City of Richmond
Business & Financial Services Department

Request for Proposal

CONTRACT 3436P
Major and Minor Road Pavement Data Collection and Analysis

1 INTRODUCTION

The City of Richmond proposes to engage the services of a qualified Consultant (the "Consultant") to collect pavement inventory and condition data on approximately 644 centerline-km, collect traffic sign inventory, complete life cycle analysis using dTIMSCT software package, and develop multi-year paving programs.

The objective of this request for proposal is to provide the City with qualified proponents capable of carrying out the work herein defined.

2 SUBMISSION DETAILS

Three (3) copies of proposals marked **"Contract 3436P –Major and Minor Road Pavement Data Collection and Analysis"** addressed to the Purchasing Section, will be received at the Information Counter, Main Floor, Richmond City Hall, 6911 No. 3 Road, Richmond BC V6Y 2C1, until 3:00pm, Local Time, on **Tuesday, December 16, 2008**. Submissions received after this time will be returned to the sender.

The City reserves the right to cancel this Request for Proposal for any reason without any liability to any proponent or to waive irregularities at their own discretion.

Proposals may be withdrawn by written notice only provided such notice is received at the office of the City's Purchasing Section prior to the date/time set as the closing time for receiving proposals.

Proposals shall be open for acceptance for 90 days following the submission closing date.

All proposals will remain confidential, subject to the Freedom of Information and Privacy Act.

Any interpretation of, additions to, deletions from, or any other corrections to the Proposal document, will be issued as written addenda by the City of Richmond. It is the sole responsibility of the potential Bidders to check with the City of Richmond's Website, and / or BC Bid to ensure that all available information has been received prior to submitting a bid.

Except as expressly and specifically permitted in these instructions, no Proponent shall have any claim for any compensation of any kind whatsoever, as a result of participating in the RFP, and by submitting a proposal each proponent shall be deemed to have agreed that it has no claim.

3 ENQUIRIES

3.1 Clarification of terms and conditions of the proposal process shall be directed to:

Sumita Dosanjh, Buyer II – Contracting Specialist
City of Richmond - Purchasing
Phone: (604) 276-4097 Fax: (604) 276-4162
E-mail: purchasing@richmond.ca

3.2 Technical clarification shall be directed to:

Helen Chan, P.Eng., Project Engineer
City of Richmond – Engineering Planning
Phone: (604) 247-4656 Fax: (604) 276-4197
E-mail: hchan@richmond.ca

The City, its agents and employees shall not be responsible for any information given by way of verbal communication.

Any questions that are received by City of Richmond Staff that affect the Proposal Process will be issued as addenda by the City of Richmond.

4 PROJECT BACKGROUND

The City's Pavement Management System requires that the condition of the Major Road Network ("MRN") and Major Roads within the City be collected, evaluated, and processed every 5 years. Based on this 5 year cycle, pavement data collection is required this year. In addition, the Minor Roads within the City are due for pavement condition collection this year. The collected pavement data will provide updated pavement condition data for life-cycle cost analysis.

For the purpose of defining the scope of the data collection services, the roads are divided into the following eight categories:

- Major Regional Road Network Divided
- Major Regional Road Network Undivided - 4 Lanes or more
- Major Regional Road Network Undivided - Less than 4 Lanes
- Major Roads Divided
- Major Roads Undivided – 4 Lanes or more
- Major Roads Undivided – Less than 4 Lanes
- Minor - Local Roads
- Minor - Lanes

There are four types of data required (all data types are not required on all roads):

- Inventory segment definition data
- Pavement surface distress data
- IRI and Rut depth
- Deflection data

All pavement condition data is currently being maintained in a dTIMSCT database.

5 SCOPE OF WORK

The Consultant shall dedicate an experienced and efficient team capable of undertaking the following tasks:

- collect and review background information;
- define routes and data processing procedures;
- calibrate data;
- collect pavement inventory and condition data;
- collect digital video;
- validate data;
- transfer data and update dTIMSCT database;
- perform life-cycle cost analysis;
- develop paving programs;
- attend meetings.

5.1 Background Information Collection and Review

Collect and review information which include, but are not limited to, the following:

- City's GIS Route Geometry Data in ESRI compatible format;
- Existing updated Pavement Management System Inventory Database in Microsoft Excel
- AADT Traffic Data for each segment;
- 2007 EBA Technical Memorandum summarizing Assumptions, Reasoning Logic, and Limitations.

5.2 Route and Data Processing Definition

The City uses a spatial and linear location referencing system for its pavement management data. It is a requirement that all the data collected and submitted for this project is referenced based on the specifications in Appendix A – Spatial and Linear Location Referencing Specifications.

The Consultant shall develop a pavement data routing plan and schedule based on the City's GIS Route Geometry Data, updated PMS inventory database, and spatial/linear location referencing. The Consultant shall outline a detailed procedure for data collection and process for data

calculations consistent with the specifications described in Appendix B – Pavement Condition Data Specifications.

Deliverables

The Consultant shall submit three draft (3) hard copies of a technical memorandum summarizing the data collection procedure, data processing calculations, and route schedule. Upon the City's review, the Consultant shall revise (if necessary) the technical memorandum and submit the final version. The Consultant shall also submit the technical memorandums digitally in PDF format.

5.3 Data Calibration

Prior to the commencement of the pavement data collection, the Consultant shall calibrate the data collection process and equipment. The City will establish 2 to 5 calibration sites with baseline inventory and pavement condition data. The Consultant shall collect pavement baseline inventory and condition data for these sites and perform the necessary calculations to derive the total surface area of cracking (ACA), IRI, and Rut as outlined in the technical memorandum from Task 5.2. The pavement data collected by the Consultant will be reviewed by the City for acceptability based on the following criteria:

- Total surface area of cracking as a percent of the total surface area of the data collection lane for each inventory segment < +/- 30% of that measured manually.
- Roughness – IRI less than +/- 20% of IRI measured by baseline Class II profile survey.
- Rut Depth – mean rut depth either wheel path less than +/- 20% of laser measured baseline mean rut depth.

If the pavement data collected does not meet the above tolerances, the City will provide the Consultant with the calibrated data. The Consultant shall calibrate the data collection process and equipment calibration to meet the criteria tolerances.

Deliverables

The Consultant shall submit the pre and post-calibrated data for the calibration sites. The data shall include segment definition (as defined in Appendix A and B), total surface area of cracking, IRI, and Rut depth. The information shall be submitted in hardcopy and digital Excel format.

5.4 Pavement Inventory and Condition Data Collection

The Consultant shall verify the Pavement Inventory provided by the City and provide updated inventory information where applicable. All pavement inventory data shall be referenced and collected as per the specifications in Appendix A and B.

There are three different levels of survey coverage required depending on category and data type. Pavement Condition data is to be measured in the condition data collection lanes as specified in Appendix B. The following table itemizes the scope of data collection services required and approximate length of assets for the project. Please note that deflection data is only required on MRN and selected portions of Routes as defined in Appendix D –Inventory Segments for

Deflection Data Pickup (segments that have been recently re-surfaced and sections that have substantial surface cracking with an ACA >= 10).

Category	Centreline length (km)	Survey Direction	Inventory Segment Definition (km)	Pavement Surface Distress (km)	IRI & RUT (km)	Deflection (km)
MRN Divided	31	Primary	31	31	31	31
MRN Undivided > = 4 Lanes	11	Primary and Opposite	11	22	22	22
MRN Undivided < 4 Lanes	10	Primary only	10	10	10	10
Major Divided *(may be deleted)*	40	Primary	40	40	40	12
Major Undivided > = 4 Lanes *(may be deleted)*	48	Primary and Opposite	48	96	96	6
Major Undivided < 4 Lanes *(may be deleted)*	71	Primary	71	71	71	8
Minor – Local *(may be deleted)*	396	Primary	396	396	0	0
Minor – Lane *(may be deleted)*	37	Primary	37	37	0	0
Totals	644		644	703	270	89

Deliverables

The Consultant shall submit the data collected digitally in the format specified in Appendix A and B compatible with Excel.

5.5 Digital Video

While collecting pavement condition data, the Consultant shall collect digital video of the roadway being surveyed along all MRN, Major, and Minor Roads. The digital video shall meet the following criteria:

- taken looking forward along primary direction;
- spatial and location referenced to City specifications in Appendix A;
- minimum resolution of images to be 1280x1024 pixels.

Deliverables

The Consultant shall submit the digital video electronically in a format compatible with City owned ESRI software package and linked to the City's GIS Route Geometry Data.

5.6 Data Validation

The City will establish several blind validation sites throughout the network. Each blind validation site will have an established baseline inventory and pavement condition data. As part of the final acceptance procedure, the submitted dataset will be compared to the City's database at the blind validation sites. Failure to meet the acceptance criteria (set out in Section 5.3) at the blind validation sites may necessitate one or more of the following:

- Re-submission of the datasets;
- Additional field surveys;
- Reduction in payment based on proportion of accepted data.

Deliverables

The Consultant shall re-submit, if required, a validated dataset based on the City blind validation sites. The Consultant shall submit the validated dataset in the format specified in Appendix A and B. The dataset shall be formatted for bulk import into dTIMSCT database.

5.7 Data Transfer and Update dTIMSCT Database

The Consultant shall transfer all pre and post-validated pavement inventory and condition data to the City in acceptable format. The pre-validated data shall also include all raw (pre-processed) and post-processed data files.

The Consultant shall import the validated segment inventory, pavement condition data (i.e. ACA, IRI, Rut, and Deflection (if applicable)), composite indices (i.e. PCI), and asset value into the City's latest version of dTIMSCT.

Deliverables

The Consultant shall generate an ESRI shapefile linking City provided GIS Route Geometry Data with the corresponding inventory segment, pavement condition data, composite indices, asset value and digital video. The Consultant shall submit the pre-validated data in digital Excel format.

The Consultant shall submit an updated dTIMSCT database to the City in digital format on data DVD(s).

5.8 Life-Cycle Cost Analysis

Using the City's latest version of dTIMSCT software, pavement inventory and condition data collected, and traffic count data and the proponent shall perform the life-cycle cost analysis for the following pavement categories:

- Major Road Network (MRN) Roads
- Major Roads
- Local Roads and Lanes
- City-owned Parking Lots

Deliverables

The Consultant shall submit the updated dTIMSCT results database to the City in digital format on data DVD(s).

5.9 Paving Program

5.9.1 Theoretical 75-Year Paving Program with No Funding Limits

Using the life-cycle cost analysis results, the Consultant shall develop a prioritized 75-year paving program based on unlimited annual funding availability and current construction unit rates. As per Tranlink's Operation, Maintenance and Rehabilitation Program Description and Guidelines (OMR), MRN roads must maintain the following criteria:

- average PCI > = 75
- average IRI < = 2.6
- maximum 20% of backlog reaching the trigger values of PCI < = 40 or IRI > = 3.5

Deliverables

The Consultant shall submit a 75-year paving program in the following format:

- Proposed Paving Project List including the following information:
    - road/paving Route Name
    - inventory segment ID
    - road/paving category (i.e. MRN, Major Road, etc.)
    - type of treatment
    - length of treatment area
    - extent of treatment area (i.e. intersection, stationing)
    - cost estimate
    - asset value
- Summary Table identifying the annual total length of treatment categorized by the road/pavement type (i.e. MRN, Major Road, etc.) and corresponding funding requirements within the 75-year horizon.

Tables shall be delivered in hardcopy and digital Microsoft Excel format.

5.9.2 Proposed 5-Year Paving Program with Annual Funding Limits

Using the life-cycle cost analysis results, the Consultant shall develop a 5-year paving program based on the City's annual funding limits and current construction unit rates. After generating

the list, the Consultant should visually verify the suitability of these sites for rehabilitation. The 5-year paving budget is as follows:

Year	MRN Budget	Non-MRN Budget	Total Budget
2010	$865,000	$3,037,000	$3,902,000
2011	$934,000	$3,280,000	$4,214,000
2012	$1,009,000	$3,542,000	$4,551,000
2013	$1,090,000	$3,826,000	$4,916,000
2014	$1,177,000	$4,132,000	$5,309,000

Deliverables

The Consultant shall submit a 5-year paving program, prioritized within each year, that falls within the City's paving budget. The proposed program shall include the following information:

- Table summarizing the proposed paving project including:
  - road/paving Route Name
  - inventory segment ID
  - road/paving category (i.e. MRN, Major Road, etc.)
  - type of treatment
  - length of treatment area
  - extent of treatment area (i.e. intersection, stationing)
  - cost estimate
- Map illustrating the proposed program with colour codes differentiating the project year
- Map illustrating the proposed program with colour codes differentiating the treatment type

Tables shall be delivered in hardcopy and digital Microsoft Excel format. The map shall be delivered in hardcopy and digital ESRI shape file and PDF format.

5.10 Meetings

The Consultant shall arrange a minimum of four (4) meetings with City staff throughout the project. These meetings shall occur with the following milestones:

- Project Initiation
- After the completion of Task 5.3: Data Calibration
- After initial assessment of acceptable data in Task 5.6: Data Validation
- After the completion of Task 5.9: Paving Program

6 CITY PROVIDED ITEMS

The City will provide the following items:

- City's GIS Route Geometry Data in ESRI compatible format

- Existing Pavement Management System Database in dTIMSCT format (to be provided after data calibration and validation);
- Existing updated Pavement Management System Inventory Database in Microsoft Excel
- AADT Traffic Data for each segment
- 2007 EBA Technical Memorandum summarizing Assumptions, Reasoning Logic, and Limitations
- Appendix C and D available digitally in Microsoft Excel

7 PROPOSAL SUBMISSIONS

The submissions must include, but is not limited to, the following sections:

7.1 Project Understanding

The proponent shall outline an approach to the undertaking of the project reflecting a clear understanding of the project issues and scope of work.

