Safety Management System (SMS) Manual

**Boca Raton
Airport (BCT)
Florida**

March 2023

Prepared for
Boca Raton Airport Authority
(BRAA)

by
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Table of Contents

Acronyms

AC	Advisory Circular
ACRP	Airport Cooperative Research Program
AOA	Air Operations Area (a.k.a., Airside)
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
BCT	Boca Raton Airport
BRAA	Boca Raton Airport Authority
CBP	Customs & Border Protection
FAA	Federal Aviation Administration
FBO	Fixed Base Operator
FDOT	Florida Department of Transportation
GIS	Geospatial Information System
i3	Simplify i3® (Integrated Infrastructure Intelligence)
MRO	Maintenance-Repair-Overhaul
NOTAM	Notice to Airmen
SA	Safety Assurance
SME	Subject Matter Expert
SMS	Safety Management System
SR	Service Request
SRA	Safety Risk Assessment
SRM	Safety Risk Management
WO	Work Order

A.   Introduction

A Safety Management System (SMS) is a systematic approach to managing safety, including all necessary organizational structures, accountabilities, policy statements, processes, and procedures. SMS provides airport management with a set of tools to make safety related decisions. SMS also helps airport management identify safety risks associated with airport operations, development, and other changes to proactively address those issues before they result in accidents, incidents, injury, or damage. SMS manifests itself through a series of complementary processes and procedures which are closely coordinated by a well-defined safety organizational structure, where the safety roles and responsibilities of everyone, including top management, are clearly defined, and understood by all. Safety objectives and data analysis will facilitate continuous improvement throughout the airport.

The Boca Raton Airport Authority (BRAA), working to improve Boca Raton Airport (BCT), has contracted EPIC Engineering & Consulting Group (EPIC) to develop this SMS Manual; embracing industry best practices recommended by the Federal Aviation Administration (FAA), the Airport Cooperative Research Program (ACRP), and in-turn the Florida Department of Transportation (FDOT).

This manual includes a practical summary of SMS requirements, and BRAA's policy and methodology to achieve these. This manual's main content is the detailed process and procedure to be used by BRAA to accomplish SMS; leveraging EPIC's commercial-off-the-shelf Simplify i3 ® system for airport digital twin transformation. An SMS Business Process Model (BPM) diagram is provided as part of this manual to facilitate BRAA's SMS understanding, training, and daily execution. This SMS Manual also includes screenshots from Simplify i3 ®, describing how to use the system to facilitate BRAA's SMS Program. Separately from this manual, Simplify i3 ® user "cheat sheets" are provided for more detailed system operation instructions.

B.   Background

BRAA contracted Ricondo & Associates, in association with the Faith Group, to develop an SMS gap analysis and corresponding implementation plan, which was published November 1st, 2017. In 2022, leveraging an FDOT grant, BRAA selected EPIC through a competitive procurement process to develop and implement this SMS Program. BRAA's SMS is being implemented via the Simplify i3 ® system, which was initially developed with a National Science Foundation's Small Business Innovation Research (SBIR) grant, awarded to EPIC. Simplify i3 ® is hereinafter referred to as "i3", which stands for "Integrated Infrastructure Intelligence". EPIC has configured i3 specifically for BRAA's business needs. EPIC is Florida-based, providing BRAA local support to continually refine its SMS and other business processes, via the i3 airport digital twin transformation platform; including service requests (SR)s, inspections, work orders (WO)s, assets and lease management, project management, training management, documentation

management, Geospatial Information System (GIS) mapping, trend analyses, reporting, and dashboarding.

C.   SMS Requirements Summary

SMS requirements in this manual are based on the FAA's guidelines, documented in the draft Advisory Circular (AC) 150/5200-37A, and various ACRP reports. ACRP Report 131, titled "A Guidebook for Safety Risk Management for Airports (2015)", is a good source of information for putting SMS into practice. It includes Table 10-1, summarizing hazard identification techniques, and Table 16-1, summarizing common airport Safety Risk Assessment (SRA) triggers. Both these tables are provided herein and supported via i3's tools. The FAA's SMS guidelines are applicable primarily to part-139 certified airports. Although BCT is not a Part-139 certified airport, BRAA wishes to improve its safety by adhering to these best practices. Moreover, FDOT encourages its Florida airports to improve their respective safety by following these FAA's SMS guidelines.

Figure C-1: SMS is comprised of four basic components described in this diagram from the FAA's AC 150/5200-37A.

Safety Risk Management (SRM) and Safety Assurance (SA) are the primary day-to-day activities achieving SMS. The 5 essential elements of SRM are:

1. Describe the System
2. Identify the Hazards
3. Determine the Risk
4. Assess and Analyze the Risk
5. Treat the Risk

Figure C-2 below provides the high-level basic process complying with these requirements via i3 provided functions.

Figure C-2: i3's FAA Compliant SMS Process (High Level)

The overall process essentially involves identification of safety hazards, immediately resolving the hazard through corrective action, and evaluating whether the hazard is trending too often or is new or of major concern justifying a Safety Risk Assessment (SRA) and mitigation. The SMS process also includes monitoring and reporting, as well as communication and education (training) of how to avoid or deal with safety hazards.

Section-E of this manual expands upon the above basic high-level process, providing a detailed business process diagram (Figure C-3) and procedures, along with corresponding i3 screenshots.

The ACRP Guidebook for Safety Risk Management for Airports includes two key tables (presented on the following pages): Table 10-1, summarizing hazard identification techniques, and Table 16-1, summarizing common airport Safety Risk Assessment (SRA) triggers. Both these tables are supported via i3's tools and SMS process details described in Section-E.

