



City of Palo Alto

City Council Staff Report

(ID # 9875)

Report Type: Consent Calendar

Meeting Date: 12/17/2018

Summary Title: Extension of Interim Autonomous Robot Regulations

Title: Authorization for the City Manager to Extend the Existing Pilot Program to Allow the use of Autonomous Robots, Also Known as Personal Delivery Devices (PDDs)

From: City Manager

Lead Department: Public Works

Recommendation

Staff recommends that the City Council authorize the City Manager to extend the existing pilot program to allow the use of autonomous robots, also known as personal delivery devices (PDDs) until December 31, 2019, or upon adoption of permanent regulations by the City Council.

Background

On October 30, 2017 City Council authorized the City Manager to establish a pilot program to allow the use of autonomous robots, also known as personal delivery devices (PDDs), in the City of Palo Alto by issuing encroachment permits to PDD operators ([SR#8544](#)). The intent of the program was to permit the operation of PDDs within the City right-of-way, subject to terms and conditions set forth by the City Manager or his designee. The pilot program was set to expire on December 31, 2018 or upon adoption of permanent regulations by the City Council.

Since then, three companies have obtained robot delivery permits. These companies began operations in Palo Alto by mapping the portions of the City permitted for delivery and performing some test deliveries but have not been recently active. The original permitted operating area was expanded modestly at the request of one company. The current interim autonomous robot regulations and updated map can be found in Attachment A.

Discussion

To date, there has not been enough PDD activity to determine whether the City should adopt permanent regulations. One company, Starship Technologies, has approached the City and requested an extension to the pilot program to allow more time for PDDs to operate. In addition, Starship Technologies is also requesting an expansion of the operating area and an increase to the PDD operational speed limit. The expanded operating area would include Stanford shopping center, Stanford medical facilities and clinics, and residences west of Sand Hill Rd (Stanford West development). Staff agrees these areas are suitable for PDD operations and would make any such changes to the operating area available to all PDD companies who wish to operate in Palo Alto, as well as any other future incremental increases. Starship Technologies will not operate on private property without the permission of the property owners.

Data from Starship Technologies' Palo Alto operations show that their PDDs have travelled over 1,200 miles and performed over 250 deliveries without safety incidents or technology failures. Data from Starship Technologies' Bay Area operations show that PDDs have travelled over 13,000 miles and performed over 7,000 deliveries throughout the region without incidents or failures.

The current interim autonomous robot regulations provide the City Manager with authority to change the operating area and PDD speed limit. These regulations stipulate a speed limit of 3.5 feet per second (about 2.4 miles per hour) which would be considered a slow walking speed. Starship Technologies has requested an increase to 5 miles per hour, a fast walking speed, which is consistent with their operations in all other jurisdictions.

Staff recommends extending the pilot program and is comfortable with Starship Technologies' requests regarding the operating area and speed increase and would likely accommodate the request if Council chooses to extend the pilot program.

Policy Implications

The following Comprehensive Plan goals, programs and policies are relevant to the permitting of PDDs and extending the pilot program:

- POLICY T-39: To the extent allowed by law, continue to make safety the first

priority of citywide transportation planning. Prioritize pedestrian, bicycle, and automobile safety over vehicle level-of-service at intersections.

- POLICY B-4: Nurture and support established businesses as well as new businesses.
- POLICY B-7: Encourage and support the operation of small, independent businesses.
- POLICY B-9: Encourage new businesses that meet the City's business and economic goals to locate in Palo Alto.
- POLICY B-10: Promote Palo Alto's image as a business-friendly community. Assume an active role in fostering new business, particularly small, start-up businesses in emerging industries.
- POLICY B-16: Encourage streamlining of City administrative and regulatory processes wherever possible. Reduce inefficiencies, overlap, and time delays associated with these processes.

