CODE for CANADA

The Civic Tech Playbook for Canadian Municipalities:

A guide to engaging with your local civic tech community

Written by Aaron Wytze Wilson

Contributions from: Hebah Masood, Kelly Halseth & Luke Simcoe

Note to Readers

This Playbook is currently in **beta**, our second draft. We'd be delighted to get feedback from our readers. Please share your ideas, concerns or questions by commenting on the document pages directly.

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Leah Bae
Darrell Bridge
Denis Carr
Nathan Childs
Jason Diceman
Michael Easter
Brendon Foster
Robert Giggey
Hillary Hartley
Christine Harvie
Ganesh Hatwar
Zlatko Krstulic
Sandi Mackinnon
Jake Miller
Kristen Morith
Steven Myers
Chris McCrae
Daniel Para
Adam Popper
Jessica Rayes
Oliver Sheldrick
John Spragge
Tim Vesterfelt
Cheryn Wong

Summary: The Quick and Dirty Version of the Civic Tech Playbook

Introduction - Why We Made This Book and How to Use It: We made the Playbook because public servants increasingly use data and technology to build cities, and you need to talk to members of the public who are already using those tools to make their cities better. The Playbook was designed for you to zoom back and forth between the sections relevant to your specific municipality and this section explains how that works.

Play 0 - Show Up, Make Friends, Talk About Your Work: If there's a hack night in your town or city, you should go to it. You don't need an invitation, you can just show up. Talk to people while you're there. You can tell them you came because of the Playbook. See how they did this in Toronto, Ontario.

Play 1 - Share Opportunities: Share opportunities for collaboration with the civic tech community. That could mean discussing project ideas your municipality might have, or describing civic problems your department has run into. Learn about the projects the civic tech community is working on, and share them with your colleagues. See how they did this in Fredericton, New Brunswick.

Play 2 - Host a Hack Night: If you know of a big municipal public space (with good wifi and plenty of wall sockets) to hold a hack night, suggest it to hack night organizers. Hack nights take place in the evening, so City Hall is a great place to do this. If you don't have a municipal space to offer, suggest some community spaces you know of. See how they did this in Vancouver, British Columbia.

Play 3 - Supply Resources for a Civic Hackathon: Civic Hackathons are usually full day events. We define two kinds of hackathons here: The first kind are "challenge-driven", where you present a civic problem to a group, and work on a solution over the day; this kind is for the general public. The second kind are "data-driven", where you'll present some open government data to a team and challenge them to use it in interesting ways; this kind is for hackers. See how they did this at the Toronto Public Library.

Play 4 - Fund Civic Tech Projects: Civic tech community projects are labours of love, and take a long time to develop. If you believe their project will benefit your municipality — or if you have a proposal you'd like to hire a civic technologist to work on — then fund a project. You'll save time and money because you likely won't need to go through a procurement process. See how they did this in Edmonton, Alberta.

Play 5 - Build on What Already Exists: Civic tech communities around the world use open source software. That means you don't have to build a new app or website from the ground up, you just need to look around at what others are doing and see if the same project works for your municipality. Make a habit of reading civic tech news websites to catch up on the latest projects. See how they did this in Ottawa, Ontario.

Play 6 - Start a Civic Tech Community: Canada is big, and there's only a dozen or so civic tech communities across the country. In many municipalities, public servants have played a critical role in getting a community started. Put out feelers with non-profits, startup incubators and higher education institutions to see who's interested in starting a community. Or, better yet, just book a place and a speaker, and start. See how they did this in Charlottetown, PEI and Niagara, Ontario.

Conclusion - Be a Civic Tech Advocate: There's a ton of activity around civic tech at the provincial and federal level. But without support for these activities at the municipal level, there's less reason for government to push for these initiatives. We hope everyone who reads this book can be a civic tech champion.

Glossary: There's a whole bunch of words and phrases in the civic tech movement that only make sense to hackers and civic tech community members. We put all those words together in one place for you to look at.

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Introduction: Why we made this book and how to use it

What is Civic Tech?

Across Canada, towns and cities are increasingly turning to digital technologies to improve our standard of living. As new technologies make our lives more convenient and efficient, Canadians have come to expect public services to follow suit.

But local governments face obstacles in meeting these expectations: software procurement processes are slow and tedious; it's challenging to get public feedback on new products; or a new digital service might be met with a cool public reception. All of these issues can make it challenging and costly for cities to deploy technological solutions.

But there's a different path available for public servants.

In towns and cities all over the country, there are dedicated groups of people creating simple digital tools and innovative processes to make their communities better. These groups aren't just made up of tech-savvy software developers, it's also your run-of-the-mill public and private sector workers taking part. They're motivated by civic duty, and a common ethos that it's better to build a technology "with" the public, instead of simply "for" the public.

The projects created through this communal process are called "civic technologies" or "civic tech" for short, and the groups that make them are "civic tech communities". In recent years, the word "civic tech" has come to describe a global movement of sorts, with communities around the world using the word as a means to signal to the public that "community collaboration happens here".

> *"People in the IT sector want to volunteer, they want to help their community, to use the skills they have."*
> *-- Sandi Mackinnon, Civic Tech Fredericton*

Canada hasn't been left out, with civic tech communities like Edmonton's "Beta City YEG" and "Civic Tech Toronto" holding their first meet-ups in 2015. Soon after, communities popped up in Vancouver, Calgary, the Waterloo Region, London, Ottawa and Fredericton.

These communities have already produced amazing digital tools for their respective municipalities. You can read more about their projects in the Playbook.

You'll also read how local governments in Canada worked with communities to reshape software procurement and user-testing processes. After collaborating on civic tech, many public servants go on to introduce "agile development" or "design thinking" models into their government units; these concepts are great ways to invigorate government procurement cycles and encourage policy innovation. Many more public servants learn how to make digital public services and products more inclusive and intuitive through "human-centred design" — a user-testing model that works with residents through the entire build process.

