Parkside Place Planned Development

Seminole County, FL

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Executive Summary

As communities in Central Florida continue to grow, they must contend with new areas of change. Technology is one of the main drivers, affecting the intersection of transportation, land use and building design. In the future, land use and transportation will continue to be linked, but in different ways. Buildings will no longer be limited through zoning but become mixed use and eventually demand-responsive. The same shift is happening in transportation: Where mobility, street and parking development were auto-centric in the past, we are moving towards a future where technology will help create multimodal, dynamic and automated networks.

Shared-use and on-demand mobility, low speed electric vehicles, as well as autonomous technology are expected to radically shift travel and mode decisions. Passenger pick up and drop off zones will become crucial and are making their way into site design and zoning codes.

Companies like Uber and Lyft are already reducing the need for parking and revenue as more drivers become passengers. Transportation experts forecast the need for less parking, though the amount and timelines are not yet clear. Conventional forecasting tools and planning are not up to the task of planning for smart mobility and parking.

There is also a paradigm shift underway in how the public and private sectors view parking. Once governed as "more parking is always better," the economics of over-supplied parking is a cost to developers and unrealized tax revenue for municipalities. On the flip side, walkable communities are a proven economic real estate strategy, **though only when designed around people, not cars.** Finally, demand for walkable communities is coming from two groups that will be attracted to Seminole County: (1) retiring baby boomers and (2) younger workforce attracted to the region's strong job market and housing options. Younger workers, in particular, are redefining mobility and car ownership.

Planning has become a balancing act between conventional planning objectives with fair and predictable processes while at the same time responding to a fast-moving, uncertain future. This paradigm shift means that new approaches to planning are crucial and planners need to get in front of trends, create environments for experiments, and set up measures with new partners that manage the transitions.

Parkside Place presents an opportunity for Seminole County to use several strategies to reduces the County's risk while adapting for success. **The vision for Parkside Place is to be become a showcase community that is vibrant, sustainable, active and healthy with less car dependence.** To achieve that, the development at Parkside Place is a pioneering new approach, harnessing smart city and transportation technology to build places where people live, work, play and connect. In shifting to a new land development paradigm, this project's future-proofing features include:

- **Anticipatory planning** that matches likely technology advances with site development phases. We classify and anticipate technology in four categories based on market adoption: existing, trending, emerging and future.
- **Performance-based planning** to right size parking with each phase.
- **A new partnership model** among the developer, mobility providers, city and county professionals, and adjoining property owners to create mobility hubs and links.

The planning approach focuses on four main scenarios that lead to reduced parking demand:

- Travelers that eschew car ownership for other modes (no spaces needed).
- Travelers that share a car or rides (space for a shared car needed).
- Travelers with personal cars that can "park once" in lots with right-sized parking (one space to conduct several trips because site is walkable).
- Travelers that use off-site parking.

To achieve that, a new partnership model among the developer, mobility providers, city and county professionals, and adjoining property owners is needed to create mobility hubs and links. These new hubs aggregate the growing number of mobility options such as transit-on-demand, ride hailing, carsharing and electric bike sharing. The new modes will be as (if not more) convenient as an auto trip. With good design, travelers can access and transfer among modes comfortably and seamlessly.

The planning approach also looked at the strengths, weaknesses, opportunities and challenges/threats for Parkside Place and the surrounding area. The following is a summary (the full assessment is included in Appendix A):

Strengths	Weaknesses
A growing, dynamic region, numerous mobility assets (Sun Rail, Lynx, Airport, roads/bikeways), Seminole State/UCF/ County campuses, pilot project with Uber.	Auto travel, parking and infrastructure drive design and mode choice mobility assets are scattered and unconnected, construction guided by outdated, rigid regulations, early studies justifying lower parking ratios come from urban locations.
Opportunities	**Challenges**
Central Florida expected to experience continued growth, both technology and site development aligned in phases, ability to build a transit network and new standard for suburban mobility hubs.	Car ownership culture, and by extension parking, remains strong, success in lowering parking demand will rely on external partners and off-site mobility factors, new driverless shuttle pilots underway, but still in early phases.

In developing recommendations, we reviewed best practices and cutting-edge techniques from other cities, with special attention to examples from similar urbanizing-suburban contexts. Effectiveness will be a combination of on-site (design, use mix, programming) and off-site (multi-modal transportation, links to destinations) practices. There is a growing body of research on parking reduction adjustments, typically presented as a range based on context and site specific factors. Research also points to certain combinations of mutually supportive policies and practices.

Recommendations are also presented for phasing that occurs on three tracks over 15 years:
(1) Parkside Place development construction phasing.
(2) Adoption of additional mobility services at the local and regional levels.
(3) Technology evolution phasing.

Note that because technology is advancing so rapidly, some of the strategies may be initiated sooner than presented below.

Phase 1: (1) Pre-construction, work with transportation partners and neighboring properties to attract mobility services that work on site, between properties and in local circulation among destinations; (2) integrate site design and programs known to influence parking demand reduction; and (3) plan for a mobility hub on site to coordinate modes.

Phase 2: (1) Use smart building technology to monitor parking utilization and tripmaking in and around the site. (2) Use this data to right size parking for Phase 2, and (3) determine how to link emerging technology pilots such as autonomous shuttles to the site.

The authors of this report also recommend three main strategies to ensure seamless mobility options and travel are possible while at the same time reducing parking spaces and saving valuable space for a walkable community as well as a natural, publicly accessible park.

1. Use well known parking reduction factors that have been proven in other communities in tandem with traditional planning and new mobility approaches.

2. Introduce new mobility options in alignment with phased planning.

3. Introduce parking with phased planning and having a contingency plan.

The authors of this report are confident that taking the above measures, Parkside Place will become a showcase community throughout the U.S. It will be proof that a vibrant, active and healthy community that is less car dependent is possible even in semi-rural areas. That confidence is bolstered by the region's commitment to testing and integrating smart mobility. This new type of community also has economic benefits for residents of Parkside Place because they will have more disposable income (private vehicle ownership is the 2nd largest expense in the U.S.) yet still have the same freedom of getting anywhere they want using on-demand mobility.

Transportation and Smart City Technology: Anticipating Phases

The following chart presents the changing mobility landscape, using four phases: existing, trending, emerging and future. This framework is helpful in:

- Developing an inventory of modes and smart city technology.
- Charting technology evolution to take advantage of technology now, while laying the groundwork to take advantage of emerging/future modes.
- Tracking transportation technology's evolution with other technology and trends since there will be feedback loops among modes, and more important, among land use, infrastructure and transportation.

Given the uncertainty associated with emerging smart growth and transportation technology, transportation and land use planners are turning to new planning approaches using scenario, anticipatory and performance-based planning. The Federal Highway Administration (FHWA) is leading these efforts, providing tools and regulatory support for state, regional and local agencies.

Next Generation Scenario Planning: In Florida, planners have traditionally used scenario planning to chart alternative futures related to housing, jobs and infrastructure. Next generation scenario planning incorporates uncertainties related to technology, climate change, economic shifts and other trends. Planning typically includes exploratory scenarios (what could happen) and/or normative scenarios (preferred futures).