Figure C-3:
i3 FAA Compliant
SMS Process (Detailed)

FAA SMS Requirements

FDOT AVIATION
FDOT Airport SMS Requirements

Legend
- Safety Hazard Identification
- Correction & Mitigation
- Monitoring & Reporting
- Communication & Training

Prepared by: David Tamir, Aviation Lead, EPIC Engineering & Consulting Group; December 2022

(1) Boca Raton Airport Authority (BRAA) SMS Plan/Manual

(10.2) FDOT Annual Audit

(10.1) BRAA Internal Audit

(3) SMS Periodic Training

(2) SMS Documentation

(10) BRAA Dashboard(s) Monitoring & Reporting

(9) Ops/SMS Manager Review & Closeout

(8) Staff SMS Update/Training

(4.1) Tenant/User Hazard Identification via Public Portal

(4.2) Ad-Hoc Hazard Identification by BRAA/ATCT/Security

(4.2.1) Initiate Hazard Service Request

(5.1) Corrective Action Work Order(s)

(7.3) Safety Hazard Mitigation Training Work Order

(4.3) Inspection Discrepancies

(4.3.1) Corrective Action Work Order

(5.2) NOTAM and/or other Reporting via FAA System(s)

(4.4) Incident Reports

(2.1) ACRP 2015

(4) Start

(4.5) Operational Change

(5) BRAA Ops Supervisor Reviews & Assigns Action(s) As Needed

New or Major or Trending Safety Hazard Requiring Mitigation

(6) Initiate SMS Service Request

(6.1) Safety Risk Assessment (SRA)

(7) Mitigation Action(s)

Training

Work Order

(7.2) Safety Hazard Mitigation Work Order

if Needed

(4.6) Airport Construction Project

(5.3) Ad-Hoc Communication(s)

Project

(7.1) Safety Hazard Mitigation Project

(4.7) Quarterly Hazard Trend Analysis by BRAA

(4.8) Annual Safety Gap-Risk Analysis by BRAA

Table 10-1. Hazard identification techniques used by airports.

Technique	Example
Observation and reporting	Anyone working at the airport or using airport facilities should be able to report hazards that they see. The process can be more effective when airport staff has received training on how to identify and report hazards, and a system or tool is available for reporting, like a hotline or intranet based reporting system.
Daily inspections	Daily inspections are effective in identifying airside hazards. The procedure can be more effective if inspectors have received training to identify types of hazards, not covered by the routine list of Part 139 requirements.
Accident and incident investigations	The hazards contributing to accidents or incidents are often difficult to identify. A thorough investigation can discover the causes and contributing factors, particularly those hazards that are not obvious (for example deficient training), and investigation reports can communicate the identified hazards to airport decision makers for SRM action.
SRM triggers	Some common safety issues and hazardous situations can signal the need to put the SRM process in action, or the need to convene a formal SRA. A list of common SRM triggers is presented in Chapter 16. The FAA uses a technique called a Safety Assessment Screening (SAS) to identify situations when SRM is required.
Hazard identification tools	There are some common tools used by multiple industries to identify hazards. Examples include Functional Hazard Analysis (FHA); Change Analysis; Job Hazard Analysis (JHA); Job Safety Analysis (JSA); Failure Modes and Effects Analysis (FMEA), and "What-If…" tools.
Functional brainstorming	Brainstorming is a tool that systematically identifies hazards, often using hazard identification tools previously described. The airport may use this technique whenever multiple airport functions or stakeholders are impacted by the hazardous situation. It consists of gathering a group of people to discuss the issue and identify hazards. A facilitator will make the process more effective.
Preliminary lists of hazards	When available, preliminary lists of hazards can be helpful to streamline the SRM process, and to identify main categories of hazards, including specific hazards associated with unique situations at airports. Appendix E presents several example lists of hazards. A preliminary list of hazards is by definition not comprehensive, nor does it address special cases. The lists should be used carefully and as a prelude to in-depth hazard identification.
Trend analysis	Monitoring of safety performance indicators and statistics improves SRM by identifying undesirable trends associated with certain hazards like birdstrikes, runway incursions, and injuries to personnel.
Audits	Safety and SMS audits, like accident investigations, are effective tools to identify hazards that are not obvious. Hidden hazards can include outdated training, organizational issues, deficient operational processes and procedures.
Interviews	Interviews during gap analyses or audits, or even informal interviews during inspections represent an excellent opportunity to identify hazards with line workers and supervisors – those airport personnel with the most in-depth knowledge of the airport systems.
Review of prior accident and incident reports	Usually, these reports will lead to an accident or incident investigation. The purpose of an investigation is to discover causal and contributing factors to the event so they can be prevented or mitigated. The airport staff can augment and complement investigations by performing a SRA and identifying risk mitigation actions and staff responsibilities to reduce the chances of a similar incident or accident.

Table 16-1. Common airport SRA triggers.

SRA Trigger	Description	Example
Construction	Airfield improvement	Runway 15 extension
	Airfield rehabilitation	Resurfacing Taxiway C
	Airfield maintenance (beyond day to day work)	Rubber removal; chip seal on Runway 10
	Construction of tower	Construction of new ATC tower
	Terminal expansion	Additional gates and gate areas
	Landside roadway reconfiguration	Additional lanes into the terminal area
	Parking area modifications or rehab	Parking garage rehab or updating facilities
	Changes in access roads onto airport property	Adding or subtracting lanes and access points
Standard Operating Procedures Changes	New SOP	SOP for towing aircraft; SOP for mowing grass in safety areas
	Modification to existing SOP	Changes to SOP on snow removal due to new equipment
Airport Organization	Significant changes to airport organizational structure or key personnel	Rearranging the Department of Operations; creating an SMS Division
Safety Reports (Hazardous Condition Reports)	Safety issues reported by pilots or airport employees (including tenants)	Reports of pavement failure, blind spots, or hazardous conditions on the ramp
	Safety issues resulting from daily inspections	FOD generated by poor pavement conditions at the intersection of taxiways
	Accidents and incidents	Surface or ramp accident; birdstrikes
Special Event	Major sport events	Super Bowl; Olympic Games; Major College Football Game
New Equipment or Software	New aircraft brought in by a carrier	Starting operation of A380 or B787 aircraft
	New passenger boarding bridge	Installation of new bridges that have different capabilities
	New ramp equipment that requires special consideration	Introduction of towbar-less tractor
	Changes to information management systems	Changes to reporting procedures during self-inspections
Proposed New Infrastructure/Facilities and Regulatory Standards	FAA research and development work (e.g. the FAA Tech Center)	Perimeter taxiway; new NextGen equipment
Safety Assurance	Trends identified from safety performance indicators (e.g. birdstrikes, FOD, etc.)	Increase of birdstrikes with damage to aircraft
	Safety audits	Unsatisfactory SMS internal or external audit results

