Functional Classification Map Update (Task 4.1)

THE GRAND VISION™
Land Use & Transportation Strategy

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1.1 Introduction

As the region grows and develops over time, there are roadways that will change in function within the regional transportation network. In some cases, it will be appropriate to change the National Functional Classification (NFC) designation for the road segment. This plan is not intended to suggest immediate changes but rather to identify roadways that are likely to change over time based on projected increases in traffic growth rates or based on the future land use pattern described in the regional Vision.

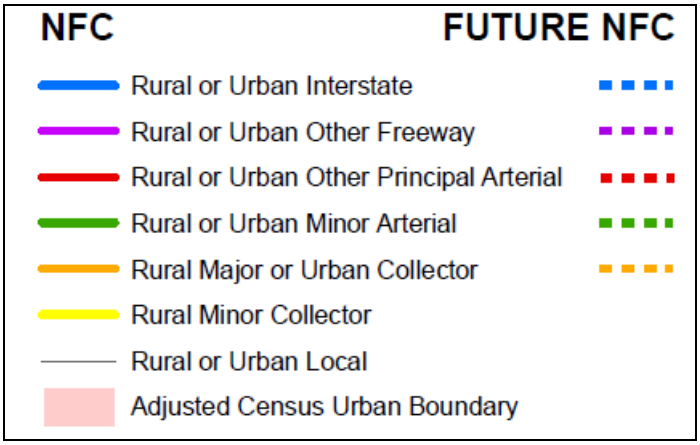
Too often, land use planning and transportation planning are conducted in a parallel manner in separate silos with no opportunity to share information. This plan is intended to be a resource for local governments, regional transportation agencies and the Michigan Department of Transportation (MDOT) to assist with bridging the gap between the two planning efforts. The information provided here will help transportation planners anticipate functional changes of roadways in the region.

These transportation observations and recommendations applied to the December 2009 NFC maps prepared by MDOT are based primarily on two reports from the Grand Vision project. First is the *Travel Demand Methodology Report* by Kimley-Horn Associates (KHA). The report explains the regional Travel Demand Model (TDM) development and output. It provides information about how the TDM was validated and projected future traffic volumes in four regional growth scenarios. This report is used as the basis for identification of roadways in **Section 1.3**. The second resource is the preferred future regional development scenario presented in the Vision document. This future vision of a village-focused future development pattern serves as the basis for the observations presented and the roadways identified more generally in **Section 1.4**.

1.2 Functional classification

Functional classification is the process by which the roadways are grouped into classes, or systems, according to the character of service they are intended to provide. These classifications are critical because, in reality, the roadways do not function independently. Functional classification defines the role that any particular facility should play in serving the flow of trips through a transportation network. Having a classification system that describes how individual elements serve system users is a key component of regional transportation planning and roadway preservation. On a regional scale, a well-defined network of roadways and an accurate functional street classification map is critical to planning an integrated roadway network across multiple jurisdictions and with multiple stakeholders.

The NFC uses the following road designations:



Source: Michigan Department of Transportation

Functional classification is intended to represent the regional importance, priority and purpose of a facility within the roadway framework. In reviewing regional definitions, it is important to recognize the distinction between functional classification and design criteria. By definition, functional classification is intended to describe the role or function a given facility is intended to play within the overall system in terms of mobility provided, access function, points connected and the predominant type of trips served. Design criteria relates to the physical specifications of how a facility should be constructed in order to best meet that function. As such, functional classification has consistent meaning throughout the region, the state and the nation. Details of design criteria (or design standards) will have to be established and refined on a local scale within the context of environment and urban or rural character through which a facility passes. A single roadway may transition through different contexts, requiring different design treatments, while still maintaining a consistent function of connecting regional destinations.

The NFC system has been used with little modification for more than 25 years by federal agencies, national organizations and state and local agencies to set parameters for roadway function and design. The functional classification of a corridor broadly defines its design and operational characteristics as they relate primarily to the movement of motor vehicles. It is made up of arterials, collectors and local streets. These classifications also guide standards for levels of access, traffic control and law enforcement. Perhaps most importantly, the classification applied to a roadway through the NFC system is directly related to its eligibility for funding.

