



**CITY OF KIRKLAND**  
**Planning and Building Department**  
**123 5th Avenue, Kirkland, WA 98033**  
**425-587-3600**

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**MEMORANDUM**

**To:** Transportation Commission

**From:** John Starbard, Deputy Director of Public Works Department  
Scott Guter, AICP, Senior Planner

**Date:** April 20, 2022

**Subject:** Autonomous Personal Delivery Devices, File No. CAM22-00195

**RECOMMENDATION:**

Receive a briefing on Autonomous Personal Delivery Devices (APDDs) and their dispensers and provide input on potential regulations.

**BACKGROUND:**

APDDs are automated or remotely controlled wheeled machines designed to deliver products to customers. These machines are "intended to help businesses cut costs on deliveries, reduce delivery vehicle congestion, and cut greenhouse gas emissions from delivery vehicles" ([MRSC Insight, September 2, 2021](#)).

In 2019, the Washington State Legislature passed HB 1325, enacted as Chapter 46.75 RCW, allowing for the operation of APDDs in Washington. The regulations allow operation of the devices within minimum operating parameters for APDDs, which include requirements that operations are in accordance with all ordinances, resolutions, rules, and regulations established by the jurisdiction governing the rights-of-way within which the personal delivery device is operated (see regulations in Attachment 1).

In late 2021, the City received four incomplete building permit applications to construct and maintain four Amazon APDD dispensers. Staff also discovered that an operator or operators had been testing APDDs in various locations in the City without any notice to the City and without any authorization or permission from the City.

On January 18, 2022, the City Council passed an emergency moratorium on accepting, processing, or issuing building permits for APDD and their dispensers within the City. This moratorium allows the City time to study and address concerns over the technology such as:

- Identifying basic facts about the technology;
- Addressing concerns over safety and privacy;
- Identifying any public benefits; and
- Researching other cities that allow and regulate this technology.

On March 1, 2022, City Council held a public hearing on the moratorium and adopted a preliminary scope of work to evaluate the use of APDDs with Resolution 5521 (see

Attachment 2). The Houghton Community Council approved the moratorium with the adoption of Resolution R-2022-3 on March 28, 2022.

### **ANALYSIS:**

Following Council's adoption of the moratorium, an interdepartmental team met with representatives from Amazon and some of its subcontractors to gain a better understanding of the technology, its deployment in other locations, Amazon's plans for Kirkland, and both current and potential operational issues. This was followed by small group meetings with members of the Kirkland community and a demonstration of the technology at one of the testing locations in Snohomish County.

Staff is seeking input from the commissions, the Houghton Community Council, and the public about this new technology, such as interests, concerns, and identifying any special challenges. Staff is briefing the Houghton Community Council and Planning Commission on APDDs at their April 25<sup>th</sup> and 27<sup>th</sup> meetings, respectively. Staff will discuss with topic with the City Council on May 3.

### **'Scout' (APDD)**

Amazon's proprietary name for both its APDDs and the program that facilitates them is called "Scout."

The Scout devices, as pictured to the right, measure about 30 inches long by 24 inches wide; weigh about 100 pounds excluding cargo; and can travel up to 15 miles per hour. However, as regulated in State law, they may not exceed six miles per hour in Washington. They are powered by rechargeable batteries, and have wireless and other



technologies for guidance, sensing of obstacles, and communication. State law requires APDDs to have lights on the front and back if they are to be used between sunset and sunrise.

Packages are loaded into Scouts at local dispensers by a human acting on behalf of the delivery company. Once the Scout reaches its destination, the recipient must meet the APDD and remove the package; Scouts cannot unload themselves.

The devices currently can fit up to six small, flat packages and can transport a payload of up to 50 pounds, which could be one or more packages delivered to one or more locations per delivery round trip. The Scout's payload is about nine inches deep and about eighteen inches long.

APDDs must be licensed by the State according to its requirements.

### **Dispensers**

Amazon Scouts are loaded in, stored in, and travel to and from dispensers. Dispensers are about 18-feet long by 8-1/2-feet wide by 11 feet tall. They are about the length and width of a parking stall. They have concealed or shaded exterior lights above roll-up

doors on the end(s) and side(s). They require communication and electrical (single-phase 120/240, such as is used for most homes) connections, but not domestic water or sanitary sewer. They house up to twenty Scouts.

Dispensers ideally are located as close to the “origin point” as possible. The “origin point” is a point on the sidewalk where the autonomous system starts. After its package(s) has/have been loaded and the lid secured, a Scout travels to the origin point by having a person control it with a handheld joystick and walk near the Scout to accompany it to the origin point.

Amazon representatives stated the company is planning to automate this process in the future.



Operationally, Amazon employees drive up to a dispenser location in a delivery van (e.g., a Mercedes-Benz Sprinter) and opens up the dispenser. One or more Scouts are moved out of the dispenser using a joystick, the employee loads the package(s), accompanies the Scout to the origin point, and once it syncs with the autonomous technology it rolls to its destination. City staff is unclear how operations work when customers in the same delivery area prefer different delivery times.

### **Delivery**

Scouts travel from their dispenser to their programmed destination(s) then return to their dispenser.

Traveling on sidewalks and crosswalks, Scouts deliver packages within a maximum 1.25 miles from their dispensers, though the APDD can have a maximum round trip of five to seven miles. Representatives from Amazon said deliveries are only within a small radius from the dispensers, and that there would not be circumstances of a Scout “traveling across the city” to make a delivery.

A remote operator, or Ambassador (see Ambassadors section, below), is available when the APDD runs into an obstacle and when it is crossing the street or intersection. Remote operators are located in an undisclosed location.

In Washington, APDDs may not transport hazardous materials or alcohol.

### **Ambassadors**

State law requires an APDD entity to have a “personal delivery device operator” who can control or monitor the navigation of an APDD per RCW 46.75.020(3). Amazon calls such an employee an “Ambassador.” During test periods, Ambassadors are in the field and may accompany a Scout all the way to the destination (see Delivery Section above). However, as Scouts proliferate that will not be practical or economical. Staff has more to learn about the future roles of Ambassadors, but at this point staff understands they will be the employees who respond to issues or conflicts with Scout devices in the field that need human attention. It is possible some of that work may be conducted remotely, but again the City needs to learn more about this aspect of the program.