D.   Safety Policy

BRAA's Safety Policy Statement is provided as Appendix-1 of this SMS Manual. It is signed by BRAA's accountable Executive Director, Ms. Clara Bennett. BRAA is committed to ensuring that safety at BCT is a top priority of management. As declared in BRAA's Safety Policy Statement, the airport encourages confidential hazard reporting and commits itself to communicating safety issues and resolution of reported hazards. This Safety Policy Statement is to be reviewed annually to ensure it remains current.

Applicability
All individuals with access to the movement and non-movement areas of the airport must follow the policies and procedures identified in this Manual. Every individual with this access has a responsibility for safety. All tenants will ensure that employees, with access to the areas identified below (under scope), receive proper training or awareness of their roles and responsibilities under the airport's SMS.

Scope
All processes and procedures developed under the SMS apply to the airside movement and non-movement areas; movement areas are runways and taxiways under the jurisdiction of the Air Traffic Control Tower (ATCT), while non-movement areas are those not under ATCT control (e.g., ramps, aprons, etc.). SMS initiatives do not apply from the FAA's perspective to landside operations nor inside terminals. However, the SMS process and procedures described herein may be applied across all BRAA property, extending beyond the airside -- Air Operations Area (AOA) -- in order to improve overall BCT safety.

Roles & Responsibilities
BRAA's SMS organization structure, responsible for making safety related decisions at BCT, is illustrated in Figure D-1 on the following page. The SMS roles and responsibilities begin with the Accountable Executive being BRAA's Executive Director (Clara Bennett) and her Deputy Director (Scott Kohut). The Accountable Executive ensures that the necessary assets and financial support are available for successful SMS development, implementation, operation, and continuous improvement. In carrying out these duties, the Accountable Executive is responsible for:
- Accepting and signing the Safety Policy Statement
- Providing adequate resources to ensure implementation and management of the SMS
- Providing leadership in safety related issues by actively participating in safety significant events
- Ensuring that all managers are aware of, and held accountable for their roles and responsibilities under the SMS
- Promoting and encouraging a positive safety culture within the airport
- Ensuring ongoing effectiveness of the SMS by facilitating, participating, or reviewing periodic reviews and evaluations
- Designating the airport's safety objectives
- Reviewing SMS related data provided by the SMS Manager

Figure D-1: BRAA's SMS Organizational Structure
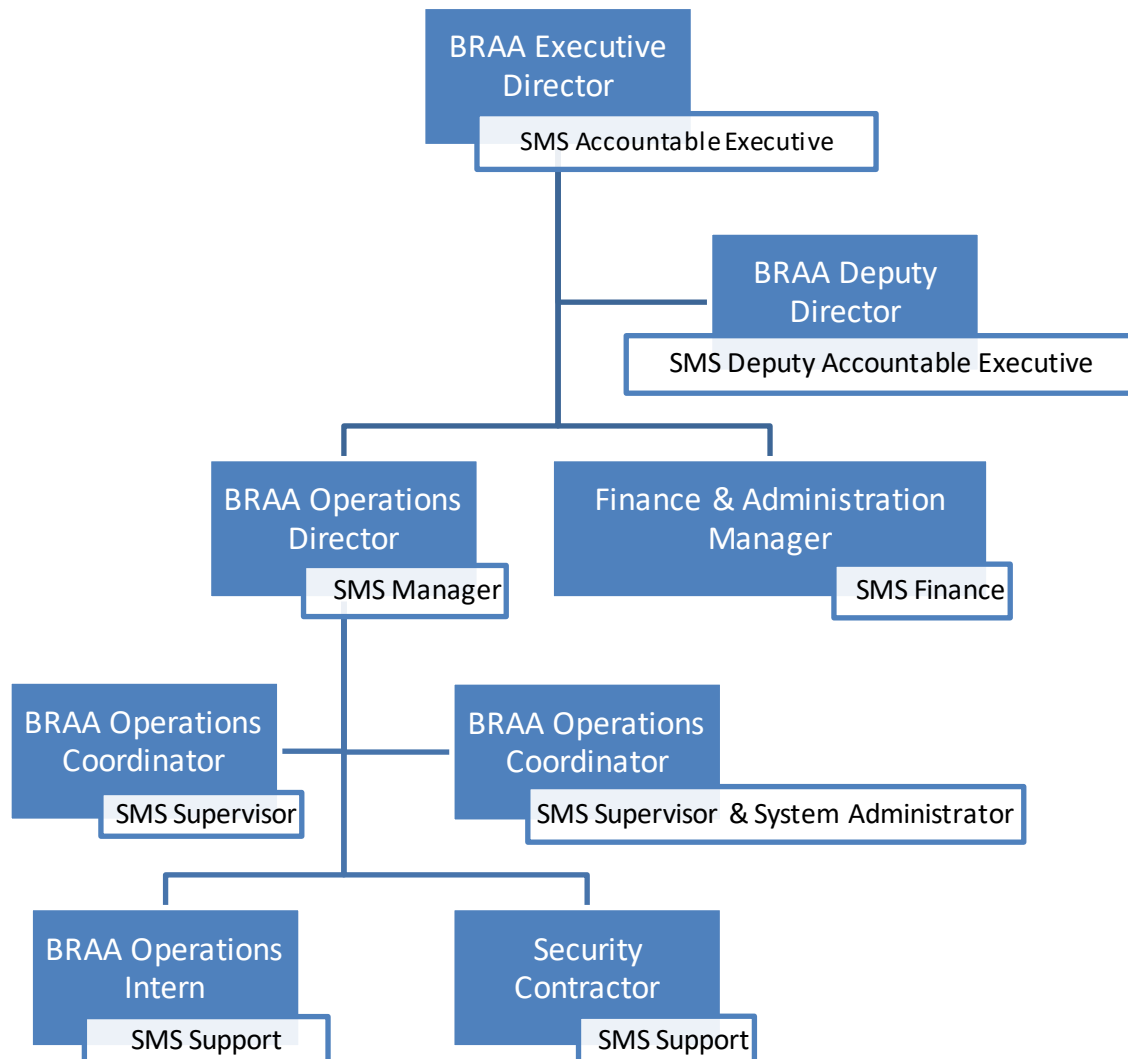
The designated SMS Manager [BRAA's Operations Director] is responsible for the daily implementation, operation, and oversight of SMS related activities and initiatives. BRAA does not require an SMS Committee, due to its smaller efficient organizational size. BRAA's SMS Manager handles the responsibilities of an SMS Committee used at larger airports. In carrying out these duties, the SMS Manager is responsible for:

