

# Charting the Future of City Services in Boston with AI + Machine Learning



City of Boston

May 21st, 2025  
NEIAF Webinar on AI



**Michael Lawrence Evans**  
*Director, Office of Emerging Technology*



**Santiago "Santi" Garces**  
*Chief Information Officer*



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**Will generative AI change the way  
that government delivers services?**



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## What could go wrong?

Unintended Consequences

Lost Trust

Wasted Time and Money

Environmental cost

## What do we value?

People

Transparency

Innovation + Risk Management

Public Purpose



# City Council Roll Call

Docket #1650

FY24 budget adjustment for collective bargaining agreements.



November 1, 2023

**DESCRIPTION:**

Message and order for your approval, an Order to reduce the FY24 appropriation for the Reserve for Collective Bargaining by Twenty Four Thousand One Hundred Twenty One Dollars (\$24,121.00) to provide funding for the Property Management Department for the FY24 increase contained within the collective bargaining agreements between the City of Boston and the New England Police Benevolent Association. Filed in the Office of the City Clerk on October 30, 2023. The rules were suspended; the order was passed; yeas 12.

**VOTES:**

Arroyo:	Yes
Baker:	Yes
Breadon:	Yes
Coletta:	Yes
Durkan:	Yes
Fernandes Anderson:	Yes
Flaherty:	Yes
Flynn:	Yes
Lara:	Not Present
Luoijeune:	Yes
Mejia:	Yes
Murphy:	Yes
Worrell:	Yes

# **Our Generative AI Guidelines (circa 2023)**



City of Boston

[boston.gov/ai-guidelines](https://boston.gov/ai-guidelines)



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# Boston's Generative AI Guidelines v1

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1. Fact check and review all content generated by AI, especially if it will be used in public communication or decision making.
2. Disclose that you have used AI to generate the content.
3. Do not share sensitive or private information in the prompts.



# **Version 2 of Our Gen AI Guidelines (Coming soon!)**



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# Text-to-Image (Diffusion Based)

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Diffusion models are generative AI models that learn to create images by gradually transforming a random noise (like old TVs) into a structured distribution of pixels, matching the images on the data they were trained on.



**Stable Diffusion**  
By Stability.AI



**DALL-E**  
by OpenAI



**Midjourney**



**Adobe Firefly**



**Adobe Photoshop**

**UI**



**Dev  
Tools**



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Dev  
Tools



# Large Language Models

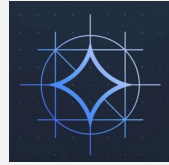
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**Claude**  
By Anthropic



**GPT-4o**  
by OpenAI



**Gemma**  
by Google



**Gemini**  
by Google



**LLaMA**  
by Meta

**UI**



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# Large Language Models

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**Claude**  
By Anthropic

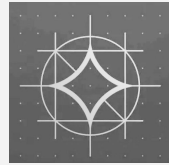
UI



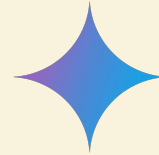
Dev  
Tools



**GPT-4o**  
by OpenAI



**Gemma**  
by Google



**Gemini**  
by Google



**LLaMA**  
by Meta







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**Models that can “comprehend”  
and generate human language.**



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## Our use cases keep expanding.

- Improve Government Transparency 
- Predict Floods 
- Streamline Trash Routes 
- Traffic Congestion 



