RIGHT SIZE PARKING
CNU FLORIDA 2019

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REDUCE MINIMUMS

NO !! PARKING MAXIMA
OK!
PARKING
MAXIMA

NO!!
RIGHT SIZE PARKING 2.0
What’s Missing?

1. Commercial/Mixed Use
2. Technology
3. Vehicle Innovation
4. Planning for Trends
In Mixed-use Districts, parking is oversupplied by 65% on average.

Rachel Weinberger, Joshua Karlin-Resnick

2018 Emerging Trends in Parking

Report on a survey conducted by the International Parking Institute
TRENDS – DIY SHARED USE MOBILITY

1. LIBRARY
2. CAMPUS RECREATION CENTER
3. WHEELCHAIR ACCESS

REQUEST A RIDE

AVERAGE PICKUP TIME IS 3 MINS

Driver Rosser will pick you up in van 98

Ride Complete
You completed your ride from Library to Campus Recreation Center at 4:07 PM

You are riding with Rosser
Car ownership rising
TNCs reducing demand for parking: entertainment districts & airports

- Avoid drunk driving and hassles of parking
- Parking at hotels down 15-20% (Ace Parking)
Deloitte: By 2040, > 50% VMT traveled in the US could occur in shared autonomous vehicles
Summit New Jersey: Cancelled $10M garage; opted for shared-use pilot with Uber in 2017 (renewed with Lyft 2018)
Davidson NC: Cancelled municipal garage citing AVs (2018)
TRENDS – E-COMMERCE

SUPERFAST DELIVERY
WHAT IS RIGHT SIZE PARKING 2.0?

PARKING DEMAND “ECOSYSTEM”

FOR PEOPLE & GOODS IN DISTRICTS

USING TRANSPORTATION DEMAND MANAGEMENT

WHILE ANTICIPATING EVOLVING TECH & TRENDS

RESPONDING WITH ADAPTIVE BUILDING/GARAGE/STREET DESIGN
The mixed-use project includes 1,682,876 ft² in four phases: office/commercial, 250-room hotel, 312-bed assisted living facility, 5,012 apartment units (752 units for student housing and 184 units for independent living).

Eliminated 9000 parking spaces

5-0 vote for approval
CASE STUDY: PARKSIDE PLACE

Technology 3 Ways
Mobility Technology
(space-light options, MaaS)

Parking Technology
(monitoring to meet permits, ability to rent excess space)

Partnerships
(developer as new mobility catalyst)
## Case Study: Parkside Place

### How we did it:

- **Used scenario planning to forecast technology**
- **Aligned tech evolution with development phasing**
- **Monitoring & contingency**

### Table: Technology, Parking, Planning

<table>
<thead>
<tr>
<th>Category</th>
<th>Now</th>
<th>Trending</th>
<th>Emerging</th>
<th>Future?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technology</strong></td>
<td>Payment apps, navigation, sensors &amp; apps, smart parking meters, carshare.</td>
<td>Autonomous parking, shared use mobility, microtransit, electric charging.</td>
<td>Autonomous shuttles (1st-fixed route then demand-response), Mobility-as-a-Service (Maas)</td>
<td>Individual cars - ¾ of fleet? Owned or shared? Publicly or privately operated?</td>
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<td><strong>Parking</strong></td>
<td>Designated carshare parking, guide drivers to spots, payment-by-app</td>
<td>Pickup/drop off zones (passengers &amp; deliveries), smart garages</td>
<td>Off-site parking, shared, automated, district parking</td>
<td>What are the best parking locations to balance demand-response with lower congestion &amp; VMT?</td>
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<td><strong>Planning</strong></td>
<td>TDM, Valets, Dynamic Pricing, Parklets, Streateries, Corrals</td>
<td>Queuing, on-street space reallocation, parking districts, flexible garage design, ubiquitous charging</td>
<td>Shuttle route planning, transition (driver/ driverless), coordination with transit, repositioned</td>
<td>How should parking be priced? How should cities recoup parking revenue?</td>
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## Case Study: Parkside Place

### Now

**Technology**
- Payment apps
- Navigation, sensors & apps
- Smart parking meters
- Carsharing

**Parking**
- Designated carshare parking
- Guide drivers to spots
- Payment-by-app

**Planning**
- TDM
- Valets
- Dynamic pricing
  - Parklets, Streateries, Corrals

### Trending

**Technology**
- Autonomous Parking
- Shared Use Mobility
- Microtransit
- Electric charging

**Parking**
- Pickup/Drop off zones
  - (passengers & deliveries)
- Smart garages

**Planning**
- Queuing
- On-street space reallocation
- Parking districts
- Flexible garage design
- Ubiquitous charging stations

### Emerging

**Technology**
- Autonomous Shuttles
  - (1st fixed route, then demand-response)
- Mobility-as-a-Service (MaaS)

**Parking**
- Off-site parking
- Shared, automated, district parking

**Planning**
- Shuttle route planning
- Transition (driver/driverless)
- Coordination with transit
- Repurposed garage spaces

### Future?

**Technology**
- Individual cars - % of fleet?
- Owned or shared? Publicly or privately operated?

**Parking**
- What are the best parking locations to balance demand-response with lower congestion & VMT?

**Planning**
- How should parking be priced?
- How should cities retool parking revenue?
THE PROGRAMMABLE STREET

- PHYSICALLY
- DIGITALLY
- ECONOMICALLY
# The Parking Demand Ecosystem

## Site Design
- Location Factors (Proximity to Transit, Use Mix, Connectivity)
- Mobility Rooms
- Showers & Lockers
- Secure Bike Parking
- Pick Up/Drop Off
- On-Site Car & Bikeshare
- Vehicle Charging
- Real Time Transit Info
- Real Time Inventory
- Facilitated Delivery
- Parking - Shared Vehicles
- Automated Parking

## District Design
- Concentrated Destinations
- TOD/Mobility Hubs
- Use Mix
- Connectivity
- Access Management
- Multimodal Infrastructure
- Public & Private Parking
- Parking Benefit District
- District Delivery Plans
- Side Street Loading
- Designated Shared Spaces
- Digital Infrastructure
- District Smart Parking
- Contingency Parking
- Pick-Up/Drop-Off Zones
- AV Parking (Remote)
- Drone Paths

## Modes
- Walking
- Scooters
- Bikes
- Bikeshare (Dock, Dockless)
- E-Bikes (owned, shared)
- Mopeds, Motorcycles
- Ridehailing (single, shared)
- Cars (+AV)
- Car Share (RT, Pt2Pt, P2P)
- NEVs
- Shuttle/Microtransit (+AV)
- Buses (+AV)
- Bus Rapid Transit (+AV)
- Rail Transit (+AV)
- Delivery Drones (Air & Ground)
- Passenger Drones

## Policy & Pricing
- Parking Benefit District
- Promoted Parking Apps
- Guaranteed Ride Home
- Unbundle Parking
- Partial Unbundle Parking
- Shared Parking Rules
- Parking Cash Out
- In-Lieu-Of Fees
- Dynamic Meter Fees
- Curb Parking/Pricing
- Residential Permits
- Valets
- TNC Fees
- Contingency Parking
- Enforcement
- (Delivery Impact Fees)