



Introduction

In September 2017, the Regional Intergovernmental Council (RIC) adopted its Kanawha – Putnam 2045 Regional Transportation Plan (LRTP). A region's Long Range Transportation Plan is the community's comprehensive guide to developing a regional transportation system that not only accommodates the current mobility needs of the area's residents but also looks to the future to anticipate where new needs will arise. In response to federal mandates and the desires of local residents, the *LRTP* addressed all modes of transportation including automobile, bicycle, pedestrian, transit, and freight movements.

The *LRTP* was shaped not only by federal legislation but also the direction of state and local agencies. The overall planning process was governed by the Fixing America's Surface Transportation Act (FAST). The federal government requires long-range transportation plans to be updated every four or five years to reflect the region's changing needs and priorities. The *LRTP* built upon past long range transportation plans for Kanawha and Putnam Counties.

Following the adoption of the *LRTP*, the State of West Virginia voted on October 7, 2017 to allow the sale of \$1.6 billion in general obligation bonds. This will enable the West Virginia Department of Transportation (DOT) to construct many large-scale transportation projects throughout the state. One of these projects is the new Culloden Interchange along I-64 in Cabell County. Transportation Planning for Cabell County is managed by the KYOVA Interstate Planning Commission and the Culloden Interchange is listed in the KYOVA Long-Range Transportation Plan. The project foot print will extend over the Cabell County line into Putnam County and therefore needs to be added to the RIC LRTP through this addendum.

The *L RTP Addendum* consists of the following elements:

- **Planning Process** – documents the coordination and outreach efforts associated with the development of the *Addendum*
- **Highway Recommendations** – provides descriptions and details of the project being added in the *Addendum*
- **Financial Plan** – incorporates modified highway recommendations into the financially constrained L RTP
- **Air Quality Conformity** – assesses the qualitative Air Quality Analysis performed for the additional project.

Planning Process

The success and effectiveness of the L RTP and air quality conformity process depends on receiving quality feedback from stakeholders. At the outset of this process the existing Interagency Consultation group was consulted to discuss the methodology for the air quality conformity analysis, as well as the assumptions for project descriptions. The Interagency Consultation group consists of representatives from the West Virginia Department of Transportation (WVDOT), West Virginia Department of Environmental Protection (WVDEP), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Environmental Protection Agency (EPA), and RIC staff.

The group was notified of the new proposed highway project and the recently completed planning study (Culloden Interchange Study). An Interagency Consultation conference call was held on December 5, 2017 which included discussion about the project details and air quality analysis. Concurrence was reached that the proposed interchange at Culloden would have insignificant impacts to air quality, specifically for PM_{2.5}, given the previous air quality analysis efforts detailed below.

Highway Recommendations

The *L RTP* presented a set of multimodal recommendations addressing bicycle, pedestrian, transit, freight, and roadway issues. For the *Addendum*, one project was identified for addition to the Kanawha – Putnam 2045 Regional Transportation Plan.

- Culloden Interchange – Construct a new interchange on I-64 at Benedict Road (CR 60/21)

This project is primarily located in Cabell County; however, its proximity to the county boundary will impact the transportation network in Putnam County. The Culloden Interchange Study was developed by AECOM for WVDOT with the purpose of analyzing congestion issues identified in previous studies conducted by WVDOT and the RIC. An Air Quality Analysis was performed during the study and estimated a reduction in fuel consumption and an improvement in air quality after the construction of the new interchange.

Financial Plan

Federal legislation requires a financial plan be performed as a part of a Metropolitan Planning Organization’s (MPO) Long Range Transportation Plan. The financial plan shows proposed investments that are realistic in the context of reasonably anticipated future revenues over the life of the plan and for future network years. Meeting this test is referred to as “financial constraint.” These funding scenarios will remain unchanged for the *Kanawha – Putnam 2045 Regional Transportation Plan Addendum*.

Air Quality Conformity

Currently the Charleston, WV Urbanized area is in attainment for all criteria pollutants and under a maintenance plan for the 2006 PM_{2.5} standard. Additional documentation may be found in the full LRTP.

Air quality and fuel consumption analysis was performed for 2013 Existing, 2040 No Build, and 2040 Build Conditions during the AM and PM Peak Scenarios utilizing TransModeler and a Comprehensive Modal Emissions Model (CMEM). The air quality and fuel consumption results are shown in *Tables 5 and 6*. There is an overall increase in emissions and fuel consumption from the 2013 Existing to 2040 No Build Conditions, and fuel consumption and emissions decrease from 2040 No Build to 2040 Build Conditions. The AM Peak scenario results show a higher reduction in fuel consumption and emissions compared to the PM Peak scenario. There was a higher reduction of delay experienced in the AM Peak from the 2040 No Build to 2040 Build conditions than the PM Peak.

Table 5: Fuel Consumption Analysis Results

Emissions	AM Peak			PM Peak		
	2010 Existing	2040 No Build	2040 Build	2010 Existing	2040 No Build	2040 Build
Fuel (g)	874,966	1,831,256	1,182,403	1,002,188	1,732,879	1,687,049

Table 6: Air Quality Analysis Results

Emissions	AM Peak			PM Peak		
	2010 Existing	2040 No Build	2040 Build	2010 Existing	2040 No Build	2040 Build
HC (g)	26,148	38,811	29,457	25,794	37,766	33,264
Nox (g)	17,992	25,653	21,935	18,426	25,575	23,577

Based on the current attainment status of the region, which is detailed in the full LRTP, as well as the feedback from the interagency consultation group, it has been concluded that the Addendum conforms to federal and state air quality requirements.