Identifying High-Congestion/Low-Transit (HC/LT) Corridors

Background

High-Congestion/Low-Transit (HC/LT) Corridors are defined as corridors of major arterials, expressways, and freeways in Prince George's County that:

1) **Have high levels of congestion,** defined as exceeding the link-level volume-to-capacity ratios defined in the County's Transportation Review Guidelines; and
2) **Have low levels of existing and potential transit service,** defined as:
   a) Not identified as having potential for a large-scale transit corridor; and
   b) Not identified as having potential as a future bus transit corridor; and
   c) Either:
      i) Not having any existing transit service; or
      ii) Not having local-serving transit stops (for example, long-distance commuter buses traverse the corridor but do not stop frequently along the corridor)

Transit Facilities

The HC/LT Corridor selection process considered three broad categories of transit service: existing transit service, the Next Large-Scale Transit Corridor, and potential future bus transit corridors. This evaluation was based on County approved plans and project alignments as of Spring 2022.

Figure 1 illustrates existing transit routes and stops in Prince George's County from the following services:

- TheBus
- Metrobus
- Metrorail
- MTA Commuter Bus
- Shuttle-UM
- Regional Transportation Agency of Central Maryland (RTA) Bus
- MARC Commuter Rail

Figure 2 illustrates conceptual alignments of potential candidates for the next large-scale transit corridor and for potential future bus corridors. These corridors are identified and described in more detail Appendices 7 and 8.

Level of Service

Figure 3 illustrates major arterial, expressway, and freeway segments throughout Prince George's County. Segments that exceed volume-to-capacity ratio level of service thresholds in either the AM or PM peak period in either the year 2020 existing analysis period or year 2045 future baseline analysis period are displayed in salmon; all other arterial segments are displayed in dark green (see Attachment 15 for details on the level of service calculation).

