

**GENESEE TRANSPORTATION COUNCIL**

**RESOLUTION**

**Resolution 19-28** *Accepting the Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment as evidence of completion of UPWP Task 5751*

**WHEREAS,**

1. The *FY 2019-2020 Unified Planning Work Program* includes Task 5751, Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment, for the purpose of determining the vulnerability of local bridges on non-federal aid roadways in the Genesee-Finger Lakes Region to natural and human-caused hazards;
2. Said Task included an inventory of local bridges, an analysis of anticipated natural and human-caused hazard extents and impacts, an assessment of the vulnerability of local bridges to anticipated hazards, and the identification of implementation strategies for preventing and/or mitigating hazard impacts on those bridges;
3. Said Task has been completed and has resulted in the *Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment*, which identifies specific actions to prevent and/or mitigate the impacts of hazard events on those bridges; and
4. Said Study has been reviewed by GTC staff and member agencies through the GTC committee process and has been found to be consistent with the goals, objectives, and recommendations of the Long Range Transportation Plan.

**NOW, THEREFORE, BE IT RESOLVED**

1. That the Genesee Transportation Council hereby accepts the *Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment* as evidence of completion of UPWP Task 5751; and
2. That this resolution takes effect immediately.

**CERTIFICATION**

The undersigned duly qualified Secretary of the Genesee Transportation Council certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Genesee Transportation Council held on June 13, 2019.

Date \_\_\_\_\_

\_\_\_\_\_  
KEVIN C. BUSH, Secretary  
Genesee Transportation Council

# Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment



**GENESEE TRANSPORTATION COUNCIL**

**Executive Summary**

**June 2019**

# Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment

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## *GTC's Commitment to the Public*

*The Genesee Transportation Council assures that no person shall, on the grounds of race, color, national origin, disability, age, gender, or income status, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity. GTC further assures every effort will be made to ensure nondiscrimination in all of its programs and activities, whether those programs and activities are federally funded or not.*

## *En Español*

*El Consejo Genesee del Transporte asegura completa implementación del Título VI de la Ley de Derechos Civiles de 1964, que prohíbe la discriminación por motivo de raza, color de piel, origen nacional edad, género, discapacidad, o estado de ingresos, en la provisión de beneficios y servicios que sean resultado de programas y actividades que reciban asistencia financiera federal.*

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## EXECUTIVE SUMMARY

The purpose of the *Genesee-Finger Lakes Regional Local Bridge Vulnerability Assessment* is to assess the vulnerability of local bridges located along non-federal aid roadways in the Genesee-Finger Lakes Region to natural and human-caused hazards and propose strategies for preventing and/or mitigating the impacts of hazard events on those bridges. Further, this assessment provides an on-site assessment of nineteen local bridges, selected by county highway superintendents.

In 2016, Genesee Transportation Council (GTC) completed the *Genesee-Finger Lakes Regional Critical Transportation Infrastructure Vulnerability Assessment*, which assessed the vulnerability of federal-aid eligible roads and the bridges on those roads, as well as regionally significant transportation facilities and assets, to natural and human-caused hazards. That project focused on bridges located along roads eligible for federal-aid funds; whereas this study focuses on those bridges located along non-federal aid local roads (i.e. “local bridges”). This study uses the same methodology and format as the Regional Critical Transportation Infrastructure Assessment.

*The Regional Local Bridge Vulnerability Assessment focuses on those bridges located along non-federal aid local roads (i.e. “local bridges”) using the same methodology and format as the Regional Critical Transportation Infrastructure Assessment.*

This Local Bridge Vulnerability Assessment acts as a supplement to the Regional Critical Transportation Infrastructure Vulnerability Assessment and using the same methodology, data, and assumptions as the regional study, thus for purposes of avoiding duplication, much of the explanation surrounding the purpose of conducting vulnerability assessments and the discussion and extent of hazard profiles outlined in the Regional Critical Transportation Infrastructure Vulnerability Assessment is incorporated into this study by reference.

The participants of this study include planning officials and highway superintendents and their staff from Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates counties along with GTC staff.

GIS data was used to identify local bridges, querying BINs that begin with the number “2” or “3” to develop a list of local bridges. Then, based upon information collected from existing plans and studies, data from the Regional Critical Transportation Infrastructure Vulnerability Assessment, and input received from county highway superintendents and officials, an inventory of existing local bridges was confirmed. Following discussions with Monroe County officials, it was determined that several bridges in

Monroe County that had BINs that began with the number "1" were actually local bridges and should be included in this study. This resulted in the identification of 712 local bridges in the region.

All 712 local bridges were numerically scored using a database developed using Microsoft Excel and then graphically portrayed by joining the Microsoft Excel database with the GIS data using the same methodology that was used in the Regional Critical Transportation Infrastructure Vulnerability Assessment. Each local bridge was scored for its vulnerability based upon the criticality of the bridge and its exposure and sensitivity to a variety of natural and human-caused hazards. There are four vulnerability components: Criticality (how critical the bridge is to the transportation network), Sensitivity (the severity of the impact that a hazard event has on a bridge), Exposure (how often the bridge is or potentially will be exposed to hazard events), and Local Input (local importance and as identified in a local plan or by local stakeholders).

Once all of the local bridges were scored, the bridges were then placed into a category, based on their score, to identify their level of vulnerability, as follows:

*Local Bridge Vulnerability Categories*

- High Vulnerability (score of 200 or greater)
- Moderately High Vulnerability (score of 175-199)
- Moderate Vulnerability (score of 150-174)
- Moderately Low Vulnerability (score of 125-149)
- Low Vulnerability (score of under 125)

For the purposes of this study, focus is placed on those local bridges that were identified as having a "high" or "moderately high" vulnerability. Across the region, there were 14 local bridges identified as being highly vulnerable and 29 local bridges identified as being moderately highly vulnerable. These are explained further in Chapter 4; the map on the following page portrays the results of the vulnerability scoring of all local bridges throughout the region.

As part of this Local Bridge Vulnerability Assessment, certified engineers from WSP conducted site visits on nineteen bridges across the region that county highway superintendents identified as bridges that they'd like to have further assessment undertaken on. These assessments are discussed in Chapter 5.

Finally, this report offers strategies that can be applied to local bridges that were identified as being most vulnerable in order to prevent or mitigate impacts from potential natural and human-caused hazards.

