

Connecticut's Traffic Records System

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Traffic Records Coordinating Committee

September 13, 2023

High-quality traffic records data is critical to effective safety programing, operational management, and strategic planning

CONNECTICUT TRCC MEETING



MEETING
AGENDA

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- Introduction
- Crash Repository for Analytics, Statistics & History
- FY2024 Section 405c Grant Application Update
- Announcements
- Open Forum
- Meeting Adjourned

CONNECTICUT TRCC MEETING

CRASH
REPOSITORY
FOR
ANALYTICS
STATISTICS
&
HISTORY

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CRASH REPOSITORY FOR ANALYTICS,
STATISTICS & HISTORY

Aaron Nash & Jennifer Pawelzik.
CT Transportation Research Center



CT CRASH

Crash Repository for Analytics,
Statistics, and History

TRCC Sept 2023

Outline

- ▶ Introduction
- ▶ Business Requirements
- ▶ Development
- ▶ Demo
- ▶ Future Development
- ▶ Q/A

Introduction - Aaron Nash

- Education
 - BS from UConn - Political Science
 - MS from CCSU - Geography
 - PhD student UConn - Geography
- Certified GIS Professional
 - 2010 - present
- GIS Project Manager
 - CT Transportation Safety Research Center
- Instructor/Lecturer
 - Adjunct Professor UConn



Introduction - Jennifer Pawelzik

- Education

- BS from - Kings College - Environmental Science
- MS from - NCSU - Geographic Information Science and Technology

- GIS Database Administrator and Programmer

- CT Transportation Safety Research Center



Phase 1 - Business Requirements

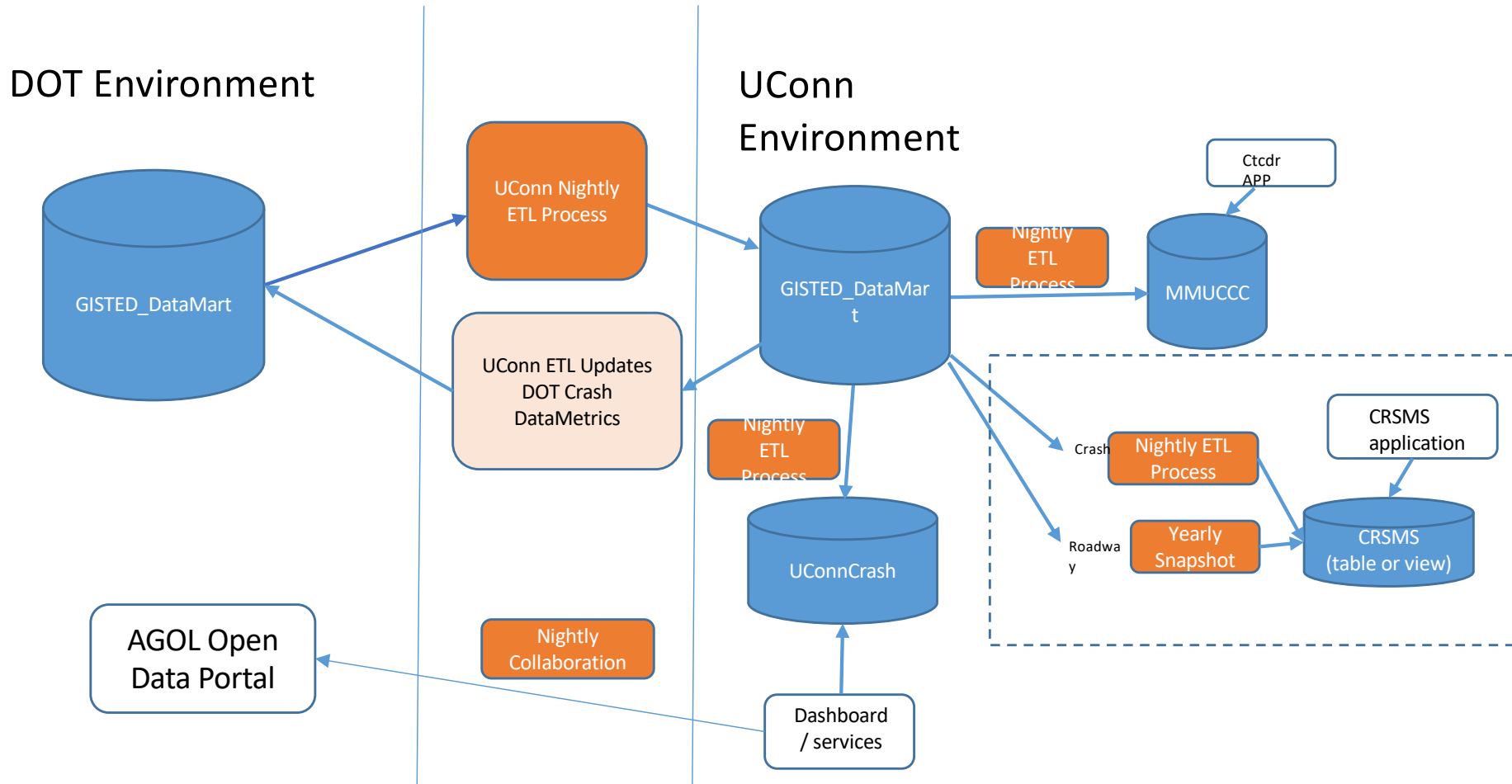
- ▶ Provide crash data on a common platform for quick access and analysis
- ▶ Web Mapping / Visualization / Query Tool
 - ▶ ESRI Dashboards
- ▶ Compliment the CTCDR - Crash Data Repository

