

City of Plano, Texas Public Works Department

Winter Storm Sanding and Brine Operations Procedures



Plano, TX “City of Excellence”

- 72 square miles
- 299,000 population, 9th largest city in Texas
- 253 Signalized Intersections
- 1,200 lane miles of arterial streets
- DFW does not historically get a lot of snow, but we do get ice, and 1 inch of ice can paralyze the metroplex for days



Previous Sanding Process:

- Static, paper maps were created through GIS and distributed to drivers for reference during winter storm events.
- Crews used radios, phones, and written lists to provide sanding activity updates.
- Challenges:
 - No real-time tracking of hundreds of locations
 - No data confirming last checked or sanded, transfer of information to the next shift was inconsistent and/or inaccurate
 - Critical facilities (Fire stations, 911, etc.) were frequently calling to ask if we sanded their parking lot approaches and exits

New Sanding Plan – Digital Maps:

Used existing OpenGov data system to create sanding zones, routes, and tracking system.

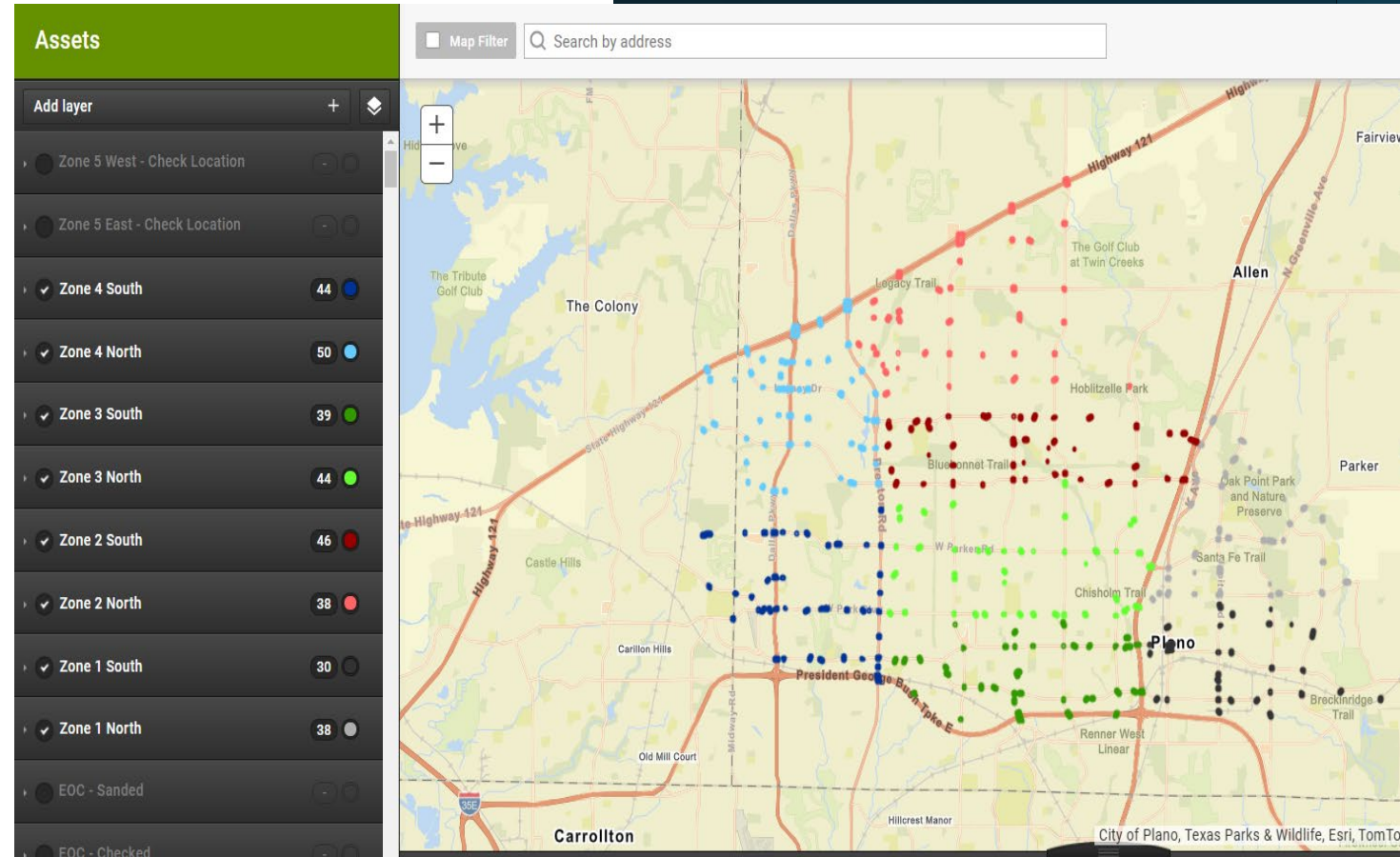
- Divided 418 city locations into 5 Zones with 2 sanding routes per zone.
- Use existing Crew Leader tablets in sanders to provide updated data
- Mapped location dots: colors change in real time on the map to indicate status:
 - RED dot: not checked or sanded
 - YELLOW dot: checked
 - GREEN dot: sanded
- Colors reset on tablets at the start of every 12-hour shift.