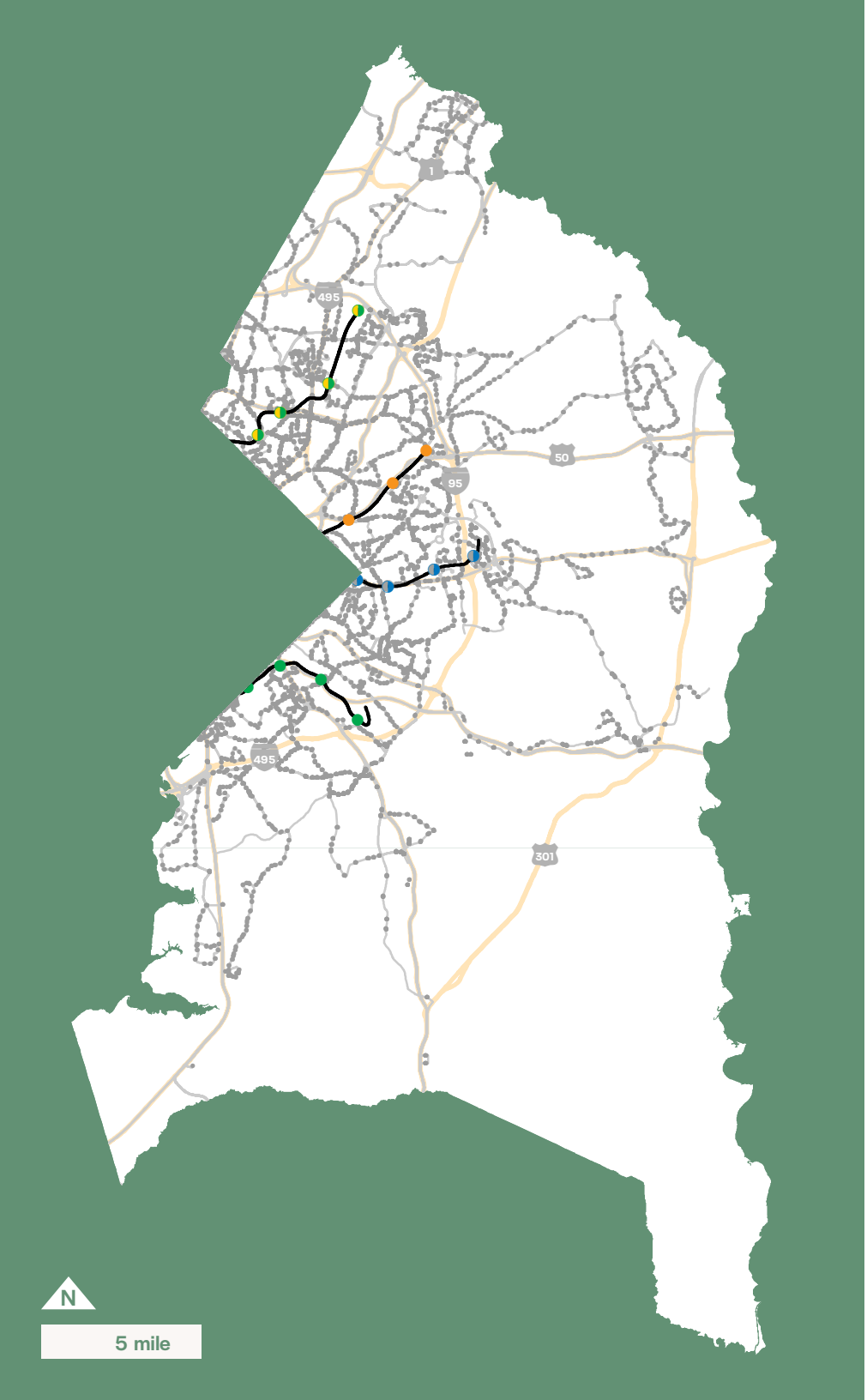

Figure 1:

EXISTING TRANSIT ROUTES & STOPS

Legend

- Metro Station
- Metro Lines
- Bus Stops
- Bus Service

Sources: Prince George's County GIS Open Data Portal, 2022; Maryland's GIS Data Catalog, 2022

