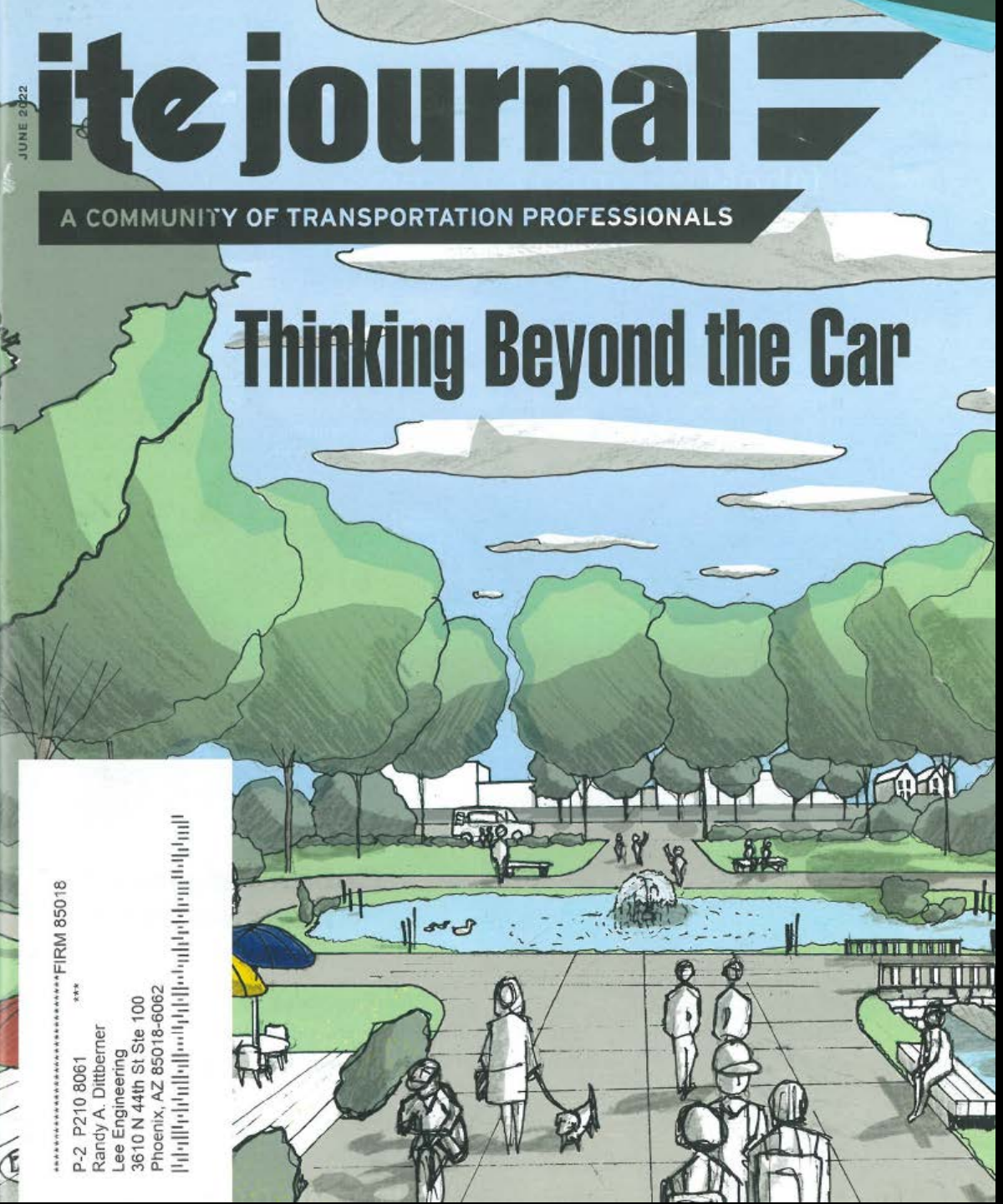
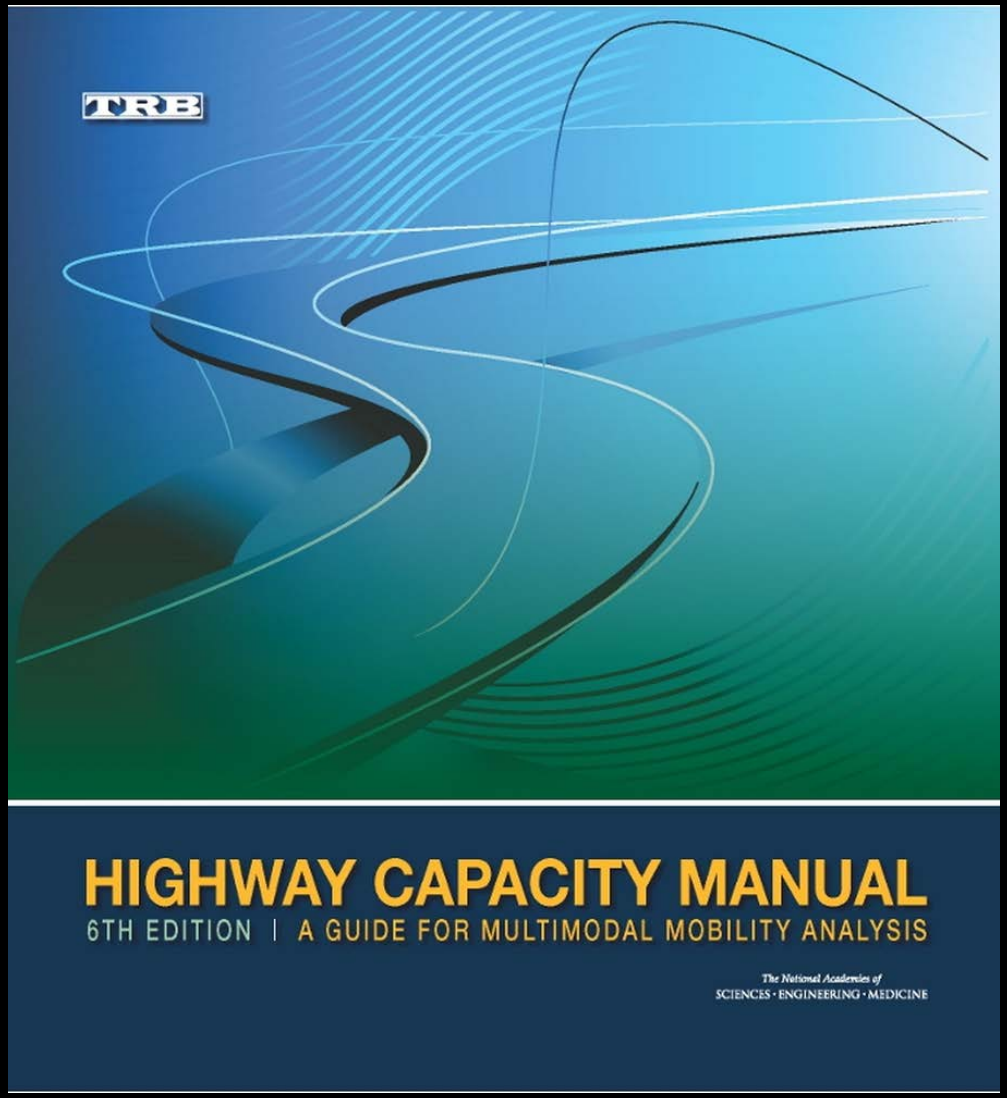