Anticipatory Planning: Like Next Generation scenario planning, anticipatory planning (or planning for transitions) envisions a future state. However, anticipatory planning also charts likely steps along the way. This is critical for harnessing early benefits, scaling pilot programs, and proactively planning to integrate new technology into the landscape. This can avoid expensive rework and redevelopment in the future. Planning for transitions also helps downshift current mobility and land uses as trends and demand change.

Performance-Based Planning: Performance planning involves setting initial targets, monitoring performance, and adjusting policy and project design as needed. Smart city technology has enabled this approach.

Timeline: Planning for Parking with Autonomous Vehicles

	NOW	TRENDING	EMERGING	FUTURE?
TECHNOLOGY	Payment apps, Navigation, sensors & apps, smart parking meters, carshare.	Autonomous parking, shared use mobility, microtransit, electric charging.	Autonomous shuttles (1st-fixed route then demand-response), Mobility-as-a-Service (MaaS).	Individual cars- % of fleet? Owned or shared? Publicly or privately operated?
PARKING	Designated carshare parking, guide drivers to spots, payment-by-app.	Pickup/drop off zones (passengers & deliveries), smart garages.	Off-site parking, shared, automated, district parking.	What are the best parking locations to balance demand-response with lower congestion & VMT?
PLANNING	TDM, Valets, Dynamic Pricing, Parklets, Streateries, Corrals.	Queuing, on-street space reallocation, parking districts, flexible garage design, ubiquitous charging stations.	Shuttle route planning, transition (driver/driverless), coordination with transit, repurposed garage spaces.	How should parking be priced? How should cities retool parking revenue?

Phases: Planning for Technology

Obtaining the benefits of technology now while laying the groundwork for future modes.

	NOW	TRENDING	EMERGING	FUTURE?
	Technology that is widely available now.	Technology that is in initial stages of gaining market share.	Technology that is in testing or pilot phases on public roads.	Technology that is experimental or limited testing.
TECHNOLOGY	**Carshare:** Point-to-point, peer-to-peer & designated spaces. **Ridehail:** Individual & shared. **Smart Parking:** Meters & Apps. **Bikeshare:** station/ dock-based. **Delivery:** Bikes, lockers, pick-up. **After Market:** Crash avoidance & park assist technology.	**Microtransit**: Small electric circulators. **Bikeshare:** Electric/ dock-less. **Ridehail:** Paratransit uses, transit agency partnerships. **Parking:** Autonomous parking garages. **Delivery:** Ground drones.	**Autonomous Shuttles:** 1st-fixed route, then demand-response. **Mobility-as-a-Service (MaaS):** service packages **Parking:** Shared, automated, district parking. **Delivery:** Ground drones, air drones, autonomous delivery.	**Individual Cars:** What % of fleet? Owned or shared? Publicly or privately operated? **Transit:** What is public transit's role? Will on-board staff be needed? **Public Rights-of-Way**: How should cities manage demand?
PLANNING NEEDS	1. Transportation Demand Management (TDM) updates. 2. Aggregating shared-use modes at transit stations. 3. Technology alignment. 4. Scenario planning. & predictive analytics.	1. On-street & sidewalk space. 2. Pick-up/Drop off curb zones. 3. Parking Districts. 4. Flexible Garage/Lot Design. 5. Urban warehousing. 6. Ubiquitous electric charging. 7. Street Design of the future.	1. Shuttle route planning. 2. Transition planning for mixed driver/driverless. 3. Coordination with transit. 4. Repurposed garage spaces. 5. Technology upgrades.	**What are pricing policies?** VMT, per ride, vehicle occupancy, congestion charges, parking? **What is likely digital & communications investment?** 5G, Cloud, Blockchain?

Methods proven to reduce tripmaking and car ownership

The transportation profession's parking focus is shifting from providing supply to managing existing and new parking. Sufficient supply is defined as having 15% of space available at any one time in a parking-shed (locating parking within walking distance to destinations). Technology is providing tools to assess and model demand more accurately, and providing drivers the tools to better find a space. Many studies show up to 30% of traffic can be attributed to the search for a parking space.

Over the past 20 years, cities and transit agencies have developed a robust set of tools to support alternatives to Single Occupancy Vehicle (SOV) travel and shared parking. While early research and measures applied to high capacity transit/high density locations, recent work has expanded to suburban locales.

Over the next 20 years, technology is expected to radically change parking demand due to automated vehicles, shared-use mobility and smart city technology. In fact, ridehailing (e.g., Uber and Lyft) is already reducing parking revenue according to parking companies and airports. According to researchers, shared-use mobility like ridehailing is already supplanting the real estate premium of immediate proximity to transit.

> For both cities and the real estate industry, it is imperative to build the right size parking. Parking is expensive to build and yields lower taxable income for local governments. In the near and middle-terms, there will be a transition period where people will own a car until it's no longer practical.

In this case, travelers will need a parking space even as they increasingly use other services. The key is adaptable site and district design that caters to alternatives to SOV travel. This also benefits cities as fewer vehicles carry more people.

1. Design for reducing SOV and parking: (how it relates and most relevant studies)

Walkable, Mixed Use Design

Walkable design is a proven method of replacing SOV trips with walking, biking and transit. For Parkside Place, the design has two benefits: replacing car trips with walk trips internally and a "park once" approach in which visitors can park once and fulfil several trips at once.

Studies: Defining sufficient supply as that which would leave 15 percent of spaces open, we find that parking is oversupplied by 65% on average.

Convertible Parking Garages

Architects and planners are developing new structured parking designs that later convert to higher value uses in anticipation of lowered parking with shared use and autonomous mobility. Current designs are difficult to convert due mainly to the large footprint of ramps, sloped floors and low ceiling heights.

Studies: In California, real estate developers AvalonBay and the Grove are preparing for the arrival of self-driving cars with an eye to converting mall parking spaces for apartments, restaurants and stores. Others invision new first/last mile distribution centers in vacant parking.

Shared Parking/Parking Districts

Parking space supply is miscalculated in two ways: (1) Overparking by establishing rates for individual sites using peak demand (2) Overlooking supply by prohibiting shared parking across properties. Shared parking creates opportunities for uses with dissimilar peaks and/or a "park once" environment. This works well when uses are clustered, demonstrating the power of how several practices work synergistically. Cities are increasingly seeking ways to manage supply better within districts across several property owners. Best practices combine pricing, time limits in prime parking areas, and designated areas for employee parking and use of unassigned parking. Cities should also let on-street parking count in the total required parking supply mix.
Studies: In "Parking Strategies for Suburban Mixed-Used Developments," Erin Michelle Puckett researched optimum use mix combinations. First, sharing is not effective when one use dominates the development, in particular retail uses busy throughout the day and evening. Restaurants have high parking needs in bursts (lunch, dinner). Good pairings with dissimilar peaks are: residential and office. In running scenarios, the report found that the greater the number of uses, the higher potential for shared use (and hence less) parking.

