

Town of Landis

Multimodal Demonstration Project

KIMBALL ROAD

Patterson Street to Main Street

Improvement Type

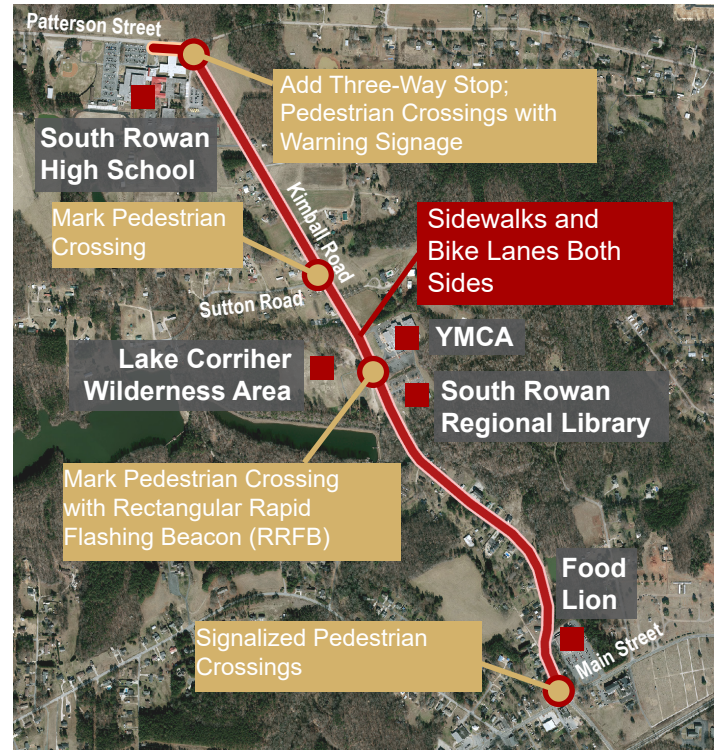
Sidewalks, Bike Lanes, and 4 Crossing Improvements (including a signal, a Rectangular Rapid Flashing Beacon (RRFB), traffic calming, and warning signage)

Cost Estimate*

~\$7,175,000 (in 2023 dollars)

~\$875,000 for design; ~\$250,000 for ROW; ~\$550,000 for utilities, ~\$5,500,000 for construction

*The planning-level cost estimate was developed using the P7 NCDOT Bicycle-Pedestrian Cost Estimation Tool. This tool assesses a wide variety of factors and characteristics of a project to generate a cost estimate that includes design, right-of-way acquisition, utilities work, and construction. During the preliminary engineering phase of a project, a more accurate cost estimate should be created.



Current Condition

This two-lane section of Kimball Road stretches from Patterson Street to Main Street and provides access across Grants Creek to South Rowan High School, the J. Fred Corriher YMCA, South Rowan Regional Library, the Lake Corriher Wilderness Area, and Food Lion. Kimball Road otherwise mostly serves rural and residential areas and sees about 3,000 vehicles a day. Speed limits differ along the segment, with 35 miles per hour (mph) limits south of Grants Creek and 45 mph limits north of it.

There are currently no multimodal accommodations or paved shoulders along this segment, no designated safe ways to cross Kimball Road to get between the YMCA or library and the wilderness area, and no safe walking or biking routes to or from South Rowan High School from surrounding communities.

Recommendations

The addition of sidewalks and bike lanes along Kimball Road, with marked ADA-accessible pedestrian crossings at Main Street, at the YMCA, across Sutton Road, and at Patterson Street, would provide a safe connection for people walking or biking to the high school, YMCA, regional library, and/or wilderness area from surrounding areas and other parts of town.

The crossings at Main Street should include pedestrian signal heads and connect to the existing sidewalk across Main Street on the south side of Coach Deal Road to allow connections across the railroad.

Based on low expected traffic and laneage, the crossing at the YMCA should include a Rectangular Rapid Flashing Beacon (RRFB) and warning signs prior to the crossing in both directions. As RRFBs are most effective on roads with speeds of 35 mph or less, the speed limit should be lowered along all of Kimball Road to 35 mph, matching the existing speed limit south of Grants Creek. Additional traffic calming measures should be considered.

To accommodate crossings near South Rowan High School, the intersection between Patterson Street and Kimball Road should be turned into a three way stop, with crosswalks behind stop lines across Kimball Road and across Patterson Street and with pedestrian crossing warning signs approaching the intersection in all directions. The turn radius for right turns from Patterson Street to Kimball Road should be reduced to encourage slow turns and pedestrian awareness.

