2014 URISA ESIG AWARD APPLICATION

FROM

THE CITY OF SAINT JOHN

NEW BRUNSWICK, CANADA

ZONESJ MAP VIEWER
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A. SYSTEM

1. Name of system and ESIG™ category for which you are applying (Enterprise System or Single Process System).

ZoneSJ Map Viewer (Single Process System).

2. A letter from the executive administrator authorizing submission of the system application (letters must be signed and scanned).

See attached authorization letter from City Manager, Patrick Woods.

3. One (1) page, or less, summary of what the system accomplishes and why it is exemplary.

The City of Saint John must adopt a new zoning by-law that conforms to the municipal plan, PlanSJ. When PlanSJ was adopted by common council in January 2012, a new land use map was adopted and conflicting and incompatible land uses were identified. ZoneSJ, the proposed zoning by-law, will establish provisions and regulations that implement the policies set out in PlanSJ.

Changes to the zoning by-law aim to:

- stimulate and support economic investment;
- protect neighbourhoods and grow their potential;
- sustainably manage service costs; and
- foster environmental stewardship.

Whereas the current City of Saint John zoning by-law was adopted over 30 years ago, ZoneSJ is a complete overhaul which affects most properties in the city to some extent.

The city’s GIS Division created the ZoneSJ Map Viewer in order to serve a dual purpose; firstly city Planners needed a tool that would allow them to quickly respond to the high volume of inquiries and secondly as part of the effort to engage, educate and inform citizens and property owners of the proposed zoning changes.

The ZoneSJ Map Viewer allows Planners and members of the public to quickly and easily see what the proposed zoning changes are and how they will affect specific properties. This bilingual (English and French) system is exemplary in its ease of use for both city employees and the public as well as for the information it provides.
4. Three “user testimonials”. These testimonials should include the title of the system, the person’s name, job title (if relevant), a statement of what specific ways the system improves their work and/or the work of their organization, and how frequently they use the system (testimonials may be signed and scanned).

See attached user testimonials from:

Brian Irving, General Manager, Saint John Industrial Parks Ltd.

Stacey Forfar, Deputy Commissioner, Growth & Community Enrichment, City of Saint John

Jody Kliffer, Planner, Growth and Community Development Services, City of Saint John

B. JURISDICTION

1. Name of jurisdiction

City of Saint John, New Brunswick, Canada

2. Population served by the organization/agency

70,063 (2011 Census of Canada)

3. Annual total budget for jurisdiction

$ 148,772,180

4. Name, title, and address of chief elected and/or appointed official

Mayor Mel Norton
PO Box 1971
15 Market Square
City Hall
Saint John, New Brunswick
Canada E2L 4L1
5. Name, title, address, telephone, FAX, and email for contact person for system

Yves Léger, M.Sc., GISP
GIS Manager
PO Box 1971
15 Market Square
10th Floor, City Hall
Saint John, New Brunswick
Canada    E2L 4L1

Phone:  506-674-4229
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E-mail: yves.leger@saintjohn.ca

C. SYSTEM DESIGN

1. What motivated the system development?

Whereas the current City of Saint John zoning by-law was adopted over 30 years ago, ZoneSJ (the proposed new zoning by-law) is a complete overhaul which affects most of the over 28,000 properties in the city to some extent.

In anticipation of the multitude of requests for property-specific zoning information from citizens and property owners, the GIS Division was asked to create a tool that would both alleviate the work for Planners when responding to inquiries and allow the public to self-serve, thereby reducing the volume of inquiries for Planners.

2. What specific service or services was the system intended to improve?

The ZoneSJ Map Viewer is intended to improve the response-time from Planners when responding to zoning inquiries, and is intended to improve the ability of the public to access current and proposed zoning information on a self-serve basis.

The system allows for Planners or members of the public to get the zoning information in less than a minute by simply typing in the civic address and then clicking on the property. A pop-up box then displays the current and proposed zoning code and zoning descriptions with links to the specific related by-law pages that list what are the current and proposed permitted uses for the zone.
3. **What, if any, unexpected benefits did you achieve?**

As a result of the ZoneSJ Map Viewer being so well received by the public and the media (see attached Telegraph-Journal newspaper article), the GIS Division has received abundant praise and its profile has been raised among the city's senior management and elected officials.