7.2 Methodology

The proposal shall describe in detail the steps taken to update and revise the hydraulic models. The methodology shall be comprehensive, conveying to the City that the proponent has reviewed the Terms of Reference in detail and has a thorough understanding of the project scope and complexity.

7.3 Schedule

The City requires that the tasks be completed as per the following schedule:

Task 5.4: Pavement Inventory and Condition Data Collection – March 27, 2009
Task 5.7: Data Transfer and Update dTIMS Database – April 30, 2009
Task 5.9: Paving Program – May 29, 2009

If in the proponent's opinion that more time is required to achieve the specified objectives, this should be clearly indicated in the proposal.

The proponent shall include a statement of commitment to undertake the project and to allocate experienced staff to deliver the project objectives on time and within budget.

7.4 Project Team

The proponent shall list the staff comprising the project team including the project manager, their relevant experience, level of effort, schedule of fees, and detailed qualifications to this project. A list of any sub-consultants with resume of relevant experience must be included.

The proponent should also provide a minimum of three (3) client references from projects of a similar size and scope undertaken by key members of the project team.

7.5 Fees

The summary of fees shall be broken down as per Appendix E – Summary of Fees. The proponent shall provide a summary of levels of effort of personnel, their rates, hours, and costs for all Tasks except 5.4, and 5.5. Task 5.4 and 5.5 shall be based on unit rates per km per type of data collected inclusive of all incidentals (i.e. mobilization/demobilization, traffic control, etc.).

Note that the total lengths of survey provided in Task 5.4 are approximates and will be used for City budgeting purposes and proposal fee comparison. The Consultant will be paid based on actual total validated (as per Task 5.6) survey lengths per data type with MRN Roads itemized separately. Similarly, the total count of signs listed in the Summary of Fees is an approximate and will be used of City budgeting purposes and proposal fee comparison. The Consultant will be paid based on actual total sign count with signs along MRN Roads itemized separately.

In addition, the proponent must provide a schedule of fees which will form the basis for adjustments to the value of the contract in the event the scope of work varies from that proposed. The City must approve any changes to the project team once the project has commenced.

8 WORKING AGREEMENT

The successful proponent will enter into a contract for services with the City based upon the information contained in this request for proposal and the successful proponents submission and any modifications thereto.

9 EVALUATION CRITERIA

Proposals shall be evaluated to determine the best value offered to the City against conformance to the following criteria:

- Understanding of project scope and issues
- Methodology of work plan proposed
- Innovation and Value Added: If the Consultant has a more innovative approach to achieve the same objectives of this study, the Consultant may present these innovative approaches as alternatives. However, for comparison purposes, the Consultant must provide the methodology and fees corresponding to the tasks/submissions outlined in the Scope of Work and clearly identify any added value and cost efficiencies with adopting an alternative approach.
- Experience and qualifications of the proponent's project team and project manager
- Compliance with the Request for Proposal document
- Proposal fees and value for money
- References
- Interviews (if applicable)

Appendix A – Spatial and Linear Location Referencing Specifications

1 Spatial Referencing Requirements

All data must be referenced to the City's GPS coordinate system. Proponents are asked to describe any capabilities regarding the ability to fill in missing GPS data (for areas of insufficient satellite coverage). The specification for this spatial referencing is detailed below:

- System Type – Differential GPS (DGPS)
- Positional Accuracy (RMS) – Less than +/- 1m horizontal, +/- 2m vertical
- Position Update Rate – 1 second (maximum)
- Geographic Ellipsoid Datum – NAD83
- Reported Coordinates – Northing (UTM, Zone-10), Easting (UTM, Zone-10)
- Orthometric Height - CGVD28 (Canadian Geodetic Vertical Datum 1928)

2 Linear Location Referencing Definitions

2.1 Route

Route is an existing infrastructure element that provides, a path for surface vehicles to travel between points. A Route's name is its Primary Element ID and is inherited from the Street name. For example, the Route name for Railway Avenue is RAILWAY AVE. The Route name must be exactly spelled and is case sensitive – it is included when referencing any Pavement Management data. The limits of a Route are defined by "Start" and "End" Control Data Reference Points (Control DRPs). Each Route in the network has a staring point at its "Start" Control DRP. The primary direction is in the direction from the "Start" Control DRP to the "End" Control DRP. Each interchange ramp is a unique "Route". A Route's length is defined by its centerline geometry in the City's Pavement Management Database and/or GIS Route coverage.

2.2 Divided Routes

Divided Routes occurs where the driving lanes are separated by a raised, sunken, guard-railed or painted median. For the purpose of location referencing, the opposite direction of a divided Route is considered to be separate "Route". Accordingly the opposite direction of the divided portion of a Route has a unique Road Name – typically derived from the primary direction's Route name with a directional suffix added (example RAILWAY AVE SBL). The start/end locations, (Control DRPs), of road segments that are to be considered as divided have been pre-determined and will be provided to the successful proponent.

2.3 Control Data Reference Points (Control DRPs)

Control DRPs are defined geographically at the start and end of each Route, at intersecting Major Route centrelines[1] and at the gore points for interchange ramps. Control DRP's are defined in

[1] Median centerline for intersecting divided routes.

terms of linear distance (chainage) measured from a Route's "Start" Control DRP, (often but not always chainage = 0 + 000), and a descriptive comment describing the location of the Control DRP.

2.4 Measured Length/Chainage

Measured Length or Chainage is the linearly measured distance along a Route as defined by the data collection consultant's Distance Measuring Instrument (DMI). For the purposes of establishing an accurate absolute data referencing system, all data acquisition vehicles must employ a DMI.

2.5 Control Chainage

Control Chainage is the linearly measured distance along a Route as defined by the City's Pavement Management Database and GIS applications. Benchmark Control Chainages are provided to Consultant at each Control Data Reference Point.

2.6 Control Segment

A Control Segment is the part of a route between two adjacent Control DRPs. It has a Control Length equal to the difference between the control chainage of the two adjacent Control DRPs.

2.7 Corrected Chainage

At the beginning of each Control Section, the DMI is reset/synchronized to exactly match the Control Chainage and tagged with an accurate GPS position[2]. Field lineal measurements corrected in such a way as to exactly match the chainage at each Control Data Reference Point are called Corrected Chainage. Measured Length/Chainage measurements are not "rubber banded" to match Control Chainages.

2.8 Primary Direction

The Primary Direction is the direction of increasing chainage. Divided Routes have two Primary Directions. Undivided Routes have only one Primary Direction. Undivided Routes also have an Opposite Direction

2.9 Directional Referencing for Undivided Routes

For undivided Routes of four lanes or more, pavement condition data is often surveyed in two directions. To differentiate between the two directions of survey, each direction of travel is labeled using "P" for the Primary Direction to the right of the centreline or "O" for the Opposite Direction left of centerline while facing increasing chainage. The centreline used to determine the code P or O, is the center median that separates opposing traffic flow. For Undivided Roads of 3 lanes or less, the data will generally be collected in only the primary direction. Data collected in either direction on undivided routes is always referenced to the Primary Direction Chainage.

[2] It is permissible that a "virtual" DMI reset and/or spatial reference can be established during post processing to avoid stopping the vehicle at each Control DRP along a continuous route. However the data collection vehicles GPS location must be recorded at each DRP to facilitate location referencing quality control.

2.10 Inventory Segments

A Route is comprised of a series of homogeneous segments called Inventory segments. A new segment occurs whenever there is a change in one or more of the following attributes:

- Paved Width
- Number of Driving lanes
- Existence of Concrete Curb & Gutter and/or Sidewalks – on either side
- Existence of open drainage ditches – on either side
- Visible Change of Pavement Surface Type – Hotmix AC, ColdMix AC, Surface Treatment
- Pavement type – AC, PCC or Bridge Deck
- Clearly differentiated differences in Pavement surface Age or Condition

2.11 Lane

Lanes are designated by their function and placement within a roadway. There are three basic lane types; Turning Lanes (T), Driving Lanes (D) and Parking Lanes (P). Lane numbers are assigned in accordance with the number of occurrences of each lane type within a roadway segment. The lane number will represent the nth occurrence of the lane type referenced to the centerline.

2.12 Primary Driving Lane

The Primary Driving lane is defined as the main driving lane of each Route. There is only one primary driving lane on a Route. It is generally, the lane closest to the centerline in the Primary Direction on two-lane undivided Routes and the dedicated driving Lane closest to the curb or shoulder on four-lane undivided and divided Routes[3].

2.13 Pavement Condition Data

Pavement condition Data encompasses pavement surface distresses, roughness (IRI), rutting (RUT), and deflection data.

2.14 Pavement Condition Data Collection Lane

The data collection lane is the lane for which pavement condition data is to be collected. On Route Segments with less than 4 driving lanes, the data collection lane is the primary driving lane. On four-lane undivided roads there will be two data collection lanes - the Primary Driving Lane and the outermost driving lane in the opposite direction, (see footnote 2). On Divided Routes pavement condition data will be collected on the Primary Lane in each direction.

3 Referencing the Analysis Segment Definition and Pavement Condition Data

All Inventory Segment Definition and/or Pavement Condition Data items are to be referenced to both Measured and Corrected Chainage based on the Control DRPs (see Figure 1).

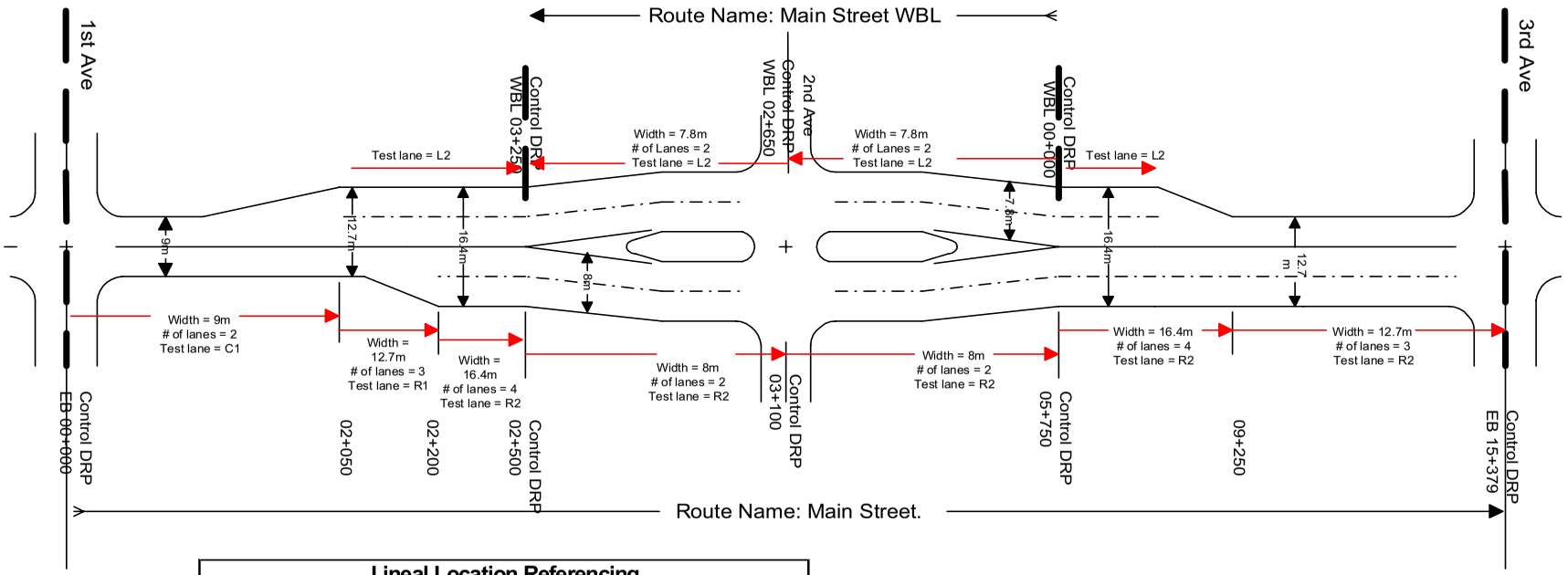
[3] With the exception of curb/shoulder lanes used for off-peak, on-street parking.

Using figure 1 as an example, an intersection occurs at km 3.10 while width changes occur at km 2.05, km 2.20 and km 2.50. Note that data collected on the Divided Route has independent Control DRPs. Data collected in the opposite direction on the undivided portion of a Route is always referenced to the primary direction chainage.

The measured length of the "Route", (as measured by the Consultant as part of this assignment), between Control DRP's is required to be within +/-0.5% (5m/1,000m) of the Control Length. In the event that the measured length deviates by more than +/-0.5% of the Control Length, the Consultant will be required to immediately notify the City to resolve the discrepancy. All discrepancies must be resolved prior to final acceptance of the project deliverables.

All data collected as part of this project is to be referenced according to this system and delivered in tables similar to that shown at the bottom of Figure 1. A Route Name, along with Control DRPs and Control Lengths, identifying each Control Segment for this project, is attached in Appendix C.

