Electric Vehicle Charging in the Right-of-Way
SDOT’s pilot evaluation and potential next steps
Seattle’s goal: Carbon neutral by 2050

2014 Seattle’s Greenhouse Gas Emissions

- Buildings
  - Residential: 14%
  - Commercial: 18%
  - Waste: 3%

- Road Transport
  - Freight: 16%
  - Passenger: 50%

ACTION

City of Seattle

June 19, 2019
EVCROW 1.0 (ongoing)

- January 2017 – December 2019
- Through Street Use Public Space Management Permit
- SDOT doesn’t pay for, own, operate, or manage the EVSE
- DCFC and Level 2

EVCROW Application Permitting Process Timeline

<table>
<thead>
<tr>
<th>MONTH 1</th>
<th>MONTH 2</th>
<th>MONTH 3</th>
<th>MONTH 4</th>
<th>MONTH 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>48 hours</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Step 2</td>
<td>2 weeks</td>
<td></td>
<td></td>
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<tr>
<td>Step 3A</td>
<td></td>
<td>4-6 weeks</td>
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<tr>
<td>Step 3B</td>
<td></td>
<td>8-12 weeks</td>
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<tr>
<td>Step 4</td>
<td></td>
<td></td>
<td>1 week</td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td></td>
<td></td>
<td></td>
<td>Construction</td>
</tr>
</tbody>
</table>

These are estimated times and assume the applicant submits all materials and is ready to answer questions/make changes to the application as needed.

EVCROW APPLICATION PERMITTING PROCESS

1. Applicant Submits RFQ
   - newmobility@seattle.gov
   - Receipt of Application
2. City of Seattle Staff Review
   - Letter of Feasibility
3A. Applicant Applies for SDOT Street Use Permit
   - SDOT Street Use Division 14 day public comment
   - Permit issued
3B. Applicant Submits Service Connection Application
   - Seattle City Light*
   - Service Requirements Letter
4. SDOT Sends Applicant Final Approval
5. Begin Construction

*Owner-the-operator SDOT permit required to make electrical connection.

June 19, 2019
Seattle Department of Transportation

City of Seattle
### SUMMARY STATISTICS

- **Evaluation Period:** July 2017-December 2018
- **Applications Received:** 68
- **Applicants:** Seattle City Light, Greenlots, and Elumigreen
- **# of Chargers Installed:** 2 Direct Current (DC) Fast Chargers installed by Seattle City Light
- **Average # of Charging Sessions per Day:** 3.2 sessions
- **Average Session Length:** 37 minutes
- **Estimated Electric Miles Enabled**: 58,500 miles
- **Estimated GHG Avoided**: 11 metric tons
- **% Surveyed applicants interested in applying for future permits:** 100%

### What interested applicants about the EVCROW permit pilot?
- Access to curbspace charging locations, testing the business case for ROW charging, avoiding private host agreements, high visibility of curbspace charging locations

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#### TABLE 1: EVCROW application funnel describing where applications encountered challenges with the permitting process.

<table>
<thead>
<tr>
<th>EVCROW Application Permitting Process Step</th>
<th># of Applications that Reached this Step</th>
<th>Reasons Applications Stopped at this Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Submit Request for Installation</td>
<td>68</td>
<td>N/A, all applications proceeded to preliminary review</td>
</tr>
</tbody>
</table>
| Step 2: City of Seattle Staff Review      | 68                                       | • Site did not meet EVCROW requirements such as sidewalk width, parking lane width, or accessibility requirements  
                                          |                                           | • Bringing electricity to the site was cost prohibitive  
                                          |                                           | • Site conflicted with other planned uses of the ROW, such as large upcoming construction projects or future transit-only lanes  
                                          |                                           | • Applicant experienced unexpected business changes, including changes (e.g., changes to funding availability and company dissolution) |
| Step 3: Apply for Street Use Permit & Electrical Service Connection Application | 3                                        | • Previously unknown physical barriers prevented EVSE installation, including overhead trolley wires and underground water pipes  
                                          |                                           | • Electrical service and construction needs were cost prohibitive due to site-specific challenges mentioned above  
                                          |                                           | • ROW demands for EVSE installation conflicted with demands for transit, biking, and pedestrian access  
                                          |                                           | • Public expressed lack of support for EVSE installation at the location, primarily due to conflicting ROW demands mentioned above |
| Step 4: SDOT Sends Applicant Final Approval | 1                                        | N/A                                       |
| Step 5: Begin Construction                | 1                                        | N/A                                       |
Beacon Hill Stations

- Two DCFC installed near Beacon Hill Light Rail Station
- Operational since January 2018
- 18% average monthly growth in station usage over 2018
- Some frequent users charged over 20 times per month
- Lessons learned around equity and community engagement in site selection and implementation

[Graph showing number of sessions and energy usage from January to December 2018]
1.0 Evaluation

Guiding information sources:

• Applicant and potential applicant feedback
• Internal review and comment, written guidance by Office of Sustainability & Environment
• External review and comment, including public comment received
• Environmental Justice Committee’s review of Drive Clean Seattle
• SDOT’s Human Centered Design Study on Equitably Expanding EV Charging Network
• SDOT’s Racial Equity Toolkit on EVCROW
• SDOT’s EVSE Roadmap for Shared Mobility Hubs
Human Centered Design Study

- 3 Part Study: TNC driver interviews, Community Interviews, Focus Group
- Participants represent low-income communities and communities of color
- Participants compensated for their time

KEY FINDINGS
- Concern ROW charging could exacerbates gentrification and displacement
- Concerns about loss of parking
- Information gaps persist
- High costs perceived as a barrier
- Need for reliable transportation
EVSE Roadmap for Shared Mobility Hubs

- Identified priority areas for EVSE deployment
- EVSE Prioritization Model is based on 11 metrics across 4 priority areas and can be replicated by other cities
- Includes Displacement Risk overlay from Seattle’s Office of Planning & Community Development

### Weighted Metrics by Priority Area:

- **EV Network Development**: 40%
- **Gaps in Transit Access**: 20%
- **Shared Mobility**: 20%
- **Equity & Environmental Justice**: 20%

### Dynamic EVSE Prioritization Model Results:
1.0 Evaluation

KEY FINDINGS

• Prioritize safety, equity, access to transit, and other active forms of transportation in ROW.
• Reevaluate use of limited ROW space for EV charging and consider off-street alternatives.
• ROW EVSE could remove parking for residents and exacerbate gentrification and displacement.
• The annually renewed street use permit mechanism is difficult for private investors.
• Technical criteria for site selection are limiting and confusing.
• More upfront guidance is necessary to limit time spent on site review and application processing.
• There is strong EV driver interest in Level 2 ROW charging in residential areas.
• More in our 1.0 Evaluation Report
Where to Go Now

Immediate Actions
- Improving Permitting
- On-street Charging Guidance
- GIS/market analysis

Next Iteration Possibilities
- EVCROW 2.0
- Electric Avenue
- Residential EVCROW
Questions?

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