Land Use Planning for a World of Autonomous and Connected Vehicles

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Framing the Topic

“Autonomous vehicles will remake cities in ways we are only beginning to imagine. Architects and planners have to envision structures now that will fit into that future”

- Urban Land – Summer 2018 (Urban Land Institute)
Framing the Topic

Today's Needs
Creating projects that will meet today's land use needs ...

Tomorrow's Expectations
Future-proofing today’s projects so they won’t become obsolete tomorrow...

Land Use Plans & Regulations
Updating plans and zoning requirements to meet today’s needs and tomorrow’s expectations...
Framing the Topic

- Google takes over 6 years to drive its first 1 million miles (June 2015).
- Waymo goes from 7 to 8 million miles in about a month (July 2018).

Source: Waymo
Note: Alphabet Inc. removed the Google branding from its cars and created the Waymo subsidiary in December 2016.
Framing the Topic
The Challenges

1. Are we preparing for the role of driverless vehicles in our regional long range plans?

2. How do we adapt existing plans, regulations, and incentives to future increase in usage of ACVs?

3. What will the future of our communities look like from a land use perspective?
Understanding the market
ACV Cities

01 | San Jose, CA
02 | Ann Arbor, MI
03 | Boston, MA
04 | Pittsburgh, PA
05 | Austin, TX
06 | *Phoenix/Chandler, AZ

*A city Charlotte is learning from.*
Phoenix...Kyla Jackson takes an autonomous vehicle to school every day!
Charlotte’s Response

01 | Regional Focus
02 | Adopted Policies
03 | Charlotte Future 2040
04 | Unified Development Ordinance
Regional Focus

01

Centralina Council of Government’s Roadmap Action Plan
Adopted Plan/Policies

02

- “Local governments, in coordination with the CRTPO will serve an important role in planning for how ACVs will impact our communities and transportation network.” MTP 2045 (March 2018)

- “The City will monitor the progress of autonomous vehicle development and implementation in order to begin planning for safe and effective accommodation of autonomous vehicles.” (City Council, 2017)
Charlotte Future 2040

03

Potential impacts on the built environment:

- Parking demand
- Roadway capacity
- Sprawl
- Transit usage
- Congestion
- Mobility for Seniors
- Safety
- Walkability/Bikeability
- Emissions
- Traffic patterns/Combined trips
- Freight movements
- Infill development
- Equity
Unified Development Ordinance

04

Regulations from 8 different development ordinances will be combined into a single comprehensive document.

- Zoning Ordinance
- Transit-Oriented Development Ordinance
- Subdivision Ordinance
- Tree Ordinance
- Chapter 19 (Streets and Sidewalks)
- Floodplain Regulations
- Erosion Control Regulations
- Stormwater Regulations
- Driveway/Access Standards
“The dream of cars driving themselves is becoming a reality. Before, the question was whether it was possible. Now we know it is.”

- Sebastian Thrun
Thank you.

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