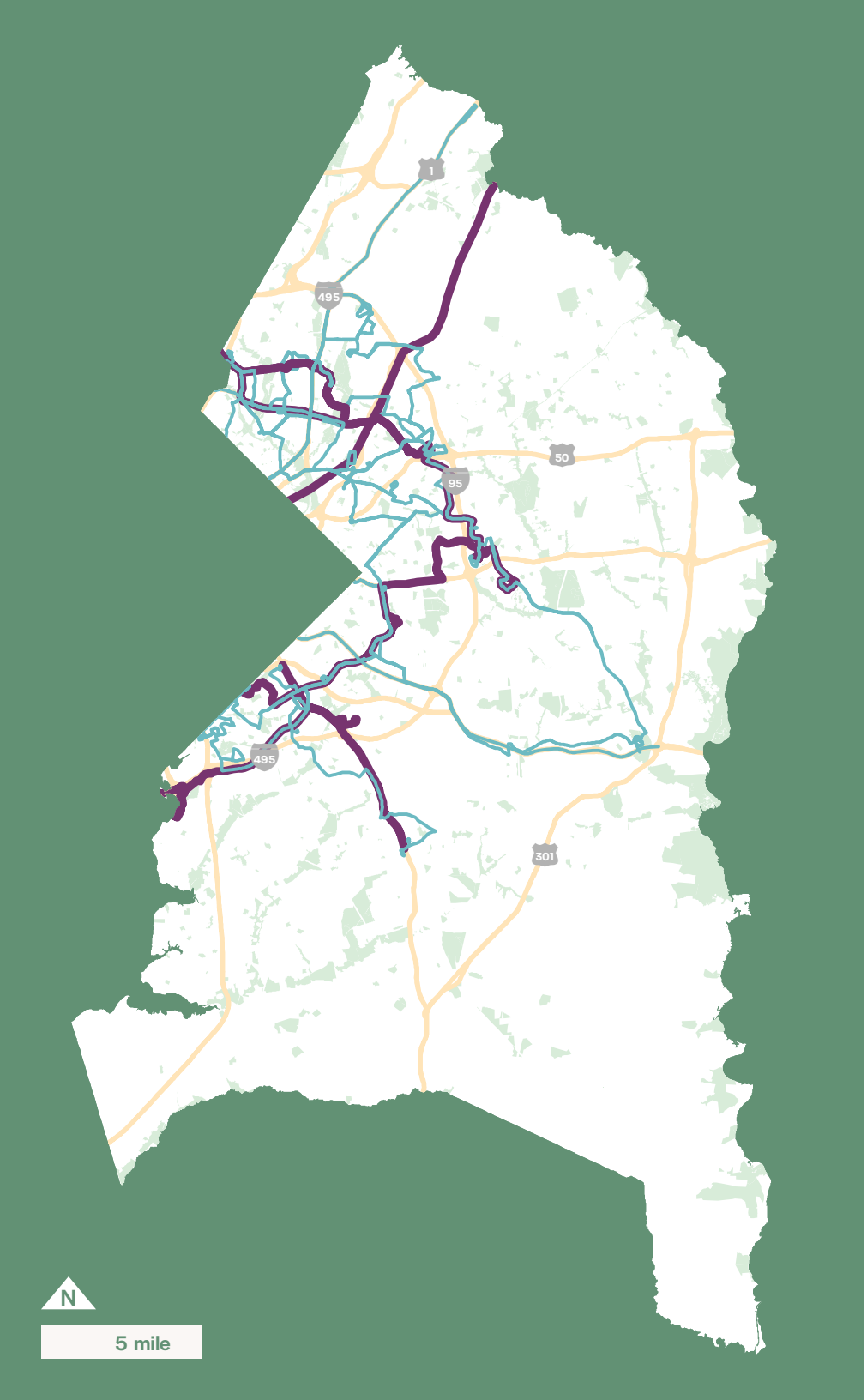

Figure 2:

POTENTIAL FUTURE TRANSIT CORRIDORS

Legend

- Potential Future Bus Corridor
- Potential Large-Scale Transit Corridor

Sources: Prince George's County GIS Open Data Portal, 2022; Maryland's GIS Data Catalog, 2022

Figure 3:

MAJOR ARTERIALS, EXPRESSWAYS, & FREEWAYS

Legend

- Congested (AM or PM, 2020 or 2045)
- Not Congested

Sources: Prince George's County GIS Open Data Portal, 2022; Maryland's GIS Data Catalog, 2022

Combining HC/LT Factors

Figure 4 illustrates the combination of HC/LT factors: existing transit routes and stops, potential large-scale transit corridors, potential future bus corridors, and the congestion status of arterial, expressway, and freeway segments based on the worst-performing period among AM and PM peak periods in 2020 and 2045.

Based on visual inspection of these factors, HC/LT corridors were identified. Table 1 lists the 16 selected HC/LT corridors, which are also illustrated in Figure 5.

All of the corridors experience congestion during at least one the identified periods across the nearly complete and continuous length of the corridor; there may be small gaps in some corridors where congestion does not exceed established thresholds, but the overall experience of corridor travel is congested.

Many of the identified HC/LT corridors have no transit whatsoever and adjacent street networks and land uses are not conducive to walking or bicycling to transit or other destinations. Other identified HC/LT corridors carry transit routes for part or all their length, but do not have more than a few local-serving transit stops, if any.