**Let's review three use cases and one caveat.**



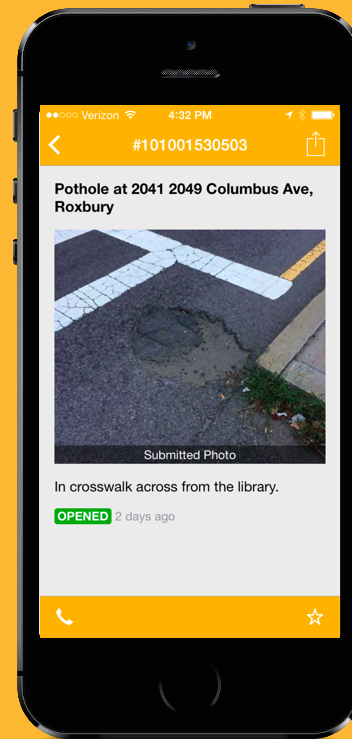
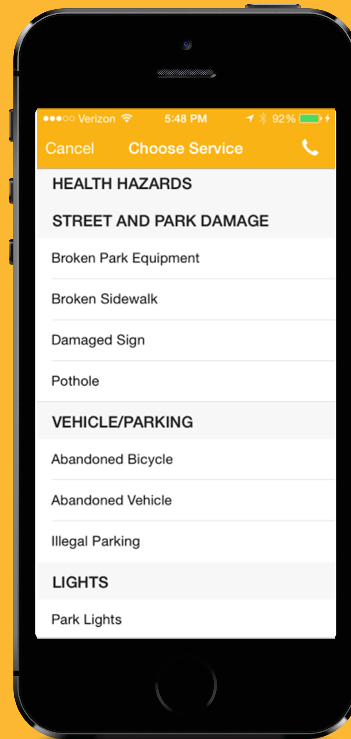
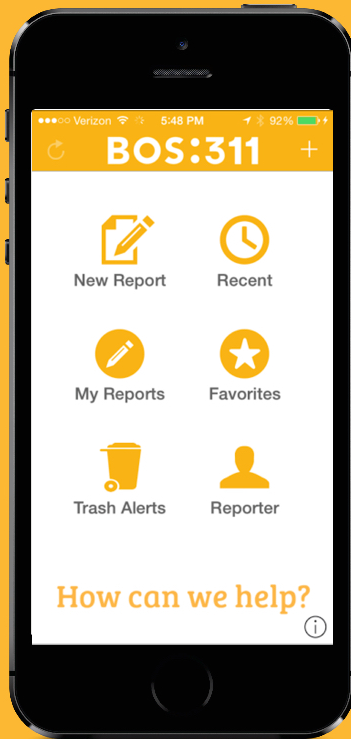


BEACH ST

**AI + Translation**



必珠街



# 10 Additional Languages



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Rechèch rapò



## BOS:311

Ede kenbe vil nou an bèl.

Nouvo Rapò



### Nouvèl En

#### Teren remokaj

Teren remokaj la ouvè sèlman lendi pou vandredi, soti 7è a.m. rive 10è:30 p.m. Kiyòsk otomatize yo disponib 24 sou 24, 7 jou sou 7 pou libere veyikil yo. Plis enfomasyon:...



#### Pakomèt

Pakomèt yo pral travay selon orè nòmal yo jodi a. Plis enfomasyon:  
<https://www.boston.gov/departments/parking-clerk/how-do-parking-meters-work>



#### Netwayaj Lari

Netwayaj lari lajounen anile. Netwayaj lari lannwit lan nan yon orè nòmal. Plis enfomasyon:  
<https://www.boston.gov/departments/public-works/street-sweeping-city>



Montre tout



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# Better Language Translation Through Machine Learning: Everything I Wish I Knew 6 Months Ago



Julie Kim · Follow

Published in The Startup · 8 min read · Dec 14, 2020



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1



## Evaluating our options:

- Continue to rely on Google Translate?
- DeepL (AI model focused on translation)
- Roll our own translation model?



A photograph of a narrow city street lined with multi-story brick buildings. On the left, a building with a tan brick base and red brick upper floors has several black metal fire escapes. A green-painted section of the building is visible further down. On the right, a red brick building also features fire escapes. A line of cars is parked along the right side of the street, with a silver hatchback in the foreground. The street is paved and has a sidewalk on the left. The sky is overcast.