- Revising and maintaining this SMS Manual
- Managing triage of identified safety hazards via:
    - Public Web Portal Safety Hazard Identifications
    - Ad-Hoc Safety Hazard Identifications
    - Safety Inspection Discrepancies
    - Incident Reports

- o Operational Changes
- o Construction Projects
- o Corrective Action Work Orders (WO)s
- Managing SMS/SRAs and mitigations for new or major or trending safety hazards
  - o Safety Mitigation WOs
  - o Safety Mitigation Projects
  - o Safety Mitigation Communication/Training WOs
- Establishing panel membership for complex SRAs requiring stakeholder Subject Matter Experts (SME)s
- Reviewing and closing above safety related items after satisfactory completion of associated actions
- Reviewing major accident and incident investigations for the airport
- Reviewing safety hazard and SMS reports and monitoring safety hazard and SMS dashboards to optimize safety
- Reporting SMS performance to the Accountable Executives (may be delegated)
- Making safety recommendations to the Accountable Executives

An SRA panel may be assembled on an as-needed basis by the SMS manager, in order to assist with safety assessments. It may be comprised of BRAA staff and relevant representatives from ATCT, CBP, security contractor, tenants (e.g., airline, fixed-base operator, flight school, MRO, etc.) and any other needed SMEs.

BRAA Operations Coordinators, reporting to the Operations Director (SMS Manager), are the primary SMS operators, administering the i3 system and processing safety hazards through it. BRAA's Operations Coordinators may be designated by the Operations Director to supervise and triage identified hazards. They are to consult with their Operations Director when in doubt, as to whether a safety hazard should be processed through SMS/SRA with both immediate corrective and safety mitigation actions, or simply be treated with a corrective WO.

BRAA Operations Intern and Security Contractor are to provide SMS support leveraging i3 with supervision from BRAA Operations Director and Coordinators.

Figure D-2:
Boca Raton Airport & Surrounding Area

E. SMS Process & Procedures

BRAA's SMS process, introduced in Section-C and Figures C-2 and C-3, is facilitated by the i3 system procured by BRAA. The following ten (10) process steps make up the procedures for implementing SMS at BCT on a daily basis, including periodic reviews and audits. The process step numbers are shown on the process diagram, corresponding to the numbered procedures below. Figure E-1 below shows the first three steps establishing BRAA's SMS Program and the final step, closing the SMS process cycle with SMS dashboard monitoring and reporting and auditing.

Figure E-1a: The Beginning and End of BRAA's SMS Process Cycle
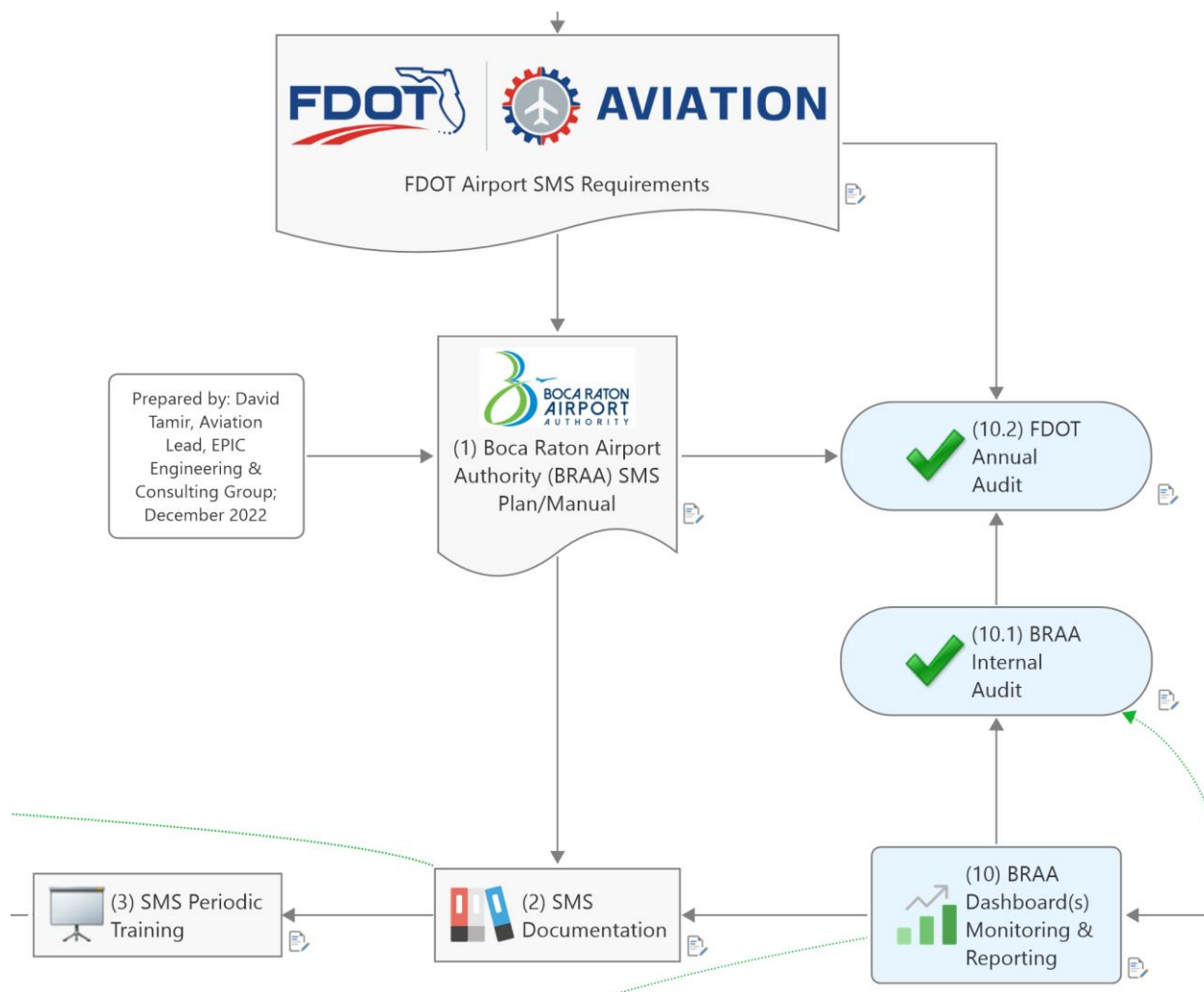
(1) BRAA SMS Plan/Manual