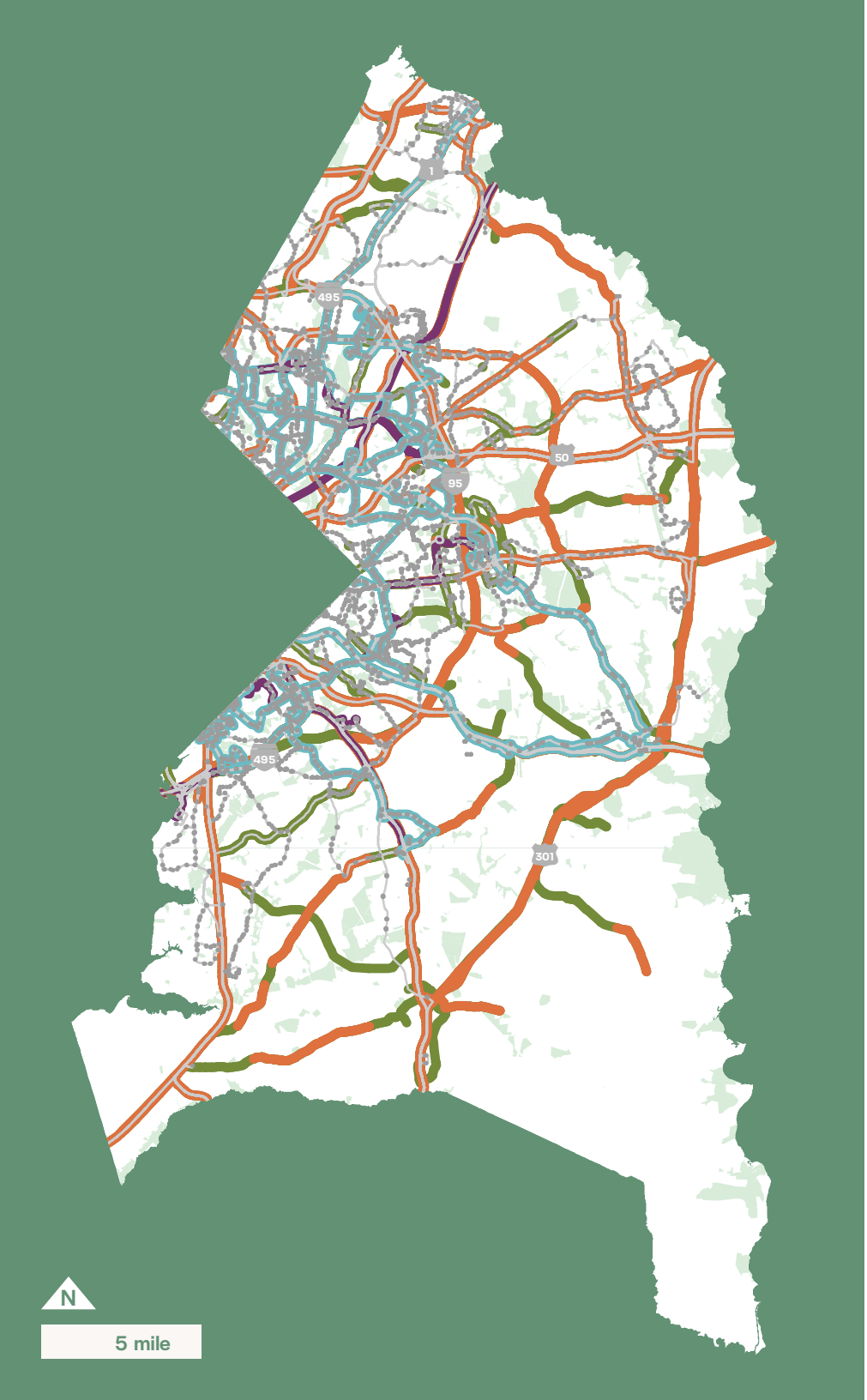

Figure 4:
HIGH-CONGESTION / LOW-TRANSIT CORRIDOR CRITERIA

Legend

- Bus Stops
- Bus Service
- Congested (AM or PM, 2020 or 2045)
- Not Congested
- Potential Future Bus Corridor
- Potential Large-Scale Transit Corridor

Sources: Prince George's County GIS Open Data Portal, 2022; Maryland's GIS Data Catalog, 2022

Table 1: High-Congestion/Low-Transit Corridors

#	Facility	From	To	Transit Considerations
1	MD 198	Montgomery County Line	9th St	transit on corridor; no/few stops
2	I-95	Howard County Line	I-495	transit on corridor; no/few stops
3	I-495	Montgomery County Line	Woodrow Wilson Memorial Bridge	transit on corridor; no/few stops
4	MD 197	Baltimore-Washington Parkway	Jericho Park Road (Bowie State Univ)	no transit
5	MD 193	MD 564	MD 214	no transit
6	MD 3/US 301	Anne Arundel County Line	Charles County Line	no transit
7	US 50	District of Columbia Line	Anne Arundel County Line	transit on corridor; no/few stops
8	Lottsford Rd	MD 202	MD 193	no transit
9	MD 214	US 301	Anne Arundel County Line	no transit
10	White House Rd	I-495	MD 202	no transit
11	MD 210	I-495	Charles County Line	transit on corridor; no/few stops
12	MD 223	Dangerfield Rd	Dower House Rd	no transit
13	MD 223	Farmington Rd	Temple Hill Rd	no transit
14	MD 373	Bealle Hill Rd	McKendree Rd	no transit
15	MD 381	US-301	N Keys Rd	no transit

Note: Palmer Rd / Tucker Rd / Allentown Rd from MD 210 to Temple Hill Rd, not included in this table, appears to have no local transit stops in Figure 4 due to a lack of available data; however, TheBus route 37 and WMATA route W7 both serve this corridor with regularly spaced local-serving stops, so it is not considered High-Congestion/Low-Transit.