How to read the Playbook ...

If you've read this far, you're probably asking yourself "how did these collaborations start in the first place?" or "how can I make this kind of collaboration happen in my municipality?" Perhaps you're already familiar with civic tech, and now you're wondering "how do I convince my superior that civic tech collaboration is a good idea?"

We've got you all covered. We wrote the playbook to make it easy to read, and arranged the playbook into six easy steps (plus a step "zero") that will put you on sure footing for constructive collaboration with civic tech communities.

If everything we're talking about is completely new for you, then we recommend starting from "Play 0: Show up, Make Friends, Share Your Work". If you're a civic tech aficionado, you might want to start at "Play 2: Host a Hack Night". If you live in a place where the nearest civic hack night is 1,000 kilometres away, then head over to "Play 6: Start at Civic Tech Community".

We've called it a playbook for a reason, this is an easy to read guide filled with strategies and "plays" for municipal employees of all experience and knowledge levels.

Our inspiration for the Playbook is *Mark Headd's How to Talk to Civic Hackers: A Guide for Public Servants That Want to Engage and Collaborate with their Local Technology Community*, a book that lays the groundwork for successful government-civic tech community collaboration.

We took the strategies and lessons from Mark's book and adapted them to the unique Canadian context, complete with on-the-ground examples of how Canadian municipalities and civic tech communities are working together to deliver better outcomes for residents.

We've learned that successful collaboration comes down to a small set of factors that most public servants can replicate in their municipality. We've synthesized these factors into practical steps you can take to get involved in your local civic tech community as well as case studies to show how other public servants accomplished what they did.

How This Book is Organized

Think of this book as a "choose your own adventure" activity. You can skip to the "play" you find most useful, or you can read it from start to finish at your own pace. We recognize that municipal public servants across Canada will be at different stages of engagement the public, and we have arranged the Playbook to be applicable to a number of groups.

How To Contribute

We also want to keep this conversation going! We invite our readers to leave comments and suggestions throughout the text, so think of the Playbook as a living document that welcomes new ideas and solutions.

Readers can also submit feedback directly to Code for Canada at hello@codefor.ca.

License

Play 0. Show up, Make Friends, Talk About Your Work

It might seem unusual to start with a play zero, but we've done so to acknowledge that the civic tech process will be different in each municipality. Based on your own needs, there's two options you can follow here:

Option 1: I don't have a civic tech community in my municipality

For some municipalities, there won't be a "civic hack night" to join, and the nearest civic tech community meet-up will be hundreds of kilometres away.

If this is you, this will not be your "play zero"; head on over to "play six", where you'll read about Canadian public servants who are overcoming both geographic and knowledge barriers to foster civic tech communities in their municipalities.

But before you go, we suggest checking out our listing of civic tech communities on the Code for Canada website. We also suggest performing a search on Facebook or Meetup.com for any past or future events.

It might also help to expand your Google keyword search to include terms like "open source", "dev-groups", "open data" and "design groups"; often times, groups that specialize in these areas are doing civic tech-type projects, and welcome outside participants.

Option 2: I have a civic tech community in my municipality

If you live in one of the handful of Canadian towns or cities with an active civic tech community, then read on. Your first move is relatively simple: show up to a scheduled event, see what kind of projects are being worked on, and talk to people.

You might be asking yourself, "wouldn't it be better to send an email or call in advance to confirm whether it's appropriate to attend?" but in most cases, hack night organizers will simply ask participants to confirm their attendance by clicking "yes" on an event notification on Facebook or Meetup.com.

Civic tech community events in Canada have very few barriers to participation. No specialized knowledge of civic tech is needed to attend, no technical knowledge of open source software is expected, and no professions or groups are prohibited from attending.

At its core, civic tech is a process that embraces ideas of “participation”, “collaboration” and “inclusion”; everyone is welcome to contribute their unique skills to community projects in development.

As public servants, you have specialized knowledge about the municipalities you serve in, and your insights act as invaluable tools to civic tech communities. Some civic tech projects involve adding a new mode of public participation or a new way to communicate civic problems to the government; your experience enables community members to pass difficult hurdles in the development process.

There is also a social and networking aspect to showing up at a hack night. Many of the people who come out to hack night are newcomers themselves. So branch out, make connections, participate in the working groups with enthusiasm. And don’t just come out once, come out consistently.

Getting up to speed on civic tech

In some cases, hack night organizers might provide a “civic tech 101” session for newcomers, where the basic ideas and principles of designing a project are introduced. This is a great opportunity to learn about the processes and tools that make civic tech events an energizing and communal experience.

The civic tech movement has borrowed liberally from the startup and design sectors, and you’ll learn that many of these ideas can be juxtaposed into your own work.

Many hack projects take a “lean” or “agile” approach to development — that is, working in small increments to complete tasks, and releasing projects to the public for feedback on a quarterly, monthly or even weekly basis. Many projects also employ “human-centered design”, which puts resident feedback at the core of the design process.

This model of work has proved indispensable for tech firms like Google, who used agile development to produce Gmail and the Android operating system. It’s also helped Canadian civic tech communities produce innovative civic technologies like the

"BikeSpace" bike parking app, the "River Watch" river level forecasting web app, and the "You Can Benefit" benefits finder web tool.

> *Coming to a community space — rather than asking a community to come to you — is necessary for a productive relationship.*

You'll also notice that civic tech communities use a mix of open-source and proprietary software. Take your time exploring these. You're likely already familiar with tools like Google Docs and Slack, but may be encountering software program repositories like GitHub or GitLab for the first time. All of these tools facilitate cooperation, and allow anyone and everyone to add input to a community project.