## **Limitations**

According to Amazon representatives with whom staff met virtually in February, Scouts do not operate in snow or threat of snow, severe rainfall, or on steep hills. The representatives said they would not operate on most roads that do not have adjacent sidewalks (e.g., Goat Hill, where they are few to no sidewalks). However, State law allows APDDs to operate on certain areas without sidewalks, such as shoulders where pedestrians may travel.

Representatives also stated Scouts do not operate on narrow or crowded sidewalks, and they would not be testing in the Kirkland downtown core.

Noting that the APDDs need a person to unload them, and that some multifamily buildings are staffed and others are not, representatives stated the Scouts would not deliver to multifamily homes but only single-family homes.

## **Dispersion**

Though staff asked what Amazon foresaw as the proliferation of dispensers, representatives stated they were uncertain but have not ruled out expansion of Scouts operating in other urban areas. Below are links to other companies that have developed APDD technology. Any new regulations should consider the potential market dispersion introduced by this new technology.

- [FedEx](#)
- [Starship Technologies](#)
- [Coco](#)
- [Nuro](#)
- [Udely](#)
- [Kiwibot](#)
- [Postmates Serve](#)
- [Robby Technologies](#)

## **Safety**

This new technology raises several safety questions, especially since the primary travel routes for Scouts is on public sidewalks. Staff needs to study the safety implications to vehicular traffic, pedestrians (including those with mobility challenges or Americans with Disabilities Act needs), bicyclists, emergency response, and potential conflicts with other users.

Amazon is conducting accessibility testing with the World Institute on Disability (WID) to address issues with the disabled community and the Scout program.

See Public Outreach section below on additional community comments on public safety.

## **Other Locations**

Amazon representatives have indicated that Scout has been tested locally in, Everett, Lynnwood, Mukilteo, and Snohomish County. Elsewhere, it has been implemented in Irvine, California; Nashville, Tennessee; some cities in Georgia, including Atlanta. Staff is aware it is being used for prepared food delivery on the Oregon State University campus in Corvallis. Below is a summary of what staff has collected from other cities that are regulating APDDs and their dispensers.

Everett: Allows for APDD operation and treats dispensers as “accessory outside storage.” Regulations are a stop gap measure, the City hopes to create a better ordinance in the future, specifically for neighborhood distribution.

Lynnwood: Has minimal regulations because of staffing constraints; service area only allowed in Industrial and Commercial zones, not Residential.

Mukilteo: Has permitted one dispenser; no regulations; did not know the dispensers would be deploying ADPPs.

Auburn: Recently adopted a detailed code that allows for the APDDs to operate on sidewalks or road shoulders with at least 5 feet in width. They must provide written notification annually to all property owners and residents in the area the personal delivery devices are intended to operate, and they must notify the City Engineer with detail on their operation schedule and map at least annually. The devices can’t be within 50 feet of each other while in operation on the same sidewalk or same side of the road.

San Francisco: Adopted code that authorizes and regulates APDDs on sidewalks for the purpose of testing for research and development. The permits are temporary (valid for 180 days) and must go through a public noticing and commenting period as well as a public hearing. The permittee is required to disclose data regarding the device testing to the City on a monthly basis. The devices are only permitted for sidewalks that are in zones for Production, Design, and Repair uses, aren’t in a high-injury corridor, and areas that can accommodate both ADPPS and persons with disabilities or have an effective sidewalk width of six feet.

### **Potential for Other Providers**

Amazon is but one package delivery service. There are other package delivery companies that may desire to deploy this or other technology in the City, not to mention the possibility of the United States Postal Service exploring such options or alternatives. Additionally, grocery stores and certain restaurants also provide deliveries and may seek alternatives and new technologies.

### **PUBLIC OUTREACH:**

City staff conducted two small community outreach meetings on APDDs. See Attachment 3 of staff’s notes from these meetings. Some of the public input is summarized here.

- Would like to know the public benefit to City as a whole
- Concerned about impacts on those who are disabled. Ensure no American Disability Act violations
- How does this align with the City’s Sustainability Master Plan?
- Concerned about traffic incidents at blind driveways
- Would Police Department resources be disproportionately used on policing APDDs?
- Privacy concerns over video recording and who has access to this information
- How are we defining if the program is “bad?” What rate of incidents would be good/bad?

**NEXT STEPS:**

City staff is working with Amazon to obtain more information on APDDs and their dispensers and will continue public outreach to gain more community input on this new technology. Staff is providing a briefing to the City Council on May 3, 2022.

More information on the project timeline can be viewed on the City's project [webpage](#).

**ATTACHMENTS:**

1. Chapter 46.75 RCW – Personal Delivery Devices
2. Resolution 5521 – Preliminary Scope of Work
3. Community Outreach Meeting Notes

cc: File Number CAM22-00195

Jeremy McMahan, Deputy Director of Planning and Building Department  
Joel Pfundt, Transportation Manager, Public Works  
John Burkhalter, Development Engineering Manager, Public Works

**Chapter 46.75 RCW****PERSONAL DELIVERY DEVICES****Sections**

- 46.75.010** Definitions.
- 46.75.020** Operation—Requirements.
- 46.75.030** Self-certification form.
- 46.75.040** Restrictions.
- 46.75.050** Violation—Traffic infraction—Notice.

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**RCW 46.75.010****Definitions.**

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

- (1) "Department" means the department of licensing.
- (2) "Eligible entity" means a corporation, partnership, association, firm, sole proprietorship, or other entity engaged in business.
- (3) "Hazardous material" means any material that has been designated as hazardous under 49 U.S.C. Sec. 5103, and is required to be placarded under subpart F of 49 C.F.R. Part 172.
- (4) "Personal delivery device" means an electrically powered device to which all of the following apply:
  - (a) The device is intended primarily to transport property on sidewalks and crosswalks;
  - (b) The device weighs less than one hundred twenty pounds, excluding any property being carried in the device;
  - (c) The device will operate at a maximum speed of six miles per hour; and
  - (d) The device is equipped with automated driving technology, including software and hardware, enabling the operation of the device, with the support and supervision of a remote personal delivery device operator.
- (5)(a) "Personal delivery device operator" means an employee or agent of an eligible entity who has the capability to control or monitor the navigation and operation of a personal delivery device.
- (b) "Personal delivery device operator" does not include:
  - (i) With respect to a delivery or other service rendered by a personal delivery device, the person who requests the delivery or service; or
  - (ii) A person who only arranges for and dispatches a personal delivery device for a delivery or other service.