Figure 1 - City of Richmond - Location Referencing Requirements
2005 Data Collection Program



	Lineal Location Referencing											
	Chainage		Description		Attributes				GPS			
Route	From	To	From	To	# of Lanes	Width	Divided	Curb	X From	Y From	X To	Y To
Main St	0	2050	1st Ave	Width Change	2	9.00	N	B	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	2050	2200	Width Change	Width Change	3	12.70	N	B	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	2200	2500	Width Change	Start Divided	4	16.40	N	B	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	2500	3100	Start Divided	2nd Ave	2	8.00	Y	R	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	3100	5750	2nd Ave	End Divided	2	8.00	Y	R	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	5750	9250	End Divided	Width Change	4	16.40	N	B	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St	9250	15379	Width Change	3rd Ave	3	12.70	N	B	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St WBL	0	2650	2650m E of 2nd AVE	2nd Ave	2	7.80	Y	R	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy
Main St WBL	2650	3250	2nd Ave	600m W of 2nd Ave	2	7.80	Y	R	xxxxxx.xx	yyyyyy.yy	xxxxxx.xx	yyyyyy.yy

= Linear Location Referencing Direction

Appendix B – Pavement Condition Data Specifications

1 Inventory Definition Data Table

A new inventory section (record/row in the table) is to be established whenever a new route has been identified in GIS database or any one of the following attributes changes. Attribute changes that would result in Inventory Segments of less than **50m** in length need not be reported. Following are the required Inventory definition data attributes for each new inventory section.

- Route Name
- Unique and sequential Inventory Segment ID Key
- Measured and Corrected Chainage of start and end of Divided Route segments – indicated by an attribute column containing a descriptive comment – (example: "begin divided segment" or "end divided segment")
- Measured and Corrected Chainage of all Control DRPs – indicated by an attribute column containing a descriptive comment giving the Control DRPs description
- Measured and Corrected Chainage at all changes in road width - indicated by an attribute column containing road width in meters and a descriptive comment such as "width change"
- Measured and Corrected Chainage for all changes in the number of driving lanes – indicated by an attribute column containing the number of driving lanes
- Measured and Corrected Chainage for all obvious changes to surface age, type or treatment – indicated by an attribute column containing the descriptive comment PCH
- Measured and Corrected Chainage for the location of changes to the existence of Concrete Curb and Gutter – indicated by an attribute column containing the comments Left (CL), Right (CR), Both (CB) or Neither (CN)
- Measured and Corrected Chainage for the location of changes to the existence of Concrete Sidewalks – indicated by the comments Left (SL), Right (SR), Both (SB) or Neither (SN)
- Measured and Corrected Chainage for the location of changes to the existence of open drainage ditches – indicated by the comments Left (DL), Right (DR), Both (DB) or Neither (DN)
- Measured and Corrected Chainage for the start and end locations of all bridge decks and an Attribute column containing a descriptive comment such as "Br"

2 Pavement Surface Distress Data Table

Flexible Pavement Surface Distress definitions are generally to be in accordance with the distress definitions described in ASTM D 6433-99 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys". All measurements are to be made/reported in metric units. All distresses are to be measured continuously, on the data collection lane only, over each Non-MRN Route and reported at a maximum reporting length (sample unit) of **50m**. The following hours of operation shall apply for automated surface distress condition surveys:

- Surveys are to be conducted between sunrise and sunset
- From sunrise until 12:00 noon, surveys shall only be conducted in the northerly and easterly directions
- From 12:00 noon to sunset, surveys shall only be conducted in the southerly or westerly directions

Following are the required data attributes for each sample segment in the surface distress data table:

Referencing

- Route Name
- Unique and sequential sample unit ID
- Measured and Corrected Chainage at the start of each sample unit
- Measured and Corrected Chainage at the end of each Control Segment
- Data Collection Direction (Primary or Opposite)
- Data Collection Lane descriptor
- Time and Date
- Data Collection Lane Width

Cracking

- Surface area (measured in m2) of each of three severity levels of Alligator Cracking
- Surface area (measured in m2) of each of three severity levels of Block Cracking
- Length (measured in lineal-m) of each of three severity levels of Edge Cracking
- Length (measured in lineal-m) of each of three severity levels of Longitudinal Cracking
- Length (measured in lineal-m) of each of three severity levels of Transverse Cracking

Surface Defects

- Surface area (measured in m2) of each of three severity levels of Weathering and Raveling[4]
- Surface area (measured in m2) of each of three severity levels of Bleeding;
- Surface area (measured in m2) of each of three severity levels of Patching and Utility Cut Patching[5]
- Surface area (measured in m2) of each of three severity levels of Distortion
- Surface area (measured in m2) of each of three severity levels of Shoving

3 IRI and RUT Depth Table

Defined below are the specifications for vehicle based longitudinal and transverse profiling to determine roughness and rutting:

[4] Note the pictorial depictions of the Distress for weathering in the ASTM D 6433-99 standard do not match the narrative descriptions. The narrative descriptions are to be used.
[5] Potholes are to be considered as high severity patches.

Valid Data
Valid Data constitutes longitudinal and transverse profile data that is collected by vehicle based automated profiling equipment while the vehicle is traveling above the minimum speed threshold and at an acceptably low rate of acceleration/deceleration as specified by the manufacture of the equipment. Data collected outside of these thresholds (Invalid Data) are to be reported as NULL values.

Valid Data Segments
Valid Data Segments are Control Segments where greater than 80% of the IRI and Rutting data constitutes Valid Data. An acceptance of 20% Invalid Data is an acknowledgement of data collection difficulties in urban environments (persistent traffic levels, intersection traffic lights etc).

Valid Route
A Valid Route from a profile data collection and reporting perspective is a Route in which all of the reported data is made up of Valid Data Segments. All data submitted by the Consultant must be a Valid Route dataset.

3.1 IRI

IRI data is to be collected on all Routes and in conformance with the "Best Practice Guidelines" as described on pages 3 thru 6 in "Standardization of IRI Data Collection and Reporting in Canada" published by Transportation Association of Canada in October 2001 with the following amendments:

Survey Direction and Lanes
- Data collection lanes are governed by those described in this RFP document.

Minimum Start-up length and full termination
- Start-up length is reduced to 50m recognizing the urban roadway environment.

Seasonal Variations
- Seasonal variations will be ignored in this instance.

Items to be Recorded, Stored and Delivered
- Raw Profile data in each Wheel path referenced to Measured and Corrected Chainage.

Items to be Recorded, Stored and Reported
- Route Name
- Unique and sequential sample segment ID
- Measured and Corrected Chainage at the start of each sample segment
- Measured and Corrected Chainage at the end of each Control Segment
- Directional Referencing for Undivided Routes (Primary or Opposite)
- Data Collection Lane descriptor
- Date of Data Collection

- Minimum Survey Vehicle Speed and Maximum Instantaneous Acceleration/Deceleration for each sample segment
- IRI in Each Wheel Path
- Measured and Corrected Chainage for the start and end locations of transient events[6]
- Descriptive comment describing the type of transient event

3.2 Rut Depth

Transverse profile measurements, expressed in terms of the wheel path rutting, shall be collected for each wheel path on a continuous basis. Specifications for the wheel path rut data collection and reporting are detailed below:

- Number of Transverse - Measurement Points: 5 (minimum)
- Transverse - Profile Width: Full Lane
- Longitudinal Sample Interval - Less than 0.3m
- Static Vertical Measurement Error - Less than 0.3mm
- Onboard DMI Accuracy - +/- 0.5% of true distance
- Minimum Valid Data Collection Speed - 25kph (subject to manufactures specifications)

Items to be Recorded, Stored and Reported - (sample segments - maximum 50m interval)

- Route Name
- Unique and sequential sample segment ID
- Measured and Corrected Chainage at the start of each sample segment
- Measured and Corrected Chainage at the end of each Control Segment
- Directional Referencing for Undivided Routes
- Data Collection Lane descriptor
- Date
- Average Left Wheel path Rut for each sample segment
- Average Right Wheel path Rut for each sample segment
- Maximum Left Wheel path Rut for each sample segment
- Maximum Right Wheel path Rut for each sample segment

Special Considerations – Proposals shall include descriptions of the rut depth calculation algorithms used, and discussion of strategies employed for processing occurrences of system measured/reported negative rut values.

4 Deflection Data

Deflection may be measured by Falling Weight Deflectometer (FWD), Dynaflect, or other approved device. Deflections are to be measured at a spacing of approximately 100m in each Data Collection Lane, taking care to avoid areas where the deflection may be influenced by utility appurtenances/patching. Specifications for deflection data reporting are given below:

[6] Reported IRI data should exclude areas of localized atypical roughness events such as cobblestone crosswalks, rumble strips, railway crossings.

- Route Name
- Date
- Directional Referencing for Undivided Routes
- Unique and sequential test location element ID
- Measured and Corrected Chainage for each test location
- Measured and Corrected Chainage at the end of each Control Segment
- Load(s) applied (FWD)
- Deflection sensor offsets from deflection source
- Individual sensor readings
- Surface temperature
- Ambient air temperature

Appendix C – Control Segments

Survey Control ID	Route	From	To	Centre-line Length (m)	DescFrom	DescTo
00010	7TH AVE	139	956	817	CHATHAM ST	STEVESTON HWY
00020	ACKROYD RD	0	365	365	NO 3 RD	COONEY RD
00030	ALDERBRIDGE WAY	0	210	210	WESTMINSTER HWY	ELMBRIDGE WAY
00040	ALDERBRIDGE WAY	210	814	604	ELMBRIDGE WAY	MINORU BLVD
00050	ALDERBRIDGE WAY	814	1137	323	MINORU BLVD	NO 3 RD
00060	ALDERBRIDGE WAY	1137	1320	183	NO 3 RD	HAZELBRIDGE WAY
00070	ALDERBRIDGE WAY	1320	2010	690	HAZELBRIDGE WAY	GARDEN CITY RD
00080	ALDERBRIDGE WAY	2010	2777	767	GARDEN CITY RD	NO 4 RD
00090	ALDERBRIDGE WAY	2777	3582	805	NO 4 RD	SHELL RD
00100	ALDERBRIDGE WAY WBL	0	805	805	SHELL RD	NO 4 RD
00110	ALDERBRIDGE WAY WBL	805	1639	834	NO 4 RD	GARDEN CITY RD
00120	ALDERBRIDGE WAY WBL	1572	2272	700	GARDEN CITY RD	HAZELBRIDGE WAY
00130	ALDERBRIDGE WAY WBL	2272	2445	173	HAZELBRIDGE WAY	NO 3 RD
00140	ALDERBRIDGE WAY WBL	2445	2567	122	NO 3 RD	NO 3 RD + 122
00150	ALEXANDRA RD	0	185	185	NO 3 RD	HAZELBRIDGE WAY
00160	ALEXANDRA RD	185	567	382	HAZELBRIDGE WAY	KWANTLEN ST
00170	BARNARD DR	0	614	614	GRANVILLE AVE	WESTMINSTER HWY E
00180	BARNARD DR	614	1002	388	WESTMINSTER HWY E	WESTMINSTER HWY W
00190	BARNARD DR	1002	1476	474	WESTMINSTER HWY W	RIVER RD
00200	BATHGATE WAY	71	276	205	SWEDEN WAY	JACOMBS RD
00210	BLUNDELL RD	27	817	790	SEAFAIR DR	No 1 RD
00220	BLUNDELL RD	817	1635	818	No 1 RD	RAILWAY AVE
00230	BLUNDELL RD	1635	2432	797	RAILWAY AVE	No 2 RD
00240	BLUNDELL RD	2432	3241	809	No 2 RD	GILBERT RD
00250	BLUNDELL RD	3241	4053	812	GILBERT RD	NO 3 RD
00260	BLUNDELL RD	4053	4880	827	NO 3 RD	GARDEN CITY RD
00270	BLUNDELL RD	4880	5699	819	GARDEN CITY RD	NO 4 RD
00280	BLUNDELL RD	5699	7329	1630	NO 4 RD	NO 5 RD
00290	BLUNDELL RD	7329	7681	352	NO 5 RD	W end of HWY 99 Overpass Br Deck
00300	BLUNDELL RD	7681	7738	57	W end of HWY 99 Overpass Br Deck	E end of HWY 99 Overpass Br Deck
00310	BLUNDELL RD	7738	8153	415	E end of HWY 99 Overpass Br Deck	SIDAWAY RD
00320	BLUNDELL RD	8153	8998	845	SIDAWAY RD	No 6 RD
00330	BLUNDELL RD	11961	13155	1194	335m W of NO.8 RD	NELSON RD
00340	BLUNDELL RD	13155	13310	155	NELSON RD	E EOP
00350	BLUNDELL RD WBL	0	859	859	NELSON RD	No 8 RD
00360	BLUNDELL RD WBL	859	2458	1599	No 8 RD	100m E of NO.7 RD
00370	BRIDGEPORT RD	0	702	702	ST EDWARDS DR	SHELL RD
00380	BRIDGEPORT RD	702	967	265	SHELL RD	SIMPSON RD
00390	BRIDGEPORT RD	967	1514	547	SIMPSON RD	NO 5 RD

