment from the parking system.

In recent years, the Green Parking Council (an affiliate of the International Parking Institute) was formed to promote sustainable practices in parking, including documenting sustainability guidelines.

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<td>Support TDM Strategies to Reduce Parking Demands</td>
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### Bicycle Parking

Providing enhanced bicycle facilities, including adequate parking, either on-street (e.g. bike corrals), on sidewalks, near business entrances, and in any parking structure or lot, will encourage bicycle use as a daily form of transportation.

- Increases cycling
- Reduces vehicular trips by 5-15%\(^2\(_4\)\)

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Go Back to the List of Common Parking Management Strategies

Communication and Involvement Strategies

Communication and involvement with the public and stakeholders regarding planning and implementation of parking strategies is often critical in the success of a program. Those who should be involved in the process may vary depending on the type, location, and expanse of the project. Typically, residential community, business community, jurisdictional representatives and elected officials, and general users should be included in the process. Involving these people early and often as part of the development and implementation process of parking policies and strategies is instrumental in garnering support and understanding of the program, which leads to a more successful program. Additionally, communicating changes, such as parking locations, prices, and regulations to the public helps to strengthen motorists' understanding of the parking system, improving parking efficiency and customer experience. There are multiple strategies used to involve and disseminate parking information to the public, and when used in concert, they create a multifaceted approach that can reach a wide range of motorists.

### PARKING SYSTEM CHALLENGES

<table>
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<tr>
<th>GENERAL DEMAND ISSUES</th>
<th>USE OF PARKING</th>
<th>PROVISION OF PARKING</th>
<th>IMPACTS OF PARKING</th>
<th>CULTURAL CHANGES</th>
<th>OUTDATED TECHNOLOGY</th>
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<td>High Parking Demand</td>
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### STRATEGIES

- **COMMUNICATIONS**
  - Active Media Outreach
  - Consistent Parking Branding
  - Coordination with Community Destinations
  - FAQ or "How to Park" Resources
  - Improved Signage
  - Parking Guidance Systems
  - Parking Maps
  - Public Information Campaigns
  - Smartphone Applications
  - Social Media
  - Stakeholder Outreach and Education
  - Wayfinding Signage
  - Web-Based Communication

### ACTIVE MEDIA OUTREACH

Program officials should actively seek out the media to report accomplishments in the program, including implementing new technology or changes to policy. If media opportunities are not actively sought, media attention will be limited to reactionary pieces, often negative.

- ☑ Improves perception of the program
- ☑ Improves understanding of new program changes
- ☑ Promotes the vision and mission of the program

*Go Back to the List of Common Parking Management Strategies*
The following case studies are presented to demonstrate how the parking management strategies are being implemented in various ways throughout the country.

### CASE STUDIES

#### BALANCING COMPETING USERS
- Charlotte, NC
- Austin, TX
- Minneapolis, MN

#### ENFORCEMENT AND REGULATION
- Tempe, AZ
- Toronto, Ontario, Canada
- Fort Collins, CO
- Austin, TX
- Lincoln, NE

#### PARKING DEMAND MANAGEMENT
- Dallas Cowboys Stadium/Arlington Entertainment District
- Fort Collins, CO
- Austin, TX
- King County Metro Transit, WA

#### MANAGING PARKING SUPPLY EFFECTIVELY
- Lincoln, NE
- Santa Monica, CA
- Minneapolis, MN

#### CREATING NEW PARKING SUPPLY
- Long Beach, CA
- King County Metro Transit, WA

#### IMPLEMENTING AND MANAGING PAID PARKING
- Seattle, WA
- Santa Monica, CA
- Houston, TX
- Washington, DC

#### TRANSPORTATION DEMAND MANAGEMENT STRATEGIES
- University of Washington, Seattle, WA
- Santa Monica, CA
- Minneapolis, MN

#### SUSTAINABLE PARKING STRATEGIES
- San Jose, CA

#### COMMUNICATION STRATEGIES
- Fort Collins, CO
- Toronto, Ontario, Canada

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**Case Study**

### BALANCING COMPETING USERS CASE STUDY – CHARLOTTE, NC

**PRIMARY ISSUES:**
The City was receiving many complaints from customers, Council, and general motorists regarding the lack of consistent signage and standard expectations, which led to a great deal of confusion on when, where, and how to park.

