January 6, 2017

Attention: Mr. James A. Castañeda, AICP
Coordinator, 2017 Technology Division Smart Cities Awards
APA Technology Division

RE: Technology Division Smart Cities Awards Nomination

Dear Mr. Castañeda and selection committee,

This application is for the nomination of the re:code LA team for the development of WebCode. This project is led by an experienced team of planners from the Los Angeles Department of City Planning and supported by a diverse, expert team of consultants. Code Studio is the primary consultant for this project, and Urban Insight is the sub-consultant who developed WebCode in collaboration with the project team.

Executive Summary of Project:

This submittal for the Smart Cities Award is for the development of the WebCode system by the re:code LA team. WebCode is a key component of re:code LA, a five year project to comprehensively revise the City of Los Angeles's Zoning Code. The system is a first-of-its-kind solution designed to not only make it easier for users to browse or search the code in its entirety, but also to narrow down the code to only those portions that apply to the property or use of interest. This improved customer service will enable the Department to focus resources on more complex questions and issues ranging from case processing to long-range planning. WebCode also contains features to improve communication and coordination within the Department. Portions of the system have been released to the open source community as a contribution to recent innovations in the delivery of information within the planning profession.

Contact Person:

For any coordination with the re:code LA team regarding this nomination, please contact:

Erin Coleman, Planning Assistant
City of Los Angeles, Department of City Planning
Code Studies Division
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Los Angeles, CA. 90012
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Thank you for your consideration,

The re:code LA team
Summary Description

Overview & Funding: This submittal for the Smart Cities Award is for the development of the WebCode system by the re:code LA team. WebCode is the new delivery system for the City of Los Angeles’ Zoning Code and is a key component of re:code LA, a five year project to comprehensively revise the City of Los Angeles’ Zoning Code. The WebCode system itself is already complete. Once the new Zoning Code is ready for public review later this year, it will be publicly available through WebCode. This project is funded as part of re:code LA through a construction services trust fund sourced from permit fees applied to all applications for development and land use activity within the City of Los Angeles.

Stakeholders and Organizations Involved: The development of WebCode is led by an experienced team of planners from the Los Angeles Department of City Planning and supported by an expert team of consultants. Code Studio is the primary consultant for this project, and Urban Insight is the sub-consultant who developed WebCode in collaboration with the project team. The full listing of consultants for the overall re:code LA project team is available here: http://recode.la/about/team#project-consultants

The re:code LA team meets regularly with its Zoning Advisory Committee, a diverse group of stakeholders comprised of representatives from neighborhood groups, advocates, and professional practitioners with expertise in real estate, architecture, development, academia, affordable housing, historic preservationist, and business communities. The detailed listing of Zoning Advisory Committee members is available here: http://recode.la/about/team. As this project serves to improve access to zoning regulations within the City of Los Angeles, anyone who lives, works, or invests in the City of Los Angeles is a stakeholder for this project. Additionally, as some of the key technology behind WebCode is being released as open source, the entire open source community is a stakeholder, including other agencies outside of Los Angeles that might incorporate the technology into their own efforts.

Objectives: The main objectives driving WebCode are to: 1) provide the public a customized experience of the Zoning Code, 2) make the Zoning Code easier to use and more accessible to the public, 3) provide all the relevant zoning information for a property in one centralized place, and 4) offer enhanced tools for internal coordination and code administration. See below for how these objectives are achieved through WebCode.

Outcomes: Below are 4 key outcomes of WebCode.

1) Customized Experience of the Zoning Code -- A key feature of WebCode is its Create Summary ability. While the public will still be able to browse the Zoning Code, they can now choose to receive a personalized summary. Traditionally, it's necessary to sift through the entirety of the Zoning Code to discern which sections apply; now anyone can simply type in an address, parcel number, or use and WebCode will automatically provide the applicable regulations.

