

# ON-CALL FOR GENERAL TRANSPORTATION PLANNING SERVICES TASK ORDER 01

## Route 1 Multimodal Study

### SCOPE OF WORK

U.S. Route 1 is a major roadway through Stafford County, which carries significant amount of commuter traffic, and provides local access to residential, commercial and office land uses. As the metropolitan region of Washington DC continues to expand outwards, once rural counties such as Stafford County are now becoming part of the exurbs of the region. This is leading to a changing face to the jurisdictions within the George Washington Regional Commission (GWRC), including Stafford County. These changes are leading to a shift in the functionality of the U.S. Route 1 corridor, the land uses associated with the corridor, and the needs of the corridor.

In responses to these changes, GWRC has retained the VHB Team to perform a multimodal study of the Corridor. The objectives are to identify the needs and to develop the long term vision for the corridor.

The purpose of this study is to develop the long term Multimodal concept for the Route 1 Corridor from the Prince William County line to the north, southwards to Route 630, Courthouse Road. The project will examine the existing traffic conditions and the facilities for the pedestrian, cyclist and transit users. Based on existing conditions and expected growth in vehicular traffic, the study will develop and examine various concepts to improve mobility all modes within the study area and enhance safety within corridor.

### Tasks

#### Task 1. Formal Kick-off Meeting.

The VHB team will provide up to three (3) staff members to attend one (1) formal kick-off meeting with GWRC, VDOT and Stafford County to confirm the scope of work and the study approach. At this meeting, GWRC, VDOT and the County will provide all available data for the study area. Information/data that will be provided at this meeting includes:

- All available traffic volumes, such as turning movement counts and roadway tube counts.
- AM peak hour and PM peak hour signal timings for traffic signals within the Corridor, preferably in Synchro files.
- Right-of-Way (ROW) information for the corridor and cross-streets, preferable in CADD and/or GIS format if it is available.
- Contact person at GWRC for coordination of the website posting and existing mailing list.
- Confirm the hours which the data collection elements will be conducted. It is anticipated that counts will be done between 6:30 - 9:30 AM and 3:30 to 6:30 PM during the weekdays.
- Contact information of person(s) with whom we will coordinate with respect to field work and data collection.
- The official Constrained Long Range Plan (CLRP) for the FAMPO model coverage area, indicating the particular roadway improvements and year that the improvement would occur.

- Information on the 2035 Land-Use plan, including population and employment levels, and demographic information, if available.
- List of key stakeholders to interview as part of the 4 days of the ten (10) one-on-one meetings.

## Task 2. Public Involvement.

The VHB team includes the firm of Cordell & Crumley, who will provide the support for Public Involvement aspect of the Route 1 Multimodal Study. Public involvement tactics will be developed to educate, inform and involve the public, businesses and agencies. Information will be produced in print and electronic formats to help the public understand the corridor study process and how they can become involved. It is anticipated that the Internet will play a large role by educating stakeholders and making information accessible to those commuters who may not be able to attend public workshops. A study mailing list/contact database will be created in partnership with GWRC staff to make sure key stakeholders are invited to participate and that the right people are being brought to the table early in the process. A meeting strategy will be implemented that ranges from one-on-one interviews at the initiation of the project to workshops where the public will be invited to attend to review the alternatives under review in detail, to ask questions, and to offer input. Throughout the study, our communication team will work in concert with GWRC, city and county public affairs staff to ensure that the general public and key stakeholders remain informed and have access to the team to provide comments or questions.

The range of tactics follows:

1. Develop Contact Mailing List/Database – it is assumed that the database from GWRC can be used to provide a mailing list specific to the Route 1 Multimodal Study. Efforts will include an email database for distribution via the internet to reduce mailing costs.
2. Web Page Development and Maintenance – it is assumed that GWRC's website can be used to provide space for the project website, in order to reduce the cost of hosting a website. Information will be provided to the County, if desired, so that the County's website can include a link to the project website.
3. Listening Tour (Up to 10 one-on-one meetings), which both VHB and Cordell & Crumley will each send one (1) staff member for one-on-one meetings with major stakeholders in the corridor. It is assumed that the meetings will be covered over a period of 4 days.
4. Public Information Meeting #1 - Initial Alternatives. VHB will provide two (2) staff members and Cordell & Crumley will provide three (3) staff members, which will include one person to staff the registration desk.
5. Public Information Meeting #2 – Draft Corridor Plan (final public meeting). VHB will provide two (2) staff members and Cordell & Crumley will provide three (3) staff members, which will include one person to staff the registration desk.
6. Develop press releases and assist in media reviews.
7. Develop advertising in local papers to announce upcoming meetings.
8. Produce mailing, such as post-cards to inform the public of progress and upcoming events, as appropriate.
9. Track public comments as they are received.

