Legality of Livable Streets

Reid Ewing
University of Utah
NACTO’s Designing Cities: Leading the Way to World Class Streets
New Jersey’s Mix

Flexible Design of New Jersey’s Main Streets

New Policies, Standards, and Case Studies

www.state.nj.us/transportation/publication/
State Highways Serving as Main Streets
Few Traditional Main Streets
Roadway Design

Less Forgiving Designs in Urban Areas
The Conventional Wisdom:

Passive Safety Paradigm
"every effort should be made to use as high a design speed as practical to attain a desired degree of safety"
Urban =/ Rural
The Alternative

Active Safety Paradigm
Wide Lanes

![Graph showing relationship between average lane width and 85th percentile speed](image)

- **Measured V85**
- **Regression Line**

![Image of wide lanes](image)
Wide Corners
Wide Clear Zones
From 2004 to 2006, San Antonio’s historic King William District consisted of three intersecting arterials. There were six injurious crashes and no traffic fatalities.

Lower Serious Crash Rates

• Higher Densities

• Pedestrian-Oriented Retail Uses

• Interconnected Streets
Which Is Safer?
Liability Cases -- Key Distinction

- Discretionary functions of government involve a choice among valid alternatives.
- Ministerial functions of government involve operational decisions that leave minimal leeway for personal judgment.
16 State Survey

- In only one state are highway design decisions treated as operational

- In two states, design immunity may lapse as highway conditions change
## New Jersey’s Tort Law

<table>
<thead>
<tr>
<th>Tort Claims Act</th>
<th>Neither the public entity nor a public employee is liable...for an injury caused by the plan or design of a public property, either in its original construction or any improvement thereto, where such a plan or design has been approved in advance of the construction or improvement by the Legislature or governing body of a public entity or some other body or a public employee exercising discretionary authority to give such approval.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manna v. State (1992)</strong></td>
<td>“Immunity is not lost even if new knowledge demonstrates the dangerousness of the design, or the design presents a dangerous condition in light of a new context.”</td>
</tr>
</tbody>
</table>
Not the Green Book’s Fault
AASHTO Minimums for Urban Arterials

- **Design Speed** – 50 kph (30 mph) in CBDs
- **Design Vehicle** – SU Truck
- **Lane Width** – 3.0 m (10 ft) for light truck traffic and speeds up to 60 kph (37 mph)
- **Shoulder Width** – desirable but not required
- **Corner Radii** -- 3.0-4.5 m (10-15 ft) under constrained conditions
- **Curbs** – vertical curbs up to 60 kph (37 mph)
AASHTO Minimums for Urban Arterials

- Sidewalks – 1.2 m (4 ft) - 2.4 m (8 ft) border width
- Clearance – .5 m (1.5 ft) with vertical curb
- Pedestrian Crossings – no restriction
- On-Street Parking – when required by existing conditions
- Textured Surfacing – no restriction
- Refuge Islands – encouraged where space permits
- Curb Extensions/Bulbouts – no restriction
What Is At Fault

• Higher State Standards
• Limited Use of Design Exceptions
• Reliance on Single Typical Sections
• Minimum LOS Standards
• Misclassification of Highways
  – With Respect to Function
  – With Respect to Context
• Maintenance Concerns
• Treatment of 4R Projects
Lower State Highway Design Standards
VAOT’s Approach

8' parking
9' travel
9' turn
9' travel
8' parking

8' parking
10' travel
10' turn
10' travel
8' parking

43'
VERMONT

46'
AASHTO
## Maryland’s Approach

### Flexible Design ("Smart" Use of Green Book)

<table>
<thead>
<tr>
<th>Rate of Vertical Curvature, K (length (ft) per percent of A)</th>
<th>Computed</th>
<th>Rounded for Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.6-8.6</td>
<td>10-10</td>
<td></td>
</tr>
<tr>
<td>14.4-16.1</td>
<td>20-20</td>
<td></td>
</tr>
<tr>
<td>23.7-28.8</td>
<td>30-30</td>
<td></td>
</tr>
<tr>
<td>35.7-46.4</td>
<td>40-50</td>
<td></td>
</tr>
<tr>
<td>53.6-73.9</td>
<td>60-80</td>
<td></td>
</tr>
<tr>
<td>76.4-110.2</td>
<td>80-120</td>
<td></td>
</tr>
<tr>
<td>106.6-160.0</td>
<td>100-160</td>
<td></td>
</tr>
<tr>
<td>140.4-217.6</td>
<td>150-220</td>
<td></td>
</tr>
</tbody>
</table>

*Minimum Versus Desirable*

- **Minimum**: Smaller values of K are determined from these equations. The dotted line in Figure III-41 is the rounded value for 40 mph A comparison shown dashed in the lower left, crossing these lines, indicates - L. Note that the right of the S = L line, the value of K, or vertical curve per cent change in A, is a simple and convenient part of the design process. For each design speed this single value is a whole number that is half of the rate of vertical curve. The rounded or trimmed K values, all combinations of A and L, for any one speed, A and L, and small, are indicated separately in a design chart. The selection of design curves is facilitated because the required curve is found to equal k times the algebraic difference in grades in L = K+A. Conversely, the checking of plans is simplified by comparison with the design K values.

