

SHARED DEMONSTRATION SITES

**Mobilizing under-utilized land
for demonstrating innovative
and impactful products and services**

Summary Report

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VANCOUVER
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This GCS project was conducted under the mentorship of City staff. The opinions and recommendations in this report, and any errors, are those of the author, and do not necessarily reflect the views of the City of Vancouver or The University of British Columbia.

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INTRODUCTION

The City of Vancouver (CoV) has ambitious environmental and social goals, but these targets will not be met through government action alone. Private sector innovation plays a key role in creating access to the products and services that can improve environmental health and social equity. Entrepreneurs in the impact economy are not only generating the technologies that can help us move away from fossil fuels, waste, and inequality, they are simultaneously educating the public on ways to live more sustainably—busting myths about what is possible, and creating the products and services that are improving environmental performance.

Although these innovators are important drivers of the green economy and impact economy in Vancouver, many are struggling to commercialize their solutions. Innovation requires access to the right mentors, talent, investment capital, and early adopters to be successful. For businesses creating innovative products and services, getting their first big client or investor, proving their concept, and educating the public can be significant obstacles to commercialization.

Having a public space to test, prototype and demonstrate products can go a long way to helping businesses commercialize their innovative new products and services, creating opportunities to showcase, educate the public and potential investors, and test and refine products. That said, industrial startups with limited capital can rarely afford to acquire such a space on their own.

This project aims to support the commercialization of innovative green products and services through the mobilization of unused or marginal land for the purposes of demonstration.

THE MISSING LINK

The Vancouver Economic Commission (VEC), launched the Green and Digital Demonstration Program (GDDP) in 2014 to provide demonstration support to entrepreneurs and start-ups in Vancouver's clean technology and digital sectors. Selected participants in the program gain temporary access to City-owned assets (e.g. buildings, streets or vehicles) for technology demonstrations and proof-of-concept trials.

Since the launch of the program, there have been 80 program applicants, 12 accepted proposals, and 4 demonstration projects initiated. Many of the additional applicants had excellent proposals but did not fit the parameters of the program because they needed land to demonstrate as opposed to City infrastructure or facilities.

In interviews and conversations with applicants that we were unable to accommodate in the GDDP, businesses were clear that a demonstration site was a “missing link” in their efforts to build their business and expand sustainable practices in Vancouver.

RESEARCH APPROACH

This research was broadly defined at the outset as an exploration of opportunities for the VEC and CoV to support demonstration beyond the limitations of the GDDP. Any number of approaches and outcomes were considered acceptable for consideration, given that they fit two criteria:

1. Business needs should be central to this research and drive recommendations
2. Priority should be given to recommendations that are of relatively low cost to the City and VEC.

In keeping with these criteria, this research included five phases:

BUSINESS INTERVIEWS: Verify and understand demonstration needs from businesses

POLICY RESEARCH: Outline the policy context and constraints for this project, as well as synergies with other City strategies or priorities

CONCEPT DEVELOPMENT: Identify regulatory frameworks, legal structures and governance models that might be applicable to the demonstration context

TESTING: Work with City staff to test regulatory, legal, and governance concepts in the Vancouver context

RECOMMENDATIONS: Distill formal recommendations for implementation based on conceptual project design

BUSINESS INTERVIEW FINDINGS

In total, 14 interviews were conducted with entrepreneurs in Vancouver's green economy, focusing initially on those businesses that applied for—and were good candidates for—access to the GDDP but were unsuccessful because their demonstration needs were primarily for space and not a clear fit with the assets available under the GDDP. Other interviewees included active cleantech companies in Vancouver that are aiming to commercialize new products, services, or technologies in the coming year.

Of the business interviewed, all respondents indicated that a demonstration site could help them make significant gains in commercializing and scaling their sustainability solutions. Some businesses went so far as to say that having access to a public space to demonstrate was the “missing link” in their efforts to reach the market. Inability to make use of the GDDP because they were only interested in getting access to land for demonstration was one of the clear indications that that a shared site may be a viable solution.