[ 2019 c 214 § 1.]

**NOTES:**

**Effective date—2019 c 214:** "This act takes effect September 1, 2019." [ 2019 c 214 § 22.]



**RCW 46.75.020****Operation—Requirements.**

An eligible entity may operate a personal delivery device so long as all of the following requirements are met:

(1) The personal delivery device is operated in accordance with all ordinances, resolutions, rules and regulations established by the jurisdiction governing the rights-of-way within which the personal delivery device is operated;

(2) An eligible entity may operate a personal delivery device only upon:

(a) Crosswalks; and

(b)(i) Sidewalks; or

(ii) If a sidewalk is not provided or is not accessible, an area where a pedestrian is permitted to travel, subject to RCW 46.61.250, provided that the adjacent roadway has a speed limit of less than forty-five miles per hour;

(3) A personal delivery device operator is controlling or monitoring the navigation and operation of the personal delivery device;

(4) The eligible entity maintains an insurance policy that includes general liability coverage of not less than one hundred thousand dollars for damages arising from the operation of the personal delivery device by the eligible entity and any agent of the eligible entity;

(5) The eligible entity must report any incidents, resulting in personal injury or property damage that meets the accident reporting threshold for property damage under RCW 46.52.030(5), to the law enforcement agency of the local jurisdiction governing the right-of-way containing the sidewalk, crosswalk, or roadway where the incident occurred, within forty-eight hours of the incident;

(6) The eligible entity registers an agent located in Washington state for the purposes of addressing traffic infractions and incidents involving personal delivery devices operated by the eligible entity;

(7) The eligible entity submits a self-certification form to the department with the information required under RCW 46.75.030, both before operating a personal delivery device and on an annual basis thereafter;

(8) The personal delivery device is equipped with all of the following:

(a) A marker that clearly identifies the name and contact information of the eligible entity operating the personal delivery device, a unique identification number for the device, and the name and contact information including a mailing address of the agent required to be registered under subsection (6) of this section;

(b) A braking system that enables the personal delivery device to come to a controlled stop; and

(c) If the personal delivery device is being operated between sunset and sunrise, a light on both the front and rear of the personal delivery device that is visible on all sides of the personal delivery device in clear weather from a distance of at least five hundred feet to the front and rear of the personal delivery device when directly in front of low beams of headlights on a motor vehicle; and

(9) A delivery device may not be operated in Washington until it has been added to the list in the self-certification and the annual registration fee has been paid.

[ 2019 c 214 § 2.]

**NOTES:**

**Effective date—2019 c 214:** See note following RCW 46.75.010.



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**RCW 46.75.030****Self-certification form.**

The department of licensing shall create a self-certification form for an eligible entity to submit prior to operating a personal delivery device and thereafter on an annual basis. Through the form, the department must obtain:

- (1) The name and address of the eligible entity and its registered agent within Washington, including the registered agent's name, address, and driver's license number, and any other information the department may require;
- (2) The name of the jurisdiction in which the personal delivery device will be operated;
- (3) An acknowledgment by the eligible entity that: (a) Each personal delivery device will display a unique identification number and other information specified in RCW 46.75.020(8); and (b) the registered agent is responsible for any infraction committed by its personal delivery device;
- (4) An affirmation by the eligible entity that it possesses insurance as required in RCW 46.75.020;
- (5) A list of any incidents, as described in RCW 46.75.020(5), and any traffic infractions, as described in RCW 46.75.050, involving any personal delivery device operated by the eligible entity in Washington state in the previous year; and
- (6) A list of each device identified by a unique identification number that the eligible entity intends to operate in the state during the year and payment of a fee of fifty dollars per personal delivery device listed. The fee must be deposited into the motor vehicle fund. The list must be updated and the fee paid prior to the eligible entity operating a device not listed in the annual self-certification.

[ 2019 c 214 § 3.]

**NOTES:**

**Effective date—2019 c 214:** See note following RCW 46.75.010.

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**RCW 46.75.040****Restrictions.**

- (1) A personal delivery device may not be operated to transport hazardous material, in a quantity and form that may pose an unreasonable risk to health, safety, or property when transported in commerce.
- (2) A personal delivery device may not be operated to transport beer, wine, spirits, or other consumable alcohol.

[ 2019 c 214 § 4.]

**NOTES:**

**Effective date—2019 c 214:** See note following RCW 46.75.010.

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**RCW 46.75.050****Violation—Traffic infraction—Notice.**

(1) A violation of this chapter, or of chapter **46.61** RCW by a personal delivery device, is a traffic infraction. A notice of infraction must be mailed to the registered agent listed on the personal delivery device within fourteen days of the violation.

(2) The registered agent of the eligible entity operating a personal delivery device is responsible for an infraction under RCW **46.63.030**(1).

(3) Infractions committed by a personal delivery device are not part of the registered agent's driving record under RCW **46.52.101** and **46.52.120**. Additionally, infractions issued under this section shall be processed in the same manner as parking infractions, including for the purposes of RCW **3.50.100**, **35.20.220**, **46.16A.120**, and **46.20.270**(2). The amount of the fine issued for an infraction issued under this section shall not exceed the amount of a fine issued for other parking infractions within the jurisdiction.

[ **2019 c 214 § 5.**]

**NOTES:**

**Effective date—2019 c 214:** See note following RCW **46.75.010**.

## RESOLUTION R-5521

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KIRKLAND, WASHINGTON, ADOPTING FINDINGS OF FACT TO SUPPORT THE MORATORIUM ORDINANCE ON AUTONOMOUS PERSONAL DELIVERY DEVICES IN KIRKLAND AND A PRELIMINARY SCOPE OF WORK TO EVALUATE THE USE OF AUTOMONOUS PERSONAL DELIVERY DEVICES IN KIRKLAND.