Just remember, this is the first step, the bare minimum to starting this relationship. It's also the most important step; building a strong foundation between the municipal government and your local civic tech community is necessary to begin any kind of collaborative development process.

The benefits of "showing up"

- Meet a slice of your city's municipality that's hard to reach: young professionals who care about civic issues with high concept ideas to fix them.
- Learn what collaboration and communication tools your civic tech community is using; join their Slack channel and be a part of the conversation.
- See how civic tech communities use tech and design solutions (like agile development and design sprints) to tackle civic problems.

Case Study: The City of Toronto's Open Data Team

Jessica Rayes and Denis Carr are public servants with the City of Toronto's Open Data Team, and are frequent participants at Civic Tech Toronto's Tuesday hack night.

The weekly event has become a forum for them to contribute their skills. With their vast networks at City Hall and Queen's Park, Denis and Jessica can introduce specific policy experts to community members working on related civic tech projects.

“These hack nights are about establishing or strengthening trust, and allowing the public to interact with civil servants. Without this, it’s hard for people to connect with us, and see how our work affects them,” said Jessica.

Civic Tech Toronto is one of North America’s largest civic tech community groups, and it’s an opportunity for public servants to hear from a diverse cross-section of the city.

That kind of feedback was useful in developing the City of Toronto’s four-year “Open Data Master Plan” — a plan that not only establishes an accessible open data portal for city residents, but also makes open data an essential tool for both city council and the city government.

“A lot of our primary research came from the members who attended the Tuesday hack night,” said Jessica. “One of the most compelling aspects about these hack nights is they help you validate your approach. We gained a lot of valuable user feedback on the design approach for our portal.”

Denis agrees, and sees the hack night as a way to pilot a new approach, and collect ideas from other projects going on within the community. “We can see particular models of how a project is evolving, learn from that playground-type atmosphere, and then pilot that model internally,” he says.

It’s also important to check expectations. A hack night isn’t about seeing a finished product at the end of the day, it’s about connecting and collaborating with others, and finding synergy with community members.

Think of a civic tech project as two-fold, says Jessica and Denis, it has the potential to resolve a civic problem, but it’s also an opportunity to bind municipal residents to grow closer, and think about a problem from a new perspective.

Play 1. Share Opportunities

Communicating opportunities is a great way to establish a working relationship with a civic tech community, and the local civic hack night is just the forum for it. In fact, many of Canada's civic tech success stories began with a public servant coming forward at a hack night with an idea to solve a civic problem:

It was a consultant at the City of Toronto that pitched "BikeSpace", a web app to report bike parking problems. It was a geomatics engineer in Fredericton that pitched "River Watch", a mobile-friendly web tool to warn citizens about rising river levels. And it was a public servant in Edmonton that proposed "YouCanBenefit", an online benefits finder for low-income earners.

None of these successful pitches came to the community with a solution at hand. Public servants discussed a problem they were having, and presented an opportunity to work with the community, and arrive at a solution together. Bringing a ready-made solution to the community will limit creativity, subvert potential for collaboration, and ultimately lead to a bad product. It also gives the impression that you're looking for free labour, not a community-led solution.

If you're presenting a way for the the community to get involved, make sure you define how the city will support members if they choose to take on the project. For example, if your idea involves open government data, then the local government should be willing to share said data with the public. "Transparency" is a core tenet of the civic tech movement, and community members live by these principles when building civic technologies. Take requests to open up data as an opportunity to work closer with your community.

If there is a deeper context to the issue at stake, public servants should set a point person to speak with the civic tech community in order to help them gain insight. That doesn't mean being on call for community members, but it does mean having a conversation about the best way to keep an open line of communication. In general, we recommend picking up tools the community already uses, such as Slack, so check with hack night organizers to see if they have a channel set up.

Getting your colleagues interested

After attending a couple hack night events, get a feel from event organizers about the current slate of projects being developed, and invite your colleagues to the next event. For example, if a civic hacker is working on an "online benefits finder" platform, why not invite a colleague from social services?

Remember, the more public servants attend and network at a hack night, the better the civic tech projects produced by the community. This intuition might seem strange, but good, community-facing app and websites need buy-in from a diverse set of stakeholders, including members of government.

Remember, failure is OK

Finally, it's important to remember that it's alright if your pitch or project idea fails. For every successful civic tech project like "BikeSpace" or "River Watch" there is a pile of failed pitches. Failure is an important part of the civic tech innovation process, and your half-realized idea could become a fully formed project later on. Don't be shy to pitch your ideas to a civic tech community and be open to a slew of possible solutions.

The Benefits of "sharing opportunities"

- Pitch project ideas to a group of civic-minded individuals who are adept at using technology and design to solve problems.
- Learn how to make residents a key player in a project, giving them ownership of both the civic issue and the solution put forward.

Case Study: One person's passion project becomes a community project in Fredericton

For folks in New Brunswick, preparing for flooding in the spring is a vicissitude of life. Some years, the river rises a little, while in other years, flooding has devastated town and cities along the St. John River.

New Brunswick residents depend on the province for up to date information on river levels. So when "Civic Tech Fredericton" established themselves in late 2017, a digital tool that notifies residents about river levels seemed like an ideal first project for the community to work on.

In March 2018, community members unveiled RiverWatch, a web app that provides a three-day flood forecast for towns and cities around the province. New Brunswicker's were able to prepare accordingly for the high river levels in April of that year.

In retrospect, it seems obvious that the Civic Tech Fredericton would build such a tool, but RiverWatch almost didn't happen at all.

Bernie Connors, a geomatics engineer with the province, had an idea for a mobile-friendly version of a river level forecasting app rattling in his head for years. In years past, he pitched the idea to other development groups, but it didn't get much traction then. His idea clicked with members of Civic Tech Fredericton because the project looked to create dividends for the public good.