There were three reasons the businesses interviewed viewed a shared demonstration site as useful:

- 1. AFFORDABILITY** - Most businesses interviewed were unable to afford a small space in the industrial core of Vancouver to demonstrate. Secondly, they were concerned about costs associated with permitting for a small temporary demonstration site.
- 2. PROGRAMMING** - The businesses interviewed were interested in a VEC-run site/facility to ensure co-location of other like-minded entrepreneurs on site, as well as ongoing investment and business development programming.
- 3. BRANDING** - All of the businesses interviewed said that the opportunity to leverage the Vancouver brand, just as in the GDDP, was a primary motivating factor.

“

A demonstration site would create a place for our product to reach the public, and to showcase how off-grid living is possible with their solar and battery technology.

”

Russell Westbrook, Tenth
Principle Technology

Interviewees were very forthcoming about the value that a demonstration site could provide. Several key roles for a shared demonstration site emerged that have informed the recommendations put forward in this report:

PUBLIC EDUCATION

All businesses mentioned that public education was a key role for a demonstration site. Public access to the site where products and services could be on display and business owners could be available to discuss their solutions with the public will be critical to the success of a demonstration site.

PRODUCT REFINEMENT

The businesses interviewed also expressed a strong interest in being able to perform live testing of their products on site and showcasing refinements over time. Ideally, the site would double as a place for sustainability education and a place to receive feedback on products.

INVESTMENT ATTRACTION + B2B NETWORKING

The businesses interviewed found a great deal of value in having a place to connect with other entrepreneurs, business owners, and investors. Sharing a site among multiple green businesses and bringing small amounts of amenity on site, such as a cafe and meeting space, was seen as a great way to attract other like-minded business people and investors to the site for forging business connections and partnerships.

From these responses, it is clear that a demonstration site would be a meaningful, even critical addition to many businesses efforts to commercialize innovative green solutions. Most businesses were looking for relatively modest spaces within a shared site. On average, businesses were looking for about 300-400 sq.ft. of level, well-drained outdoor space. There were, however, some notable outliers of <50sq. ft. indoor space and >1000 sq. ft. outdoor space.

POLICY CONTEXT

There are a number of relevant local, regional and national government programs and policies that should be considered in the development of shared demonstration sites. Most notably, several City policies influence the viability of establishing shared demonstration sites in Vancouver.

THE VANCOUVER CHARTER

The Vancouver Charter, which lays out how the City and its subsidiaries may engage in dealings with businesses, presents one of the biggest hurdles to establishing shared demonstration sites on City-owned land. Section 190 of the Charter states that Council may dispose of real or personal property by “sale, conveyance, lease, or license”, while Section 206 constrains how, and to whom, the City can provide benefits, including land. Generally, private businesses are not allowed to receive benefit from the City, which constrains the way in which land might be apportioned for this kind of project: it would either need to be disposed of at a market rate or provided to a registered charity, or another entity deemed by Council to be contributing to the welfare of the city, such as the VEC.

ZONING BYLAWS + BUILDING PERMITS

Additionally, demonstration sites may be subject to zoning bylaws and the Vancouver Building Code, depending on where they are situated. CoV Engineering rights-of-way that are sitting temporarily vacant are sites of primary interest as all structures and uses are only subject to approval by the head of engineering at the City. Privately owned sites could be subject to many CoV approvals and permits, which can be cumbersome for temporary installations.

REGIONAL + PROVINCIAL POLICY

Various regional and provincial laws related to health, air quality, soil contamination, and stormwater management may also apply to a shared demonstration site, depending on the layout and extent of the site. Soil contamination laws, for instance, could play a role in the False Creek Flats, which could greatly increase project costs.