1 WHEREAS, the City of Kirkland ("City") is an Optional Municipal  
2 Code City organized under Title 35A of the *Revised Code of Washington*  
3 ("RCW"); and  
4

5 WHEREAS, Washington State law empowers cities to regulate  
6 and protect public ways and real property of all kinds, such powers being  
7 illustrated but not exclusively contained within RCW 35A.11.020; and  
8

9 WHEREAS, the Washington State Legislature passed HB 1325 in  
10 April 2019, which caused a new chapter RCW 46.75 to be codified,  
11 entitled, "Personal Delivery Devices," and  
12

13 WHEREAS, RCW 46.75 says in part that an eligible entity may  
14 operate a personal delivery device in the State provided that it is  
15 operated in accordance with all ordinances, resolutions, rules and  
16 regulations established by the jurisdiction governing the rights-of-way  
17 within which the personal delivery device is operated; and  
18

19 WHEREAS, in late 2021, the City received four building permit  
20 applications for the placement of four pre-fabricated "dispensers" to  
21 facilitate the deployment and operation of autonomous personal  
22 delivery devices within defined locations of the City (the "Applications");  
23 and  
24

25 WHEREAS, autonomous personal delivery devices are a  
26 relatively new technology that has not been permitted in the City  
27 previously, and  
28

29 WHEREAS, the City at this time does not have any ordinances,  
30 resolutions, rules, or regulations concerning the use and storage of  
31 autonomous personal delivery devices; and  
32

33 WHEREAS, the Applications raised questions for City staff such  
34 as, but not limited to, how to categorize and regulate such uses,  
35 implications for public safety, questions about such a use on the public  
36 rights-of-way, and uncertainties about community acceptance; and  
37

38 WHEREAS, on February 1, 2022, the City Council unanimously  
39 enacted emergency ordinance O-4779 that imposed a moratorium  
40 within all zones of the City on the acceptance of applications for the

review and/or issuance of building permits for autonomous personal delivery device dispensers and on the acceptance of applications for the review and/or issuance of right-of-way use permits for autonomous personal delivery devices; and declaring an emergency; and

WHEREAS, on February 15, 2022, in order to increase community awareness of the public hearing and the potential moratorium, the City Council essentially ratified the emergency ordinance by unanimously passing the moratorium again in an open public meeting by enacting O-4782; and

WHEREAS, moratoria are regulated by the State through RCW 35A.63.220 and RCW 36.70A.390, which require the City to hold a public hearing within 60 days of the establishment of an emergency moratorium, and to enter findings of fact following the public hearing; and

WHEREAS, a public hearing before the City Council concerning the moratorium adopted by emergency ordinance O-4779 occurred on Tuesday, March 1, 2022; and

WHEREAS, findings of fact in support of the moratorium adopted by emergency ordinance O-4779 are adopted by this Resolution, as set forth herein; and

WHEREAS, to assist City staff in drafting regulations concerning the use of autonomous personal delivery devices in the City, a preliminary scope of work was created and is attached hereto as Attachment A; and

WHEREAS, within the City, moratoria are regulated further by *Kirkland Zoning Code* 135.30.2, which requires approval of the Houghton Community Council.

NOW, THEREFORE, be it resolved by the City Council of the City of Kirkland as follows:

Section 1. By this Resolution the City Council adopts the following findings of fact to support the establishment of the moratorium described in emergency Ordinance O-4779 and Ordinance O-4782:

- a. Washington State law permits the operation of autonomous personal delivery devices on and in sidewalks, crosswalks, and, if otherwise unavailable, areas where a pedestrian is permitted to travel, provided that the use and operation complies with applicable laws and regulations of the jurisdiction in which the autonomous personal delivery devices are operating.

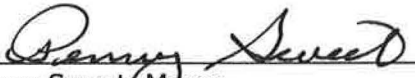
- b. The City has not yet enacted any ordinances, resolutions, rules, or regulations concerning the use of autonomous personal delivery devices within its rights-of-way.
- c. Autonomous personal delivery devices are a new technology, and currently are being tested or are in use in a small number of locations in the United States. They are being researched and developed for the package delivery industry as an alternative for "last mile" delivery.
- d. The City received four incomplete building permit applications for "dispensers" to facilitate the use of autonomous personal delivery devices in the City. The City does not yet have any adopted rules or regulations concerning dispensers for autonomous personal delivery devices.
- e. The City requires time to learn about this new technology, to review and analyze it, to determine any public safety concerns related to it, to look at how it has been regulated in other locations, to identify and address local concerns and interests about the use of the technology, and to draft proposed regulations that must be reviewed and refined by advisory bodies and the City Council.
- f. Some, but not all, of the safety issues related to permitting autonomous personal delivery devices are as follows:
  - 1. Will they be compliant with the Americans with Disabilities Act?
  - 2. What hours can they operate?
  - 3. Where can they operate safely? Can they be approved in all zones, or only some zones? Should they be barred from certain areas, such as school zones?
- g. Some, but not all, of the safety issues related to permitting dispensers for these devices are as follows:
  - 1. Where can they be located?
  - 2. What environmental impacts are associated with them?
  - 3. How are they operated, and how prolific may they become?
  - 4. To what extent are the compatible with surrounding land uses?
- h. The City cannot safely permit autonomous personal delivery devices, or dispensers for those devices, in the City until these reviews and analyses have been completed and ordinances, resolutions, rules, and/or regulations concerning the use of autonomous personal delivery devices in the City

139 of Kirkland, and dispensers for those devices, have been  
140 adopted and are in full force and effect in the City.

141 Section 2. A preliminary scope of work to evaluate the use of  
142 autonomous personal delivery devices in Kirkland is attached to this  
143 Resolution as Exhibit A and is intended to be used by the City as an  
144 outline or plan to study these matters. This scope may be amended by  
145 City staff without further Council action in response to questions or  
146 issues that arise as a result of conducting the evaluation.

147  
148 Passed by a majority vote of the Kirkland City Council in open  
149 meeting this 1 day of March, 2022.