**STRATEGIES USED:**
- Improved signage
- Comprehensive Curb Lane Management Policy

**SUMMARY:**
In 2011, the City of Charlotte completed the Uptown Curb Lane Management Program, which was developed in response to public feedback related to signage and confusing messaging about curbside parking requirements. The goal of the program was to provide a clear and consistent curb lane structure and ensure that the curb lane uses made sense in relation to the adjacent uses and uses on the block. The program’s mission was to properly serve and support business, residents, commuters, employees, and other users. As such, all curb lane uses were documented and analyzed (bus stops, commercial loading, passenger loading, on-street parking, residential parking), as well as traffic patterns (e.g., rush hour volumes and parking restrictions during rush hour, bicycle volumes), type, number, and location of citations issued, surrounding land uses, and parking policies and regulations.

The recommendations from the study were implemented in 2012 as part of a pilot project, which included consolidating curb lane uses to create more parking spaces and more efficient use of those spaces. Additionally, improved signage with clear communications on how, when and where to park was added.

### LESSONS LEARNED:
- Fewer customer complaints and users seemed to better understand where and how to park
- Valets and other users have adapted to the changes. Valets no longer have general motorist parking in their spaces, but the amount of spaces available to valets has been reduced
- Taxis are better at staying in their taxi stands and not squatting in metered spaces
- Citations related to parking violations were reduced by approximately 50 percent
- Parking revenues were increased by close to 40 percent, largely because of removal of peak hour restrictions

### TYPOLOGIES:
Implementing the previous parking management strategies will be limited by the effectiveness of the program that manages and maintains them. There is no one-size-fits-all approach to management because of each community’s unique characteristics and goals. However, there are overarching components of a parking system that, if implemented in a manner appropriate for that community, can greatly improve the parking system and the user experience. Communities face similar challenges relating to politics, community diversity, staff training, technology, organizational structure, and financing. How each of these challenges is addressed through the structure and organization of the parking program will be as unique as the community itself. The elements below provide a glimpse into the components involved in building a parking program.

DEFINING A PARKING PROGRAM

Program Structure

How a parking program is structured depends greatly on the type of system (e.g., municipal system, transit, university, etc.), the location and unique community characteristics, the size of the parking system, community goals, and the political structure and atmosphere. As a result, parking management structures have evolved organically and have become fragmented. Models have emerged to improve the organization and management structure to create an effective parking system.

CONSOLIDATED ("VERTICALLY INTEGRATED") CITY DEPARTMENT MODEL

Under this model, the program is led by a department director with assistance from an assortment of support staff. The department director has complete authority and responsibility for the management of all parking-related program elements. Responsibilities can include branding, marketing, community outreach, support and implementation of TDM strategies, implementation of new technologies, and interface with downtown development and economic development.

PARKING AUTHORITY MODEL

This model uses an appointed board with political authority to manage daily parking operations. The parking authority is responsible for all aspects of operations, including off-street, on-street, enforcement, and rate adjustments. It is governed by a management agreement and is self-funded. The authority is typically led by a president or executive director who reports to a board comprised of community stakeholders.

“CONTRACT” OR BUSINESS DISTRICT MODEL

In this model, a downtown business district or authority assumes the responsibility of managing and operating the parking in a particular area. This model is governed by a well-defined operating agreement that sets specific expectations and limits on the use of parking assets, policies, and rate adjustments. This model can be very successful because the managing agency is typically more in tune with the strategic goals of the community. However, it requires that the business district hire a parking professional who is well-versed in operations and management.

PARKING DISTRICT OR COMMISSION MODEL

This model involves clearly defining an area where parking is to be managed, as well as establishing a revenue source to fund the parking program. Revenue sources may include on and off-street parking pricing, parking citations, a special property tax assessment that applies to all properties in the district, or a Parking In-Lieu of Property Tax program where developers pay a fee-in-lieu of parking development. The revenues are invested back into the district in the form of district improvements, parking additions, technology upgrades, etc.

PROFESSIONAL SERVICES MODEL

A small, professional-level parking services group is developed in conjunction with outsourcing the daily parking operations. There can be many variations of this model; however, the most successful variation is when there is a management group that can focus on the administrative responsibilities of the parking system, and the daily operations of the parking system are outsourced to a qualified parking management firm.

PARKING MANAGEMENT COLLABORATIVE APPROACH

Under this model, the on-street parking facilities are managed by the City as a short-term parking resource. A coordinated management and marketing approach is required to manage the off-street parking facilities, which are privately owned and operated. This could include common branding and marketing, coordination of parking rates, a wayfinding system, a parking and transportation information clearinghouse, and coordination with downtown management in support of downtown business needs.