STRATEGIC ALIGNMENT

CITY POLICY / STRATEGY	RELEVANCE
Greenest City Action Plan	Furthers green economy goal (green jobs)
Healthy City Strategy	Supports community economic development
Zero Waste Strategy (2040)	Spurs innovation in materials management
Municipal Sharing Economy Strategy	Shared space project
The Renewable City Strategy	Encourages adoption of renewable energy tech
False Creek Flats Area Plan	Ties to “walk the line” green infrastructure project
Flats Economic Development Strategy	Central to R&D section of the strategy
The Zero Emissions Building Plan	Commercialization of green building technologies
Vancouver Economic Action Strategy	Creating a climate for growth

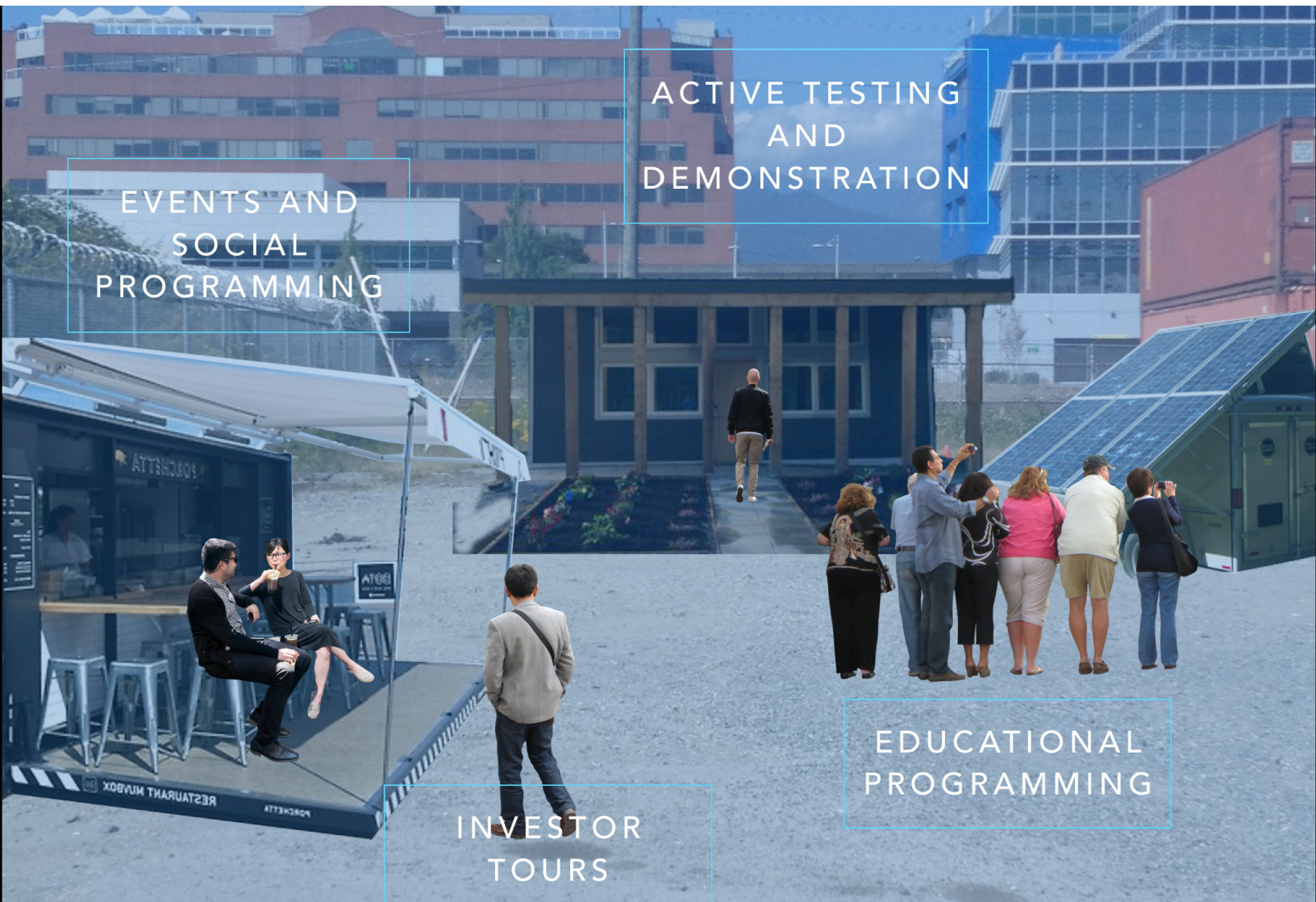
RECOMMENDATIONS

Conversations with innovators and entrepreneurs in Vancouver's green and impact economies and City staff informed two primary recommendations:

1. In the short-term, establish an off-grid demonstration site in the False Creek Flats.
2. In the long-term, seek opportunities to land fully serviced and themed demonstration sites with more in-depth programming and R&D happening on site.

OFF-GRID DEMONSTRATION SITE IN THE FLATS (short term)

In the short term, this report recommends that the VEC and CoV should focus on establishing a public demonstration site in the False Creek Flats. This site should mobilize one of two identified engineering rights-of-way that are being held for future transportation infrastructure but are currently sitting fallow with no immediate plans for redevelopment. The site should be designed to accommodate between 5 and 10 demonstration projects, be publicly accessible, and be able to host a variety of business programming.



Five specific actions have been identified in order to realize shared demonstration sites in the Flats:

SECURE THE UNUSED PORTION OF SCOTIA STREET NORTH OF INDUSTRIAL AVE

The unfinished portion of Scotia Street immediately north of Industrial Ave is most well-suited to becoming a demonstration site because it is being held for future transportation connections that will not be realized for more than 8 years. As an engineering right-of-way, it is not subject to the same policy and permitting requirements of other sites in the Flats, and it is currently partially unused and partially surface parking. The Scotia site is also in close proximity to transit and Science World which makes it well-positioned to host educational programming.

Securing this site involves gaining buy-in from CoV Engineering to have the VEC license the site on a fixed term from the City. The City would maintain ownership of the site and the VEC would function as the property manager, vetting applications and handling day-to-day administration of the site.