All meeting and notification materials will be submitted to GWRC for review and approval prior to production. Documents may be translated into Spanish as appropriate for the region; however, the costs for translation are not included in this scope, as it is expected that GWRC will handle fees for translation if

needed.

It is assumed that there will be no rental fees associated with the public meetings. If there is a rental fee, it is assumed that GWRC will pay directly for the rental fees. The detailed scope as submitted by Cordell & Crumley is attached as attachment 3.

### Task 3. Field Visit and Data Collection.

The VHB team will conduct field review of the eight-mile study section of Route 1. The data/inventory collected will include:

- Geometric features of the roadway including number of through and turn lanes, locations of medians and median openings, and locations of intersections and major access points.
- Traffic signals and stop signs, posted speed limits, and turn prohibition signs.
- Pedestrian facilities and bicycle facilities, including crosswalks across Route 1 (and whether signalized) where present in the corridor. Locations that discourage pedestrian and bicycling activity will be identified.
- Major transit and/or commuter Park&Ride facilities that exist within the corridor.

Traffic conditions during the inventory will be observed and any noticeable traffic problems will be identified. The field visit will not include an inventory of signal timing information of the ten (10) signalized intersections within the Corridor, as that information will be obtained from VDOT or the County. Speed studies will not be included as part of this study.

MCV Associates, the data collection subconsultant on the VHB team, will collect traffic turn movement data at up to twelve (12) intersections, consisting of ten (10) existing signalized intersections and remaining two (2) will be unsignalized intersections within the corridor. The intersection counts will be performed between 6:30 - 9:30 AM and 3:30 to 6:30 PM during the weekdays. MCV will also collect 24-hour vehicular counts at two (2) locations in the corridor. No weekend counts will be included.

### Task 4. Existing Conditions Analysis.

The VHB team will perform traffic operational analyses of the weekday AM peak hour and the weekday PM peak hour using the data and information collected in the Task 3. The traffic software for the operational analysis will be Synchro. No other traffic software will be used. Balanced turning movement counts will be developed from the counts that were collected in Task 3. The outputs from the analysis will use the HCS module within the Synchro software to report the V/C ratio, average intersection delay and LOS.

VHB will apply quantitative and qualitative methods to assess existing conditions. At up to three (3) intersections where there is or will be significant pedestrian crossing volumes, pedestrian level of service models that quantify the perception of the walking environment will be applied to help assess existing conditions, similar to how vehicular level of service is used. The Bicycle Level of Service will be applied at up to three (3) locations to help evaluate biking conditions. Quantitative observations and assessments will be made for pedestrian and bicyclist safety at up to three segments.

#### Task 5. Crash Data Analysis.

The VHB Team will request VDOT to provide all crash data within the corridor for a three year period (preferably between 2004 and 2006, inclusive) using their HTRIS system. This is to be provided in electronic format, such as an excel spreadsheet. VHB will then analyze the crash data obtained from VDOT to identify crash patterns in the corridor. Crash data and rates will be summarized for the entire corridor. Each crash will be annotated on a map of the corridor. The map will show locations of crashes by type and/or severity. Collision diagrams will be created for up to five intersections and two critical roadway segments (ranging between 0.3 to 0.5 miles) with high concentrations of crashes.

#### Task 6. Travel Demand Forecasting – Modeling.

VHB will use the latest FAMPO model for the George Washington Regional Commission region. This model is currently being upgraded by GWRC and VDOT. It is assumed that the existing year model will be available by the end of December 2007 and the model data for future years will be available in February 2008.

VHB will not prepare a subarea model, rather VHB will review the network and make revisions as needed to ensure that the roadway network, in vicinity of the study area, is correctly coded prior to running the model. It will be assumed that the model has been validated and calibrated by GWRC and/or VDOT, consequently VHB will not perform any calibration of the model. The model will be run for the existing year and the outputs compared to the existing counts as a comparison.

VHB will then complete two future model runs, one for the horizon year 2015 and the second for the horizon year 2035. It is assumed that the model as received will have been updated to the current CLRP for 2015 and 2035. VHB will review the network and ensure that the coding is correct prior to running these two horizon years. The model outputs from the horizon year will be post-processed, per NCHRP Report 255, to develop future turning movement counts and link volumes for subsequent analysis.

It is assumed that the land use will not be modified from the land use as defined by the model. No alternative land use scenarios will be modeled.