- **Desirable**: Values of K are rounded as shown in the column. The upper, rounded values of K, shown as the solid line in Figure III-41. Rounded values of K are higher than computed values, differences are not significant.

- **K**: is greater than L (lower left in Figure III-41), computed values curve (as shown by the dashed line for 45 mph) that bends to the left, small values of A the required lengths are more because this is the line over the speed. This relation does not express desirable design, vertical centers.

---

*Using computed values of stopping sight distances*
Use Design Exceptions Liberally To Preserve Context
NJDOT Design Exceptions – 1997-1999

81 Projects

- Vertical Clearance: 7
- Vertical Curve SSD: 13
- Intersection SD: 2
- Travel Lane Width: 5
- Auxiliary Lane Width: 6
- Horizontal Curve Radius: 12
- Shoulder Width: 20
- Superelevation: 13
- Bridge Width: 4
- Horizontal Curve SSD: 3
- Grade: 1
- Cross Slope: 0

81 Costs Considered

- 80 Costs Were Primary Justification

50 Impacts Considered

- 1 Impacts Were Primary Justification

80 Costs Were Primary Justification

1 Impacts Were Primary Justification

Costs Were Considered

Impacts Were Considered

Considered

Costs Were

Primary

Justification

Impacts Were

Primary

Justification

Costs

Considered

81

Projects

CSDEs for 50 Projects
15th Avenue (Anchorage, AK)
Safety Study

Lack of Left-Turn Lanes or Pockets

Existing Substandard Elements

• Curb Return Radii (1.3-8.3 m)
• Clear Zone (0.1-.5 m)
• Corner Sight Distances (52-76m)
• Grades (0.2-9.7%)
Varying Traffic Volumes
Four-Lane Section
Three-Lane Section
At 1/3rd The Cost

Standard Elements (Built to Minimums)

- Lane Width (3 m)
- Shoulder Width (0 m)

Design Exceptions

- Curb Return Radii at Minor Streets
- Clear Zones
- Intersection Sight Distances
- Vertical Stopping Sight Distances
Fit Cross Sections to Roadway Function and Context
One Cross-Section Presently

[Diagram showing a cross-section with dimensions and designations for various sections such as R.O.W. Line, Shoulder, Lane, etc., with specific measurements and inclinations indicated.]
South Broadway/US 9 (Saratoga Springs, NY)
Fifth Objective

“To enhance the historic, recreational, and visual aspects of the Saratoga State Park and establish the corridor as a gateway to SSP and the City of Saratoga Springs”
Gradual Transitions

55 mph 40 mph

30 mph 30 mph
Asymmetric Design

Diagram showing a road design with various sections labeled as follows:

- Multi-use path (2.4m)
- Grass strip (1.5m)
- Shared travel lane (4.5m)
- Travel lane (3.6m)
- Median/turn lane (5.1m)
- Shared travel lane (4.8m)
- Grass strip (1.5m)
- Sidewalk (1.25m)

The diagram is 24.925m (83') long.
Breakaway Elements and Beveled Curb
Relax LOS Standards As Necessary
Sunset Drive/SR 986 (South Miami, FL)
Poor Main Street Environment
Downtown Redevelopment Plan
4 -> 3 Lane Conversion
Wide Sidewalks and Small Corners
Eastbound Lanes Through the Intersection
<table>
<thead>
<tr>
<th></th>
<th>LOS by Approach (PM Peak Hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NB</td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>B</td>
</tr>
<tr>
<td>Projected with Current Cross Section</td>
<td>B</td>
</tr>
<tr>
<td>Projected with New Cross Section</td>
<td>B</td>
</tr>
</tbody>
</table>
Reclassify or De-Designate Main Streets That Are No Longer Critical
East Main Street/MD 32 (Westminster, MD)
Change In Function With a Bypass
First CSD Project In Maryland
Issues for MSHA
Within the Envelope – MD 144 (Hancock, MD)
Traffic Calming Case Study
Traffic Calming
State of the Practice
Reid Ewing

http://www.ite.org/traffic/tcstate.asp#tcsop
First Legal Challenge

Glenco Bumps are Vindicated by Court

INTER OCEAN 9/30/05

Judge Mack Rules That Automobilists Must Either Ride Over Them or Take Another Road—Village Has Right to Cross-Walks.

LAW PARTNERS ARE ARRAYED ON OPPOSITE SIDES IN CASE

One Time Apprentice Wins Legal Victory Over Man Who Taught Him His Blackstone—Complainants Take an Appeal:

Glencoe's famous—or infamous—bumps are not to be torn out by the minions of the law. Judge Mack put his judicial "O.K." upon them yesterday. But Gordon K. Ramsay, president of the village,
More on Glencoe Bumps

- Brick Crosswalks
- Arched to Shed Water
- 5 feet x 2 3/5 inches
- 15 mph design speed

"Villagers should not be expected to walk in mud while crossing the streets simply to allow automobiles to run at a high rate of speed."

