



# Unlocking Tomorrow's ATIS

## Unique Innovations to Iowa's 511 System

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ITS Heartland  
April 30, 2024



# Agenda

Where we started

Decision making for enhancements

Iowa DOT 511 Innovations

What's in the works

The screenshot displays the Iowa Department of Transportation's 511 website. At the top, the logo for the Iowa Department of Transportation and the 511 logo are visible. Below the logo is a navigation bar with tabs for Major Delays, Road Work, Winter Conditions, All Advisories, IWS Forecasts, and NWS Alerts. A dropdown menu shows 'State of Iowa' and a link for 'All Current Incidents'. A legend explains the icons used on the map: Accident (red triangle), Alert (orange diamond), Difficult Driving Conditions (red circle), Fair Driving Conditions (yellow circle), Roadwork (yellow diamond), Permit Status (red circle), Traffic Flowing Freely (>45 mph) (green line), Slow Traffic (20-45 mph) (yellow line), Stop and Go Traffic (<20 mph) (red line), and Information Not Available (black line). The map shows various incidents across the state, with major highways like I-80, I-35, and I-29 highlighted. A sidebar on the left contains links for About 511, Newsroom, Contact, Links, Site Map, 511 Hints, Iowa DOT, State of Iowa, and a link for Des Moines with a TripGuide logo.



# We've come a long way....

2001 – Launched 511 phone system for road conditions

2002 – Launched first 511 website just for winter road conditions

2012 – Launched first mobile app

2020 – Launched latest UI version of website



# We've come a long way....

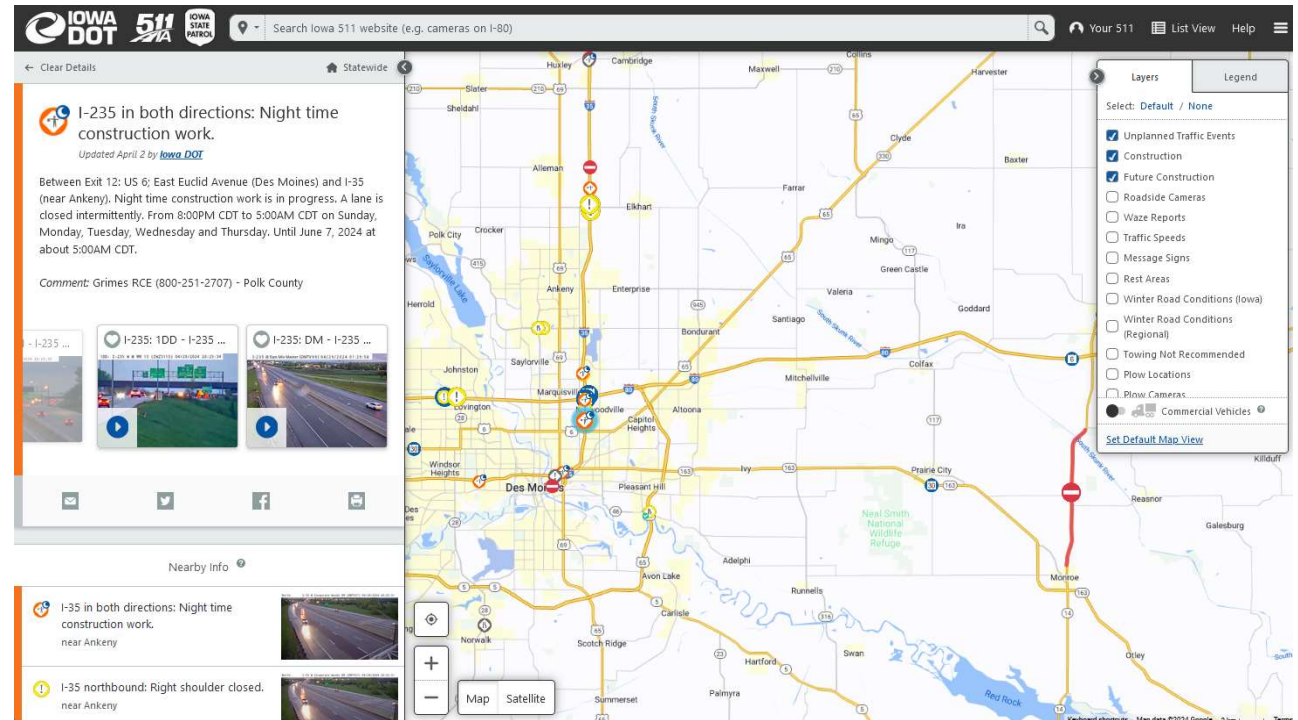
2001 – Launched 511 phone system for road conditions

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Over the years added: traffic alerts, social media, and more!