Photosimulation

Existing Condition

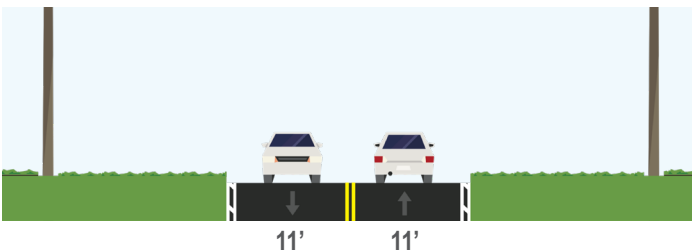


Photosimulations of Preferred Future Design

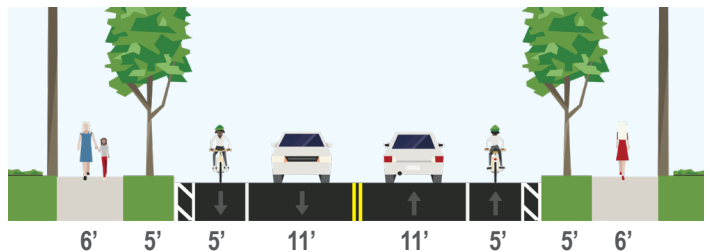


Illustrative Cross-Sections

Illustrative Current Cross-Section



Illustrative Preferred Cross-Section



Additional Constraints and Challenges

In order to fit both pedestrian and bike accommodations the into the 60' right of way while matching NCDOT typical cross-section standards, Kimball Road will need to be upgraded to curb and gutter.

Kimball Road is lined with utility poles along most of the segment. While there is enough space between the road and the utility poles that relocation is likely unnecessary, the Town would need to work closely with the utility provider in design.

Much of the southern side of Kimball Road is fairly hilly and may pose topography challenges. In addition, there are areas where space for adding sidewalks and bike lanes is limited due to ponds, ditches, vegetation, or property fences. Sidewalks may need to be closer to the street than typical cross-sections in some places. Kimball Road is also lined with several driveways on both sides of the road that would need to be retained and safely incorporated in sidewalk designs.

The recently rebuilt existing bridge over Grants Creek appears to have been designed with paved shoulders and with space for multimodal accommodations in mind, so it should be possible to incorporate bike lanes and sidewalks in the space provided; however, this would need to be confirmed during design. If the bridge is unable to accommodate them, there would be additional costs involved in bridging Grants Creek.

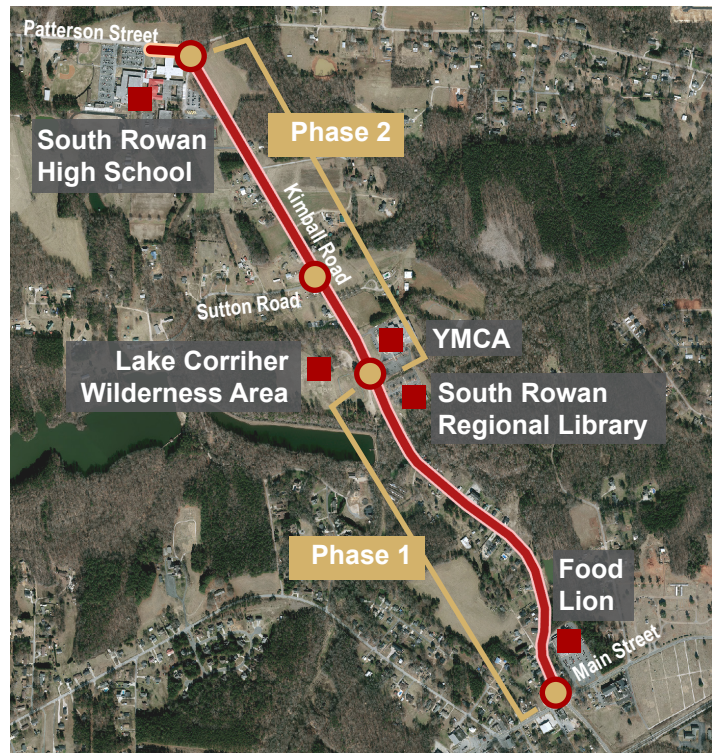
To fully provide a safe route to school, the Town would need to work with South Rowan High School to ensure the sidewalk continues onto school property and connects to the school as needed.

Potential Phasing

Due to the length of the corridor, it may make sense to phase improvements. Based on connections to existing sidewalks, phasing should begin with the southern side connecting the YMCA and Regional Library to the existing sidewalk at Main street and Coach Deal Road.

Phase 1: Construct the curb, gutter, bike lanes, and sidewalk between Main Street and the YMCA and Regional Library, including the crossings at Main Street and at the YMCA/ Library

Phase 2: Construct the curb, gutter, bike lanes, and sidewalk between the YMCA and Regional Library and Patterson Street, including the crossing at Patterson Street and the connection to South Rowan High School



Alternative Designs

One alternative possibility for the corridor would be to include a 10-foot wide multi-use sidepath on the eastern side of Kimball Road in place of the 6-foot wide eastern sidewalk and bike lanes. This would separate bikes from traffic, potentially enhancing bike safety along the corridor. However, this would come with the tradeoff of likely requiring additional right of way if designed according to NCDOT typical cross-sections.