
# “A PLAN FOR EVERY SECTION OF EVERY ROAD ON EVERY ISLAND”

GOOD ROADS COST LESS

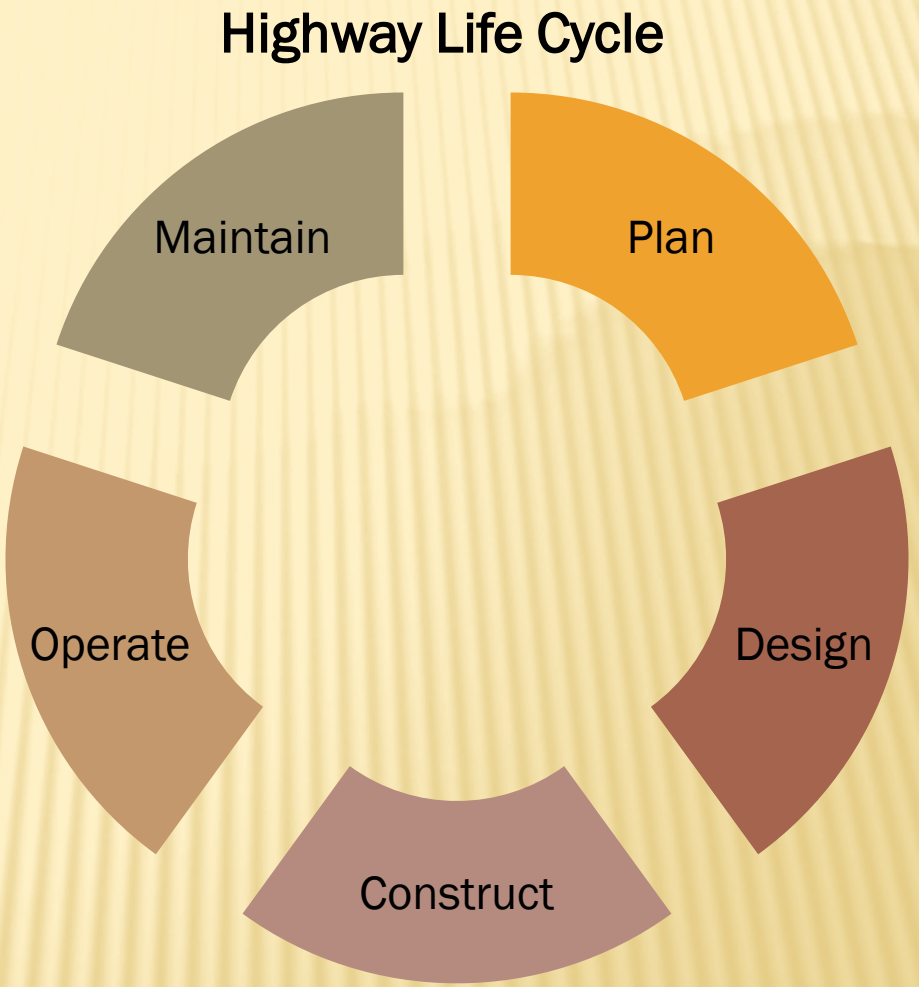
# USING ASSET DATA FOR SYSTEM PRESERVATION

- AM Purpose/goal
- RIS Architecture
- Asset Data Collection Program–
  - Photolog/Lidar
  - LCMS Pavement
- Taking Care of What We Have -
  - Good Roads Cost Less
- Plan for Every Section–
  - Logical Framework
  - Condition Assessment
- Lessons Learned & Next Steps
  - Pavement Mgmt Sys
  - Design & Safety App

# ROADWAY INFORMATION SYSTEM GOAL

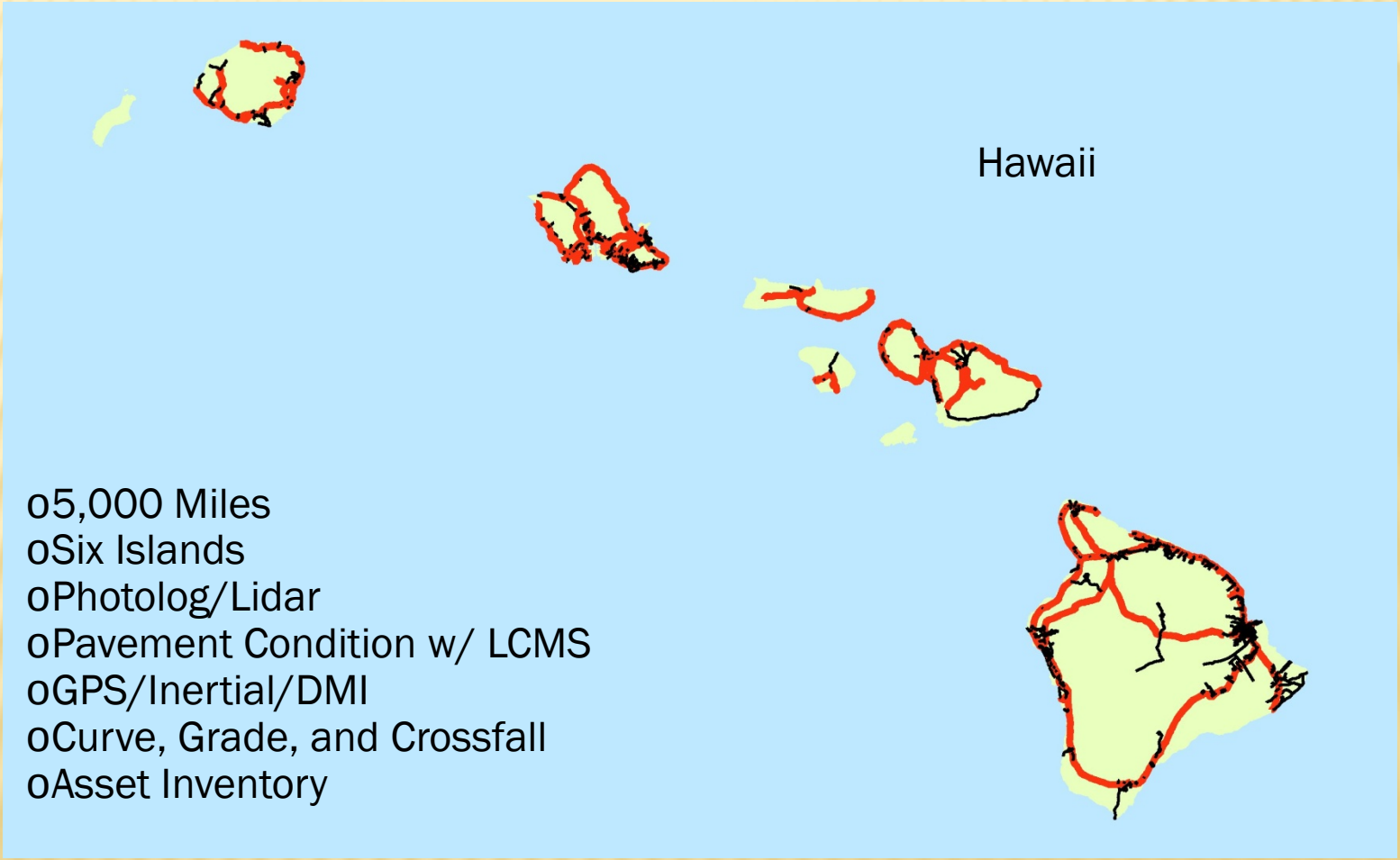
Develop an information system for managing the entire highways infrastructure