New Sanding Process Continued:

- Each emergency operations 12-hour sanding shift will have to check or sand each of the 418 locations in the 5 Zones
- Sanding maps viewed by management and the Emergency Operations Center are updated in real-time during the winter storm event.
- Sanding data can be compiled from OpenGov for post-event reporting.
- Sanded locations are sent to the street Sweeper contractor and internal PW street sweeper operator

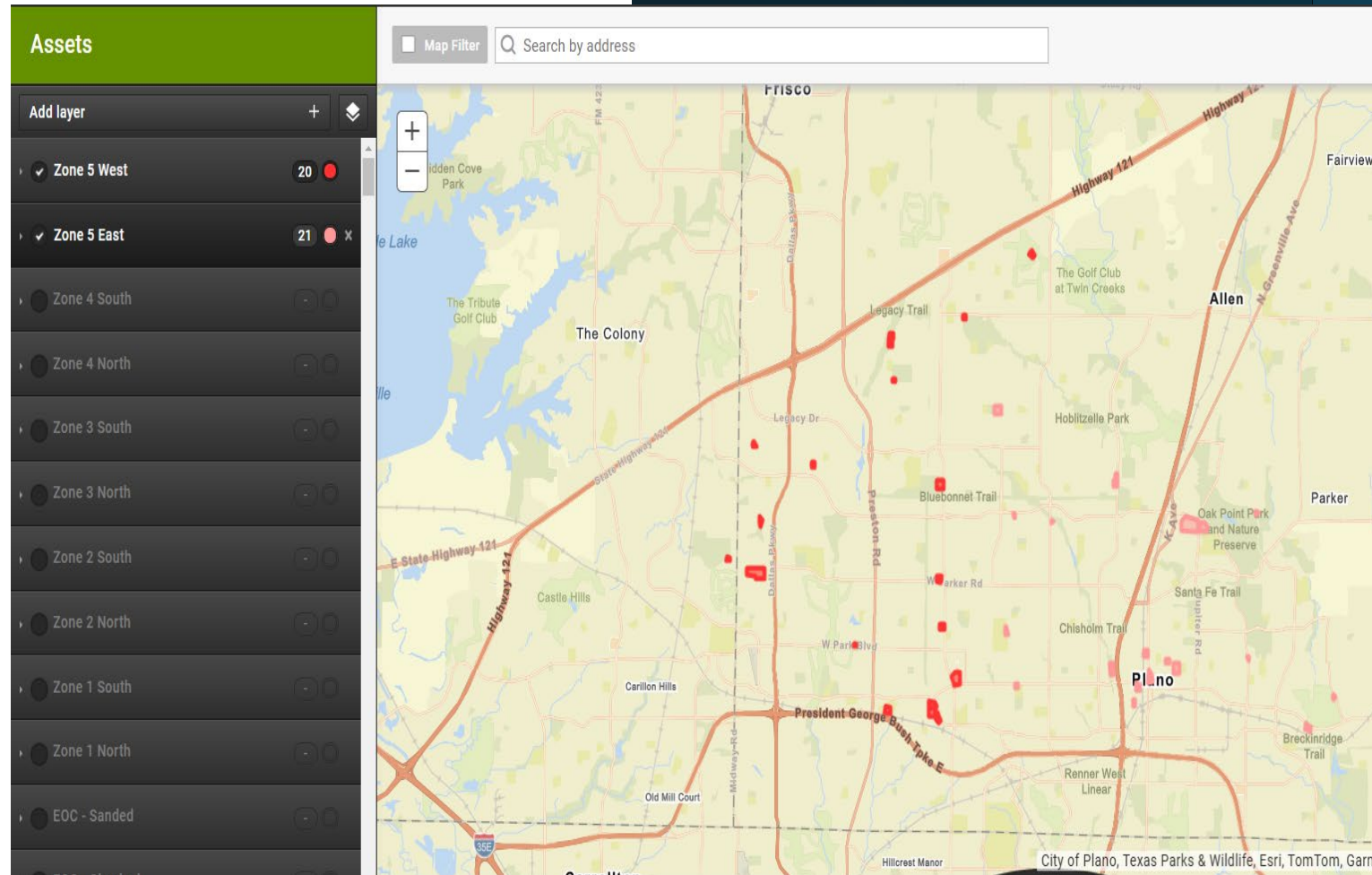
Zones 1-4: Signalized Intersections and Bridges