# Biggest impacts - winter operations

The screenshot displays the Iowa DOT 511 website interface. At the top, the navigation bar includes the Iowa DOT logo, the '511' logo, and a search bar. The main content area features a traffic alert for I-80 westbound, stating that two right lanes are blocked, resulting in a 7-minute expected delay. Below the alert are two video thumbnails showing traffic on the highway. To the right, a map of Iowa shows the location of the delay near Des Moines. A legend on the right side of the map allows users to toggle various layers, including 'Winter Road Conditions (Iowa)', 'Weather Warnings', and 'Commercial Vehicles'. At the bottom right, a live camera feed shows a traffic jam on a snowy highway with several semi-trucks and cars stuck in traffic. The camera title is 'I-80 DM - I-35/80 @ Exit 135 (DMTV23) 01/09/2024 12:00:37'.



# How do we evolve?

The screenshot shows the Iowa DOT 511 website. At the top is the logo for the Iowa Department of Transportation and the 511 logo. Below the logo are navigation tabs: Major Delays, Road Work, Winter Conditions, All Advisories, NWS Forecasts, and NWS Alerts. A search bar contains 'State of Iowa'. Below the search bar are links for 'All Current Incidents', 'Text Only', and 'High Bandwidth Vers'. A legend identifies icons for Accident (red triangle), Difficult Driving Conditions (red circle), Roadwork (yellow diamond), Alert (yellow diamond with exclamation mark), Fair Driving Conditions (yellow circle), and Permit Status (red circle with 'P'). A color-coded traffic status legend includes: Traffic Flowing Freely (>45 mph), Slow Traffic (20-45 mph), Stop and Go Traffic (<20 mph), and Information Not Available (black square). A map of Iowa is displayed with various colored icons indicating road conditions. A sidebar on the left contains links for About 511, Newsroom, Contact, Links, Site Map, 511 Hints, Iowa DOT, State of Iowa, and a link for Des Moines tripGuide.

This screenshot shows a detailed incident report for I-235. The title is 'I-235 in both directions: Night time construction work.' The report is dated April 2 by Iowa DOT. The text describes construction work between Exit 12 (US 6, East Euclid Avenue) and I-35 (near Ankeny), with intermittent lane closures from 8:00 PM CDT to 5:00 AM CDT on Sunday, Monday, Tuesday, Wednesday, and Thursday, until June 7, 2024. A comment from Grimes RCE (800-251-2707) in Polk County is included. Below the text are three video thumbnails showing construction activity. A 'Nearby Info' section lists other incidents: 'I-35 in both directions: Night time construction work. near Ankeny' and 'I-35 northbound: Right shoulder closed. near Ankeny'. On the right, a map shows the location of the incident on I-235 near Des Moines. A legend on the far right lists map layers such as 'Unplanned Traffic Events', 'Construction', 'Future Construction', 'Roadside Cameras', 'Waze Reports', 'Traffic Speeds', 'Message Signs', 'Rest Areas', 'Winter Road Conditions (Iowa)', 'Winter Road Conditions (Regional)', 'Towing Not Recommended', 'Slow Locations', 'Slow Cameras', and 'Commercial Vehicles'.

# Gather feedback from the public

Feedback

Feedback form fields:

- Email
- General website feedback
- Description

This site is protected by reCAPTCHA and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

Cancel

Save

Android User  
 1/25/23  
 There is no dark mode on this version. Be prepared for pastel lines on a blinding white background. Almost unusable.  
 Was this review helpful? Yes No  
 Iowa Department of Transportation 1/26/23  
 Hi, Thanks for the feedback. We actually launched it initially, but found we needed to make some tweaks. It's going to make its way back to the app in the near future. Thanks for



