

NORTH FALLS LAKE AREA STUDY

Corridor Studies

An in-depth analysis of the NC 56 and Brogden Road (SR 1127) corridor was conducted to identify transportation needs and develop corridor-specific recommendations that support both current conditions and anticipated future growth.

Introduction

The analysis incorporated multiple data sources, stakeholder input, and field observations to develop a context-sensitive approach focused on safety, operations, access management, and multimodal mobility.

This evaluation included the following components:

- Review of CAMPO's High Injury Network to identify locations with elevated safety concerns
- Review of development activity and Traffic Impact Analyses (TIAs)
- Review of traffic volumes (historic, current, and anticipated) using NCDOT data and project datasets
- Review of environmental features using NCDOT ATLAS
- Review of existing and future land use conditions
- Review of planned transportation improvements identified in the 2055 Metropolitan Transportation Plan (MTP), Comprehensive Transportation Plan (CTP), and 2026-2035 State Transportation Improvement Program (STIP)
- Review of projected population growth through adopted 2055 MTP Traffic Analysis Zone (TAZ) data
- Review of relevant plans and studies including the 2013 I-85 Future Interchange Location Analysis, the 2015 NC 56 Corridor Study, and the CAMPO 2025 Blueprint for Safety

In addition to the data-driven analysis, we conducted stakeholder interviews to gain a more detailed understanding of issues and needs along the corridors. The stakeholder input provided insight into safety concerns, operational challenges, emergency response considerations, and future growth expectations that are not fully reflected through data alone. Stakeholders included:

- North Falls Lake Area Study Project Management Team
- Granville County Public Schools Director of Transportation
- Granville County Emergency Management Director
- Granville County Fire Marshal
- County/City Staff (Town of Stem Administrator, Creedmoor City Planner, Franklin County Assistant Planning & Inspections Director)
- Granville County Economic Development Director
- KARTS Executive Director
- CAMPO Senior Transportation Planner overseeing the Blueprint for Safety
- Granville County Emergency Communications Director
- Granville Health System Chief Executive Officer
- Creedmoor Police Department Chief of Police

A summary of the stakeholder input is included in Appendix A1 and Appendix A2. Project staff also drove and reviewed the two corridors using field observations and aerial imagery to evaluate roadway conditions, traffic operations, access conditions, and multimodal accommodations.

This effort represents a planning-level assessment intended to identify recurring corridor patterns and develop implementable recommendations. Detailed crash analyses, traffic studies, and site-specific engineering evaluations were not performed as part of this effort and would be required prior to implementation of individual projects. Progress updates were provided during PMT meetings, and findings were presented at two Core Technical Team meetings.

Recommendations were organized into two groups: recommendations developed as a part of the Study and recommendations from prior plans and studies (MTP, CTP, or traffic impact assessments). Recommendations that were developed for the Study were shorter-term, lower-cost, intermediate solutions that could be accomplished using alternative funding sources to SPOT or funded through the Division Needs category where the projects may be more competitive. These recommendations were developed after considering recommendations already developed in prior plans and studies. Recommendations from prior plans and studies were carried forward to reflect a coordinated planning approach and to ensure consistency with previously identified long-term transportation improvements.

Recommendations developed as a part of the Study are shown in Figure 1 and 2 and prior recommendations are shown on the same maps with letters.

Rather than focusing only on isolated intersections, the study evaluated recurring corridor conditions related to safety, access, mobility, and future development patterns. This approach helped identify corridor-wide strategies intended to improve long-term transportation performance while supporting planned growth within the North Falls Lake study area.

NC 56 Corridor

Corridor Role and Future Function

NC 56 is transitioning from a primarily rural roadway to a developing suburban corridor with increasing regional and local travel demand. The corridor currently serves a mix of through trips, school traffic, and local access; however, planned growth and MTP-identified widening will shift its function toward a higher-capacity, mobility-oriented facility.

As development continues, the corridor will need to balance regional mobility with increasing access demands from residential and commercial growth. This transition supports a corridor strategy focused on operational improvements, access management, multimodal accommodations, and long-term capacity enhancements.

Corridor Overview

NC 56 serves as a key east-west corridor connecting residential areas, schools, community destinations, and regional roadways, including US 1 and NC 96. The corridor is experiencing increasing traffic demand due to ongoing development and population growth within the North Falls Lake study area.