While this system is in place and directly tied to transportation funding, the concept of a single design standard for all road segments in a classification category is at odds with the Grand Vision's guiding principles. The Grand Vision emphasizes coordinated land use and multi-modal corridors that extend through multiple jurisdictions and land use types. Therefore, the traditional classification system does not adequately reflect this approach to the planning and design of transportation facilities. Specifically, these conflicting elements have been identified:

- The functional classification definitions are expressed primarily in terms that relate to motorized transportation and offer little or no direction with regard to how each mode (pedestrian, bicycle, auto/truck, transit) is anticipated to operate.
- The functional classifications are affected by the area types (urban or rural) they serve and traverse, but are not explicit in terms of the types of land uses they are suitable to serve or abut, which leads to some roadways appearing to be out of context with the areas they are serving.
- Many of the design standards commonly associated with the traditional functional classification system (e.g., access spacing, design speed) do not foster the desired environment or do not lead to system efficiency.

Nonetheless, the NFC system is an established part of the federal transportation funding network and is not likely to change in the near future. In general, the integration of land use and context can be accomplished within this traditional system by augmenting the functional designations with recommended design elements and operational changes to provide a more balanced environment. The discussion in this report of NFC changes to roads applies to road function and the future need for increased funding. It does not assume an associated design standard.

1.3 Transportation corridors identified with the TDM output

The TDM provides traffic volumes along roadways for 2007 and for 2035. By comparing modeled volumes from the approved 2007 validation run to the 2035 village scenario model run, growth rates were calculated from 2007 to 2035. This calculation (hereinafter *traffic growth rates*) and the regional growth pattern makes some roadways likely candidates for upgrades within the NFC classification system over time. Note that the higher classification level is a reflection of the increasing importance of the link as a transportation route in the region but is not associated with any specific design recommendation. A chart showing this calculation based on the TDM is included as **Exhibit A**. The 2009 NFC maps for the six-county Grand Vision area are included as **Exhibits B-G**.

The M-22 route from the intersection of US-31 and M-37 north along the east coastline of Leelanau County is one corridor that may be reclassified from a minor arterial to a principal arterial over time. See attached **Exhibit F**. The traffic growth rates between M-72 and Cherry Bend Road show an increase of 41.33%. The traffic growth rates from Cherry Bend Road north to Bingham Road show a projected increase of 29.10%. Also, this road connects several village developments shown in the regional Vision including the population node at Greilickville as well as the villages of Suttons Bay and Northport. Based on both the projected traffic growth rates and the regional land use vision, it may be appropriate to reclassify this road to the principal arterial category in the future. See attached **Exhibit H**.

This observation comes with an additional note. This route is a beautiful, scenic route along the West Bay with changing topography. The future designation of this route as a principal arterial will make it eligible for more funding but does not equate to a plan to widen the road. The concepts of road classification and road design need to remain separated.

The question of east-west mobility in the region was a topic of conversation before and during the Grand Vision. The second route identified here is a series of roadway links that provide an east-west path across the south side of Traverse City: Beitner Road to Keystone Road to Hammond Road to 3 Mile Road. The route could be extended to 4 Mile using the same rationale. See attached **Exhibit D**. This path connects two principal arterials both west to east and east to west. Using these road corridors, US31 (Benzie Highway) on the west is connected to US-31/M-72 (Grandview Parkway) on the east. M-72 provides a route east and connects to the US-127 freeway. US-31 (Benzie Highway) turns south in Benzie County and provides a connection to the US-31 freeway beginning in Ludington.

Along this route, the extension of Hammond Road to Keystone Road will create a new link in the street network grid. The new connection in the grid street network provides more options for circulation in the urban core including east-west travel movement. The increase in travel path options allows more cars to choose between an east-west route on Hammond Road or on S. Airport Road.