2. Access to Numerous Modes of Transportation:

Shared-Use Mobility

Shared Use mobility (car/bike share, ridehailing, ridesharing) has grown exponentially, providing on-demand mobility once only available through car ownership. Sanford and four nearby cities have expanded testing for inter-city travel through a partnership with Uber. Chandler, Arizona recently revised its zoning code allowing parking reduction for developments (up to 40%) that add and monitor pick-up and drop-off points for shared-use now and autonomous vehicles in the future.
Studies: In 2016, the Transportation Sustainability Research Center (TSRC) at UC Berkeley found the one-way (or point-to-point) carsharing service Car2Go replaced 7-11 cars.

Roundtrip car share research (drivers check out and return a car to the same or a designated space) also shows significant reductions of 9-13 vehicles. California-based TransForm developed a detailed methodology for measuring the impact of carsharing membership, transit passes, bikesharing membership, and unbundled parking on parking supply reductions and driving. The calculations were developed to meet California's climate regulations, however the information on Vehicle Miles Travelled reductions are instructive for Seminole County's approach to reducing traffic and congestion.

Proximity to Transit

Study: Los Angeles California recently released its formulae for reducing parking for affordable units near transit. At the lowest level of bus service, required parking for all residential units shall not exceed 0.5 spaces per bedroom. For nonresidential parking, there is provision for up to a 10% reduction in the baseline zoning requirement. These reductions are coupled with unbundling, bike parking and alternatives to typical site design restrictions (e.g., setbacks).

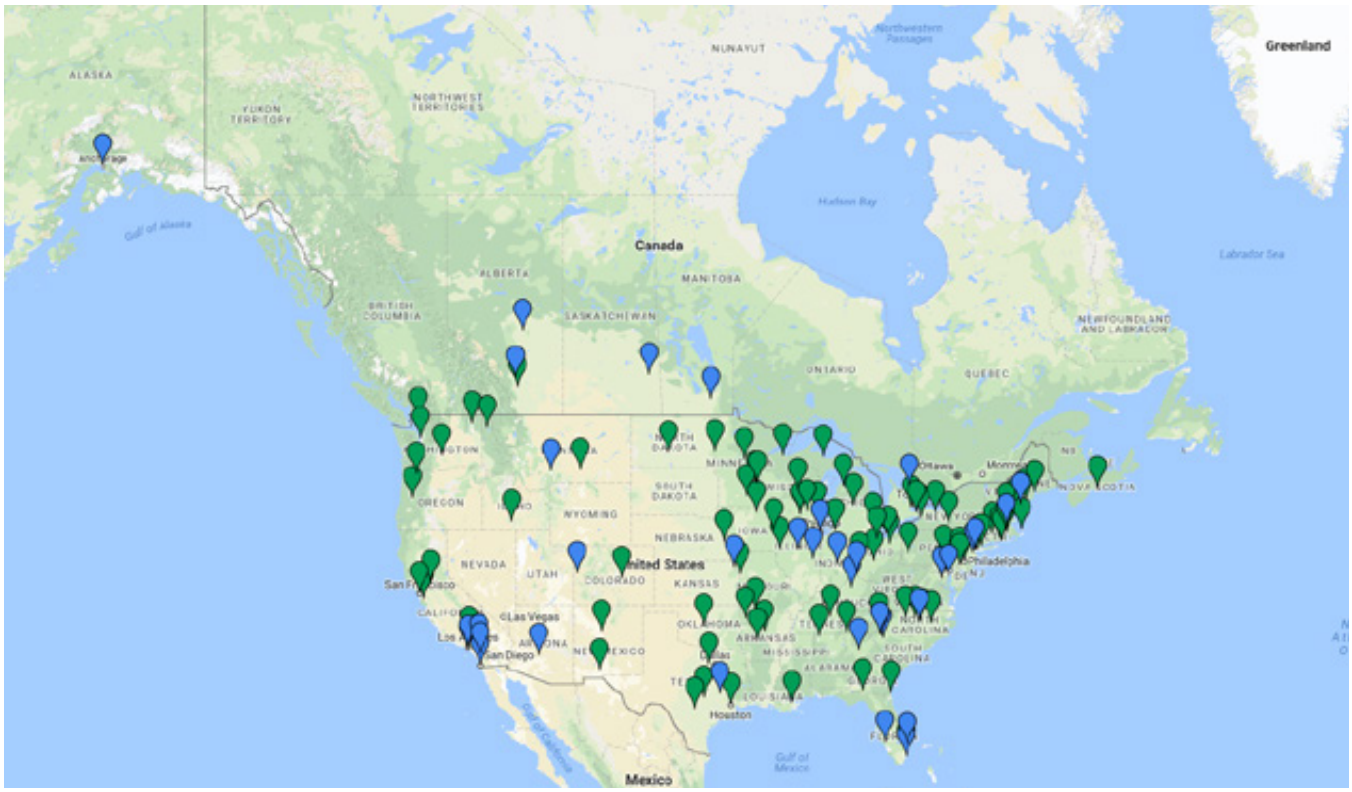
Autonomous Shuttles

A growing number of cities see emission-free shuttles as a linchpin to improving urban air quality, reducing congestion, and filling mobility gaps by filling the last-mile access to transit gaps and transit deserts. By focusing on low speed, fixed loop trials, automated shuttles are gaining valuable experience.
Study: Florida is a leader in automated vehicles. The cities of Houston, Texas, Peachtree Corners, Georgia, and Providence, Rhode Island have announced intentions to pilot automated shuttles. Central Florida is one of 10 USDOT "Proving Grounds" for testing autonomous vehicles and buses.

3. Policy

Removing parking minimums

Ninety-one municipalities of all sizes have removed parking minimum requirements for developments in the United States and an additional 37 cities are considering removing them. In the state of Florida, Fort Lauderdale and Fernandina Beach have removed any parking requirements for downtown developments. Miami, West Palm Beach and Punta Gorda all are currently considering removing parking requirements for commercial/residential developments.



Source: StrongTowns

In addition, some U.S. and Canadian municipalities allow developers to reduce parking minimums if they provide access to carsharing vehicles or if the site is close to on-street parking.

For instance, Austin's off-street parking regulation allows for a reduction of one space for each on-street parking space adjacent to the site. In addition to that a developer can remove 20 parking spaces if they provide access to one carsharing vehicle.

New Rochelle, in Westchester County, allows developers to eliminate three conventional car spaces for every car-share space (the details of the zoning code can be found here.)

Another example of removing parking minimums, is Vancouver's parking bylaw which allows developers to replace 5 regular parking spaces if they create one publicly accessible carsharing parking space. Unless the building is in a dense area, there is a cap for how many carsharing parking spaces can be introduced: to a maximum of one shared vehicle and one shared parking space for each 50 dwelling units up to a maximum of two shared vehicles for each 100 dwelling units.

Parking Pricing

- Value pricing by location: Prices for long term parkers (employees) are lower or free away from prime parking for customers.
- Dynamic parking: Dynamic pricing sets a price based on parking demand. Using technology (e.g. sensors), parking rates are set according to demand.
- Parking Cash-out (employer).
- Unbundled parking (residential) and partial unbundling with separate charges for a second vehicle (residential).

Studies: Unbundling is a critical TDM measure (perhaps the most effective) where parking is bundled auto-ownership is higher and SOV use is 12.5% higher for commute trips and 40% higher for non-commute trips. Arlington County (Virginia) Aggregate Building Study (2018).