In a sense, the factors that brought together RiverWatch was good timing, but it was also about taking advantage of opportunities when presented, and sharing ideas with like-minded and empathetic individuals.

Play 2. Host a Civic Hack Night

Finding a space to hold a weekly hack night can be a headache for civic tech community organizers. The size of the space isn't the only issue, organizers need to think about the factors that enable a hack night to run smoothly.

You need solid wifi internet that can handle up to a hundred people working together simultaneously. You need a room with enough wall sockets that can handle two dozen laptop computers charging at the same time.

Then there's the issue of transportation. If the meeting site for the hack night isn't centrally located, how will community members attend the event? Is the site located next to a bus route? If your civic tech community meets in a municipality where public transportation is lacking, how will people without cars — like university students — make it to events?

These are all issues that can make or break a hack night. But there's a great public space to hold a hack night right under your nose. That's right, it's city hall.

Centrally located, and usually equipped with free public wifi, municipal buildings are often ideal places to hold a hack night. And since many hack nights are scheduled in the evening, when the majority of public servants are on their way home, the civic tech community will likely never be a nuisance to city business.

How a civic hack night might go:

Most civic tech communities hold a weekly or monthly civic hack night. They typically follow a similar schedule:

i. The night will begins with a couple announcements about the space the community is using.

ii. That's followed by a short presentation from a guest speaker, with a question and answer period. The guest speaker is usually someone in the municipality who is working on a civic tech, open source or digital governance project.

iii. Next, community members (or newcomers) will set aside a block of time to pitch new and existing projects. Typically, members will tell participants what their project is lacking, perhaps they need a UX or UI designer to complete their project.

iv. After that, members break out into small groups, and hack on civic tech project for an hour or two. In between hack nights, members might work on projects outside of the event space.

If this all seems overwhelming or forced, we recommend leaning heavily on the experience of the civic tech community to run the event; they will already have their own routines for running a hack night. In most cases, public servants can leave the vast majority of of the hack night organizing to the civic tech community.

Creating a civic website or app is an intensive and laborious process, so you're likely to see a handful of projects at early or middle stages of development. If you do present a challenge or civic problem to consider at the hack night, a good result might be the community wants to keep working on the project at the following community event.

> *"The people who came were socially aware, and had a range of ideas about improving efficiency, safety, or making government more accessible. There's a lot of energy to collaborate on user-testing with civic tech."*
> *-- Cheryn Wong, City of Vancouver*

Help a civic tech community find a permanent home

Holding a hack night at a municipal public space can help build important bridges between local government and the civic tech community. But even if your city doesn't have a big enough space to hold a hack night, your knowledge about booking public spaces can be a big help to members.

You may know of spaces that civic tech communities haven't considered. Consider suggesting non-profit organizations, charities, startup spaces, or community centres that your municipal office comes into contact with, and put out some feelers to see if they'd be willing to host a one-off hack night event.

Ideally, civic tech communities prefer to meet at a regular location because it improves turn out. In fact, two of Canada's most active communities — Civic Tech Fredericton and Edmonton's Beta City YEG — have been able to draw attract consistent turnout because they've lucked out with a single meeting space for their hack night events.

So don't wait for the call, reach out to them first. If you see that there's already a civic tech community in your area, and they don't appear to have a regular space for their hack night, feel free to make the first move.

Benefits of hosting a hack night:

- The civic tech community and general public will begin to associate municipal offices as a site for innovation and new ideas.
- Your public servant colleagues are far more likely to attend a civic hack night if the site of the event is a municipal building or space.

Case Study: Making space for a smarter Vancouver

In Winter 2017, Infrastructure Canada invited municipalities to think big about their futures. With over $300 million dollars in federal funding up for grabs, the Smart Cities Challenge was a great opportunity for municipal planners to sketch out the towns and cities of their dreams.

But there were conditions attached for these planners. It wasn't enough to start drawing up a blueprint for smart lamp posts and touch-screen info kiosks, municipalities had to consult with the public.

The cities of Vancouver and Surrey decided to put forward a joint bid for the challenge, and were considering dozens of options for their final proposal.

Just as Vancouver City Hall was ramping up its public outreach for suggestions, they received an offer on social media from Civic Tech Vancouver — a local civic tech community — to host a hack night to brainstorm ideas for the Smart Cities Challenge.

The City could have said no. After all, city staff were already busy polling residents about their ideas for the project. They had also commissioned a tech startup to create an online participation platform that collected suggestions.

But they took advantage of the offer presented to them, and hosted Civic Tech Vancouver at the City's "Engagement Lab"— a civic innovation space reserved for the public. It was a simple but inclusive way for the government to hear from a community that was familiar with the concepts and technologies of smart cities.

"They were well informed, and they represented a demographic that is not traditionally involved in civic processes," said Cheryn Wong, an engagement officer with the City of Vancouver. "The range of ideas that they had, from improving efficiency to safety, from making government more accessible to digital information boards in strategic locations, were all really thoughtful and socially aware."

Civic Tech Vancouver used design thinking processes to imagine some potential challenges the city might encounter in creating an inclusive smart city. "We took the main themes that the city wanted us to work on, and we asked what an 'un-smart city' would look like. So we came up with the stupidest ideas for the project, and then we flipped them into smart ones," said Leah Bae, the co-founder of Civic Tech Vancouver.

Mobility was a hot topic at the hack night, and participants put forward some ideas on resolving public transportation issues. They suggested autonomous buses that sync their routes with air and ground level sensors, and smart traffic lights that gather weather and traffic information. When Vancouver and Surrey started to formulate their final bid, they drew on those ideas for their planned collision-free multi-modal transportation corridors.

Play 3. Supply Resources to Civic Hackathons

If you've just read up on how to host a "civic hack night" at a municipal public space, it might seem confusing to suddenly hear about providing resources for this other event called a "civic hackathon".

