

# Wyoming Department of Transportation Migrates to Postgres for Better Uptime and Performance



Inside the Wyoming Department of Transportation (WYDOT) the GIS/ITS team hosts a variety of applications and databases for collecting and distributing road and travel information. As you can imagine, road and travel information is an integral public service. With web cameras, sensors, road hazard reporting, road maintenance, and dynamic messages for the public - the database infrastructure at WYDOT is a critical system. WYDOT's GIS/ITS team has been working with Crunchy Data during their migration from their Oracle database to Postgres on self-hosted hardware and have seen drastic improvements ever since.

## Oracle Challenges

WYDOT's GIS/ITS team was traditionally an Oracle database shop, using Oracle in two data centers to run their backend operations. They are comfortable with self-hosting inside their own private data centers but struggled with the databases.

## Uptime

WYDOT had database uptime inconsistency for years. During every storm, they would be forced to restart Oracle databases, sometimes multiple times a day. What was worse, was that the database was shared amongst internal staff and public facing applications, so weather would impact database uptime during the worst possible situations for communication.

## Scaling & Cost

WYDOT knew they wanted to expand their databases to offer new applications and separate the internal systems from the public ones. But because of the prohibitive cost, they were never able to move beyond the simple two-database system that they'd always had.

## Lack of Support

The lack of proactive support on the Oracle system made it hard to make any progress or improvements to the system. Updates often went longer than they should.

## Discovering Postgres

When WYDOT's GIS/ITS team worked with an open source road information project that was backed by Postgres, and noticed that this project's database never seemed to go down, it tipped them off to take a closer look at Postgres.

“When we saw the kind of stability Postgres offered, we knew we wanted to consolidate around Postgres instead of Oracle”

## Vince Garcia

Program Manager  
WYDOT



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The WYDOT team began their research and consideration of how they could move to Postgres. Their applications were mainly in Node.js, Express, Java and .Net and they knew they could easily connect Postgres to their applications.

Not long after, WYDOT began looking for support providers to help them plan their transition. They looked at quite a few database companies and ultimately decided to work with Crunchy Data. They were excited about Crunchy Data’s experience with enterprise databases and knew they could depend on the software as well as the professional services to help them set up their cluster.

## Surprisingly Easy Migration

WYDOT knew they had a big project ahead of them to train their team on Postgres and move their databases to a new platform after years of being on Oracle. They did have to move some of their PL/SQL functions to node but that was the hardest part. The rest of the migration, including the actual data move, turned out to be pretty easy.

“It was much easier to move to Postgres than we thought it would be.”

**Suzie Roseberry, Developer, WYDOT**

WYDOT said the learning curve was pretty minor for their team. During this same transition from Oracle to Postgres, they also moved to new operating systems, using LXD with Ubuntu. WYDOT was able to change over OS and database platforms in less than 3 months.

## A New Era of Stability for WYDOT

### Support

WYDOT was able to leverage Crunchy Data’s Solutions Architect team to help with building and designing the new system. They also check-in with the team quarterly to see how things are and check in on versions, security updates, and other upcoming updates.

“The team always makes sure we know where we stand, if there are any vulnerabilities, and if we need to make any changes. We appreciate how proactive they are.”

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“One of the things we like most about working with Crunchy Data is that the support is so much better. We really like the quarterly check-ins. The team always makes sure we know where we stand, if there are any vulnerabilities, and if we need to make any changes. We appreciate how proactive they are.”

**Vince Garcia, Program Manager WYDOT**

## New Cluster Configurations

WYDOT was able to create much larger and more sophisticated clusters with Postgres than they could with Oracle. They have development machines, internal databases, and public read replicas. They're also able to take advantage of streaming replication to keep all of their clusters in-sync. This new setup is incredibly stable and much more secure.

“What we have now we could never have afforded with Oracle”

**Suzie Roseberry, Developer, WYDOT**

## No Downtime

WYDOT is also experiencing less downtime and manual restarts. They're thrilled with the stability that Postgres offers.

“We don't have to fear every storm that comes at us. We used to have to wait for things to go down and manually restart our database, several times a day during critical storm periods. Once we set up Postgres, we just sit back and watch it work.”

**Vince Garcia, Program Manager WYDOT**

## Cost Savings and Performance

Not only does the new database have more features, and is more stable, but the price to performance is making everyone smile. WYDOT is able to expand their database by quite a bit and still save on hardware space.

“We are really happy with Postgres' performance. We have four times more database capability and we're only using half the hardware than we were before. This is due to a combination of LXD and Postgres.”

**Suzie Roseberry, Developer, WYDOT**

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WYDOT is getting a multi-cluster database, read only replicas, internal tools, developer machines for less they were paying for a single instance of Oracle.

By choosing PostgreSQL, WYDOT was able to overcome the challenges of high costs, limited flexibility, and scalability issues with Oracle by moving to Postgres. Their migration was easy and straightforward with Crunchy Data as their partner. They're currently enjoying expanded features, reduced cost, and greater reliability for their database operations.

"We have very little Oracle left now. We're really happy with the move to Postgres and Crunchy Data"

**Vince Garcia, Program Manager WYDOT**

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we could never have  
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