#### Task 7. Future Conditions – Baseline.

The VHB team will perform traffic operational analyses of the future years (2015 and 2035) of AM peak hour and PM peak hour using the volumes developed under task 5. The geometry will be roadway improvements as defined by the CLRP. The volumes will be inputted into Synchro and the outputs from the analysis will use the HCS module within the Synchro software to report the V/C ratio, average intersection delay and LOS. The purpose of the analysis in this task is to assess the operational performance of the roadway as defined by the CLRP and to identify any additional improvements that could be needed.

#### Task 8. Future Conditions – Alternatives.

Using the results of the Existing Condition Analysis, Crash Data Analysis, and Future Conditions – Baseline

analysis, VHB will develop additional alternative improvements for the 8-mile long corridor. VHB will perform traffic operational analysis of additional improvements beyond those included in the CLRP. These improvements will be analyzed, as appropriate, using Synchro to quantify the changes in operational performance. The analysis will examine the Horizon Year 2035. No traffic analysis will be completed for the year 2015.

#### Task 9. Develop Multimodal Plan and Concept Designs.

VHB will develop a list of projects for the corridor, consisting of short-, mid- and long-term improvement projects. It will include a review the new VDOT's regulations on Access Management, which at this time are expected to be implemented in July 2008. VHB will develop order-of-magnitude, planning level costing information for the improvements identified for the corridor, using VDOT's cost indices, excluding utility relocation and ROW costs. From the listing of projects, VHB will develop a prioritization of projects.

VHB will develop graphics to illustrate the conceptual improvements. It is anticipated that a maximum of five (5) roadway cross-sections, five (5) intersection layouts, and two (2) 3-D visualization graphics will be developed.

VHB will develop recommendations where bus shelters should be provided in the corridor and where multimodal transit centers are desired. This effort will require coordination with other studies in the region, as other consultants are performing the full transit study for the FAMPO/GWRC region.

Based on a review and analysis of existing data and conditions, VHB will identify and describe the problem areas and make recommendations for short-term, low-cost improvements. We anticipate that some of these improvements will relate to the existing issues and challenges. It will be important that the recommended improvements be compatible with potential longer-term solutions.

The concept graphics are conceptual only. Detailed engineering drawings will not be produced or delivered as part of this Task Order.

#### Task 10. Report Writing – Draft.

VHB will prepare a draft report for GWRC. The report will document:

- 1) Existing Traffic Conditions
  - a. Vehicular flows
    - Intersection MOEs
    - Traffic condition observations
  - b. Transit users
  - c. Non-Motorized users
- 2) Findings of the Crash Analysis
- 3) Future Traffic Conditions
- 4) Concept Design and Recommendations
- 5) Conclusions and Summary

It is anticipated that the document will be a maximum of 70 pages, of which an estimated 15 pages will be in color. VHB will provide to GWRC a copy of the text in WORD format, so that GWRC can provide comments electronically, and will provide a file copy of the report with all graphics embedded in PDF format

as well. VHB will provide up to five (5) sets of CDs or DVDs of the report in WORD and PDF format, and all concept graphics. No hard copies will be provided for the Draft Submittal.

#### Task 11. Report Writing – Final.

It is anticipated by VHB that GWRC will distribute the CDs/DVDs to VDOT and Stafford County. Therefore, GWRC will consolidate all comments from staff members of GWRC, VDOT, Stafford County and other agencies prior to resubmitting comments back to VHB. VHB will review the comments and revise the Draft Report as needed. VHB will provide five (5) hard copies of the report and five (5) sets CD or DVD of the report in PDF format, and all concept graphics.

#### Task 12. Project Meetings and Coordination Meetings.

VHB provide one (1) staff member to attend up to five (5) meetings with GWRC throughout the project to provide project status updates, and for presentations to the Board. These five (5) meetings will be determined as needed by GWRC.

As there are other two other studies that will be on-going in the region, VHB will devote up to twenty hours of a lead transportation professional for coordination with each study. It is expected that meetings will need to take place with the Team developing the Master Plan for the Boswell area and the Courthouse area, and with the Team developing the Transit Plan for the region. Both of these study areas include the Route 1 Corridor study area.

#### Attachments

Five attachments are included with this with this scope-of-work, they consist of:

1. A detailed estimate on man-hours and costing.
2. A proposed schedule, including milestones, for the project, both for a 12-month schedule and a compressed 9-month schedule.
3. A detailed plan from Cordell & Crumley for the public involvement.
4. Cost estimate and man-power estimate from Cordell & Crumley.
5. Cost estimate from MCV to perform data collection efforts.