Figure 5:

HIGH-CONGESTION / LOW-TRANSIT CORRIDORS

Legend

High-Congestion/ Low-Transit Corridors

Sources: Prince George's County GIS Open Data Portal, 2022; Maryland's GIS Data Catalog, 2022

Addressing Transportation Concerns in HC/LT Corridors

Although Figure 4 illustrates that vehicular congestion is pervasive on the HC/LT Corridors, concerns expressed in public meetings are more comprehensive and multimodal in nature. Public concerns include:

- Lack of safe, comfortable, and connected/continuous bike and pedestrian facility networks and safe crossings of corridors, especially near transit stops
- Safety for all road users
- Roads with high design speeds in dynamic areas filled with pedestrians
- Consideration of development on already crowded roads
- Desire for first-/last-mile solutions, such as flex route /microtransit service to serve lower-density areas
- Network connectivity
- Appropriate performance emphasis on highways versus neighborhoods

Potential practices for addressing transportation concerns in HC/LT Corridors include:

- **Expand network connectivity.** Where possible, expanding network connectivity. Providing more travel route options by having more continuous and connected small streets spreads traffic across a wider network and relieves traffic congestion. Connected, especially by grid, networks spread traffic more equitably than cul-de-sac networks, reduce trip lengths, and reduce the need for wide streets.
- **Understand corridor users.** Big Data sources such as StreetLight Data and RITIS can provide an understanding of the ultimate origins and destinations of travelers along each HC/LT corridor and help identify other potential solutions. An origin/destination analysis can reveal whether the corridor serves local travelers or is a through-route for origins and destinations beyond Prince George's County.
- **Clarify corridor priorities.** Identifying the primary use of each corridor, the vision for its surrounding land use context, and the performance measures that will guide its planning are prerequisites to designing appropriate solutions. This may come from planning documents such as the General Plan. A limited-access freeway will likely emphasize longer-distance mobility, while a corridor through a dense and vibrant community may prioritize multimodal access and quality of place.
- **Leverage land use solutions.** Denser, mixed-use communities can reduce the congestion on HC/LT corridors by providing numerous opportunities for travelers to meet their travel needs locally without the need for a private automobile. When driving is necessary, these communities make it possible to quickly meet their travel needs and within a shorter travel distance.
- **Manage transportation demand.** Providing travelers with alternatives and incentives can help reduce the demand for travel or shift travel from the single-occupant vehicle trips that result in corridor-level congestion to other modes, times, and routes.
- **Manage access.** Access management by spacing or removing access points and driveways can increase roadway capacity, reduce crashes, and reduce travel times on a particular facility. However, these considerations are most appropriate for corridors emphasizing the through-movement of vehicles and can result in less-direct travel paths to destinations by limiting the connectivity of the network.

- **Develop and apply a Transportation Systems Management and Operations (TSMO) strategy.** TSMO strategies aim to avoid constructing larger roadways and intersections by better managing and operating existing transportation systems. These solutions include management of special circumstances, such as work zones, traffic incidents, special events, and road weather events; integrated corridor management through active management and integrated decision-making for the corridor as a whole, including traffic signal coordination, ramp management, traveler information, and eventually autonomous vehicle management; and congestion pricing and other traveler incentive programs.
- **Don't count transit out.** Relatively high-volume origin/destination pairs identified through a Big Data analysis may present otherwise unidentified opportunities for transit service or carpooling, vanpooling, or park-and-ride lots. Even corridors that are not themselves well-served by transit may carry transit service that provides access to important destinations throughout the County. Alternatives to conventional, fixed-route transit—such as partnerships with ridesharing companies and on-demand transit like Call-A-Bus—can provide point-to-point connections for travelers or close first-/last-mile gaps in the transit system.

Implementing HC/LT Corridors: Strengths and Concerns

The High-Congestion/Low Transit corridor concept is helpful for identifying current congestion challenges and current limitations on future options for addressing those challenges with conventional transit solutions. However, this assessment should not be used as a justification for indefinitely accepting those limitations on all HC/LT corridors.

Although public feedback ranked congestion (measured by vehicular level of service) as the sixth most important of seven transportation indicators of success, the inherent emphasis on congestion on the HC/LT corridors may bias action toward automobile-focused efforts that may alleviate congestion in the short term but ultimately lead to increased automobile travel and congestion. While many of the operational strategies outlined above can help make the best use of existing automobile infrastructure, other automobile-focused solutions—particularly expansion of vehicular capacity—may ultimately induce additional vehicle travel and increase congestion; in the meantime, roadway expansions may suppress the potential for access and travel by other modes such as walking, biking, and transit, thereby further increasing reliance on automobile travel and exacerbating congestion concerns.

Given the increasingly multimodal nature of travel in the County and public feedback supporting additional approaches to measuring transportation success, other approaches may be more appropriate to improve and evaluate transportation, such as accessibility, increased non-automobile mode share, reduced severe and fatal crashes, and reduced vehicle miles traveled.