A civic hackathon can be a full-day event or even a multi-day affair. We'll talk about two types of civic hackathons here, "challenge-driven" and "data-driven".

i. Challenge-driven civic hackathons

At some events, city residents are invited to provide "challenges" to work on over the course of a day. These challenges usually take the form of a problem a group is grappling with. The best challenges are provided by stakeholders that know their community intimately, and interact with their constituents on a daily basis. If you expect a big turnout, considering soliciting challenges from a number of organizations.

Challenge-driven civic hackathons are great at getting a mix of experienced civic hackers and members of the general public to come out. If it appears that your municipality is unfamiliar with the civic tech movement, then a hackathon can be a fantastic crash course for residents to how the concept works.

If you've already on board about hosting a civic hackathon, we recommend structuring your event into two time sections:

In the first section (the morning), let your challenge owners discuss the problem, and elaborate on the different threads of the issue. Try to visualize and map out the problem with residents, and then pinpoint which part you'll tackle at today's event.

In the second part (after lunch), get participants to write down their solutions on sticky notes, and discuss them together as a group. Come to a consensus on which solution you like best, and flesh out what a potential prototype for the solution would look like.

If you're still uncertain on how to get started, you could hold your civic hackathon in conjunction with other cities in Canada on "CodeAcross" Day — an annual event that sees civic tech communities across the country working on challenge-driven civic hackathons.

ii. Data-driven civic hackathons

At data-driven hackathons, a local municipality provides a series of open government data sets at the event, and challenges participants to think of some interesting ways to visualize or use these data sets. Because data visualization and utilization requires a higher level of technical skills, these kinds of hackathons appeal to tech-savvy members of open data and civic tech communities.

We suggest working with community members to see if there are new government data sets they'd like to see released for the hackathon. Of course, public servants must consider issues of personal or sensitive data, and civic hackathon participants will understand their concerns.

In general, this is a good habit to get into; civic hackers are routinely the first members of the public to play around and visualize new data sets, and can help demonstrate to the public the value of open government data. If your municipality does not have an open data portal, or lacks a data and code repository, you could try a challenge-driven hackathon that converts paper-based historical records into digital records.

> *"It's a great way to highlight how the community can take advantage of data when the government makes it open. The municipality benefits when we can use this data."*
> *-- Bernie Connors, Civic Tech Fredericton*

If you're not sure which day of the year will elicit the most interest in such a hackathon, look no further than "International Open Data Day" — a global event that celebrates the release of open government data sets. In March 2018, there were nearly 400 open data communities holding events (with the majority supported by their local government).

In general, "Open Data Day" and "CodeAcross" happens on the same day — the first Saturday of March. Check out the Open Data Day website for the timing of this year's event.

About food

Civic hackathons last the whole day, and you'll have to order food—usually breakfast, lunch, snacks and refreshments. Without food and drinks, hackathon participants will head out for lunch, losing project momentum. We understand some municipal units might not have a budget for food, so have a conversation with your local civic tech community about the best arrangement for the event.

If you're still skeptical, feel free to reach out to veteran civic tech communities in Toronto, Edmonton, Ottawa and Calgary. Community members in these cities have held their share of CodeAcross and Open Data Day events, and would be happy to share their insights.

The benefits of supplying resources for a civic hackathon

- Get the civic tech community AND the general public involved in formulating solutions for a civic problem.
- Civic hackers are more than happy to visualize open government data sets during a data-driven challenge; these events can act as proof that the public is motivated to use open data sets and have a desire to see more.
- Open Data Day is a well-known event, and residents in your municipality will instinctively visit the official web site to check for a local hackathon in their area; be part of a national and global movement, and work with a civic tech community, open-source dev group or a university to hold your own Open Data Day event.

Case Study: Challenging Toronto to be more open at CodeAcross

The City of Toronto is continually looking for new ways to make public services more accessible and responsive to residents. In March 2018, eight organizations had such an opportunity when Civic Tech Toronto organized their CodeAcross civic hackathon, where they were asked to think about how public services will change in the future.

Brendon Foster, a Senior Services Specialist at the Toronto Public Library, learned about the Toronto's CodeAcross event from his manager, and asked if he could come up with a challenge to engage the public in the library's work.

On the morning of the hackathon, he made a quick three minute pitch to the crowd about the need to look up a growing diversity of reference materials, including books, web

articles, films and music clips. He hoped to attract two or three participants to brainstorm some new solutions. He was surprised to find nearly a dozen members of the public ready to work on his project pitch. “I thought I was going to be sitting all alone for the duration of the hackathon,” said Brendon jokingly.

He was happy to have ten engaged people working on his problem, and was pleased with the diversity of ideas that came from the group. “When you’re able to have that kind of fertile discussion, it really helps you get an idea about how you can frame a problem, or an issue in ways you might not have thought about,” he adds.

Play 4. Fund Civic Tech Projects

Civic technologies are almost always a labour of love; it's a project a civic tech community will work on once or twice a week, or off the side of a desk.

That inevitably leads to long development periods. A programmer might put the project on hold when work or family obligations come up, while others simply lose motivation, making it harder for projects to see the light of the day. What's more, it can be difficult to secure funding because civic tech projects do not follow the logic of the market.

But if you value the work community members are doing, and you sense the project has the potential to benefit your municipality, you can consider funding their initiative to keep it going. As Jules Maitland — co-founder of Civic Tech Fredericton — points out, it's not about dollars and cents for civic technologies. "Solutions don't need to be profitable, they just need to do good." Civic tech projects aim to address hyper-local issues, and work well as problem-solving agents when it is members of the community who build the digital solution together.

The cities of Edmonton and Toronto have already set a precedent on how a small amount of funding can help civic tech projects get to the product launch stage.