- Support entire life cycle
- Remove islands of information
- Support information exchanges




1995 FHWA pooled fund study entitled GIS-T/ISTEA Management Systems,Phase A - System Architecture

# ANNUAL DATA COLLECTION CYCLE SCOPE




- 5,000 Miles
- Six Islands
- Photolog/Lidar
- Pavement Condition w/ LCMS
- GPS/Inertial/DMI
- Curve, Grade, and Crossfall
- Asset Inventory

# PHOTOLOG PROJECT HISTORY

- 2003 (Add pavement profile scanning)
- 2006
- 2007
- 2009 (Add LiDAR collection for Oahu)
- 2010
- 2011 (Add County Of Hawaii LiDAR)
- 2012 (Add Maui and Kauai LiDAR)
- 2014 (Add LCMS)
- 2015 (Change to twin LiDAR units)

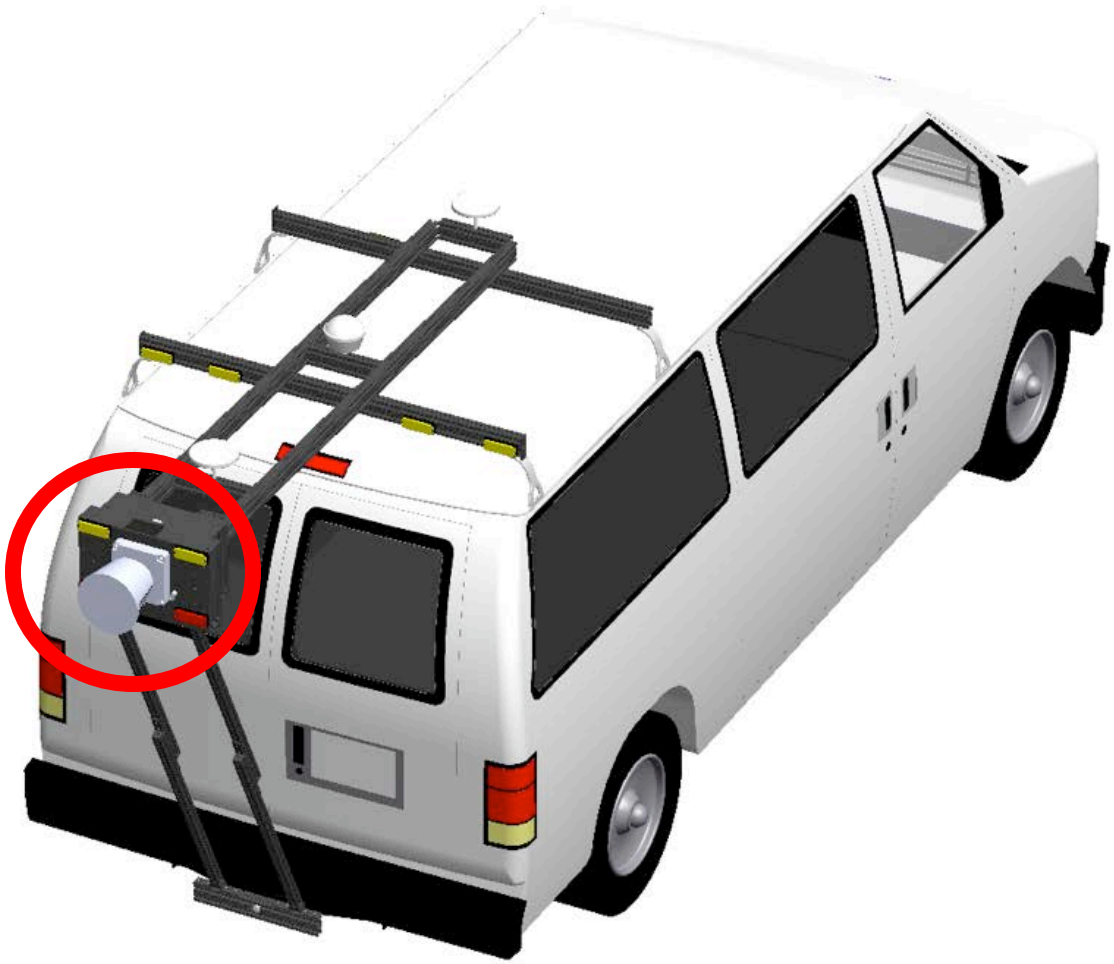
# 3 CAMERA PHOTOLOG @ 500 IMAGES/MI

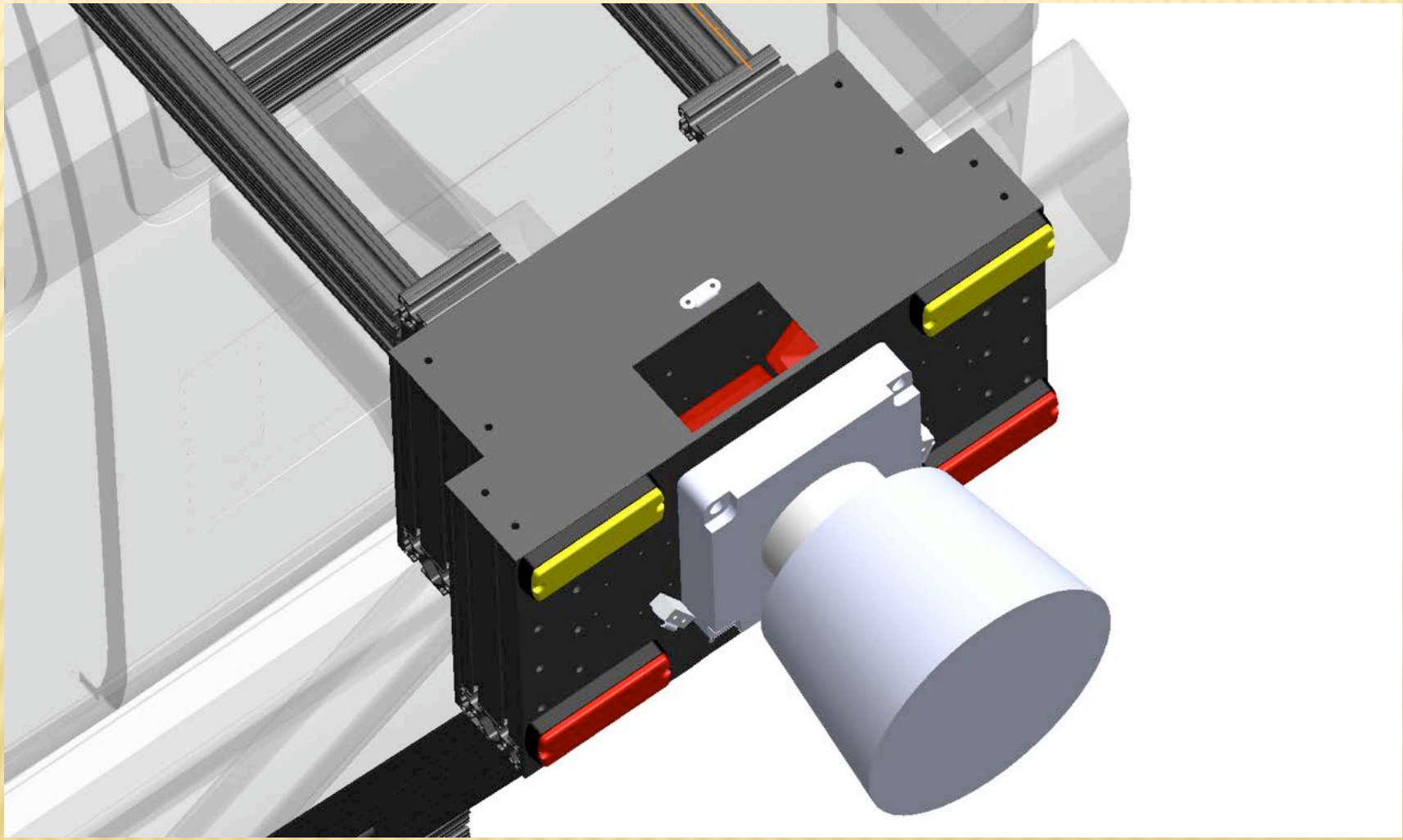
2010 – 2048 x 1152 (Same as 2009)

