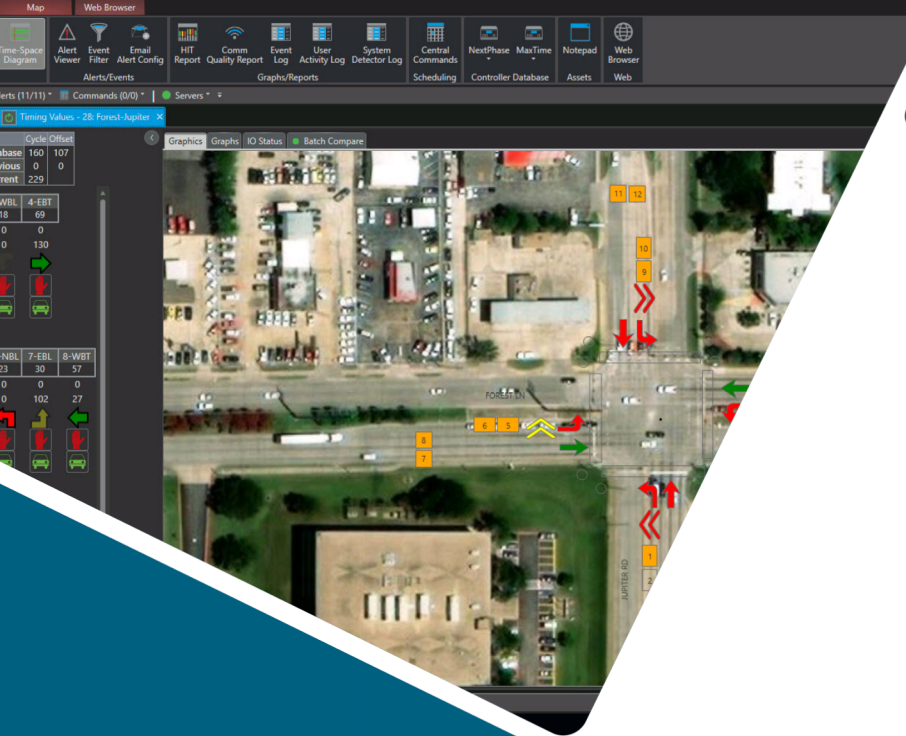


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Kimley»»Horn



TECHNOLOGY FORUM

Castle Rock / CDOT ATSPM Overview

»»KITS

A Kimley-Horn Software Solution

»»Kadence

A Kimley-Horn Software Solution

»»Traction

A Kimley-Horn Software Solution

Agenda

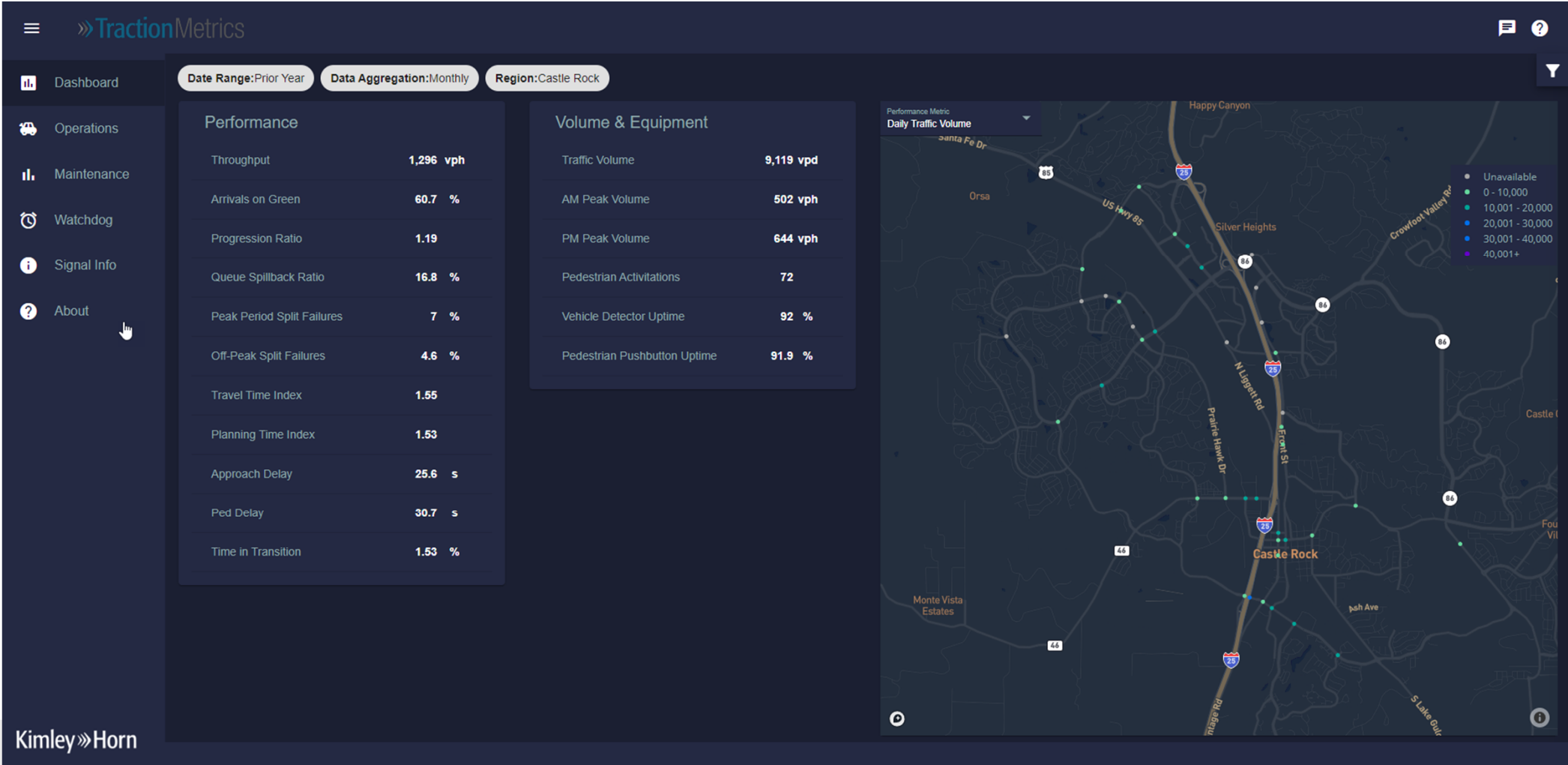
- Project overview
- Architecture
- Stakeholder engagement
- Future outlook

Project Overview

Colorado Regional ATSPM Dashboard

- Regional ATSPM deployment for Castle Rock and CDOT signals
 - Traction Metrics + UDOT ATSPM
- Re-timing on 18 Town of Castle Rock signals
- ATSPM customizations
 - Percent time in transition
 - Aggregate approach delay for vehicles and peds
 - Integration of Bluetoad data for calculating PTI and TTI
- Partnership with CDOT and Cloudreach to build a regional ATSPM repository

Traction Metrics Regional Dashboard



Open-source ATSPM Supplement

Measures ▾ Reports ▾ Log Action Taken Links ▾ FAQ About Register Log in

Signal

Signal Selection

Signal ID: Factory Shops Blvd @ New Memphis Ct

Signal List

Signal Map

Area: Jurisdiction:
Region: Metric Type:




Chart Selection

Metrics List

- Purdue Phase Termination
- Split Monitor
- Pedestrian Delay
- Preemption Details
- Timing and Actuation
- Purdue Split Failure
- Turning Movement Counts**
- Approach Volume
- Approach Delay
- Arrivals on Red
- Purdue Coordination Diagram
- Left Turn Gap Analysis
- Wait Time

Turning Movement Counts Options

Thru Movement Y-axis Max:
Turn Movement Y-axis Max:
Volume Bin Size:
 Show Movement Type Volume
 Show Total Volume
 Show Data Table

Date Selection

Start Date:
End Date:

« October 2023 »