- Each of the 4 sanding zones has 2 separate routes
- 8 trucks/sander inserts are operated by 8 Class A CDL drivers and 8 data assistants



Zone 5: City Facilities

- Zone 5 contains 2 routes including: city facility parking lots, City Hall, EOC, Police and Fire Stations, Hospital emergency room lanes, and warming stations
- 2 smaller trucks/sander inserts operated by 2 Class A CDL drivers and 2 data assistants



Tablet Data Entry:

- Data for each mapped location is added by the tablet assistant operator:
- **Action:** sanded or checked
- **Operator:** who enters the data
- **Driver:** who is driving the sander
- **Equipment:** vehicle number
- **Date and Time**

Create Sanding Operation

Sanding Operation

Action

Sanded

Operator

19001

Zachary Williams

Driver

18992

Grant Henry

Equipment

11308

Date and Time

Feb 4, 2026

3:58 PM

Notes

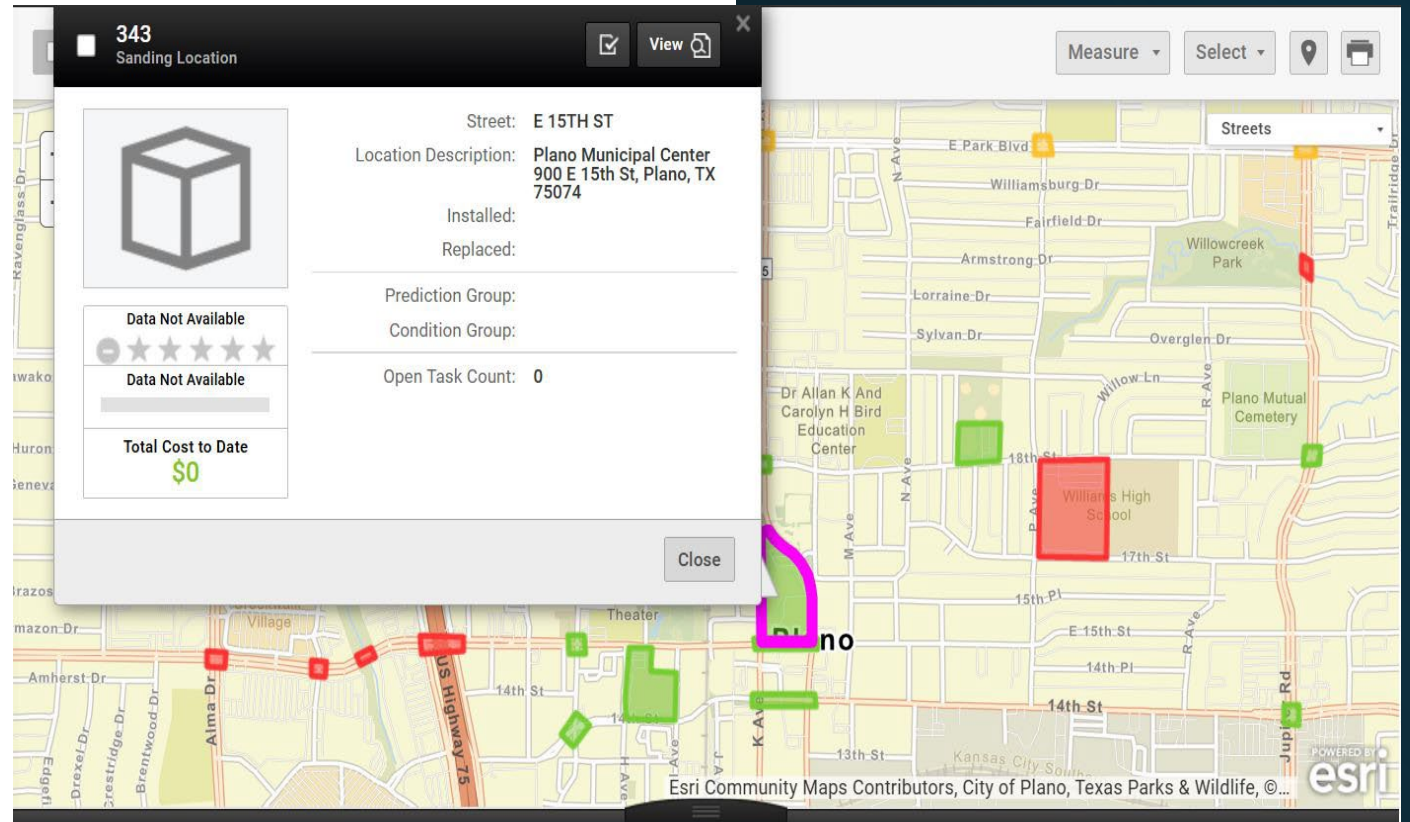
Enter Text

Cancel

Save

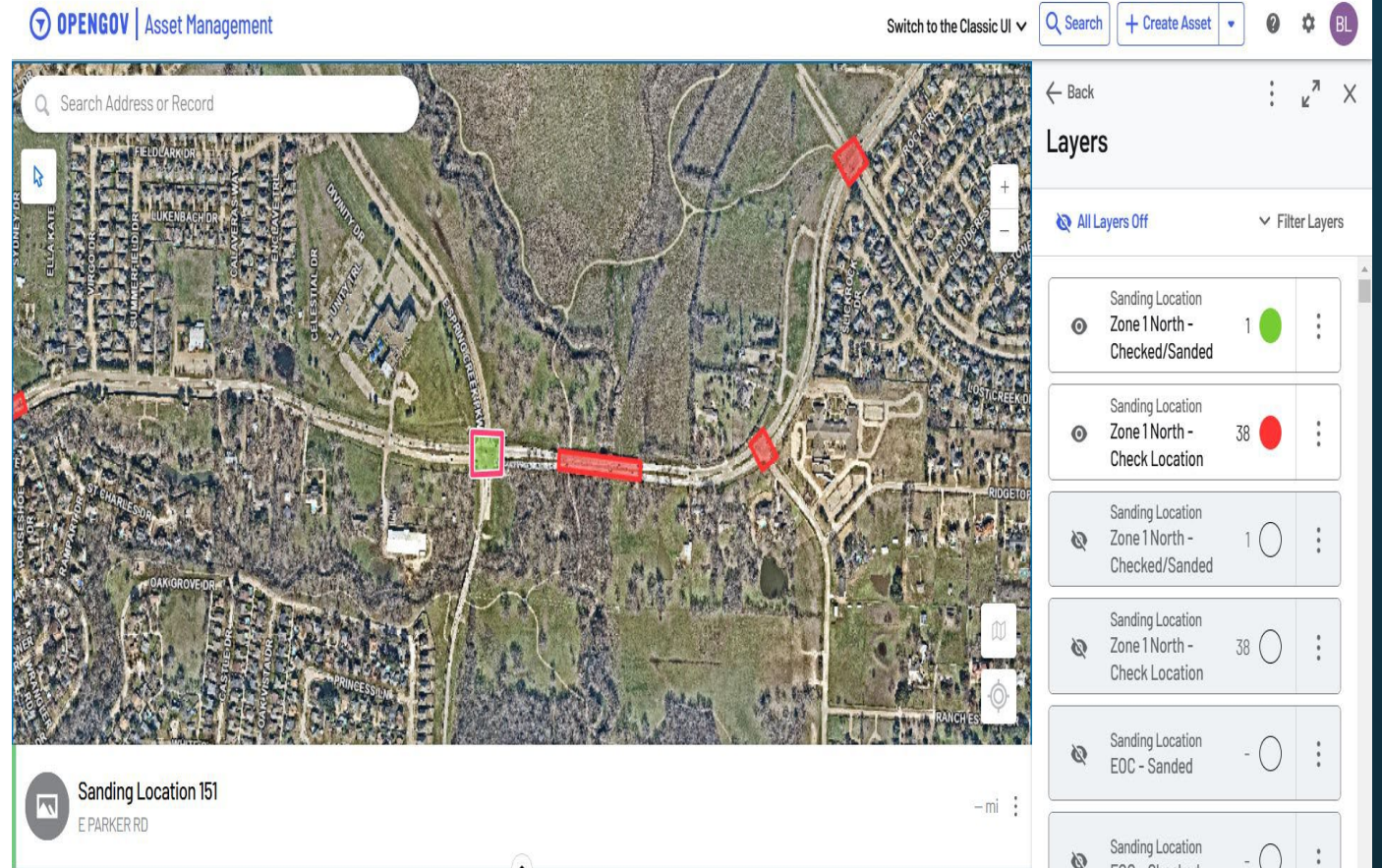
Individual Location Information:

- “Clicking” an individual location on the sanding map in OpenGov will show the history of checked or sanded activity during the storm event.



