Transit parking best practices deliver sustainable benefits to parking facilities and communities.

As communities develop and refine walkable, transit-friendly environments, stakeholders experience challenges associated with parking. These vibrant neighborhoods become popular destinations, which increases congestion and the demand for parking. The following transit parking best practices are designed to help stakeholders navigate these challenges and achieve efficient and effective parking. Adequate parking and greater adoption of public transportation equates to a reduction in traffic congestion, fuel consumption, pollution, and parking sprawl.

Understanding the Transit Context

It is important to understand the specific type of transit that parking serves to be able to design the best solution. In a transit village, parking should be located so it encourages patrons to walk by the commercial areas to stimulate activity. Because use patterns for each type of transit station are different depending on whether the main transit mode is bus, train, lightrail, ferry, or a combination of modes, parking solutions will vary for each individual transit station. For example, the number of bus passengers boarding at a given time varies with the number of train passengers, which in turn means the traffic flow arriving is different, which affects the design of entrance and exits for vehicles and pedestrians.

Program Mixed Uses

Mixed uses, such as retail and residential developments, play an important role in activating a transit station and creating a more secure, active environment. Mixed uses increase train and bus ridership, encourage walkable communities near transit, reduce auto use, and enhance multi-modal access. By providing mixed uses such as retail, destinations are created that will improve the quality of the parking experience for all users. A residential mixed use is a prerequisite for a transit village and reduces automobile congestion as well as the costs associated with travel to and from work. A transit village or transit oriented development (TOD), is a moderate to higher density development

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located within an easy walk of a major transit stop, generally with a mix of residential, employment, and shopping opportunities designed for pedestrians that do not exclude automobiles.

Access Demand Issues and Supply Solutions

The first step in planning a new transit station or transit village is to evaluate the demand for parking in the area through demand studies. A parking management plan (PMP) should describe how the parking supply will be managed. As part of developing the PMP, the effect charging for parking has on the parking demand and ridership can be evaluated.

Integrate Walkability

For transit parking to be successful, a network of safe, direct, and attractively landscaped paths must connect the residential, retail, and transit components over a reasonably sized, walkable area. The close proximity of these elements is required to be considered walkable.

Mitigate Modal Conflicts

Possibly the biggest challenges in developing a transit station or village are the inherent conflicts between pedestrians, autos, buses, trains, and other modes of transit. It is imperative to design to protect each and provide an atmosphere of safety. In addition, each mode is more efficient when it's effectively isolated and separated from the others. For example, a pedestrian walkway should be protected from vehicle traffic with bollards and/or landscaping.

Provide Clear Wayfinding

Clear wayfinding is a requirement for all transit stations and villages. Informational kiosks and plentiful signage are a must and when a parking structure is present, stair and elevator towers work well as passive signage when exposed as opposed to hidden. Colors and symbols used to reflect the various parking levels can be used as effective wayfinding and enhance the station's theme or characteristic.

Design for Low Maintenance

Because many transit stations are built with funding that doesn't include money for maintenance, designing for low maintenance is imperative. Choosing durable materials, protecting all metals with galvanizing or powder coating, using low energy and low maintenance lights, designing durable, low maintenance landscaping, and using anti-graffiti coatings and materials that are naturally resistant to vandalism help lower costs over time. The incorporation of alternative energy sources such as photovoltaic (solar) systems will help reduce ongoing electric costs, which are usually the most costly item in the maintenance budget for parking structures.

Include Revenue Concepts

There are a number of options to generate revenue at transit stations. The inclusion of mixed use such as retail, charging for parking, coffee or snack kiosks, cell tower antennae rooms, and advertising opportunities can all be effective revenue generation options. Many agencies are taking innovative approaches. For example, Bay Area Rapid Transit (BART), San Francisco, offers reservations for premium parking spaces before 10 a.m.

at high ridership stations, while John Wayne Airport in Santa Ana, Calif., offers valet parking.

Incorporate Appropriate Security Design

Security is a prime concern in all parking structure environments, especially transit stations. Passive security or crime prevention through environmental design (CPTED) such as glass-backed elevators, open stairwells, and eliminating hiding spots behind walls can be effective at deterring crime. In addition, code blue emergency phones, security guards, and video surveillance systems should be considered based on location.

To see how all of this might come together, let's take a look at a real-world example.

The Tustin Metrolink Station

The Orange County Transit Authority (OCTA) Tustin Metrolink Station in Tustin, Calif., was designed and constructed as a joint venture between the City of Tustin and the OCTA. Increased parking was necessary to boost ridership at the station. Due to site constraints, a parking structure became the focus of investment.

The existing facility's parking capacity was only 317 stalls. By increasing the parking capacity at the station to 825 stalls, commuters were given alternatives to the automobile for their commutes. The Metrolink commuter trains, bus rapid transit lines, local bus lines, rail feeder buses, and Go Local shuttles make the station a hub for regional transit.

To provide bus and train passengers a convenient location to transfer between transportation modes, additional bus docks were added to the station. Transit accessibility and intermodal connectivity were enhanced with four additional bus docks to increase bus service, two additional Go Local shuttle docks, information kiosks, bus shelters, and new signage and wayfinding elements. While the goal of the Metrolink Station is to be a multi-modal hub and part of the backbone of the regional transportation system, the OCTA and the city both insisted on design and construction methods that maximized sustainability while minimizing maintenance and operations costs.

In addition to the transportation and sustainable elements that define this project, revenue generating features were included to minimize the operations and maintenance costs. This project's sustainable elements provide a great example of best practices that can be applied to other projects:

- Large scale mixed use didn't pencil out. However, to improve the transit experience for users, space and infrastructure was provided for coffee and snack kiosks.
- The station was sized to allow for planned increases in ridership at this regional multi-modal hub.
- Pedestrians can conveniently access the station from the north side of the tracks using a landscaped path. The train platform and bus docks are located in close proximity to facilitate multi-modal trips. The segregation of modes of transportation creates a safe walking environment.
- To minimize vehicular/transit/pedestrian conflicts, the station includes a unique, segregated drive aisle that expedites automobile entering and exiting. Buses and bus docks are separated from pedestrians. Automobiles and buses are quickly separated upon entering the site. Stair and elevator towers for the parking structure are located so pedestrians do not conflict with automobiles or buses. A distinct kiss & ride area, ample bus dock section, and designated pedestrian paths enhance safety.
- New information kiosks were provided to help users plan their multi-modal trips. The dual elevator tower provides clear onsite wayfinding to the parking structure. Parking structure levels are color coded to help users remember where they parked, and a stall counting and guidance system was included to help users locate the nearest available parking space.
- The Tustin Metrolink Station includes multiple revenue generating elements such as outdoor coffee and snack kiosks, as well as accommodations for cell tower antennaes in rooms in the tower.
- The design incorporates LED lighting with long fixture life to eliminate the need to replace lamps over time, and drought resistant landscaping. In addition, the cast in place concrete requires minimal maintenance. The stair rails and architectural screens were powder coated to maintain their color and appearance for decades. Other metal elements in the parking structure were galvanized to prevent rust.

Active security measures at the Tustin Metrolink Station include a video surveillance system that monitors the entire parking structure and train platform, code blue emergency phones in the parking structure and throughout the site and train platform, evenly spaced bright LED lighting in the parking structure and site, and patrols from the Tustin Police Department. Passive security or crime prevention through environmental design (CPTED) is accomplished through the use of glass backed elevators, open stairwells, and placing shear walls at the interior of the building to provide a more open feel.

This project is an example of using creative solutions to make transit more attractive and help boost a community's sustainability.

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