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

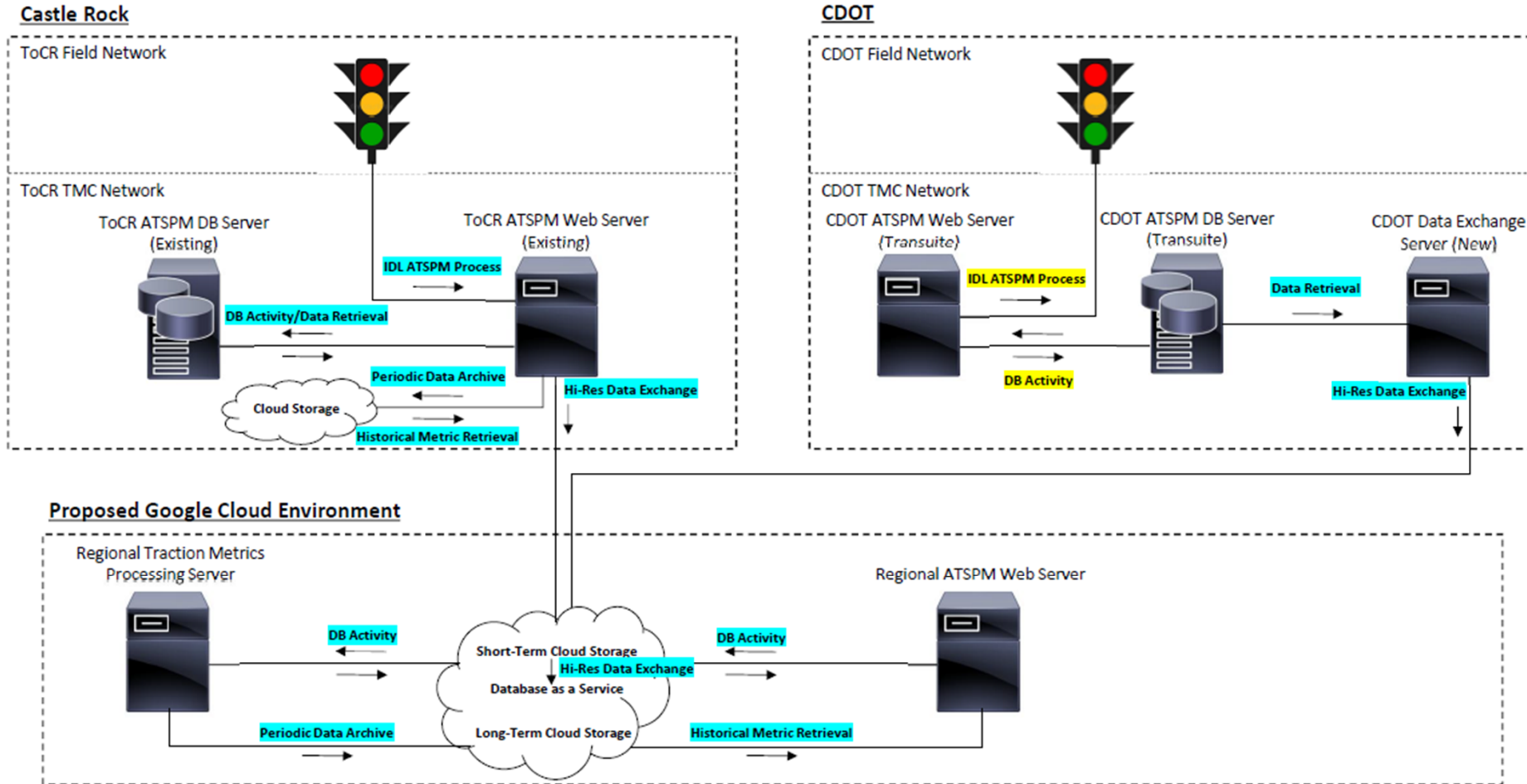
The background is a solid teal color. It features several abstract, overlapping geometric lines in a slightly darker shade of teal. These lines include a vertical line on the right side, a diagonal line from the top-left towards the bottom-right, and another diagonal line from the top-right towards the bottom-left. The lines intersect to create various geometric shapes and patterns.

Architecture

Fusing Data from Disparate Systems

- Regional ATSPM system deployed in Google Cloud environment (GCP)
- Hi-resolution data exchange deployed on each agency network
- Data from each agency merged within the regional ATSPM system
- Coordination with IT departments and other ATSPM providers

Basic System Architecture



Blue — Kimley-Horn managed processes
 Yellow — Existing, non-Kimley-Horn managed processes

