Business Requirements Document (Short Form BRD)

LANE CLOSURES APPLICATION

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1 SUMMARY

The purpose of this document is to capture, at a high level, the business process requirements for the Lane Closures Application Project.

When these requirements have been accepted by the business representative(s), this document will serve as the basis for the delivery team's work. The details, defining how the delivery team will solve the documented problem and satisfy the stated need(s), will be set out in subsequent specification document(s).

The scope of these requirements will consist of business and software requirements for insertion into a request for proposal ("RFP") for development of the Lanes Closure software solution.

Summary of modules identified for the Lane Closures Application:
- Public Website
    - Home Page
    - Full Page Map
    - Full Page Closure List
    - Request/Report a Lane Closure
    - Informational Pages (Regional Street Map, Manual of Temporary Traffic Control)
- Login/Registration
    - User Authorization/Authentication
    - User Administration
        - User Permissions/Settings
    - Organization/Department/Division/Branch Administration
- Lane Closure Management - web/mobile app
    - Dashboards
    - Submit Lane Closure Request/Report
    - Lane Closure Request Management
    - Reported Lane Closure Management
    - Reported Restriction Management
    - Contraventions Management
    - Quick Links to
    - Waze Export
- Tools
    - Quick Search
    - Reports
    - History
    - Advanced Search
- Settings
    - Profile Settings
    - Global Settings
- Wishlist Items

2   KEY ASSUMPTIONS & CONSTRAINTS

- Software design must be esthetically compatible with existing www.winnipeg.ca website
- Software design may need to go through cow approval process
- Application must be built with extensibility in mind where implementation takes future growth into consideration, especially concerning integration with other systems (e.g. permits system)

Software requirements on common practices when managing records

- **List view** is a page that lists all records of an object, where user can search on, order or filter list, with ability to add new or edit record
- **Details page** is the add/edit form used to add/modify/disable/delete a record
- **Adding a new record** will load up the record's details page with default values applied with the ability to save if the required fields are provided. User can cancel at any time.
- **Editing an existing record** will load up the object's details page with the records' values with the ability to save if the required fields are provided. User can cancel at any time.
- **Deleting an existing record** is only allowed if there are no database records that reference it. If specified in the software requirements, the record can be disabled instead of deleted to ensure no data is orphaned in the system.
- **Record ID:** Each record for the major objects should have a unique readable ID that can be searched on by the user
  - Organization, Department, Division, Branch, User, Request, Report, Restriction, Contravention
- **Confirmation prompts**: Ensure that prompts are put in the appropriate places to confirm changes to data.
  - For example, when saving/submitting, deleting a record

3   RELATED DOCUMENTS

- Lane Closures Application Project Delivery Plan
  - *LCA-PDP Short form-v1.1.docx*
  - Short form project deliver plan
- Business Requirements:
  - *LCA-Business Requirements-v1.0.xlsx*
  - Detailed requirements within the business that map to software requirements.
- Software Requirements:
  - *LCA-Software Requirements-v1.0.xlsx*
  - Detailed requirements on what the software application must, should, could do, along with wish list items. Each requirement can be traced back to a business requirement.
- Data Requirements:
  - *LCA-Data Requirements-v1.3.xlsx*
  - A breakdown of data requirements, along with wording for forms visible to the user.
- Process Activities:
  - *LCA-Process Activities-v1.1.vsdx*
  - A high level flowchart of the business processes

- Web Map:
    - *LCA-Web Map-v1.0.vsdx*
    - A map of the public and restricted web application and the restricted mobile application. Highlighting the page structure breakdown and elements within those pages.
- Risk Register:
    - *LCA-Risk Register-v1.1.xlsx*
    - Repository for all risks identified and includes additional information about each risk

4 DATA MIGRATION REQUIREMENTS

The only data that requires migration from the current lane closures application is the contacts and active lane closure requests. Given volume of data, we're recommending manual migration. It was agreed that the current application remain live for 1 year, then decommissioned. Database should still be accessible once decommissioned, for historical data retrieval as needed.

New application must contain as many known active organizations, departments, divisions, branches, users as is possible with the assistance of the TMB and TMC teams.

5 HOSTING REQUIREMENTS

Hosting will be managed in-house with the City of Winnipeg's Corporate Support Services, Business Technology Services.

6 AVAILABILITY REQUIREMENTS

Uptime of 99.98% availability per month, except for excused outages.