Subsidies and Incentives

Carpooling: FDOT's reThink Your Commute already sponsors vanpooling programs and vehicles. In general, vanpools make sense where highways are tolled or restricted to high occupancy vehicles (HOV) of 2 or more passengers. Other incentives include preferred or free parking and coupled with Guaranteed Ride Home. Technology is facilitating dynamic ride and route matching, reducing the commitment, coordination and time involved with traditional programs.
Study: California's Bay Area Rapid Transit has partnered with Scoop was to create an innovative parking program allowing BART riders to dynamically find carpool matches. This program is one of USDOT's Mobility on Demand Sandbox 11 pilot programs.

Guaranteed Ride Home (GRH) or Emergency Ride Home (ERH) programs

Guaranteed Ride Home (GRH) Programs remove a common barrier to SOV commutes by providing commuters with a free ride home if unexpected circumstances arise. Costs are typically partially subsidized and partially paid by users. Seminole County participates in Florida DOT's reThink's ERH Program. These programs are ripe for pilots with TNCs similar to the Uber Pilot in the area and can be enhanced with effective ride/van share apps.

Study: The GRH program in Alameda County California supported the reduction of 407,368 one-way vehicle trips in 2013, or 3,917 vehicle roundtrips per week among 5,612 employees in 292 participating businesses. According to the 2013 survey results: 29% of participants stated that without the GRH program they would not use an alternative travel mode or would use one less frequently. 82% of participants stated that, with the program, they use alternative modes four or more times a week. 29% of respondents reported commute trips were by driving alone before joining GRH, but only 15% of trips were drive-alone trips after participants enrolled.

Smart Parking

Deploying smart parking systems in cities requires data collection and management, integration with mobile phones, real time information on parking availability (mobile & screens in buildings, transit stops & parking lots), payment systems and various software and hardware innovations. Furthermore, there is a need for cooperation among various parking stakeholders such as off and on-street parking operators, transport authorities, municipalities, as well as customers
Study: Pittsburgh's GoMobilePGH smart parking app includes information on both on-street and off-street parking space availability.

Walk/Bike

Studies: In Pittsburgh, Transit Passes Come With Bike-Share Access at No Extra Charge.

Most likely/promising technologies + design for the site

The following practices seem to be among the top technologies to explore (individually and in packages) to improve mobility and reduce parking demand.

Mobility/Modes/Parking

- Ridehailing through Transportation Network Companies now being tested. (Uber intercity pilot).
- Carsharing is a convenient way of getting around and is users generally spend only 15% of the cost of owning a personal vehicle per year. It is also a proven way of reducing vehicle ownership.
- E-bikes and e-bikeshare are emerging as powerful alternatives to driving, and could link the site to Lynx super stops, the SunRail station and among several nodes. Apartment & condominium developers are beginning to add bike amenities, and in particular electric bikes, as a prime amenity.
- Shuttles (on-demand and driverless) will provide a convenient, low cost form of transit linking the site to other destinations not well served by buses. Shuttles, like vanpools, benefit from a Emergency or Guaranteed RIde home service.
- Pricing is among the most effective methods for right-sizing parking. For residential parking, charging for rent and a parking space separately (unbundling) reveals the true price of parking. For commercial areas, timed meters help with turnover, and work well when employees are assigned non-premium spaces. Each of these has variations and can be phased in over time.
- Contingency parking for managing uncertainty.

Smart City Technology

- Parking technology to monitor parking demand and guide drivers to available spaces that may not be adjacent to a destination, but is attractive for drivers seeking an open, reliable space. Parking technology works best when combining both on-street and off-street spaces.
- Real time information to reliably plan for shared use and transit trips (mobile apps, screens in buildings, screens at transit stops).
- Internet of Things (IoT) sensors to monitor how people travel within, to, and from the site. Pedestrian, bike and vehicle counters can allow better management of parking spaces and infrastructure such as sidewalks. Managers can also manage shared spaces and flow as autonomous vehicles increase.

Design

- Unassigned and shared on and off-street parking among uses with dissimilar peak hour parking.
- Walkability to enhance active modes and support a “park once” strategy.
- An on-site Mobility Hub to assemble shared-use and active modes of transportation in the near term and autonomous shuttles/vehicles in the future. This strategy will require coordination with local and regional transportation providers, and good design to minimize conflict among users as they access and disembark.

Adjustment Factors: Technology + Parking Strategies

> Cities around the globe are realizing the negative impacts related to parking oversupply, as well as new methods for better managing parking existing or lowered parking requirements. Tactics vary based on geographic location, land use mix and design, transit availability, car ownership, and other factors.

Most parking management strategies have individual impacts, typically reducing parking requirements by 5-15% each. However, strategies are typically mutually supportive and cumulative. Strategies also require a holistic approach at the site, district and jurisdictional scale. This requires participation from travelers, real estate developers, property owners, local governments and other transportation agencies.

Determining exact reductions is tricky. Historically, car ownership rates change with the economy and access to regional jobs. Currently, unprecedented changes in demographics and technology are impacting demand for an individually-owned car. Eventually, experts predict the need for less parking, though cannot precisely forecast demand during the transition. As such, management measures are the best approach to right-sizing parking. A comprehensive parking management program with a combination of cost-effective strategies can usually reduce the amount of parking required at a destination by 20-40%.

For this site, right-sizing will involve (1) management measures for reduced parking in Phase I, (2) introduction of new mobility and smart city technology, and (3) monitoring and adjustments for future phases. This information will help Seminole County adapt to new land use and transportation trends in ways that realize the full value of the real estate portfolio.

New Mobility Phases + Options

This section looks at how site phases and new mobility are likely to evolve together and what new mobility options are available to Parkside Place.

1. Goals

The first step is to align overarching goals for the region, county and site.

At the Regional/County level, goals align to deliver:

- A street and mobility network that connects major corridors, nodes and hubs using active transportation, personal mobility, transit and emerging/future mobility.
- Proactive planning to harness the benefits of trends and technology while limiting risks.
- Unrealized economic value locked in real estate and infrastructure designed around a singular transportation mode.

2. Approach

The phased approach relies on three strategies:

- A site plan, developed over the next 12 years, that is friendly to all modes, prioritizing walking, biking and shared uses.
- Working with the County, cities and region to build a powerful portfolio of mobility modes and supportive infrastructure to serve the site and connect to other nodes, hubs and destinations. Offer site to attract/expand, where appropriate, (1) Orlando-based shared-use mobility services, (2) expand existing pilots, and (3) attract pilots for emerging modes and smart city technology.
- Monitoring parking and other performance standards for each phase.

At the site level, the initial developments will focus on:

- Creating nodes in and around the development for aggregating mobility options as well as covered public transit shelter. These are called Mobility Hubs.
- Allowing for enough space next to the bus shelter for shared mobility services (such as car share, bike share).
- Incorporating safe pick up/drop off zones for microtransit shuttle and Uber/Lyft, also close to the public transit shelters.
- Building enough parking for initial parking needs and measuring utilization using Smart Parking Technology.
- Creating a safe bike infrastructure and additional bike share zones throughout site.