The evaluation identified a combination of operational, safety, and multimodal deficiencies, particularly in areas influenced by school traffic, developing residential areas, and locations with increasing turning movements.

Key Issues and Needs

The following primary needs were identified along the NC 56 corridor:

- Intersection visibility and sight distance limitations due to skew, horizontal curvature, and roadside obstructions
- Congestion and queuing, particularly associated with Mount Energy Elementary School and adjacent development activity
- Frequent turning conflicts and lack of dedicated turn lanes in key segments
- Limited pedestrian infrastructure, especially near schools and residential areas
- Curve-related safety concerns and inconsistent advisory speeds
- High operating speeds and increasing driveway density in developing segments

Recommended Improvements

Recommendations for NC 56 focus on improving safety and operations in the near term while supporting planned long-term corridor widening identified in the MTP and CTP. The recommendations are shown in Figure 1.

Previous planning work recommends the following projects:

- The CAMPO MTP calls for NC 56 to be widened in the 2055 Horizon year between Hayes Road (SR 1702) / Moss-Hayes Road (SR 1636) and Hester Road (SR 1129) (GRNV22A).
- The CAMPO MTP calls for NC 96 to be widened in the 2055 Horizon Year from the Franklin County Line to NC 56 (GRNV23). Improvements to the intersection of NC 96 at NC 56 will be required to accommodate the widened roadway.
- The CAMPO CTP calls for NC 56 to be widened between Hester Road (SR 1129) and the US 1 interchange (GRNV22B and FRNK4A). This project is unfunded.
- The CAMPO CTP proposes bicycle and pedestrian facilities along the NC 56 study corridor from Hayes Road (SR 1702) / Moss-Hayes Road (SR 1636) to the US 1 interchange.
- Bicycle and pedestrian accommodations will be considered as part of the 2055 MTP roadway projects in accordance with the NCDOT Complete Streets Policy.