Keystone Road between Birmley and Hammond shows a traffic growth rate of 219.33%. Traffic growth rates on Hammond Road show an increase of 36.23%, 47.47% and 52.55% along the roadway segments between Garfield and 5 Mile. Traffic growth rates on S. Airport Road from LaFranier to 3 Mile also increase but at a much lower rate: 2.47%, 13.35% and 12.97% by roadway segment (see **Exhibit A**). The increase in traffic growth rates on Hammond Road indicates that it will become a more heavily travelled road over time. The two east-west routes may be sharing the traffic. Some of these trips are local trips and some of them are through trips on each corridor. When the regional Vision is applied to these options, however, the identification of an east-west through route for vehicular traffic further from the core city center is beneficial. See attached **Exhibit H**.

While the S. Airport Road corridor will carry some through traffic, the regional vision describes it as a multi-modal, urban corridor with nodes of dense development at major intersections. It calls for design changes to be made over time within the roadway and to the adjacent land use to encourage pedestrian, bicycle and transit use. The roadways that make up this east-west corridor—Beitner Road to Keystone Road to Hammond Road to 3 Mile Road—are currently classified as minor arterials. Over time, it may be appropriate to reclassify them as principal arterials.

The current NFC map shows a proposed future bridge linking Hartman Road and Hammond Road as a future minor arterial. This future link on the NFC map should be considered for removal. The Grand Vision policy describes the community's vision for regional growth over the next fifty years and is based on public feedback received during an extensive public involvement process. It reads:

> *Most new roads are built in village and city centers to complete connections in the existing grid networks. Transportation tools to address capacity issues still include new roads and additional lanes, but have expanded to include transit, non-motorized, operational, traffic calming, and context sensitive solutions. This combination of solutions is making the best use of existing right-of-way and shrinking construction budgets while also considering aesthetics and community mobility needs.*

This policy language is not intended to preclude any single transportation improvement project but to provide a guideline to evaluate and prioritize options for transportation improvements. See attached **Exhibit H**.

1.4 Transportation corridors identified with Villages development pattern

The TDM is geographically limited to the City of Traverse City and the nine surrounding townships. The Grand Vision study area includes a six-county region. As a result, there are other corridors outside of the model area that may exhibit the same type of functional change over time based on the regional land use Vision. In this section, these corridors are identified and discussed.

The villages of Kingsley and Fife Lake are within Grand Traverse County but outside of the TDM model area. Kingsley is connected to Traverse City by S. Garfield Road, which is currently classified on the NFC as an urban collector. As the Village of Kingsley grows, S. Garfield Road may carry more traffic between the village and the city and may be appropriately reclassified as a minor arterial on the NFC map. There is a connection between Kingsley and Fife Lake that is already classified as a minor arterial except for a short link between M-113 and Fife Lake, which is classified as an urban collector. The minor arterial route connects Kingsley with US-131. The direct link between villages may also function as a minor arterial in the future as employment and housing grow in the two villages. The link on M-186 between M-113 and Fife Lake should be watched for potential reclassification over time. See attached **Exhibit H.**

Other links between villages should also be put on a “watch list” for reclassification on the NFC maps. As villages grow in the region and become independent communities with a diversity of housing and employment options, connections between villages may serve a different function in the region’s transportation system. In addition to the “hub and spoke” connections between villages and city centers, direct links between villages may function more as arterial connections. This could result from the addition of a single large employer or a mixed use development. There are examples of village to village connections in counties throughout the Grand Vision study area.

In Antrim County, most villages are already connected with arterial routes. The connection between Central Lake and Ellsworth is currently a collector and may become an arterial. In Benzie County, the connection between Beulah and Frankfort is currently classified as a minor arterial and may become a principal arterial. The same can be said about the connection between Manton and Mesick in Wexford County. The road is currently a minor arterial but may be reclassified as a principal arterial in the future if employment and housing growth increase the direct personal and commercial travel between the two destinations. Between counties, the connection between the villages of Fife Lake and Buckley may also change in function if the villages become housing and employment centers.

This section discusses connections between villages as a component of the Grand Vision’s regional growth scenario. The converse should also be considered when proposed changes are considered for the NFC map. The elevation of roads in functional classification based simply on growing traffic volumes could be contrary to the regional land use and transportation vision. If traffic volumes are a result of sprawling commercial and residential development along the corridor, improvement of the road could

support or encourage a continuation of that land development pattern. A coordinated transportation and land use approach will consider whether the link is connecting established development nodes.

1.5 Grand Traverse County Road Commission proposed changes

The Grand Traverse County Road Commission (GTCRC) and other county road commissions play a role in NFC road classification. As the region grows and road functions change, the Road Commission recommends changes to MDOT regarding changes to the NFC road classification categories. Proposed road classification changes are evaluated based on established criteria including Average Daily Traffic (ADT) levels, connection to the larger road network and service to traffic generating uses. The decision to change categories is made by MDOT within a framework provided by the Federal Highway Administration (FHWA).

FHWA has requirements for the percent of road mileage within each state that can be assigned to each road category. Currently, the total route mileage of all arterials and collectors combined should be no more than 35% of total route mileage. Conversely, local route mileage should be 65% or greater of total route mileage. FHWA requirements are for the state overall and it is MDOT's policy to apply this ratio equally to regions throughout the state. The Traverse City Urban Area, or the TC-TALUS area, currently has less than 65% designated as local route mileage. This limits the opportunity to shift routes to arterial and collector categories even when the change is warranted by other criteria. Another factor that can impact classification decisions is whether the road is in an area classified as "rural" or "urban." Urban areas are shown on the NFC maps as a pink shaded area. It has been the practice of MDOT to limit that classification of *urban or other principal arterials* in rural areas to state trunklines.

The Grand Vision is not a regulatory tool but a resource to support integrated transportation and land use planning. An overarching goal of the Grand Vision is to locate growth in villages and cities in the region. In these areas, it is reasonable to expect the development of new traffic generating uses. As a result, some village to village connections and village to city center connections are likely to become more significant. Within the existing regulatory confines, the Grand Vision can provide guidance and support for transportation planning recommendations.

1.6 Conclusion

The Grand Vision provides a policy guide for regional growth over the next fifty years. The TDM provides traffic growth rates within the model area for 2035 model year. The combination of these two resources can be applied to the 2009 NFC map to identify transportation links that may be changed in functional classification over the current planning horizon. The TDM is an excellent tool for considering the "what if" scenario of the preferred regional growth scenario in 2035. Interpretation of the statistical results is always an important step in the evaluation process. The Grand Vision provides insight into community preferences and values that can be applied to the model results.

The choices made in the region related to transportation investment have direct impacts on the region's land use development pattern. Similarly, choices made in the region that impact land use patterns have a

direct impact on the travel demand on each roadway. Recognizing this connection, the Grand Vision was conceived and created as an integrated transportation and land use strategy. Successful implementation will depend on both land use and transportation strategies and actions.

A village development pattern and new development in the region's main cities is at the core of the regional vision for growth. Transportation planners should be aware of this preferred land use pattern. Roads that connect the growing population and employment centers may change from collectors to arterial routes. As this change happens over time, transportation links can be reclassified in the NFC system. This will elevate the road in terms of its role in the regional transportation system and provide access to additional funding sources to support its new role.

The NFC system is integrated into the federal system of funding roads and highways and is expected to remain in place throughout the planning horizon. From that perspective, the NFC map should be updated as the region grows over time. However, the NFC classification does not have to translate automatically into a single design standard for the associated category. The Grand Vision's guiding principles support a complete streets approach to design that emphasizes multi-modal transportation options, especially in urban areas. According to these principles, the traditional NFC will need to be augmented with operational changes to provide a more balanced street function for pedestrians, bicyclists, transit users and motorists. These operational policies should be considered and implemented by local road agencies in cooperation with the Michigan Department of Transportation.

Exhibit A

2007 to 2035 TDM Growth Rates

Exhibits B-G

Existing NFC Maps

Antrim County
Benzie County
Grand Traverse County
Kalkaska County
Leelanau County
Wexford County

Exhibit H

Potential NFC Changes