At a later stage:

- Tying mobility hubs together with the introduction of car sharing, bike sharing.
- Creating safe pick up/drop off zones throughout the site for on-demand shuttles and TNC (Uber/Lyft) and ensure that these can be repurposed for AV microtransit shuttles in the future.
- Analysing parking utilization data before the beginning of each new development phase.

The authors of this report have reviewed all options available to Parkside Place and have highlighted the technology trends outlined in the table below as having the most potential.

Technology Status	Existing/Trending 2018-2020	Probable Emerging 2021-2025	Possible Future 2026-2030+
Mobility Portfolio	**Bikes** **Owned Cars** - navigation apps **Car Share** - investigate w/ Seminole State & County **Ridehail/Rideshare** - Uber/ Lyft **Shuttles** - free Sanford shuttle, airport, Lynx Vanpool, expand NeighborLink **Bus** - Lynx 103 **Rail** - SunRail stations - Lake Mary, Longwood	**Bikes** **BikeShare** - Juice/e-bikeshare **Owned Cars** - electric, fleets **Car Share** - expand UCF Zipcar, Car2Go **Ridehail/Rideshare** - expand Uber pilot **Shuttles** - On-demand microtransit, fixed- route AV Shuttle Pilot **Bus** - BRT/LYMMO pilot Rail	**BikeShare** - multiple bikeshare) **Owned Cars** - autonomous pilots **Shared Use & Ridehail/ Rideshare** - Autonomous **Shuttles** - on-demand, FAVES shuttle circulators **Bus** - AV Bus Rapid Transit (LYMMO) **Rail**
TDM Programs + Apps	FDOT reThink Emergency Ride Home Uber 5-city Pilot **Smart City** - Data strategy, Real Time Information apps, screens	Uber 5-city Pilot (expand) **Smart City** - Data strategy, Internet of Things	
Land Use + Smart City Apps	Site Work Residential Assisted Retail Hotel *Mobility Hub (small)	Residential Assisted Office Retail Hotel *Mobility Hub (medium)	Residential Assisted Office Retail Hotel *Mobility Hub (medium intermodal)
Parking, Loading + Apps	**Smart Parking Technology** - Navigation and Utilization. **Electric Charging** - Bikes, Cars, Scooters. **Bike Parking.** **Pick-Up & Drop off zones** - E-Commerce Lockers,	**MaaS** (Mobility as a Service) aggregating all services offered to the site. **Data:** Predictive analytics for build out and spaces needed.	**Smart Pick Up/Drop Off Zones** for AVs could reduce # parking spaces. **Automated parking.**

Sample Metrics for Existing/Trending Technology Phase (2018-2020)

- Baseline traffic and transit ridership counts.
- Potential College partnership for co-locating mobility assets at a small mobility hub (shared-use options, bus stops).
- Parking demand and turnover for Phase I uses (residential, assisted living, retail.
- Uber Pilot performance (and if appropriate expansion).
- Sales (to gage demand for smart city and alternative mobility).

Sample Metrics for Probable Emerging Technology (2021 - 2025)

- Baseline traffic and transit ridership counts in 2021.
- Parking utilization and car ownership for Phase 2.
- Mode splits (internal, to/from the site for multiple modes).
- Partnerships for other new mobility pilots and safety protocols (e.g., on-demand shuttles, e-bikeshare, Autonomous shuttles).

Sample Metrics for Possible Future 2026-2030

- Baseline traffic and transit ridership counts in 2026.

It is paramount that Parkside Place beconnected to the public transit (Lynx's) network yet offer a wide variety of shared use mobility options that.

Shared use mobility (on-demand transit, car/bike share, ride hailing, ride sharing), the smaller cousin of public transit, has grown exponentially, providing on-demand mobility once only available through car ownership. They will be integrated through partnership with private providers. Parkside Place will create the infrastructure (curbside pick up/drop off, parking spaces for carshare and space allocated to bike share) throughout the site.

Last but not least, Parkside Place will have sidewalks and bike paths that support inter-community active transportation options.

The authors have recommended to incorporate these new mobility providers and options that are already available in other parts of Florida or Seminole County to be introduced with Phase 1 of the development:

1. **Shuttles (on-demand and driverless)** will provide a convenient, low cost form of transit linking the site to other destinations not well served by buses. Lynx's On-Demand pilot and Via are both up and running in Florida and could also be used as an Emergency or Guaranteed Ride home service.
2. Introduce **car sharing** to the site either through Zipcar or BMW's ReachNow program. Zipcar already has a footprint in Florida and so is a strong contender for Parkside Place. However, Zipcar doesn't always offer electric vehicles. An alternative that does offer an electric residential program is ReachNow by BMW. Since their call center is in Fort Lauderdale, they have an operational footprint in Florida already.
3. Add **ride hailing** for first and last mile trips. Sanford and four nearby cities have expanded testing for inter-city travel through a partnership with Uber. The goal for Parkside Place is to be added to the pilot program. Uber could also be used as a guaranteed ride home program.
4. Establish a smart mix of **micro-mobility** options such as e-bikes, e-scooters or mopeds. E-bikes and e-bikeshare, which are emerging as powerful alternatives to driving, could link the site to Lynx super stops, the SunRail station and among several nodes. Lime, ZappRide and JuiceBikeshare are all available in Florida and could be added to site. Lime might be very open to a project like Parkside Place because they have regular bikes, e-bikes and e-scooters available in their sharing program.

At a later stage, the authors recommend adding two additional new forms of transportation to the site:

A growing number of cities see **emission-free autonomous shuttles** as a linchpin to improving urban air quality, reducing congestion, and filling mobility gaps by filling the last-mile access to transit gaps and transit deserts. By focusing on low speed, fixed loop trials, automated shuttles are gaining valuable experience. Florida is a leader in automated vehicles and Gainesville already runs a three- year pilot project with EasyMile. The authors feel that Parkside Place would be a safe place to pilot one shuttle that is on a fixed route connecting the entire site.

Whim is a **Mobility as a Service application** that allows residents to purchase a mobility service bundle (similar to your phone bundle). It will launch in summer 2018 in Miami and is an option for the site if there is an eco-system of other mobility providers on-site. Once the eco-system of public transportation and new mobility options is introduced to Parkside Place, this would be a convenient way to tie all offers together.

In order to create this new eco-system of transportation options and tie it into the land-use development plan, Parkside Place will approach possible partners and stakeholders early in the development process. These stakeholders will include newer shared mobility providers, existing public transit authorities as well as local and regional planning authorities. This will help integrate Parkside Place into the larger regional transportation context.

Parking Reduction Factors and Calculations

Current parking standards for Seminole county mandate two spaces for each dwelling unit in a multi-family structure as well as 4 spaces per 1,000 square feet of office building. Depending on the usage of commercial structures, different numbers of required parking spaces are required by the Seminole County Land Development Code, specifically Section 30, Part 64.

These parking standards make perfect sense knowing that the population density of Sanford is around 2,350/square mile and Lake Mary is at 1,550/square mile. Lesser density means more street space available but it also means that the minimum parking requirement by the County create an ample supply of off-street parking which makes traffic congestion worse and inhibits street life.