As described in Section-A above, this SMS process starts with the BRAA's SMS plan and manual. The SMS Plan, shown in Figure C-3 and throughout this Section-E, is provided as part of this manual to facilitate BRAA's SMS understanding, training, and daily execution. This SMS Manual

11

also includes screenshots from i3, describing how to use the system to facilitate BRAA's SMS program. Separately from this manual, i3 user manual and "cheat sheets" are provided for more detailed system operation instructions.
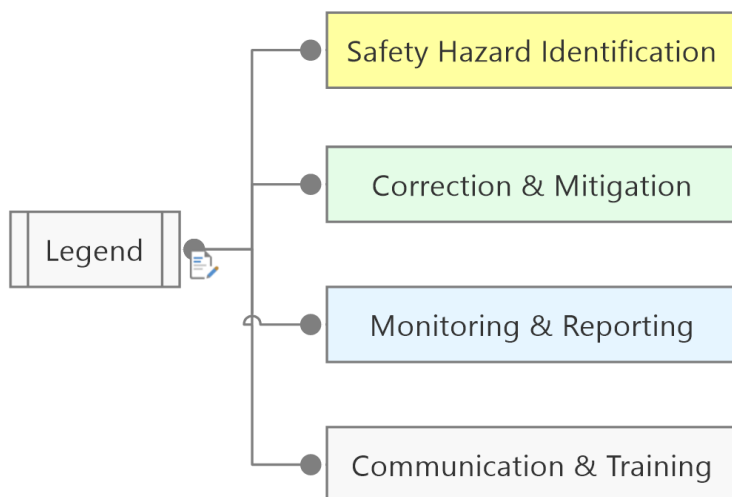
Figure E-1b: BRAA's SMS Process Diagram Color-Coded Legend

BRAA's SMS business process diagram is color coded to designate safety hazard identification steps in yellow, corrective and mitigation actions in green, monitoring and reporting in blue, and communication and training in gray.

(2) SMS Documentation

SMS documentation is facilitated via i3's Documentation Module, which houses BRAA's SMS reference documents, including but not limited to:

- SMS Implementation Plan
- SMS Policy
- SMS Manual
- SMS Communications
- SMS Reports
- SMS Audits
- SMS Training Materials
- SMS FAA Guidelines
- SMS ACRP Studies
- Other SMS Reference Materials
- Simplify i3 user manual and "cheat-sheets"

The Simplify i3 Documentation Module may be used by BRAA to house various other documents as needed, and organize them into folders. The i3 Documentation Module also includes system generated folders with all documents and attachments (e.g., photos, videos, audio recordings, etc.) generated by various safety hazard identification SRs, safety inspections, incident report SRs, operational change SRs, SMS SRs, WOs, projects, etc. Such documents and attachments are normally accessed via the attachments tab on their respective initiating parent events, as listed in the previous sentence.

(3) <u>SMS Periodic Training</u>

BRAA is to conduct periodic SMS training of its stakeholders, at least on an annual basis. Training coursework is to be updated as needed, based on BRAA's evolving safety hazards experience and mitigation actions. Simplify i3's training module includes BRAA's SMS coursework, involving review of this manual and corresponding presentation. Simplify i3's training module supports tracking of re-training dates (i.e., using a 12 month cycle or other desired period for the SMS course). Self-training may be conducted by individual users of the Simplify i3 system (e.g., BRAA staff), or in a group training setting led by a BRAA Ops Coordinator, who will record in Simplify i3 those trained and when. Group training is especially useful for those not directly using the Simplify i3 system's training module (e.g., security contractor, ATCT operator, Customs & Border Protection (CBP), Fixed Based Operators (FBO)s, airside tenants, and potentially landside tenants). Training for tenants and other airport users may also be provided via the SMS Public Portal, provided by Simplify i3.

The most important purpose of SMS training is to improve safety hazard identification, which is essentially the actual start of the daily SMS process.

