SCOPE OF ENGINEERING SERVICES
Albemarle County
Project Order No. XX
Richmond Road (Route 250) Pedestrian Crossing Feasibility Study

The following project order will be completed in accordance with the Contract for Professional Engineering Services for discrete projects, Numbered 2011-12163-10, dated March 21, 2011, between Albemarle County (hereinafter referred to as the County and/or the Client) and KIMLEY-HORN & ASSOCIATES, INC (hereinafter referred to as Kimley-Horn).

BACKGROUND/UNDERSTANDING:
Kimley-Horn understands that the County desires to complete a pedestrian crossing feasibility study on Richmond Road (US 250) generally between I-64 and the Rivanna River (refer to **Figure 1**).

The purpose of this study is to:
1. Determine where pedestrian crossing(s) on Richmond Road are needed within the corridor, and
2. Determine the type of pedestrian improvements needed to facilitate pedestrian crossings at the identified locations.
3. Recommend potential long term locations for future pedestrian overpass of Richmond Road.

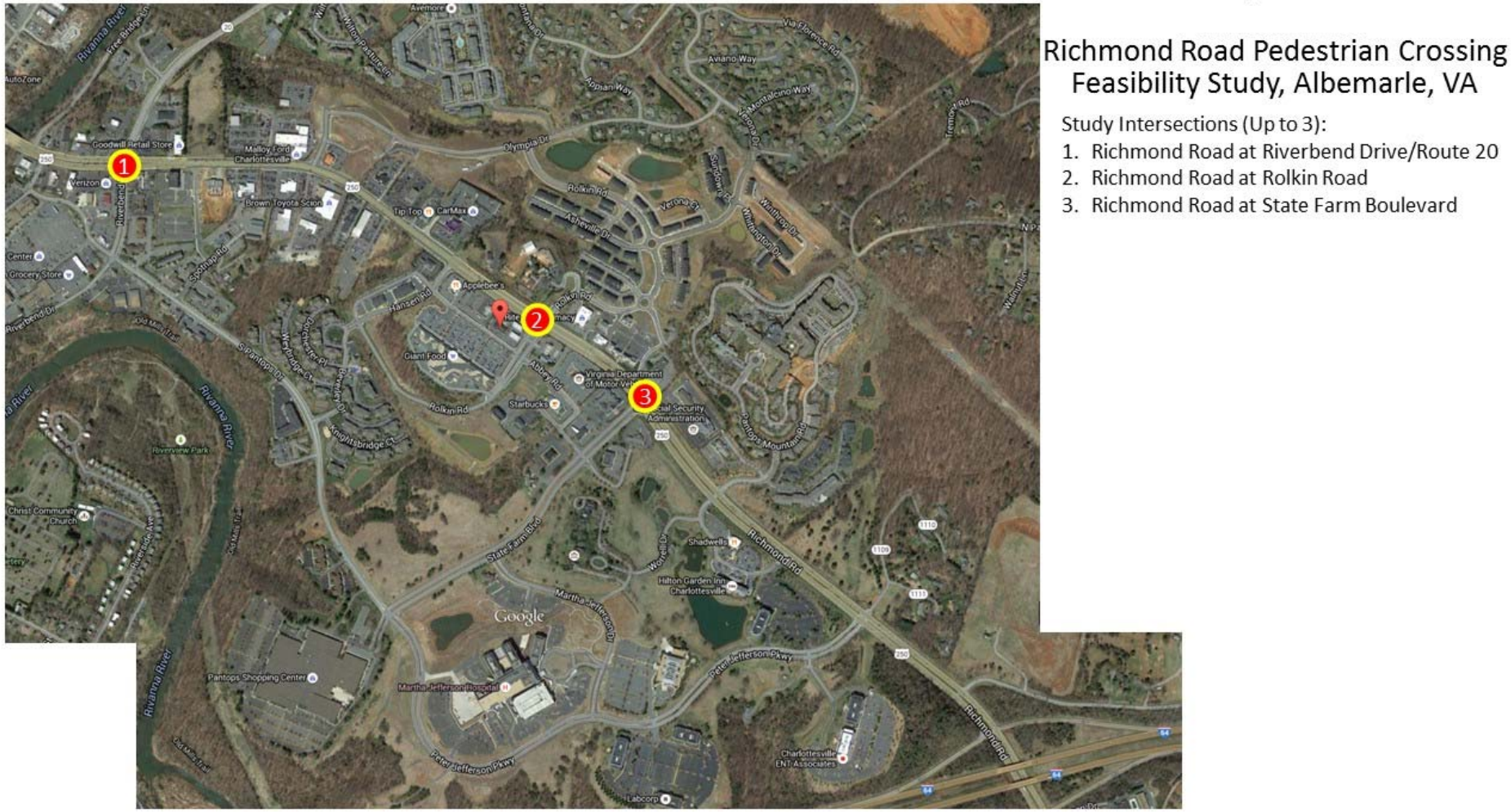
PROJECT SCOPE

CONSULTANT SERVICES

Assumptions
The following assumptions were made in preparing this scope of services:
- The County will coordinate with VDOT to identify representatives from the Virginia Department of Transportation (VDOT) Charlottesville Residency and NWRO Traffic Engineering to participate in this study.
- No public involvement outreach will be conducted by Kimley-Horn for this project. Kimley-Horn will assist County staff with preparation for one meeting with the Pantops Advisory Council. County Staff will facilitate and present findings to the Pantops Advisory Council.
- Up to three study intersections will be considered as part of this study. The following three study intersections have been identified (refer to **Figure 1**):
  1. Richmond Road (US 250) at Riverbend Drive/Route 20
  2. Richmond Road (US 250) at Rolkin Road
  3. Richmond Road (US 250) at State Farm Boulevard

  The County will coordinate with the Pantops Advisory Council to schedule the date and location of the meeting with the Pantops Advisory Council to present project findings by County staff.

Figure 1: Study Area and Intersections



- Operational analysis or simulation will not be conducted as part of this study.
- It is anticipated that the overall study duration will be approximately 7 months from the notice-to-proceed. It is anticipated that notice-to-proceed will be issued in January 2016.
- Traffic count data will be collected by subconsultant Peggy Malone & Associates.
- Report deliverables prepared by Kimley-Horn will be sent to the County and VDOT in electronic format only using the project FTP site. Materials for project meetings will be sent electronically to the County project manager and project representatives from VDOT.

The following information will be provided by the County and/or VDOT:

- Latest five years (2010 - 2014) of traffic crash data
- Available as-built traffic signal plans, signal installation date information and existing signal timing information for the three study intersections
