PLACEMAKING: Transportation, Land Use, Economic Vitality
What is the purpose of a road or street?
1. **Mobility**: Point A to Point B
   - **Vehicle throughput** (highways, arterials, collectors)

2. **Access**: Goods, services, housing, jobs
   - **Placemaking** (main streets and n’hood streets)
Who do they serve?
1. Drivers only:
   Limited Access Highways, i.e., the Beltway

2. Drivers mostly:
   Arterials and Collectors, i.e., Rt. 29 and Gov Ctr Pkwy

3. All travelers:
   Local Streets, i.e., Market Street in Reston
How did we get here?
A Brief History of Roads and Streets
1700s to Today
The typical 1700s country road
1860s: Country roads – Rt 1, 7, 29, 50, 123
Long distance travel: farm to market, town to town
1880s: Fairfax country roads proliferate
No “plan” or grid of streets
1749: Alexandria Plan
A planned grid of streets
1749: Alexandria
A dense, walkable grid spurs economic activity
1800: City of Washington
A planned grid of streets
1900: City of Washington
A dense, multi-modal grid (peds, horses, bicycles, streetcars, cars) spur economic activity
1960: First Fairfax Plan
1960s: Tysons Corner
Auto-dominant development
Auto-scale: 8 roads

Human-scale: 112 streets
Fairfax development was built on highways & arterials

1964: Beltway
Fairfax’s first highway – 4-lanes

1970s: Beltway
Doubled to 8-lanes within 10 years
1961: First Tysons Plan
Based on highways (495) & arterials (Rt. 7 & 123)
Separated land uses
Auto-scale v Human-scale
Main Arterial through Tysons
Rt. 123 is now 10-lanes – No peds/cyclists
Fighting Traffic
THE DAWN OF THE MOTOR AGE IN THE AMERICAN CITY
Peter D. Norton
Late 1800s: New York City
Street as marketplace, gathering space, playground, and travel
MOVIE TIME!

Early 1906: San Francisco
All travelers “owned” the street
Automobiles are given highest priority on streets
1910: Richmond, Virginia (Broad & 4th)
Street as marketplace, gathering space, and multi-modal travel
2010: Richmond, Virginia (Broad & 4\textsuperscript{th})
Street as automobile thoroughfare
1920s – The start of Euclidean Zoning
This is where the pedestrians went: Auto-dominated subdivisions, shopping centers, office parks
1930s: Washington, D.C. – Shopping District
Active Multi-Modal Streets: Pedestrians, Streetcars & Studebakers in Street Grid
1956: Seven Corners Shopping Center
Fairfax’s first major auto-dominated shopping center
1960s: Rt. 7 and 50 are Widened
Former country roads become auto-dominated arterials
The Futon
The Futon

A lousy sofa and a lousy bed
The Futon

A lousy sofa and a lousy bed

The Arterial

Lousy throughput and lousy place
CAPACITY OF STREETS
Level of Service (LOS):
The basis of Fairfax street and road design

VDOT owns Fairfax streets and roads and uses LOS
<table>
<thead>
<tr>
<th>LOS</th>
<th>Average delay in seconds per vehicle</th>
<th>Description of motorist perception</th>
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<tbody>
<tr>
<td>A</td>
<td>&lt; 10</td>
<td>Free-flow traffic: “Good” LOS</td>
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<tr>
<td>B</td>
<td>10.1 – 20</td>
<td>Reasonable free-flow</td>
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<tr>
<td>C</td>
<td>20.1 – 35</td>
<td>Stable but unreasonable delay begins to occur</td>
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<tr>
<td>D</td>
<td>35.1 – 55</td>
<td>Borderline “bad” LOS</td>
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<tr>
<td>E</td>
<td>55.1 – 80</td>
<td>“Bad” LOS: long queues</td>
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<tr>
<td>F</td>
<td>&gt; 80</td>
<td>Unacceptable: very high delay, congestion</td>
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LOS: Measures Vehicle Delays at Traffic Lights
Typical LOS Modeling
### Typical LOS Modeling

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<thead>
<tr>
<th>Movement</th>
<th>EBL</th>
<th>EBT</th>
<th>EBL</th>
<th>WBL</th>
<th>WBT</th>
<th>HBL</th>
<th>HBT</th>
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<th>NBL</th>
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<tr>
<td>Lane Configurations</td>
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<td>9</td>
<td>21</td>
<td>1393</td>
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<td>1335</td>
<td>59</td>
<td>232</td>
<td>1596</td>
<td>37</td>
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<td>Future Volume (vph)</td>
<td>18</td>
<td>9</td>
<td>21</td>
<td>1393</td>
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<td>0</td>
<td>17</td>
<td>1335</td>
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<td>232</td>
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<td>Ideal Flow (vph)</td>
<td>1900</td>
<td>1900</td>
<td>1900</td>
<td>1900</td>
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<tr>
<td>Grade (%)</td>
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<td>0%</td>
<td>0%</td>
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<td>0%</td>
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<tr>
<td>Total Lost time (s)</td>
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<td>4.5</td>
<td>4.5</td>
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<td>Lane Util. Factor</td>
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<td>Sett. Flow (prot)</td>
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<td>Heavy Vehicles (%)</td>
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<td>175.3</td>
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**Intersection Summary**
- HCM 2000 Control Delay: 94.5
- HCM 2000 Level of Service: F
- HCM 2000 Volume to Capacity ratio: 1.07
- Actuated Cycle Length (s): 145.0
- Sum of lost time (s): 18.0
- Intersection Capacity Utilization: 103.2%
Travel Time Reliability (TTR): Application

- Frequency distribution of travel times
- Free flow travel time = 11.5 min
- Average travel time = 15.9 min
- 95th% travel time = 22.7 min ← Near Worst
- Buffer time = 6.8 min ← Minimize

Typical LOS Modeling
Voila!