00400	BRIDGEPORT RD	1514	2164	650	NO 5 RD	SWEDEN WAY
00410	BRIDGEPORT RD	2164	2510	346	SWEDEN WAY	W end of KNIGHT ST Overpass Br Deck
00420	BRIDGEPORT RD	2510	2575	65	W end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck
00430	BRIDGEPORT RD	2575	2833	258	E end of KNIGHT ST Overpass Br Deck	VIKING WAY
00440	BRIDGEPORT RD	2833	3136	303	VIKING WAY	No 6 RD
00450	BRIDGEPORT-KNIGHT E to N loop	95	439	344		
00460	BRIDGEPORT-KNIGHT E to S ramp	86	431	345		
00470	BRIDGEPORT-KNIGHT W to N ramp	49	379	330		
00480	BRIDGEPORT-KNIGHT W to S ramp	0	70	70		
00490	BROWNGATE RD	0	224	224	NO 3 RD	HAZELBRIDGE WAY
00500	CAMBIE RD	0	151	151	RIVER RD	NO 3 RD
00510	CAMBIE RD	151	447	296	NO 3 RD	HAZELBRIDGE WAY
00520	CAMBIE RD	447	1021	574	HAZELBRIDGE WAY	GARDEN CITY RD
00530	CAMBIE RD	1021	1793	772	GARDEN CITY RD	NO 4 RD
00540	CAMBIE RD	1793	2220	427	NO 4 RD	W end of HWY 99 Overpass Br Deck
00550	CAMBIE RD	2220	2312	92	W end of HWY 99 Overpass Br Deck	E end of HWY 99 Overpass Br Deck
00560	CAMBIE RD	2312	2475	163	E end of HWY 99 Overpass Br Deck	ST EDWARDS DR
00570	CAMBIE RD	2475	2612	137	ST EDWARDS DR	SHELL RD
00580	CAMBIE RD	2612	3431	819	SHELL RD	NO 5 RD
00590	CAMBIE RD	3431	4249	818	NO 5 RD	JACOMBS RD
00600	CAMBIE RD	4249	4447	198	JACOMBS RD	W end of KNIGHT ST Overpass Br Deck
00610	CAMBIE RD	4447	4506	59	W end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck
00620	CAMBIE RD	4506	5063	557	E end of KNIGHT ST Overpass Br Deck	No 6 RD
00630	CAPSTAN WAY	0	244	244	RIVER RD	NO 3 RD
00640	CAPSTAN WAY	244	836	592	NO 3 RD	GARDEN CITY RD
00650	CEDARBRIDGE WAY	0	367	367	ELMBRIDGE WAY	ALDERBRIDGE WAY
00660	CHATHAM ST	0	772	772	7TH AVE	No 1 RD
00670	COOK RD	0	868	868	NO 3 RD	GARDEN CITY RD
00680	COONEY RD	0	848	848	GRANVILLE AVE	WESTMINSTER HWY
00690	COONEY RD	848	1047	199	WESTMINSTER HWY	ACKROYD RD
00700	COONEY RD	1047	1253	206	ACKROYD RD	MANDSDOWNE RD
00710	ELMBRIDGE WAY	0	553	553	WESTMINSTER HWY	HOLLYBRIDGE WAY
00720	ELMBRIDGE WAY	553	653	100	HOLLYBRIDGE WAY	GILBERT RD
00730	ELMBRIDGE WAY	653	802	149	GILBERT RD	ALDERBRIDGE WAY
00740	ELMBRIDGE WAY	802	1139	337	ALDERBRIDGE WAY	MINORU BLVD
00750	FRANCIS RD	58	1004	946	SEAFAIR DR	No 1 RD
00760	FRANCIS RD	1004	1844	840	No 1 RD	RAILWAY AVE
00770	FRANCIS RD	1844	2635	791	RAILWAY AVE	No 2 RD
00780	FRANCIS RD	2635	3447	812	No 2 RD	GILBERT RD
00790	FRANCIS RD	3447	4259	812	GILBERT RD	NO 3 RD

00800	FRANCIS RD	4259	5102	843	NO 3 RD	GARDEN CITY RD
00810	FRANCIS RD	5102	5901	799	GARDEN CITY RD	NO 4 RD
00820	GARDEN CITY RD	629	1447	818	WILLIAMS RD	FRANCIS RD
00830	GARDEN CITY RD	1447	2254	807	FRANCIS RD	BLUNDELL RD
00840	GARDEN CITY RD	2254	3095	841	BLUNDELL RD	GRANVILLE AVE
00850	GARDEN CITY RD	3095	3423	328	GRANVILLE AVE	ALBERTA RD
00860	GARDEN CITY RD	3423	3913	490	ALBERTA RD	WESTMINSTER HWY
00870	GARDEN CITY RD	3913	4708	795	WESTMINSTER HWY	ALDERBRIDGE WAY
00880	GARDEN CITY RD	4708	5528	820	ALDERBRIDGE WAY	CAMBIE RD
00890	GARDEN CITY RD	5528	5875	347	CAMBIE RD	CAPSTAN WAY
00900	GARDEN CITY RD	5875	6246	371	CAPSTAN WAY	SEA ISLAND WAY
00910	GARDEN CITY RD SBL	98	372	274	PATTERSON RD	CAPSTAN WAY
00920	GARDEN CITY RD SBL	372	718	346	CAPSTAN WAY	CAMBIE RD
00930	GARDEN CITY RD SBL	718	1539	821	CAMBIE RD	ALDERBRIDGE WAY
00940	GARDEN CITY RD SBL	1539	2336	797	ALDERBRIDGE WAY	WESTMINSTER HWY
00950	GARDEN CITY RD SBL	2336	3146	810	WESTMINSTER HWY	GRANVILLE AVE
00960	GENERAL CURRIE RD	0	412	412	NO 3 RD	ST ALBANS RD
00970	GENERAL CURRIE RD	412	819	407	ST ALBANS RD	GARDEN CITY
00980	GILBERT RD	2386	3218	832	STEVESTON HWY	WILLIAMS RD
00990	GILBERT RD	3218	4035	817	WILLIAMS RD	FRANCIS RD
01000	GILBERT RD	4035	4844	809	FRANCIS RD	BLUNDELL RD
01010	GILBERT RD	4844	5639	795	BLUNDELL RD	GRANVILLE AVE
01020	GILBERT RD	5639	6466	827	GRANVILLE AVE	WESTMINSTER HWY
01030	GILBERT RD	6466	6915	449	WESTMINSTER HWY	LANSDOWNE RD
01040	GILBERT RD	6915	7366	451	LANSDOWNE RD	S END OF DINSMORE BRIDGE
01050	GILBERT RD SBL	0	170	170	LANSDOWNE RD	ELMBRIDGE WAY
01060	GILBERT RD SBL	170	449	279	ELMBRIDGE WAY	WESTMINSTER HWY
01070	GRANVILLE AVE	364	607	243	BARNARD DR	No 1 RD
01080	GRANVILLE AVE	607	1513	906	No 1 RD	RAILWAY AVE
01090	GRANVILLE AVE	2280	3081	801	No 2 RD	GILBERT RD
01100	GRANVILLE AVE	3081	3632	551	GILBERT RD	MINORU BLVD
01110	GRANVILLE AVE	3632	3900	268	MINORU BLVD	NO 3 RD
01120	GRANVILLE AVE	3900	4717	817	NO 3 RD	GARDEN CITY RD
01130	GRANVILLE AVE	4717	5552	835	GARDEN CITY RD	NO 4 RD
01140	GRANVILLE AVE	5552	7183	1631	NO 4 RD	NO 5 RD
01150	GRANVILLE AVE WBL	0	797	797	GARDEN CITY RD	NO 3 RD
01160	GRANVILLE AVE WBL	797	1613	816	NO 3 RD	MINORU BLVD
01170	GRANVILLE AVE WBL	1064	1613	549	MINORU BLVD	GILBERT RD
01180	GRANVILLE AVE WBL	1613	2417	804	GILBERT RD	No 2 RD
01190	GRANVILLE AVE WBL	2417	3171	754	No 2 RD	RAILWAY AVE
01200	GREAT CANADIAN WAY	0	648	648	SEA ISLAND WAY	RIVER RD
01210	GREAT CANADIAN WAY SBL	0	224	224	RIVER RD	VAN HORNE WAY
01220	GREAT CANADIAN WAY SBL	225	529	304	BECKWITH RD	SEA ISLAND WAY
01230	HAMMERSMITH GATE	0	196	196	SHELL RD	HAMMERSMITH WAY
01240	HAMMERSMITH WAY	0	240	240	HORSESHOE WAY	HAMMERSMITH GATE

01250	HAZELBRIDGE WAY	0	843	843	ALDERBRIDGE WAY	CAMBIE RD
01260	HAZELBRIDGE WAY SBL	0	207	207	CAMBIE RD	BROWNGATE RD
01270	HOLLYBRIDGE WAY	0	419	419	ELMBRIDGE WAY	RIVER RD
01280	HORSESHOE WAY	854	1171	317	HAMMERSMITH WAY	MACHRINA WAY
01290	HORSESHOE WAY	1171	1701	530	MACHRINA WAY	Start ONE WAY
01300	HORSESHOE WAY	1701	1760	59	Start ONE WAY	COPPERSMITH WAY
01310	HORSESHOE WAY	1760	2004	244	COPPERSMITH WAY	NO 5 RD
01320	HORSESHOE WAY SBL	0	289	289	NO 5 RD	COPPERSMITH WAY
01330	HORSESHOE WAY SBL	289	888	599	COPPERSMITH WAY	MACHRINA WAY
01340	JACOMBS RD	0	773	773	WESTMINSTER HWY	S end of HWY 91 Overpass Br Deck
01350	JACOMBS RD	773	830	57	S end of HWY 91 Overpass Br Deck	N end of HWY 91 Overpass Br Deck
01360	JACOMBS RD	830	1588	758	N end of HWY 91 Overpass Br Deck	CAMBIE RD
01370	JACOMBS RD	1588	2111	523	CAMBIE RD	BATHGATE WAY
01380	KNIGHT ST	0	549	549	WESTMINSTER HWY	MOT Jurisdiction
01390	KNIGHT ST	1385	1634	249	MOT Jurisdiction	CAMBIE RD
01400	KNIGHT ST	1634	2453	819	CAMBIE RD	BRIDGEPORT RD
01410	KNIGHT ST	2453	2775	322	BRIDGEPORT RD	S End of S Span KNIGHT ST BR
01420	KNIGHT ST SBL	0	313	313	S End of S Span KNIGHT ST BR	BRIDGEPORT RD
01430	KNIGHT ST SBL	313	1132	819	BRIDGEPORT RD	CAMBIE RD
01440	KNIGHT ST SBL	1132	1387	255	CAMBIE RD	MOT Jurisdiction
01450	KNIGHT ST SBL	2225	2775	550	MOT Jurisdiction	WESTMINSTER HWY
01460	KNIGHT-BRIDGEPORT N to E ramp	132	194	62		
01470	KNIGHT-BRIDGEPORT N to E ramp	194	453	259		
01480	KNIGHT-BRIDGEPORT S to E loop	171	415	244		
01490	KNIGHT-BRIDGEPORT S to W ramp	242	435	193		
01500	LANSDOWNE RD	0	104	104	GILBERT RD	ALDERBRIDGE WAY
01510	LANSDOWNE RD	394	658	264	MINORU BLVD	NO 3 RD
01520	LANSDOWNE RD	658	1529	871	NO 3 RD	GARDEN CITY RD.
01530	LANSDOWNE RD WBL	0	871	871	GARDEN CITY RD	NO 3 RD
01540	LANSDOWNE RD WBL	871	1136	265	NO 3 RD	MINORU BLVD
01550	LESLIE RD	0	188	188	NO 3 RD	HAZELBRIDGE WAY
01560	MACHRINA WAY	0	334	334	HORSESHOE WAY	NO 5 RD
01570	MINORU BLVD	0	791	791	BLUNDELL RD	GRANVILLE AVE
01580	MINORU BLVD	791	1654	863	GRANVILLE AVE	WESTMINSTER HWY
01590	MINORU BLVD	1654	2338	684	WESTMINSTER HWY	ALDERBRIDGE WAY
01600	MINORU BLVD SBL	0	202	202	ELMBRIDGE	WESTMINSTER HWY
01610	MINORU BLVD SBL	202	945	743	WESTMINSTER HWY	LIBRARY ENTRANCE
01620	MINORU BLVD SBL	945	1065	120	LIBRARY ENTRANCE	GRANVILLE AVE
01630	MITCHELL RD	460	1317	857	NW CORNER	NW CORNER + 857
01640	MITCHELL RD	1317	1444	127	NW CORNER + 857	KNIGHT ST SB ON RAMP + 95
01650	MITCHELL RD	1444	2043	599	KNIGHT ST SB ON RAMP + 95	E EOP
01660	MONCTON ST	440	1278	838	No 1 RD	RAILWAY AVE