150 Signed in authentication thereof this 1 day of March, 2022.  
151

  
Penny Sweet, Mayor

  
Kathi Anderson, City Clerk

Exhibit A to Resolution R-5521  
March 1, 2022

**Preliminary Scope of Work to Evaluate the Use of  
Autonomous Personal Delivery Devices in Kirkland**

*This preliminary scope of work may be amended based upon testimony at a public hearing, City Council direction, and additional questions or issues raised as a result of research.*

Category I: Basic Facts About This Emerging Technology

- A. What is the purpose of this new technology and how does it operate?
- B. Dispenser data and operation
  - 1. Standard dimensions and capacity
  - 2. Utility requirements
  - 3. Environmental impacts (e.g., noise, light, glare, and aesthetics)
  - 4. Siting criteria and preferred types of locations for dispensers
  - 5. Amount of clear area required around dispenser for loading
  - 6. Near-term and projected frequencies of loading deliveries and times of day/days of week
  - 7. Loading delivery details: type of vehicle, average loading time, vehicle parking/waiting needs
  - 8. Service area geography of dispensers
  - 9. Signage requirements
  - 10. Regulatory context
- C. Scout delivery device data and operation
  - 1. Standard dimensions and capacity
  - 2. Recharging requirements
  - 3. Speed and speed controls
  - 4. Maneuverability/adaptability to hills and hazards
  - 5. Autonomous mode versus with operator intervention
  - 6. Protocols if device loses charge, such as in the middle of an intersection or sidewalk
  - 7. Interactions with pets or wildlife
  - 8. Reaction to closed sidewalks, sidewalks under construction, downed limbs, etc.
  - 9. Time of day for operation
  - 10. Ability to operate in various weather conditions
  - 11. Does the device itself contain any hazardous materials (e.g., type of batteries)?
  - 12. Do the devices have cameras? If so, would the City have access to the video in the event of a crash or incident?
  - 13. Can the devices travel through side yards or over dirt trails?



14. Do the devices make noise?
15. How does the package actually get delivered from the sidewalk to the recipient's door?
16. Insurance requirements

Category II: Safety

- A. Traffic safety and records of reported accidents
- B. Pedestrian safety
  1. Interactions with pedestrians, pedestrians with strollers or carts, those with ADA/mobility challenges, and bikes and other wheeled devices
  2. Have any pedestrians been injured thus far in other markets?
  3. Adequacy of infrastructure to meet both APDD and ADA needs
  4. Bicycle safety and history of conflicts
  5. Emergency response impacts/implications
  6. Conflicts with other public users
  7. Are there pedestrian interface issues that Amazon is working on now to address/fix?

Category III: Proliferation and Saturation

- A. Quantity of dispensers and devices; potential "logjam"
- B. What's on the horizon for the technology?
- C. Other businesses with their own version of Scout

Category IV: Public Benefits

- A. What is the best case to be made for permitting this technology in Kirkland; what are the public benefits?
- B. Is the operation of this technology on public sidewalks beneficial?
- C. Vandalism, destruction, or theft
  1. Are the devices an attractive nuisance?
  2. Would the City be expected to investigate incidents?
- D. Are there other "last mile" delivery methods that would be more effective or safer?

Category V: Peer City Comparisons

- A. How have other cities addressed APDDs?
- B. What challenges have other cities experienced where they have been permitted?
- C. What are the fundamental commonalities and differences of adopted regulations in other cities?

# APDD Public Outreach Summary & Questions

(Forwarded to Amazon 4/20/2022)

## Questions for Amazon

- What are the public and City benefits to those not in single-family homes? (Beyond Amazon customers)
  - What is Amazon doing for us?
  - Does Amazon deliver to multi-family homes/commercial in other cities yet? Or only single-family homes?
  - How are we benefitting the environment/general public if a delivery sprinter van delivers to a home right outside of the Scout boundary (for ex. Right next to a home within the boundary) and the house next door gets a delivery by Scout?
  - What are the protocol if Scouts are vandalized/stolen/deliveries stolen?
  - Will prescription drugs be delivered?
  - Would Police Department resources be disproportionately used on policing APDDs?
  - How would Scout respond if there is someone approaching from behind trying to get around them? What if there are people coming in both directions?
  - Need more info on cameras on the Scouts
    - o Camera specs? (Out of privacy concern)
    - o Video footage? When are they recording?
    - o How long is the footage kept?
    - o Who has access to the footage?
    - o How easy could it be hacked into?
    - o What if the Scout recorded a crime? Protocol?
  - Will Amazon customers have a choice to have their package delivered by a real person?
- 

## 4/18 Public Outreach Meeting

Staff:

- Jim Lopez
- John Starbard
- Scott Guter
- Sierra Ohlsen

Participants:

- John Fleshman
  - David Godfrey
  - Cory Carrigan
-

John F.

- Owns [Denny's Pet World](#) on 124<sup>th</sup>, signed up in 2020 to have Amazon utilize one of their parking spots for a dispenser. Amazon came and hooked up power but haven't done anything since nor been in contact with John
  - Signed contract, then saw the Scouts after the fact and was surprised how low profile they were
  - Concerns of the Scouts being difficult for cars to see
  - Felt the dispenser would be OK as it'd utilize a space that wasn't very useful in their lot
  - Thought delivery would be M-F with one delivery to the dispenser/day
  - Regrets signing up for this a bit now and doesn't quite see the purpose anymore, but also doesn't think it'd be a big deal/cause major issues if they are allowed in the City; doesn't think they'll saturate
  - Biggest concern is ADA/impact to wheelchair user
  - Would prefer Scout delivery window to be M-F
- 

David G.