Website Feedback Form

App Store Feedback

IOWA | DOT DMV TRAVEL BUSINESS FORMS CONTACT US A-Z INDEX

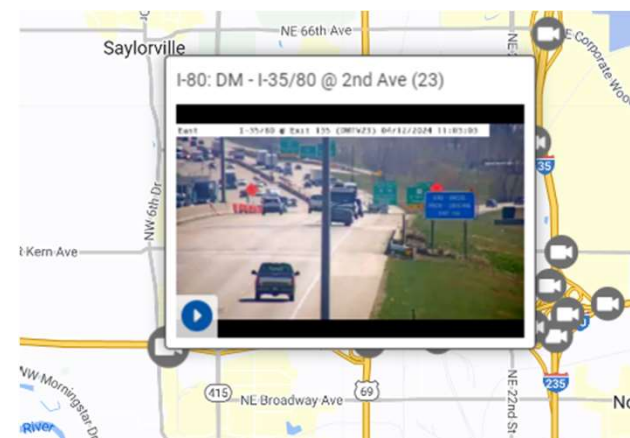
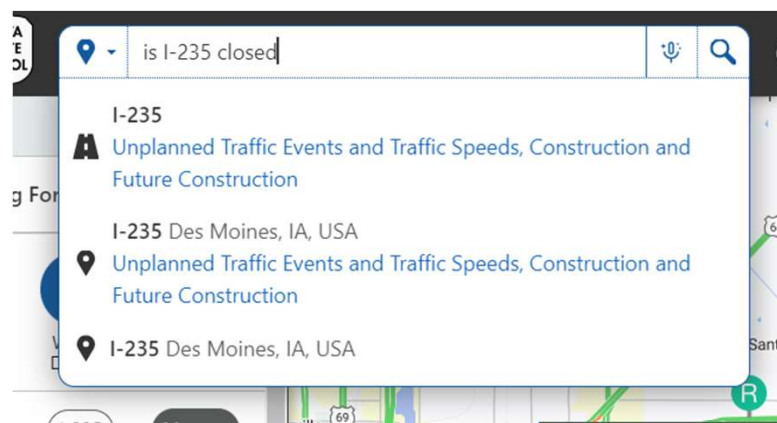
WHAT CAN WE HELP YOU FIND?

KNOW WHAT YOU'RE LOOKING FOR? [TRY OUR A-Z INDEX](#)

CONTACT US

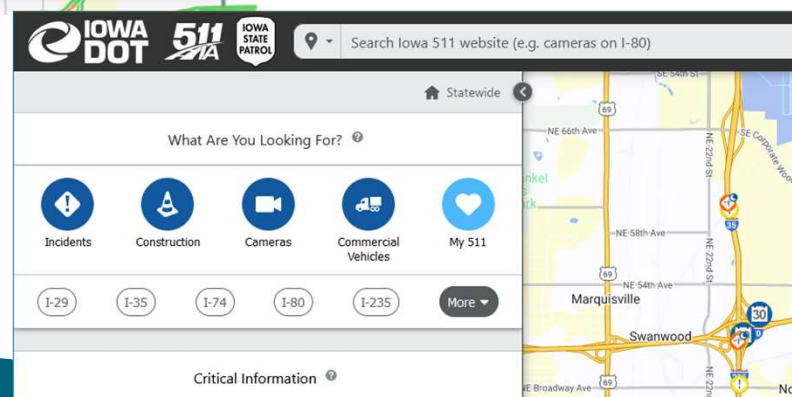
Iowa DOT "Contact Us" Form

# Act on public feedback



I can't find what I'm looking for.

- ✓ Added NLP Searches
- ✓ Added Quick Buttons



I want to be able to view cameras quickly.

- ✓ Added the ability to view images while hovering over icon





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# Iowa DOT 511 Innovations

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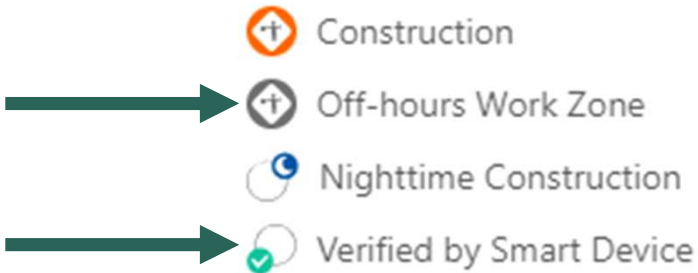





