# Gilmerton Bridge

The Gilmerton Bridge is a four-lane undivided twin bascule span bridge constructed in 1938. Currently the bridge carries an average daily traffic volume of approximately 36,000 vehicles. This number increases significantly when an incident occurs at the high-rise bridge, and commuters begin to seek alternative routes to crossing the Southern Branch of the Elizabeth River.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a specified period under prevailing roadway, traffic, and control conditions. LOS is defined as a qualitative measure that describes operational conditions and motorist's perception within a traffic stream. The Highway Capacity Manual (HCM) defines six levels of service, LOS A through LOS F; with A being the best and F the worst. LOS D or better (i.e., LOS A, B, or C) is typically recognized by VDOT and other agencies as the industry standard or the limit of acceptable LOS.

Even under normal traffic conditions the current daily traffic volume exceeds the vehicle carrying capacity of the bridge as a four-lane undivided facility.

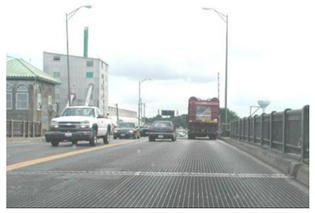
TABLE 1:
DAILY CAPACITY LOS CRITERIA FOR URBAN ARTERIALS

| LOS | 4-LANE ARTERIAL | 6-LANE ARTERIAL |
|---|---|---|
| A | 0–10,800 | 0–16,200 |
| B | 10,800–18,000 | 16,201–27,000 |
| C | 18,001–24,800 | 27,001–37,100 |
| D | 24,801–29,100 | 37,101–43,700 |
| E | 29,101–33,000 | 43,701–49,500 |

In addition to being undersized, the Gilmerton Bridge also has a low vertical clearance between the water surface and the bridge deck. This low vertical clearance prohibits moderately sized ships from accessing industrial deep water businesses located immediately north of the bridge and along the shore line of the Elizabeth River without requiring a bridge lift. Low vertical clearance combined with vibrant river traffic result in frequent bridge openings that interrupt traffic flow along the corridor at this location.

Weight limitations associated with the bridge require tuck traffic to be diverted toward the George Washington Highway intersection attempting to access I-64 and through the Community Core of the corridor. This results in a large amount of through truck traffic unnecessarily traveling within the core impacting traffic operations.

Given the era in which the bridge was constructed, there are inherent safety concerns. Average travel speeds across the bridge range from 45mph to 55mph with no physical barrier separation oncoming inside lane traffic. Travel lanes across the bridge are approximately 10 feet in width and offer little room for error or maneuverability. Sidewalks are provided along the bridge deck in each direction. However, there is no physical barrier separating vehicle and pedestrian or bicycle traffic. The combination of a deteriorating structure, inadequate capacity, frequent openings, and general traffic operations safety concerns support the need for the City of Chesapeake to replace this structure.



© 2005 URBAN DESIGN ASSOCIATES