ECO DISTRICT MODEL

This model focuses on integrating goals that accelerate sustainable community or neighborhood development. A parking and transportation Eco District approach recognizes technologies and strategies for enhancing district sustainability. Under this model, parking revenues can be dedicated first to supporting parking system operations, and excess revenues can be used for programs that support the community’s sustainability initiatives, such as community bike programs, car sharing, EV infrastructure, etc.
COMMUNICATING EFFECTIVELY

Successful implementation of parking initiatives often requires community acceptance of new regulations and/or behavior changes by individuals who park in a given area. Community members are typically slow to accept strategies to address parking issues, and building support often requires developing credibility and trust within a community before implementation can begin. Effective communications strategies are required to help community members understand and embrace new regulations, and change behavior in order to make new strategies successful. Recognizing community attachment to free and low-cost parking is a critical step in communicating potential solutions. All strategies must be presented in a positive light in order for the public to not see solutions as a “loss” of an existing right. Demonstrating both the “give” and the “get” with each parking strategy will help community members fairly evaluate how changes in regulations or practices impact their daily lives.

INFORMATION AND EDUCATION

A. PRESENTATIONS TO COMMUNITY AND BUSINESS GROUPS – Presentations allow the agency to reach a variety of audiences and provide an opportunity for groups to give feedback.

B. PRINT COLLATERAL – Written materials such as brochures, fact sheets, maps, etc. can be developed to provide information about new programs, locations, answers to frequently asked questions, etc.

C. WEBSITES – A website serves as the “hub” for all project information. The website should be designed to be user-friendly, informative, and interactive.

D. E-NEWSLETTERS/E-BLASTS – E-newsletters and e-blasts allow for the rapid distribution of news, updates, and alerts rather than general project information. These should be eye-catching, with the most important information prominently highlighted.

E. VIDEOS – Brief, fun, and informative videos can be featured on the website, used in presentations, posted on social media, and included in e-mail communication.

F. SOCIAL MEDIA – Social media provides an opportunity to share information, videos, infographics, etc. in a low-cost manner. It can be integrated with website and e-mail programs.

G. EXPERT PANELS – Expert panels can be a useful tool to educate the public on parking issues, why innovative parking management is needed, the effectiveness and application of various parking strategies, and lessons learned.

H. PARKING AMBASSADOR – A Parking Ambassador may serve as an ombudsman and spokesperson for the agency, providing a single point of contact for the public to get information about the new programs.

I. MEDIA RELATIONS – Media relations can communicate information about changes in parking management and associated benefits. Relations should start early, when the agency is working with the public to develop a plan to address issues and continue through implementation.

Presentations to Community and Business Groups

ADVANTAGES:
• Provides the opportunity to convey detailed information to a captive audience.
• Community and business groups can often help you reach a broader audience through distribution of information to their networks.

DISADVANTAGES:
• Requires significant staff resources.
• Reaches only a limited audience.
• Groups are often based on special interest, and may provide one-dimensional feedback.
PUBLIC OUTREACH

A. PARKING ADVISORY BOARD – A Parking Advisory Board provides an opportunity for the agency to engage key stakeholders that would be affected by parking changes on an ongoing basis.

B. FOCUS GROUPS – Focus groups are helpful in providing thoughts about various options being considered, as well as methods of communicating with the public.

C. SURVEYS – Surveys are useful tools for gaining information from a broader audience both prior to and after implementation of parking programs.

D. PUBLIC WORKSHOPS – Public workshops engage interested stakeholders to provide input and/or help develop proposed solutions prior to implementation, and also provide feedback about the programs once they have been implemented.

E. PILOT PROGRAMS – Pilot programs implement a project in a small area to test a technology and/or policy. It may be challenging to educate the public on parking program changes associated with the pilot.

F. ONE-ON-ONE OUTREACH – This involves sending a “street team” out to conduct short surveys or interviews with stakeholders to obtain the feedback and convey the information needed.

G. PARTNERSHIPS WITH COMMUNITY-BASED ORGANIZATIONS (CBO) – To reach some segments of the public, it can be helpful to develop outreach partnerships with CBOs.

H. COMMUNICATING WITH AGENCIES AND ELECTED OFFICIALS – Communicating strategies and policies with elected officials is often the most critical step in achieving successful implementation.

COMMUNICATING EFFECTIVELY

Successful implementation of parking initiatives often requires community acceptance of new regulations and/or behavior changes by individuals who park in a given area. Community members are typically slow to accept strategies to address parking issues, and building support often requires developing credibility and trust within a community before implementation can begin. Effective communications strategies are required to help community members understand and embrace new regulations, and change behavior in order to make new strategies successful. Recognizing community attachment to free and low-cost parking is a critical step in communicating potential solutions. All strategies must be presented in a positive light in order for the public to not see solutions as a “loss” of an existing right. Demonstrating both the “give” and the “get” with each parking strategy will help community members fairly evaluate how changes in regulations or practices impact their daily lives.