Figure E-2: Daily Safety Hazards Identification
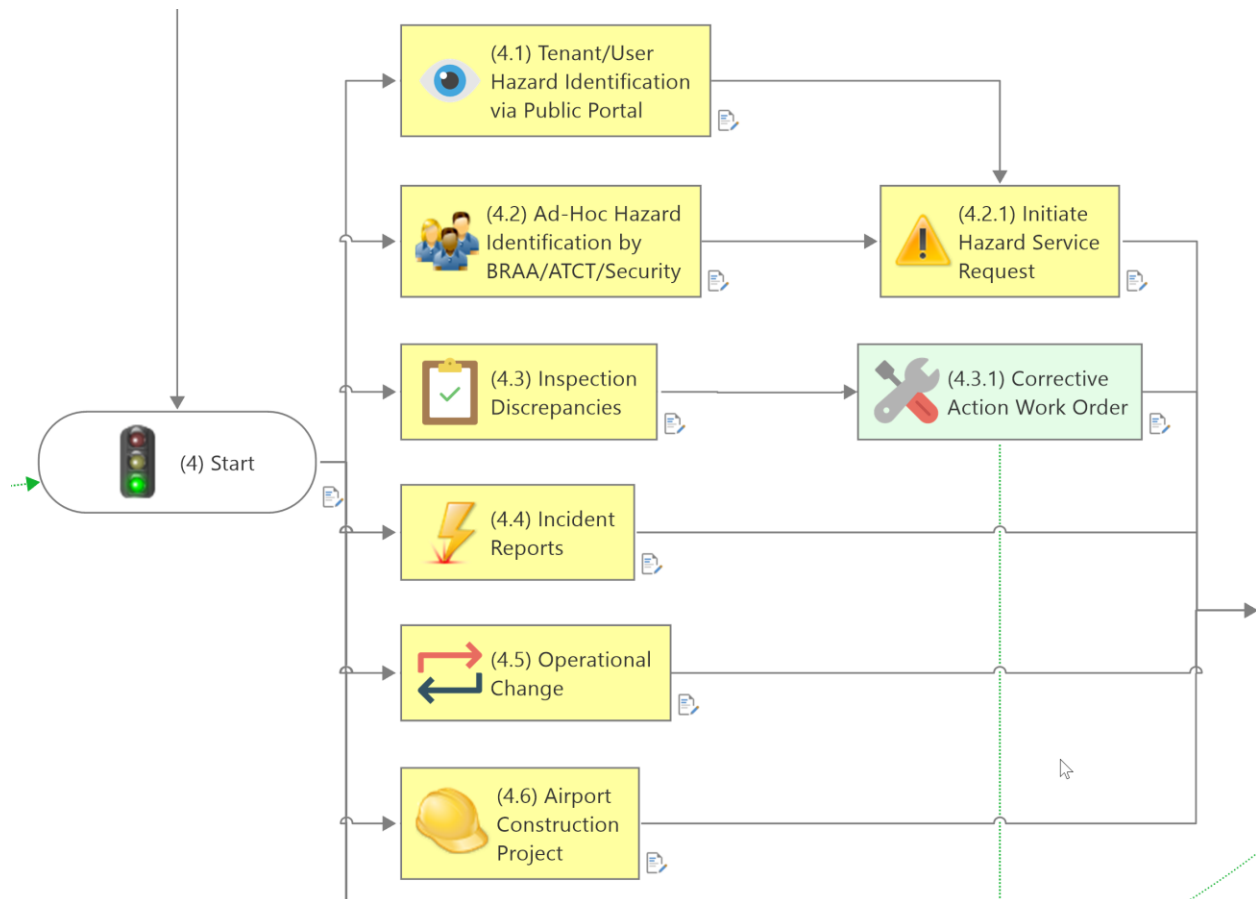
(4) Start
(i.e., of safety hazard identification)

As described in ACRP Report-131's Table 10-1 (see page 6 above), several situations may lead to identification of safety hazards. These are supported via the following mechanisms in i3:

- Tenant or Airport User Hazard Identification via Public Portal
- Ad-Hoc Hazard Identification by BRAA/ATCT/Security
- Inspection Discrepancies
- Incident Reports
- Operational Change
- Airport Construction Project

A quarterly safety hazard trend analysis and an annual airport assets safety gap-risk analysis is to be performed by BRAA, leveraging i3's reports/dashboard functions, such as "heat" map analysis, and i3's assets module. These periodic analyses may lead to needed SMS/SRA initiations.

(4.1) Tenant/User Hazard Identification via Public Portal

Airport tenants and other users of the airport facilities (public) may observe a safety hazard, and in such a case should immediately report it to BRAA. In order to facilitate such reporting, i3 provides a Public Web Portal (portal), which may be used anonymously. Public airport users may access the portal via a hyperlink, to be provided from BRAA's main web site to the web address provided below. These public users may set up their own log-in credentials for the portal, enabling them to follow-up on their reported safety hazards' resolution via the portal. Moreover, the portal provides a 'Help' menu with safety best practices and instructions documentation, which BRAA's SMS system administrator may upload as needed. Furthermore, the portal may also be used by the public to submit suggestions for airport improvements. Figure E-3a on the following page shows the portal entry screen.

The i3 SMS public web portal address is: https://citizen.simplifyi3.com/braa/citizen/home

Reporting a safety hazard via the portal includes providing a location by clicking on a specific location on the portal's map of the airport, or by providing an address or description of the location (as shown in Figure E-3b). Reporting via the portal also includes the option to upload photo(s) of the hazard, in addition to providing a written description of the hazard (as shown in Figures E-3c and E-3d). Finally, the public user selects their "visibility" preference for submission (e.g., showing their identity, hiding their identity, or submitting anonymously), as shown in Figure E-3e.

As soon as a safety hazard is reported via the portal by a public airport user, i3 automatically captures the submitted information into a Safety Hazard Identification SR form and notifies designated BRAA staff via e-mail, which includes a hyperlink to the form for immediate review and action. Moreover, BRAA designated staff may log into the portal as a system administrator to adjust portal configuration settings, upload safety best practice documentation, as well as monitor portal activity reports and dashboards (as shown in Figures E-3f and E-3g).