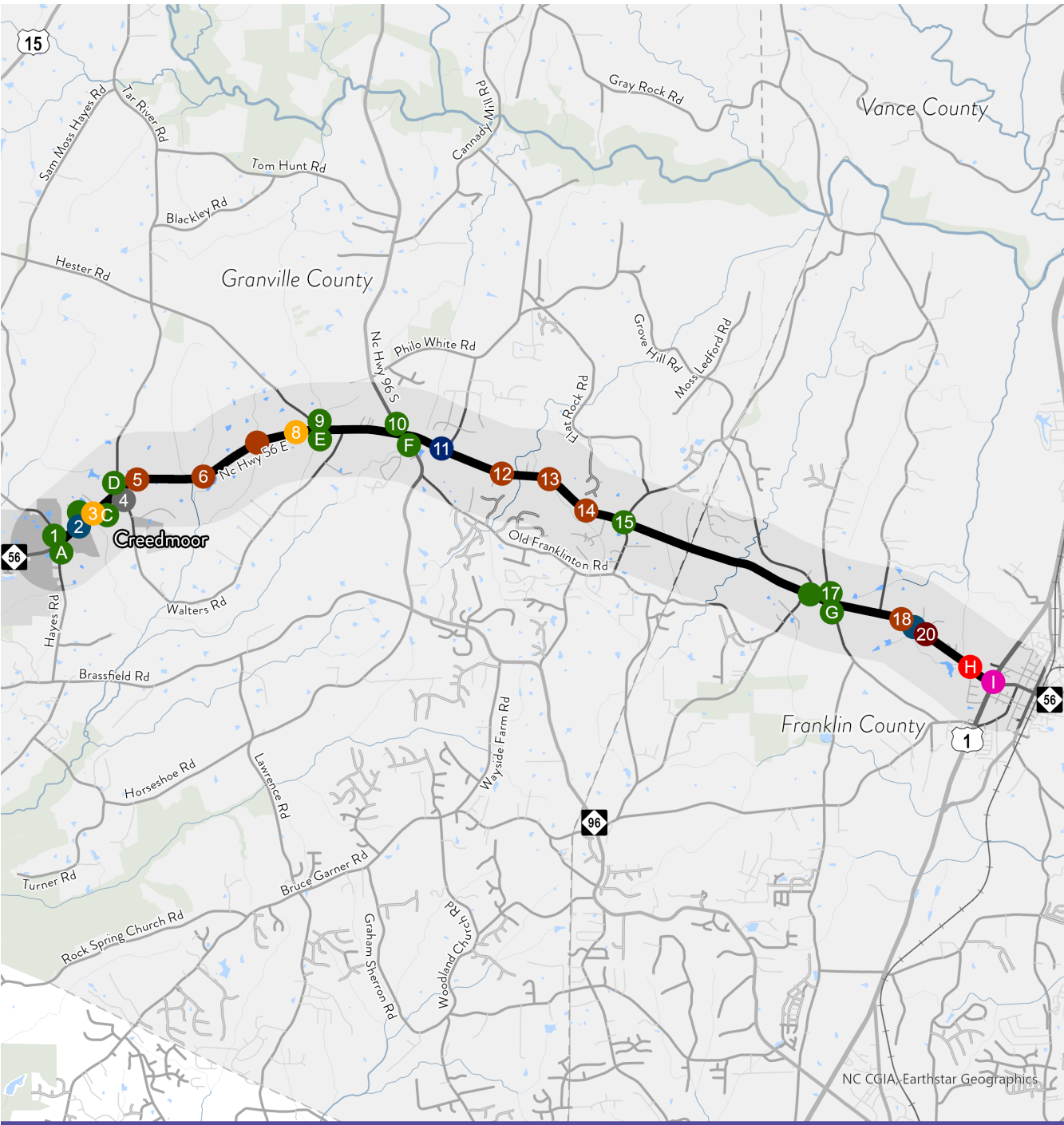
Summary

The evaluation indicates that many of the issues along NC 56 are associated with turning conflicts, access conditions, visibility constraints, and increasing development pressure rather than isolated operational deficiencies. As a result, the corridor is best served through a coordinated strategy that combines operational improvements, access management, multimodal infrastructure, and long-term capacity enhancements.

Near-term recommendations focus on safety and operational improvements that can be implemented incrementally, while medium- and long-term recommendations support continued corridor growth and future widening identified in regional plans.

Overall, NC 56 should continue to be developed as a regional corridor that balances mobility and access through coordinated transportation improvements that improve both current operations and long-term corridor performance.

Figure 1. NC 56 Corridor Recommendations



NC 56 Corridor Multimodal Transportation Recommendations

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|---|----------------------------|-----------------------------|-----------------------------|
| ① Recommendation as part of the study | ● Access Management | ● Intersection Improvements | ● Reduce Posted Speed Limit |
| ② Recommendation identified in previous plans | ● Adjust Advisory Speeds | ● New Intersection | ● Turn Lanes |
| | ● Interchange Improvements | ● New Sidewalks | ● Warning Signage |
| | | | — Study Corridor |
| | | | --- Railroad |

Brogden Road (SR 1127) Corridor

Corridor Role and Future Function

Brogden Road is expected to transition from a low-volume rural roadway to a more active connector corridor as development progresses and regional connectivity improves.

While the corridor will continue to serve local access needs, particularly for residential areas, planned improvements (including the potential I-85 interchange) indicate a future role as a secondary access route to the regional network.

This anticipated change informs the recommended approach of implementing near-term safety improvements while preserving flexibility for future capacity and connectivity enhancements.

Corridor Overview

Brogden Road functions as a local-to-collector roadway providing access to residential areas and connecting to NC 56 and I-85. The corridor is characterized by rural roadway conditions, frequent curves and grades, limited shoulders, and constrained sight distance conditions.

The evaluation identified that Brogden Road currently operates with limited geometric capacity and several safety-related constraints, which are expected to become more pronounced as development increases.

Key Issues and Needs

The following primary needs were identified along Brogden Road:

- Limited sight distance due to horizontal and vertical curvature and roadside conditions
- Rural crash patterns, including nighttime rural crashes and identified high-risk locations
- Lack of pedestrian and bicycle accommodations, including gaps in regional connectivity
- Operational challenges at key intersections (e.g. NC 56, Hester Road, W. Lyon Station Road)
- High driveway density in constrained segments
- Flooding vulnerability at the Ledge Creek bridge crossing

Recommended Improvements

Recommendations for Brogden Road focus on low-cost safety improvements combined with targeted operational and multimodal connectivity, and long-term flexibility for future regional transportation improvements. The recommendations are shown in Figure 2.

Previous planning work recommends the following projects:

- The CAMPO CTP calls for the addition of a center turn lane on Brogden Road (SR 1127) from NC 56 (Lake Road) to Tally Ho Road (SR 1132). This project is unfunded.