01670	MONCTON ST	1278	2072	794	RAILWAY AVE	No 2 RD
01680	NO 1 RD	136	1094	958	MONCTON ST	STEVESTON HWY
01690	NO 1 RD	1094	1900	806	STEVESTON HWY	WILLIAMS RD
01700	NO 1 RD	1900	2711	811	WILLIAMS RD	FRANCIS RD
01710	NO 1 RD	2711	3526	815	FRANCIS RD	BLUNDELL RD
01720	NO 1 RD	3526	4321	795	BLUNDELL RD	GRANVILLE AVE
01730	NO 1 RD	4321	5133	812	GRANVILLE AVE	WESTMINSTER HWY
01740	NO 1 RD	5133	5563	430	WESTMINSTER HWY	RIVER RD
01750	NO 2 BRIDGE	0	880	880	S END	N END
01760	NO 2 RD	450	804	354	LONDON RD (DYKE) + 450	MONCTON ST
01770	NO 2 RD	804	1754	950	MONCTON ST	STEVESTON HWY
01780	NO 2 RD	1754	2583	829	STEVESTON HWY	WILLIAMS RD
01790	NO 2 RD	2583	3403	820	WILLIAMS RD	FRANCIS RD
01800	NO 2 RD	3403	4210	807	FRANCIS RD	BLUNDELL RD
01810	NO 2 RD	4210	5001	791	BLUNDELL RD	GRANVILLE AVE
01820	NO 2 RD	5001	5825	824	GRANVILLE AVE	WESTMINSTER HWY
01830	NO 2 RD	5825	6189	364	WESTMINSTER HWY	NO 2 RD BRIDGE
01840	NO.2 RD ON RAMP	0	198	198	RIVER RD	NO.2 RD SBL
01850	NO.2 RD OFF RAMP	0	120	120	NO.2 RD	RIVER RD
01860	NO 2 RD SBL	0	357	357	NO 2 RD BRIDGE	WESTMINSTER HWY
01870	NO 2 RD SBL	357	1183	826	WESTMINSTER HWY	GRANVILLE AVE
01880	NO 3 RD	2546	3363	817	STEVESTON HWY	WILLIAMS RD
01890	NO 3 RD	3363	4188	825	WILLIAMS RD	FRANCIS RD
01900	NO 3 RD	4188	5001	813	FRANCIS RD	BLUNDELL RD
01910	NO 3 RD	5001	5790	789	BLUNDELL RD	GRANVILLE AVE
01920	NO 3 RD	5790	6625	835	GRANVILLE AVE	WESTMINSTER HWY
01930	NO 3 RD	6625	7418	793	WESTMINSTER HWY	ALDERBRIDGE WAY
01940	NO 3 RD	7418	8234	816	ALDERBRIDGE WAY	CAMBIE RD
01950	NO 3 RD	8234	8783	549	CAMBIE RD	CAPSTAN WAY
01960	NO 3 RD	8783	9067	284	CAPSTAN WAY	SEA ISLAND WAY
01970	NO 3 RD	9191	9458	267	BRIDGEPORT RD	RIVER RD
01980	NO 3 RD SBL	0	284	284	SEA ISLAND WAY	CAPSTAN WAY
01990	NO 3 RD SBL	284	833	549	CAPSTAN WAY	CAMBIE RD
02000	NO 3 RD SBL	833	1385	552	CAMBIE RD	LESLIE RD
02010	NO 3 RD SBL	1385	1649	264	LESLIE RD	ALDERBRIDGE WAY
02020	NO 3 RD SBL	1649	2445	796	ALDERBRIDGE WAY	WESTMINSTER HWY
02030	NO 4 RD	2225	3036	811	STEVESTON HWY	WILLIAMS RD
02040	NO 4 RD	3036	3850	814	WILLIAMS RD	FRANCIS RD
02050	NO 4 RD	3850	4676	826	FRANCIS RD	BLUNDELL RD
02060	NO 4 RD	4676	5490	814	BLUNDELL RD	GRANVILLE AVE
02070	NO 4 RD	5490	6305	815	GRANVILLE AVE	WESTMINSTER HWY
02080	NO 4 RD	6305	7101	796	WESTMINSTER HWY	ALDERBRIDGE WAY
02090	NO 4 RD	7101	7917	816	ALDERBRIDGE WAY	CAMBIE RD
02100	NO 4 RD	7917	8279	362	CAMBIE RD	END at HWY 99
02110	NO 5 RD	395	712	317	MACHRINA WAY	FORGE PL
02120	NO 5 RD	712	875	163	FORGE PL	JACOBSON RD

02130	NO 5 RD	875	1405	530	JACOBSON RD	STEVESTON HWY
02140	NO 5 RD	1405	2221	816	STEVESTON HWY	WILLIAMS RD
02150	NO 5 RD	2221	2625	404	WILLIAMS RD	KING RD
02160	NO 5 RD	2625	3010	385	KING RD	KINGSBRIDGE DR
02170	NO 5 RD	3010	3858	848	KINGSBRIDGE DR	BLUNDELL RD
02180	NO 5 RD	3858	4672	814	BLUNDELL RD	GRANVILLE AVE
02190	NO 5 RD	4672	5510	838	GRANVILLE AVE	WESTMINSTER HWY
02200	NO 5 RD	5510	5903	393	WESTMINSTER HWY	S end of HWY 99 Overpass Br Deck
02210	NO 5 RD	5903	5995	92	S end of HWY 99 Overpass Br Deck	N end of HWY 99 Overpass Br Deck
02220	NO 5 RD	5995	6272	277	N end of HWY 99 Overpass Br Deck	ALDERBRIDGE WAY
02230	NO 5 RD	6272	7105	833	ALDERBRIDGE WAY	CAMBIE RD
02240	NO 5 RD	7105	7414	309	CAMBIE RD	GREENLAND RD
02250	NO 5 RD	7414	7924	510	GREENLAND RD	BRIDGEPORT RD
02260	NO 5 RD	7924	8135	211	BRIDGEPORT RD	VULCAN WAY
02270	NO 5 RD SBL	0	699	699	STEVESTON HWY	FORGE PL
02280	NO 6 RD	83	453	370	STEVESTON HWY	TRIANGLE RD
02290	NO 6 RD	453	879	426	TRIANGLE RD	WILLIAMS RD
02300	NO 6 RD	879	2511	1632	WILLIAMS RD	BLUNDELL RD
02310	NO 6 RD	2511	4154	1643	BLUNDELL RD	WESTMINSTER HWY
02320	NO 6 RD	4154	5022	868	WESTMINSTER HWY	HWY 91
02330	NO 6 RD	5022	5767	745	HWY 91	CAMBIE RD
02340	NO 6 RD	5767	6576	809	CAMBIE RD	BRIDGEPORT RD
02350	NO 6 RD	6576	7344	768	BRIDGEPORT RD	VULCAN WAY
02360	NO 6 RD	7344	7638	294	VULCAN WAY	RIVER RD
02370	NORTHGATE WAY	0	321	321	CAMBIE RD	CAPSTAN WAY
02380	RAILWAY AVE	477	1439	962	MONCTON ST	STEVESTON HWY
02390	RAILWAY AVE	1439	2251	812	STEVESTON HWY	WILLIAMS RD
02400	RAILWAY AVE	2251	3068	817	WILLIAMS RD	FRANCIS RD
02410	RAILWAY AVE	3068	3873	805	FRANCIS RD	BLUNDELL RD
02420	RAILWAY AVE	3873	4639	766	BLUNDELL RD	GRANVILLE AVE
02430	RAILWAY AVE SBL	0	766	766	GRANVILLE AVE	BLUNDELL RD
02440	RAILWAY AVE SBL	766	1571	805	BLUNDELL RD	FRANCIS RD
02450	RAILWAY AVE SBL	1571	2388	817	FRANCIS RD	WILLIAMS RD
02460	RAILWAY AVE SBL	2388	3200	812	WILLIAMS RD	STEVESTON HWY
02470	RAILWAY AVE SBL	3200	4162	962	STEVESTON HWY	MONCTON ST
02480	RIVER DR	542	922	380	VAN HORNE WAY	NO 4 RD
02490	RIVER DR	922	1621	699	NO 4 RD	SHELL RD
02500	RIVER RD	910	1418	508	BARNARD DR	No 1 RD
02510	RIVER RD	1418	2239	821	No 1 RD	McCALLAN RD
02520	RIVER RD	2239	3116	877	McCALLAN RD	No 2 RD
02530	RIVER RD	3116	4018	902	No 2 RD	HOLLYBRIDGE WAY
02540	RIVER RD	4019	5333	1314	HOLLYBRIDGE WAY	CAMBIE RD
02550	RIVER RD	5333	5830	497	CAMBIE RD	CAPSTAN WAY
02560	RIVER RD	6449	6827	378	NO 3 RD	GREAT CANADIAN WAY

02570	RIVER RD	9730	11303	1573	No 6 RD	No 7 RD
02580	RIVER RD	11303	13953	2650	No 7 RD	NELSON RD
02590	RIVER RD	13953	18068	4115	NELSON RD	WESTMINSTER HWY
02600	SEAFAIR DR	0	903	903	FRANCIS RD	BLUNDELL RD
02610	SHELL RD	54	736	682	HAMMERSMITH GATE	STEVESTON HWY
02620	SHELL RD	736	1547	811	STEVESTON HWY	WILLIAMS RD
02630	SHELL RD	1989	2769	780	WESTMINSTER HWY	ALDERBRIDGE WAY
02640	SHELL RD	2769	3605	836	ALDERBRIDGE WAY	CAMBIE RD
02650	SHELL RD	3605	4432	827	CAMBIE RD	BRIDGEPORT RD
02660	SHELL RD	4432	4946	514	BRIDGEPORT RD	RIVER DR
02670	ST ALBANS RD	808	1604	796	BLUNDELL RD	GRANVILLE AVE
02680	ST EDWARDS DR	0	1150	1150	CAMBIE RD	BRIDGEPORT RD
02690	STEVESTON HWY	150	914	764	7TH AVE	No 1 RD
02700	STEVESTON HWY	914	1753	839	No 1 RD	RAILWAY AVE
02710	STEVESTON HWY	1753	2552	799	RAILWAY AVE	No 2 RD
02720	STEVESTON HWY	2552	3361	809	No 2 RD	GILBERT RD
02730	STEVESTON HWY	3361	4176	815	GILBERT RD	NO 3 RD
02740	STEVESTON HWY	4176	5541	1365	NO 3 RD	SOUTHRIDGE RD
02750	STEVESTON HWY	5541	5803	262	SOUTHRIDGE RD	NO 4 RD
02760	STEVESTON HWY	5803	6611	808	NO 4 RD	SHELL RD
02770	STEVESTON HWY	6611	7417	806	SHELL RD	NO 5 RD
02780	STEVESTON HWY	7417	7632	215	NO 5 RD	Start of MoTH Jurisdiction
02790	STEVESTON HWY	8004	9128	1124	End of MoTH Jurisdiction	No 6 RD
02800	SWEDEN WAY	0	313	313	BATHGATE WAY	BRIDGEPORT RD
02810	SWEDEN WAY	313	628	315	BRIDGEPORT RD	VULCAN WAY
02820	VAN HORNE WAY	0	730	730	SMITH ST	RIVER DR
02830	VIKING WAY	137	952	815	CAMBIE RD	BRIDGEPORT RD
02840	VIKING WAY	952	1579	627	BRIDGEPORT RD	VULCAN WAY
02850	VULCAN WAY	0	1737	1737	NO 5 RD	No 6 RD
02860	WESTMINSTER HWY	626	1077	451	BARNARD DR S	No 1 RD
02870	WESTMINSTER HWY	1077	2709	1632	No 1 RD	No 2 RD
02880	WESTMINSTER HWY	2709	3516	807	No 2 RD	GILBERT RD
02890	WESTMINSTER HWY	3516	3741	225	GILBERT RD	ALDERBRIDGE WAY
02900	WESTMINSTER HWY	3741	4068	327	ALDERBRIDGE WAY	MINORU BLVD
02910	WESTMINSTER HWY	4068	4333	265	MINORU BLVD	NO 3 RD
02920	WESTMINSTER HWY	4333	5204	871	NO 3 RD	GARDEN CITY RD
02930	WESTMINSTER HWY	5204	5980	776	GARDEN CITY RD	NO 4 RD
02940	WESTMINSTER HWY	5980	6784	804	NO 4 RD	SHELL RD
02950	WESTMINSTER HWY	6784	7608	824	SHELL RD	NO 5 RD
02960	WESTMINSTER HWY	7608	7901	293	NO 5 RD	W end of HWY 99 Overpass Br Deck
02970	WESTMINSTER HWY	7970	8430	460	E end of HWY 99 Overpass Br Deck	JACOMBS RD
02980	WESTMINSTER HWY	8430	8858	428	JACOMBS RD	KNIGHT ST
02990	WESTMINSTER HWY	8858	9245	387	KNIGHT ST	No 6 RD
03000	WESTMINSTER HWY	9245	10892	1647	No 6 RD	No 7 RD
03010	WESTMINSTER HWY	10892	12517	1625	No 7 RD	No 8 RD

03020	WESTMINSTER HWY	12517	13350	833	No 8 RD	NELSON RD
03030	WESTMINSTER HWY	13350	14180	830	NELSON RD	No 9 RD
03040	WESTMINSTER HWY	14180	15046	866	No 9 RD	GRAYBAR RD
03050	WESTMINSTER HWY	15046	15972	926	GRAYBAR RD	MoTH Jurisdiction S of HWY 91
03060	WESTMINSTER HWY	16621	16675	54	MoTH Jurisdiction N of HWY 91	WESTMINSTER HWY NORTH
03070	WESTMINSTER HWY	16675	16961	286	WESTMINSTER HWY NORTH	MCLEAN AVE
03080	WESTMINSTER HWY	16961	17321	360	MCLEAN AVE	GILLEY RD
03090	WESTMINSTER HWY	17321	18530	1209	GILLEY RD	BOUNDARY RD
03100	WESTMINSTER HWY WBL	322	1127	805	No 6 RD + (-312)	JACOMBS RD
03110	WESTMINSTER HWY WBL	1127	1591	464	JACOMBS RD	W end of HWY 99 Overpass Br Deck
03120	WESTMINSTER HWY WBL	1659	1949	290	E end of HWY 99 Overpass Br Deck	NO 5 RD
03130	WESTMINSTER HWY WBL	1949	2774	825	NO 5 RD	SHELL RD
03140	WESTMINSTER HWY WBL	2774	3577	803	SHELL RD	NO 4 RD
03150	WESTMINSTER HWY WBL	3577	4353	776	NO 4 RD	GARDEN CITY RD
03160	WESTMINSTER HWY WBL	4353	5224	871	GARDEN CITY RD	NO 3 RD
03170	WESTMINSTER HWY WBL	5224	5493	269	NO 3 RD	MINORU BLVD
03180	WESTMINSTER HWY WBL	5493	5812	319	MINORU BLVD	ALDERBRIDGE WAY
03190	WESTMINSTER HWY WBL	5812	6035	223	ALDERBRIDGE WAY	GILBERT RD
03200	WESTMINSTER HWY WBL	6035	6848	813	GILBERT RD	No 2 RD
03210	WESTMINSTER HWY WBL	6848	8480	1632	No 2 RD	No 1 RD
03220	WILLIAMS RD	188	950	762	SPRINGMONT DR	No 1 RD
03230	WILLIAMS RD	950	1795	845	No 1 RD	RAILWAY AVE
03240	WILLIAMS RD	1795	2584	789	RAILWAY AVE	No 2 RD
03250	WILLIAMS RD	2584	3393	809	No 2 RD	GILBERT RD
03260	WILLIAMS RD	3393	4210	817	GILBERT RD	NO 3 RD
03270	WILLIAMS RD	4210	5044	834	NO 3 RD	GARDEN CITY RD
03280	WILLIAMS RD	5044	5857	813	GARDEN CITY RD	NO 4 RD
03290	WILLIAMS RD	5857	6667	810	NO 4 RD	SHELL RD
03300	WILLIAMS RD	6667	7490	823	SHELL RD	NO 5 RD