Sudden Jolt May Be Avoided.

The "bumps," about which so much has been written, are brick walks across Sheridan road at street intersections. They are arched to shed water, the crown of the arch in the five foot walk being two and three-quarter inches higher than the street level.

The spring of the arch is level with the macadam on the street, so that there is no sudden jolt given the automobilist unless he is going faster than the speed limit of fifteen miles an hour.

Mr. Ramsay, while he has vigorously defended the right of the council to erect the walks, is liberal in his views toward automobilists.

He says that they are free to the use of the streets when going at a speed of fifteen miles an hour, but that the villagers should not be expected to walk in mud while crossing the streets simply to allow automobiles to run at a high rate of speed.

Bumps Are Gentle "Cure."

That the Glencoe bumps are the best cure for speedy automobilists is the opinion of Special Counsel Tolman, and he believes that the suburb has found the solution of the problem.

"I think the raising of the cross walks is the proper cure for automobile speeding." Meter Tolman asserted last night. "It..."
Court Ruling

- Served a public purpose
- Not a public threat
- No ground to override council discretion
Case Law

- Lack of Legal Authority
- Tort Liability
  - Negligence in Design, Operation, or Maintenance
- Unconstitutionality
  - Taking of Property/Loss of Access
  - Due Process
  - Equal Protection
Legal Authority -- Berkeley Case

- California Supreme Court ruled that half closures and diagonal diverters are traffic control devices not authorized by state law.

- Ruling became moot when the California State Legislature:
  - gave local governments the authority to block entry to or exit from any street by means of islands, curbs, traffic barriers, or roadway design features.
  - excluded traffic calming measures from the definition of traffic control devices and hence from state regulation.
A Confusing Ruling
**Legal Authority -- Sarasota Case**

- Florida circuit court ruled that speed humps and speed tables are traffic control devices not authorized by state law.
- Court rejected city’s claims of sovereign immunity and broad home rule and police powers.
- Decision reversed upon appeal for lack of standing.
The Real Issues in Sarasota
Traffic control devices are used to direct and assist vehicle operators in the guidance and navigation tasks required to traverse safely any facility open to the public.

Manual on Uniform Traffic Control Devices
Liability Cases -- Key Distinction

• Discretionary functions of government involve a choice among valid alternatives

• Ministerial functions of government involve operational decisions that leave minimal leeway for personal judgment
From Discretionary to Ministerial

- Decision to Calm Traffic
- Choice of Traffic Calming Measures
- Design of Traffic Calming Measures
- Adequate Warning of Measures
- Adequate Maintenance of Measures
California Code Section 830.6

No liability for injury caused by a plan or design if:

(a) Plan or design is approved by legislative body or other entity with discretionary authority
   or
(b) Plan or design is in conformity with standards previously approved
   and
(c) Such approval has a rational basis
Jury found that the city was not liable for a fatal collision that might have been averted if a diverter had been installed at the accident location.

City exercised its discretion and instead installed an island and traffic circles farther down the street -- the neighborhood had specifically rejected a diverter at that location.
Portland’s Treatment
Loss of Access -- Seattle Case

- Washington State Court of Appeals ruled that a street closure did not rise to the level of a taking.
- The closure advanced a legitimate public purpose of reducing “noise, traffic hazards and litter” in a residential area.
- Access to the business was maintained, albeit not the most convenient access.
Access Still Adequate
**Loss of Access -- Montgomery County Case**

- U.S. District Court dismissed a lawsuit under the Americans with Disabilities Act
- A disabled veteran claimed that the proliferation of speed humps interfered with his use of public roads due to the discomfort they caused him
- Court held that while the humps presented the man with difficulty, they did not “totally bar his use of the roads” nor deny him “meaningful access”
The Real Issues in Montgomery County
"... loss of peace and quiet is a fact of life which must be endured by all who live in the vicinity of freeways, highways, and city streets."
Damage Claims

• The Most Common Bases for Paid Claims:
  • Inadequate Signage
  • Flawed Design of Measures
• Arguably Both Involve Failure of Local Governments to Perform Ministerial Duties
Problem Choker
2004 Update

- City of Albuquerque, NM
- City of Austin, TX
- City of Bellevue, WA
- Broward County, FL
- City of Charlotte, NC
- City of Charlottesville, VA
- City of Colorado Springs, CO
- City of Eugene, OR
- Gwinnett County, GA
- Howard County, MD
- Los Angeles County, CA
- City of Minneapolis, MN
- Montgomery County, MD
- City of Portland, OR
- Pima County, AZ
- City of Riverside, CA
- City of Sacramento, CA
- City of Seattle, WA
- City of Vancouver, WA
- City of Walnut Creek, CA
Recent Action

- Montgomery County - person injured on a speed hump received a $10k out-of-court settlement
- Portland - driver claiming injury due to “incomplete speed humps” lost his lawsuit
- Seattle - boy hit at an intersection where a traffic circle had been requested lost his suit
- Bellevue – threatened lawsuit over the removal of speed tables