- All relevant traffic and/or planning studies completed within the vicinity of the study corridor within the past 5 years

Task 1 – Project Management and Meetings

Task 1.1 – Project Management, Coordination & Meetings

This task consists of time required to administer the project including contracting; internal coordination and coordination with County and VDOT staff; supervision and general quality control; and project management responsibilities, including project organization and scheduling.

Kimley-Horn will develop a Microsoft Excel-based project work plan itemizing the project tasks and schedule required to complete each task. The project work plan will also identify milestones and essential elements for quality control and quality assurance. The project work plan will reflect a mutually agreeable schedule. For budget purposes, this task assumes a six (6) month delivery of the project from Notice to Proceed (NTP) to delivery of the final report.

Task 1.2 – Meetings

Task 1.2.1 – Project Meetings

Up to two Kimley-Horn staff members will attend the following two project meetings during the course of the project.

1. Kick-Off Conference Call – Kimley-Horn will conduct a kick-off conference (teleconference) call with County and VDOT staff to review the project scope, goals of the project, and to discuss key issues (i.e., overall project schedule, perceived problems/complaints regarding pedestrian activity within the corridor, etc.). The kick-off meeting will be held after receipt of Notice to Proceed based on County,

VDOT, and Kimley-Horn staff availability. Meeting minutes will be summarized by Kimley-Horn and shared with County staff via email submittal.

2. Technical Meeting - Kimley-Horn will attend one technical meeting with County staff following the substantial completion of the subsequent tasks. The intention of this meeting is to discuss findings and recommendations and allow for input from County and VDOT staff. It is assumed that this meeting will be held at the Albemarle County Office Building.

Task 1.2.1 – Pantops Advisory Council Meeting

Prior to finalizing the technical memorandum and recommendations, Kimley-Horn will prepare and brief County staff in advance of County staff's presentation to the Pantops Advisory Council. The purpose of this presentation is to present findings and draft recommendations from the study. It is assumed that the County will be responsible for coordinating with the Pantops Advisory Council and securing the meeting location. Kimley-Horn will provide presentation materials in PowerPoint format to the County at least two weeks prior to the proposed meeting date for review. Kimley-Horn will make one round of revisions to the meeting materials pending receipt of comments from the County. Comments from the meetings will be collected and summarized in electronic format by the County following the meeting. Kimley-Horn, in coordination with the County and VDOT, will make one round of revisions to the proposed recommendations based on comments received from this meeting.