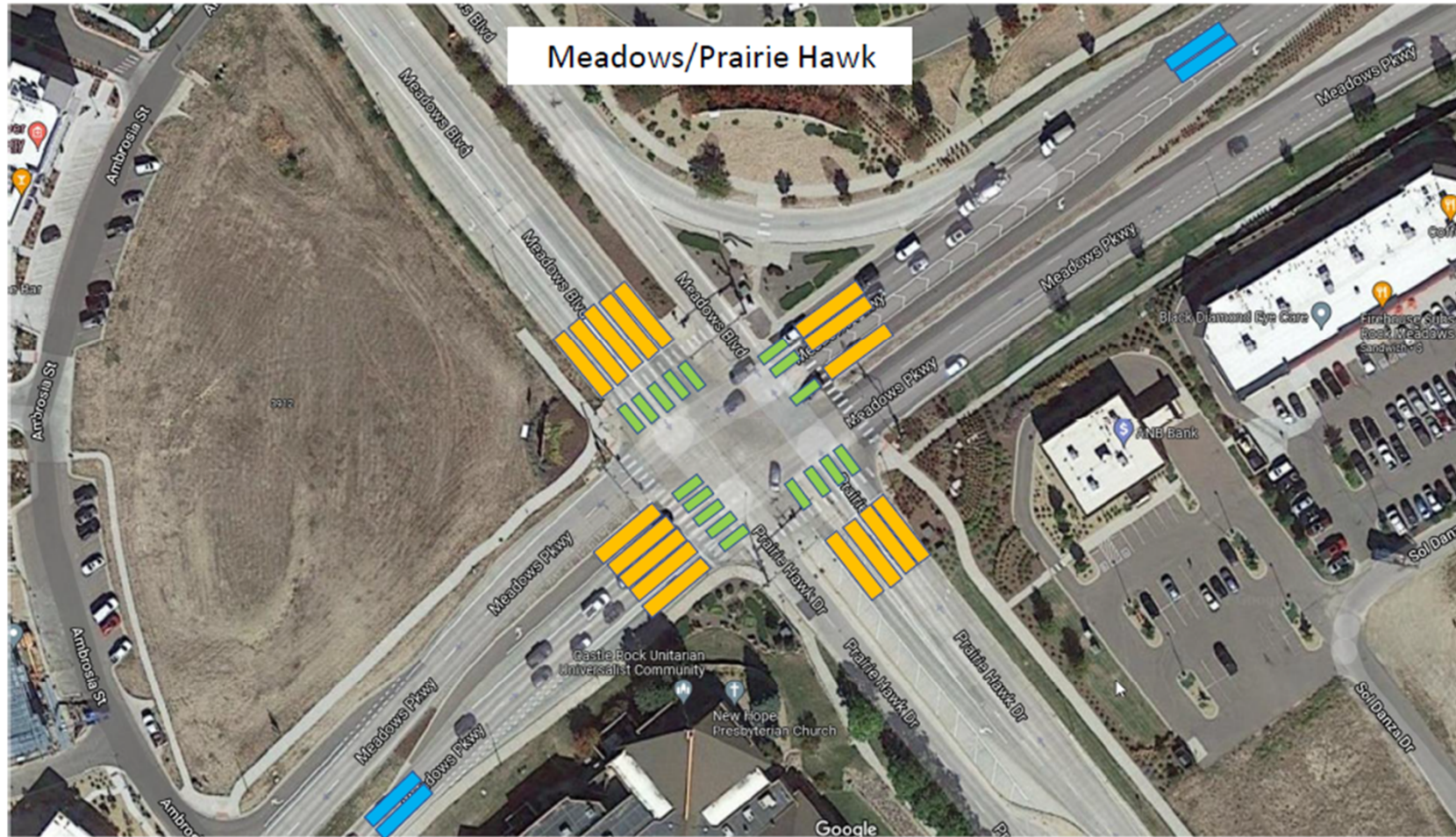
The background is a solid teal color with several abstract, darker teal lines. One line is vertical, another is horizontal, and a third is diagonal, creating a grid-like structure. A fourth line is diagonal and intersects the others, forming a complex geometric pattern.

Stakeholder Engagement

Working Within Different Environment and Policy Constraints

- Castle Rock environment
 - Econolite controllers
 - Existing UDOT open-source ATSPM environment
 - Castle Rock IT policies
- CDOT environment
 - Maxtime controllers
 - Existing Transuite ATSPM environment
 - CDOT IT policies
- Google cloud environment
 - GCP specific storage buckets
 - Coordination with cloud solution consultant

Signal Configurations



After stop bar count detectors – lane-by-lane, ideally sized 6'-10'



Presence detectors – lane-by-lane, ideally sized 30' or less



Advance count detectors – lane-by-lane, ideally sized 6', 200' – 300' set back, or at exit of upstream signal

Future Outlook

Colorado Statewide ATSPM Dashboard

- Further coordination with CDOT to populate remaining CDOT signals
- Swim lane charts to solidify roles and responsibilities
- Documentation of various ATSPM integration options
- Local agency outreach
- Research into other multi-jurisdictional ATSPM deployments

Thank You!

