

## **Mayor's Office for People with Disabilities Accessibility Recommendations**

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In order to become an approved Alternative Technology Pilot Participant, Alternative Technology Systems must comply with New York City Administrative Code §19-538, which requires that taxicabs be accessible to people with visual disabilities. The Mayor's Office for People with Disabilities (MOPD) will be involved in reviewing solutions to ensure that they comply with the letter and spirit of the law. However, people with disabilities comprise a wide range of disabilities with different user needs, preferences, overlaps and conflicts. As such, MOPD has put together this list of suggested accessibility features so participants can make their systems as accessible as possible for all New Yorkers. This list comprises four major categories of disabilities: mobility; sight; hearing; and cognitive. Each contains sub-categories. For example, mobility disabilities may include: ability to ambulate, people who use mobility devices (wheelchairs, walkers, canes), limited dexterity, limited endurance and strength, use of left or right hand only.

### **Requirements under §19-538:**

1. Instructions for contacting the TLC in Braille and large-print text, must be on the same side and in the same passenger compartment in each taxicab.
2. Payment option to permit visually impaired passengers to pay unassisted, must be in the same passenger compartment in each taxicab.
3. Has audio instructions and audible announcements of the initial charge, periodic updates during the trip, rate code charges and/or toll charges, and the final fare at the end of the trip

### **Recommendations:**

#### **General:**

1. Alternative methods of paying such as Apple Pay or other NFC technology.
2. Voice commands for hands free interaction.
3. Screen and card reader placement should be standardized and the same in all taxis.
4. Taxi app: to find or hail taxis and discover nearby taxis.
5. Ads and videos should be inactive by default. Users should have the choice to turn them on instead of the ads playing by default. For users with disabilities, it can be difficult to lower the volume or turn off the screen once the ride has started. This can be unpleasant and over-stimulating for some riders with disabilities.

#### **Mobility:**

1. The top and bottom edges of the screen should be within reach for a sitting person.
2. Wheelchair users should be able to reach the screen and comfortably use it. In most accessible taxis, the screen is in the middle section while wheelchair users are in the back. In accessible cabs, there should be a screen in the back area where the wheelchair users ride.
3. Include an on screen keyboard that can be enlarged for people with diminished dexterity.
4. Include voice recognition software for hands-free interaction:
  - a. Add simple phrases so that users can enable voice commands hands free. For example: "Hey Siri" or "Ok Google."

- b. Give a list of possible commands. For example: Where am I? What is the estimated fare? Commands should appear on screen and have a command to read them out loud.

### **Vision:**

1. Screen reader to read on screen prompts and instructions. Users should be able to access all the information and features with the use of the verbal output of the screen reader only.
2. The gestures for the TTS should be intuitive and easy to use for a person with a visual disability. For example: Tapping multiple times in the middle of the screen works with limited success. This is the current way to turn on the accessibility in taxis. It does not always work for blind riders because it can be difficult to tap in the middle of the screen accurately in a short time frame and while the vehicle is moving.
3. The user should be able to enable or disable the accessibility features at any time
  - a. The prompts and instructions for enabling accessibility features should be announced at the beginning of every trip and repeated from time to time.
4. Include distinct tactile markers at the borders of the screen. Some of the current gestures require tapping the corners of the screen. This is difficult to do if the boundaries of the screen don't stand out through tactile means. A good example would be a raised border that surrounds the edges of the screen.
5. Add tactile indicators for the signature line on the card reader so riders with visual disabilities know where to sign.
6. Headphone port for riders to have privacy while using screen readers.
  - a. It should be clearly marked using braille and close to the screen.
7. The user should be able to adjust the speech volume, rate and pitch of the screen reader voice.
8. Riders with partial or low vision should be able to enlarge text, adjust brightness and change color contrast.
9. The screen reader should give instructions on the physical location of the card reader during the payment process. Not every taxi has the same setup. Sometimes the card reader is below the screen while other times it's to the left of the screen.
10. Instructions on how to enable the screen reader should be included next to the screen in both braille and print.
11. Connectivity to a braille display for blind deaf riders. Currently braille displays connect via USB or Bluetooth. This could change to a newer technology such as NFC in the future.

### **Hearing:**

1. Include receiver jacks for use with assistive listening devices.
2. Include induction loops or output of unit interfaces with hearing aid t-coils.
3. Provide volume control.
4. Video relay for riders that use American Sign Language.

### **Cognitive:**

1. The text and verbal output should include simple language for riders with cognitive disabilities.
2. Option to switch languages.
3. Symbols should be available to accompany text.

4. The interface should be as follows:
  - A. Simple
  - B. Consistent
  - C. Clear (large text, enlargeable images, ensure color alone is not used)
  - D. Error-tolerant when there is an error, it should be clearly stated and how to resolve the error should be clearly stated.
  - E. Avoid background sound: Screen should not automatically loop.