Figure E-3a: BRAA's Public SMS Web Portal Entry Screen
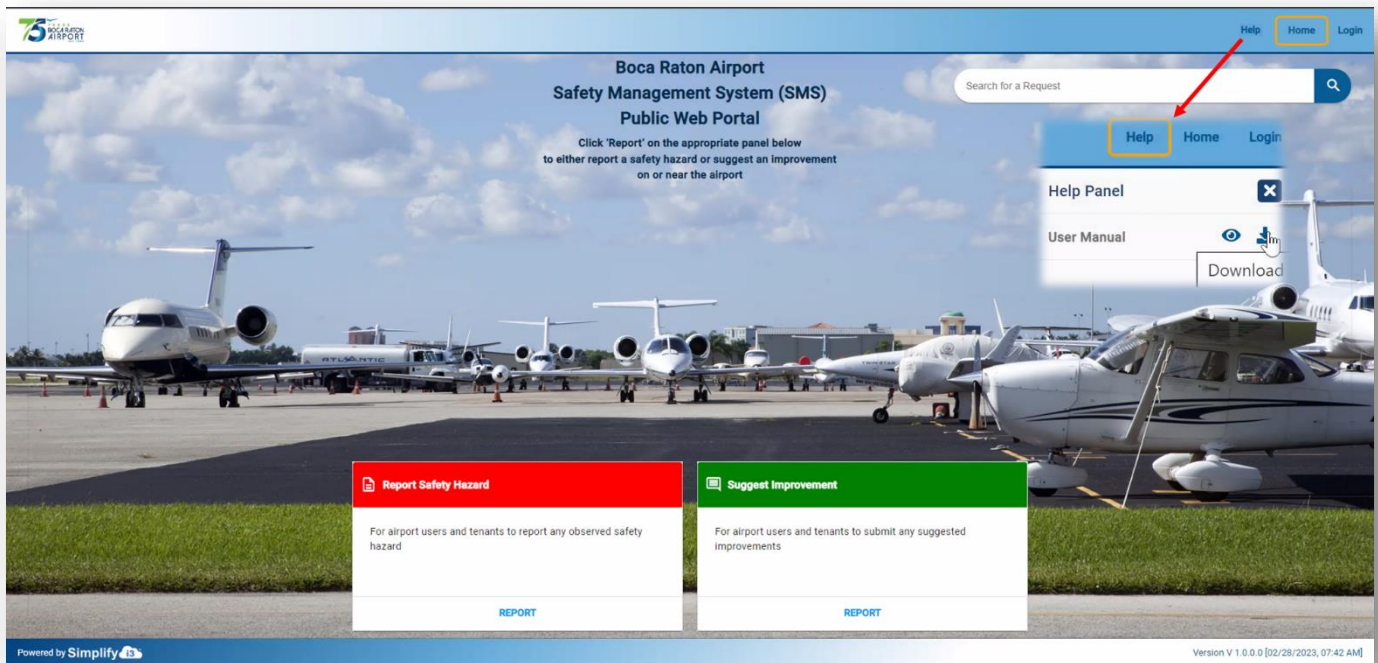
Figure E-3b: Hazard Location Identification via Public Portal
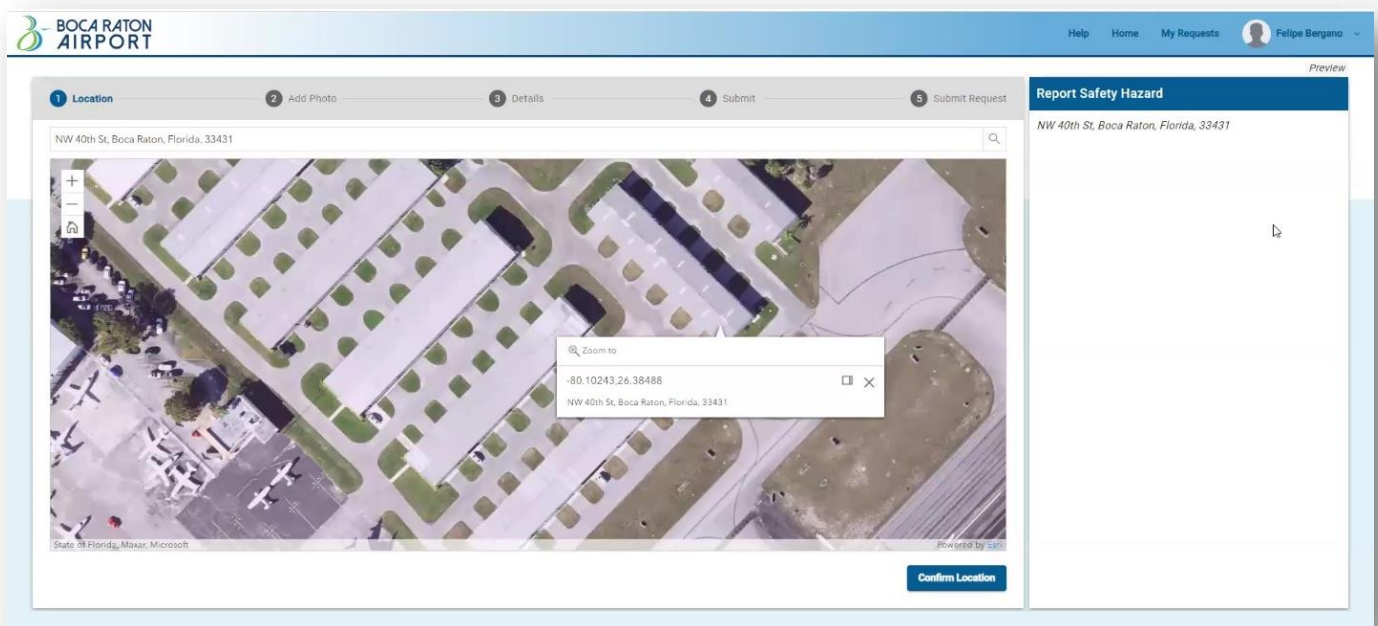
Figure E-3c: Hazard Photo Upload via Public Portal