2) Easier to Use & Accessible -- The new Zoning Code will be a visual document using images, tables, and illustrations; WebCode will clearly display those visuals on the web, along with video content to help explain common questions, where appropriate. Definitions for glossary terms will be available when site users tap on or hover their cursor over the term in question so they no longer need to flip back and forth. Site users will be able to download summary results, or the entire Zoning Code as a PDF or ePub (iBook) to access offline or to share with others.

WebCode also makes the Zoning Code easier to search. Staff can prioritize certain search results that are most relevant for a particular topic. Site users can also filter their search results by use, zone, or section of the code, offering a similar search experience as popular commerce sites such as Amazon.com. WebCode also has a Frequently Asked Questions (FAQ) section where staff can document answers to common zoning questions. These results will intuitively display while site users browse the Zoning Code to improve accessibility to the answers. For example, if a user is viewing information on parking regulations, an FAQ with answers to common questions on parking will display. Importantly, WebCode is optimized for mobile
devices. It does not require a special app to run and instead was built to be fully mobile responsive. This means users will be able to easily access their zoning regulations on the go.

3) **All Zoning Information in One Place** -- Zoning interpretations, memos, and information bulletins can affect how regulations are applied in specific situations. Today, these interpretations are separate from the code. The average person typically does not know they exist. With WebCode, when there are relevant interpretations or additional information, the system will display them with the Zoning Code section they relate to, making them easy to find. This helps to democratize regulatory information to the public, removing the need for a high level of expertise to navigate the code.

4) **Enhanced tools for internal coordination and code administration** -- City staff can manage the Zoning Code online. Staff will have a dashboard allowing them to see when there is content requiring review, and to view site analytics one which content and sections of the Zoning Code are most commonly viewed. Staff also have the ability to create personal or internal notes to share with other staff. Staff will have the ability to make notes public when appropriate. WebCode also archives previous versions of the code, making it easy to track applicable regulations at different points in time.

**Broader Implications of the Project:** WebCode changes how the City of Los Angeles delivers information to the public. It does so by prioritizing the customer’s experience in accessing zoning information. With WebCode, it is no longer necessary to sift through the entirety of the Zoning Code in order to understand what regulations apply to a property or use; once the new Zoning Code is made publicly available, the customer can simply type in the address or use of interest and receive a curated set of the relevant zoning regulations for their query.

The City Council officially approved the Department of City Planning’s proposal to release portions of WebCode as open source in March of 2016. The first of the releases, known as the WebCode Toolkit, was released in November of 2016 through the online software repository GitHub (available here: https://github.com/cityoflosangeles).

The WebCode Toolkit marks the City of Los Angeles' first open source software contribution, complementing Mayor Eric Garcetti’s Open Data platform. According to Peter Marx, the Mayor’s former Chief Technology Officer, “this act is much more significant than it might seem: it is the first time we have gone through a formal process to take software developed for the City and contribute it to the open source community.” By releasing key portions of the software driving WebCode as open source, the City set a precedent for future open source software releases.

**Scope of Project:** WebCode is the new delivery system for the City of Los Angeles’ Zoning Code. In a custom software development effort, the Consultant Team built an interactive web-based application for the new Zoning Code specifically for this project.

Key system features include: 1) Development of a web-based publishing system to present the new Zoning Code. 2) The ability for a user to enter an address into WebCode and receive a customized report of the relevant sections of the zoning code based on the zoning of the selected parcel; 3) Ability for users to perform keyword searches of the full text of the Zoning Code. 4) An application programming interface (API) for the Web-Based Code System that enables information to be transferred between the Zoning Information Map Access System, the City’s geographic database of parcel-level zoning information, and the Web-Based Code System 5) Ability for authorized City staff to add comments or make edits (e.g. code interpretations, proposed code amendments, etc.) to specific sections of the new zoning code. Each comment or edit can be public or private. If the comment is public, public users of the zoning code will be able to see the comments as notes on the zoning code. 6) Ability to maintain the Zoning Code in InDesign and the Web-Based Code System. The system includes a legacy feature which will allow the City to maintain versions of the Zoning Code that can be viewed by accessing earlier versions in the Web-based code system. 7) Portions of the Web-based Code System are and will be made available to the open source community on GitHub, a popular repository for open source collaboration (https://github.com/cityoflosangeles).
Technology Deployment Details