# Icon change based on WZDx

## At-A-Glance


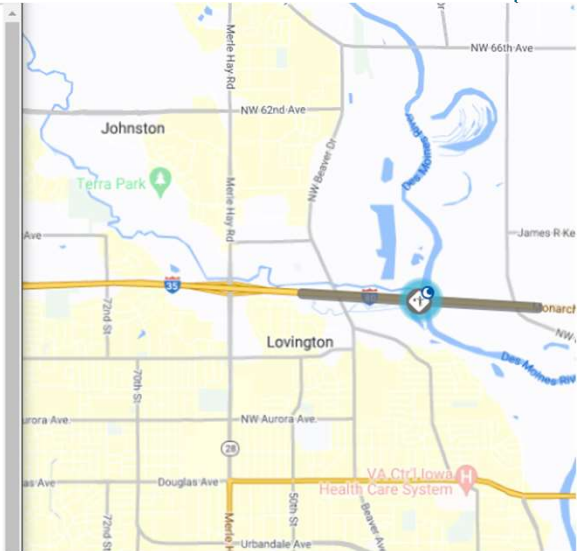
- ❖ Change icon color to a grayscale based on if the connected arrow board (CAB) is on or off. This is using the WZDx feed. (also for non-connected events)
- ❖ Verified checkmark on icon when CAB is turned on.




 **I-80 westbound: Night time construction work.**  
*Updated April 25 by Iowa DOT*

Between IA 415 and Exit 131: Merle Hay Road (1 to 3 miles east of Urbandale). Night time construction work is in progress. A lane is closed intermittently. From 8:00PM CDT to 5:30AM CDT on weekdays. Until April 25, 2030 at about 5:30AM CDT.

*Comment: Grimes RCE (800-251-2707) - Polk County*

 **IA 415 northbound: Right lane closed.**  
*Updated Last Wednesday at 12:42 PM CDT by Iowa DOT*

*Verified by smart device*

Between I-80 (1 mile north of Des Moines) and Northwest 54th Avenue (1 mile south of Saylorville). The right lane is closed due to road construction work. Until September 28, 2023 at about 4:00PM CDT.

Full schedule below:

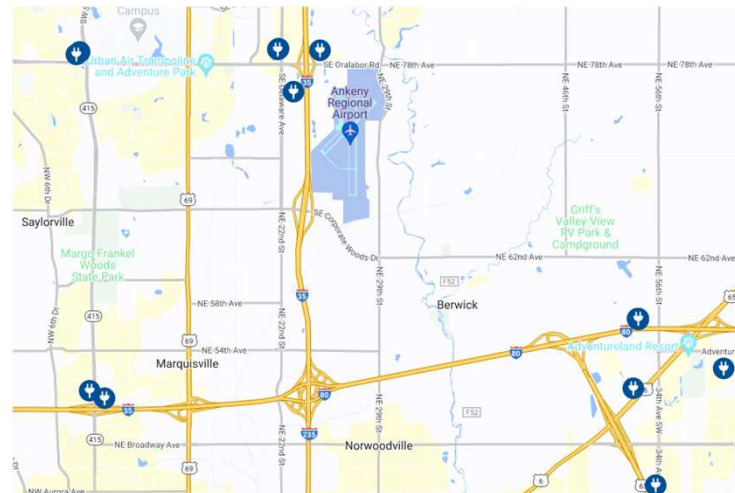
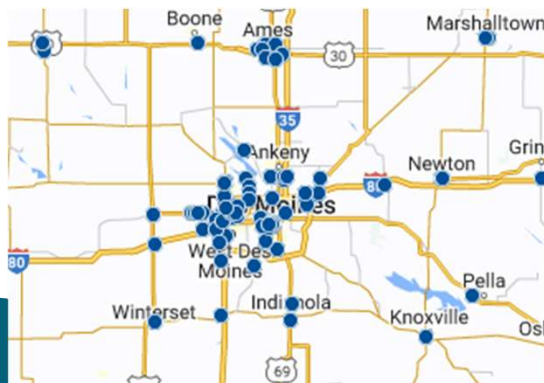
- July 28, 8:00AM - September 28, 4:00PM





# EV Charging stations

- ❖ People are changing how they get from A -> B.
- ❖ Locations near search route will appear in search list.
- ❖ Using the data from the National Renewable Energy Library that provides an [open-source API](#)
  - Can see a map of these locations [here](#).



**Johnston Hy-Vee**

Charger Connectors

CHADEMO (Fast)

J1772COMBO (Fast)

2

Total DC Fast Chargers

5750 Merle Hay Rd,  
Johnston, 50131

Address

24 hours daily

Hours of Operation

Johnston Hy-Vee

This satellite view is for visual reference only and does not match the real-time charging port availability.