2011 – 3296 x 2472

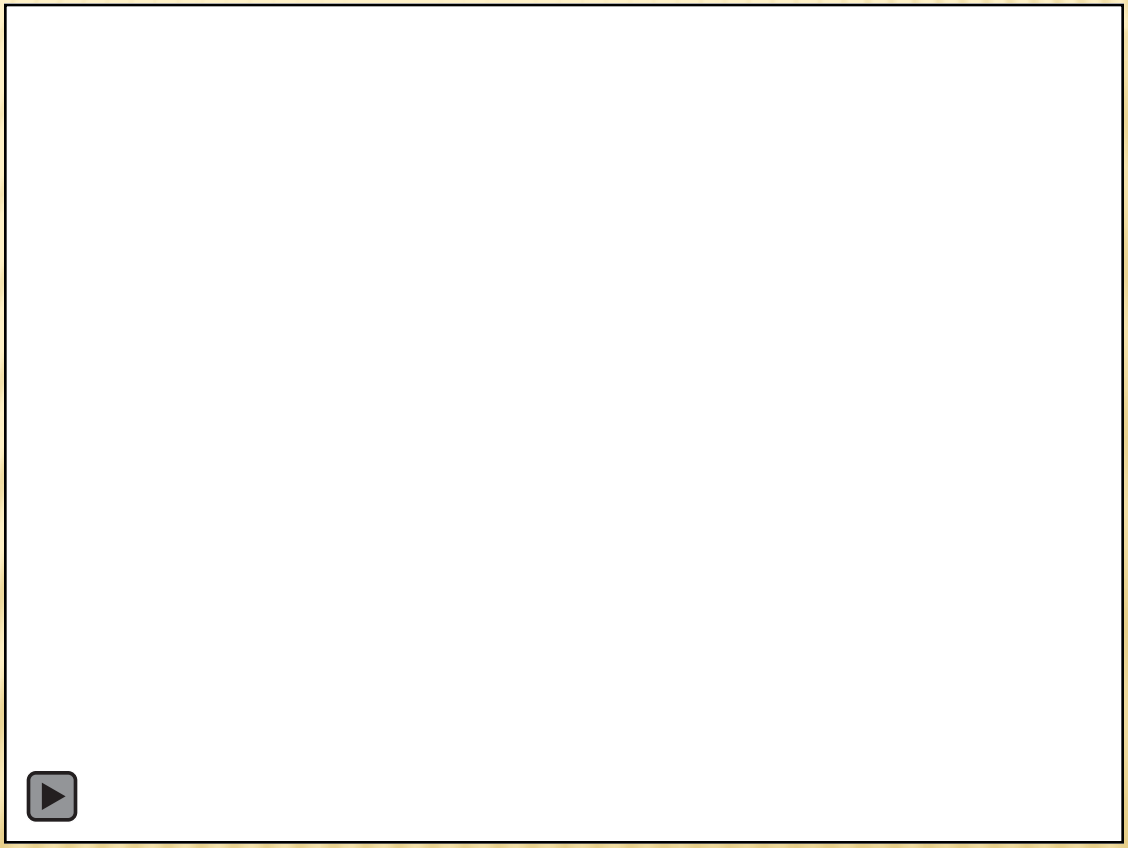
# LIDAR SYSTEM

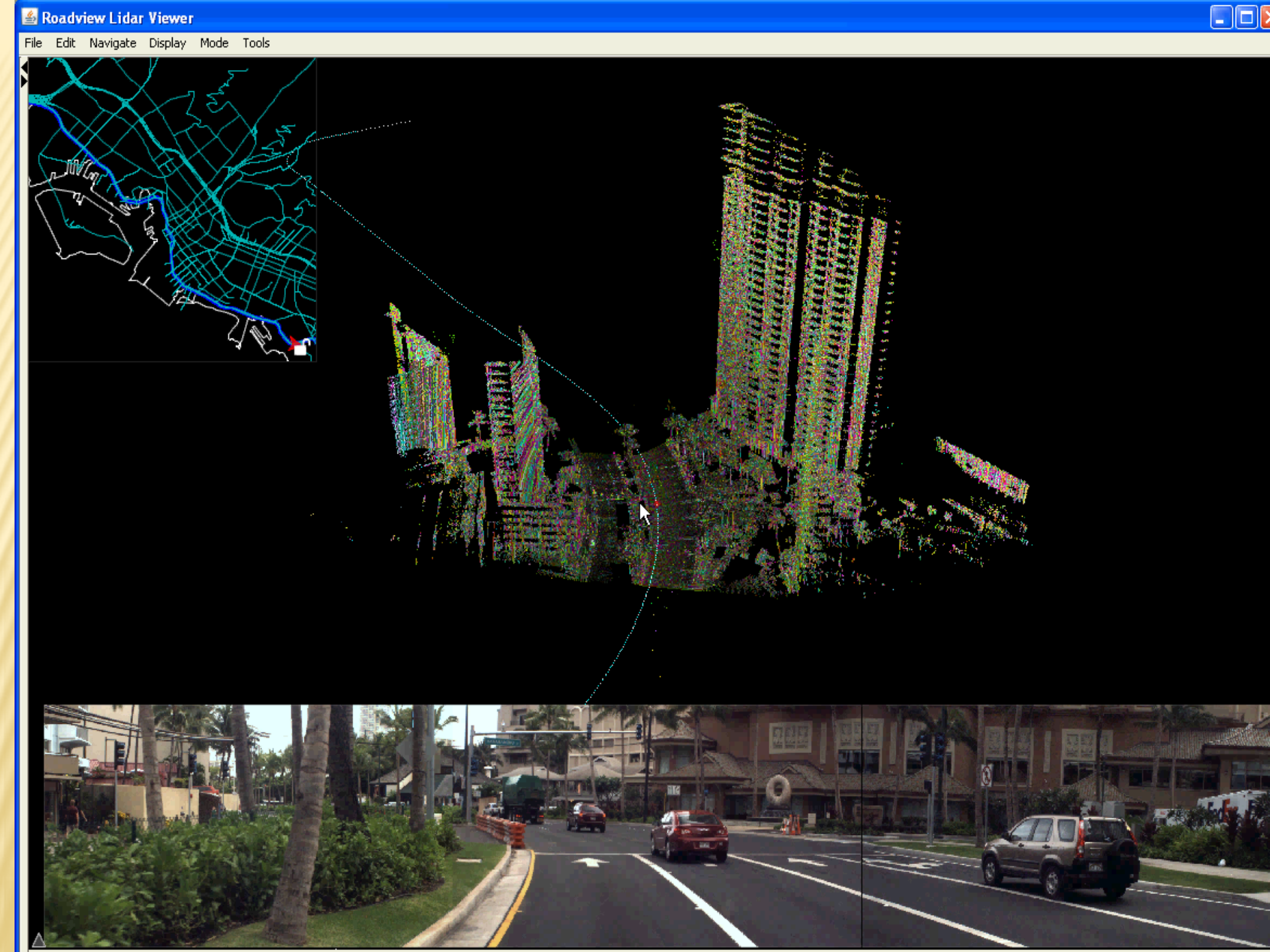
- LIght Detection And Ranging
- Optical remote sensing technology that measures properties of scattered light
- 64 lasers and sensors are used to measure the surrounding environment
- 2 cm XYZ accuracy
- 50 m range for pavement
- 120 m range for cars, buildings and trees