# AI + Curb Regulation





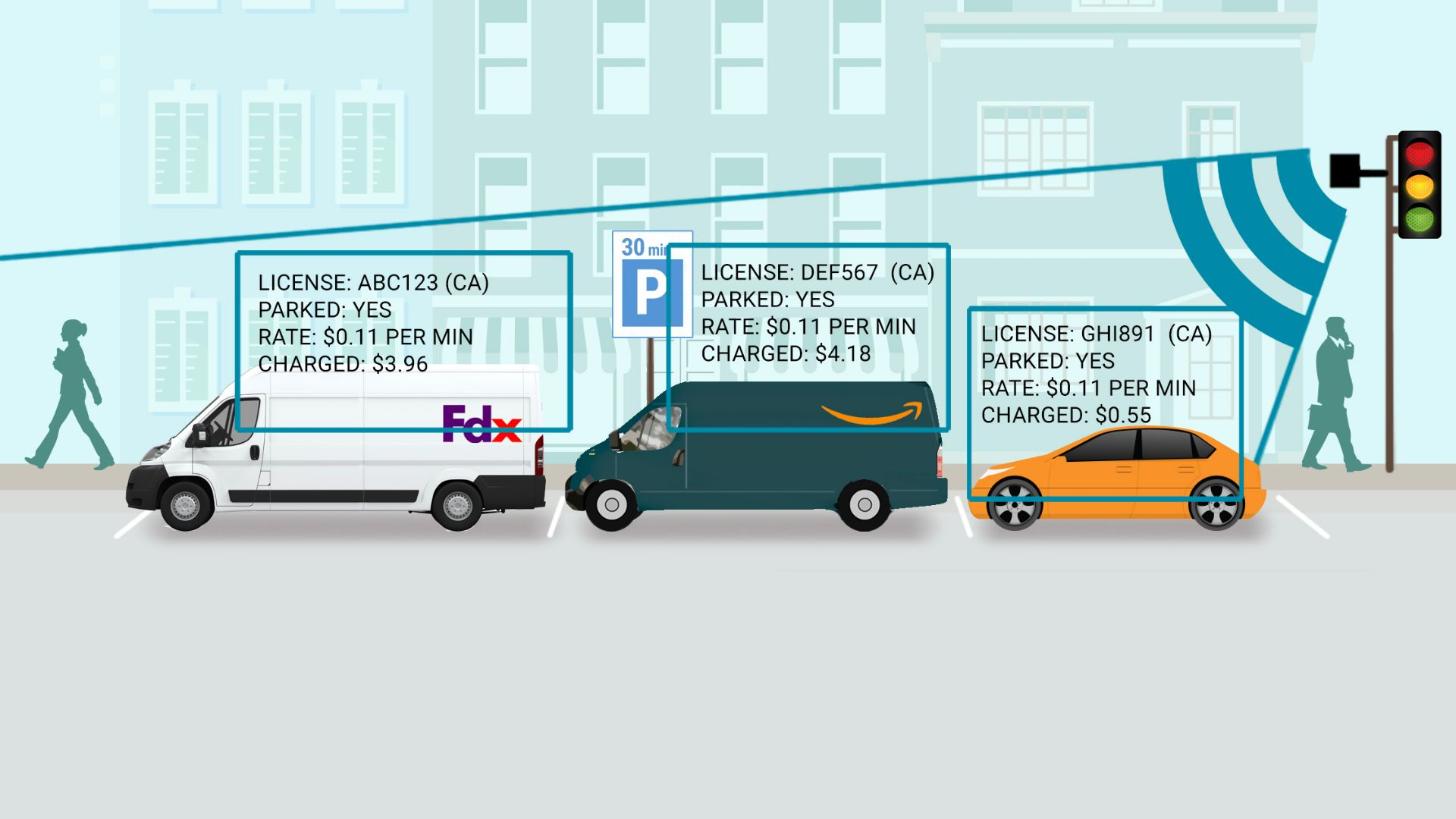
# Smart Loading Zones with Automotus

EXCELLENCE. SIMPLY DELIVERED.