7 PRIVACY REQUIREMENTS

Coord Records & Info Mgmt does not foresee any privacy issues with the data being captured as long as:
- It is emphasized that the contact information provided is labelled as 'Business' (i.e. Primary Business Phone Number, Business Email)
- The disclaimers (throughout the application, or at registration) clearly states that information can be:
  - Shared across an organization
  - Org name and user first/last name may be visible to other Org users when transferring report ownership
  - Attachments should not include personal info (e.g. photos/documents)

Also to note, there should be no issues with:
- registering users seeing other organization names along with dept/div/branch for selection
- storing infraction details in tool as they are only visible to internal administrators
- registration approval emails being sent to Org. User Administrators with all user info for approval
- tracking changes on who made the change, and what they changed

Given the information being collected, there is no need for a PIA.

8 SECURITY REQUIREMENTS

- Authorization
  - Organizations are only approved by internal City of Winnipeg User Administrators.
  - An organization's first User Administrator must be approved by an internal City of Winnipeg User Administrator, but after that, the User Administrator can authorize other User Administrators/Users within

their organization at their level or below. Anyone above their level must be approved by a User Administrator at or above their level.

- Authentication
    - Active directory authentication required for City of Winnipeg users
    - Login authentication required by non-City of Winnipeg users is outside Active Directory
- Login Rules
    - The software requirements for displaying Lane closures on the public website are visible to the public and do not require a login to use
    - Login only required when accessing the Request a Lane Closure/Reporting modules on the website and the mobile application
    - The mobile application is only accessible via a login
- Permissions
    - See 'LCA-Software Requirements–v1.0.xlsx' for permissions for each object

9   ARCHIVING CONSIDERATIONS

At minimum, data for the last 7 years must be easily accessible. Anything older than that can be archived.

10 DISASTER RECOVERY CONSIDERATIONS

The recovery point objective (RPO) for data recovery should be to the last hourly backup. The recovery time objective (RTO) should be two hours or fewer for production instances.

11 TO DO

- Application Disclaimers: Must work directly with Coord Records & Info Mgmt Analyst to create disclaimers.
    - Public Site (unrestricted/restricted)
    - Mobile App (restricted)
- Application Information
    - Website/App labels & content
    - When asking for 'Number of Open Lanes' provide a description
    - FAQs
- Email Content
    - Login
        - Registration confirmation
        - Email validation confirmation
        - Registration approval notification
        - Registration denied notification
    - Registration approval required
        - Approval action required to Org. User Administrator

- o LCR
    - Email at every LCR status change to client including submission (i.e. NEW)
    - Reminders & Notices
- o RLC/RR
    - Email at submission
    - Reminders & Notices
- o Email to By-Law Enforcement Officer at cancellation of reported regional street lane closure/restriction
- o Email Disclaimers
- Mobile App Notifications
    - o Reminders & Notices (should have similar wording with corresponding emails)
- Web/Mobile notifications
    - o Conflict Messages
    - o Information Messages
        - When asking if the LCR/RCL/RR is an emergency, provide the definition and examples of what is not considered an emergency (e.g. water not available to a restaurant)
- Translation of all static text to French
- Translation of Manual of Temporary Traffic Control to French
- Requirements for when to report a lane closure/turn restriction
    - o Which streets apply? (e.g. Regional, Non-Regional, P1, P2, P3, P3S, NA)
    - o During what time frames?
        - Duration (e.g. > 30 minutes)
        - When (e.g. weekdays only, any time, peak time periods)
- Nature of Work:
    - o Internal discussion required between TMB/TMC to determine final list

12 FUTURE CONSIDERATIONS

- Reporting
    - o Reporting of sidewalk closures
    - o Reporters on the street have the following options to RLC/RR
        - Work phone/tablet/laptop (minimal)
        - Personal phones
        - Radio foreman

13 ACTORS

13.1 LANE CLOSURE REQUESTOR

Authorized Construction Agency personnel submitting request for a lane closure.

13.2 LANE CLOSURE APPROVER

TMB personnel with permission to approve Lane Closure Requests as well as manage LCRs which involves conflict management and follow-up.

13.3 CONSTRUCTION AGENCY USER ADMINISTRATOR

Construction Agency personnel authorized by TD or other Construction Agency User Administrator to manage users at a specific Organizational Structure level and below.

13.4 USER ADMINISTRATOR (INTERNAL ADMINISTRATOR)

TD personnel authorized to manage application users and organizational structures.