CREATE A DEMONSTRATION LICENCE FOR ADMINISTERING ACCESS TO THE SITE

The City cannot provide unfair benefit to business. Thus, a new low-cost, restricted real estate product will need to be developed to administer space to various demonstration projects. The license will need to be designed to ensure that businesses that are able to gain access to the site are contributing to CoV and VEC goals, as well as providing additional public benefit such as educational programming. Demonstration licenses will allow businesses temporary, non-exclusive access to the site for a set period of time (likely 12 months) for the sole purpose of demonstrating their sustainability solution. This license will then go out for bids on the open market to set a price congruent with the product and its limitations.

SERVICE THE SITE VIA INNOVATIVE OFF-GRID TECHNOLOGIES

Use creative mechanisms to service the site using demonstration projects themselves. Mechanisms can include contract stipulations in demonstration licenses as well as sole-source provision agreements to get businesses on the site to provide full servicing of waste, electricity, and water. Design the site in such a way that it operates as a showcase how off-grid operations can function, and how these ideas might be applied throughout the City more broadly. One way to administer off-grid servicing is to have demonstration projects propose solutions to their own needs within their demonstration, as well as facilitate introductions across demonstration projects to ensure servicing needs are met.

ADAPT THE GOVERNANCE STRUCTURE OF THE GDDP TO INCLUDE SHARED SITES

The VEC's Green and Digital Demonstration Program (GDDP) already has a number of systems in place to identify and implement demonstration projects, including:

- significant, useful criteria for what businesses may make use of the program
- a bi-annual call for applications, and a series of partners for assisting in program communications
- an application process and application screening process,
- a steering committee for ensuring projects are operating safely, ensuring necessary permits and licenses can be acquired, and supporting implementation of the project

This governance structure can be adapted to meet the needs of a shared demonstration site. The demonstration license can also rely on established GDDP criteria to ensure that only those best suited to benefit from a shared demonstration site can bid on licences.