- What's in it for the City/general public?
  - Worries about the speed, size, weight on sidewalks
  - Sees more benefit to Amazon and Amazon customers than to the City and community members
  - Can the City charge Amazon to use the sidewalk?
    - o John S. mentioned that license revenue not distributed like gas tax
  - (Posed to David) Should we look into compensation for the use of public assets?
    - o Sure, thinks it's a good idea to consider; Amazon would be making it harder for others to use the ROW
  - What is Amazon doing for us?
  - Just because you can do it doesn't mean you should or that it's a public good
  - To what extent could we say the program aligns with the Sustainability Master Plan (SMP)? Any benefits to low-income, workers, and those who don't live in Single-family homes?
    - o Jim L: we should talk to David Barnes about implications on SMP
  - There's no rush in being one of the first cities to implement Scout, we could always start later and not really lose out on anything
- 

Scott notes:

- Would link dispenser to primary use; regulations for commercial site, noise, signage, setbacks, likely require review of parking space taken
    - o "Is John F.'s property in the right zone/space for this"
  - What would a trade-off for allowing Scout in an area and thus not allowing Sprinter van deliveries there?
  - How are other companies using their technologies?
- 

John S. notes:

- How is the City/general public/environment benefiting if a Scout is delivering to a house and a sprinter van delivers a package to the house right next door?

- Need to confirm if they are testing delivery to MF/Commercial in other cities or if it's all SF homes
  - Problem we're solving is Amazon's profit margin
- 

## 4/19 Public Outreach Meeting

### Staff:

- Jim Lopez
- John Starbard
- Scott Guter
- Sierra Ohlsen

### Participants:

- Margaret Bull
  - Izzi Di Amore
  - Will Dolezal
- 

### Margaret B

- Concerned Houghton citizen
- Why is this good for the City/public?
- 1x/day seems inefficient
- What does on-site mean?
  - o Jim L: course of Scout delivery
- Protocol if Scout gets stolen or packages are stolen?
- Prescription drugs being delivered?
- Concerns of walking down the street with a robot behind
- Video footage? How long do they keep it? Who has access?
- What if it did record a crime? Izzi: Would PD need to subpoena the content? If there was footage of the Amazon employee committing a crime would they keep or destroy the evidence?
- How/where does the Scout drop off the package?
  - o Izzi: customer has to meet the Scout and pick it up
- If the City decides to allow Scout, can the City decide to stop the program if things go badly?
  - o John S: tentative plan is to have an interim period of operating, then get more public input before deciding on permanent implementation

### Would PD resources be disproportionately used on APDDs?

- How's it better than human-operated delivery?
  - Concerns of blind driveways/obstructed views, skinny sidewalks on 108<sup>th</sup>
    - o If Scout is backing up, could be backed up into driveways
  - Will customers have the choice to opt for a real person delivery?
-

Izzi

- Concerned citizen, has gotten in contact with the engineers assigned to the project (Mia & Chris)
  - Was also in contact with Av Raichura and Scout Director Alexander
  - Concerns about disability rights
  - Has been in contact with Amazon and expressing the concerns of community members in the Be Neighborly Kirkland Facebook group
  - Doesn't feel like Amazon answered questions directly nor have done as much research as they should
  - Will forward emails along to Scott (see below)
  - Amazon said the Scouts would maintain 2m in distance from a person
  - Press Amazon to fully answer specific, experimental questions
    - o Ex. Can the Scout/remote controller respond effectively to being touched by anyone (mentioned a child, someone with a neurodiversity, etc.)
  - Has videos from Finn Hill residents of Scouts getting stuck in sidewalk cracks
  - Who is responsible for damages to property?
    - o Ex. If a disabled person can't get past the Scout and kicks it into the bushes and it gets damaged, who falls liable?
  - Not opposed to the idea overall, but opposed to "do whatever they want and then ask for forgiveness"
  - Wants to ensure no ADA violations
- 

Will D.

- Interested in learning more about the program and getting Amazon packages
- How are we defining if the program is bad? What rate of incidents would be good/bad?
- Using non-taxed vehicle—how will we/the City be compensated?

## Copies of emails to / from Amazon Scout PR - Part 1

Izzi Di Amore <izzi.di.amore@gmail.com>

Tue 4/19/2022 12:41 PM

To: Scott Guter <SGuter@kirklandwa.gov>

Cc: James Lopez <JLopez@kirklandwa.gov>

CAUTION/EXTERNAL: This email originated from outside the City Of Kirkland. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Aleksandar Kojic: Director of Robotics at Amazon Scout was cc'd on all emails from me. All responses came from Av Zammit: Senior Communications Manager of Transportation Technology & Innovation. Nearly 2 months have passed without response from Amazon Scout. On 4-16-22 I published the below copies of my email communications with Amazon Scout PR as comments under the Kirkland Wa - Gov Facebook post regarding APDDs. Shortly after my public comments / images, Av Zammit's family member tagged him in the comments section. Within 24 hours communications with me were reassigned to Amazon Scout employees Maya Vautier: PR Manager of Ops, Innovation & Technology + Charles Cook: Principal Technical Product Manager, Robot Interaction / Senior Software Engineer. My next communication with Amazon Scout PR (via Zoom) regarding ADA concerns is scheduled for 4-28-22.



Izzi

To:

1/4/22

## Scout - Accessibility Questions

Good afternoon,

My name is Isabella and I am a disabled resident / disability advocate of Kirkland, WA. I occasionally liaise with the city council on matters that affect our local community. It is in this capacity that I am reaching out to you today.

It was recently brought to our attention that Amazon Scout had been making deliveries in downtown Kirkland on or around December 23rd, 2021. Whilst ESHB 1325 (2019) does specify that delivery robots shall give right of way to those with disabilities utilizing mobility aids, there are lingering questions of how this is implemented.

[https://lawfilesexternal.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/House/1325-S.SL.pdf?fbclid=IwAR1VeHYksnNRtsYBC9RHKIYgsoeCfW4688Ur6CXjjypcdE4x6qFk\\_VKx1x8](https://lawfilesexternal.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/House/1325-S.SL.pdf?fbclid=IwAR1VeHYksnNRtsYBC9RHKIYgsoeCfW4688Ur6CXjjypcdE4x6qFk_VKx1x8)

How does the Scout delivery robot act / react when it intersects with a wheelchair or white cane (for the visually impaired) on more narrow sidewalks outside of the downtown area whose sizing may not allow for passing? Do they back up, move off of the sidewalk, or other? Is it dependent on the mapped width of the sidewalk vs the Scout's internal sensor's measured width of the obstacle (e.g. wheelchair, white cane) in its path? Do you have videos of these types of encounters you could provide to us for our view only and / or to share with our community on the "Accessibility for All" page of our city website? Is there any other information you are willing to share regarding the Scout that may be helpful to the disabled community?