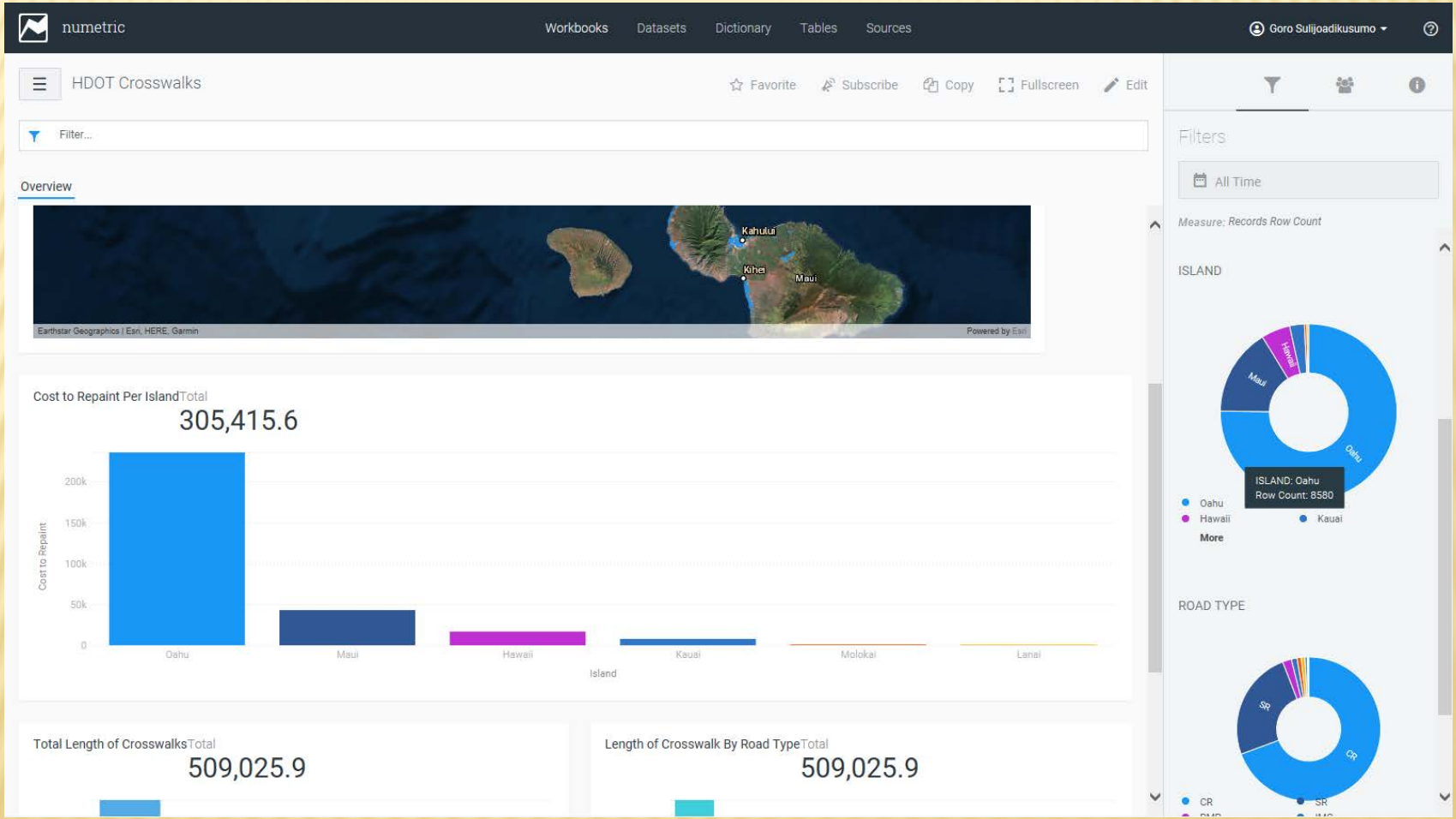


# ONE PASS COLLECTION

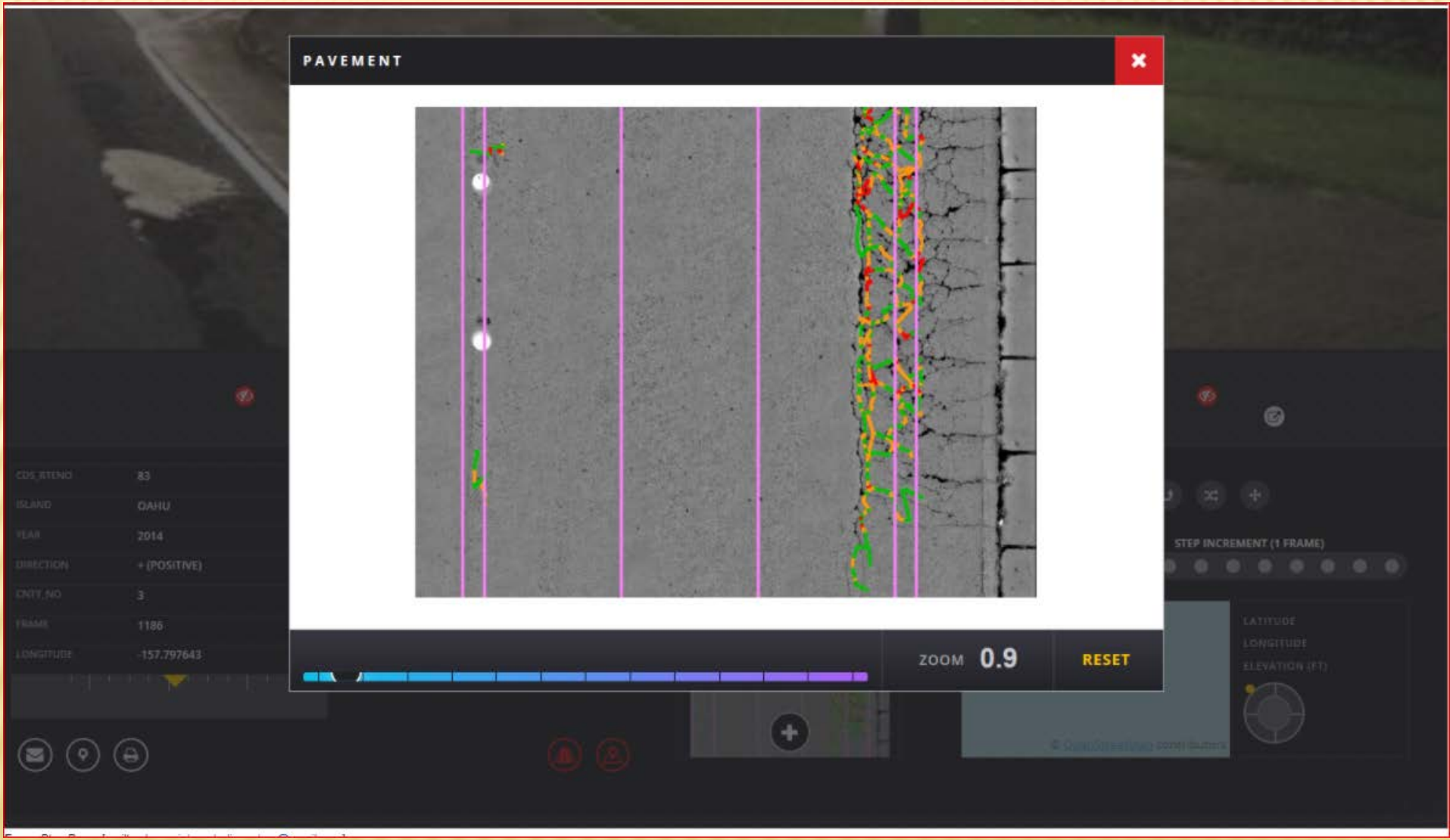



Roadview Lidar Viewer
File
Edit
Navigate
Display
Mode
Tools

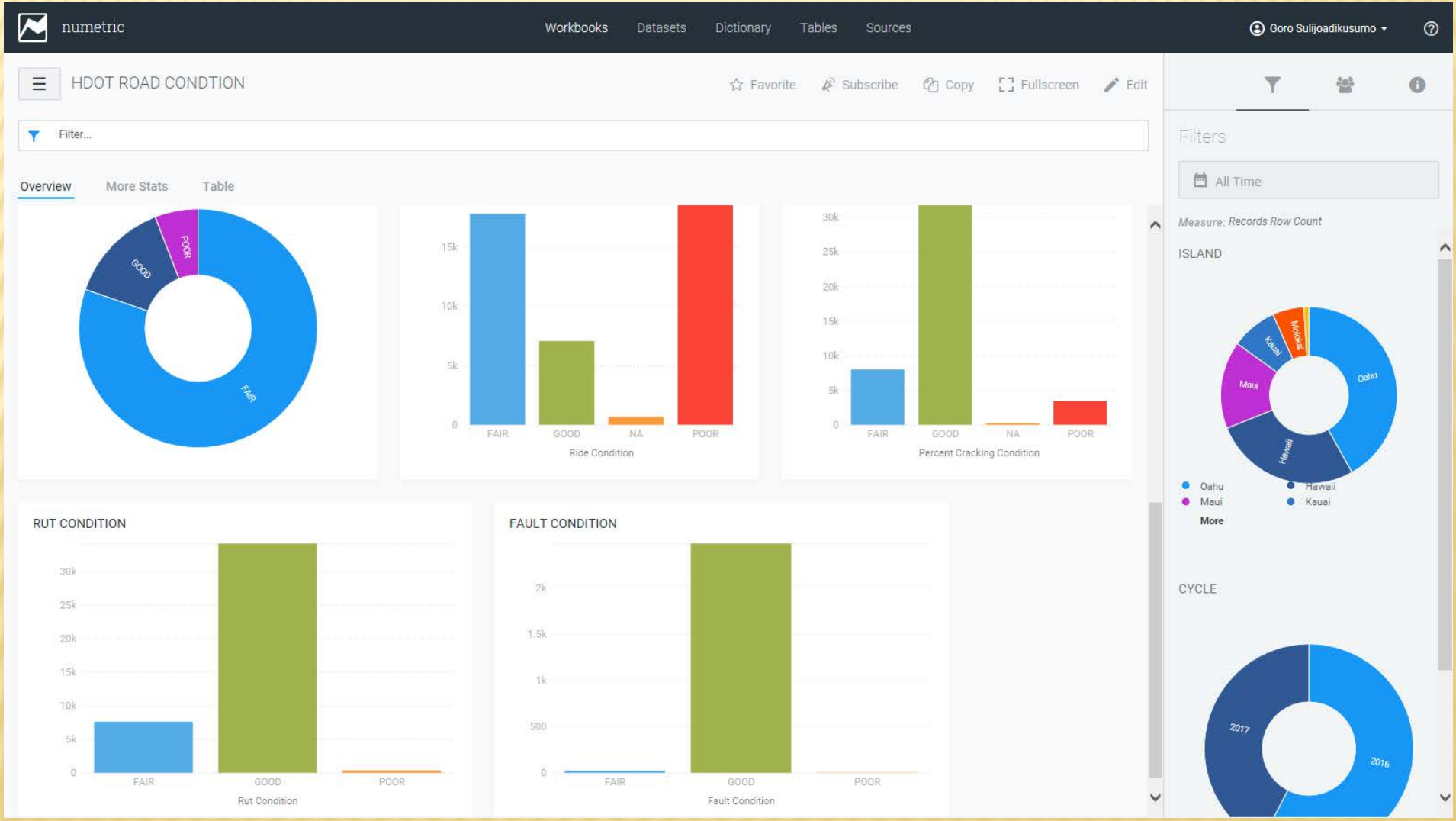
# ASSET INVENTORY - CROSSWALKS



# LASER CRACK MEASUREMENT