Another potential unexpected benefit is the ability to generate revenue for the City of Saint John. Some neighbouring municipalities have expressed an interest in having the City of Saint John GIS Division create similar applications for them, for a fee. Discussions are on-going.

4. **What system design problems were encountered?**

Because the ZoneSJ Map Viewer is built using Adobe Flex, we encountered the issue of how to make it work on mobile devices. As a work-around, we provide a link for end-users to be able to download and install the free Puffin browser on their mobile devices. We also provide static PDF maps of the current and the proposed zoning.

5. **What differentiates this system from other similar systems?**

The city's Planners, many of whom have experience working in various jurisdictions across Canada, have said they've never seen such an easy-to-use system for showing current and proposed zoning with links to the corresponding by-law sections.

New Brunswick is the only officially bilingual province in Canada. Because the province is officially bilingual, everything the City publishes on its website must be available in both English and French. The fact that it is offered in two languages also differentiates the ZoneSJ Map Viewer.

D. **IMPLEMENTATION**

1. **What phases did you go through in developing the system?**

The phases that I went through are:

- user needs analysis;
- application design;
- application development;
- testing;
- application modification;
- cartographic design;
- testing;
- developing the French version;
- writing English and French help documents; and
- application launch.

2. Were there any modifications to the original system design? Why? What?

When first asked to create a tool to allow the public to see show the changes from the current to the proposed zoning by-law, the initial design was based on using the time-slider widget. While the time-slider widget would have provided a bit of a “wow” factor, after some initial tests, it seemed to add a level of complexity for some end-users who weren't familiar with it and it didn't provide any additional useful functionality. It was therefore decided to simply have both the current and proposed zoning layers turned on and transparent by default.

E. ORGANIZATIONAL IMPACT

1. What user community does the system serve and how?

In addition to the city's Planners, by making the ZoneSJ Map Viewer publicly available, it also serves appraisers, surveyors, developers, realtors as well as citizens and property owners. It serves this user community by quickly and easily allowing them to see how the proposed new zoning by-law will affect specific properties.

2. What are the ultimate decisions/operations/services being affected? If appropriate, provide a few examples including, but not limited to: screen input/output forms, paper products, or other descriptive graphics.

The service being affected is the response to zoning inquiries. Knowing what uses will be permitted with the adoption of the new zoning by-law is very important and can affect decisions by property owners, realtors, developers, etc. as to whether or not they will invest in a property.

The ZoneSJ Map Viewer aims to provide people with ease of access to the relevant zoning information. The application, located at http://maps.saintjohn.ca/zonesj-en/, opens with the current and proposed zoning overlaid upon orthophotography.
After reading the simple instructions on the splash screen and clicking the “OK” button, the user simply needs to type in a civic address in the “Enter Address” box located above the map. The map will zoom and center on the civic address.
The user then only needs to click on the property to activate the pop-up window which will provide the current and proposed zoning codes and descriptions as well as hyperlinks to the specific pages of the current and proposed by-laws.

FIGURE 3: POP-UP WINDOW DISPLAYING CURRENT ZONING INFORMATION
The Zoning By-Law of The City of Saint John

310 THREE STOREY MULTIPLE RESIDENTIAL (RM-1)

(1) Uses

Any land, building or structure may be used for the purposes of, and for no other purpose than,

(a) the following uses:

- a one-family dwelling;
- a two-family dwelling;
- a multiple dwelling;
- subject to Section 810(1), a group home;
- a park or playground;

(b) the following uses subject to such terms and conditions as may be imposed by the Committee:

- subject to Section 810(2) and to subsection 2(a), a convenience store, with or without an ancillary dwelling unit;
- a dwelling group;
- an efficiency apartment;
- subject to Section 810(3), a home occupation;
- a kindergarten, nursery or day care centre;
- a nursing home for not more than six persons;
- an office for one or two practitioners of medicine or dentistry;
- subject to subsection 2(c), a parking area;
- a private club, fraternity or lodge without a license under the New Brunswick Liquor Control Act;
- subject to subsection 2(b), a business office;
- subject to subsection 2(d), a rooming house;
- a senior citizens' housing project and accessory offices;

(c) subject to Section 833, an accessory building, structure or use, incidental to a use, building, or structure permitted in this Section.