The screenshot shows the 'Basic Crash Report' form on the UCONN Connecticut Crash Data Repository website. The form includes several sections for data selection:

- Start Year:** 2015
- End Year:** 2022
- Available Reports:** Select a Report
- Route Class:** Any, Unknown, Interstate, USRoute, State, Local
- Rural/Urban:** Any, Rural, Urban
- Town:** Andover, Ansonia, Ashford, Avon, Barkhamsted, Beacon Falls, Berlin, Bethany, Bethel, Bethlehem
- Police Agency:** Amtrak PD, Ansonia PD, Avon PD, Berlin PD, Bethel PD, Bloomfield PD, Branford PD, Bridgeport PD, Bristol PD, Brookfield PD
- CSP Troop:** A, B, C, D, E, F, G, H, I, K
- COG:** CT Metropolitan, Capital Region, Lower CT River V, Naugatuck Valley, Northeastern CT, Northwest Hills, South Central Reg, Southeastern CT, Western CT
- MPO:** Capital Region, Central Naugatuck, Greater Bridgeport, Housatonic Valley, Lower CT River V, Rural Region, South Central Reg, South Western Re, Southeastern CT
- County:** Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham

At the bottom, there is a **Report Subtitle** field, a **Generate Report** button, and a **Clear Selection** button.