Public servants in both cities presented a problem to their respective civic tech communities. They received a positive response to their proposals, and a number of community members stepped forward to work on the project. To ensure that a final product would eventually see the light of day, both Edmonton and Toronto looked for a project manager to help shepherd the app or website to completion.

> *"It's good value for the taxpayer when civic tech projects are developed, because it's owned by the community."*
> *-- Jason Diceman, City of Toronto*

Once they found their desired project managers, both cities wrote up a contact detailing time frames they wanted to see a completed product, as well as desired specifications and functions.

For such a funding model to work, public servants need to pitch project ideas that have buy-in from the local civic tech community. If members don't believe the project is for the benefit of the public good, no one will step forward to work on it. And because these projects are invariably open source, the final product does not belong to the city, but to the community, a situation some municipal governments may not be used to.

This is a bold way to fund and create digital tools that serve the public good. It's also a great alternative to the lengthy and bureaucratic procurement process that municipalities must undertake in order to hire a firm to create a new digital tool.

It could be months (or years) before public servants are able to put into action a new piece of software through the traditional procurement process. After all, requests need to pass a committee and municipal council vote to gain approval, then a bid needs to be put out to create the software. By the time the final product is complete, the item could be out of date, or no longer reflects the needs of residents.

Granted, this new municipal civic tech funding model won't be replacing the procurement process for software products that target digital public services, but it is ideal for smaller projects that tackle singular civic problems. For example, Toronto's "BikeSpace" web app only reports bike parking issues and Edmonton's "You Can Benefit" website only provides instantaneous feedback on possible benefits low-income families can apply for.

Furthermore, because many civic tech projects take an "agile" approach to software development (frequent product releases that ensure user-testing and feedback can be given throughout the development process) the project will move at a steady pace, allowing public servants to corral user feedback from the public.

Once the project is successfully launched, we recommend continued funding for the project manager, as the product will likely require maintenance, and can assist in integrating new features or ideas the community has for the project.

For the vast majority of Canadian municipal governments, establishing this kind of relationship with a civic tech community will be a completely new experience. But as we'll see in the following case study, the experience was worth it for all stakeholders involved.

The benefits of funding a civic tech project:

- It's good value for the taxpayer. With just a little bit of funding, you get a technological or design solution that's made just for your community.

- Civic tech communities generally take an agile development approach to app or website creation; that means a push for early prototypes, and an emphasis on user feedback up front.

- You avoid a lengthy procurement cycle that could see your app or website completed years later, with little to no user-testing.

Case Study: Empowering civic tech communities in Edmonton to do good work

In 2016, the City of Edmonton wanted to create an online benefits finder for members of the public who need some kind of government assistance.

The City offers a wide variety of services and resources to low-income families (for both children and adults), but information about said benefits were scattered across dozens of websites. That meant many of those benefits were severely under-utilized by the public.

David Rauch, a public servant with the City, thought that civic tech had potential to tackle the problem. David was a member of Beta City YEG, Edmonton's civic tech community, and put out a call for a developer to steer a new project called "You Can Benefit" that looked at the problem of the city's underused social benefits.

Steven Myer, a postgraduate student from the University of Alberta, was in the audience that day, and saw the project as an opportunity to put what he learned in school to use, and try his hand at project management. Over the span of a year, Steven worked with dozens of stakeholders, including social workers with the City of Edmonton, as well as a handful of local nonprofits and charity groups.

But for the partnership between all of these actors to work, the City needed to find a group to act as a vendor, who could enter into a contract with the city. Beta City YEG, like

most civic tech groups, is not a registered charity or non-profit, and was not able to perform that role. So the City worked with "e4c", a non-profit organization that works with vulnerable communities in Alberta. By working through e4c, Steven was able to enter into a contract to take on the project.

The City of Toronto followed a similar route for their "BikeSpace" bike parking web app. Because Civic Tech Toronto (the community that developed BikeSpace) was unable to enter into a contract with the City, Code for Canada stepped in, and handled the contract details of the project manager role.

With Steven working on the project full time, he was able to regularly consult with users, allowing him to formulate an appropriate interface and experience for the online benefits finder. As a recent graduate, Steven was also excited to work on a project that could have real impact in his city. "It's great to get a student to work on these projects. When you get someone who's hungry to learn, you're usually in a good position," says Steven.

Play 5. Build on What Already Exists

If your community is tackling a hyper-local issue, it's easy to assume that your civic tech project will need to start from scratch, but that doesn't have to be the case. Sharing resources is at the core of the civic tech movement, and there are likely dozens—or even hundreds—of open-source projects your team can draw on when formulating an appropriate solution.

So before you get started, take a look around at other Canadian civic tech communities to get a feel for the kind of projects they've already worked on. Since Edmonton's Beta City YEG and Civic Tech Toronto are the most well-established civic tech communities in Canada, you might want to start with their GitHub repositories. Feel free to use a part of (or all of) the code they've put up, and then contribute new code to GitHub for others to share.

Keep in mind that the civic tech communities are not bound by national borders, and open source software or open data projects from the US, Europe, Asia, Latin America or Sub-Saharan Africa is constantly being shared, reused and repurposed to fit new locales and situations.

Check out the Code for America, mySociety or the g0v.tw GitHub repositories to get some inspiration, or adapt completed projects to fit the needs of your municipality. In some cases, you can find a project where much of the coding is already done for you — like an application program interface (API).

To keep track of new developments in the civic tech movement, it's good to make a habit of checking out civic-tech related news and blog sites for reports about projects and initiatives. We highly recommend the following websites:

- The Code for Canada blog
- The Code for America blog
- The Civicist
- The mySociety blog
- g0v.news
- The Open Knowledge International blog
- The P2P Foundation blog

If you see something that's working in another city, reach out to them, and ask for advice on strategies for adapting—or "forking"—the project for your municipality.
We suggest taking a close look at how similar or different the contexts to the social issue at hand are, especially if said cities differ in population or geographic size.