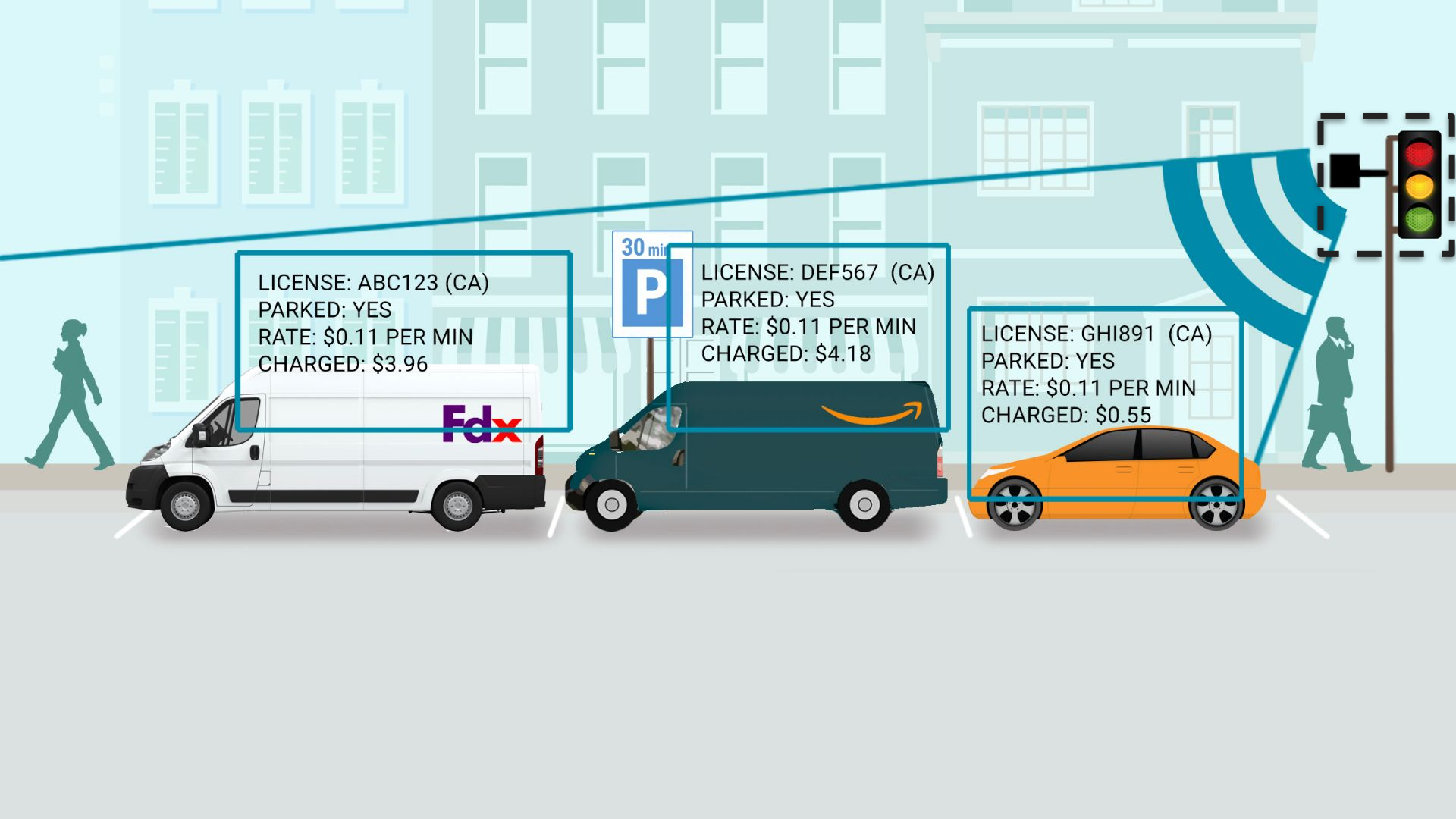
LICENSE: ABC123 (CA)  
PARKED: YES  
RATE: \$0.11 PER MIN  
CHARGED: \$3.96

30 min



LICENSE: DEF567 (CA)  
PARKED: YES  
RATE: \$0.11 PER MIN  
CHARGED: \$4.18

LICENSE: GHI891 (CA)  
PARKED: YES  
RATE: \$0.11 PER MIN  
CHARGED: \$0.55



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PARKED: YES  
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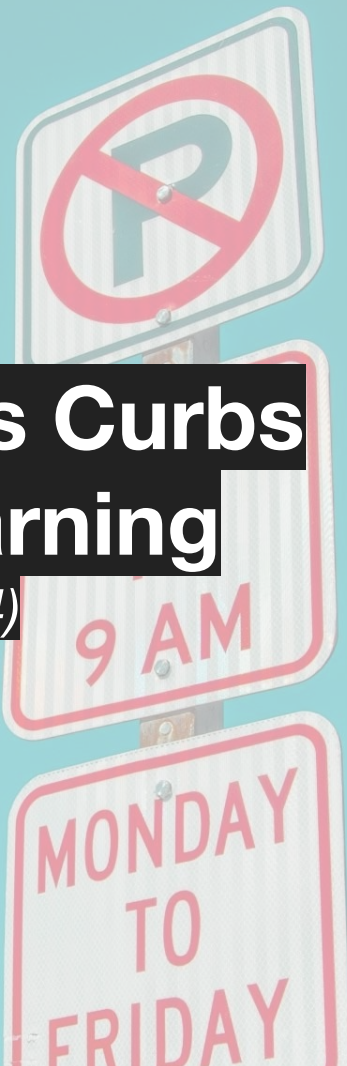
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CHARGED: \$0.55