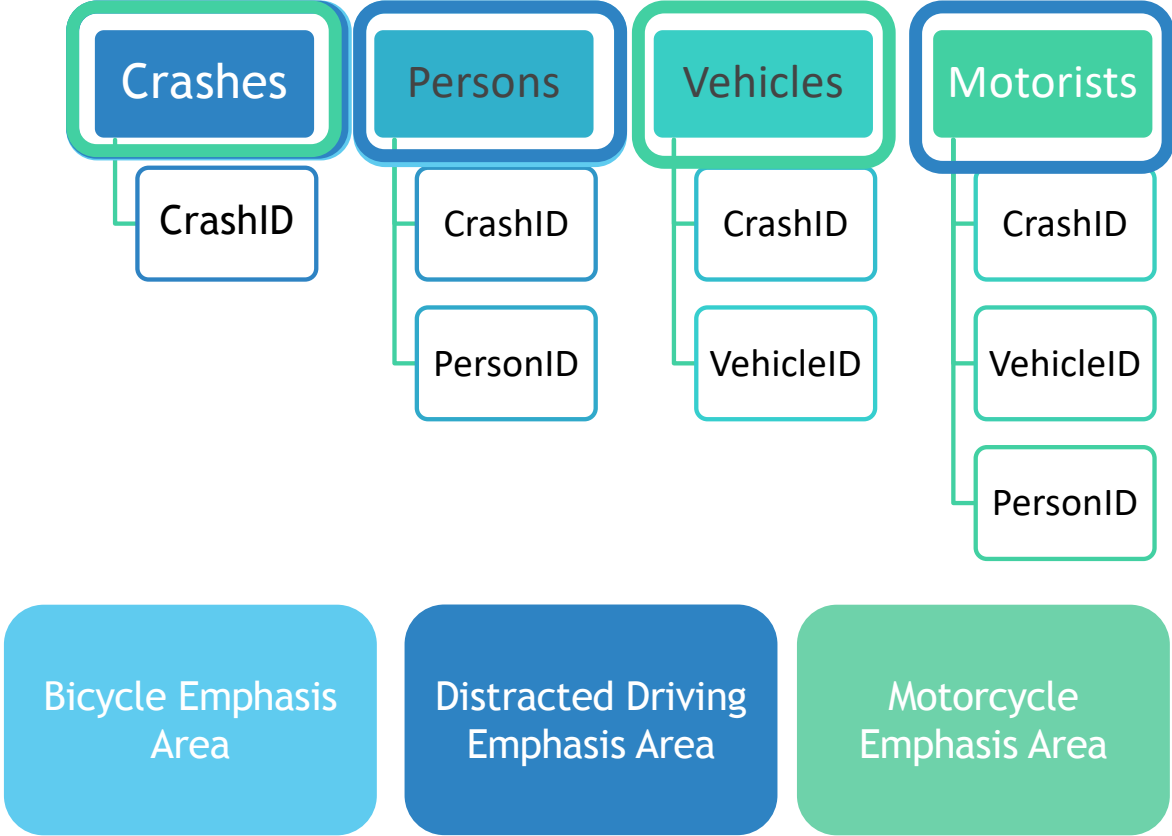
Flow of Data



Emphasis Areas

- ▶ Just under a million crash records from 2015 - present
 - ▶ Large tables that make up the dataset with lots of information captured
- ▶ Want to break out and display data in areas of interest
 - ▶ 26 different queries that visualize the data
 - ▶ Based off ways the data is commonly filtered and viewed
- ▶ Informative, user friendly, interactive

Table Structure - MMUCC 4



Phase 1 - Lessons Learned

- ▶ Snapshot of Data
- ▶ Dynamic views
 - ▶ Extremely poor performance
 - ▶ Time out errors in dashboards
- ▶ Create geometry in python
- ▶ Registering with geodatabase
- ▶ Increasing instance on dedicated service
- ▶ Coded values
 - ▶ Decoded in dashboard

Instance Type	
Make this service available using:	<input checked="" type="radio"/> Dedicated instance pool <input type="radio"/> Shared instance pool
Specify Number of Instances	
Minimum number of instances per machine:	<input type="text" value="8"/>
Maximum number of instances per machine:	<input type="text" value="16"/>
Specify Service Timeouts	
The maximum time a client can use a service:	<input type="text" value="600"/> seconds
The maximum time a client will wait to get a service:	<input type="text" value="60"/> seconds
The maximum time an idle instance can be kept running:	<input type="text" value="1800"/> seconds