Resource Impact

Extending the pilot program will not significantly impact resources. The issuance of Encroachment Permits for PDDs will be done through the Development Center, and require limited resources from the Development Services Department, Public Works Department, Planning and Community Environment Department, Police Department and other departments. Ongoing monitoring for compliance will also require the use of existing departmental resources.

Environmental Review

This program is exempt from the requirements of the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) of Title 14 of the California Code of Regulations. It can be seen with certainty that there is no possibility the adoption and implementation of this program may have a significant effect on the environment, and Section 15301 in that this proposed resolution will have a minor impact on existing facilities.

Attachment A – Interim Autonomous Robot Regulations

Attachments:

- Attachment A: Interim Autonomous Robot Regulations



INTERIM AUTONOMOUS ROBOT REGULATIONS

I. Scope

Consistent with Palo Alto City Council Resolution No. 9716, this policy applies to any proposed deployment of an autonomous robot in public spaces, sidewalks, and public rights of way within the City of Palo Alto's jurisdictional boundaries. For the purposes of this policy, autonomous robot means a motorized device used to transport items, products, or any other materials, and that is guided or controlled without a human operator sitting or standing upon and actively and physically controlling the movements of the device.

II. Procedures

- a. Any person seeking to operate an autonomous robot within the City of Palo Alto shall first obtain an encroachment permit conditioned on compliance with the Operating Regulations contained in this policy. No person shall operate an autonomous robot in public spaces or in public rights of way within the City except pursuant to such permit.
- b. The City Manager, in consultation with the City Engineer and Chief Transportation Official, shall establish Operating Regulations governing the operation of autonomous robots. All Permittees shall be required to comply with these regulations as they may be amended from time to time.

III. Operating Regulations

- a. **Maximum speed.** When operating on public sidewalks, ADA ramps or within crosswalks, robots shall not travel faster than 3.5 feet per second.
- b. **Paths of Travel.** Autonomous robots shall yield to pedestrians and other users of sidewalks and public rights of way. Robots shall not block accessible paths of travel for disabled individuals using mobility devices or otherwise interfere with accessibility features in the public rights of way. Robots shall not travel on roadways except in designated crosswalks.
- c. **Area of operation.** Permittees shall operate autonomous robots only within the operating areas described and shown in Exhibit A. These operating areas are subject to change by the City Manager or his designee upon 24 hours' notice. In addition, robots may be temporarily prohibited from sidewalks and crosswalks within business districts, specific construction areas, and special event areas at any time.
- d. **Visibility.** Permittees shall ensure adequate visibility of all autonomous robots during daytime and nighttime hours of use, including but not limited to, the use of flags and flashing lights in order to increase the visibility of the robot. During night time operations robots shall have reflectors at least in front and back, and lights that cover the direction of movement, including white lights in front and red lights in the back, that are visible up to 300 feet away under normal weather and operating conditions. Robots must include the operator's name and phone number in a location visible to the public when in operation.
- e. **Human Monitor or Attendant.** Permittees shall monitor autonomous robots at all times that they are operating in the public rights of way, either through an attendant who

accompanies the robot or through real-time, remote monitoring. For first 30 days that any model of robot is operated in the City of Palo Alto, Permittees shall provide a human attendant to travel with the robot.

- f. **Reporting.** Permittees shall report any significant collisions or other operational safety issues to the City within 24 hours of the incident.

IV. Effective Dates

This Interim Autonomous Robot Policy shall be effective from the date of its approval by the City Manager and shall terminate upon the earlier of December 31, 2018 or the adoption of an ordinance regulating autonomous robots by the Palo Alto City Council.

Approved: _____

James Keene
City Manager



11.20.17

Date

Palo Alto
The City of

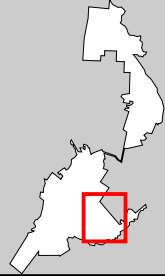


Exhibit A: Autonomous Robot Operating Area

This map is a product of the
City of Palo Alto GIS



Legend

- abc Downtown
- abc California Avenue
- abc City Jurisdictional Limits