Sanding Routes: Mobile View

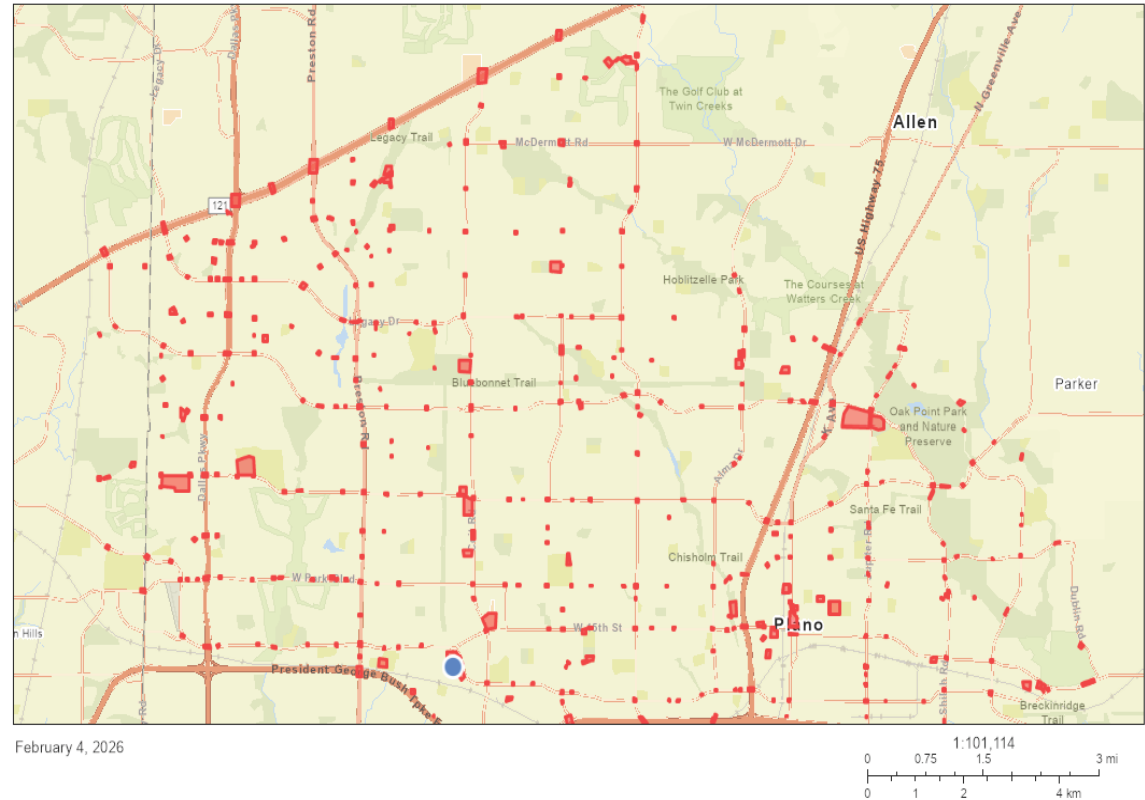
- The tablet operator can look at their route and see the locations they have:
- Sanded: **Green** dots
- Checked: **Yellow** dots
- Not Inspected: **Red** dots



Winter Storm: Jan 22-28, 2026

- Sanding route map that the EOC, Shift Supervisors, management, and sanding crews can view.
- At the start of the first shift, none of the locations had been inspected: Red dots for all locations.