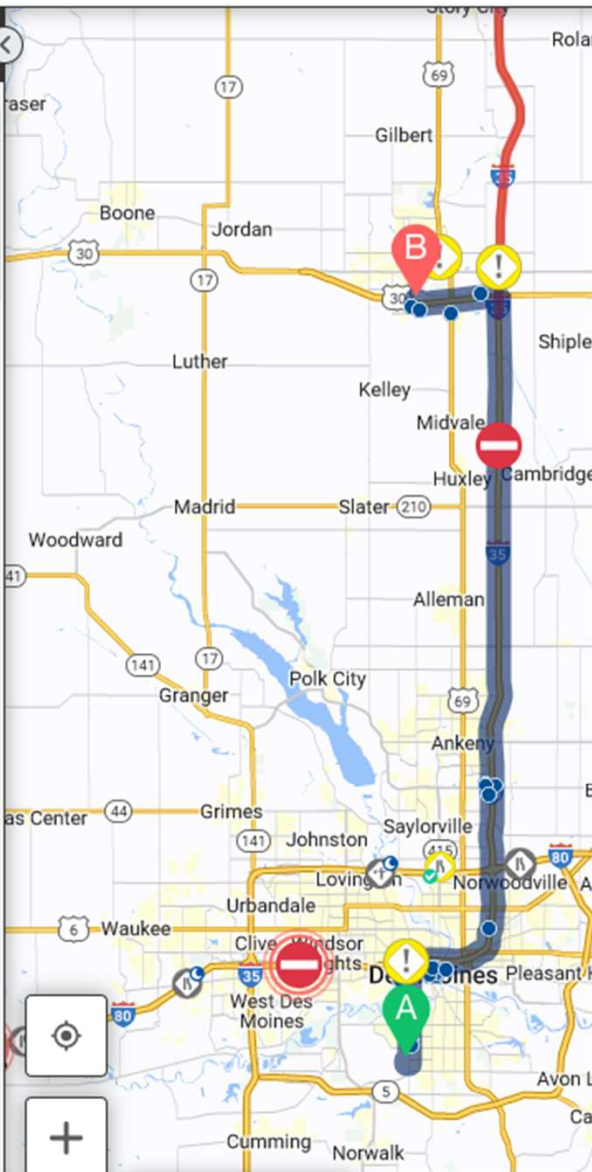
Access:	Information Unavailable
Charging Network:	SHELL_RECHARGE
EV Charging Levels:	DC Fast Charger: 2
Payments Accepted:	Information Unavailable
EV Pricing:	Information Unavailable
Restrictions:	Information Unavailable
Phone Number:	855-900-7584
Site URL:	<a href="#">Johnston Hy-Vee</a>
City:	Johnston
Address:	5750 Merle Hay Rd, Johnston, 50131

← Clear Search      Statewide

Favorite      **30 Results Terminal, 5800 Fleur Dr, Des Moines, IA 50321, USA To Ames, IA 50011, USA Driving**

Results    Directions    EV Charging

- Des Moines Fleur HyVee**      Add to Route  
4605 Fleur Dr, Des Moines, 50321  
2 Chargers    CHADEMO    J1772COMBO
- FAREWAY PARKING WAKONDA1**      Add to Route  
4301 Fleur Dr, Des Moines, 50321  
1 Charger    J1772
- Central Iowa Power Cooperative**      Add to Route  
2600 Grand Ave, Des Moines, 50312  
2 Chargers    J1772
- DES MOINES DES MOINES 3**      Add to Route  
203 Grand Ave, Des Moines, 50309  
1 Charger    J1772



# Commercial Vehicle Mode



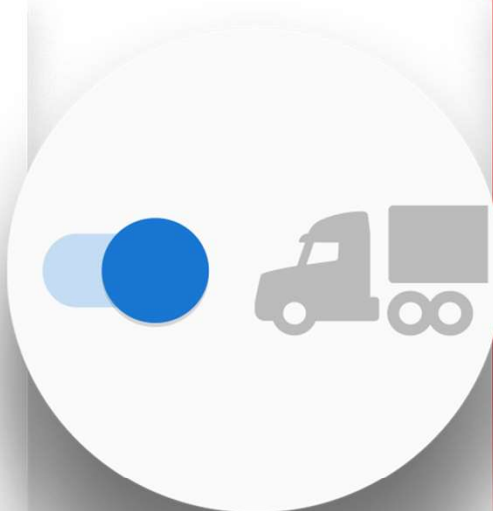
## IA 117 southbound: Road construction.