DEVELOP THE POLICY CONTEXT TO ENSURE SHARED DEMONSTRATION SITES ARE ENABLED ON PRIVATELY-OWNED SITES IN THE FUTURE

In order to ensure that demonstration sites can be created outside engineering rights-of-way in the Flats, a small number of policy changes will need to be made. These include:

- Adapting existing I-2 zoning: Demonstration is well in line with I-2 zoning's existing outright allowable use of a "Laboratory". If additional spaces become desired in the future on private land or City-owned lots, either "Institutional Uses" or "Laboratories" in I-2 zones may need to be adapted to accommodate demonstration.
- Easing the building permitting process: Future demonstration sites on private land may need to adapt permitting processes developed for major events, such as the Olympics and FIFA, to ensure that the Chief Engineer and/or Building Official are able to quickly and efficiently approve or comment on temporary structures for the site.

FULL-SERVICE DEMONSTRATION SITES (long-term)

In the long term, there is an opportunity to expand the shared demonstration sites program beyond the Flats. Based on conversations with businesses and City staff, expansion of this program would best be applied in a "themed" manner—for instance, having sites specifically dedicated to demonstration of waste and reuse solutions, or agri-tech solutions, or renewable energy technologies. Businesses and municipal staff could also see more intensive programming, operations, and R&D work happening on future demonstration sites. This model would be more of an active industrial co-working space for businesses that have a keen interest in educating the public on their impactful environmental solution.

Broadly, the same structure recommended for the short term project in the Flats could be applied to larger, more in-depth demonstration sites. That said, these sites are more likely to

require some degree of servicing and utility provision, longer-term licenses or reduced-cost fixed-term leases, as well as significantly more human resources to manage and program the sites. The West Kent Avenue Recycling Station, which is owned by the City Engineering Department, is one such site that has an unclear future use that might be well-suited to a waste-centric demonstration use, demonstrating industrial-scale waste solutions, including recycling, remanufacturing, reuse, and composting solutions.

ANTICIPATED IMPACTS

Demonstration sites can create powerful opportunities for companies to build awareness, educate the public, and refine innovative green products and services. Anticipated impacts of a demonstration site include:

MARKET DEVELOPMENT

Vancouver has a very environmentally conscious population. Citizens and businesses alike are taking proactive approaches to reduce their environmental footprints and have a positive social and environmental impact. Still, many green businesses in Vancouver struggle to find early adopters of their products, services and technologies. Most of the businesses interviewed expressed a real need to be able to engage directly with the public for the purpose of educating Vancouverites on what is possible. Their argument was that sustainable lifestyles are already here — their products embody them — but that the public did not see this to be the case. Public perception is integral to consumer choice and, thereby, developing new markets for sustainable products and services.

Demonstration sites can also serve as testing grounds for new policy development. Often, sustainability-related policy development lags behind sustainable technology development, ensuring that commercial solutions are available to act on policy changes. Shared demonstration sites can give policy makers ongoing insight into what is coming next, allowing them to begin writing policy that will further encourage the market to engage with new clean technologies and sustainability solution-providers. In coordination with the VEC's 'Thriving Vancouver' initiative, shared demonstration sites could also become ground zero for convening social innovation labs and sustainability policy advocacy groups.

TECHNOLOGY COMMERCIALIZATION

The shared demonstration site aims to accelerate the commercialization period for innovators by bringing their solutions to market more quickly. Flexible space for industrial pilot projects saves time and money for start-ups, many of which are operating on a short financial runway with limited resources. Having access to immediate feedback from potential consumers and the public is also crucial to accelerating the refinement of products and business models.