Appendix D – Inventory Segments for Deflection Data Pickup

ElementID	Route	From	To	DescFrom	DescTo
00501N0001	7TH AVE	139	189	CHATHAM ST	CHATHAM ST + 50
00501N0002	7TH AVE	189	956	CHATHAM ST + 50	STEVESTON HWY
01001E0006	ALDERBRIDGE WAY	1137	1198	NO 3 RD	NO 3 RD + 61
01001E0007	ALDERBRIDGE WAY	1198	1320	NO 3 RD + 61	HAZELBRIDGE WAY
01001E0008	ALDERBRIDGE WAY	1320	1702	HAZELBRIDGE WAY	KWANTLEN ST
01001E0009	ALDERBRIDGE WAY	1702	2010	KWANTLEN ST	GARDEN CITY RD
01001E0010	ALDERBRIDGE WAY	2010	2777	GARDEN CITY RD	NO 4 RD
01001E0011	ALDERBRIDGE WAY	2777	3582	NO 4 RD	SHELL RD
02001W0001	ALDERBRIDGE WAY WBL	0	709	SHELL RD	SHELL RD + 709
02001W0002	ALDERBRIDGE WAY WBL	709	805	SHELL RD + 709	NO 4 RD
02001W0003	ALDERBRIDGE WAY WBL	805	1470	NO 4 RD	NO 4 RD + 665
02001W0004	ALDERBRIDGE WAY WBL	1470	1572	NO 4 RD + 665	GARDEN CITY RD
02001W0005	ALDERBRIDGE WAY WBL	1572	1639	GARDEN CITY RD	GARDEN CITY RD + 67
02001W0006	ALDERBRIDGE WAY WBL	1639	1880	GARDEN CITY RD + 67	KWANTLEN ST
02001W0006.1	ALDERBRIDGE WAY WBL	1880	1992	KWANTLEN ST	KWANTLEN ST + 112
02001W0007	ALDERBRIDGE WAY WBL	1992	2172	KWANTLEN ST + 112	KWANTLEN ST + 292
02001W0008	ALDERBRIDGE WAY WBL	2172	2272	KWANTLEN ST + 292	HAZELBRIDGE WAY
02001W0009	ALDERBRIDGE WAY WBL	2272	2445	HAZELBRIDGE WAY	NO 3 RD
03001E0001	ALEXANDRA RD	0	185	NO 3 RD	HAZELBRIDGE WAY
07001E0012	BLUNDELL RD	5902	6520	NO 4 RD + 203	NO 4 RD + 821
C-2008/07/18-03	BLUNDELL RD	13155	13250	NELSON RD	NELSON RD + 95
C-2008/07/18-04	BLUNDELL RD	13250	13310	NELSON RD + 95	E OEP
C-2008/07/18-02	BLUNDELL RD WBL	1747	2458	888m W of NO. 8 RD	100m E of NO.7 RD
08001E0001	BRIDGEPORT RD	0	326	ST EDWARDS DR	ST EDWARDS DR + 326
08001E0002	BRIDGEPORT RD	326	702	ST EDWARDS DR + 326	SHELL RD
08001E0003	BRIDGEPORT RD	702	762	SHELL RD	SHELL RD + 60
08001E0004	BRIDGEPORT RD	762	967	SHELL RD + 60	SIMPSON RD
08001E0004.1	BRIDGEPORT RD	967	1422	SIMPSON RD	SIMPSON RD + 455
08001E0005	BRIDGEPORT RD	1422	1514	SIMPSON RD + 455	NO 5 RD
08001E0006	BRIDGEPORT RD	1514	1657	NO 5 RD	No 5 RD + 143
08001E0007	BRIDGEPORT RD	1657	2088	No 5 RD + 143	No 5 RD + 574
08001E0008	BRIDGEPORT RD	2088	2164	No 5 RD + 574	SWEDEN WAY
08001E0008.1	BRIDGEPORT RD	2164	2352	SWEDEN WAY	SWEDEN WAY + 188
08001E0009	BRIDGEPORT RD	2352	2510	SWEDEN WAY + 188	W end of KNIGHT ST Overpass Br Deck
08001E0009.1	BRIDGEPORT RD	2510	2575	W end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck
08001E0010	BRIDGEPORT RD	2575	2675	E end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck + 100
08001E0011	BRIDGEPORT RD	2675	2833	E end of KNIGHT ST Overpass Br Deck + 100	VIKING WAY
08001E0011.1	BRIDGEPORT RD	2833	3136	VIKING WAY	No 6 RD
09001C0001	BRIDGEPORT-KNIGHT E to N loop	95	439		

10001E0001	BRIDGEPORT-KNIGHT E to S ramp	86	431		
11001W0001	BRIDGEPORT-KNIGHT W to N ramp	49	379		
12001W0001	BRIDGEPORT-KNIGHT W to S ramp	0	70		
14001E0018	CAMBIE RD	4249	4382	JACOMBS RD	JACOMBS RD + 133
14001E0019	CAMBIE RD	4382	4447	JACOMBS RD + 133	W end of KNIGHT ST Overpass Br Deck
14001E0020	CAMBIE RD	4447	4506	W end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck
14001E0020.1	CAMBIE RD	4506	4756	E end of KNIGHT ST Overpass Br Deck	E end of KNIGHT ST Overpass Br Deck + 250
14001E0021	CAMBIE RD	4756	5063	E end of KNIGHT ST Overpass Br Deck + 250	No 6 RD
16001E0002	CHATHAM ST	332	772	7TH AVE + 332	No 1 RD
20001E0004	FRANCIS RD	1004	1095	No 1 RD	No 1 RD + 91
20001E0005	FRANCIS RD	1095	1844	No 1 RD + 91	RAILWAY AVE
20001E0006	FRANCIS RD	1844	2635	RAILWAY AVE	No 2 RD
21001N0010	GARDEN CITY RD	3423	3500	ALBERTA RD	COOK RD
21001N0010.1	GARDEN CITY RD	3500	3556	COOK RD	
C-2008/08/14-01	GARDEN CITY RD	3556	3746		FERNDALE RD
21001N0011	GARDEN CITY RD	3746	3809	FERNDALE RD	
C-2008/08/25-01	GARDEN CITY RD	3809	3862		
C-2008/08/25-02	GARDEN CITY RD	3862	3913		WESTMINSTER HWY
21001N0012	GARDEN CITY RD	3913	3981	WESTMINSTER HWY	WESTMINSTER HWY + 68
21001N0013	GARDEN CITY RD	3981	4314	WESTMINSTER HWY + 68	LANSDOWNE RD
21001N0013.1	GARDEN CITY RD	4314	4708	LANSDOWNE RD	ALDERBRIDGE WAY
21001N0015	GARDEN CITY RD	4874	5528	ALDERBRIDGE WAY + 166	CAMBIE RD
21001N0016	GARDEN CITY RD	5528	5630	CAMBIE RD	CAMBIE RD + 102
21001N0017	GARDEN CITY RD	5630	5750	CAMBIE RD + 102	CAMBIE RD + 222
21001N0018	GARDEN CITY RD	5750	5875	CAMBIE RD + 222	CAPSTAN WAY
21001N0018.1	GARDEN CITY RD	5875	5953	CAPSTAN WAY	CAPSTAN WAY + 78
21001N0019	GARDEN CITY RD	5953	6143	CAPSTAN WAY + 78	PATTERSON RD
21001N0020	GARDEN CITY RD	6143	6246	PATTERSON RD	SEA ISLAND WAY
22001S0001	GARDEN CITY RD SBL	98	372	PATTERSON RD	CAPSTAN WAY
22001S0001.1	GARDEN CITY RD SBL	372	718	CAPSTAN WAY	CAMBIE RD
22001S0005	GARDEN CITY RD SBL	1539	1719	ALDERBRIDGE WAY	ALDERBRIDGE WAY + 180
22001S0006	GARDEN CITY RD SBL	1719	1931	ALDERBRIDGE WAY + 180	LANSDOWNE RD
22001S0007	GARDEN CITY RD SBL	1931	2240	LANSDOWNE RD	LANSDOWNE RD + 309
22001S0008	GARDEN CITY RD SBL	2240	2336	LANSDOWNE RD + 309	WESTMINSTER HWY
23001N0012	GILBERT RD	6466	6812	WESTMINSTER HWY	ELMBRIDGE WAY + 67
23001N0013	GILBERT RD	6812	6915	ELMBRIDGE WAY + 67	LANSDOWNE RD
23001N0014	GILBERT RD	6915	6975	LANSDOWNE RD	LANSDOWNE RD + 150
C-2008/08/29-01	GILBERT RD	6975	7065	LANSDOWNE RD + 150	
CITY-2004-190	GILBERT RD	7065	7366		S END OF DINSMORE BRIDGE
23501S0001	GILBERT RD SBL	0	103	LANSDOWNE RD	LANSDOWNE RD + 103
23501S0002	GILBERT RD SBL	103	170	LANSDOWNE RD + 103	ELMBRIDGE WAY
23501S0003	GILBERT RD SBL	170	346	ELMBRIDGE WAY	ELMBRIDGE LANE SOUTH

23501S0004	GILBERT RD SBL	346	449	ELMBRIDGE LANE SOUTH	WESTMINSTER HWY
C-2008/10/22-01	GRANVILLE AVE	1433	1513		RAILWAY AVE
24000E0005	GRANVILLE AVE	1513	1584	RAILWAY AVE	RAILWAY AVE + 71
24000E0006	GRANVILLE AVE	1584	1665	RAILWAY AVE + 71	RAILWAY AVE + 152
24000E0007	GRANVILLE AVE	1665	2280	RAILWAY AVE + 152	No 2 RD
24000E0015	GRANVILLE AVE	4793	5269	GARDEN CITY RD + 76	GARDEN CITY RD + 552
24000E0017	GRANVILLE AVE	5325	5552	GARDEN CITY RD + 608	NO 4 RD
25001W0002	GRANVILLE AVE WBL	55	205	GARDEN CITY RD + 55	GARDEN CITY RD + 205
25001W0003	GRANVILLE AVE WBL	205	267	GARDEN CITY RD + 205	GARDEN CITY RD + 267
25001W0004	GRANVILLE AVE WBL	267	391	GARDEN CITY RD + 267	ST ALBINS RD
25001W0004.1	GRANVILLE AVE WBL	391	534	ST ALBINS RD	ST ALBINS RD + 143
25001W0005	GRANVILLE AVE WBL	534	723	ST ALBINS RD + 143	ST ALBINS RD + 332
25001W0008	GRANVILLE AVE WBL	854	1064	NO 3 RD + 57	MINORU BLVD
25001W0013	GRANVILLE AVE WBL	2417	2936	No 2 RD	No 2 RD + 519
25001W0014	GRANVILLE AVE WBL	2936	3171	No 2 RD + 519	RAILWAY AVE
31001N0001	KNIGHT ST	0	115	WESTMINSTER HWY	WESTMINSTER HWY + 115
31001N0002	KNIGHT ST	115	549	WESTMINSTER HWY + 115	MOT Jurisdiction
31001N0005	KNIGHT ST	1385	1634	MOT Jurisdiction	CAMBIE RD
31001N0006	KNIGHT ST	1634	2206	CAMBIE RD	CAMBIE RD + 572
31001N0007	KNIGHT ST	2206	2453	CAMBIE RD + 572	BRIDGEPORT RD
31001N0008	KNIGHT ST	2453	2775	BRIDGEPORT RD	S End of S Span KNIGHT ST BR
32001S0006	KNIGHT ST SBL	0	199	S End of S Span KNIGHT ST BR	S End of S Span KNIGHT ST BR + 199
32001S0007	KNIGHT ST SBL	199	313	S End of S Span KNIGHT ST BR + 199	BRIDGEPORT RD
32001S0008	KNIGHT ST SBL	313	395	BRIDGEPORT RD	BRIDGEPORT RD + 82
32001S0009	KNIGHT ST SBL	395	755	BRIDGEPORT RD + 82	BRIDGEPORT RD + 442
32001S0010	KNIGHT ST SBL	755	822	BRIDGEPORT RD + 442	BRIDGEPORT RD + 509
32001S0011	KNIGHT ST SBL	822	884	BRIDGEPORT RD + 509	BRIDGEPORT RD + 571
32001S0012	KNIGHT ST SBL	884	1132	BRIDGEPORT RD + 571	CAMBIE RD
32001S0013	KNIGHT ST SBL	1132	1387	CAMBIE RD	MOT Jurisdiction
32001S0015.2	KNIGHT ST SBL	2225	2775	MOT Jurisdiction	WESTMINSTER HWY
33001N0001	KNIGHT-BRIDGEPORT N to E ramp	132	194		
33001N0002	KNIGHT-BRIDGEPORT N to E ramp	194	453		
34001C0001	KNIGHT-BRIDGEPORT S to E loop	171	415		
35001S0001	KNIGHT-BRIDGEPORT S to W ramp	242	435		
C-2008/08/28-07	LANSDOWNE RD	0	104	GILBERT RD	ALDERBRIDGE WAY
46001E0001	MONCTON ST	440	525	No 1 RD	No 1 RD + 85
46001E0002	MONCTON ST	525	825	No 1 RD + 85	No 1 RD + 385
46001E0003	MONCTON ST	825	1278	No 1 RD + 385	RAILWAY AVE
46001E0003.1	MONCTON ST	1278	2072	RAILWAY AVE	No 2 RD
47001N0007	NO 1 RD	2711	3073	FRANCIS RD	YOUNGMORE RD + 145
47001N0008	NO 1 RD	3073	3526	YOUNGMORE RD + 145	BLUNDELL RD
CITY-2004-260	NO 2 BRIDGE	0	880	S END	N END
49001N0009	NO 2 RD	1754	2583	STEVESTON HWY	WILLIAMS RD