Approach:

WebCode is a crucial component of re:code LA; it is the delivery system of the new Zoning Code. Even with a well designed zoning code, if the PDF of the document is simply posted online, it is not fully optimized for mobile devices or as dynamic and responsive as is possible with modern technology. WebCode takes its inspiration from popular tax software that makes it easy to navigate a document as complex as the tax code. A driving principle behind WebCode is that the experience of interacting with the zoning code should be responsive to the interests of the customer. This means providing only the information that is relevant to a property or use queried.

The WebCode Publishing Platform solves the problem of publishing complex planning documents, such as a Zoning Code or comprehensive plan on the web. Many complex planning documents must be designed and elegantly formatted to look professional and engaging when they are published in print. The leading layout software product to perform desktop publishing is Adobe InDesign. Previously, staff would need to meticulously convert drafts and the final version of InDesign documents into static web pages. The WebCode Publishing Platform has a simple workflow that enables staff to convert properly formatted Adobe InDesign documents to an elegant, interactive website that is optimized for browsers on mobile and tablet devices, as well as desktops. Visitors to the website can browse or search the resulting website, and optionally have the document personalized based on the visitor’s interests.

While the technology behind WebCode can help to make any complex document searchable and interactive online, the new Zoning Code itself is optimized for WebCode, both in terms of the structure of the new zoning system itself and in the way the Zoning Code is written. The new zoning string is modular, as seen below. Each component has a specific function.
This modularity contributes to the personalized experience WebCode provides. Key terms that should be searchable on WebCode are designated using vocabularies within the WebCode taxonomy, as shown in the image below. Planning staff then tag documents in InDesign using the character styles that match the taxonomy vocabularies within the WebCode system. In the second image below, HR1 and HR2 (which stand for High Rise 1 and High Rise 2 Form Districts) are both tagged as “Zone Form.” This is what allows WebCode’s Create Summary feature to pull these code pages when a site user plugs in an address that has an HR1 or HR2 Form District. This same technology is used for other queries a site user may perform in the search feature of WebCode for other content types such as FAQs, standards or processes.
Development Process, Scope & Budget:

WebCode is funded as part of re:code LA through a construction services trust fund sourced from permit fees applied to all applications for development and land use activity within the City of Los Angeles. The total amount of funding allocated to the development tasks outlined below is: $506,960.

WebCode Tasks
As part of re:code LA, the Consultant Team was tasked with building a custom, interactive web-based application for the new Zoning Code. Below are the key subtasks for the process of developing WebCode.

1. Discovery and Requirements
Urban Insight, in collaboration with Code Studio, and the Department of City Planning, undertook a custom software development process to discover the project requirements and create a sustainable, affordable, and sensible implementation plan with discrete phases resulting in working components of the application on a regular basis.

Deliverables: a) Discovery Meetings, b) Requirements Document

2. Technical Architecture
Based on the Requirements Document produced during the Discovery and Requirements, the Consultant Team created a technical architecture for the new system.


3. Visual Design
Beginning with wireframes, and proceeding through usability testing and design, the visual design and user interface for the new system were developed. This usability testing involved several staff from the Department of City Planning.


4. Development
Using an agile sprint-based approach, Urban Insight developed the new Web-Based Code System according to the Requirements Document, Technical Specification, and based on the visual interface designs.


