AT WORK, I LEAD TOOLE DESIGN’S PLANNING PRACTICE AND HELP CITIES ADAPT THEIR TRANSPORTATION SYSTEMS TO TODAY’S NEEDS. MY WORK FOCUSES ON CREATING SAFER STREETS THAT PUT PEOPLE FIRST.

ALIA ANDERSON, AICP
INTRODUCTION
HIGHWAYS
Roads originally intended to link but not intrude into cities
90% FEDERALLY FUNDED
Interstate highway system

We built 26 thousand miles of highways in 15 years.
COMMON COMPLETE STREETS MYTHS
Myth #1:
There’s no room to build sidewalks or bikeways.
Inside-Out Design
Inside-Out Design

Once your street is improved, the curb will be right here.

Ian Lockwood PE @ianLockwoodPE 28 Aug 2014
Upgrade, LOS, delay, capacity, demand, accident biased expert jargon skews perspectives, culture, decisions & cities
Adhering strictly to the most conservative values (lane widths, shoulder widths, and design speeds) leads to wider streets, large curves, and higher operating speeds. – FHWA, Achieving Multimodal Networks (2015)
## Adopt Context-Based Street Design Guidance

<table>
<thead>
<tr>
<th>Street Type</th>
<th>Left Turn Lane (if required)</th>
<th>Two Way Left Turn Lane</th>
<th>Inside Travel Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown Boulevard</td>
<td>10' default, 9' min</td>
<td>N/A</td>
<td>10'</td>
</tr>
<tr>
<td>Downtown Street</td>
<td>10' default, 9' min</td>
<td>10'</td>
<td>10'</td>
</tr>
<tr>
<td>Boulevard</td>
<td>10'</td>
<td>N/A</td>
<td>10'</td>
</tr>
<tr>
<td>Town Center Boulevard</td>
<td>10'</td>
<td>N/A</td>
<td>10'</td>
</tr>
<tr>
<td>Town Center Street</td>
<td>10'</td>
<td>10'</td>
<td>10'</td>
</tr>
<tr>
<td>Neighborhood Connector</td>
<td>10'</td>
<td>10'</td>
<td>10'</td>
</tr>
<tr>
<td>Neighborhood Street</td>
<td>N/A</td>
<td>N/A</td>
<td>10'</td>
</tr>
<tr>
<td>Neighborhood Yield Street</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Industrial Street</td>
<td>11'</td>
<td>11'</td>
<td>11'</td>
</tr>
<tr>
<td>Country Connector</td>
<td>11'</td>
<td>N/A</td>
<td>11'</td>
</tr>
<tr>
<td>Country Road</td>
<td>10'</td>
<td>N/A</td>
<td>11'</td>
</tr>
<tr>
<td>Major Highway</td>
<td>11'</td>
<td>N/A</td>
<td>11'</td>
</tr>
</tbody>
</table>

Source: Montgomery County Complete Streets Design Guide
## Adopt Context-Based Street Design Guidance

<table>
<thead>
<tr>
<th>Street Type</th>
<th>Maintenance Buffer</th>
<th>Frontage Zone</th>
<th>Sidewalk/Sidepath</th>
<th>Street Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown Boulevard</td>
<td>0'</td>
<td>10' default; 0' min</td>
<td>15' default; 10' min</td>
<td>8' default; 6' min</td>
</tr>
<tr>
<td>Downtown Street</td>
<td>0'</td>
<td>10' default; 0' min</td>
<td>10' default; 8' min</td>
<td>6'; 11' if shared w/ street parking</td>
</tr>
<tr>
<td>Boulevard</td>
<td>2'</td>
<td>7' default; 0' min</td>
<td>11' default/8' min</td>
<td>8' default; 6' min</td>
</tr>
<tr>
<td>Town Center Boulevard</td>
<td>0'</td>
<td>7' default; 0' min</td>
<td>10' default; 8' min</td>
<td>8' default; 6' min</td>
</tr>
<tr>
<td>Town Center Street</td>
<td>0'</td>
<td>7' default; 0' min</td>
<td>10' default; 8' min</td>
<td>6'</td>
</tr>
<tr>
<td>Neighborhood Connector</td>
<td>2'</td>
<td>0'</td>
<td>6' min for sidewalk or 10' default/8' min for sidepath</td>
<td>6'</td>
</tr>
<tr>
<td>Neighborhood Street</td>
<td>2'</td>
<td>0'</td>
<td>6'</td>
<td>6'</td>
</tr>
<tr>
<td>Neighborhood Yield Street</td>
<td>2'</td>
<td>0'</td>
<td>6'</td>
<td>6'</td>
</tr>
<tr>
<td>Industrial Street</td>
<td>2'</td>
<td>6' default; 0' min</td>
<td>6' min for sidewalk or 10' default/8' min for sidepath</td>
<td>6'</td>
</tr>
<tr>
<td>Country Connector</td>
<td>2'</td>
<td>0'</td>
<td>6' min for sidewalk or 10' default/8' min for sidepath</td>
<td>10' (if sidewalk/sidepath are provided)</td>
</tr>
<tr>
<td>Country Road</td>
<td>2'</td>
<td>0'</td>
<td>6' min for sidewalk or 10' default/8' min for sidepath</td>
<td>8' default; 6' min</td>
</tr>
<tr>
<td>Major Highway</td>
<td>N/A</td>
<td>N/A</td>
<td>11' default/8' min</td>
<td>As wide as feasible (10' min)</td>
</tr>
</tbody>
</table>

Source: Montgomery County Complete Streets Design Guide
Myth #2:
We can't lower the speed limit or driving speeds here.
SPEED CREEP
SPEED MATTERS