This task does not include preparation and attendance of Kimley-Horn staff at a Pantops Advisory Council, Planning Commission, Board of Supervisors meeting, additional citizen's information meetings, and/or public meetings. If additional meetings are required, those will be considered as Additional Services.

Task 1 Deliverables

- Monthly progress reports to accompany invoices
- Microsoft Excel-based project work plan itemizing the project tasks and schedule
- Coordination calls with County project manager
- Kick-Off meeting meeting summary submitted in electronic PDF format
- Two Kimley-Horn representatives will attend the Technical Meeting

Task 1 Project Meetings

- Kick-Off Conference Call (up to 2 Kimley-Horn staff)
- Technical Meeting (up to 2 Kimley-Horn staff)

Task 2 – Data Collection

The purpose of this task is to collect relevant field data to be utilized in the subsequent project tasks.

Task 2.1—Data Collection

1. Turning Movement Counts (TMCs) – Kimley-Horn's subconsultant, Peggy Malone & Associates, Inc., will conduct one weekday (Tuesday, Wednesday, or Thursday) twelve-hour TMCs at up to three intersections. To capture the AM, Midday, and PM peak hours the proposed data collection time period is from 7:00 AM to 7:00 PM. The following three study intersections have been identified:
   1. Richmond Road (US 250) at Riverbend Drive/Route 20 (Signalized)
   2. Richmond Road (US 250) at Rolkin Road (Signalized)
   3. Richmond Road (US 250) at State Farm Boulevard (Signalized)

   Kimley-Horn will confirm count locations and times with the County and VDOT prior to beginning data collection efforts. TMCs will be conducted when schools are in session and will summarize vehicle (including heavy vehicles and buses) and pedestrian activity at each intersection.

2. Annual Average Daily Traffic (AADT) - Kimley-Horn will research recently published VDOT AADT counts (2014) for Richmond Street (US 250), Riverbend Drive/Route 20, Rolkin Road and State Farm Boulevard within the vicinity of the study corridor.

3. Crash Data Analysis - Kimley-Horn will coordinate with VDOT to obtain the five most recent years of crash data (assumed to be January 1, 2010 to December 31, 2014) on Richmond Road generally between I-64 and the Rivanna River. Sources from which the crash data is available consists of police reports (FR-300s) and the latest VDOT RNS-based crash tables.

   Kimley-Horn will analyze and summarize the following crash data at the three study intersections.
   - Kimley-Horn will summarize intersection crash data in tabular format for up to ten factors such as weather conditions, lighting conditions, type of collision, severity of crash, and other pertinent crash factors as necessary to aid in identifying crash patterns.
   - Kimley-Horn will develop collision diagrams for the three study intersections.
   - Crash rates for Richmond Road between I-95 and the Rivanna River will be developed and compared with statewide average crash rates for the appropriate functional classification of roadway.

4. Review of Existing Studies and Area Plans - Kimley-Horn will compile and review relevant studies and plans provided by the County and/or VDOT to supplement development of study recommendations and document in the final report.

Task 2.2—Field Inventories

Once data collection has been completed, Kimley-Horn will conduct a site field review of each intersection to observe potential safety and operational issues. Kimley-Horn will also conduct a site field review during the AM and PM peak periods to review the existing conditions in the corridor. Kimley-Horn will note observed pedestrian activity along the corridor. Potential preliminary pedestrian improvement recommendations will be noted during the site field review for further discussion with the County and VDOT.

Kimley-Horn will document the following information at each study intersection:

- Roadway and intersection configurations
- Traffic signal phasing and signal head displays
- Turning restrictions by time of day
- Documentation of safety-related issues (notes and photographs)
- Speed limits on each approach
- Sight distance issues will be identified and measured for up to three intersections
- Pedestrian and bicycle accommodations will be identified, if applicable
- Observation of traffic operations including vehicles, pedestrians, and bicycles
- Roadway and intersection geometrics and deficiencies
- Access and associated issues and concerns
- Documentation of signing and striping
- Potential for locating a potential future pedestrian overpass of Richmond Road

Measurements for the various roadway features will be based on a combination of both GIS information and spot measurements during the field reviews.

