Autonomous, Connected, Electric and Shared Mobility:

Bellevue’s CommutePool Proposal

Washington State Transportation Commission

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State and Local Transportation Goals

- Target Zero/Vision Zero. Zero vehicle deaths and serious injuries by 2030
- Cut Green House Gas to 1990 levels by 2020
- Commute Trip Reduction Act Goals
- Cut VMT (Vehicle Miles Traveled) 18% by 2020
Unmet Goals

• Target Zero: Traffic deaths in Washington last year were 537, up from 419 in 2014. Serious injuries increased to 2,209.

• GHG reduction: “Added carbon pollution”

• Commute Trip Reduction: “A 22% increase in urban delays due to congestion”
“A world with zero crashes, zero emissions and zero congestion”

“The future of personal mobility will be driven by the convergence of electrification, autonomous vehicles, connectivity and shared mobility services.”

--Mary Barra, CEO of General Motors
EV battery costs drop from $1,000 to under $200/kWh

**Cheaper Batteries**
Lithium-ion battery prices just keep falling. They’re down 24% from 2016 levels.

$1,200 U.S. dollars a kilowatt-hour

Note: Figures are volume-weighted averages
Source: Bloomberg New Energy Finance survey of more than 50 companies
LiDAR in Autonomous vehicles
LiDAR costs drop from $70,000 to $95
VW concept car
Autonomous, Connected, Electric, Shared Vans
Waymo’s Jaguar I-Pace Electric, Autonomous Cars
Waymo’s Jaguar I-Pace Electric, Autonomous Cars
GM’s Cruise in San Francisco
Deadly truck wrecks soar, but pleas for action ignored

Five people died in this fiery crash on Interstate 70 that was triggered when a truck slammed into vehicles stopped due to road construction.

More than 4,300 people were killed in accidents involving semis and other big trucks in 2016, a 28 percent increase over 2009, according to the federal government.
PACCAR’s autonomous trucks
Bellevue’s Smart Mobility Vision

Use innovation and partnerships to deploy emerging technologies to enhance the safety, sustainability, efficiency, and accessibility of Bellevue’s transportation system.
The Bellevue/Kirkland Grant Application
6 Building Blocks for the flexible, electric autonomous CommutePool Network

- **Employer partnerships**: To focus on commute solutions for Bellevue and Kirkland employees.
- **Smartphone application**: Enable employee reservation and determine pick-up and drop-off locations.
- **CommutePool network (CPN) administration**: Coordinate, market and administer the CPN platform.
- **Fleet operator**: Operate a connected, electric, eventually autonomous vehicle fleet for the CPN program.
- **Curb management system**: Provide safe, convenient drop off locations near employer locations.
- **EV charging infrastructure**: Provide convenient charging in service areas.
1. Rideshare hailed from mobile apps within a similar timeframe and geographic area.

2. Pick-up set at a designated central leased parking lot.

3. Rideshare to Bellevue/Kirkland.

4. Drop-off at central location and riders disperse to their respective employers.
Office of Extraordinary Innovation
"This really is an innovative approach, but I'm afraid we can't consider it. It's never been done before."
Bellevue Smart Mobility Goals

1. Make Bellevue a nationally recognized leader
2. Improve safety
3. Leverage Bellevue’s ITS network to support the growth of the technology industry
4. Improve the efficiency of the roadway network
5. Expand and enhance ITS functions
6. Create more mobility choices
7. Provide accurate and timely information
8. Enhance sustainability
9. Pursue private and public-sector partnerships