SYSTEM (LCMS)



# PAVEMENT CONDITION REPORT CARD



# “GOOD ROADS COST LESS”

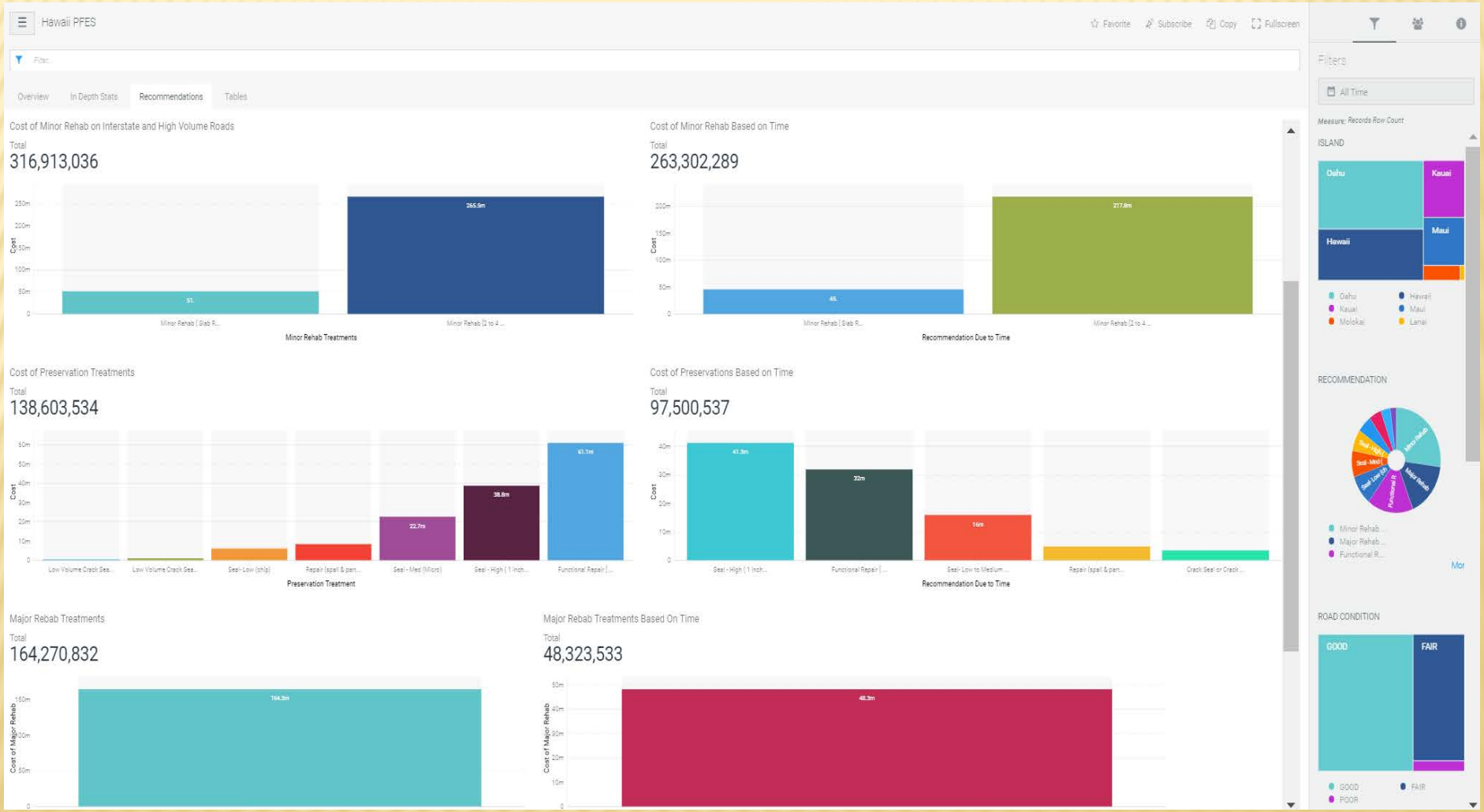
## COST EFFECTIVE MANAGEMENT OF THE STATE’S ROAD NETWORK

- Preservation First – Then Minor Rehabilitation
  - Challenges
    - District need to response to complaints
    - Preservation dollars might be reallocated to Minor/Major Reb
  - Benefits - Greatest benefit for the least cost
    - Extend the life of the Pavement
- High Volume Roads
  - Funding Allocation Prioritized
  - Sliding Scale - Highest to Lowest