Randy Dittberner, P.E., PTOE
Lee Engineering

Agenda

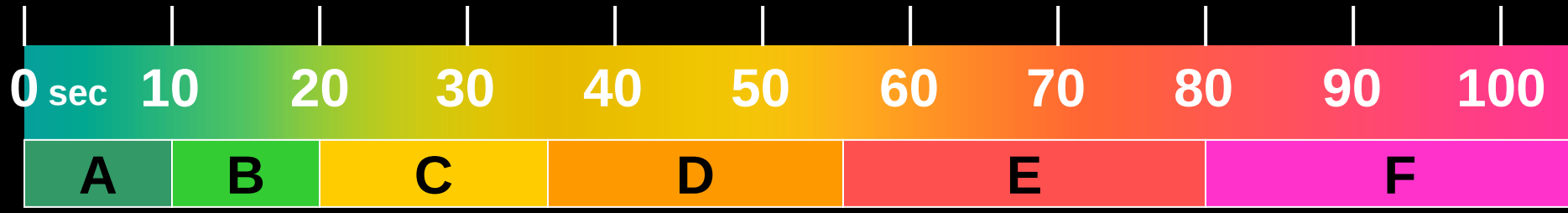
- How agencies determine the size of streets and intersections
- Treatments that can help support bicycling and walking

Level of Service (LOS)

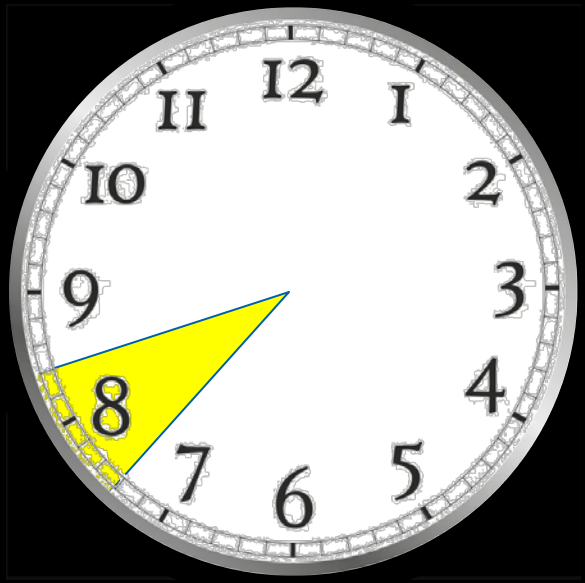



REPORT
CARD
A+
A-
F

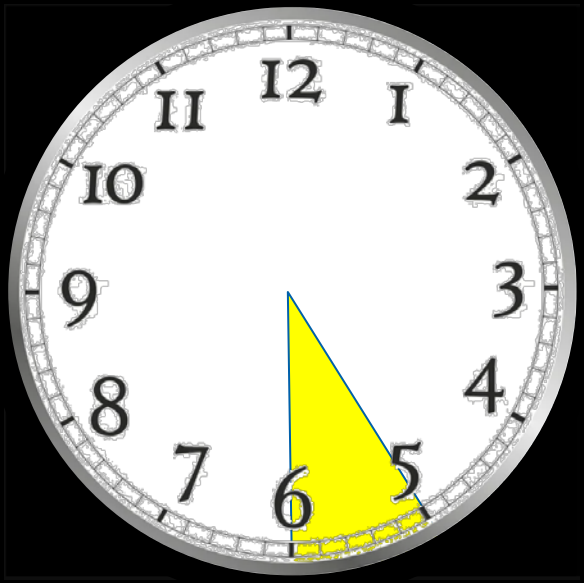
LOS at traffic signals



MORNING PEAK HOUR



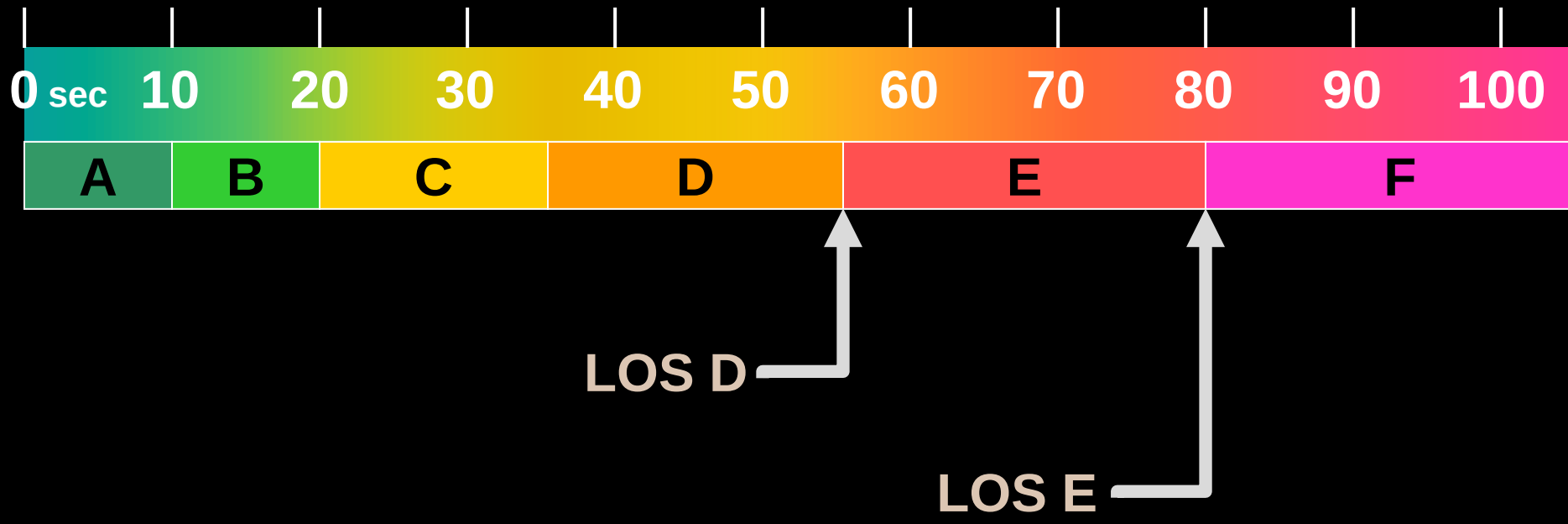
AFTERNOON PEAK HOUR



- If a **freeway** is LOS F, it is **failing**.
- If a **two-lane highway** is LOS F, it is **failing**.
- If a **traffic signal** is LOS F . . .

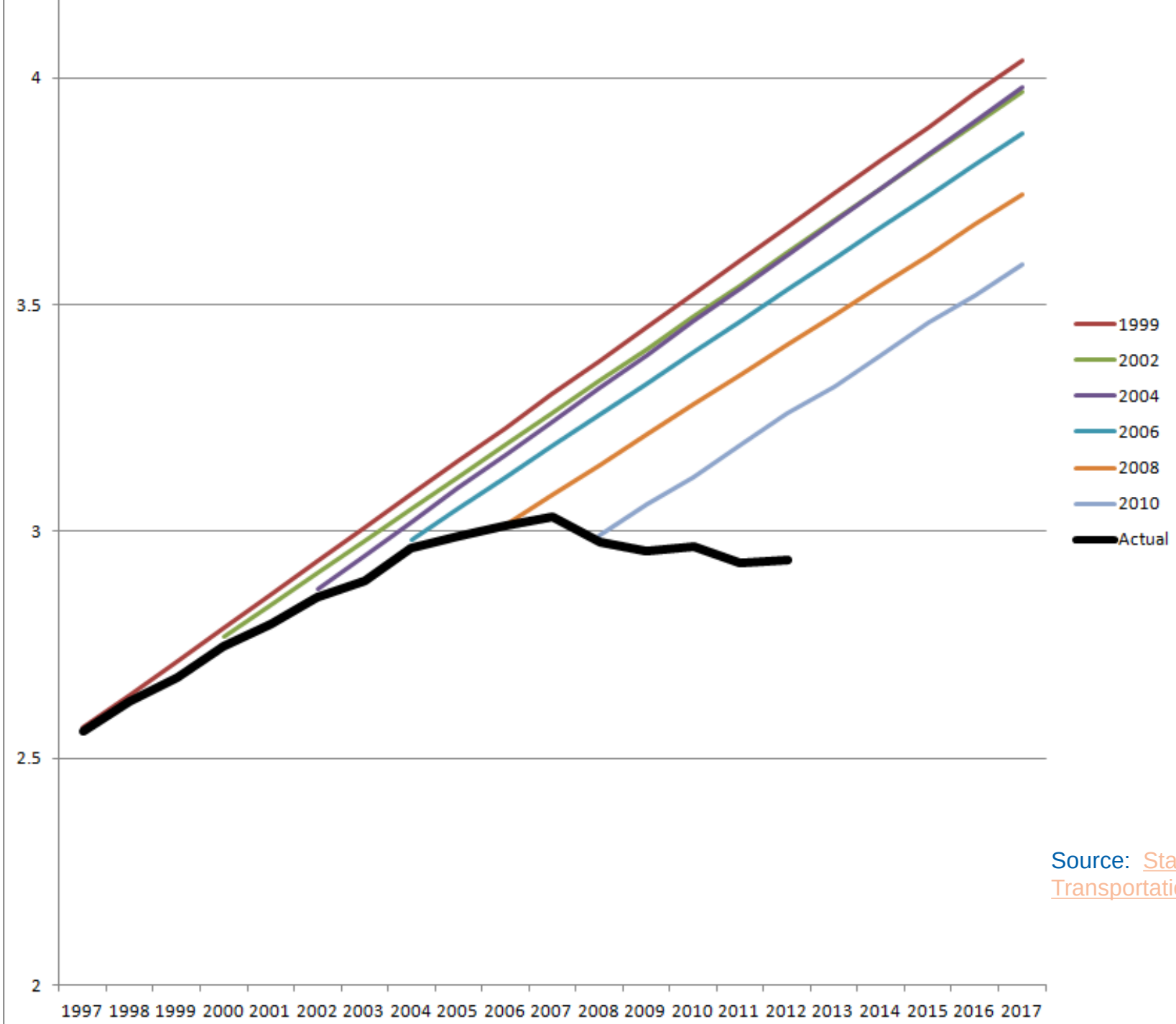
  it has **average delay over 80 seconds**.

What LOS is Acceptable?



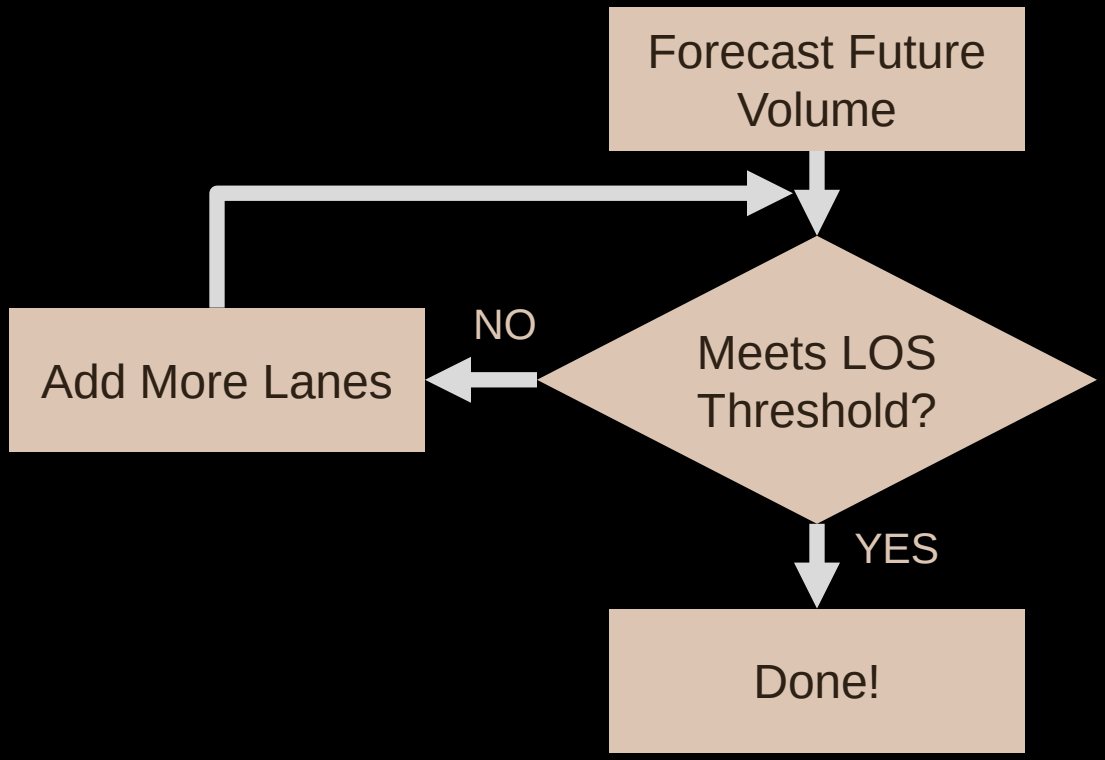
Traffic in the Future

Annual Traffic Growth Rate	Increase in Traffic After 20 Years
1%	22%
2%	49%
3%	81%
4%	119%



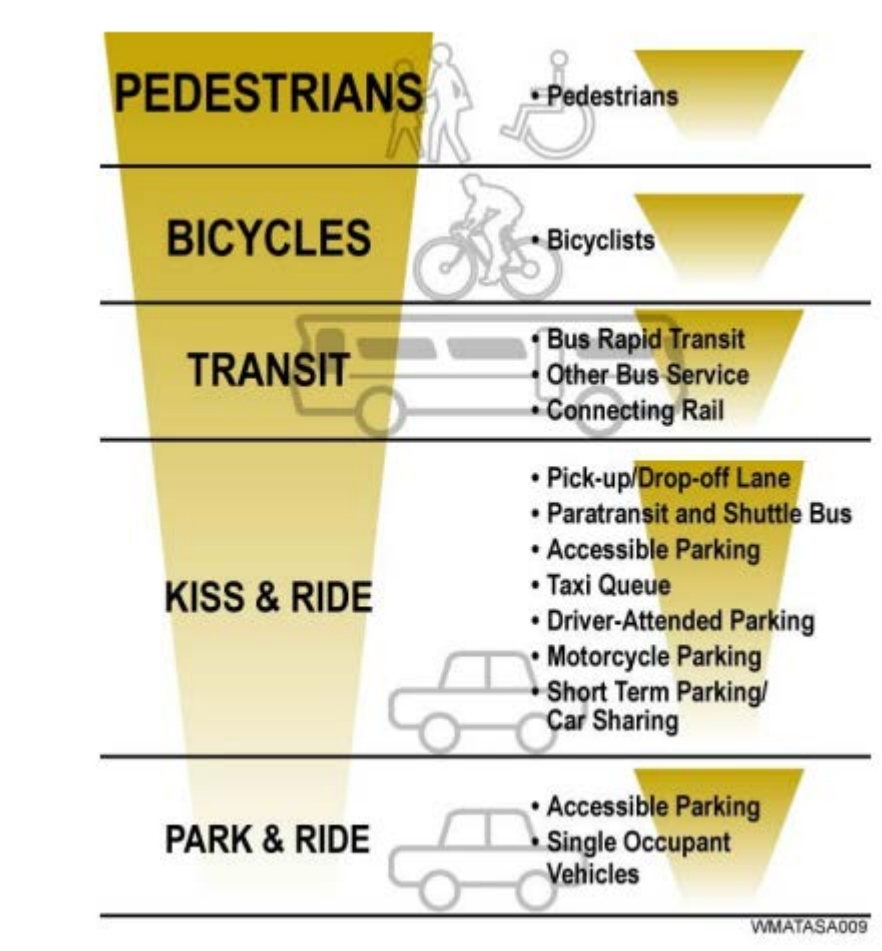
Source: State Smart Transportation Initiative

Traditional Process for Intersection Design



An Alternative Design Approach

- Reconsider LOS threshold at traffic signals
- Consider livability thresholds:
  - Maximum crossing distance
  - Maximum number of lanes
  - Maximum number of turn lanes
- Consider access hierarchy
- Don’t build it now if it isn’t needed now



Source: WMATA Station Site and Access Planning Manual

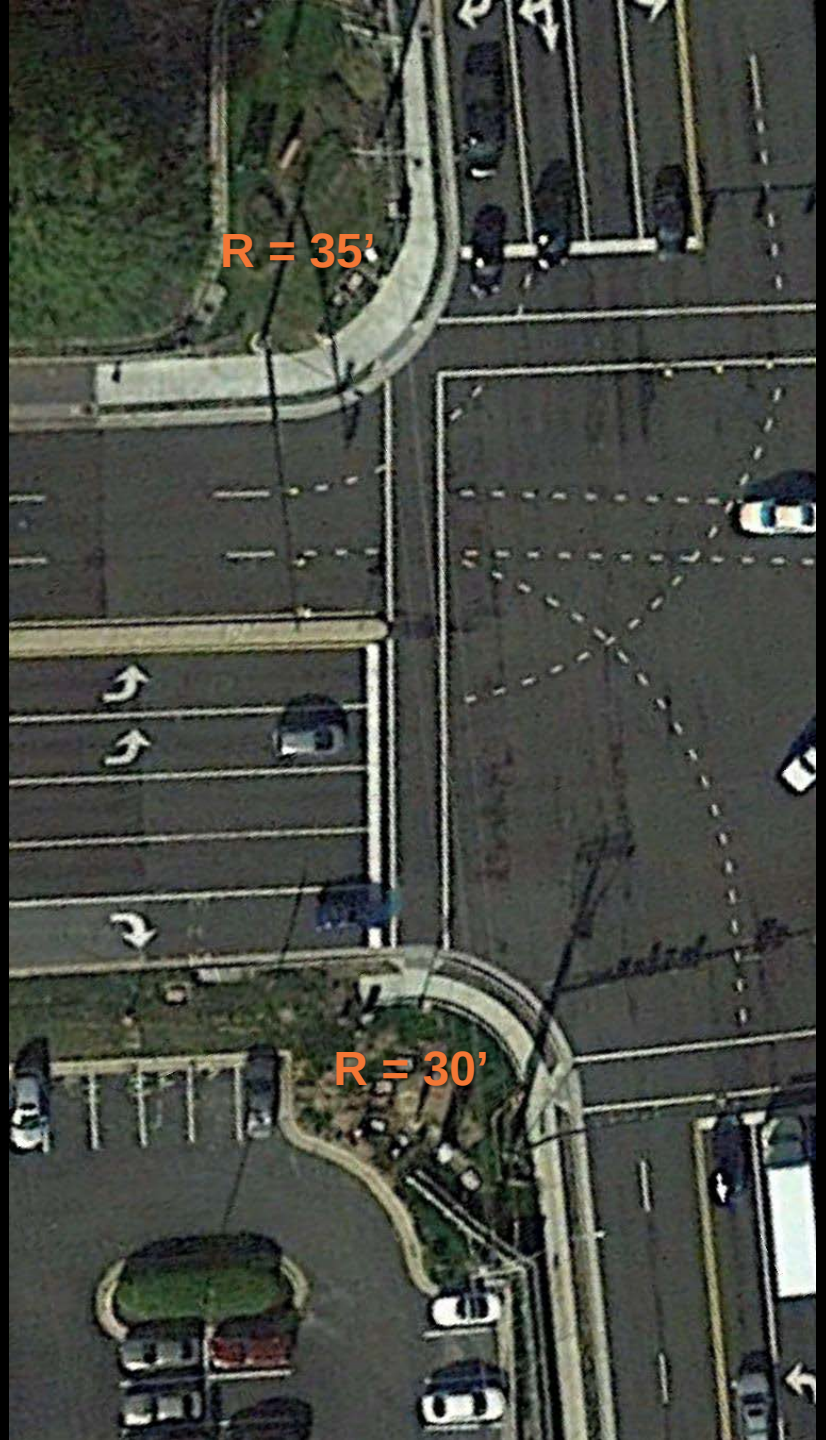
Questions for Advocates to Ask Agency Staff

- Is there an LOS threshold at traffic signals? If so, what is it?
- How would the design change with a different LOS threshold?
- How is future volume forecasted? How confident is the forecast?
- How would the design change if a different forecast were used?
- What design is needed to accommodate existing traffic?

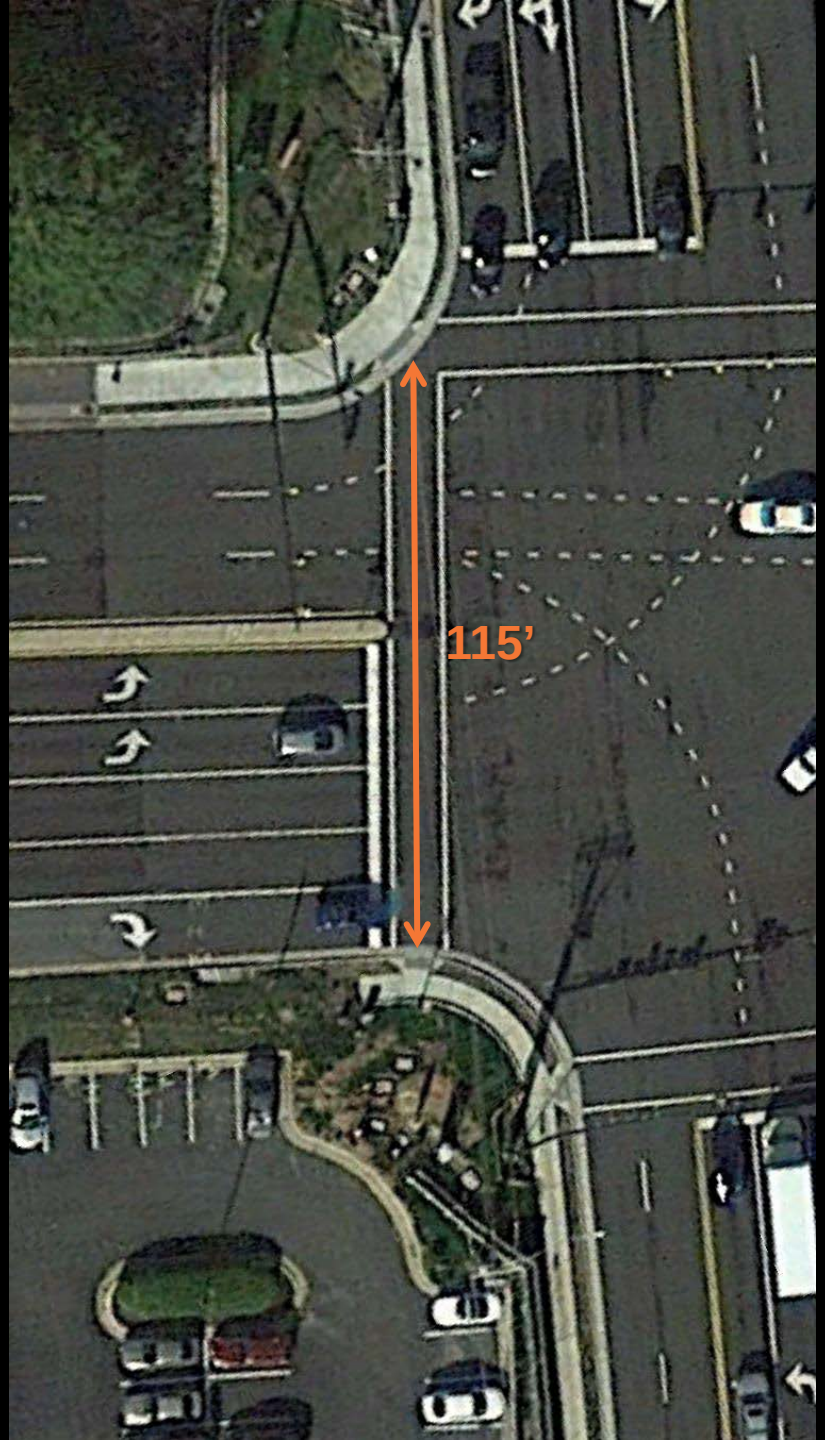
Treatments to Encourage Walkability

1 Curb Return Radius


R = 60’
R = 53’

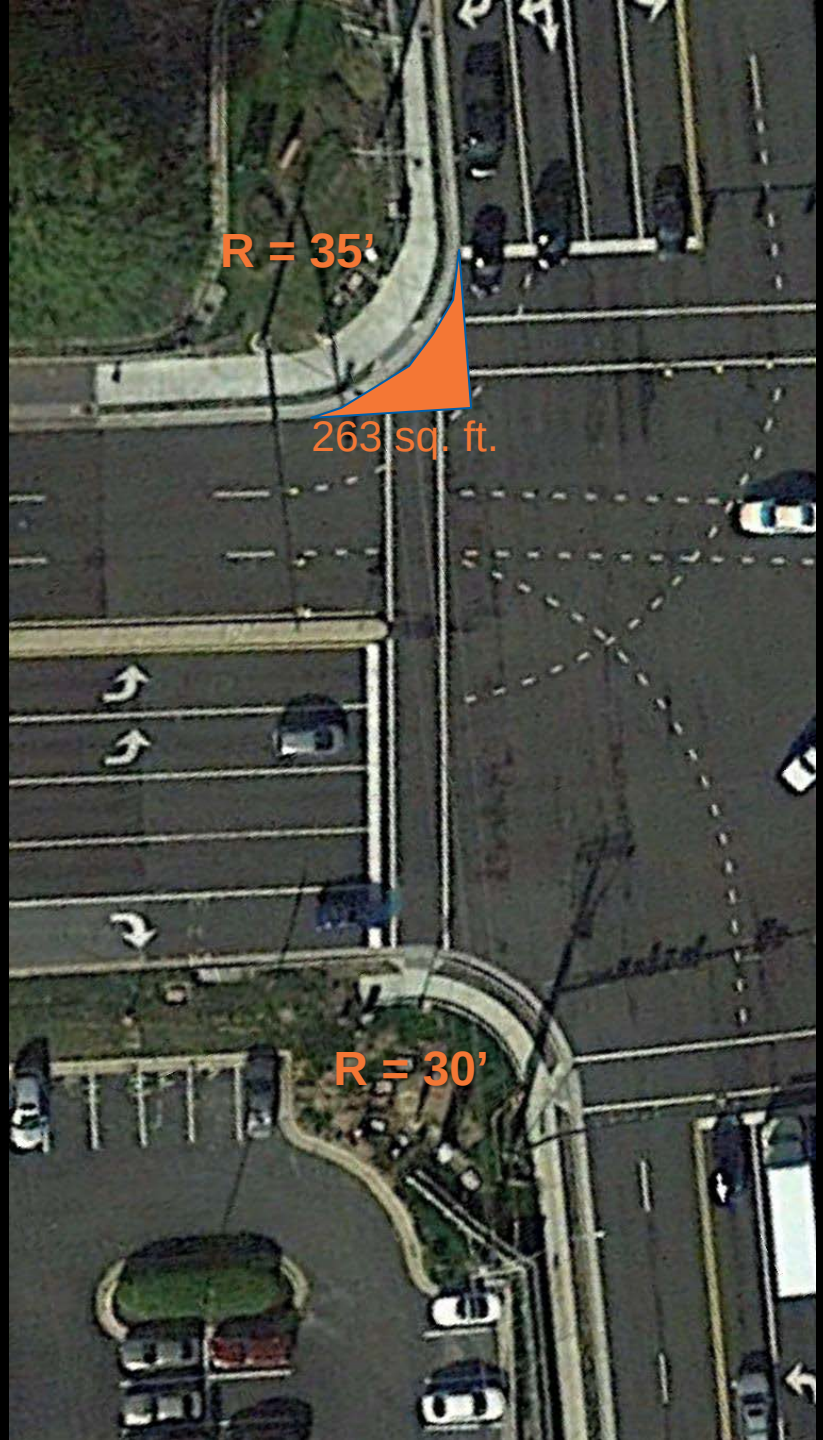

R = 35’
R = 30’

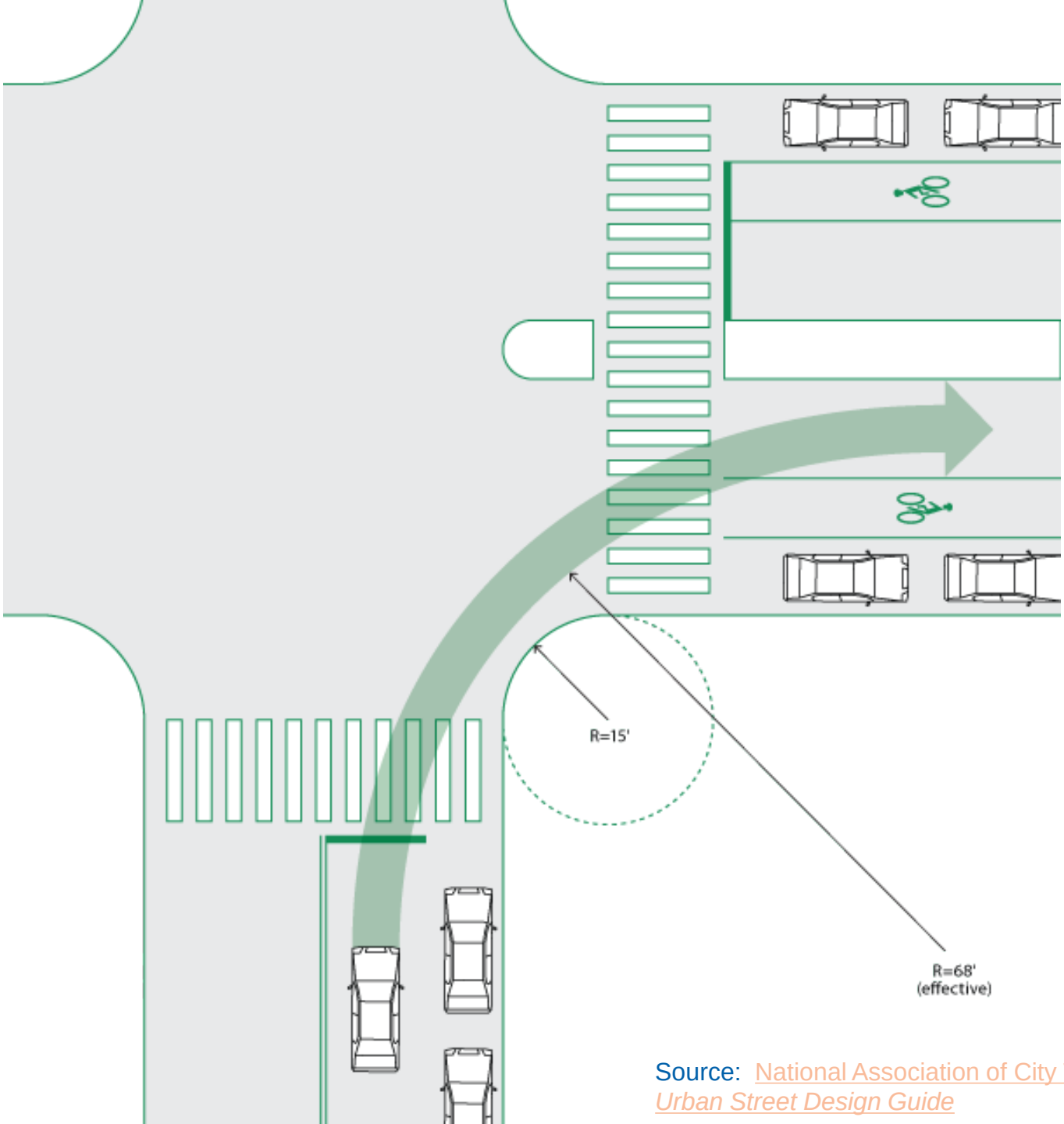
Ped phase: **12 sec.** shorter



Radius drops by 42%

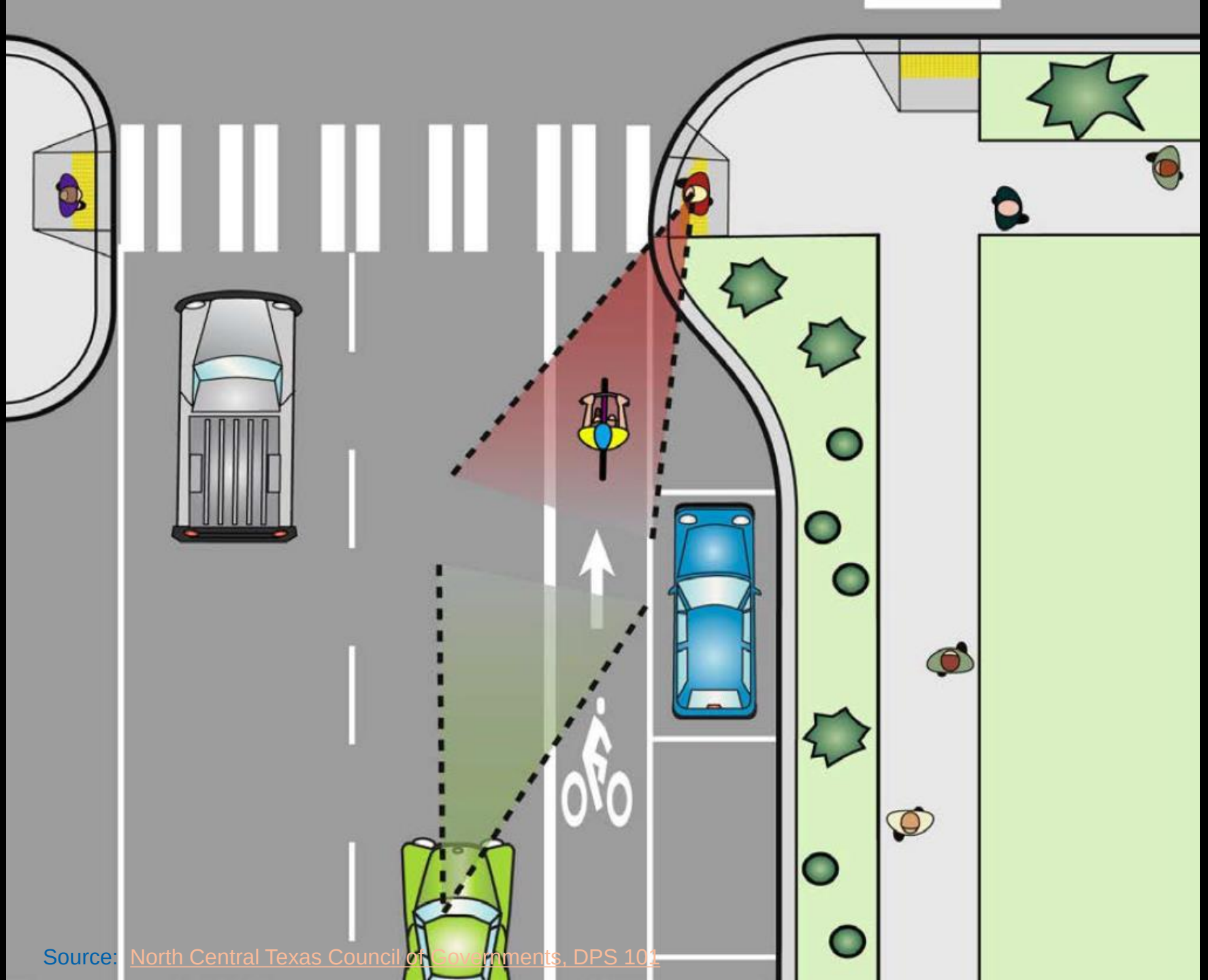
Area drops by **67%**





Source: National Association of City Transportation Officials *Urban Street Design Guide*

2 Curb Extensions



Source: North Central Texas Council of Governments, DPS 101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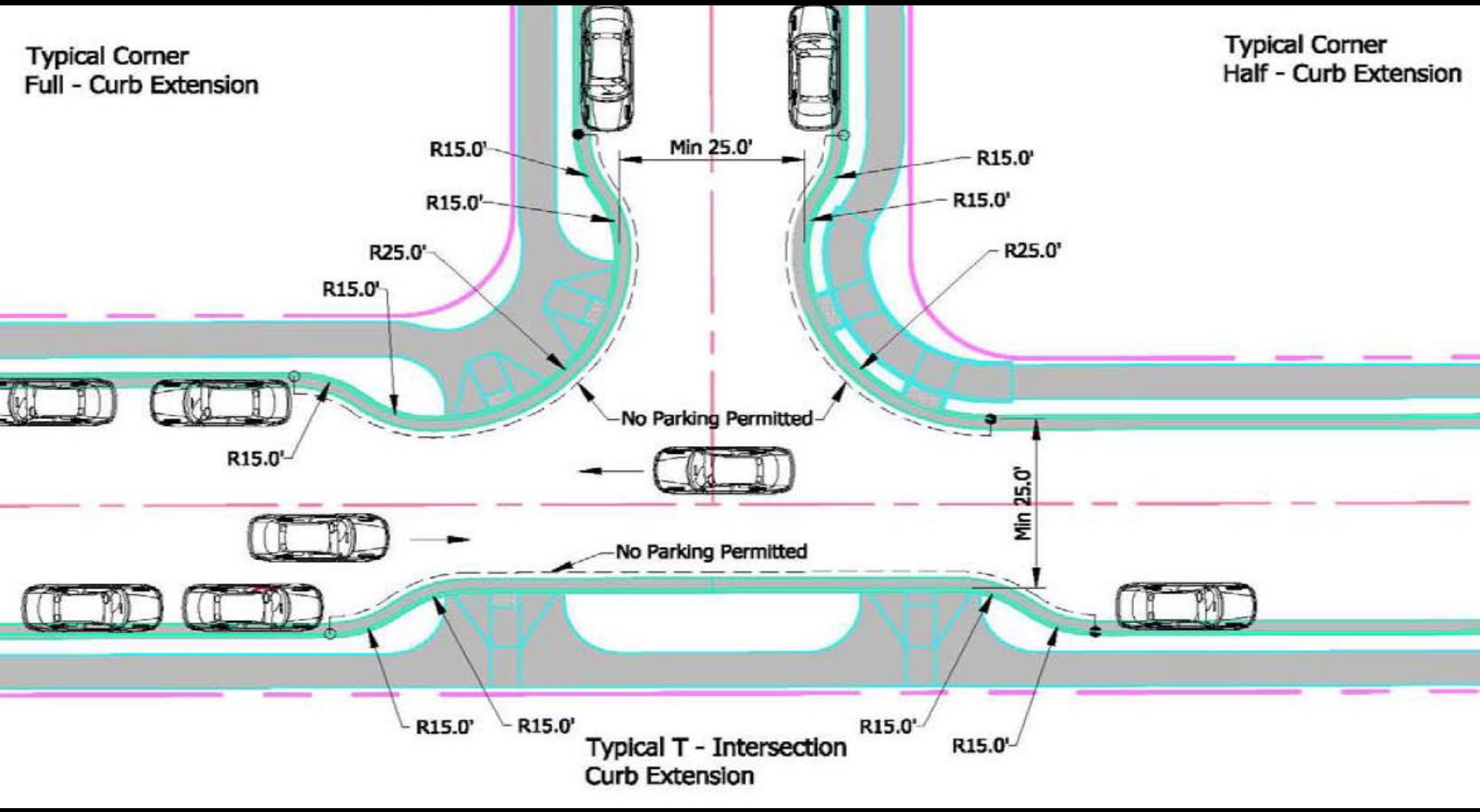
HST 453



Source: Arlington County, Virginia, Drawing CE-1.0, 2011

3 Avoiding Multiple Turn Lanes


ONLY
RIGHT TURN
ON RED
FROM RIGHT
LANE ONLY
ONLY

Randy Dittberner

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