49001N0010	NO 2 RD	2583	3403	WILLIAMS RD	FRANCIS RD
49001N0011	NO 2 RD	3403	4210	FRANCIS RD	BLUNDELL RD
C-2008/08/25-07	NO 2 RD	4210	4267	BLUNDELL RD	
C-2008/08/25-08	NO 2 RD	4267	4383		LANCING RD
49001N0012	NO 2 RD	4383	4829	LANCING RD	BLUNDELL RD + 619
49001N0013	NO 2 RD	4829	5001	BLUNDELL RD + 619	GRANVILLE AVE
49001N0014	NO 2 RD	5001	5825	GRANVILLE AVE	WESTMINSTER HWY
49001N0015	NO 2 RD	5825	6189	WESTMINSTER HWY	NO 2 RD BRIDGE
C-2008/08/01-02	NO 2 RD OFF RAMP	0	120	NO.2 RD	RIVER RD
50001S0001	NO 2 RD SBL	0	72	NO 2 RD BRIDGE	NO 2 RD BRIDGE + 72
50001S0002	NO 2 RD SBL	72	200	NO 2 RD BRIDGE + 72	NO 2 RD BRIDGE + 200
50001S0003	NO 2 RD SBL	200	357	NO 2 RD BRIDGE + 200	WESTMINSTER HWY
51001N0009	NO 3 RD	6470	6549	SABA RD	SABA RD + 79
51001N0010	NO 3 RD	6549	6625	SABA RD + 79	WESTMINSTER HWY
51001N0010.1	NO 3 RD	6625	6823	WESTMINSTER HWY	ACKROYD RD
51001N0010.2	NO 3 RD	6823	7023	ACKROYD RD	LANSDOWNE RD
51001N0011	NO 3 RD	7023	7264	LANSDOWNE RD	LANSDOWNE RD + 241
51001N0012	NO 3 RD	7264	7418	LANSDOWNE RD + 241	ALDERBRIDGE WAY
51001N0012.1	NO 3 RD	7418	7683	ALDERBRIDGE WAY	LESLIE RD
51001N0013	NO 3 RD	7683	8234	LESLIE RD	CAMBIE RD
51001N0014	NO 3 RD	8234	8783	CAMBIE RD	CAPSTAN WAY
51001N0015	NO 3 RD	8783	8929	CAPSTAN WAY	CAPSTAN WAY + 146
51001N0016	NO 3 RD	8929	9067	CAPSTAN WAY + 146	SEA ISLAND WAY
51001N0018	NO 3 RD	9191	9290	BRIDGEPORT RD	BRIDGEPORT RD + 99
51001N0018.1	NO 3 RD	9290	9458	BRIDGEPORT RD + 99	RIVER RD
52001S0002	NO 3 RD SBL	0	78	SEA ISLAND WAY	SEA ISLAND WAY + 78
52001S0003	NO 3 RD SBL	78	220	SEA ISLAND WAY + 78	SEA ISLAND WAY + 220
52001S0004	NO 3 RD SBL	220	284	SEA ISLAND WAY + 220	CAPSTAN WAY
52001S0005	NO 3 RD SBL	284	767	CAPSTAN WAY	CAPSTAN WAY + 483
52001S0006	NO 3 RD SBL	767	833	CAPSTAN WAY + 483	CAMBIE RD
52001S0007	NO 3 RD SBL	833	955	CAMBIE RD	CAMBIE RD + 122
52001S0007.1	NO 3 RD SBL	955	1385	CAMBIE RD + 122	LESLIE RD
52001S0008	NO 3 RD SBL	1385	1543	LESLIE RD	ALEXANDRA RD
52001S0009	NO 3 RD SBL	1543	1649	ALEXANDRA RD	ALDERBRIDGE WAY
52001S0009.1	NO 3 RD SBL	1649	2044	ALDERBRIDGE WAY	LANSDOWNE RD
52001S0009.2	NO 3 RD SBL	2044	2244	LANSDOWNE RD	ACKROYD RD
52001S0010	NO 3 RD SBL	2244	2333	ACKROYD RD	FIRBRIDGE WAY
52001S0011	NO 3 RD SBL	2333	2445	FIRBRIDGE WAY	WESTMINSTER HWY
53001N0009	NO 4 RD	2225	2312	STEVESTON HWY	STEVESTON HWY + 87
53001N0010	NO 4 RD	2312	3036	STEVESTON HWY + 87	WILLIAMS RD
54001N0008	NO 5 RD	1240	1405	RIVERSIDE WAY SOUTH + 151	STEVESTON HWY
54001N0018	NO 5 RD	5651	5903	WESTMINSTER HWY + 141	S end of HWY 99 Overpass Br Deck
54001N0022	NO 5 RD	7105	7414	CAMBIE RD	GREENLAND RD
55001N0012	NO 6 RD	4403	4459	WESTMINSTER HWY + 233	WESTMINSTER HWY + 289
55001N0013	NO 6 RD	4459	4537	WESTMINSTER HWY + 289	WESTMINSTER HWY + 367

55001N0014	NO 6 RD	4537	4863	WESTMINSTER HWY + 367	WESTMINSTER HWY + 693
55001N0018	NO 6 RD	5193	5429	MAYCREST WAY	MAYFIELD PL
55001N0018.1	NO 6 RD	5429	5767	MAYFIELD PL	CAMBIE RD
56001N0008	RAILWAY AVE	1520	2251	STEVESTON HWY + 81	WILLIAMS RD
56001N0009	RAILWAY AVE	2251	3068	WILLIAMS RD	FRANCIS RD
C-2008/08/22-09	RAILWAY AVE	3068	3118	FRANCIS RD	FRANCIS RD + 50
56001N0011	RAILWAY AVE	3873	4034	BLUNDELL RD	BLUNDELL RD + 161
56001N0012	RAILWAY AVE	4034	4554	BLUNDELL RD + 161	BLUNDELL RD + 681
56001N0013	RAILWAY AVE	4554	4639	BLUNDELL RD + 681	GRANVILLE AVE
57001S0001	RAILWAY AVE SBL	0	121	GRANVILLE AVE	GRANVILLE AVE + 121
57001S0002	RAILWAY AVE SBL	121	179	GRANVILLE AVE + 121	GRANVILLE AVE + 179
57001S0003	RAILWAY AVE SBL	179	460	GRANVILLE AVE + 179	GRANVILLE AVE + 460
57001S0004	RAILWAY AVE SBL	460	766	GRANVILLE AVE + 460	BLUNDELL RD
C-2008/08/22-10	RAILWAY AVE SBL	1521	1571	FRANCIS RD (-50)	FRANCIS RD
57001S0006	RAILWAY AVE SBL	1571	1676	FRANCIS RD	FRANCIS RD + 105
57001S0007	RAILWAY AVE SBL	1676	2388	FRANCIS RD + 105	WILLIAMS RD
57001S0008	RAILWAY AVE SBL	2388	3200	WILLIAMS RD	STEVESTON HWY
57001S0014	RAILWAY AVE SBL	3981	4162	STEVESTON HWY + 781	MONCTON ST
C-2008/08/01-01	RIVER RD	3116	4018	No 2 RD	HOLLYBRIDGE WAY
58003E0013	RIVER RD	5333	5850	CAMBIE RD	CAPSTAN WAY
64001N0007	ST EDWARDS DR	1095	1150	CAMBIE RD + 1095	BRIDGEPORT RD
65000E0003	STEVESTON HWY	914	1077	No 1 RD	No 1 RD + 163
65000E0005	STEVESTON HWY	1753	2552	RAILWAY AVE	No 2 RD
65000E0006	STEVESTON HWY	2552	2625	No 2 RD	No 2 RD + 73
65000E0007	STEVESTON HWY	2625	2724	No 2 RD + 73	No 2 RD + 172
65000E0008	STEVESTON HWY	2724	3361	No 2 RD + 172	GILBERT RD
65000E0009	STEVESTON HWY	3361	3566	GILBERT RD	GILBERT RD + 205
65000E0010	STEVESTON HWY	3566	3769	GILBERT RD + 205	GILBERT RD + 408
65000E0011	STEVESTON HWY	3769	4110	GILBERT RD + 408	GILBERT RD + 749
65000E0012	STEVESTON HWY	4110	4176	GILBERT RD + 749	NO 3 RD
65000E0013	STEVESTON HWY	4176	4242	NO 3 RD	NO 3 RD + 66
65000E0014	STEVESTON HWY	4242	4627	NO 3 RD + 66	NO 3 RD + 451
65000E0015	STEVESTON HWY	4627	4690	NO 3 RD + 451	NO 3 RD + 514
65000E0016	STEVESTON HWY	4690	4869	NO 3 RD + 514	NO 3 RD + 693
65000E0017	STEVESTON HWY	4869	4992	NO 3 RD + 693	NO 3 RD + 816
65000E0018	STEVESTON HWY	4992	5160	NO 3 RD + 816	
65000E0018.1	STEVESTON HWY	5160	5249		MORTFIELD GATE
65000E0019	STEVESTON HWY	5249	5449	MORTFIELD GATE	SOUTHDALE RD
65000E0020	STEVESTON HWY	5449	5541	SOUTHDALE RD	SOUTHRIDGE RD
65000E0021	STEVESTON HWY	5541	5803	SOUTHRIDGE RD	NO 4 RD
65000E0022	STEVESTON HWY	5803	5898	NO 4 RD	NO 4 RD + 95
65000E0023	STEVESTON HWY	5898	5963	NO 4 RD + 95	NO 4 RD + 160
65000E0024	STEVESTON HWY	5963	6505	NO 4 RD + 160	NO 4 RD + 702
65000E0025	STEVESTON HWY	6505	6611	NO 4 RD + 702	SHELL RD
65000E0026.1	STEVESTON HWY	6611	6718	SHELL RD	SHELL RD + 107
65000E0027	STEVESTON HWY	6718	6872	SHELL RD + 107	SEAWARD GATE

65000E0028	STEVESTON HWY	6872	7081	SEAWARD GATE	COPPERSMITH PL
65000E0028.1	STEVESTON HWY	7081	7417	COPPERSMITH PL	NO 5 RD
65000E0029	STEVESTON HWY	7417	7503	NO 5 RD	No 5 RD + 86
65000E0030	STEVESTON HWY	7503	7632	No 5 RD + 86	Start of MoTH Jurisdiction
65000E0036	STEVESTON HWY	8087	8160	End of MoTH Jurisdiction + 83	End of MoTH Jurisdiction + 156
70001E0004	WESTMINSTER HWY	2709	2890	No 2 RD	No 2 RD + 181
70001E0005	WESTMINSTER HWY	2890	3166	No 2 RD + 181	ELMBRIDGE WAY
70001E0005.1	WESTMINSTER HWY	3166	3366	ELMBRIDGE WAY	ELMBRIDGE WAY + 200
70001E0006	WESTMINSTER HWY	3366	3516	ELMBRIDGE WAY + 200	GILBERT RD
70001E0006.1	WESTMINSTER HWY	3516	3613	GILBERT RD	GILBERT RD + 97
70001E0007	WESTMINSTER HWY	3613	3741	GILBERT RD + 97	ALDERBRIDGE WAY
70001E0007.1	WESTMINSTER HWY	3741	3875	ALDERBRIDGE WAY	ALDERBRIDGE WAY + 134
70001E0008	WESTMINSTER HWY	3875	4068	ALDERBRIDGE WAY + 134	MINORU BLVD
70001E0009.1	WESTMINSTER HWY	4068	4230	MINORU BLVD	MINORU BLVD + 162
70001E0010	WESTMINSTER HWY	4230	4333	MINORU BLVD + 162	NO 3 RD
70001E0011	WESTMINSTER HWY	4333	4457	NO 3 RD	NO 3 RD + 124
70001E0012	WESTMINSTER HWY	4457	4697	NO 3 RD + 124	COONEY RD
70001E0013	WESTMINSTER HWY	4697	5204	COONEY RD	GARDEN CITY RD
70001E0014	WESTMINSTER HWY	5204	5308	GARDEN CITY RD	GARDEN CITY RD + 104
C-2008/08/14-02	WESTMINSTER HWY	5308	5372	GARDEN CITY RD + 104	KATSURA ST
70001E0015	WESTMINSTER HWY	5372	5447	KATSURA ST	GARDEN CITY RD + 243
70001E0016	WESTMINSTER HWY	5447	5533	GARDEN CITY RD + 243	
C-2008/08/14-03	WESTMINSTER HWY	5533	5583		ALDER ST
C-2008/08/14-04	WESTMINSTER HWY	5583	5671	ALDER ST	
C-2008/08/14-05	WESTMINSTER HWY	5671	5722		
C-2008/08/14-06	WESTMINSTER HWY	5722	5800		
C-2008/08/14-07	WESTMINSTER HWY	5800	5885		
70001E0017	WESTMINSTER HWY	5885	5980		NO 4 RD
70001E0018	WESTMINSTER HWY	5980	6347	NO 4 RD	NO 4 RD + 367
70001E0019	WESTMINSTER HWY	6347	6784	NO 4 RD + 367	SHELL RD
70001E0020	WESTMINSTER HWY	6784	7442	SHELL RD	SHELL RD + 658
70001E0021	WESTMINSTER HWY	7442	7608	SHELL RD + 658	NO 5 RD
70001E0022	WESTMINSTER HWY	7608	7740	NO 5 RD	No 5 RD + 132
70001E0023	WESTMINSTER HWY	7740	7787	No 5 RD + 132	No 5 RD + 179
70001E0023.1	WESTMINSTER HWY	7787	7901	No 5 RD + 179	W end of HWY 99 Overpass Br Deck
70001E0025	WESTMINSTER HWY	7970	8152	E end of HWY 99 Overpass Br Deck	E end of HWY 99 Overpass Br Deck + 166
70001E0026	WESTMINSTER HWY	8152	8430	E end of HWY 99 Overpass Br Deck + 166	JACOMBS RD
70001E0027	WESTMINSTER HWY	8430	8532	JACOMBS RD	JACOMBS RD + 102
70001E0028	WESTMINSTER HWY	8532	8858	JACOMBS RD + 102	KNIGHT ST
70001E0029	WESTMINSTER HWY	8858	8967	KNIGHT ST	KNIGHT ST + 109
70001E0030	WESTMINSTER HWY	8967	9124	KNIGHT ST + 109	KNIGHT ST + 266
70001E0031	WESTMINSTER HWY	9124	9245	KNIGHT ST + 266	No 6 RD
70001E0032	WESTMINSTER HWY	9245	9404	No 6 RD	No 6 RD + 159
70001E0033	WESTMINSTER HWY	9404	9517	No 6 RD + 159	No 6 RD + 272