Parking Advisory Board

ADVANTAGES:
- Provides an opportunity to work with affected stakeholders in the development of solutions, creating community buy-in and consensus.
- Creates a forum for the community to identify new challenges and potential solutions.
- Offers an ongoing resource for the agency to seek input on proposed solutions and feedback on implementation.

DISADVANTAGES:
- Requires significant staff resources and coordination.
- Establishment of a Parking Advisory Board means that there is empowerment of an outside body, to some degree. It is important to be clear at the outset what the purpose, responsibilities, and authority of the board will be.
- Boards can become political.
MARKETING / ADVERTISING

A. DIRECT MAIL – Direct mail provides printed information directly to each residence in the targeted area. It can effectively deliver messages and information about the programs.

B. PAID ADVERTISING – Advertising in newspapers, on radio and TV, outdoor/billboards, and online will reach a broad and diverse audience. It can be developed as part of a campaign so that the ads complement and build upon one another.

C. SIGNAGE – Well-designed signage will help to direct the public as they encounter changes in parking, which can help ease frustrations that may occur with change.

D. INCENTIVES – Providing incentives to change behavior can be useful. Potential incentives could include free parking for a set number of hours, discounts at local businesses with a parking ticket, or a giveaway when parking during a specified time period.

E. BUSINESS CARDS – Business cards are a simple form of collateral that can be easily distributed and made available for others to distribute. The cards would provide topline information and direct people to the website for more details.

COMMUNICATING EFFECTIVELY

Successful implementation of parking initiatives often requires community acceptance of new regulations and/or behavior changes by individuals who park in a given area. Community members are typically slow to accept strategies to address parking issues, and building support often requires developing credibility and trust within a community before implementation can begin. Effective communications strategies are required to help community members understand and embrace new regulations, and change behavior in order to make new strategies successful. Recognizing community attachment to free and low-cost parking is a critical step in communicating potential solutions. All strategies must be presented in a positive light in order for the public to not see solutions as a “loss” of an existing right. Demonstrating both the “give” and the “get” with each parking strategy will help community members fairly evaluate how changes in regulations or practices impact their daily lives.

Direct Mail

ADVANTAGES:
- Distribution can be targeted.
- Directly reaches the public.

DISADVANTAGES:
- Many community members expect it.
- Limited ability to provide detailed information while keeping concepts simple.

• Can be costly.
• People may consider it “junk mail” and do not pay attention.
RESOURCES

Parking Management Resources

The following resources represent a compiled reading list for new parking professionals and programs. Some of these are dedicated resource manuals, while others are linked information from the internet. The reader should explore these resources as they work through the implementation, maintenance, and management of parking strategies.

- Parking 101, A Parking Primer – International Parking Institute Fredericksburg, VA, 2002
- Parking 102, Parking Management – The Next Level – International Parking Institute Fredericksburg, VA, 2004
- Parking – Robert A. Weant and Herbert S. Levinson, Copyright - Eno Foundation for Transportation, Washington, DC, 1990
- Shared Parking, Second Edition – Study coordinated by the ULI, Copyright – The Urban Land Institute, Mary S. Smith, Washington, DC, 2005
- The High Cost of Free Parking – Donald Shoup, American Planning Association, Planners Press, Chicago, 2005
- Victoria Transport Policy Institute TDM Encyclopedia
- International Parking Institute Home Page

Transit & Parking Resources

- Capitol Hill Transit Oriented Development, Coordinated Development Plan (May 2013)
- Los Angeles County Metropolitan Planning Authority – Metro – First Last Mile Strategic Plan & Planning Guidelines (March 2014)
- MARTA Transit-Oriented Development Guidelines (November 2010)
- National Center for Mobility Management, Making First/Last Mile Connections to Transit (2013)
- Perceptions of Bicycle-Friendly Policy Impacts on Accessibility to Transit Services: The First and Last Mile Bridge (January 2014)
- SANDAG First and Last Mile Solutions for Transit Centers (October 2011)
- Smarter Parking at Transit Stations (Fall 2007)
- Sound Transit Parking Pricing Study (June 2010)
- Transit Station Area Development Guidelines
- Transit’s Enemy: Cheap Parking (May 2011)

Case Study Participants

Austin, Texas
Charlotte, North Carolina
Dallas Cowboys Stadium, Arlington, Texas
Fort Collins, Colorado
Halifax, Nova Scotia, Canada
Houston, Texas
King County Metro Transit
King County Metro Transit
Lincoln, Nebraska
Long Beach, California
Minneapolis, Minnesota
Norfolk, Virginia
San Jose, California
Santa Monica, California
Seattle, Washington
Sound Transit
Tempe, Arizona
Toronto, Ontario, Canada
University of Washington
Valley Transportation Authority
Washington, D.C.
Washington Metropolitan Area Transit Authority