FIGURE 4: CURRENT ZONING BY-LAW
FIGURE 5: POP-UP WINDOW DISPLAYING PROPOSED ZONING INFORMATION
11.9 Local Commercial (CL) Zone

Municipal Plan Context
The Local Commercial (CL) zone accommodates limited daily convenience needs for surrounding residential neighbourhoods and may include dwelling units. The built form is characterized by buildings similar in scale to the surrounding neighbourhood.

The Local Commercial (CL) zone is intended for land inside of the Primary Development Area that is designated Stable Residential Area or Low Density Residential. However, land in other appropriate designations could be zoned CL.

11.9(1) Permitted Uses
Any land, building or structure may be used for the purpose of, and for no other purpose than, the following provided no drive-thru facility is included:

- Artist or Craftsperson Studio;
- Bakery;
- Bed and Breakfast;
- Business Office, subject to paragraph 11.9(2)(a);
- Community Policing Office;
- Day Care Centre;
- Dwelling Unit, subject to paragraph 11.9(2)(b);
- Garden Suite, subject to section 9.8;
- Grocery Store;
- Home Occupation, subject to section 9.9;
- Library;
- Medical Clinic;
- Personal Service;
- Pet Grooming;
- Restaurant;
- Retail Convenience;

FIGURE 6: PROPOSED ZONING BY-LAW
3. What were the quantitative and qualitative impacts of the system?

To respond to an inquiry as to how the new zoning by-law will affect a specific property without the ZoneSJ Map Viewer would take approximately 5 minutes. However by using the ZoneSJ Map Viewer, the response time is well under 1 minute. While this certainly improves the Planners’ productivity, it also reflects very positively on them when they can provide such an efficient service.

A positive impact of providing public access to the ZoneSJ Map Viewer is that it reduces the volume of inquiries for the Planners, thereby allowing them to perform other duties. And it also has a positive impact on the City’s image as a whole because self-serve tools are usually seen by the public as improvements to City services.

4. What effect has the system had on productivity?

The fact that the volume of inquiries is reduced by providing the public with the ability to self-serve and also by greatly reducing the amount of time required to respond to any inquiries that do make their way to the Planners, their productivity is greatly improved by having more time to work on other tasks or projects.

5. What, if any, other impacts has the system had?

While we’ve been, for a few years now, providing public access to a general web-mapping application which provides public access to almost all of the City’s GIS data, we had been planning on developing stripped-down, service-specific web-mapping applications. So when we received the request from Planners for a tool to allow the public to view how the new zoning by-law would affect specific properties we saw this as an opportunity to test our first service-specific web-mapping application.

Because of the extremely positive feedback we’ve received for the ZoneSJ Map Viewer, we’ve since developed four other service-specific web-mapping applications and will be developing others in the coming months.

6. How did the system change the way business is conducted with and/or service delivered to clients? Give specific examples comparing the old way with the new.

Without the ZoneSJ Map Viewer, in order to respond to inquiries, city Planners would need to first search for and locate the property and view the existing and proposed zoning, using the enterprise GIS. They would then have to search the existing and proposed by-law documents in order to look up the related specific information. Using the ZoneSJ Map Viewer, they simply type in the property’s address after which the map centers on the property. They then click on the property
and a pop-up window opens which lists the current and proposed zoning codes, zoning descriptions and provides hyperlinks to the exact pages of both the current and proposed by-laws.