13.5 LANE CLOSURE/TURN RESTRICTION REPORTER

Authorized Construction Agency personnel reporting a lane closure or restriction.

13.6 REPORTED LANE CLOSURE/TURN RESTRICTION ADMINISTRATOR

TD personnel authorized to manage reported lane closures/restrictions.

13.7 BY-LAW ENFORCEMENT OFFICER

TD personnel who enforces the by-laws on lane closures.

14 USE CASES

14.1 REGISTERING A NEW ORGANIZATION/USER

- Use Case Name: Requesting a Lane Closure
- Created By: Christy Pop
- Date Created: September 26, 2016
- Last Updated By: Christy Pop
- Date Last Updated: September 26, 2016

- Actors:
- Description:
- Preconditions:
- Post conditions:

- Normal Course:
- Alternative Courses:
    - Organization is not approved
    - User is not approved
- Exceptions:
- Includes:

- Priority: N/A
- Assumptions:
- Notes and Issues:

14.2 REQUESTING A LANE CLOSURE

- Use Case Name: Requesting a Lane Closure
- Created By: Christy Pop
- Date Created: September 26, 2016
- Last Updated By: Christy Pop
- Date Last Updated: September 26, 2016

- Actors:
- Description:
- Preconditions:
- Post conditions:

- Normal Course:
- Alternative Courses:
    - Requestor changes information and must be re-approved
    - Requestor does not set Request to complete before expiry date/time
    - Enforcement Officer identifies contravention
- Exceptions:
- Includes:

- Priority: N/A
- Assumptions:
- Notes and Issues:

14.3 R<small>EPORTING A</small> L<small>ANE</small> C<small>LOSURE</small>/T<small>URN</small> R<small>ESTRICTION</small>

- Use Case Name: Requesting a Lane Closure
- Created By: Christy Pop
- Date Created: September 26, 2016
- Last Updated By: Christy Pop
- Date Last Updated: September 26, 2016

- Actors:
- Description:
- Preconditions:
- Post conditions:

- Normal Course:
- Alternative Courses:
    - Reporter does not close lane at specified start date/time
    - Reporter does not reopen lane at specified end date/time
    - Reporter does not set Restriction to in-effect at specified start date/time
    - Reporter does not set Restriction to not-in-effect at specified end date/time
    - Enforcement Officer identifies contravention
    - Reporter deletes report
- Exceptions:
- Includes:

- Priority: N/A
- Assumptions:
- Notes and Issues:

15 GLOSSARY OF TERMS & ACRONYMS

- Construction Agency: shall mean any City Department, utility company or private contractor, or any other persons responsible for the undertaking of work on any section of a public right-of-way in The City of Winnipeg.
- COW: City of Winnipeg
- LCA: Lane Closures Application
- LCR: Lane Closure Request
- Left Turn Restriction: Inability to turn left from one street, through an intersection to the cross street successfully. Meaning there is a closure in the intersection, or there are no open lanes in that direction on the cross street.
- Manual of Temporary Traffic Control: http://winnipeg.ca/publicworks/trafficControl/pdf/Manual_of_Temp_Traffic_Control_2015_Rev1.pdf
- Non-Regional Street: Any Winnipeg street that is not a Regional Street
- Notice: A message that action is required
- Organizational Structure: Organization and it's departments, divisions, branches
- Regional Street: shall mean those streets listed in Schedule "E" of the most recent City of Winnipeg Streets By-law No. 1481/77. Note that a list of the Regional Streets is included in the Appendix of the Manual of Temporary Traffic Control on City Streets.
- Reminder: A message that reminds the user that action may need to be taken
- Right Turn Restriction: Inability to turn right from one street, through an intersection to the cross street successfully. Meaning there is a closure in the intersection, or there are no open lanes in that direction on the cross street.
- RR: Reported Restriction
- RLC: Reported Lane Closure
- Segment: a line of road from 1 intersection to another, as defined by the COW
- TD: Transportation Division (used when referring to someone in the division, where it is not yet known what department will be managing that task/area)
- Through restriction: Inability to drive from one street, straight through an intersection in one direction, to the other side of the intersection successfully. Meaning there is a closure in the intersection, or there are no open lanes in the same direction on the other side of the intersection
- TMB: Traffic Management Branch
- TMC: Traffic Management Centre
- User: Any person using the Lance Closures Application