Phase 1 - Final Product

- ▶ Tables built in SQL
 - ▶ Updated nightly from scheduled SQL procedure
 - ▶ Create geometry using latitude and longitude in SQL
- ▶ Indexing
 - ▶ Spatial index
 - ▶ Clustered indexes
- ▶ Mobile and desktop optimized

```
-----BIKE

TRUNCATE TABLE [dbo].[Dashboards_Bike_Desc]
INSERT INTO [dbo].[Dashboards_Bike_Desc]

SELECT CR.*
FROM [dbo].[01_Crash_Descriptions]
AS CR

INNER JOIN ( SELECT DISTINCT CRASH.[CrashID] FROM [dbo].[01_Crash_Descriptions] AS CRASH
LEFT OUTER JOIN [GISTED_DataMart].[CRASH].[Persons] AS PER ON CRASH.[CrashID] = PER.[CrashID]
LEFT OUTER JOIN [GISTED_DataMart].[CRASH].[Vehicles] AS VEH ON CRASH.[CrashID] = VEH.[CrashID]

WHERE (PER.[PersonType] IN (5, 6)
OR VEH.[MostHarmfulEventForThisVehicle] IN (18, 19)
OR CRASH.[FirstHarmfulEvent] IN (10, 11))
) AS BIKE
ON CR.[CrashID] = BIKE.[CrashID]

PRINT 'BIKE - COMPLETE'

----- CAR SEAT

TRUNCATE TABLE [dbo].[Dashboards_CarSeat_Desc]
INSERT INTO [dbo].[Dashboards_CarSeat_Desc]

SELECT CRASH.*
FROM [dbo].[01_Crash_Descriptions]
AS CRASH

INNER JOIN (
SELECT DISTINCT
[CrashID]
FROM [GISTED_DataMart].[CRASH].[Persons]
WHERE ((([PersonType] = 2
OR [PersonType] = 7)
AND [Age] <= 6)
) AS PER
ON CRASH.[CrashID] = PER.[CrashID]

PRINT 'CAR SEAT'
```

9/20/23

Feature Service Configuration

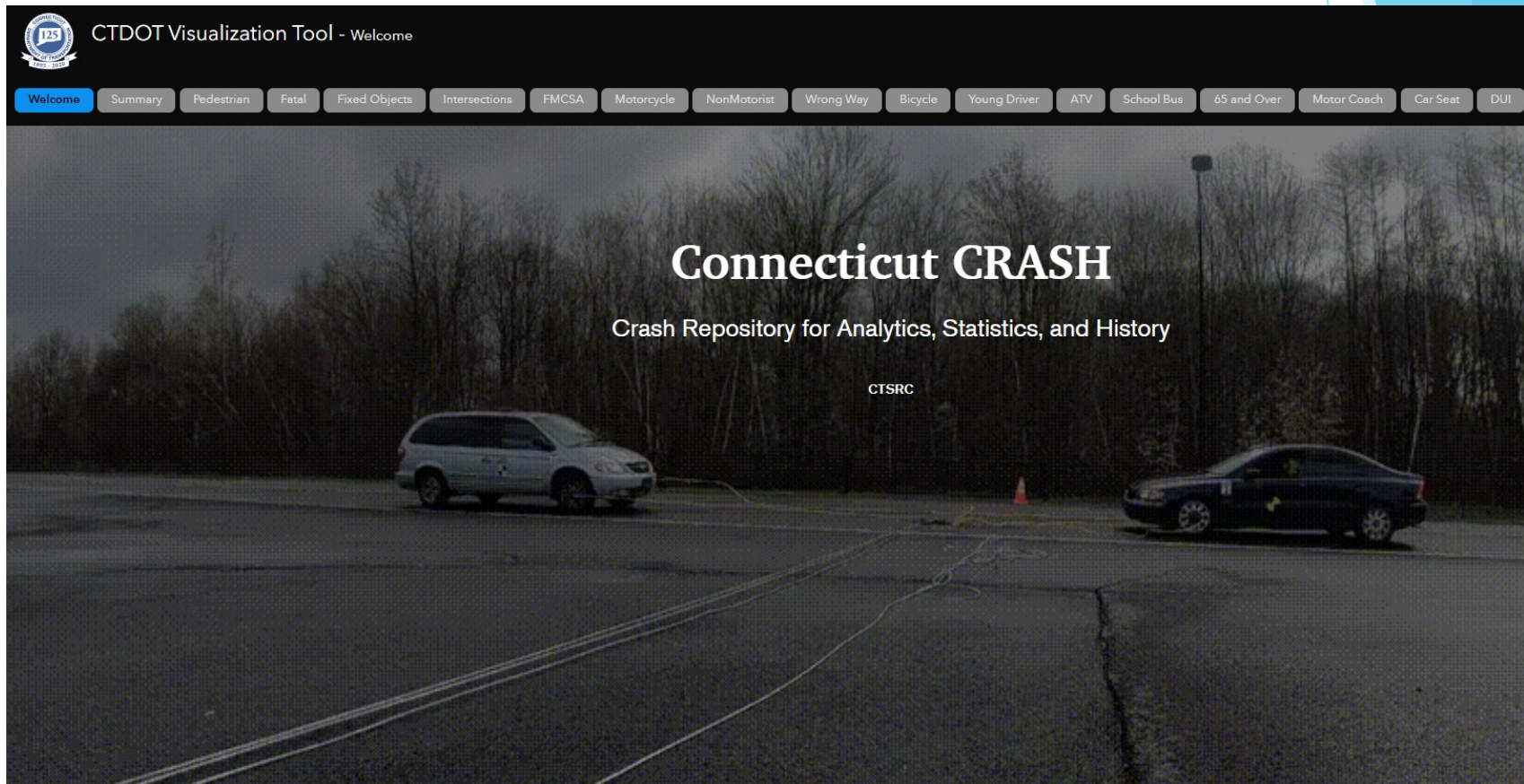
- ▶ Required fields in tables
 - ▶ ObjectID - Unique Identifier as the first field
 - ▶ Geometry
 - ▶ Date fields - Need to be cast as datetime2
 - ▶ Field names no longer than 31 characters
- ▶ Setting on time zone on the service
 - ▶ Correct temporal queries