However, the vision of Parkside Place is that of a small urban center that allows for work, live and play. The density of Parkside Place will be much higher than other parts of Seminole County. This is why the authors of this report have reviewed the parking recommendations available for some larger urban centers. In particular the authors have used these guidelines from Victoria Transport Policy Institute, Parking Management, Melbourne Policy, King County (WA) Metro and Chandler AZ to compile the list of 17 parking reduction recommendations.

Victoria Transport Policy Insitute
Parking Reduction Recommendations

	Factor	Typical Adjustments
1	**Geographic Location.** Vehicle ownership and use rates in an area.	Adjust parking requirements to reflect variations identified in census and travel survey data. 40-60% reductions are often justified in Smart Growth neighborhoods (VPTI).
2	**Residential Density.** Number of residents or housing units per acre/ hectare.	Reduce requirements 1% for each resident per acre (e.g. 15% where at 15 residents per acre and 30% at 30 res. per acre) (VPTI).
3	**Employment Density.** Number of employees per acre.	Reduce requirements 10-15% in areas with 50 or more employees per gross acre.(VPTI) However, current office zoning requirements (4/1,000 square feet) may underestimate parking for office.
4	**Land Use Mix.** Land use mix located within convenient walking distance.	Reduce requirements 5-15% in mixed-use developments. Additional reductions with shared parking (VPTI). Up to 20% reduction if the proposed development contains a mix of uses, where at least 45 percent of the gross floor area is residential, provided that the required provision of visitor bays for each use are made available to visitors at all times (Melbourne). Estimate parking for the peak hour for the combined mix (Urban Land Institute).
5	**Transit Accessibility.** Nearby transit service frequency and quality.	Reduce requirements 10% within ¼ mile of frequent bus service, and 20-50% within ¼ mile of a rail transit station (VPTI).
6	**Carsharing.** Whether carsharing services are located within or near a residential building.	Reduce residential requirements 10-20% if carshare services are located onsite, or 5-10% if located nearby (VPTI). According to a 2016 study by each car2go vehicle replaced 7-11 privately owned cars in the five cities studied (UC Berkeley Transportation Research).

Victoria Transport Policy Insitute
Parking Reduction Recommendations

	Factor	Typical Adjustments
7	**Walkability and Bikeability.** Walking environment quality.	Reduce requirements 5-15% in very walkable and bikeable areas, and substitute bike parking for up to 10% of car parking. Bikeshare reductions (VPTI). Up to 10% reduction if the proposed development provides 'end-of-trip' facilities for bicycle users. Up to 5% is the development provides secure on-site and/or adjacent street bicycle parking (facilities within public view to which at least five bicycle frames and wheels can be locked) (Melbourne).
8	**Demographics.** Age and physical ability of residents or commuters.	Reduce requirements 20-40% for housing occupied by young (under 30), elderly (over 65) or disabled people (VPTI).
9	**Income.** Average income of residents or commuters.	Reduce requirements 10-20% for the 20% lowest income households, and 20-40% for the lowest 10% (VPTI).
10	**Housing Tenure.** Whether housing is owned or rented.	Reduce requirements 20-40% for rental versus owner occupied housing (VPTI).
11	**Pricing.** Parking that is priced, unbundled or cashed out.	Reduce requirements 10-30% for cost-recovery pricing (i.e. fees that pay the full cost of parking facilities), and 10-20% for unbundling (parking rented separate from building space) (VPTI). Note "partial unbundling" refers to bundling the first car, but unbundling for 2+ vehicles.
12	**Sharing/Overflow.** Ability to share parking facilities with other nearby land uses. Also referred to as Parking Held in Reserve.	Depends on the differences in peak demands with other land use. 20-40% reductions are often possible. Some jurisdictions require parking block-by-block (rather than code) in order to align peaks among uses. Others strategically place shared parking among buildings for efficient access.

Victoria Transport Policy Insitute
Parking Reduction Recommendations

	Factor	Typical Adjustments
13	**Parking & Mobility.** Management. Parking and mobility management programs implemented at a site.	Reduce requirements 10-40% at worksites with effective parking and mobility management programs. Parking utilization - Parking technology includes identification & navigation of open spaces. This guides a driver to a spot, lessening the "circling for parking" phenomenon, as well as perceptions that parking is undersupplied. Technology can also boost the use of parking in locations not immediately proximate to buildings (effect on parking unknown).
14	**Design Hour.** Number of allowable annual hours a parking facility may fill.	Reduce requirements 10-20% if a 10th annual design hour is replaced by a 30th annual peak hour. Requires overflow parking plan (VPTI).
15	**Contingency-Based Planning.** Use lower-bound requirements, and implement additional strategies if needed.	Reduce requirements 10-30%, and more if a plan exists indicating the responses that will be deployed if the number of parking spaces initially built is insufficient in the future (VPTA).
16	**Guaranteed Ride Home (also Emergency Ride Home).**	Guaranteed Ride Home (GRH) programs gives commuters an "insurance policy" against being stranded.
17	**Design Features.** Allow for discretionary reductions based on design features.	Up to 40% reduction with shared-use mobility pick up/drop off zones supporting by parking demand study. (Chandler AZ) Up to 10% for passenger loading zones (Chandler AZ) Pick-up and drop off, Transit Plaza, Transit Shelter, Extended width sidewalks with seating for transit, Publicly accessible, sheltered outdoor bike racks or storage, Overhead weather protection, Transit information (e.g., notification of next bus arrival) (King County Metro). Reprogram parking from solely car storage to parking, transportation and mobility (International Parking Institute).

Sources:

Florida Department of Transportation, Impact of Parking Supply and Demand Management on Central Business District Traffic Congestion, Transit Performance and Sustainable Land Use: A Study on the Impact of Parking Supply and Demand Management

Victoria Trasport Policy Institute, Parking Management http://www.vtpi.org/park_man_comp.pdf

Melbourne Policy P315 Car Parking Reductions for Non-Residential Development

King County (WA) Metro Right Size Parking Model Code

Chandler AZ Revised Parking Code.

International Parking Institute, 2018 Emerging Trends in Parking.

Out of the 17 recommendations above, the authors have focused on 11 that are in the control of the Developer.

Recommendation 2 (density) and 10 (housing tenure) have been combined because they go hand-in-hand. Since the population of Seminole County is heavily dependant on personally owned vehicles the authors have opted for a more conservative approach to reduction, aiming below the typical adjustments used or recommended. The table below outlines the recommendations, the % adjustment used as well as a justification for the reduction.

movmi and GreaterPlaces Parking Reduction Recommendations

	What	Percent Adjust-ment	Reduction in # of parking spaces	Justification for Parkside
1	**Geographic Location.** Vehicle ownership and use rates in an area.	5%	901	Parkside meets all 10 principles that define a Smart Growth community, from a site that is focused on live-work-play to a transportation plan that is focused on a walkable community with new mobility as well as a developer that decided to preserve the natural beauty on site.
2 & 10	**Residential Density.** Number of residents or housing units per acre/ hectare. **Housing Tenure.** Whether housing is owned or rented.	10%	1002	Parkside focuses on providing rental units only with a high level of density.
4	**Land Use Mix.** Land use mix located within convenient walking distance.	10%	1002	Parkside is a mixed-use development with commercial, residential and office buildings all within walking distance. Current codes oversuppply parking by assuming each trip needs its own space.
5	**Transit Accessibility.** Nearby transit service frequency and quality.	5%	901	The developer of Parkside will build one bus stop on site for a Lynx bus that will connect to the SunRail station. The developer will provide Transportation Demand Management (TDM) communications onsite such as TransitScreen.