Sharing knowledge is part of the inclusion process. Our goal is to communicate this information to our community of disabled persons in order to lessen the anxiety around the unknown / new experience and prepare them with the necessary information for their safe and accessible movement around Kirkland. This is especially important for children and adults with neuro-diversities, intellectual disabilities, vision impairments, & physical disabilities.

Thank you for your time. We look forward to hearing back from you and, with your help, continue building a more inclusive city.





**Av Zammit**

To: Izzi &gt;

1/6/22

Dear Izzi,

This is Av Zammit from Amazon Scout. Thank you very much for reaching out.

We're excited to be field testing Amazon Scout in Kirkland. Safety is our top priority and Scout has been designed to be inherently safe. These devices are the size of a small cooler and move at a walking pace.

Scout is able to stop, or safely navigate around pedestrians, pets, and other object in its path. Devices like Scout operate in the same way a pedestrian would:

- Scout can navigate around obstacles;
- It can stop instantly if something crosses in front of it;
- Scout can safely proceed across crosswalks when needed; and
- Scout will not block sidewalks when it encounters pedestrians with strollers or wheelchair users.

Scout devices autonomously follow their delivery route and send signals to our operations teams to ensure it's always operating safely. An Amazon employee is also nearby to provide support when needed.

I'm happy to share [this video](#) which shows Scout's behavior in more detail.

Lastly, we regularly invite community members to participate in dedicated research on specific aspects of Scout and how we can make the service better. If you and the wider community are interested, we would very much like for you to be part of this process so we can learn from you. Bringing this technology to life in partnership with local communities is something we're excited about and we value your feedback and ideas so we can make Scout better.

Best,  
Av

**Av Raichura Zammit**  
Amazon

*For the latest news, check out [About Amazon](#) and follow [@amazonnews](#)*

**Izzi**

To: [REDACTED]

1/11/22

Good afternoon Av,

Thank you for having responded to my inquiry so quickly. I very much would like to keep an open line of communication with the Amazon Scout research team, through you or another point of contact, and contribute questions / feedback regarding accessibility specific aspects of the Scout. I'm happy to begin our partnership in learning from each other.

I am gathering from the video link you had sent, the Scout would reverse course upon intersecting with a wheelchair, cane, or other mobility aid user on a narrow sidewalk until there is a space or opening for the Scout to pull aside. Is this correct?

Has the Scout been tested around guide dogs (for the sight impaired), other service dogs, and / or emotional support dogs? If so, what was the natural reaction from each type? The results between them will most likely vary as each type is trained for specific tasks, with guide dogs being the most highly trained.

Has the Scout been tested around children - adults with Autism Spectrum disorder, other neuro-diversities, and / or intellectual disabilities? If so, what were the results of those interactions? What would the Scout's reaction be if a child with one of those diagnoses attempted to touch, hit, push, pick up, or chase the device? What would the Amazon employee's reaction be?

When a Scout is behind a person of any ability, how much distance do they provide at minimum?

Again, thank you for your time. We look forward to hearing back from you, continuing this forward progress in understanding the Scout's movements and how best to prepare our community of disabled persons.

Have a terrific Tuesday!  
Izzi / Isabella

**Izzi**

To: [REDACTED]

1/20/22

Good afternoon,

I am following up on our last email regarding Amazon Scout field testing in the city of Kirkland and its potential impact on our community. In addition to the previous questions which have yet to be answered by your company representatives, we have additional concerns regarding post-dusk usage of Scout, its lighting system (if applicable), and its capacity to affect those with medical photosensitivity and seizure disorders.

As you may be aware, the City of Kirkland has issued an emergency 6 month moratorium on expanding the usage of Autonomous Personal Delivery Services (APDDs) within city limits as well as paused the permitting of building storage units (hives) for such devices. This time will allow for thorough evaluation of the APDDs impact on our citizens, including disabled persons. The results of the city's analysis will determine whether additional regulations are necessary to ensure the safety of all on public walkways. We would greatly appreciate your cooperation in this exploratory process of bringing this amazing new technology to our community and look forward to gaining insight through your response(s).

---

New questions:

Will the Scout be utilized after sun down? If so, please describe the lighting system. Are the lights bright white, soft white, red, or other color(s). Are lights on the front, back, side, and / or undercarriage of the Scout? Do they blink or flash? If so, at what pace? E.g. 10 times per 30 seconds. Certain lighting can trigger seizures. Those with photosensitivity and seizure disorders who travel on sidewalks at night tend to set their sight downwards and at a short distance in front of them for visual safety and to avoid an increase in symptoms or medical episodes.

---

Prior questions awaiting response:

"I am gathering from the video link you had sent, the Scout would reverse course upon intersecting with a wheelchair, cane, or other mobility aid user on a narrow sidewalk until there is a space or opening for the Scout to pull aside. Is this correct?

Has the Scout been tested around guide dogs (for the sight impaired), other service dogs, and / or emotional support dogs? If so, what was the natural reaction from each type? The results between types will most likely vary as each are trained for specific tasks, with guide dogs being the most highly trained.

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Has the Scout been tested around children with Autism Spectrum disorder, other neurodiversity, and / or intellectual disabilities? What would the Scout's reaction be if a child with one of those diagnoses attempted to touch, push, pick up, or chase it? What would the Amazon employee's reaction be?

When a Scout is behind a person of any ability, how much distance do they provide at minimum?"

---

Your prompt reply would be appreciated. Thank you in advance.

Respectfully,

Izzi / Isabella D.



**Av Zammit**

To: Izzie &gt;

1/26/22

Hi Izzie,

Thanks very much for your follow up and thanks for your patience on this response.

Please find below answers to the questions you shared.

As I mention in one of my responses below, we're field testing Scout and always keen to learn from the community. We're currently running qualitative research with customers in Washington. If you or any other members of your community would like to take part in these 1:1 discussions, please let me know and I can share your contact details with our research team.

Best,  
Av

**CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you can confirm the sender and know the content is safe.**

Good afternoon,

I am following up on our last email regarding Amazon Scout field testing in the city of Kirkland and its potential impact on our community. In addition to the previous questions which have yet to be answered by your company representatives, we have additional concerns regarding post-dusk usage of Scout, its lighting system (if applicable), and its capacity to affect those with medical photosensitivity and seizure disorders.