- PEDESTRIAN FATALITY & SERIOUS INJURY RISK

- 20 MPH
  - 18%

  - 50%

  - 77%

+ 40 MPH

CONES OF VISION

TOOLE DESIGN
DESIGN SPEED = TARGET SPEED = POSTED SPEED
The **2011 AASHTO Green Book** provides flexibility when it comes to selecting appropriate design speeds given the context of a particular roadway:

“Design speed should be a logical one with respect to the anticipated operating speed, topography, the adjacent land use, and the functional classification of the highway. In selection of design speed every effort should be made to attain a desired combination of safety, mobility, and efficiency within the constraints of environmental quality, economics, aesthetics, and social or political impacts”

**AASHTO Green Book 2011, p. 2-54**
Traffic calming techniques may apply on arterials, collectors, or local streets.


Raised measures may not be appropriate on higher speed roads. If raised measures are desired to improve pedestrian or bicyclist safety, designers should consider completing a study and reducing the speed limit to 35 mi/h or lower.

Myth #3:
No one walks here today, so we don't need sidewalks and safe crossings.
Hold paramount the safety, health, and welfare of the public.

- National Society of Professional Engineers Code of Ethics

“Roadways without sidewalks are more than twice as likely to have pedestrian crashes as sites with sidewalks on both sides of the street.”

- FHWA Safety Program
"Sidewalks are recommended on all but the most low-speed and low-volume roadways."

- FHWA Small Towns and Rural Networks Guide, 2019
A crosswalk is that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway; and in the absence of a sidewalk on one side of the roadway, that part of a roadway included within the extension of the lateral lines of the existing sidewalk at right angles to the centerline.

CRASH REDUCTION FACTORS

- Install Raised Median with Marked Crosswalk (uncontrolled): **46%**

- Install high-visibility crosswalk: **19-40%**

- Install high-visibility yellow, continental type crosswalks at schools: **37%**

- Install pedestrian hybrid beacon (PHB or HAWK) with advanced yield or stop markings and signs: **12-56%**

Source: USDOT cmfcleaninghouse.cfm
3.4 Bicycle and pedestrian accommodations should be provided except where one or more of the following conditions exist:

• scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations

Source: https://www.virginiadot.org/programs/resources/bike_ped_policy.pdf
CASE STUDIES
GALAX, VA
(population 6,600)

**Sidewalk and crossing improvements.** The City of Galax received a Safe Routes to School Infrastructure grant for $51,000 to add 120 feet of new sidewalk, and add two high visibility crosswalks to a busy intersection near Galax Elementary School, Galax Middle School, and the community center. These improvements will increase the safety of the intersection and help nearly 850 students from the elementary and middle school reach the community center and sports fields.
<table>
<thead>
<tr>
<th>Grant Type</th>
<th>Amount</th>
<th>2022-2023 Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QuickStart Mini-grants</strong></td>
<td>$1,000</td>
<td>August 25&lt;br&gt;September 29&lt;br&gt;March 2&lt;br&gt;April 6</td>
</tr>
<tr>
<td><strong>Walkabout Mini-grants</strong></td>
<td>Varies</td>
<td>September 29&lt;br&gt;February 2</td>
</tr>
<tr>
<td><strong>Program Grants</strong></td>
<td>Varies</td>
<td>Once every two years&lt;br&gt;Anticipated dates for next round: Pre-Application due June 30, 2023&lt;br&gt;Full Application due October 2, 2023</td>
</tr>
<tr>
<td><strong>Infrastructure Grants</strong></td>
<td>Varies</td>
<td>Once every two years&lt;br&gt;Anticipated dates for next round: Pre-Application due June 30, 2023&lt;br&gt;Full Application due October 2, 2023</td>
</tr>
</tbody>
</table>
If a community desires to re-establish neighborhoods, inject downtown areas with energy, and teach its citizens life-saving health habits, then Safe Routes to School is a good place to start.

- Linda Mock, Galax Safe Routes to School Coordinator
VDOT nearing completion of interim improvements on Sinai Road

ASHLEY HODGE  Nov 29, 2020  📰

Bollards or delineators align Sinai Road separating a section of the road from traffic to allow for a pedestrian walking area. The speed limit also has been reduced to 30 miles per hour on the same stretch of road.

Ashley Hodge/Gazette-Virginian
HALIFAX COUNTY, VA
(population 33,738)

“I look forward to the day when it’s not normal to feel a sense of fear while walking, and I think it’s coming. Mr. Simpson (County Administrator) has been a man of his word, and I appreciate that.”

- Anthony Womack, community member
MAINTAIN CHAMPIONS

EMPHASIZE the GOALS in PUBLIC ENGAGEMENT

ENSURE FACILITIES are HIGH COMFORT (inc. intersections)

FOCUS ON PROJECTS that SHOW RESULTS QUICKLY

LEARN & TEACH AS YOU GO

EXPLORE CREATIVE FUNDING STRATEGIES
EMPHASIZE THE GOALS
BUILD COMFORTABLE FACILITIES
BUILD COMFORTABLE FACILITIES
SHOW THE PUBLIC
LEARN AND TEACH

ACHIEVING MULTIMODAL NETWORKS
APPLYING DESIGN FLEXIBILITY & REDUCING CONFLICTS

Small Town and Rural Multimodal Networks

DECEMBER 2016

US Department of Transportation
Federal Highway Administration

AUGUST 2016
CREATIVE FUNDING STRATEGIES

**Federal:**

Safe Streets and Roads for All (SS4A) Grant Program
https://www.transportation.gov/grants/SS4A

*FY22 awards announced: $800 million for 510 communities across the United States*

**Through VDOT:**

- Transportation Alternatives (TA)
- Congestion Mitigation and Air Quality (CMAQ) allocations
- Smart Scale (VDOT District Grant Program & High-Priority Projects)
- VA Highway Safety Improvement Program (VHSIP)