INVESTMENT ATTRACTION

The shared demonstration site serves as a critically important platform for companies to go global by showcasing local. Having a collection of industrial innovations clustered together in one site will be a significant draw to a diverse group of investors, prospective customers, and key partners. The ultimate outcome is to create a continuous cycle of onsite connections that drive sales, revenue, and market opportunities for a steady stream of local entrepreneurs.

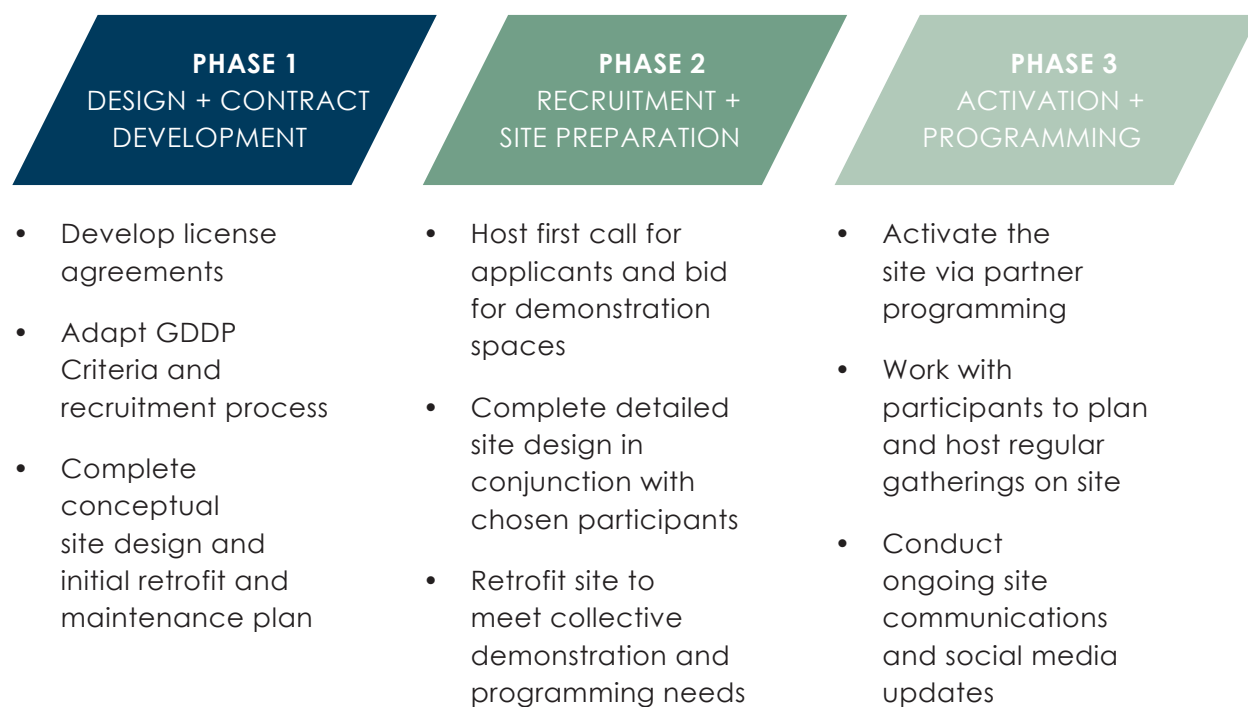
The VEC is well-positioned to facilitate investor tours of demonstration 'projects' as the organization already regularly hosts national and international investors looking for investment opportunities.

URBAN TRANSFORMATION

Demonstration will also show new pathways to achieving key city priorities through featuring products that have the potential to drive forward major City strategies. In particular, technically oriented strategies, such as the Renewable City Strategy, the Zero Waste Strategy or the Zero Emissions Building Plan rely on private sector innovation to implement. Demonstration can help foster dialogue and action for bringing these visions to reality.

ACTION PLAN

Throughout the fall of 2016, the VEC will be working to secure project partners, funders and sponsors to help realize the first Shared Demonstration Site in the False Creek Flats. Once secure, work will begin on the following project phases:





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