# Digitizing Boston's Curbs via Machine Learning

*(SMART Grant 2024)*



**TOW ZONE**

**NO  
STOPPING**  
11am - 11pm

**North End Resident  
Permit Parking Only**  
11pm - 8am

**15  
MIN** **Parking Limit**  
8:00am - 11am  
Except Sunday

**30  
MIN** **Parking Limit**  
8:00am-6:00pm  
Except Sunday

**North End Resident  
Permit Parking Only**  
6:00pm-8:00am



r/boston · 10 mo. ago

## What does this parking sign mean?

Hey this is a dumb question, but is this sign saying that I can park here overnight as a non-resident. It appears to be saying that there is a 2 hour limit between 8am-6pm and outside of that its fine to park, but local parking trumps all?

Thank you for the help!



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If it is 8:24 pm on a Friday  
can I park in this spot?



The sign indicates the following regulations:

1. Loading Zone:
  - Monday to Saturday, 7 AM to 6 PM, 30-minute limit
2. Pick-Up/Drop-Off:
  - Monday to Saturday, 6 PM to 8 AM, 5-minute limit

Since it is 8:24 PM on a Friday, the Pick-Up/Drop-Off regulation is in effect. You can park in this spot but only for up to 5 minutes.

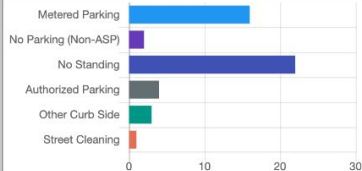



 FILTER

LIST


[DOWNLOADS](#)

STREETVIEW



Filter Signs Based On Sub Category Using Menu Above

This Icon Represents Signs That Are In Same Support



This Icon Represents Signs That Are Nearby Each Others

## Disclaimer

The Information Contained In SIMS And The Information Shown Here Was Compiled By The: New York City Department Of Transportation for Governmental Purposes. The Information Is Updated As Soon As Reasonably Practicable. This Application Also Makes Use Of A Pre-Release Version Of The New York City Department Of City Planning's Geosupport System. The