Updated March 11 by Iowa DOT

Between County Road F48 and IA 163 (near Prairie City). Road construction work is in progress. Look out for temporary traffic lights. There is a height limit in effect. There is a width limit in effect. Height limit 15'0". Width limit 15'0". Until June 17, 2022 at about 4:00PM CDT. Full schedule below:

- March 21, 7:00AM - June 17, 4:00PM

*Comment:* Marshalltown RCE (800-251-2706) - Jasper County



## IA 117 southbound: Road construction.

Updated March 11 by Iowa DOT

Between County Road F48 and IA 163 (near Prairie City). Road construction work is in progress. Look out for temporary traffic lights. **There is a height limit in effect. There is a width limit in effect. Height limit 15'0". Width limit 15'0".** Until June 17, 2022 at about 4:00PM CDT. Full schedule below:

- March 21, 7:00AM - June 17, 4:00PM

*Comment:* Marshalltown RCE (800-251-2706) - Jasper County



# Telling a Story - Construction

We try to mashup data on the map to help tell a traffic story, so users can make better decisions.

**IOWA DOT 511 IOWA STATE PATROL**

Search Iowa 511 website (e.g. cameras on I-80)

← Clear Details    Statewide

**⚠ I-80 westbound: Entrance ramp closed.**  
Updated December 27 by Iowa DOT

At Entrance ramp from 60th Street. The entrance ramp is closed due to road construction work. A detour is in operation. See map for detour(s). Until June 3, 2024 at about 5:00PM CDT.

Full schedule below:

- June 25, 2023, 8:00PM - June 3, 5:00PM

Comment: Creston RCE (877-226-8109) - Dallas County

**I-80: DM - I-80 @ J...**    **I-80: DM - I-35/80/...**

Nearby Info

7:59

**I-235 in both directions: Night time construction work.**  
between Des Moines

arquisville    Monarch Hwy    NE 22nd St    80    235    6    6    1st Hubbe

Norwoodville

id Ave    Ave    Hull Ave    St

**1DD - I-235 @ MM 13 (IWZ 3113) 2 of 3**

South 100 - I-235 W @ MM 13 (IWZ3113) 04/12/2024 09:58:09

Last updated: Apr 2, 2024 at 7:51 PM CDT

Between Exit 12: US 6: East Euclid Avenue

# Telling a Story - Winter

We try to mashup data on the map to help tell a story, so users can make informed decisions during winter storms.



## IA 9: Snow on roadway.

Updated Today at 11:53 AM CST by Iowa DOT

Between IA 51 (1 mile west of the Waukon area) and IA 26 (1 mile west of the Lansing area). There is snow on the roadway. Visibility is half a mile or less.

*Forecast Weather (next 6 hours):* Chance of Light Freezing Drizzle. Expect up to 2 inches of new snow accumulation. Wind gusts of up to 25 mph are expected.

ST, ...

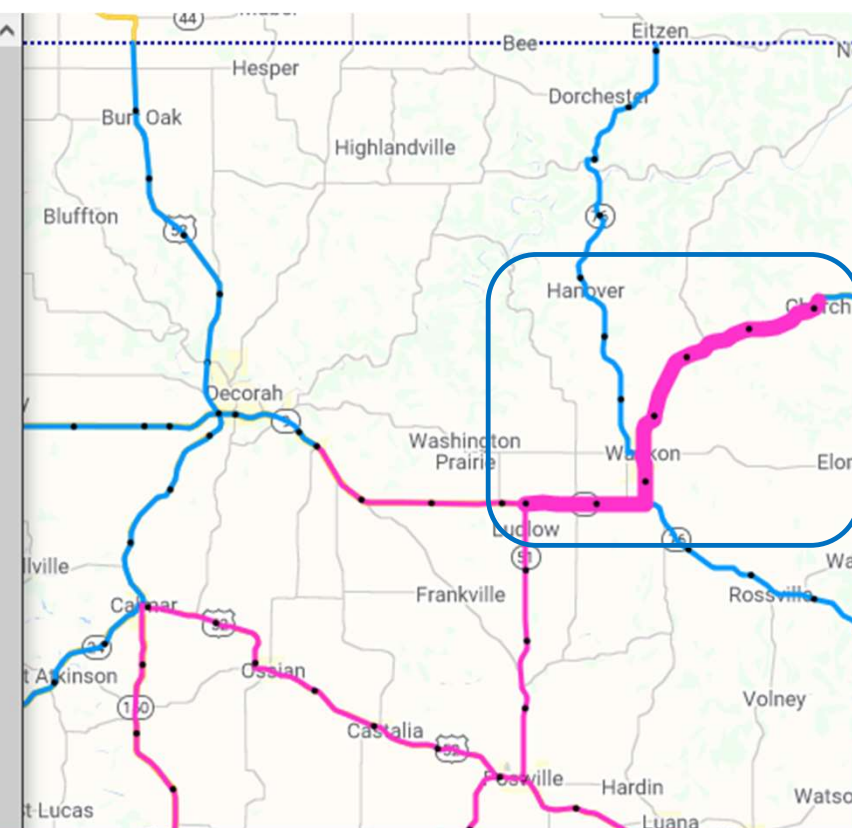
Today at 11:29 AM CST, ...