Date Field Setting

Time Zone: (UTC-05:00) Eastern Time (US & Canada) 

Values are adjusted for daylight savings Preferred Time Zone

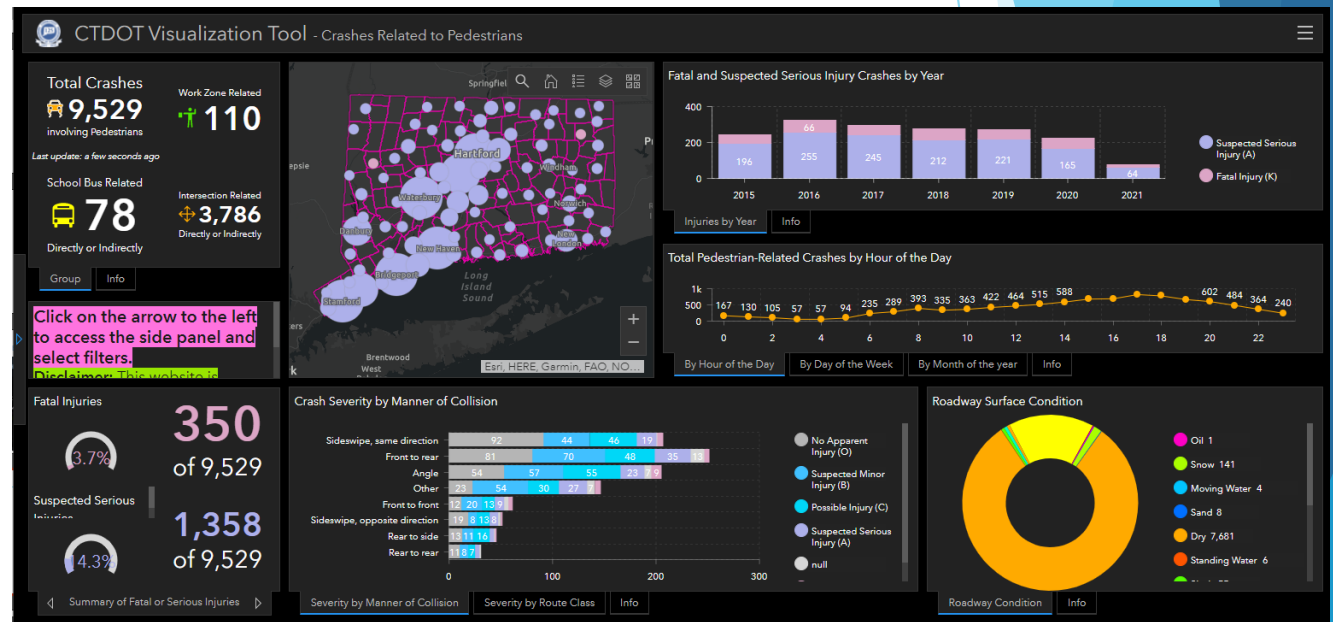
Tabbed Experience Builder- ArcGIS Enterprise