# **Climate Preparation**







**Water + AI**









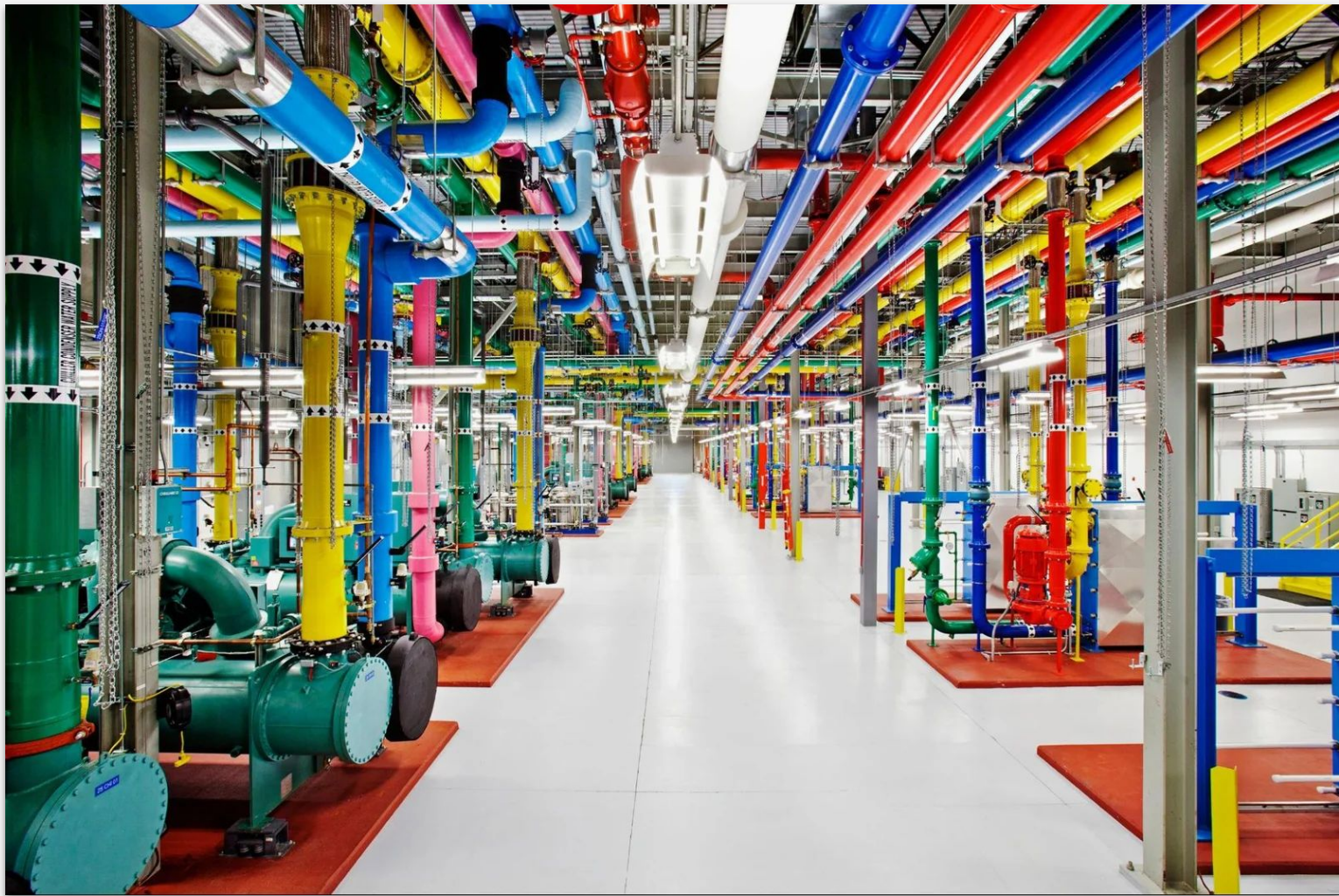
# **Environmental Impact of AI**















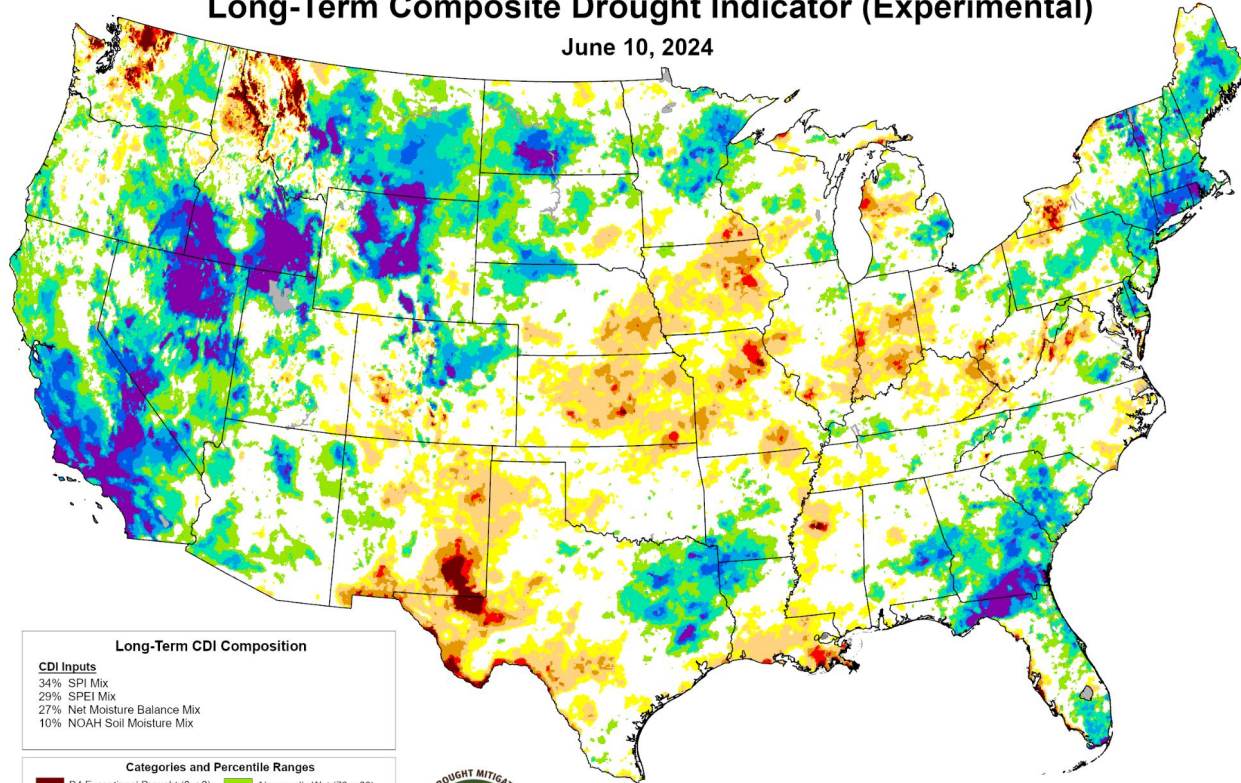






# Long-Term Composite Drought Indicator (Experimental)

June 10, 2024



## Long-Term CDI Composition

### CDI Inputs

34% SPI Mix  
29% SPEI Mix  
27% Net Moisture Balance Mix  
10% NOAA Soil Moisture Mix

