

Implementation Procedure Summary for Traffic Analysis

Introduction:

UAS can be an effective tool for traffic analysis, especially when combined with AI/Machine Learning. The advantage of UAS in traffic analysis is the broad coverage from the air and the ability to move across the site quickly. The steps below illustrate procedures to assist with the successful implementation of using UAS for traffic analysis.

Define Mission Objectives

- Data Collection Goals (Monitoring Traffic, Live streaming information to traffic operation center, etc.)
- Timeframe

Develop System and Staffing Plan

- Team Selection (Internal or Consultants)
- Aircraft Platform (Fixed Wing, Blimp, Tethered, or Rotorcraft)
- Sensor Selection (RGB Camera, Zoom, Thermal)
- Software
- Batteries, Charging, and Power Source Requirements

Develop Flight Plan and Conduct Risk Assessment

- Pre-Flight Plan to Meet Goals (Camera Angle, Altitude for Coverage)
- Site and Operation Analysis for Risk (Flight lines, Weather, Airspace, Traffic, Population, Private Property, Wildlife)

Obtain Permits or Waiver

- LAANC
- COA
- National Park
- Airport
- Private Property Notification

Obtain Approval and Perform Flight Operations

- UAS Manager Approval
- Site Preparation (Lane Closures, Take-off and Landing Sites, Signage)
- Perform Flight

Assess Outcomes and Document Lessons Learned

Data Management

- Data Processing Required (AI/Machine Learning)
- Storage
- Livestreaming to Traffic Operation Center, or External Stakeholder
- Deliverable Formats (Orthomosaic, Point Cloud, Video, Traffic Analysis Report, etc.)