Sanding Operation - 1/22/2026 7:00AM

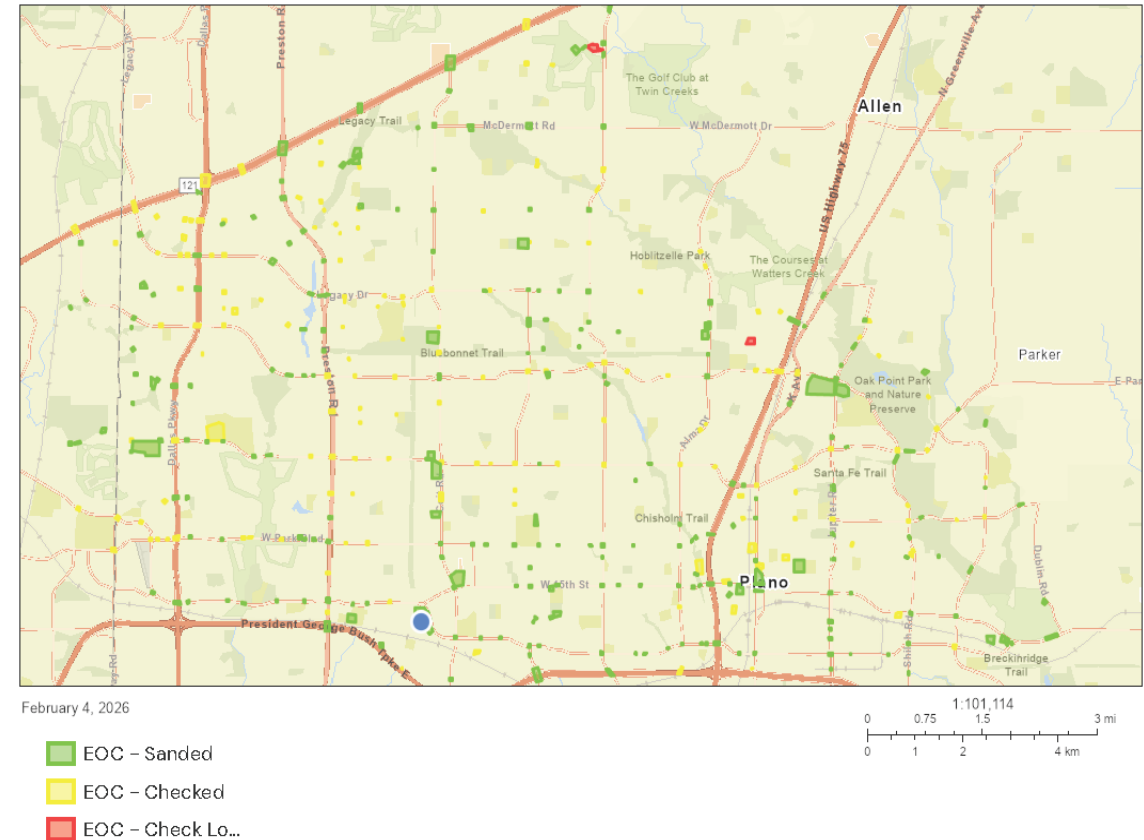


EOC - Check Lo...

Winter Storm: Jan 22-28, 2026

- Over the six-day storm event, Plano experienced ice, then snow (which covered our sand) and then a return to ice.
- At the end of the Jan 28th day shift, 70% of mapped locations had been sanded

Sanding Operation - 1/24/2026 7:00PM



Post-Winter Storm Sanding Operations Details:

- Locations were sanded a total of 1457 times and checked over 2200 times. This data could not have been compiled using the old process.
- Nearly 400 tons of sand was applied; amounts are now tracked in OpenGov per sander unit.
- No tablet failures or map issues during the event.
- Crews, Supervisors, EOC staff, and City Management gave positive feedback on our reporting and tracking process.
- Fire and Police were now aware of when their facilities were sanded.
- Data on facilities sanded was used to prioritize sweeping efforts.
- PW restocked 400 tons of sand and 300 tons of road salt.

Brine Operations Equipment:

- First deployment of brine in City of Plano history.
- \$275,000 investment in new brine production and application equipment.
- Brine equipment was delivered and setup three days prior to the Jan. 22nd storm event.
- Brine Operations ran from Jan 22 - Jan 23, twenty-four hours prior to the start of sanding shifts.



Brine Operations Equipment:

- Brine tanks are inserted into 4 large and 2 small PW trucks: (four) 1900-gallon tanks and (two) 800-gallon tanks
- The brine computer is detached and stored in our facility when not in use. This is the most expensive part of the operations.
- We are currently researching all-weather housing options for this unit