Today at 11:24 AM CST, ...

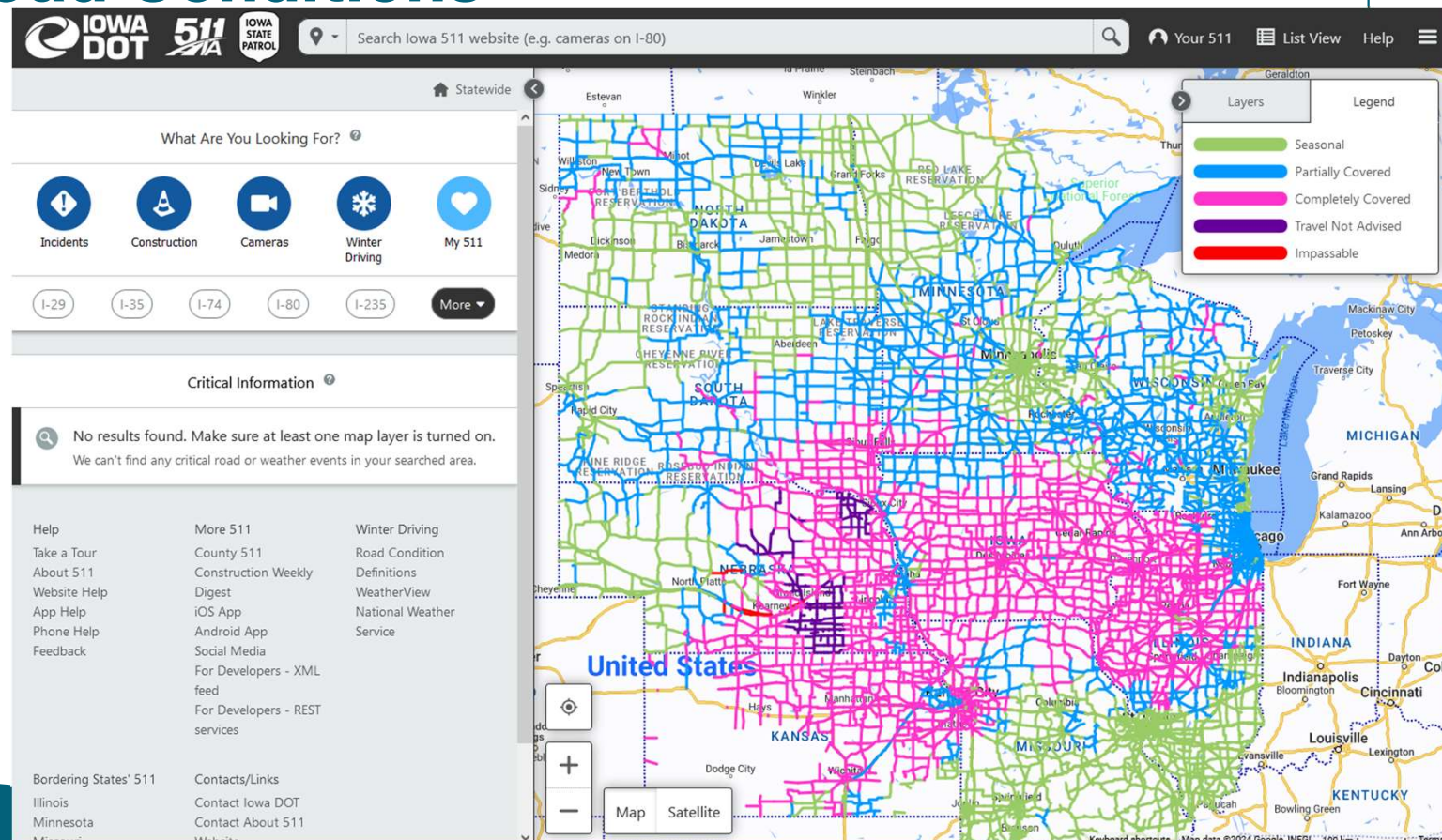


Toda



# Regional Road Conditions

- ❖ Map surrounding states' road conditions to Iowa's color scheme
- ❖ ND, SD, NE, KS, MO, IL, WI, MN
- ❖ On a separate layer.
- ❖ Getting it on the app has been challenging





