Today’s Big Takeaway

Automated Vehicles will cause the next great transformation in our transportation systems and the built environment

- Mobility and safety will increase
- Ownership patterns will change
- AVs will impact roadway design, urban form, site design, and parking
Will Driverless Cars Become a Dystopian Nightmare?

Autonomous cars could be a big win for the climate. Or they could undo years of progress on efficiency.

Time to hit the panic button on driverless cars?
Automated Vehicle Experts Say Future Could Be Bright—Or Dystopian

Katy Steinmetz / San Francisco
Jul 19, 2016

Utopian or dystopian? Either way, the future is driverless cars
Changes to the Built Environment

Road Design
AVs may create narrower and more efficient ROWs

Signage & Signalization
Virtual infrastructure may replace physical signs and signals

Bikes & Pedestrians
AVs could support or hinder the pedestrian experience

Parking
AVs could affect the location, design and demand for parking

Drop-offs
Drop-off areas may replace on-site parking

Redevelopment
Reduced parking may open redevelopment opportunities
AV Right-of-Ways (ROW)

AVs could enable smaller & more efficient ROWs

Why?
- Smaller vehicles
- More precise driving – AVs remove margin of error
- Increased throughput – AVs can travel closer together

Implications
- Creates more space for bike/ped facilities
- Reduces need to expand roadways
- Potential for road diets
A Common Auto-Centric Streetscape
Moving Toward Complete Streets
AVs’ Long-Term Streetscape Opportunity
Transitioning to AV ROWs

Until the existing vehicle fleet turns over the transportation system will need to accommodate automated and human-operated vehicles.

Separating automated and human-operated vehicle infrastructure

- Dedicated lanes
  - Starting on the highway system - Similar to today’s HOV lanes
  - Provides AVs’ efficiency benefits without compromising human-operated vehicles
The Future of Traffic Signals

◎ The Decline of Traffic Signs and Signals
  ○ V2I and V2V technology may replace all traffic signs and signals
  ○ Declutter Roadways

◎ Reorient of Traffic Signs to Pedestrians

◎ Enable Free-flowing Intersections

Source: USDOT
Free-Flowing Intersections

Source: University of Texas
## How AVs Could **Support** or **Hinder** Bikes & Peds

| Support                                      | Hinder                                                               |
|----------------------------------------------|                                                                     |
| ◦ AVs require less space within urban settings | ◦ Free-flowing intersections could make crossing intersections difficult or even dangerous |
| ◦ Open space to retrofit ROWs to provide more pedestrian and bicycle facilities | ◦ Drop-off lanes could fragment bike/ped networks                    |
| ◦ Opportunities to pursue complete streets   |                                                                     |
The Future of Parking

**Design**
Human design elements can be removed from parking areas

**Location**
Parking is no longer tied to a site

**Demand**
The demand for parking may decrease dramatically

Source: Cornell.edu
Drop-offs: The Parking Replacement

- AVs will shift priority from parking to drop-off areas
- Drop-off areas are expected to become a staple in urban site design
- Existing infrastructure could be retrofitted as drop-offs
  - Surface Parking
  - On-street parking
  - Turn lanes
  - Service roads
Figure 3.1 - Redeveloping On-street Parking as Drop-Off Areas: Drop-offs will be integral in freeing parking for reuse and redevelopment. Here they are seen redeveloped from on-street parking. Additional space from narrower ROWs may also be redeveloped into protected bike lanes or other bike/ped facilities.
Redeveloping Suburban Strip Malls
Redevelopment Opportunities

- Reduction and relocation of parking will open space for significant urban redevelopment
- Opportunity to rethink, revitalize, and redevelop urban centers
  - Densification of urban core
  - Placemaking and beautification efforts
- Site Design Implications
  - Replace parking with drop-off areas
  - Pull buildings closer to frontage roads

Source: Savannah College of Art & Design, 2014
Redevelopment Opportunities
Putting it All Together: Today’s Built Environment
Putting it all Together: A Fully Autonomous City
Conclusion

AV is a **Transformative Technology** that if implemented properly could support attractive, people-centered, and safe urban environments.

The technology is rapidly advancing. It is vital for planners and policy makers to integrate AVs as a transportation mode in our plans.
Envisioning Florida’s Future: Transportation and Land Use in an Automated Vehicle World

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Available for free online at: http://fpdl.coss.fsu.edu/Research-Projects/Envisioning-Floridas-Future