LOS determines that the road must be widened for vehicles.
How about considering all users and creating great places?
Here’s how LOS works: Infrastructure for Peak Hours

Traffic Volume

Waste

LOS F!
What’s important depends upon values and perspective

LOS Model:  
F A F

Economic/Placemaking Model:  
A F A
The **LOS** Methodology is **INDUCING** More Traffic

Therefore, it will never “solve” for congestion
Miles driven per person grew by 20 percent in the largest 100 urbanized areas

1993 - 21 miles per day

2017 - 25 miles per day

Source: Smart Growth America
“The Congestion Con” 2020
Traditional Urban Grid
Promotes walking

Traditional Suburban Arterial & Cul-de-Sacs
Promotes driving
You suffer from a severe lack of urbanism.
Get rid of LOS, design your streets for walking, and call me in the morning
The road that LOS built
Can you find the pedestrian?
Over 40,000 people die each year in auto related accidents
The gateway to Fairfax County – Rt. 1
A suburban arterial with 11 lanes and high speeds
This is where Ms. Alston was killed in 2020
This is where Mr. Yeboah was killed in 2020
Notice the number of lanes & the lousy bike lane
Our residents deserve better: more humane streets
“Just use the nearest sidewalk and crosswalk, they said.”
Who are the victims of these tragic crashes? Although people of all ages, races, ethnicities, and income levels suffer the consequences of dangerous street design, some neighborhoods and groups of people bear a larger share of the burden than others.

Older adults, people of color, and people walking in low-income communities are disproportionately represented in fatal crashes involving people walking.

Even after controlling for differences in population size and walking rates, we see that drivers strike and kill people over age 50, Black or African American people, American Indian or Alaska Native people, and people walking in communities with lower median household incomes at much higher rates.

Relative Pedestrian Danger by Age (2008-2017)

People age 50 and up, and especially people age 75 and older, are overrepresented in deaths involving people walking. This age group is more likely to be hit by a car and killed. Older adults are more vulnerable than younger people to the consequences of traffic crashes.

Source: Smart Growth America
Speed results in serious injuries and deaths.

- Hit by a vehicle traveling at 20 MPH: 9 out of 10 pedestrians survive.
- Hit by a vehicle traveling at 30 MPH: 5 out of 10 pedestrians survive.
- Hit by a vehicle traveling at 40 MPH: only 1 out of 10 pedestrians survives.
The gateway to Alexandria – Rt. 1
An urban arterial, but only 6 lanes, and slow speeds
Connecticut Ave:
An urban arterial with 6 lanes, on-street parking, slow speeds, and mixed-use development
Streets & Bridges as Great Civic Places
We can:

- Create streets that are great places
- Induce more ped/cyclist/transit travel
- Spur economic activity

How?
1. Replace LOS with other measures, i.e., VMT

2. Humanize our streets for ALL users:
   a. Slow speeds to 25-35 mph
   b. Limit arterials to 6 lanes
   d. Add on-street parking (and help small businesses)
   e. Add crosswalks every 300’-500’
   e. Add well-designed sidewalks/bike lanes
   f. Plant shade trees
The Active Fairfax Transportation Plan virtual public meetings will be held for every Supervisor District starting tomorrow. Also scheduled are two Lunch & Learn sessions and a conversation in Spanish. You can register online for one of the meetings. If you can’t attend you can provide comments via email to activefairfax@fairfaxcounty.gov:

- Braddock - Mon., April 26, 2021 7 p.m.
- Dranesville - Tues., April 20, 2021 7 p.m.
- Hunter Mill - Mon., April 19, 2021 7 p.m.
- Lee - Mon., April 12, 2021 6:30 p.m.
- Mason - Thurs., April 8, 2021 7 p.m.
- Mount Vernon - Thurs., April 22, 2021 6:30 p.m.
- Providence - Wed., April 28, 2021 7 p.m.
- Springfield - Tues., April 27, 2021 7 p.m.
- Sully - Wed., April 21, 2021 7 p.m.
- Conversacion comunitaria de transporte activo en espanol Thurs., April 15, 2021 7 p.m.
- Lunch & Learn - Tues., April 13, 2021 12 p.m.
- Lunch & Learn - Fri., April 23, 2021 12 p.m.
Contact your state officials:

Ralph Northam:  Governor of Virginia  
Shannon Valentine:  Secretary of Transportation  
Nick Donovan:  Deputy Secretary of Transportation  
Stephen Brich:  VDOT Commissioner  
Barton A. “Art” Thrasher:  VDOT Chief Engineer

Ask them to:  
1. Develop Alternatives to LOS  
2. Develop a Complete Streets Policy for Virginia
A Complete Street :)