Regional Connectivity and Potential I-85 Interchange

A key long-term consideration for the Brogden Road corridor is the potential development of a new interchange at I-85. While this concept requires further study and coordination with NCDOT and FHWA, it presents an opportunity to improve regional connectivity and provide additional access within the North Falls Lake study area.

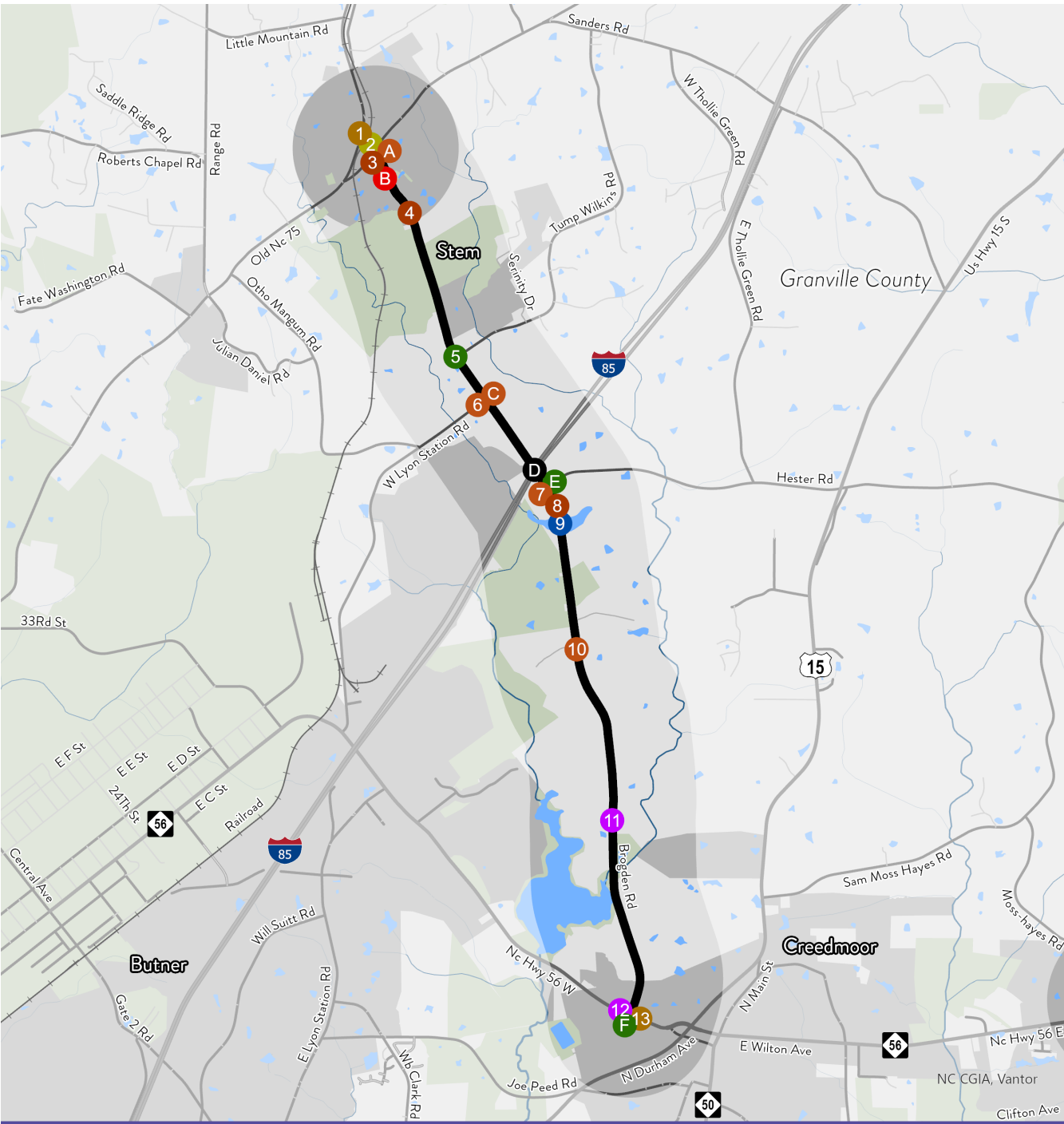
While multiple interchanges exist along I-85 in the broader area, access for trips originating from or destined to the Brogden Road corridor and surrounding portions of the study area is primarily served by the NC 56 interchange. The spacing and connectivity of adjacent interchanges limit their ability to serve these local travel patterns, resulting in a concentration of demand at the NC 56 interchange for this portion of the network.