> *"Civic tech communities can take on some of the risk in developing tools; public servants might not have the capital, knowledge or skills to make a product that meets the needs of the municipality."*
> *-- Nathan Childs, Civic Tech Niagara*

There's also no reason to limit your search to civic tech circles. There are hundreds of open-source hobbyist and development groups that would be more than happy to contribute their code or resources to your project.

There's a give and take philosophy surrounding open source code, and the model works because of the dedicated communities that continue to build and contribute to the existing base of code. So set up a GitHub (or GitLab) repository for your own municipality, and provide instructions on how your code or projects can be used by others. (should be a creative commons link).

The benefits of building on what exists:

- There's no need to start from scratch; you can look around, see what open source projects work in other cities (or countries) and rework a project to fit your particular locale.
- This is an opportunity to reach out to other public servants (or civic tech communities) and learn about what's been successful for them; there's no need to stop at Canada, the civic tech movement has already reached every corner of the globe.

Case Study: Ottawa Joins in on the Open311 Trend

311 services are becoming key channels for municipalities to converse with residents, allowing anyone to talk to a city employee through a voice call or online.

About ten years ago, cities like San Francisco, Boston and Seattle bandied together to release the source code for their 311 mobile applications, and allow tech-savvy residents to create their own apps or service that perform new or improved functions.

Recently, the City of Ottawa wanted to experiment with new ways it could improve its own 311 mobile app, and invited the city's local civic tech and open data communities — Ottawa Civic Tech and Open Data Ottawa — to a hack night event to play around with "Open311".

Open311 is an application programming interface (API), it's the part of the software that allows users to make commands to the app. Since Open311 is an open-source application, anyone with an idea and the know-how can alter the source code to add new functions. So for example, instead of simply reporting potholes (a common use for 311 applications) your new 311 application can now report graffiti tagging.

As the City of Ottawa's Open311 hack nights got underway, public servants Tim Vesterfelt and Zlatko Krstulic went in with an open mind on what could be achieved over the course of the events. "Worst case scenario from the hack nights, there are more web apps available for residents to look at, and we get continuous feedback on our API" said Tim.

With a select set of challenges, hack night participants created a 311 reporting dashboard, and even an A.I. algorithm that recognizes images of potholes and reports issues automatically. "If we wanted to do that in government, we'd need a lot of budget and manpower. So just seeing a group experiment with this ideas, was pretty interesting," said Tim.

When cities use open data, or other open-source tools, they send a signal to civic tech and open data communities that there is an opportunity to collaborate. Cities don't always have to develop their own digital tools, they simply need to look around at what's already there, and reach out to community members about ways to collaborate.

Play 6. Start a Civic Tech Community

If it isn't already obvious, establishing a civic tech community is no easy task, and will require a diverse group of people in the room to get the ball rolling. We've already prepared a toolkit on how to foster a civic tech community in your town or city.

We recommend casting a wide net for like-minded individuals in government, the startup and design community, the nonprofit world, as well as universities and colleges in your area. Each one of these groups possess a different skill set that is vital for a civic tech community to flourish. People from the start-up and design community provide the digital building blocks to create digital tools. The non-profit community understands the mathematics of collective action and community-building. And university and college students see civic tech as a great conduit to put their skills into practice.

Sometimes the best way to gather interest is a call to action to tackle a problem that has nagged at your municipality for years. Think about the kinds of issues in your town or city that affects all residents, and suggest a hack night as a new way to approach the problem. It might seem obvious, but it doesn't hurt to bring a local newspaper to a hack night and discuss how your civic tech community could approach local problems for a technological perspective. It's difficult, however, to motivate participants to work towards a goal that is completely out of one's range. The project has to be ambitious enough to make a difference in your community, but not overly ambitious that would lead to questions of feasibility.

> *"Make your meetup inclusive. In small communities, you can't afford to alienate anyone, so target your hack night to all kinds of people and skill sets, and let people get more specific after.*
> *-- Chris McCrae, PEI Design*

In some cases, you'll already have a community in your municipality that do projects similar to civic tech, but don't call themselves a civic tech community. What's most important is finding a group of compassionate individuals who meet on a regular basis to use data, technology or design for a common good. With that in mind, ask around or check to see if there are regular "design thinking" or developer ("dev") groups in your town or city. We're excited to see so many Canadian civic tech communities prosper over

the years, and we want to find more opportunities to foster collaboration with local governments.

The benefits of starting a civic tech community:

- Bring a diverse group of individuals together to formulate technological or design solutions to civic problems.
- If your office is facing a problem that is particularly complex or intersects in a number of jurisdictions, civic tech is a great way to tackle the issue; in the past, public servants have brought issues to civic tech communities for precisely this reason.

Case Study: Civic tech community-building in PEI and Niagara

In Charlottetown, PEI, a city of 35,000 people, members of the local tech and design sector meet regularly. The dev group "PEI Developers" hold a monthly meeting to share ongoing open-source projects, as well as invite guest speakers to talk about a topic or theme of common interest. The group doesn't call themselves a civic tech community, but have produced civic tech projects all the same.

In 2015, one member of that group, Michael Easter, wanted to show the Province how open data could bring Islanders together. Using online mapping and data visualization skills, Micheal created a memory map that displayed local landmarks on the Island that have long since vanished. Residents were encouraged to add their own landmarks, helping to preserve an important part of local history.

Michael says population size can make group sustainability a challenge, but stresses that it shouldn't stop an interested party from starting a civic tech community. "Just start. Book a place, and a speaker and just get going. Let the framework grow organically, and think broadly about where you can get speakers for content," says Michael. "Most people are very happy to introduce an audience to what they do."