Without the ZoneSJ Map Viewer, in order to get information as to how the new zoning by-law is going to affect a specific property, members of the public would have to either call one of the Planners or visit City Hall. This could only have been done during normal business hours, Monday to Friday. With the ZoneSJ Map Viewer the public has access to the information at any time, from any computer with internet access. They simply go to [http://maps.saintjohn.ca/zonesj-en/](http://maps.saintjohn.ca/zonesj-en/), type in the property’s address, after which the map centers on the property. They then click on the property and a pop-up window opens which lists the current and proposed zoning codes, zoning descriptions and provides hyperlinks to the exact page of both the current and proposed by-laws.

F. SYSTEM RESOURCES

1. What are the system’s primary hardware components? Give a brief list or description of the hardware configuration supporting the system.

The system’s primary hardware components are:

- 1 virtual development server;
- 1 cluster of 4 virtual production servers;
- 1 SQL server;
- 1 Storage Area Network server; and
- 1 web server.

2. What are the system’s primary software components? Describe the primary software and, if a commercial package, any customizations required for the system.

The system’s software components are:

- ArcGIS for Server 10.1
- ArcSDE 10.1
- ArcMap 10.1
- ArcCatalog 10.1
- SQL Server 2008
- ArcGIS Viewer for Flex - App Builder 3.3
- ArcGIS API 3.3 for Flex
- ArcGIS Viewer for Flex 3.3

No customization was required.
3. What data does the system work with? List and briefly describe the database(s).

The system works with the following data residing in the city’s enterprise geodatabase, which is stored in a SQL Server:

- Property parcels;
- Streets;
- Civic addresses;
- Current zoning; and
- Proposed zoning.

The system also works with orthophotography stored in a separate blade server which is part of a Storage Area Network.

4. What staff resources were required to implement the system? (i.e., report approximate staff and consultant time as FTE’s)

The total resources required to implement the system was approximately 35 hours of the GIS Manager's time (1.0 FTE).

5. Comment on anything unusual about the resources used to develop your system, such as data, software, personnel and financing.

The ZoneSJ Map Viewer (both English and French versions) was developed in-house, in approximately one week, using existing hardware, software and data.
March 27, 2014

Urban and Regional Information Systems Association

To Whom It May Concern:

SUBJECT: Exemplary System in Government Award

As City Manager for the City of Saint John, I hereby authorize the submission of an application for an Exemplary System in Government Award for the ZoneSJ Map Viewer in the Single Process System Category.

Sincerely,

[Signature]

Patrick Woods, CGA
CITY MANAGER
CITY OF SAINT JOHN
March 28, 2014

TO WHOM IT MAY CONCERN:

We, at Saint John Industrial Parks, use the Zone SJ Map Viewer when working with clients in the Industrial Parks. We review the client’s future planned uses for the development site, and measure that against the vision the municipality has chartered for the property. We have been successful in ensuring that my clients future uses will be better understood and permitted.

The system is easy to use and we rely upon it heavily in such matters of future land use planning in the Industrial Parks.

Sincerely,

Saint John Industrial Parks Ltd.

[Signature]

Brian Irving, General Manager
March 31, 2014

Re: ZoneSJ Map Viewer
URISA Exemplary Systems in Government Award application.

To whom it may concern,

As the project manager for the development of a new zoning by-law for the City, we were eager for the opportunity to develop a meaningful and useful tool the public, landowners and industry consultants could utilize to review the proposed by-law impacts on their property. The ZoneSJ Map Viewer provides the community with a transparent, modern and easy to use tool to review the impacts that the proposed by-law would have on their property.

As staff, we utilized the tool to respond to hundreds of property inquires during the public engagement period and we continue to use it to double check the proposed map layers and encourage the public to check the online map first and then contact us. This was the first time we utilized this technology as part of a widespread public engagement program and we are looking forward to utilizing similar technology for future events.

Sincerely,

[Signature]

Stacey Forfar, MBA, MCIP, RPP
Deputy Commissioner, Growth & Community Enrichment
City of Saint John, NB
To whom it may concern, 

This letter of support is with regard to my usage of the “ZoneSJ Map Viewer”, which was created and installed by Yves Leger from the City of Saint John’s Geographical Information Services division. In my position as an urban planner for the City, I am a front-end user of this system on a regular basis and find it extremely efficient and user-friendly.