# A PLAN FOR EVERY SECTION OF EVERY ROAD

- Identification
  - Routes
  - Sections
  - Treatments
- Pavement Distress – Normalized – 0 to 100
  - Ride, Rut, Cracking, Fatigue
  - Scale
    - Good: 100 - 80
    - Fair: 80 - 50
    - Poor: Less than 50
- OCI – Overall Condition Index
  - Quantify Measure of Ride, Rut, Cracking, Fatigue

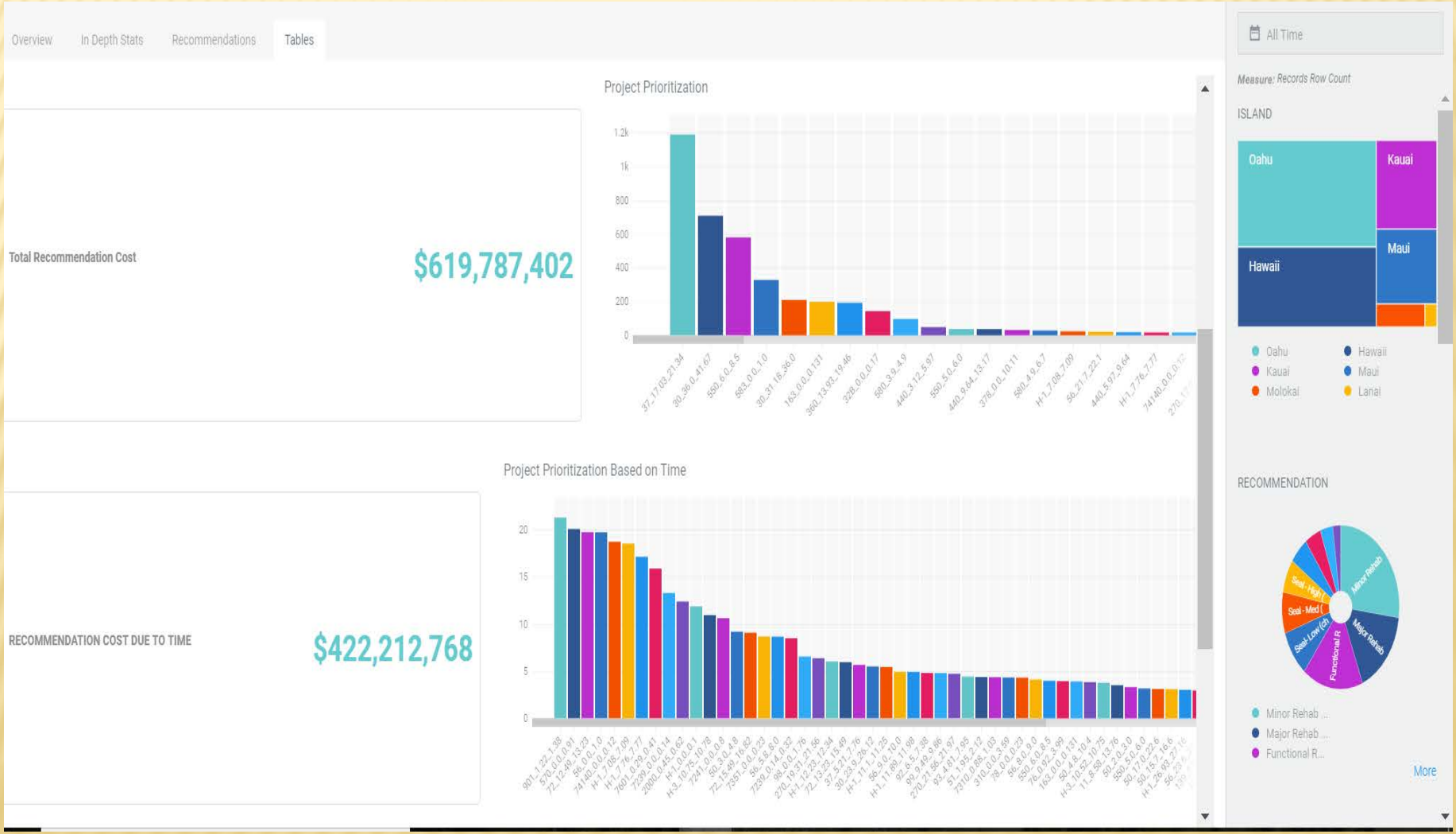
# PAVEMENT PRESERVATION 5YR PLAN



# 5 YEAR - SUMMARY OF RECOMMENDATIONS

- Statewide - Funding
  - Preservation $153M
  - Minor Rehabilitation $220M
  - Major Rehabilitation $250M
  - Total $623M
- Maui
  - Preservation $34M
  - Minor Rehabilitation $21M
  - Major Rehabilitation $0
- Hawaii
  - Preservation $42M
  - Minor Rehabilitation $93M
  - Major Rehabilitation $82M
- Kauai
  - Preservation $12M
  - Minor Rehabilitation $12M
  - Major Rehabilitation $18M
- Oahu
  - Preservation $59M
  - Minor Rehabilitation $95M
  - Major Rehabilitation $145M

# PROJECT PRIORITIZATION



# LESSONS LEARNED

- Make it Part of the HDOT Culture and Strategic Direction
- Message – Keep It Simple
  - -"Good Roads Cost Less",
  - -"A Plan for Every Section of Every Road"
  - -Performance Measures
- Transparent, Maintainable and Repeatable Process

# NEXT STEPS

- Pavement Management System
- Design & Safety Applications
  - -Directly link Plan to Design application
  - -Link Safety Data to Asset Data
  - -Link Performance Measures
- Training