In the Niagara region, with its unique geography and spread out population, a civic tech community is also taking shape. Nathan Childs has worked at the Niagara region for nine years, and has seen how civic tech communities in other municipalities have enriched government efficacy, and increased public participation in decision-making. He hopes

civic tech can be a platform for Niagara resident to leverage skills, and get civic-minded developers to work with the public to solve local problems.

But the region poses significant challenges to building a community. The region lacks a unifying metropolitan centre, with cities lining the ridges of the peninsula. There's also no public transit that links the region's twelve localities, making it burdensome for residents to make it to monthly hack nights.

So Nathan has turned to regional partners to help build a community. He's working with local co-working spaces in the region, and hopes to rotate civic hack nights throughout the different localities. In an age of video-streaming and cooperative work tools like Slack, Trello and Google Docs, Nathan says it's also not impossible to work in 2 or 3 locations around the region and work collaboratively on community projects.

Conclusion: Be a Civic Tech Advocate

The six plays reviewed here should set you on the road to becoming a civic tech advocate in your municipality. But your quest shouldn't end at the local level, there are hundreds of advocates at the provincial and federal level working to make Canada a civic tech-friendly nation.

And in 2019, the global civic tech community will be shifting their attention to Canada, as Ottawa hosts the Open Government Partnership Summit — one of the only multilateral organizations to promote civic tech and open government initiatives.

But for any high-level effort to promote open government and civic tech to succeed, Canada needs a solid base of civic tech advocates at the local level, who can push the provincial and federal governments to continue on with such projects.

Despite our belief that civic tech communities can develop anywhere in Canada, we must admit, that digital government resources and knowledge are not spread evenly in this country. Some municipalities (and some provinces) are more able than others to dedicate resources to fostering the civic tech movement.

But civic tech has always worked best when it employs low-tech solutions to civic problems. At the core of each of the civic tech projects we've described earlier, is a simple web app or website that tackles a hyper-local issue. And if it's not already obvious from reading our case studies, civic technologies work best when they focus on the "civic" not the "technologies".

The Playbook offers a new kind of collaboration between municipal government, the tech sector and residents, and we hope civic tech can act as a new tool to facilitate collaboration between municipal governments and the general public.

Canada's civic tech movement is young, but shows no sign of receding into the background. As governments continue to push forward with digital governance and smart cities planning, civic tech communities will only grow in importance, strength and impact. We hope Canada's public servants will be along for the ride.

Glossary

Agile (n./adj.)

Agile refers to "agile software development", an approach to software development that relies heavily on the collaborative efforts of both the developer and the end user. Agile development favours an adaptive planning process, along with early and continual product delivery.

Civic hacker (n.)

A civic hacker collaborates with others to create an open-source solution to a civic problem. In the past, a civic hacker might solely refer to a person who can write code, but has since been adopted to refer to any person that frequents civic hacking events.

Civic hacking (v.)

Civic hacking refers to an innovative (and often technological) process to responding to civic problems.

Civic hack night (n.)

A civic hack night is an informal social event for technologists, residents and public servants to come together and work on civic tech projects. They are usually scheduled in the evenings.

Civic hackathon (n.)

A civic hackathon is a full-day or multi-day marathon event to create or design a civic tech solution to a civic problem. Some civic hackathons are challenge-driven: a stakeholder presenting a problem, and participants come up with a novel solution. Other hackathons are data-driven: participants are challenged with making an interesting visualization or digital tool with open government data.

Civic tech (n.)

Civic tech (or civic technology) is a technology or process that allows the public to tackle a civic problem for the common good.

Civic tech communities (n.)

Civic tech community groups bring together technologists, public servants and residents to tackle local challenges using technology and design.

Design thinking (n.)

Design thinking employs strategies and processes from the design world into non-design related fields and sectors. Among civic tech communities, design thinking has become a useful tool for brainstorming new ideas to address civic problems.

Digital rights (n.)

Digital rights describes a person or community's human rights to access and use information and communication technologies (ICT). The term also denotes a person or community's right to privacy or freedom of expression, in the context of new digital technologies, especially the Internet.

Fork (v./n.)

A fork is a secondary copy of another person or organization's project. By forking a project, a user can make changes without affecting the original.

GitHub (proper noun)

GitHub is a popular website with the open-source community that hosts computer code.

Human-centered design (n.)

Human-centred design is an approach that puts users at the center of the design, and constantly looks for feedback on their needs and requirements.

Lean (n./adj.)

Lean refers to a development methodology that shortens the product development cycle.

Merge (v.)

Merging is the act of taking changes from a forked project, and consolidating it with the original.

Meetup.com (proper noun)

Meetup.com is a web platform to schedule events. It is popular with civic tech communities in North America.

Open data (n.)

Open data is data that can be freely used, reused and redistributed by the public, the government and businesses.

Open government (n.)

Open government is a governing doctrine that employs concepts and methodologies from the open-source movement. Its basic tenets are "transparency, accountability and participation".

Open source (n./adj.)

Open-source software is any software or source code that is released under a copyright licence that grants users the rights to copy, change and distribute the software to anyone and for any purpose. It is often developed in a collaborative and public manner.

Smart cities (n.)

A smart city is any town or city that uses digital technology to improve the quality of life for residents.

Sprint (n.)

A sprint is a timeboxed effort to complete a specific project. In most cases, a restricted time period is designated in advance for a team to consider a problem, and then work out potential solutions.

Waterfall (n./adj.)

A linear development process that "flows" steadily towards a final completion. Waterfall development favours a single product release after all coding is complete; in contrast, agile development favours quick product releases and user-testing throughout the development process.

"With not for"

"With not for" is a common rallying cry for members of the civic tech community that compels designers and developers to involve the communities they serve in the design process. At its core is a belief that the coder should not be the only person involved in the creation of a solution to a civic problem.

Pages for Future Consideration