### Categories and Percentile Ranges

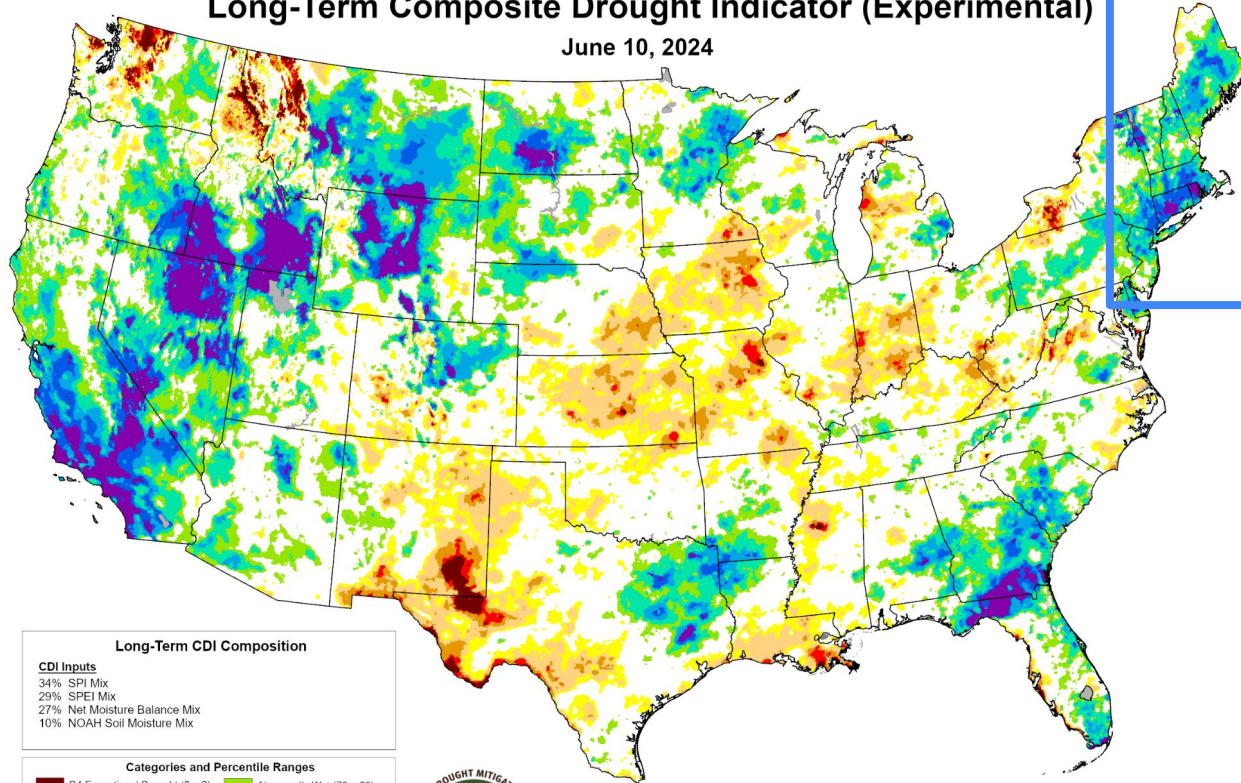
D4 Exceptional Drought (0 < 2)	Abnormally Wet (70 < 80)
D3 Extreme Drought (2 < 5)	Moderately Wet (80 < 90)
D2 Severe Drought (5 < 10)	Severely Wet (90 < 95)
D1 Moderate Drought (10 < 20)	Extremely Wet (95 < 98)
D0 Abnormally Dry (20 < 30)	Exceptionally Wet (98 - 100)
Near Normal (30 < 70)	No Data