The City of Saint John is currently undergoing the onerous process of re-writing its municipal Zoning Bylaw in order to modernize our development standards and ensure the policies of the new Municipal Plan are interpreted in a way that captures the intent of the Plan’s direction. In order for that to be achieved, the need to engage the public in capacities that clearly outline any changes going forward are critical to the success of the project. As such, our strategies in how we interface with the public to communicate proposed changes and gather feedback need to be dynamic and informative. The deadlines for this major body of work are tight and cannot be sidelined for reasons relating to confusion, misunderstandings, or other reasons stemming from inadequate communication to the public on the part of the City.

The “ZoneSJ Map Viewer” has been of enormous value to our team in achieving this goal as it allows the user to navigate the City to the property of interest without requiring staff to walk them through the process every time there is an inquiry. The system is intuitive to the vast majority of users, and provides both the existing and proposed bylaw provisions in a simple display feature with only a click of the mouse. Without this system in place, staff would surely have a much greater workload to contend with as it is very likely that many more people would be calling with relatively easy questions on a regular basis. This system provides the user with necessary answers within minutes, thus allowing the process to move along much more efficiently.

Should you have any questions regarding the contents of this letter, please don’t hesitate to contact me directly.

Regards,

Jody Kliffer, MCIP, RPP
Growth & Community Development Services,
Saint John, NB
(506)632-6846
Jody.kliffer@saintjohn.ca
City launches hi-tech zoning map

**Technology** Tool uses aerial photographs to create accurate relief map that displays current and proposed zones

APRIL CUNNINGHAM
TELEGRAPH-JOURNAL

SAINT JOHN – A new online tool launched by the city’s planning department allows people to see how the proposed new zoning bylaw will impact their property.

The web application uses aerial maps – similar to Google Earth – to display how properties and neighbourhoods may change under the draft zoning bylaw.

“This is pretty much as simple as it can get,” said Yves Léger, the city’s manager of geographic information systems, who helped develop the new tool. “Type in your address, and click.”

The maps are colour-coded according to zoning type, ranging from uptown commercial zone to one-unit residential zone.

After typing in an address, the map zooms in on a property. A box appears and the user can view information on the proposed zoning or current zoning for the property. A link connects the user to more detailed information about what the zone allows.

“Any property owner in the city could use this,” said Stacey Forfar, deputy commissioner of growth and development services for the city. “Every single zone has got basically a new name and in many cases hasn’t changed. But the real message is that with the bylaw, other things have changed.”

A single-family dwelling will now be permitted to house a

**PLEASE SEE ZONING, B2**
Map first to use geographic systems software

ZONING ← B1

secondary suite, for example. And many homes will be permitted to open as day-cares and bed and breakfasts without seeking permission from the city.

"People will be able to do more with their home," Forfar said. “Any property owner should be aware of what this means for them.”

The interactive map is the first launched by the city that uses new geographic information systems software. The images – taken from the air every two years – are more accurate and detailed than Google Earth, Léger said.

City staff already use an internal program that allows them to view many city services on the map, including heritage bylaws, water and sewer infrastructure.

Léger said he expects the city could also use the mapping software to allow residents to view city services such as snow and sidewalk plowing and how the priorities change depending on the neighbourhood and route.

The zoning map is fairly unique, Forfar said. Fredericton used Google Maps for its zoning bylaw review, but Forfar said with the city’s extensive data mapping that was already available, it just made sense to use it.

“We just really want to capitalize on our existing system, because frankly the mapping is better and the information is better,” she said.

The zoning map will have both current and proposed bylaws viewable until the new bylaw is adopted next spring or summer.

Until then, anyone can easily view the map by visiting the city’s website at saintjohn.ca/zonesj and clicking on view zoning maps.

Forfar said developers and real estate agents might find the tool particularly useful. People can search by multiple properties and enter information by property identification numbers.

“Developers are the major landowners in the city and they’ll want to go on and check multiple properties to see what the impact is on them,” Forfar said.

More aerial city maps and historical maps are available at saintjohn.ca/en/home/living/maps/default.aspx.