As growth continues in the surrounding areas, this interchange is expected to experience increased demand, resulting in higher congestion levels and operational challenges. While the rate and location of future development in the Brogden Road corridor may vary, providing an additional access point at Brogden Road would introduce greater flexibility into the transportation network, allowing it to better accommodate a range of potential growth scenarios and travel patterns over time.

A future interchange at Brogden Road could:

- Provide an additional access point to I-85, reducing reliance on the NC 56 interchange
- Provide an additional route option for trips originating from or destined to developing areas along Lyon Station Road, Brogden Road, and adjacent corridors, with the potential to redistribute some traffic demand across the network.
- Help reduce localized congestion and queuing at the NC 56/I-85 interchange by providing an alternate access option
- Improve access to developing areas along Brogden Road, Lyon Station Road, and adjacent corridors
- Support emergency response access and regional connectivity.

Figure 2. Brogden Road Corridor Recommendations



Brogden Road Corridor Multimodal Transportation Recommendations

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|---|---|-----------------------------|--------------------|
| ① Recommendation as part of this study | ● At-Grade Rail Crossing | ● Cross-section Improvement | ● New Intersection |
| ② Recommendation identified as part of the previous plans | ● Bicycle and Pedestrian Accommodations | ● Intersection Improvements | ● Turn Lanes |
| | ● Bridge Improvement | ● New Interchange | ● Warning Signage |
| | | — Study Corridor | — Railroad |

The interchange concept is consistent with previous planning efforts, including the I-85 Future Interchange Location Analysis, and generally supports broader MTP goals related to regional mobility and network redundancy.

This recommendation is conceptual and intended for long-term planning consideration only. Additional feasibility analysis, traffic modeling, environmental review, interchange spacing analysis, and coordination with NCDOT and FHWA would be required before advancing the concept further.

Access Management Strategy at Proposed I-85 Interchange

The long-term effectiveness of a future interchange would depend heavily on how access along Brogden Road and Hester Road is managed over time. Without proactive access management, incremental development could introduce closely spaced driveways and frequent turning movements, ultimately reducing the operational benefits of the interchange and degrading corridor safety.

The following strategies are intended to guide future development in a way that accomplishes the following:

- Preserves the functional integrity of Brogden Road and Hester Road
- Supports orderly and coordinated growth
- Minimizes future retrofit costs and operational issues

Driveway Spacing

Establishing driveway spacing expectations early helps prevent unsafe access patterns as traffic volumes increase.

- Limit new driveways within 1,000 feet of interchange ramp terminals
- Restrict access within this area to right-in/right-out operations only, where necessary
- Direct full-movement access to locations farther from ramp terminals or to future secondary streets

Shared Driveway and Access Consolidation

Coordinated access planning across parcels reduces the number of conflict points and improves overall corridor safety.

- Encourage shared driveways between adjacent properties
- Limit parcels to one driveway, unless additional access is justified
- Plan access comprehensively during subdivision or rezoning rather than on a parcel-by-parcel basis

Internal Cross-Access and Circulation

Internal connectivity between sites reduces the need for short trips to re-enter the arterial roadway

- Require cross-access connections between adjacent developments
- Incorporate:
 - » Internal service drives or rear access lanes
 - » Stub connections to future development parcels
 - » Circulation systems that allow movement between sites without returning to Brogden Road or Hester Road

Preference for Secondary Street Access

As development occurs, reliance on direct access to Brogden Road should be reduced.

- Encourage new development to take access from local or collector streets rather than directly from Brogden Road or Hester Road where possible
- Minimize direct driveway connections as alternative access becomes available

Management of High-Traffic-Generating Uses

Certain land uses can introduce high volumes of turning movements that negatively affect traffic operations near interchanges.

- Carefully evaluate uses such as:
 - » Gas stations
 - » Convenience stores
 - » Drive-through restaurants
- Consider:
 - » Restricting these uses near ramp terminals, or
 - » Requiring access via secondary streets

Summary

The evaluation indicates that most identified issues along Brogden Road are related to roadway geometry, access conditions, localized crash patterns, and future development pressure rather than existing capacity deficiencies.

As a result, the corridor is best served through a strategy focused on:

- Near-term safety enhancements and low-cost operational improvements
- Incremental cross-section and access management upgrades
- Improved multimodal connectivity
- Long-term coordination with future regional transportation projects