© 2023, National Drought Mitigation Center, University of Nebraska

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June 10, 2024



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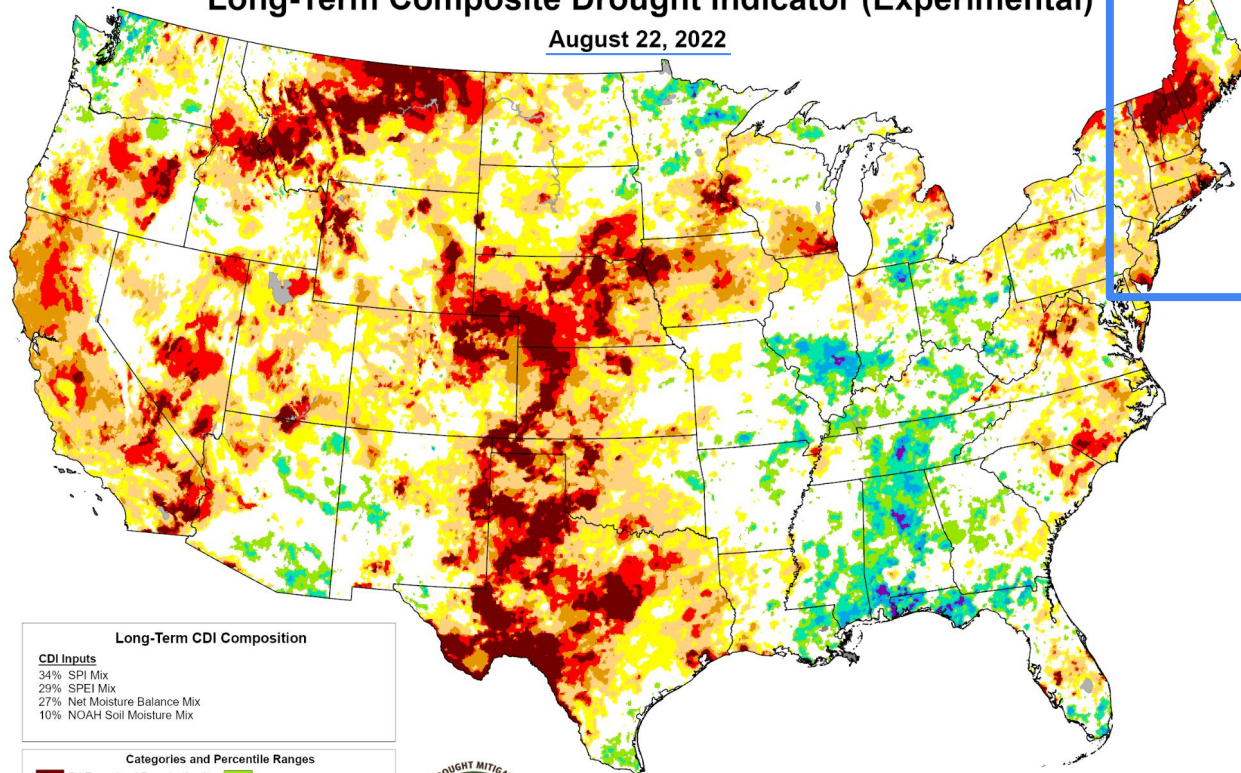


© 2023, National Drought Mitigation Center, University of Nebraska



# Long-Term Composite Drought Indicator (Experimental)

August 22, 2022



## Long-Term CDI Composition

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34% SPI Mix  
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## **We're learning more about:**

- Retrieval Augmented Generation
  - Fine-tune LLMs with your documents
- Data Privacy and LLMs (including on-device AI and running our own models)
- Small Language Models

## Later this year:

- New research paper with the MIT Media Lab about AI + community engagement
- Version 2 of our Gen AI guidelines
- Open-source AI + ML prototypes on GitHub ([@OETBoston](#) + [@CityofBoston](#))

**Thank You!**