9/20/23

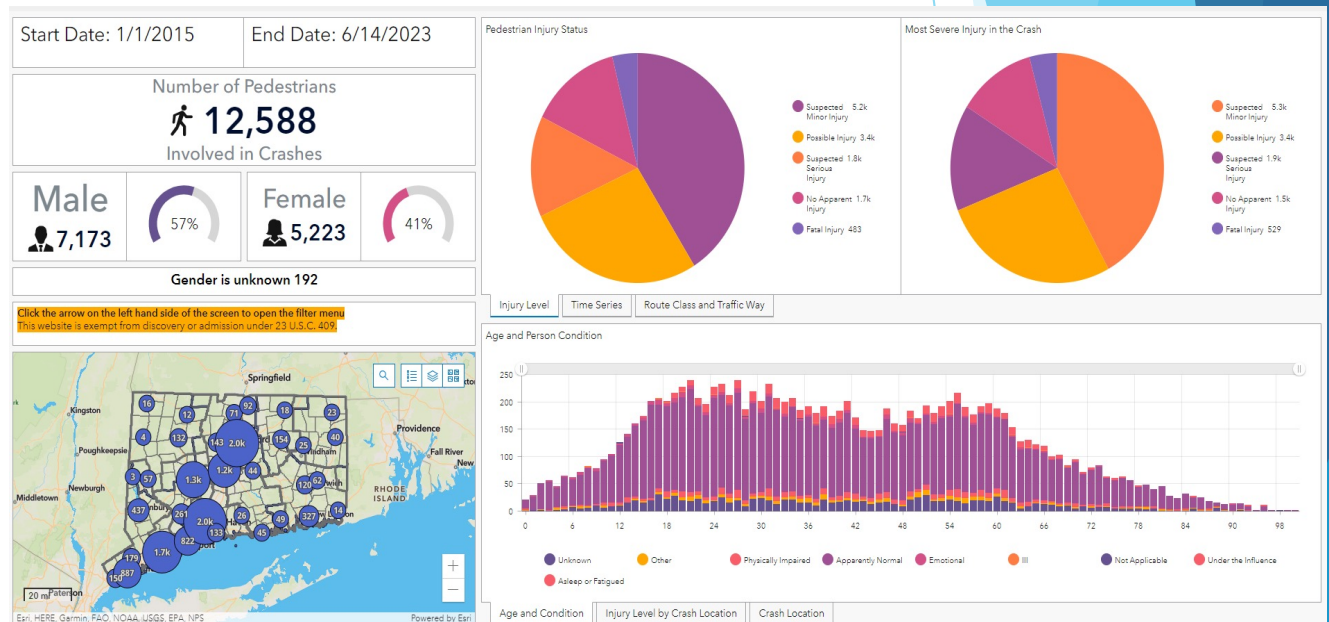
Dashboards - ArcGIS Enterprise

- AA Compliant
 - Dark theme
 - Contrasting colors
 - Contrasting font
- Spatial and attribute filtering
- Info tabs on widgets
- Clustering on webmap with spatial filtering