5. Web-based Zoning Code Open Source Development
The WebCode Toolkit open source project contains the core functionality that allows text and image content to be extracted from an Adobe InDesign file and then imported into a Drupal database for publishing on a website. The initial project release posted to the City’s GitHub page (https://github.com/cityoflosangeles) in November of 2016 included: InDesign EPUB export script(s), Drupal EPUB import module, and technical documentation. In January of 2017, refinements to the EPUB import module were released. Future releases will include a sample front-end display interface and visual walk-through demo showcasing how to best use the WebCode Toolkit once you download it. Once the downtown zoning code options are released, new features can be included within additional WebCode Toolkit updates. Possible updates to the project could be fixes to known software bugs found during continued development of the Web-based Zoning Code or additional features as directed by the project team.
Deliverables: a) WebCode Engine, b) Sample Display Interface

6. City Staff Training and Content
During the Alpha and Beta release stages, Urban Insight provided training to City staff who manage the system to enter content and create project assets. During the Production Release stage, Urban Insight will provide a similar training to City staff.

Deliverables: a) Training and Content Plan, b) Methodology for synchronizing Web Code across multiple formats, c) Alpha System Internal Staff Training, d) Beta System Internal Staff Training, e) Production Release Internal Staff Training

7. Testing
Urban Insight developed a system testing plan to implement during each phase of development.


8. WebCode Modification/Relaunch, Downtown Zoning Code Options
A preliminary draft of the Downtown Zoning Code options has been completed, tagged by City staff, and imported into the web-based code system. The web-based code system is currently being tested using this preliminary draft, and will continue to be tested to ensure WebCode is functioning to the City’s satisfaction. Where additional refinement is required, it will be undertaken. Once the refinements are complete, and the Downtown Zoning Code options are elevated to the public review level, a Launch Plan will be prepared and the WebCode will proceed to its Production Launch.

Deliverables: a) Tagged InDesign Code, b) Refinements, c) Launch Plan, d) Production Launch

9. Web-Based Code System Support
Once the web-based code system is in production, the Urban Insight will continue to support the system for the duration of the project.

Deliverables: Website Support @ 32 hours/month for up to 30 months

10. Web-Based Code System Hosting
The system hosting configuration was defined during the Technical Architecture subtask and includes: a managed dedicated server, managed firewall, managed network load balancer, managed backups, bandwidth, and enterprise level support through BlackMesh, a fully managed service provider.

Deliverables: a) Managed Hosting for 36 months

11. Web-Based Code System Project Management & Meetings
Monthly web-based code system project management meetings.

Deliverables: a) Project Management & Meetings

Current Status of the Project, Timeline, & Deployment Details:
re:code LA is a 5 year project that launched in 2013, and will have citywide zoning options ready for adoption by 2018. The new zoning options will be applied through a community planning process. Areas in the City of Los Angeles that have the new zoning options will be able to access their zoning information through WebCode. Currently, three Community Plan Areas, located within the Downtown Los Angeles area, are actively updating their community plans utilizing the new re:code LA zones: Central City, Central City North, and Boyle Heights. Once the zoning maps and plan language for these Community Plans are ready for public review, the zoning options for the areas will be accessible through WebCode.
WebCode -- The Development Process and Scope in the section above outline the steps involved in the Project. Currently, the Beta WebCode system is fully developed and displays a preliminary working draft of the Downtown Los Angeles zoning options. WebCode is currently password protected and is not yet publicly accessible. Once the draft zoning options for Downtown Los Angeles and Boyle Heights are ready for public review (projected for Fall of 2017), the updated drafts will be tagged in InDesign by City staff, checked for quality assurance, and imported into WebCode. Then, the WebCode Production Launch will occur, making the drafts publicly accessible through WebCode. In the interim, the re:code LA project team will make refinements and usability enhancements to WebCode as outlined above in subtask 8.

Open Source -- The WebCode Toolkit (described above in subtask 5), has already been made publicly available, and can be accessed on the City’s GitHub page: https://github.com/cityoflosangeles. Future releases will include a sample front-end display interface and visual walk-through demo showcasing how to best use the WebCode Toolkit once you download it. Once the downtown zoning code options are released, new features can be included within additional WebCode Toolkit updates. Possible updates to the project could be fixes to known software bugs found during continued development of the Web-based Zoning Code or additional features as directed by the project team.