70001E0034	WESTMINSTER HWY	9517	9557	No 6 RD + 272	No 6 RD + 312
70001E0034.1	WESTMINSTER HWY	9557	10892	No 6 RD + 312	No 7 RD
70001E0035	WESTMINSTER HWY	10892	12517	No 7 RD	No 8 RD
70001E0036	WESTMINSTER HWY	12517	12905	No 8 RD	No 8 RD + 388
70001E0037	WESTMINSTER HWY	12905	13350	No 8 RD + 388	NELSON RD
70001E0038	WESTMINSTER HWY	13350	13455	NELSON RD	NELSON RD + 105
70001E0039	WESTMINSTER HWY	13455	13551	NELSON RD + 105	NELSON RD + 201
70001E0040	WESTMINSTER HWY	13551	14180	NELSON RD + 201	No 9 RD
70001E0041	WESTMINSTER HWY	14180	14396	No 9 RD	RAILROAD CROSSING
70001E0042	WESTMINSTER HWY	14396	15046	RAILROAD CROSSING	GRAYBAR RD
C-2008/08/15-01	WESTMINSTER HWY	15046	15486	GRAYBAR RD	FRASERWOOD PL
C-2008/08/15-02	WESTMINSTER HWY	15486	15680	FRASERWOOD PL	FRASERWOOD PL + 194
70001E0043	WESTMINSTER HWY	15680	15972	FRASERWOOD PL + 194	MoTH Jurisdiction S of HWY 91
70001E0049	WESTMINSTER HWY	16621	16675	MoTH Jurisdiction N of HWY 91	WESTMINSTER HWY NORTH
70001E0050	WESTMINSTER HWY	16675	16810	WESTMINSTER HWY NORTH	WESTMINSTER HWY NORTH + 135
70001E0051	WESTMINSTER HWY	16810	16961	WESTMINSTER HWY NORTH + 135	MCLEAN AVE
70001E0051.1	WESTMINSTER HWY	16961	17321	MCLEAN AVE	GILLEY RD
70001E0051.2	WESTMINSTER HWY	17321	17425	GILLEY RD	GILLEY RD + 104
70001E0052	WESTMINSTER HWY	17425	17952	GILLEY RD + 104	GILLEY RD + 631
70001E0053	WESTMINSTER HWY	17952	18530	GILLEY RD + 631	BOUNDARY RD
71001W0001	WESTMINSTER HWY WBL	0	128	No 6 RD + (-312)	No 6 RD + (-184)
71001W0002	WESTMINSTER HWY WBL	128	198	No 6 RD + (-184)	No 6 RD + (-114)
71001W0003	WESTMINSTER HWY WBL	198	306	No 6 RD + (-114)	
71001W0003.1	WESTMINSTER HWY WBL	306	444		No 6 RD + 132
71001W0004	WESTMINSTER HWY WBL	444	556	No 6 RD + 132	No 6 RD + 244
71001W0005	WESTMINSTER HWY WBL	556	695	No 6 RD + 244	No 6 RD + 383
71001W0006	WESTMINSTER HWY WBL	695	1127	No 6 RD + 383	JACOMBS RD
71001W0007	WESTMINSTER HWY WBL	1127	1340	JACOMBS RD	JACOMBS RD + 213
71001W0008	WESTMINSTER HWY WBL	1340	1401	JACOMBS RD + 213	JACOMBS RD + 274
71001W0009	WESTMINSTER HWY WBL	1401	1591	JACOMBS RD + 274	W end of HWY 99 Overpass Br Deck
71001W0011	WESTMINSTER HWY WBL	1659	1775	E end of HWY 99 Overpass Br Deck	E end of HWY 99 Overpass Br Deck + 116
71001W0012	WESTMINSTER HWY WBL	1775	1949	E end of HWY 99 Overpass Br Deck + 116	NO 5 RD
71001W0013	WESTMINSTER HWY WBL	1949	2035	NO 5 RD	No 5 RD + 86
71001W0014	WESTMINSTER HWY WBL	2035	2774	No 5 RD + 86	SHELL RD
71001W0015	WESTMINSTER HWY WBL	2774	3577	SHELL RD	NO 4 RD
71001W0016	WESTMINSTER HWY WBL	3577	4259	NO 4 RD	NO 4 RD + 682
71001W0017	WESTMINSTER HWY WBL	4259	4353	NO 4 RD + 682	GARDEN CITY RD
71001W0018	WESTMINSTER HWY WBL	4353	4457	GARDEN CITY RD	GARDEN CITY RD + 104
71001W0019	WESTMINSTER HWY WBL	4457	4857	GARDEN CITY RD + 104	COONEY RD
71001W0020	WESTMINSTER HWY WBL	4857	5102	COONEY RD	BUSWELL RD + 88
71001W0021	WESTMINSTER HWY WBL	5102	5224	BUSWELL RD + 88	NO 3 RD
71001W0022	WESTMINSTER HWY WBL	5224	5398	NO 3 RD	NO 3 RD + 174
71001W0023	WESTMINSTER HWY WBL	5398	5493	NO 3 RD + 174	MINORU BLVD

71001W0024	WESTMINSTER HWY WBL	5493	5678	MINORU BLVD	MINORU BLVD + 185
71001W0025	WESTMINSTER HWY WBL	5678	5758	MINORU BLVD + 185	MINORU BLVD + 265
71001W0026	WESTMINSTER HWY WBL	5758	5812	MINORU BLVD + 265	ALDERBRIDGE WAY
71001W0027	WESTMINSTER HWY WBL	5812	5938	ALDERBRIDGE WAY	ALDERBRIDGE WAY + 126
71001W0028	WESTMINSTER HWY WBL	5938	6035	ALDERBRIDGE WAY + 126	GILBERT RD
71001W0029	WESTMINSTER HWY WBL	6035	6195	GILBERT RD	GILBERT RD + 160
71001W0030	WESTMINSTER HWY WBL	6195	6391	GILBERT RD + 160	ELMBRIDGE WAY
71001W0030.1	WESTMINSTER HWY WBL	6391	6664	ELMBRIDGE WAY	ELMBRIDGE WAY + 273
71001W0031	WESTMINSTER HWY WBL	6664	6848	ELMBRIDGE WAY + 273	No 2 RD
72001E0007	WILLIAMS RD	2584	2696	No 2 RD	PARSONS RD
72001E0008	WILLIAMS RD	2696	3393	PARSONS RD	GILBERT RD

Appendix E – Summary of Fees

	Task		Personnel			Subtotal		Unit Rate Tasks				Total Cost
			Name	Name	Name			Estimated		Unit Rate	Extended	
			Hourly Rate	Hourly Rate	Hourly Rate	Hours	Disbursements	Quantity	Units	per km	Price	
5.1	Background Information Collection and Review											
5.2	Route and Data Processing Definition											
5.3	Data Calibration											
5.4	Pavement Inventory and Condition Data Collection											
	.1 MRN	Inventory Segment Definition						52	km			
		Pavement Surface Distress						63	km			
		IRI and Rut						63	km			
		Deflection						63				
	.2 Major (may be deleted)	Inventory Segment Definition						159	km			
		Pavement Surface Distress						207	km			
		IRI and Rut						207	km			
		Deflection						26	km			
	.3 Minor (may be deleted)	Inventory Segment Definition						433	km			
		Pavement Surface Distress						433	km			
5.5	Digital Video							644	km			
5.6	Data Validation											
5.7	Data Transfer and Update dTIMSCT Database											
5.8	Life-Cycle Cost Analysis											
5.9	Paving Program											

	5.10.1 Theoretical 75-Year										
	5.10.2 Proposed 5-Year										
5.10	**Meetings**										
	Total Cost										

City of Richmond
Finance & Corporate Services Division

Notice of No Bid

Note: Receipt of this completed form will assist us in calling for future bids. Please complete and submit this form prior to the closing date and time as shown on the Request for Quotation/Proposal/Tender form.
Please remember to include Quotation/Proposal/Tender No. at right.

Proposal No. 3436P

A Quotation/Proposal/Tender is not being submitted for the following reason(s):

- ☐ We do not manufacture/supply the required goods/services
- ☐ We do not manufacture/supply to stated specifications
- ☐ Specifications are not sufficiently defined
- ☐ Insufficient information to prepare quote/proposal/tender
- ☐ Quantity too small
- ☐ Quantity too large
- ☐ Quantity beyond our production capacity
- ☐ Cannot meet packaging requirements
- ☐ Cannot handle due to present plant loading
- ☐ Cannot obtain raw materials/goods in time to meet delivery requirements
- ☐ Cannot meet delivery requirements
- ☐ Cannot quote/tender a firm price at this time
- ☐ Insufficient time to prepare quote/tender.
- ☐ We are unable to competitively quote/tender at this time.
- ☐ We do not have facilities to handle this requirement
- ☐ Licensing restrictions (please explain)
- ☐ Agreements with distributors/dealers do not permit us to sell directly.
- ☐ Other reasons or additional comments (please explain below)

I / We wish to quote / tender on similar goods / services in future ☐ Yes ☐ No	Authorized Company Official – Signature and Title	Date

This space for City of Richmond Comments	Firm Name
	Address
	City
	Province Postal Code
	Telephone Number

December 1, 2008
File: 10-6060-05-01/2008-Vol 01

Engineering
Telephone: 604-276-4289
Fax: 604-276-4197

Attention: All Proponents

Dear Madam/Sir:

Re: Request for Proposal 3436P:
Major and Minor Roads Pavement Data Collection and Analysis – Addendum 1

This addendum forms part of the Contract Documents and shall be read, interpreted and coordinated with all other parts. Please review and consider the following information in preparation of your submissions:

Item 1.0 – Section 7.5: Fees

Delete text:
"Similarly, the total count of signs listed in the Summary of Fees is an approximate and will be used of City budgeting purposes and proposal fee comparison. The Consultant will be paid based on actual total sign count with signs along MRN Roads itemized separately."

Item 2.0 –Clarification of Questions

2.1 Section 5.9.1 - Is the City wanting the 75-year paving program generated from within dTIMS?
- Yes

2.2 Section 6 - Will the City provide their existing dTIMS set up and current models?
- Yes, see Section 6: City Provided Items

2.3 Section 6 - Can you please advise what version of the dTIMSCT the City has?
- dTIMSCT V. 7

2.4 Appendix E - Summary of fees - Please reconsider the inclusion of the words "may be deleted" in section 5.4 and Appendix E, as this creates significant pricing risk for proponents. As proponents we have to contemplate the removal of tasks 5.4.2 and 5.4.3 and therefore need to ensure that all fixed

costs relating to data collection (ie. establishment, data management, post processing, etc.) are included in other tasks thereby losing transparency in the pricing schedule. Please confirm that we should include the total cost of work assuming full scope?

- Depending on proposal submission, tasks 5.4.2 and 5.4.3 may be deleted due to budgetary constraints. Data collection establishment, data management, post processing would not be necessary for data that is not collected.

2.5 Please provide the basis of payment (ie. time writing and kilometer rate or lump sum)? Does the pricing schedule derive the total project budget or financial upset limit? How will this budget be adjusted should the scope of work be reduced?

- Basis of payment varies per task, please see Section 7.5: Fees

2.6 Can you please provide a copy of your previous Pavement Management Plan?

- The City will provide the data listed in Section 6: City Provided Items

If the proponent requires further clarification on the above addendum, please contact the Project Engineer for this RFP.

Yours truly,

Helen Chan, P.Eng.
City of Richmond
Project Engineer

HC:hc