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or street and community livability, Autonomous Vehicles (AVs) potentially offer the benefits of more street space for cyclists and pedestrians, and reduced demands for parking. But to realize these promises, planners need to achieve two key objectives: more (vehicle) sharing, and less sprawl.

If we cannot do these two things, the induced travel and sprawl effects of AVs (driven by the vanishing personal cost of travel) will likely drive up vehicle travel and capacity requirements beyond the ability of cities to provide this new street livability space for human travelers.

Through stronger transportation and land use integration and balance, we can more intentionally a) plan our land use activities as a form of travel demand management, lowering travel (sustainability), b) minimize the impact of that travel by lowering people’s exposure to vehicle speeds and volumes (livability), and c) make sure streets prioritize humans and vulnerable groups (equity).

Toward this, we offer this “manifesto” outlining principles for greater transportation and land use integration and balance for a) The Vehicles, b) Streets and Users, and c) Land Use and Design to serve as guideposts for policy and planning decisions.

The Vehicles:

1. Leverage new technology to reward sustainability. Seek to leverage new technology and behavioral economics to smartly determine pricing and incentive sustainable behaviors. For example, handhelds that transmit people’s modes can allow agencies to reward sustainable travel (more sharing)—real-time regional TDM.

2. Sustainable and Human Scale. Encourage AVs to be low emission emitters—electric or hybrid, and designed with humans in mind—smaller to save street space, and to lower injury threats.

The Streets and Users: Design & Program for Livability and Humanity

Cities currently rely on passive street design, but should now advocate for directly programming vehicle behavior—to put people first!

3. Prioritize the needs of vulnerable/human street users, through infrastructure, street re-design, and how the vehicles are programmed to respond to pedestrians and bicyclists.

4. Design streets for livability & humanity. Streets should be designed to prioritize the needs of human users, especially the most vulnerable. Areas of high human transport activity should be protected by:

a. Reducing the vehicle right-of-way;

b. Routing traffic onto appropriate streets (away from residential neighborhoods) and;

c. Limiting AV speeds to 20 kph, optimizing the street livability.

Land Use Planning & Design

5. Encourage Urban Reinvestment “Squeezing” over Urban “Spreading” (Sprawl) ASAP. Cities should work to position themselves to get ahead of AV induced “spreading” by taking advantage of the “squeezing” opportunities created by reduced burdens on parking, lowering the cost of construction (see below). Engage in regional land use planning and growth management to reduce sprawl and lower overall trip distances by balancing land uses (jobs-housing balances can significantly lower vehicle travel).

6. Maintain vitality of urban transit corridors. A new study by Clewlow & Shankar Mishra shows how ride-sharing cannibalizes transit ridership, potentially undercutting the vitality of urban transit corridors. Use Land use planning and urban design to maintain their vitality.

7. Strategically leverage newly available parking land in downtowns and TODs. One study estimates self-parking cars could save approximately 60 percent in surface area alone. Greater sharing could further eliminate parking, freeing valuable land for redevelopment into much needed affordable housing, etc.

8. Strategically leverage construction cost reductions from reduced needs for parking. If structural parking is eliminated, the cost of construction can be reduced 20-25%, according to pro forma analyses from San Diego’s London Moeder advisors, allowing land to become more valuable, incentivizing redevelopment and housing production in expensive markets.

9. Proactively change zoning and parking requirements to get ahead of the “spreading.” "Technology does not change policies, people do!” Therefore, proactively change parking requirements and zoning—and this is already happening. For example, a parking project at UCSD is being designed by Safdie Rabines Architects, for conversion to classrooms. Change zoning and parking to be flexible and inclusive, with maximum to zero parking, minimum density and heights.

10. Create a vision, a performance measurement framework, and use them to guide subsequent planning decisions. We can start with our “Doing the Right Things Paper” for PM Framework. For scenario testing, we can use TRBs Livability Calculator and Handbook for Building Livable Transit Corridors, http://www.trb.org/Main/Blurbs/174953.aspx

If these principles can be followed to achieve greater vehicle sharing and less sprawl, and minimizing AV capacity increases, we stand a better chance to both lower speeds and optimize the amount of street space we can recapture for street-life and livability, taking us further along the road to a more sustainable, livable, and equitable future with autonomous vehicles.

To achieve these objectives, we need a seat at the table to properly understand the issues and help design the solutions. For more information, see the Union of Concerned Planners, Engineers, & Designers website at www.ucped.com.