UCLA Ziman Center EST MINDS IN REAL ESTAT June 27, 2017 **Taylor Mammen, Managing Director**

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THE IDEA OF AUTONOMOUS VEHICLES HAS BEEN AROUND FOR DECADES





SEVERAL TECHNOLOGICAL ADVANCEMENTS ARE FACILITATING AV DEVELOPMENT TODAY

- Internet of Things (V2V, V2I Connectivity) •
- Ubiquitous Internet
- Virtual Reality

- E-commerce (Amazon Drones)
- Electric Cars
- Processing Capacity



AUTOMATION OCCURS ALONG A SPECTRUM





MANY FACTORS, FROM DIFFERENT DIRECTIONS, DRIVE AV DEVELOPMENT AND ADOPTION





NO CONSENSUS ON TIMING, BUT AVS COULD IMPACT 10-YEAR UNDERWRITING PRO FORMA...



WE MAY ALREADY BE EXPERIENCING ANALOG IMPACTS

Already, up to 11 vehicles removed per carsharing vehicle.	City	Vehicles Sold	Vehicles Suppressed (foregone purchases)	Total Vehicles Removed per Carsharing Vehicle	Range of Vehicles Removed per Carsharing Vehicle
	Calgary, AB (n=1,498)	2	9	11	2 to 11
	San Diego, CA (n=824)	1	6	7	1 to 7
	Seattle, WA (n=2,887)	3	7	10	3 to 10
	Vancouver, BC (n=1,010)	2	7	9	2 to 9
	Washington, D.C. (n=1,127)	3	5	8	3 to 8



SPECIFIC IMPLICATIONS DEPEND ON THE MODEL THAT RESULTS



NUMEROUS POTENTIAL IMPLICATIONS:

- Parking needs/preferences/requirements, and impacts on land residual values
- Consumer spending, household income available for housing
- Building and urban design and form
- Existing building conversion (or obsolescence?)
- Additional urban land availability, and impacts on land values
- Winners and losers: urban/suburban, neighborhoods, product types, etc.
- What happens to TOD?
- e-Commerce and distribution
- Major job dislocation
- Changes in how people spend their time
- Changes in capital markets
- Changes in infrastructure financing
- Changes in insurance liability



WHENEVER IT SEEMS FAR-FETCHED...





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