Task 2 Deliverables

- Raw traffic count data

Task 3 – Summary of Existing Conditions

Based on the available and aforementioned collected data, Kimley-Horn will summarize existing conditions and pedestrian deficiencies at each of the study intersections including physical and operational issues. The inventory of existing conditions will be established using GIS, collected traffic data, crash data, current land use data, and a visual survey. The existing conditions analysis will identify stakeholder concerns and priorities and validate assessments of existing conditions and hazards.

Task 3 Deliverables

- Existing Conditions section to be included in the Technical Memorandum
- Specific deliverables in addition to summary text include:
  - Summary of existing weekday AM, Midday, and PM peak hour TMCs in figure format
  - Corridor crash summary table, intersection collision diagrams, and corridor crash rate tables

Task 4 – Recommendations

Kimley-Horn will develop potential improvements as countermeasures to pedestrian related issues identified through existing conditions analysis and discussions with the County and VDOT. Specific recommendations will include:

- Recommended locations where pedestrian crossings should be provided
- Type of pedestrian improvements may include:
  - Traffic signal improvements (i.e., crosswalk installations, pedestrian signal heads and push buttons, pedestrian ramp accommodations, etc.)
  - Mid-block crossings at grade
  - Grade-separated crossings (i.e. pedestrian bridges)

The alternatives and recommendations will be developed in narrative format using PowerPoint or Word. Each improvement will be categorized as short-term, mid-term, and long-term. This categorization of improvements will be approximated using past planning experience and input from the County and VDOT.

Short term, mid-term, and long term improvements will be generally defined as follows:

- Short-Term Improvements - projects that could be implemented within one to two years at a relatively low construction cost and impacts to right-of-way and utilities.
- Mid-Term Improvements - projects that could be completed within two to five years at a moderate construction cost and impact to right of way and utilities. It is envisioned that some of the mid-term improvements may require detailed engineering prior to implementation.
- Long-Term Improvements – projects that would be implemented within five to 10 years with a high construction cost and impacts to right of way and utilities such as location(s) of future potential pedestrian overpasses of Richmond Road.

Kimley-Horn will use pertinent information gathered at each potential location to determine the feasibility of a pedestrian bridge. If a pedestrian bridge is determined to be feasible within the vicinity of one of the study intersections, Kimley-Horn will determine the impact the recommended location would have on a pedestrian bridge crossing. Kimley-Horn will qualitatively assess span length, required number of spans, potential support locations, and access options (stairtower, ramps, elevator, etc.) to the effect that would deem the location as a valid site for pedestrian grade crossing. Kimley-Horn will also consider various design criteria and constraints when considering the feasibility of constructing a

pedestrian bridge crossing at up to four potential locations. Special design criteria or restrictions that could influence the alternative analysis include:

- Design pedestrian loading
- ADA requirements
- Bicycle accommodations
- Any maintenance vehicular loading
- Maintenance of traffic restrictions or considerations
- Any limitations due to the limited available right-of-way

Kimley-Horn will submit a preliminary list of draft alternatives in tabular format to the County staff for review and comment. The summary table will include a project description, timeframe, and a list of advantages and disadvantages associated with each draft improvement. Kimley-Horn will make one round of revisions to refine the improvements based on comments received from the County at Technical Meeting described in **Task 1.0**. Kimley-Horn will finalize the proposed recommendations based on input gained from the meeting with the Pantops Advisory Council as described in **Task 1.0**.

If the County and input from the Pantops Advisory Council concurs on the feasibility of a pedestrian bridge crossing at the recommended location, Kimley-Horn will develop the conceptual design for the roadway improvements and will include the following:

- Selection of at least three (3) alternate bridge sections, preferably providing a cross section of cost alternatives
- Identification of advantages and disadvantages of each alternative, including cost, constructability, impacts to traffic, life cycle costs, and service life, etc.
- Preparation of a conceptual level engineer's opinion of probable construction cost for each alternative.