	What	Percent Adjust-ment	Reduction in # of parking spaces	Justification for Parkside
6	**Bike and Carsharing.** Whether carsharing services are located within or near a residential building.	8%	802	The developer will partner with a carshare program that offers electric carsharing services to residential developments (such as BMW or Zipcar) and will provide an adequate number of carsharing parking spaces on-street with charging infrastructure. These spaces are distributed strategically throughout the site. On-street spaces are more visible to the public which increases membership and utilization. These cars and bike fleets like Riide will, in essence, be a renter's "second car".
7	**Walkability and Bikeability.** Walking environment quality.	5%	901	Parkside Place is designed around walkability and bikeability. This will allow residents who would like to go to a restaurant or a movie to walk/bike instead of drive.
8	**Demographics.** Age and physical ability of residents or commuters.	20% Assisted Living, 40% student housing.	662	In Phase 1 of the development the assisted living housing will be built. Parking needs for the elderly in this building will be reduced. In Year 5 and 7, the developer will be student housing on the site. Parking needs for students are also reduced, especially if they attend Seminole County College which is across the street from Parkside Place.
11	**Pricing.** Parking that is priced, unbundled or cashed out.	10%	1002	Parkside will adopt a "partial unbundling" practice to parking. The first car will be included in the monthly rent and the parking space will be conveniently located (indoors, close to the rental unit). The second parking space will be charged extra per month and may not be close to the rental unit.

	What	Percent Adjust-ment	Reduction in # of parking spaces	Justification for Parkside
15	**Contingency-Based Planning.** Use lower-bound requirements, and implement additional strategies if needed.	10%	1802	The developer of Parkside Place is aware that parking needs might change or be different than originally anticipated. The developer is willing to increase parking if initial estimates were too low over the 10 year build out phase.
16	**Guaranteed Ride Home (also Emergency Ride Home).**	1%	180	Uber and Lyft both run a pilot in Seminole County and the developer will approach both groups in the future. This will allow visitors a guaranteed ride to the site and home even without their own personal vehicle.
17	**Design Features.** Allow for discretionary reductions based on design features.	3%	541	Parkside place will have a multimodal transportation hub with a covered bus shelter for the Lynxbus, adjacent carsharing parking as well as a pick up/drop off zone for Uber/Lyft. In addition to that pick up/drop off zones for Uber/Lyft will be placed strategically on the site (in close vicinity of hotels, restaurants).

If all recommendations are taken into account, **a total reduction of 9,696 parking spaces is possible. This means that Parkside Place needs to offer 8,322 parking spaces in total to serve parking needs for residents, employees and visitors combined.** The Developer currently plans to build 9,018 spaces in structured parking in total over all development phases. In addition, there will be 520 on-street parking spaces available to any visitors of the park, hotel, theatre, guests etc. This means Parkside Place will provide a surplus of parking by 9%. An adequate number of the on-street parking spaces will be dedicated to electric car sharing vehicles, the others can also be used by residents using a parking permitting system.

Summary of Recommendations

The authors of this report recommend three main strategies to ensure seamless mobility options and travel are possible while at the same time reducing parking spaces and saving valuable space for a walkable community as well as a natural, publicly accessible park.

1. Use well known parking reduction factors that have been proven in other communities in tandem with traditional planning and new mobility approaches

The 11 parking reduction strategies chosen to plan for Parkside's parking needs are all in control of the developer through some traditional planning measures such as creating the right density, land use mix, pricing and housing tenure approach. In addition to that, the Developer has committed to introducing new mobility options and services that will help reduce the number of car trips needed on-site and off-site. In tandem with the phasing plan for housing, the Developer will build out the mobility offering and infrastructure that supports less car trips.

2. Introduce new mobility options in alignment with phased planning

Parking reduction and the introduction of the right mobility services go hand-in-hand. The Developer will provide several new mobility options in a phased approach:

Initial:

- Creating nodes in and around the development for aggregating mobility options as well as covered public transit shelter. These are called Mobility Hubs.
- Allowing for enough space next to the bus shelter for shared mobility services (such as car share, bike share).
- Incorporating safe pick up/drop off zones for microtransit shuttle and Uber/Lyft, also close to the public transit shelters.
- Building enough parking for initial parking needs and measuring utilization using Smart Parking Technology.
- Creating a safe bike infrastructure and additional bike share zones throughout site.

Later on:

- Tying mobility hubs together with the introduction of car sharing, bike sharing.
- Creating safe pick up/drop off zones throughout the site for on-demand shuttles and TNC (Uber/Lyft) and ensure that these can be repurposed for AV microtransit shuttles in the future.
- Analysing parking utilization data before the beginning of each new development phase.

Transportation options for residents, visitors and employees of Parkside Place will include traditional public transit and a menu of shared mobility options such as carsharing, on-demand shuttles, ride hailing and micro mobility services. The Developer will aim for them to be electric and integrated into the larger regional transportation context. To do this successfully, the Developer will approach possible partners and stakeholders early in the development process.

3. Introduce parking with phased planning and having a contingency plan

In addition, the Developer has a risk mitigation plan for parking in case parking reductions have been over or underestimated. To measure utilization, the Developer plans to equip their parking facilities with Smart Parking Technology and analyse parking utilization data before the beginning of each new development phase. Based on this data analysis, the Developer will address parking shortages or oversupply over the 12 year development cycle.

> If all recommendations are taken into account, a total reduction of 9,696 parking spaces is possible. This means that Parkside Place needs to offer 8,322 parking spaces in total to serve parking needs for residents, employees and visitors combined. The Developer currently plans to build 9,018 spaces in structured parking in total over all development phases. In addition, there will be 520 on-street parking spaces available to any visitors of the park, hotel, theatre, guests etc. This means Parkside Place will provide a surplus of parking by 9%. An adequate number of the on-street parking spaces will be dedicated to electric car sharing vehicles, the others can be used overnight by residents using a parking permitting system.

The authors of this report feel confident that taking the above measures, Parkside Place will become a showcase community throughout the U.S. It will be the proof that a vibrant, active and healthy community that is less car dependent is possible even in semi-rural areas. This new type of community also has economic benefits for the residents because they will have more disposable income (private vehicle ownership is the 2nd largest expense in the U.S.) yet still has the same freedom of getting anywhere whenever they want.