Phase 2 - In QA

- ▶ Internal pilot project to provide different view of the MMUCC data
- ▶ Person level data
 - ▶ Age, Gender, Person Condition, Seat Belt Use
- ▶ Vehicle level data
 - ▶ Vehicle Age, Body Type, Vehicle Damage
- ▶ Mission is to provide full comprehensive view of MMUCC



DEMO

9/20/23

Future Development

- ▶ Full view feature services with front end applications to query and visualize
- ▶ Upgrade to MMUCC 6
- ▶ Enhancements of Dashboards
- ▶ QA of person and vehicle data
- ▶ Continued interaction with end users to drive future development

Q/A



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CONNECTICUT TRCC MEETING

FY2024
SECTION 405C
GRANT
APPLICATION
UPDATE

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- ❑ Application Updates
- ❑ Submitted Projects for Funding

CONNECTICUT TRCC MEETING

SUBMITTED
PROJECTS

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Project Title	Project Description	Funding 2024 Grant
Electronic Citation Connecticut State Police	Resident Trooper Project	\$600,000.00
EMS & Trauma Registry Databases	EMS and Trauma Registry Databases/EMS/Trauma/MIH Dashboard, Training & Conferences	\$310,000.00
Online Adjudication/Disposition System	Integrated Pretrial Dockets/System Enhancements and Upgrade	\$225,000.00
Ignition Interlock Device (IID) License Restriction Code	Ignition Interlock Device (IID) Restriction Code Implementation on Operator License in compliance with AAMVA	\$200,000.00
Traffic Records Administration	TRCC Management/Strategic Plan Updates/Grant Application	\$250,000.00
eCitation Hardware for Municipal/Local Police Department	Hardware/Software	\$700,000.00
EasyStreet Draw Application for Police Departments	Crash Diagrams software upgrade for Police Reporting	\$200,000.00
FY2024 BUDGET		\$2,485,000.00

CONNECTICUT TRCC MEETING

TRCC
WEBSITE

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Current Materials

[TRCC Meeting / Current](#) 

[TRCC Meeting / Past](#) 

[TRCC Stakeholders](#) 

[TRCC Charter](#) 

[TRCC Traffic Records Strategic Plan](#) 

[TRCC Data Linkage Subcommittee](#) 

[TRCC Traffic Enforcement Data Update](#) 

[TRCC CSP Wrong Way Driver Study](#)

[Project Submission Form](#) 

[Link to MMUCC PR-1 Crash Data Collection Main Page](#)

<http://www.ct.gov/dot/cwp/view.asp?a=2094&q=435916>

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TRCC
WEBSITE
CONTD..

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Reference Materials


[Traffic Records Program Assessment Advisory 2018](#) 

[Traffic Records Assessment 2021](#) 

[MMUCC Guideline Fifth Edition 2017](#) 

[D16.1 Manual on Classification of Motor Vehicle Crashes](#) 

[One-Page MMUCC / D16.1 / D20.1 Standards Comparison](#) 

[Traffic Records System Inventory](#) 

[Traffic Records Assessment Procedures Manual](#) 

[Bill No 5288 - Task Force for Vehicle Accident Form](#) 

[GHSA Safe System Report](#) 

"Three Biggest Causes of Fatalities on the Road are Alcohol, Speeding, & Distracted Driving 0

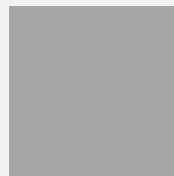
CONNECTICUT TRCC MEETING

OPEN
FORUM

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General
Discussion/Meeting
Adjourned



Be Safe & Stay
Healthy!!!