Land Valuation Workshop

How autonomous vehicles might change the fundamentals of land valuation and how we can work to predict it
WHO ARE WE?

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What is this all about?
To a worm in horseradish, 
the world is horseradish
CITIES – Past, Present, and Future
Cities have historically developed alongside access to transportation.
Like at a shipping harbor...
Or along a canal...
Or along rail lines...
Or by blimp...
Wait, what???
These transportation modes connected Places
And allowed for our traditional development pattern
While transportation inside the City was done by walking or by horse...
Or subway...
And then comes the car...
And in 70 years we go from this...
...to this
The form, location, function, and ultimately, the success of our cities is fundamentally shaped by the available modes of transportation of the time.
Our current model is about to change...
“...so what does that mean for us?”
“If I had asked people what they wanted, they would have said faster horses”

-Henry Ford
/LEVEL 5 – full autonomy/
2016 – approx. 40,000 deaths in U.S. alone

93% caused by human error

National Safety Council (NSC)

• 1.3 Million people killed per year, or 3,287 per day worldwide
• 20-50 Million people injured or left disabled per year, worldwide
• Predicted to be 5th leading cause of death worldwide by 2030

Association for Safe international Road Travel (ASIRT)
How many parking spaces can you get per acre of land?
How many parking spaces can you get per acre of land?

+/- 100 spaces
How many parking spaces would be needed for 1,000 square feet of retail?
How many parking spaces would be needed for 1,000 square feet of retail?

3-4 spaces
-or- 1,740 square feet
Given one acre of land, how much retail can be developed?
Given one acre of land, how much retail can be developed?

10,000 square feet
On-site parking is keeping us from:

*Building densely
On-site parking is keeping us from:

* Building densely
* Developing sustainably
On-site parking is keeping us from:

* Building densely
* Developing sustainably
* Building walkable communities
Parking is THE #1 constraint for development in almost any context.

/what does this mean?/
/today’s exercise/

we’re nearing the end of a 70-year experiment...
... with a new era about to begin:

*Reminders of what we know:

* There will be winners and losers

* Cities have a lots to gain
  * Must be prepared
  * Must embrace change

* Autonomous Vehicle technology is part of a global shift toward automation
... with a new era about to begin:

*Reminders of what we know:

* There will be vast impacts at a variety of scales:
  * Regional
  * City/neighborhood
  * Site specific

* Many different perspectives will be needed to understand the shifting realities
*Shifting ownership model

* Strong incentives toward shared model
  * Per mile cost
  * Liability
  * Urban opportunities

Source: Barclays Research Insights on Disruptive Mobility (2015) – Barclays Bank PLC
What will “cars” look like?

* New vehicle types and mode choices

* Dynamic impacts on:
  * Vehicle occupancy
  * Transit
factors at play/

assumptions
*First assumption:

* Evaluate at three scales
  * Regional
  * City/neighborhood
  * Site specific
*Second assumption:

* Adoption:
  * 50% of the travel demand is met with autonomous vehicles
What are the factors that will influence land value?

Influence categories:

- Existing value
- Land use
- Locational factors
- Demographic factors
/how will this work?/

workshop tasks
part 1: regional scale
  * establish and rate criteria
  * test in model

part 2: city/neighborhood scale
  * establish and rate criteria
  * test in model

part 3: site-specific scale
  * establish and categorize criteria
  * prioritize

discussion
/regional-scale/

exercise 1
/part 1: regional factors/

Influencing factors selected:
* access to highway (distance from interchange)
* access to labor (data is segmented by white and blue collar)
* land vacancy (number of parcels and total acreage)
* proximity to civic institutions
* proximity to major employers (>= 500 people)
* other key factors?
Task 1
Influencing factors:
* You have “influence rating cards” at your table
* Individually, fill out cards with your ratings and additional comments
part 1: regional factors/

Task 1 (continued)

Influencing factors:
* Collectively discuss your assumptions for each
* Collaborate to fill out a single “influence rating card” for the group
  * Add specific notes
    * Are there anywhere consensus was very hard to reach?
    * Was the table in general agreement or divided?
* Identify top 3 most influential factors
/city/neighborhood-scale/

exercise 2
/part 2: city/neighborhood factors/

Influencing factors selected:
* access to transit stops
* age of building stock
* population density
* renter population (less likely to own/need a car)
* daytime pop and total employees (proxy for parking demand)
* location and scale of strip retail
* proximity to desirable natural features (rivers, streams and viewsheds)
* other key factors?

+ discussion
Task 2

Influencing factors:

* You have “influence rating cards” at your table
* Individually, fill out cards with your ratings and additional comments
Task 2 (continued)

Influencing factors:
* Collectively discuss your assumptions for each
* Collaborate to fill out a single “influence rating card” for the group
  * Add specific notes
  * Are there any where consensus was very hard to reach?
  * Was the table in general agreement or divided?
* Identify top 3 most influential factors
/site-scale/

exercise 3
350 acres

Uses:
* Office
* Residential
* Hotel
* Restaurant
* Theater
/development impacts/

350 acres

Uses:
* Office
* Residential
* Hotel
* Restaurant
* Theater
Development impacts:

Roadway
14 acres
4%
development impacts

Roadway
14 acres
4%

BLDGs
31.5 acres
9%

case study
/development impacts/

- Roadway: 14 acres (4%)
- BLDGs: 31.5 acres (9%)
- Greenspace: 112 acres (32%)

+ case study
development impacts

Greenspace 112 acres 32%

Roadway 14 acres 4%

BLDGs 31.5 acres 9%

Parking 192 acres 55%

case study
/part 3: site specific factors/

Question...

Primary change areas:
* Development constraints
* Internal site design / development
* External infrastructure
* Site selection
part 3: site specific factors/

Task 3 (a)

Criteria elements:
* There are 4 “change area” category headers on the wall
* As individuals/a group list as many site change factors as possible
  * Put each factor on a separate post-it
* Arrange post-its under the 4 “change area” category headings
  * If something fits in multiple heading, write duplicate post-its and include in each
Development constraints

Primary change areas:
* Parking
* Cost of architecture
/part 3: site specific factors/

Internal site design/development

Primary change areas:
* Pick-up/drop-off
* How to “future proof” site development
* Retrofit v. open site development
part 3: site specific factors/

External infrastructure

Primary change areas:
* Required roadway improvements
  * Developer-funded
  * City planned /required
* Existing incompatibilities with new design/uses
Site selection

Primary change areas:
* Visibility
* Proximity to resident customers
* Proximity to working customers
Task 3 (a)

Criteria elements:
* There are 4 “change area” category headers on the wall
* As individuals/a group list as many site change factors as possible
  * Put each factor on a separate post-it
* Arrange post-its under the 4 “change area” category headings
  * If something fits in multiple heading, write duplicate post-its and include in each
Task 3 (b)

Categorize and prioritize:

* There are 3 “action area” category headers on the wall
  * Regulatory (design standards, zoning)
  * Technical (traffic/transportation, site access)
  * Design (Site design, architecture)

* Re-arrange post-its under the 3 “action area” category headings

* Arrange existing post-its in order of importance
  * Physically put in order from top-to-bottom
/what we do now/

planners and planning must begin today
/final discussion/

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