Stakeholders Involved:

As this project serves to improve access to zoning regulations within the City of Los Angeles, anyone who lives, works, or invests in the City of Los Angeles is a stakeholder for this project. Additionally, as some of the key technology behind WebCode is being released as open source, the entire open source community is a stakeholder, including other agencies outside of Los Angeles that might incorporate the technology into their own efforts.

Immediate stakeholders involved in creating WebCode and, or in contributing to the decision-making around releasing the WebCode Toolkit as open source included members from:

Los Angeles Department of City Planning
Code Studio
Urban Insight
Information Technology Agency, City of Los Angeles
Mayor’s Office, City of Los Angeles
Los Angeles City Council

For More Information

For more information on the technical details behind WebCode, please contact Erin Coleman at ErinColeman@lacity.org to request the full Methodology for WebCode Synchronization and the WebCode User Manual prepared by Urban Insight.
Significance in Planning

WebCode changes the way the Department of City Planning communicates with the public. Today, the Zoning Code is a daunting document for the average person to navigate, both in print and online. It often requires specialized knowledge or expertise to understand all the applicable zoning regulations. WebCode makes the Zoning Code easy to navigate through a responsive, personalized, and intuitive experience. Instead of having to comb through the entire Zoning Code, users now have the option of having only the information relevant to their query delivered to them in a personalized summary. Additionally, WebCode supports the Department of City Planning’s mission of transparency and accessibility by being the singular and comprehensive source of zoning information. Currently, zoning interpretations that can affect how the Zoning Code is applied in certain situations live as separate documents that are often difficult to find. WebCode will pin those interpretations to the relevant sections of the Zoning Code, so users will know upfront that there are additional rules that may affect their property rights.

In a first for the City of Los Angeles, the City Council officially approved the Department of City Planning’s proposed open source releases of portions of the Web-based Zoning Code System in March of 2016. The releases, known as the WebCode Toolkit, are available through the online software repository GitHub. The WebCode Toolkit will enable any member of the public to make reports or static documents searchable and interactive on the web. The Toolkit has huge potential to enable other jurisdictions and members of the public (universities, students, tech community, etc.) to offer any document in a customized online format. In making the Toolkit available through open source releases, the City not only helps spur innovation, but also creates opportunity for potential improvements made by others to be contributed back into the WebCode Toolkit, which could allow the City to incorporate future enhancements.

Lessons learned from the process

1. Writing a zoning code with the intent of making it searchable and accessible online requires every paragraph to be “smart.” In order to deliver the correct summary, the system needs to know whether or not a piece of content applies to a specific zone. With the new system, it is imperative that planning staff understand the applicability and purpose of each section of the Zoning Code as we write regulations, so that all the relevant information can be tagged and “pulled” appropriately. Regulations have to be clear and consistent, which improves the way the Zoning Code is written.

2. Be mindful of the software you pick, and plan for technological change. Initially, the project team was not utilizing Creative Cloud. Transitioning into Creative Cloud after developing the system required a lot of work. Additionally, plan for regular software updates. For example, this project has to accommodate Creative Cloud updates every month.

3. Finish a zoning code draft before developing the web-based system. Technology firms can move faster than you might expect, so having the content ready first will enable the development of the web-based tool to be informed by the needs of the content. It is valuable to have sample language to test. However, you also need to maintain a balance of having the code and system inform each other, as development is iterative in nature.
Letters of Support
December 16, 2016

Mr. James A. Castañeda, AICP
Coordinator, 2017 Technology Division Smart Cities Awards
APA Technology Division
American Planning Association
1030 15th St., NW Suite 750 West
Washington, DC 20005-1503

Dear Mr. Castañeda,

On behalf of The OpenGov Foundation (OGF), I recommend to you and support the the City of Los Angeles, Department of City Planning’s recode LA team’s new WebCode system for the APA Technology Division Smart Cities Award.