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—  
New questions:

Will the Scout be utilized after sun down? If so, please describe the lighting system. Are the lights bright white, soft white, red, or other color(s). Are lights on the front, back, side, and / or undercarriage of the Scout? Do they blink or flash? If so, at what pace? E.g. 10 times per 30 seconds. Certain lighting can trigger seizures. Those with photosensitivity and seizure disorders who travel on sidewalks at night tend to set their sight downwards and at a short distance in front of them for visual safety and to avoid an increase in symptoms or medical episodes.



A. We are starting with a small number of Amazon Scout devices in the area, delivering Monday through Friday, during daylight hours. On photosensitivity, we have designed Scout light patterns to avoid adversely impacting individuals with photosensitivity and seizure disorders.

---

Prior questions awaiting response:

I am gathering from the video link you had sent, the Scout would reverse course upon intersecting with a wheelchair, cane, or other mobility aid user on a narrow sidewalk until there is a space or opening for the Scout to pull aside. Is this correct?

A. Scout can navigate to avoid obstacles in its path. Scout devices autonomously follow their delivery route and send signals to our operations teams to ensure it's always operating safely. An Amazon employee is also nearby to provide support when needed.

Has the Scout been tested around guide dogs (for the sight impaired), other service dogs, and / or emotional support dogs? If so, what was the natural reaction from each type? The results between types will most likely vary as each are trained for specific tasks, with guide dogs being the most highly trained.

Has the Scout been tested around children with Autism Spectrum disorder, other neurodiversity, and / or intellectual disabilities? What would the Scout's reaction be if a child with one of those diagnoses attempted to touch, push, pick up, or chase it? What would the Amazon employee's reaction be?

A. Scout is designed to stop when approached by any person or animal. It would only move again after the person or animal is at a safe distance, well-clear of the device. An Amazon employee is also nearby to provide support when needed.

We have tested the device with various customer and community groups. In addition, Scout has safely delivered tens of thousands of Amazon packages to customers in Snohomish County, Washington, the Irvine-area of California, Franklin, TN and Atlanta, GA. Our field-tests are ongoing and we're always approaching new customer and community groups to learn how Scout can serve them better.

We're currently running qualitative research with customers in Washington. If you or any other members of your community would like to take part in this 1:1 discussion, please let me know and I can share your contact details with our research team.

When a Scout is behind a person of any ability, how much distance do they provide at minimum?"

A. When approaching a person from behind and moving in the same direction, Scout will maintain a 2m distance between it and the person.

---

Your prompt reply would be appreciated. Thank you in advance.

Respectfully,

Izzi / Isabella D.





**Izzi**

To: [REDACTED]

2/23/22



Good morning Av,

Thank you for your patience during my extended absence from our conversation. In answer to your question, yes, you may pass my contact information on to those leading qualitative research with customers as I would like to contribute input.

In continuation of our previous email thread, our community is very satisfied in knowing that the lighting system for Scout was designed with accessibility free-from-harm standards and in giving pedestrians 2 meters of spatial distance. However, we still have some unanswered questions / concerns.

---

**Q1:** I am gathering from the video link you had sent, the Scout would reverse course upon intersecting with a wheelchair, cane, or other mobility aid user on a narrow sidewalk until there is a space or opening for the Scout to pull aside. Is this correct?

A. Scout can navigate to avoid obstacles in its path. Scout devices autonomously follow their delivery route and send-signals to our operations teams to ensure it's always operating safely. An Amazon employee is also nearby to provide support when needed.

**Follow-upQ1:** Are you willing to provide more details on this?

\* What would the Scout do if it was traveling on a narrow sidewalk (that does not allow for passing) with an adult pushing a stroller in the same direction behind it and a wheelchair user approaching in the opposite direction?

\* It is being reported by residents of the Finn Hill neighborhood that a Scout is often stuck on their narrow and cracked sidewalks. At times, Scout appears to be obstructing the path of pedestrians for extended periods. Additionally, these residents have observed an Amazon employee sitting in their vehicle during the malfunctions further delaying the obstruction. In other instances, an employee will closely follow the Scout while driving their vehicle. (refer to attached videos) Can you provide clarity regarding these claims? How long does an Amazon employee allow a Scout to obstruct a sidewalk before getting involved? What actions do they then take? How many Scouts maximum





before getting involved? What actions do they then take? How many Scouts maximum are assigned to each Amazon employee for observation during deliveries? Is it accepted protocol for the assigned employee to observe Scout from a moving or static vehicle?

---

Q2: Has the Scout been tested around guide dogs (for the sight impaired), other service dogs, and / or emotional support dogs? If so, what was the natural reaction from each type? The results between types will most likely vary as each are trained for specific tasks, with guide dogs being the most highly trained.

Has the Scout been tested around children with Autism Spectrum disorder, other neurodiversity, and / or intellectual disabilities? What would the Scout's reaction be if a child with one of those diagnoses attempted to touch, push, pick up, or chase it? What would the Amazon employee's reaction be?

A. Scout is designed to stop when approached by any person or animal. It would only move again after the person or animal is at a safe distance, well-clear of the device. An Amazon employee is also nearby to provide support when needed. ...

**Follow-upQ2:** It is good that Scout is designed to "freeze" upon encountering a person or animal. But, what does happen when the unit is contacted by a curious / protective / overstimulated human or animal? Has the Scout team participated in research regarding interactions with neurodiverse persons and / or service animals? If so, what are those results? If not, would Scout be willing to add these interactions into their research? If you are unsure whether these interactions have been tested, is this a topic the qualitative research team or others in management are more apt to answer?

---

Thank you for keeping this line of communication open and for showing good faith effort in identifying and removing any accessibility barriers by all parties involved. I look forward to hearing back from you and from the research team directly.

--

~ Isabella ~



Izzi

To: [REDACTED]

ATTACHMENT 3

3/23/22

## **Re: Scout Accessibility Concerns - City of Kirkland**

Good morning Av,

Any updates or responses to the previous series of questions I posed?

Izzi