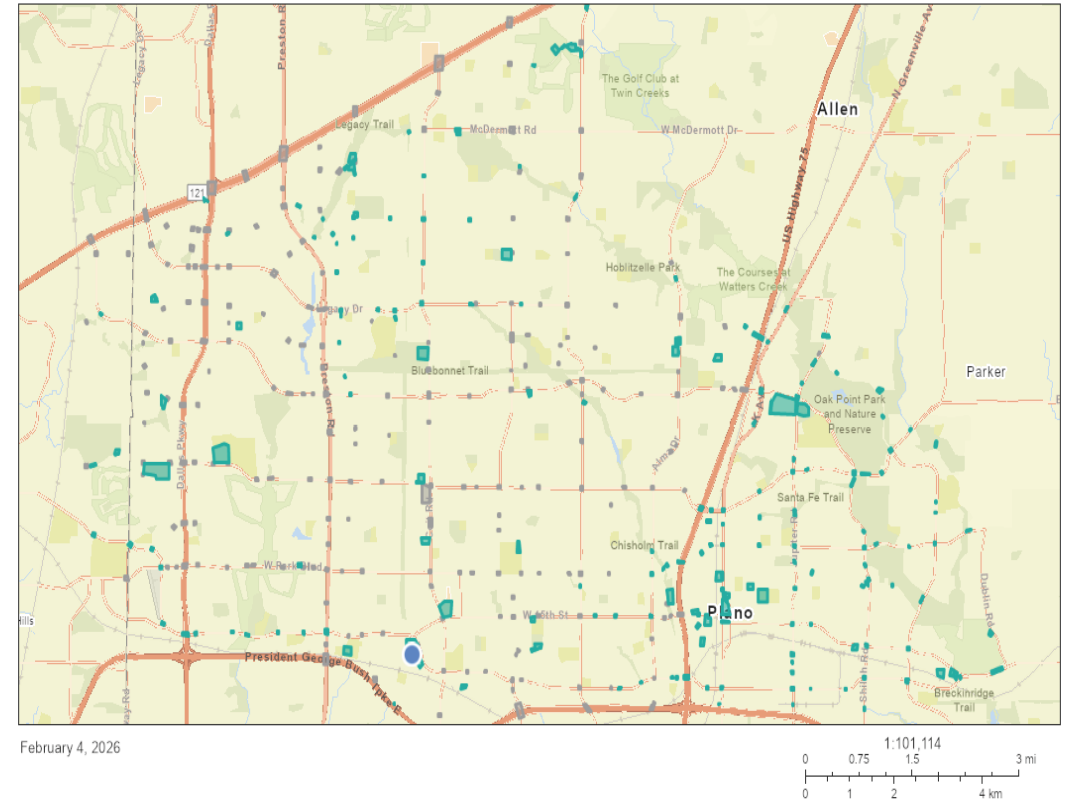
Brine Operations Equipment:

- Brine tanks are stored at the PW facility and will be lifted off the ground on stands
- (two) 10,000-gallon brine storage tanks have been placed next to the brine maker
- 24 pallets of Solar Salt was purchased to fill both brine tanks: cost \$5000

Winter Storm: Jan 22-28, 2026

- Brine operations are tracked via OpenGov (similar to sanding).
- **Gray Dots:** Locations identified for brine application.
- **Blue Dots:** Locations successfully brined.
- 40% of priority locations were completed during this initial run due to equipment issues, which have since been corrected.

Brining Operation - 1/23/2026 7:00PM



Brine Operations: Lessons Learned

- Timing is everything!!
- Streets crews and Fleet needed 2-3 weeks to have the vendor setup, train, and troubleshoot equipment.
- Plastic parts and heavy equipment do not work well together. Handle all equipment with care!
- Brine can be made and stored quickly given the proper conditions.
- Stockpile brine salt at least 1-2 months ahead of the winter season. Store brine salt pallets under cover.
- Ensure that crews are trained ahead of the winter season in brine making, brine spreading, and maintenance of brine equipment.
- 16 PW crew members were selected to obtain Class A CDL tanker endorsements for brine operations.

Sanding and Brine Operations Summary:

- Over the past two years, the Plano Public Works Department has reinvented our Winter Storm Emergency Operations practices to streamline sanding and brine processes and procedures.
- The data is easy to enter, track, and view in real time.
- Any level of city management can view operations progress during the storm event.
- PW crews, city management, EOC, Police, and Fire have complimented our new system for ease of use and reporting
- After Action Reports are accurate and can be generated with little effort.

City of Plano, TX Public Works Contact information:

Erik Ferner

Public Works Operations Manager (Streets, Drainage, Traffic)

eferner@plano.gov

972-769-4141

Joe Riley

Public Works Superintendent (Streets and Drainage)

jriley@plano.gov

972-769-4345