Figure E-3d: Hazard Description via Public Portal

Figure E-3e: Public Submission Visibility

Figure E-3f: BRAA System Administrator Interface for Portal Configuration

Figure E-3g: Public Portal Activity Dashboard & Report for BRAA View Only
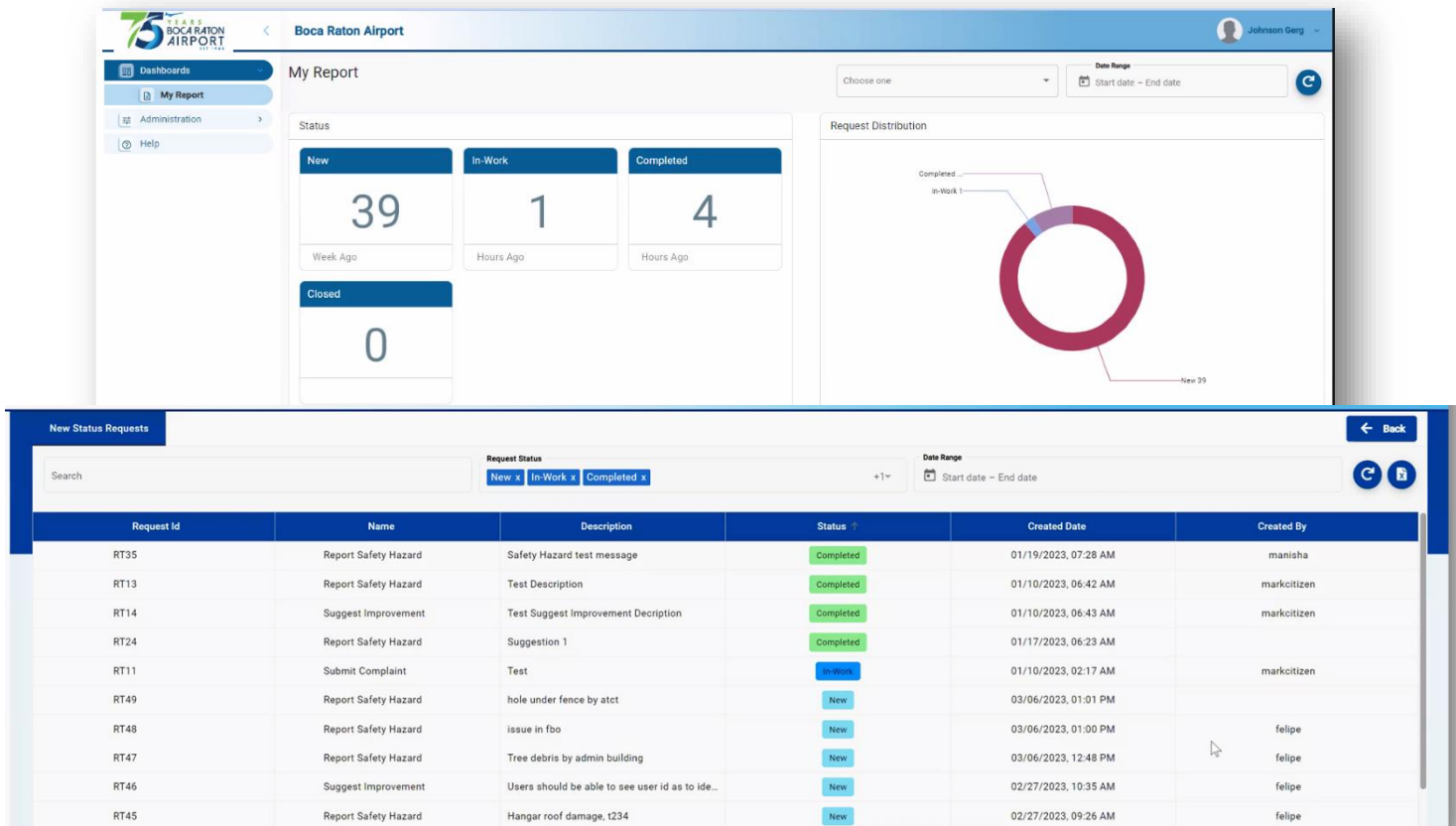
(4.2) Ad-Hoc Hazard Identification by BRAA/ATCT/Security

Safety hazard identification may take place on an ad-hoc basis by BRAA staff directly observing an issue or receiving a communication (e.g., call, text message, e-mail, etc.) from the ATCT, the security contractor, tenants, or even the public. In such a case, BRAA staff or the security contractor are to initiate a Safety Hazard Identification SR in i3 via a laptop or desktop computer, an iPad or Android Tablet, or even via a smart phone. This i3 SR form is to be filled with the appropriate information, including identifying the hazard location on the airport aerial map, and embedding photo(s) and/or video(s) of the hazard.

(4.2.1) Initiate Hazard SR

The i3 Safety Hazard Identification SR form is automatically initiated by a hazard identified by an airport tenant/user via the i3 provided public portal for BRAA. This SR form may also be initiated by a BRAA staff person or BRAA's security contractor upon ad-hoc hazard identification, including a call from the ATCT or a tenant, etc. Once the i3 Safety Hazard Identification SR form is initiated, designated BRAA's Ops representatives will receive an e-mail with a hyperlink to review the form, categorize the hazard, and initiate appropriate actions, described further along this process.

Figure E-4: i3 Safety Hazard Initiation SR Form

18

(4.3) Inspection Discrepancies

i3 supports BRAA with various inspection forms, covering its facilities on a daily, weekly, monthly, quarterly, and annual basis. These inspections may identify discrepancies, which cause a safety hazard. Such discrepancies are immediately addressed via initiation of a corrective action WO, initiated from within the inspection form.

The following lists BRAA current inspection forms enabled via i3:
(Additional inspection forms may be added as needed by BRAA or EPIC)

- **Daily**
  - Facility Inspections
  - