التقاطعات بدون إشارات ضوئية

- التقاطعات التي يتم التحكم باستخدام إشارة قف على اتجاهين للحركة (Two way stop controlled)
- التقاطعات التي يتم التحكم باستخدام إشارة قف على كافة الاتجاهات (All way stop controlled)
- التقاطعات الدوارة Roundabouts

Two-way stop procedure includes

- Revised critical gap parameters
- Revised methods for queue length estimates
- Revised control delay estimates

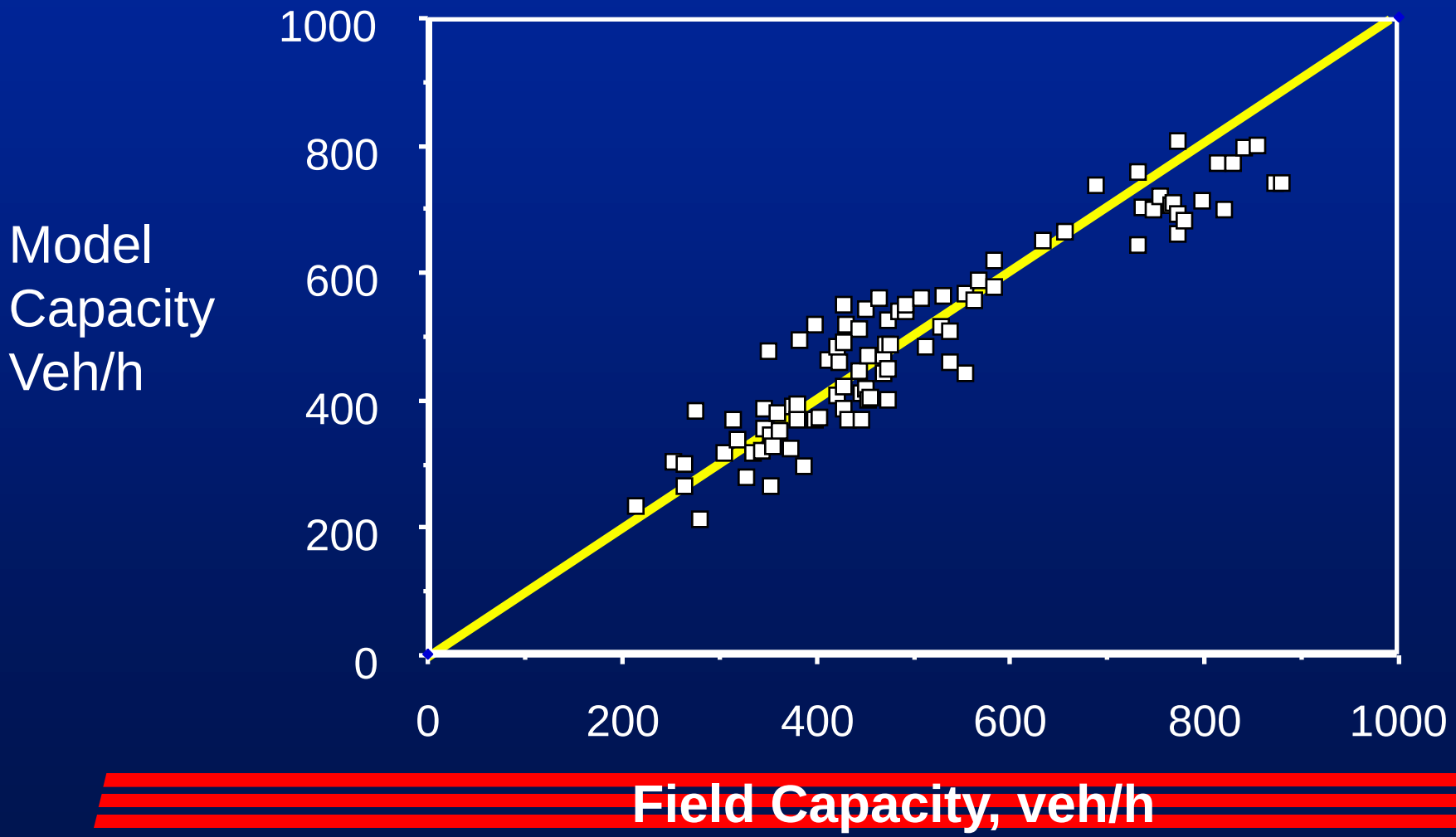
Two-way stop procedure evaluates

- Pedestrians effects
- Flared minor street approaches
- Upstream signal effects
- Two stage gap acceptance processes

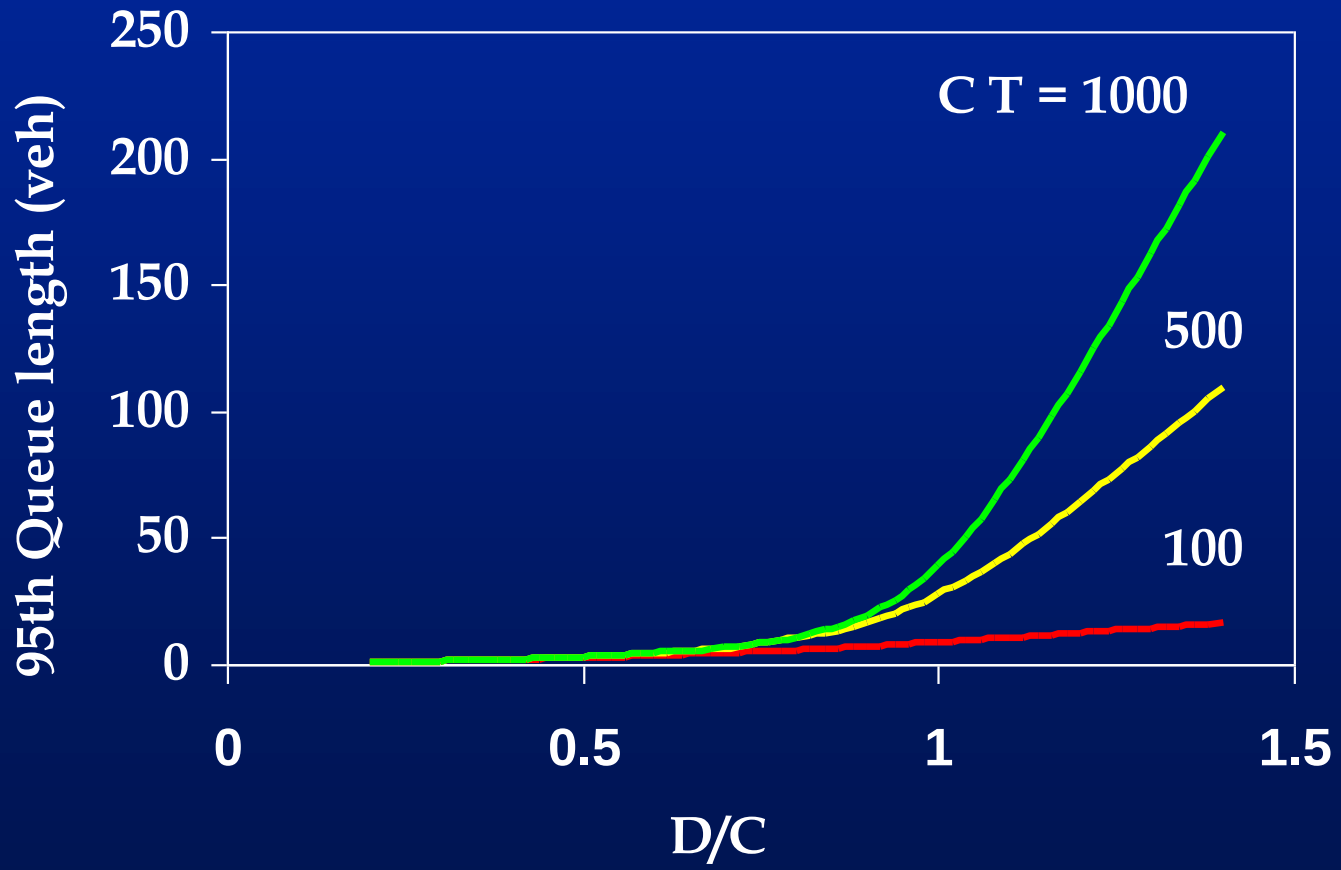
Revised critical gap parameters

- Essentially the same as the 1997 values
- Allow for heavy vehicles
- Allow for grade
- Adjusts for T-intersections

Capacity for gap acceptance method



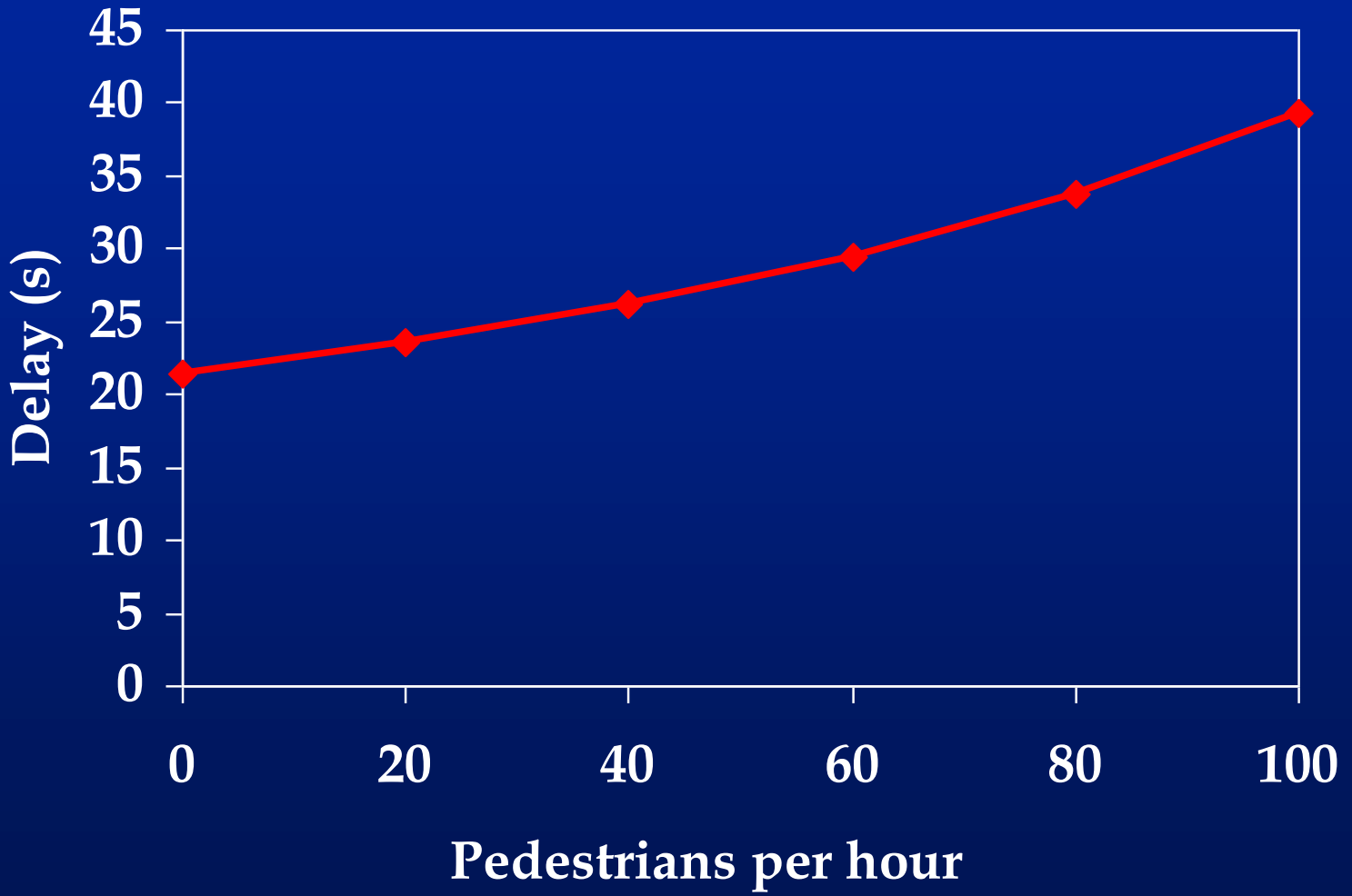
95th percentile queue length estimates



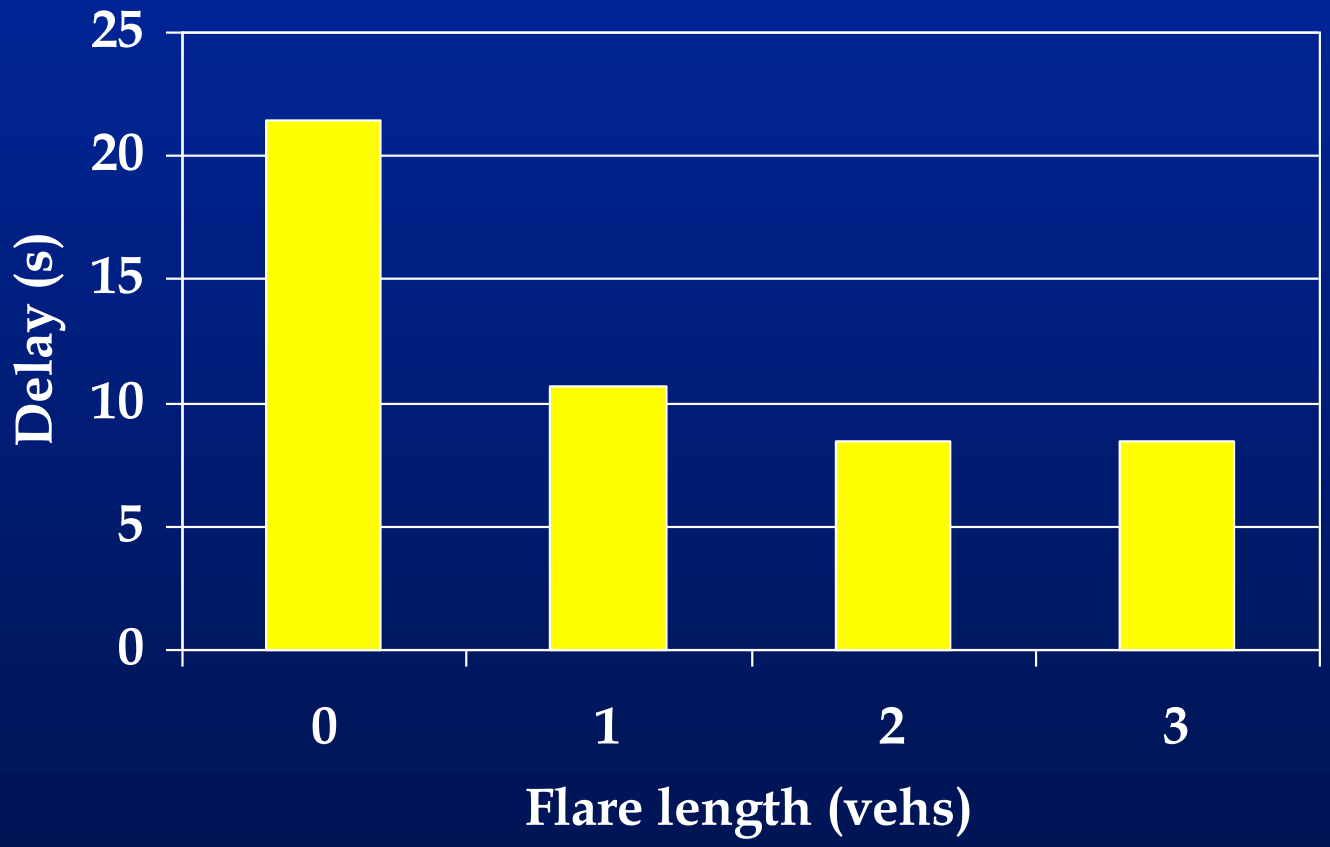
Revised control delay estimates

- Uses a similar equation to other chapters
- Allows for D/C ratios to be greater than 1.0
- Allows for any length of analysis
- Allows for the acceleration and deceleration associated with control delay

Pedestrians effects



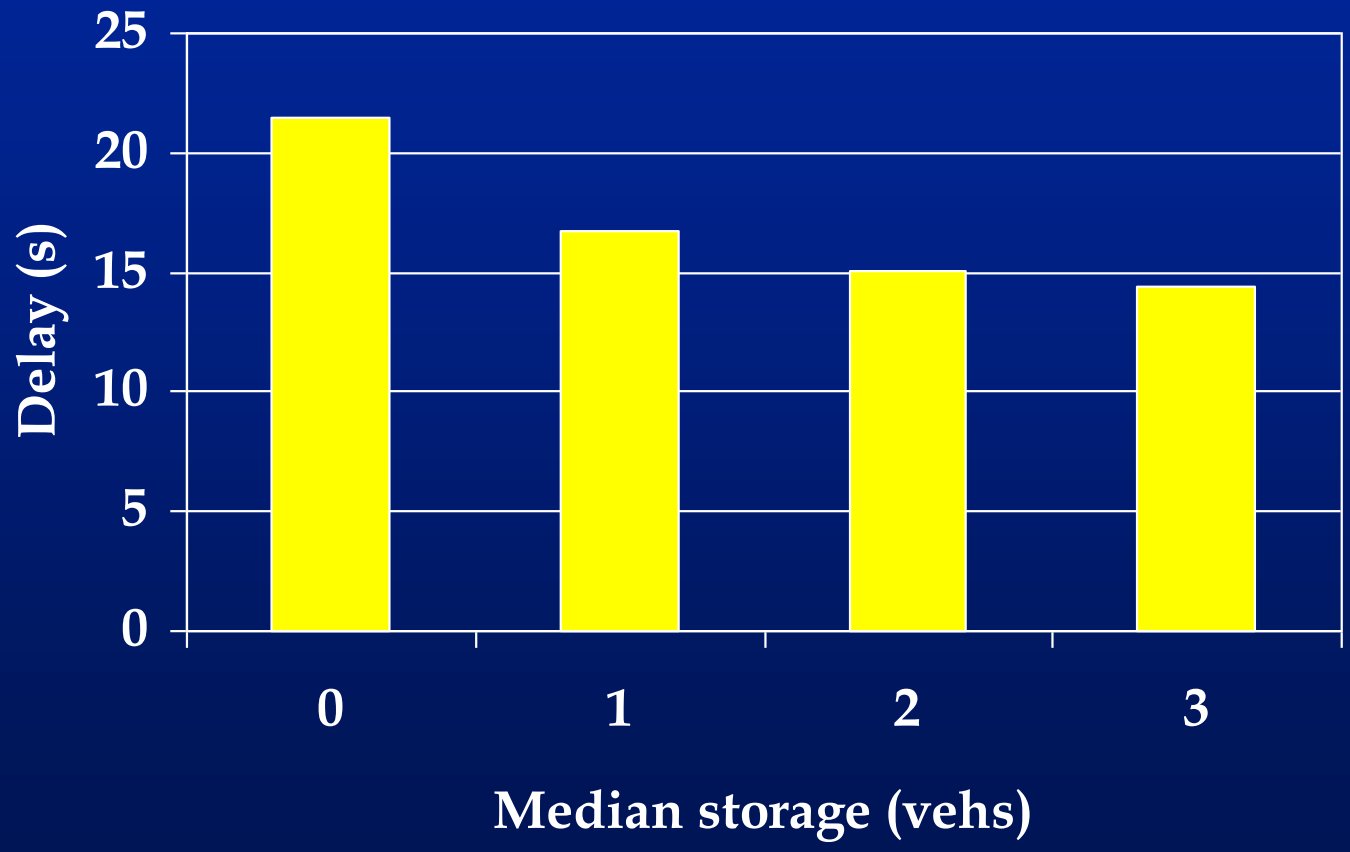
Flared minor street approaches



Upstream signal parameters include

- The distance between intersections
- Signal timings
- Travel speed on the arterial
- Saturation flow rates

Two-stage gap acceptance processes



The all-way stop procedure

- Based on the notion that the service time is a function of the conflict type
- The more difficult the conflict - the longer the service time
- Defines “degree-of-conflict” cases
- The process is iterative

Departure headway

- The mean departure headway is a function of probability of the "degree-of-conflict" case and the departure headway (or service time).
- The probabilities are themselves a function of the departure headways.

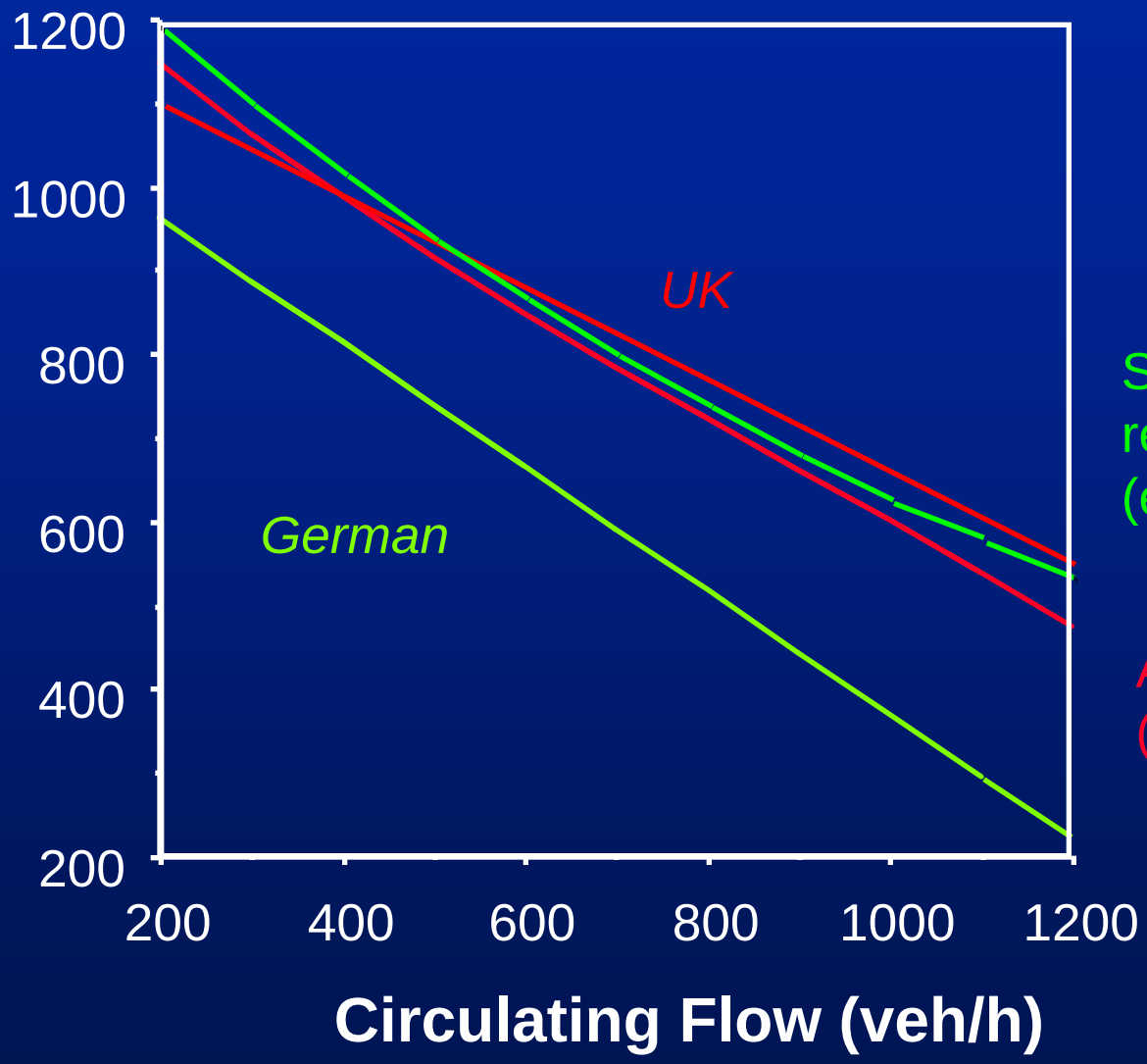
Capacity and delay

- The capacity is evaluated by increasing the traffic demand on the subject approach until the degree of utilization is equal to 1.0.
- The delay is evaluated using a non steady state equation similar to the one used in the TWSC section and in other chapters.

Roundabout procedure

- Based on a gap acceptance approach
- Evaluated on limited US field experience
- Provides two estimates of capacity and offers no advice on delays

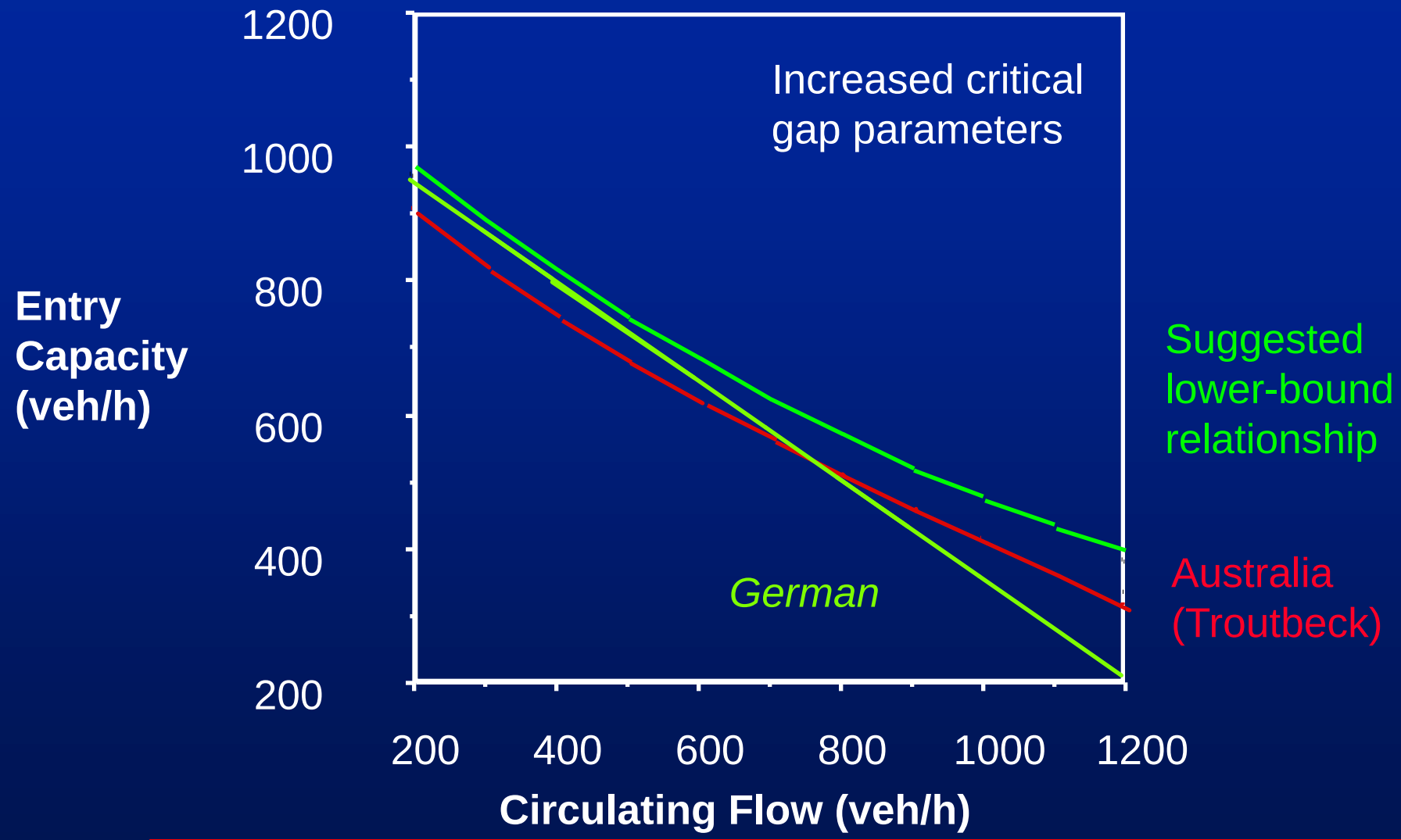
Comparison with others



Suggested relationship (exponential)

Australia (Troutbeck)

Comparison with others



Roundabout evaluation

- Suggest that the upper-bound is more appropriate for most roundabouts.
- Use the lower bound estimate when the speeds are particularly low and if roundabouts are not common.