Task 4 Deliverables

- Draft and final list of categorized improvements in tabular format

Task 5 – Planning Level Cost Estimates and Schedule Estimates

Kimley-Horn will develop planning level cost estimates to facilitate future inclusion in future County or VDOT transportation plans for the short term and mid-term improvements identified in **Task 4.0**. Kimley-Horn will work with the County to determine draft planning level cost estimates for preliminary engineering (PE), right-of-way (ROW), and construction (C) phases for each intersection. Kimley-Horn will also prepare a draft project schedules for the improvements. Draft planning level cost estimates and

project schedules will be discussed with the County at the Technical Meeting described in **Task 1.0**. Kimley-Horn will make one round of revisions and will prepare final planning level cost estimates.

The planning level costs will be developed by Kimley-Horn using planning level cost information maintained by the Transportation and Mobility Planning Division (TMPD) and informal cost information maintained by the firm to cross-check the cost estimates. Kimley-Horn will inflate the costs based upon agreed upon rates to the agreed upon construction advertisement date (e.g., FY18) costs. Kimley-Horn anticipates adding a planning level contingency cost of 20% for each project phase, unless specified otherwise by the County. Right-of-way (ROW) costs will be approximated either on an agreed upon percentage of the overall construction costs or sampling of actual appraised values. The planning level cost estimates will include planning level estimates for utility costs, utility relocations, or engineering costs.

Kimley-Horn will assemble the cost and schedule information into a format that is consistent with the programming format needed for support of future funding applications (e.g. Revenue Sharing, Highway Safety Improvement Program, Transportation Alternatives Program, etc.).

Task 5 Deliverables

- Draft and final planning level cost estimates delivered electronically in table format
- Draft and final project schedules for PE, ROW, and C delivered electronically in table format

Task 6 – Technical Memorandum

Upon determination of the final recommendations, Kimley-Horn will provide the County with a draft memorandum consisting of a narrative and recommendations. Documentation of the corridor crash data analysis, site field review, existing conditions analysis, alternatives, and recommendations will be prepared in a technical memorandum. The memorandum will document pertinent information relative to the study purpose; planning and analysis process; and summary of short-, mid-, and long-term recommendations. The objective of this study is to provide a technical document that will describe and illustrate the recommended improvements at the study intersections. The draft memorandum will be submitted to the County electronically in PDF format. Should the County request revisions to the draft memorandum upon review, Kimley-Horn will make one round of revisions and resubmit the updated documents.

Task 6 Deliverables

- Electronic submittal in PDF format of the technical memorandum and associated figures, photos and support material

ADDITIONAL SERVICES (NOT INCLUDED):

Any services not specifically provided for in the above scope of services, as well as any changes in the scope as requested by the County, will be considered additional services. No additional services will be performed without written authorization by the County, and compensation for additional services will be agreed to prior to their performance. Additional services Kimley-Horn can provide, but are not limited to, the following:

- Operational analysis
- Public involvement
- Traffic signal design
- Survey
- Subsurface
- Additional Meetings
- Additional Traffic Data Collection
- Additional Intersection Data Collection
- Signal timing development
- Intersection Geometric Design/Modifications
- Future Conditions Analysis
- Traffic Impact Analysis
- Additional Alternatives
- Additional HSIP applications
- Sign Retroreflectivity Review

SCHEDULE

The following schedule is anticipated to complete the study:

Task – Tentative Completion (Schedule approximately 6 months from NTP)	**Date**
Notice to Proceed (Assumed)	January 2016
Task 1.0 – Project Management and Project Meetings	Ongoing
Task 2.0 – Data Collection	January 2016
Task 3.0 – Summary of Existing Conditions	February 2016
Task 4.0 – Recommendations	March through May 2016
Task 5.0 – Planning Level Cost Estimates and Schedule Estimates	March through May 2016
Task 6.0 – Technical Memorandum	June 2016

FEE AND PAYMENT FOR SERVICES

Kimley-Horn will perform the services as detailed above in Tasks 1 through 6. A breakdown of the lump sum fee as follows:

Task #	Description	Total Fee
Task 1.0	Project Management and Project Meetings	$ 10,235.00
Task 2.0	Data Collection	$ 11,640.00
Task 3.0	Summary of Existing Conditions	$ 2,460.00
Task 4.0	Recommendations	$ 15,365.00
Task 5.0	Planning Level Cost Estimates and Schedule Estimates	$ 4,725.00
Task 6.0	Technical Memorandum	$ 8,410.00
	SUB-TOTAL	$ 52,835
	Direct Reimbursable Expenses	$ 61.20
	Total	$ 52,896.20

See attached “Albemarle County Fee Estimate”