Appendix A - SWOT Analysis for the area/site

Strengths	Weaknesses
- Sanford and Seminole County are dynamic, growing communities. - The area has numerous mobility assets (Sun Rail, Lynx, Airport, roads). - The site is across from Seminole State/UCF/County campuses along a corridor slated for expansion. - The natural area provides an amenity for site tenants and visitors. - Pilot project with Uber (culture of innovation in the area). - Extensive investment in bikeways and trails.	- Auto travel is engineered as almost exclusively the sole mode of travel through transportation forecast methodology and infrastructure design. - The area's mobility assets are scattered and unconnected. - Existing norms on parking oversupply. - Rigid regulations that preclude adaptable building design and uses. - Many of the studies justifying lower parking ratios come from high capacity/density TOD stations not applicable to suburban locations.
Opportunities	**Threats**
- Florida is on the leading edge of adopting new models such as autonomous vehicles. - Growing number of non-auto, new mobility modes (e-bikes, AV shuttles) that can connect people & places; new bike trail in north Sanford. - Phased site plan that allows for both experimentation and accomodation. - Ability to build a transit network connecting corridors, neighborhoods and destinations using new mobility. - Ability to design a mobility hub SW corner) that adds more value to the site & can be test bed for smart city technology. - Ability to set new standard for suburban mobility hubs. - Central Florida expected to experience continued growth.	- Car ownership culture remains strong; even with mobility alternatives, residents may still want to own 2 cars. - Parking culture is strong and tilted towards oversupply. - Success in lowering parking demand will rely on external partners and factors. - The ability to capture internal trips relies on a use mix that meets daily needs; retail is undergoing rapid flux with e-commerce so it is difficult to predict whether current retail design applies in the future. - Uncertain technology (driverless shuttle pilots underway, but still in early phases).

Appendix B - Parking Reduction Calculations

Parking spaces per county requirements	
Total # of Commerical	**7,994**
Total # of Residential	**10,024**
Total Student Housing	**1,504**
Total Assisted Living	**300**
Total Overall	**18,018**

Parking Reductions Calculations

	Final Reduction Scenario	
Factor	**Adjustments used for Parkside**	**Parking Space Reduction**
Geographic Location. Vehicle ownership and use rates in an area.	**5%**	901
Residential Density. Number of residents or housing units per acre/ hectare.& Housing Tenure. Whether housing is owned or rented.	**10%**	1002
Land Use Mix. Land use mix located within convenient walking distance.	**10%**	1002
Transit Accessibility. Nearby transit service frequency and quality.	**5%**	901
Carsharing. Whether carsharing services are located within or near a residential building.	**8%**	802
Walkability and bikeability.Walking environment quality.	**5%**	901

	Final Reduction Scenario	
Factor	**Adjustments used for Parkside**	**Parking Space Reduction**
Demographics. Age and physical ability of residents or commuters.	**20% Assisted Living housing in Y3, 40% student housing Y5**	662
Pricing. Parking that is priced, unbundled or cashed out.	**10%**	1002
Contingency-Based Planning. Use lower-bound requirements, and implement additional strategies if needed.	**10%**	1802
Guaranteed Ride Home (also Emergency Ride Home)	**1%**	180
Design Features Allow for discretionary reductions based on design features.	**3%**	541
	Total Parking Reduction	**9,696**
	County Requirement	**18,018**
	Total Parking Proposed	**8,322**

Parking Reduction Calculations

Commercial

	Unit Area	Total Area	Proposed Parking	Our Parking Ratio #	County Required Parking	County Parking Ratio
Office		1,392,876	2786	2/1000	5572	4/1000
Medical/Dental Offices		50,000	138	2.75/1000	275	5.5/1000
Assisted Living		200,000	60	0.35 spaces/bed	300	2/unit
Retail		290,000	798	2.75/1000	1595	5.5/1000
Hotel		150,000	225	0.9 cars/key	252	1/room +2
Total		**2,082,876**	**4,006**		**7,994**	

Residential

	Unit Area	Total Area	Proposed Parking	Our Parking Ratio #	County Required Parking	County Parking Ratio
Student Housing	752	631,800	752	1/unit	1,504	
Multi-family	4260	4,942,250	4,260	1/unit	8,520	2/unit
Total	**5012**	**5,574,050**	**5,012**		**10,024**	

Development Schedule Vision

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
Schedule	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
County Planning & Land Purchase															
Site Planning															
Site Works - 40%															
Site Works - 60%															
Multi-Family (Residential) - 5,012 units															
825 units			400	425											
984 - MF and Students					444	450									
936 Units							648	288							
1118 - MF and Students									308	810					
961 Units											440	521			
Independent Living - 184 units - 184,000				184											
COMMERCIAL - 2,082,876 sq feet															
Office - 1,442,876 sq ft					300,000		300,000		300,000		300,000		242,876		
Assisted Living - 150 Units - 200,000 sq ft			200,000												
Specialized Retail - 290,000 sq. ft			50,000	50,000	50,000	90,000	50,000								
Hotel - 250 rooms - 150,000 sq ft				150,000											

Appendix C - Contacts

An effective parking plan involves several interlinking strategies at several scales: site, neighboring properties, district, town and region.

There are likely other efforts underway with strategies related to regional transportation, land use, infrastructure, economic development and innovation. This section provides two areas of contacts: (1) point people who oversee comprehensive efforts and (2) other contacts.

Carsharing

ZIPCAR	Station-based carsharing program, already up and running in Orlando.
ENTERPRISE CARSHARE	Station-based carsharing program, up and running at some campuses in Florida.
MAVEN (GM)	Provides station-based carsharing program, including EV.
REACHNOW (BMW)	Provides residential carsharing with electric vehicles.
ENVOY	Provides fleets to apartment companies.

Bikesharing

MOTIVATE (LYFT)	Station-based bikeshare program, generally needs city to launch and operate.
LIMEBIKE	Dockless bikeshare program, generally city wide program
DROPBIKE	Alternative dockless bikeshare program, often introduced on large campuses
JUMP (UBER)	Electric dockless bikeshare
VELOMETRO	Covered electric bikeshare
JUICEBIKESHARE	Station-based bikeshare option, managed by Cycle Hop. Operating in Orlando for the past 3 years.

Carpooling

GOKIDS	Focused on carpooling for families.
RIDEAMIGOS	Commuter and ridesharing (carpooling) service.

Electric Motorcycles

SCOOT NETWORKS	Mopeds & bicycles
ZAPP RIDE SHARE	Electric three-wheeler moped program that is already available in Key West, Florida.

Electric Bikes & Fleets (non shared)

BLIX	ORGANIC TRANSIT

Mobility as a Service

MAAS GLOBAL	Focused on carpooling for families.
FREE2MOVE (PSA)	Commuter and ridesharing (carpooling) service.
MOOVEL (DAIMLER)	moovel is also similar to Whim, however it can also be used for public transit mobile ticketing or for improving public transit routes on-demand.
TRANSIT APP	Trip finder that simply shows users all possible transportation options (no booking, payment possible).
TRANSIT SCREEN	Large electronic screens that show users all possible transportation options (similar to airport departure/arrival screens).

Other

ECO-SERVICE	Fleet management and technology for carsharing to AV
BESTMILE	AV technology provider for micro shuttle projects. Generally works with Navya AV shuttles.
STRATIM	Fleet management, including preparation for autonomous.
CHARGEPOINT	Electric charging infrastructure for multi-family, part of BMW group (works with ReachNow)

Authors

This report is a collaboration between Sandra Phillips from movmi Shared Transportation Services, a boutique agency specialized in all forms of new and shared mobility and Lisa Nisenson from GreaterPlaces with 20 years of experience in community planning, policy and design.