The OGF is a fiercely non-partisan 501(c)(3) nonprofit. We promote citizen participation in how laws are envisioned and created, and help legislatures transform from paper-based to digital operations to make the best possible public access and engagement happen. Our software, coalition-building and events are designed to change the culture of government. Everything we create is free and open source, allowing everyone to use, contribute to and benefit from our work.

The new WebCode system was designed to promote the same principles and practices that we support. To wit, to be able to publish the City’s new zoning code in a modern, personalized, and mobile-optimized format, and to encourage openness and collaboration.

To my knowledge, when this project was approved by the LA City Council on March 1, 2016, it became the first open source software product to be publicly released by the City of Los Angeles. The recode LA team has helped the City of Los Angeles through the complicated, year-long approval process so that it could be released as open source software, with a view of facilitating other cities and counties ability to benefit from the City’s investment. An early release of the code is already available freely here on GitHub:
https://github.com/cityoflosangeles/webcode-toolkit
I believe that re:code LA is a comprehensive revision of the City's zoning code and an important effort. WebCode is a crucial part of this effort, demonstrably and meaningfully improving the public's experience with and access to the new regulations.

The WebCode initiative has my strong support for consideration for the 2016 APA Technology Division's Smart Cities Award. Should you have any questions, please do not hesitate to contact me via email at Seamus@opengovfoundation.org or via phone at +1-760-659-0631.

Sincerely,

Seamus Kraft
Executive Director and Co-Founder
OpenGov Foundation

Thank you for all you do to Support Smarter Cities! - Seamus
January 6, 2017

Re: Nomination for American Planning Association Technology Division Smart Cities Award

Dear Smart Cities Award Panel,

Established in 1924, the Central City Association (CCA) is Los Angeles’ premier business organization, with 450 members employing over 350,000 people in the Los Angeles region. We are writing in support of nominating the re:code LA team for the development of the WebCode system, an online and interactive experience to browse, search, and download the City of Los Angeles’s new zoning code.

re:code LA is a comprehensive revision of the City’s zoning code, and is one of its largest planning initiatives to date. WebCode is a crucial part of this effort, as it will improve the public’s experience and access to the new regulations.

Currently, if someone wants to understand what can be built and what activities are allowed on a property, it is very difficult to find answers to these questions. In today’s system, rules are scattered throughout the zoning code, and one must know all the different sections of the code they should search in order to understand the applicable rules. They also must confirm there are no relevant Zoning Administrator interpretations to be aware of, and that there are no conditions or overlays that modify the regulations. Navigating the current code requires a high level of expertise.

To address this problem, WebCode has a Create Summary feature that will allow anyone to simply enter in an address within the City of Los Angeles and see the zoning rules that apply to the property of interest. Additionally, if there are relevant interpretations or overlays, WebCode will automatically provide that information in the Create Summary search. This will save the public the headache of trying to sift through the entire zoning code to discern which rules apply to them.

Imagine with a simple search, a business owner would be able to decide whether or not to sign a lease on a retail space based on whether or not their type of business is allowed. This quick access to clear information will aide investors and businesses in efficiently determining which location is best suited to their needs.

CCA commends the re:code LA team for their innovation and appreciates your consideration.

Sincerely,

Jessica Lall
CEO
Re:code LA - A Smart Cities Award

Mike <mclark.udg@gmail.com>
To: erin.coleman@lacity.org
Cc: Darrell Clarke <darrclarke@gmail.com>

Erin,

Thank you for the background information on your request for a letter of recommendation for "WebCode" from the Angeles Chapter Transportation Committee.

I found your presentation last month to the Zoning Advisory Committee (ZAC) both exciting and convincing. The utilization of technology in the planning process is most welcome.

Although you are at an early stage, we look forward to your return when you are prepared for full implementation. Well done!

Please send an information set to Darrell Clarke, Chair, Sierra Club Transportation Committee (darrclarke@gmail.com). Our next meeting is January 5.

Mike Clark, Vice Chair
Sierra Club Transportation Committee