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In the  
Works

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# Artificial Intelligence Summaries

Summarizing a lot of data

**Search Summary**

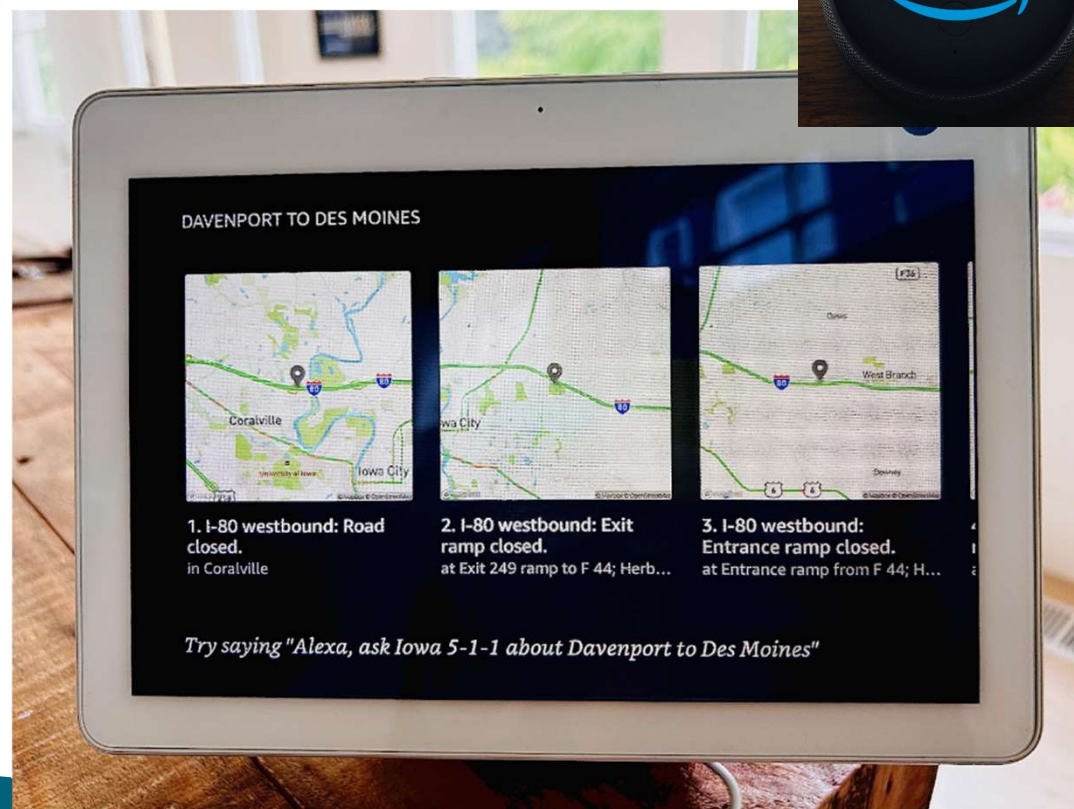
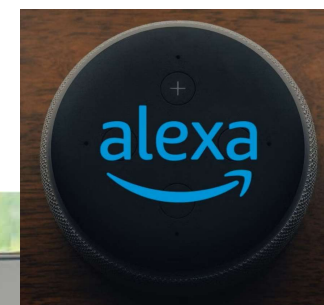
Roadway events are affecting multiple areas in and around Polk County, Iowa. Drivers should expect road closures, lane closures, shoulder closures, and changing traffic patterns at various times and locations through June 2024 due to construction and a crash. Detours are in place for some closures - see maps. Nighttime lane closures are occurring Sunday through Thursday on several routes until mid-2024. Height and weight restrictions are in place for one construction project. Allow extra travel time and pay attention to signs regarding closures and traffic shifts.

Summarizing Clustered Icons in the Tooltip

## 511 Alexa “Skill”

Another example of leveraging new-ish technology...

- Will be similar to interacting with the phone system.
- Using Natural Language
  - What are the road conditions in Des Moines?
  - Are there crashes near Ames?
- Testing using the screen showing maps for those with Amazon Show devices.
- Testing using Amazon AI engines to summarize the response for better human processing.





## Questions?

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vCard

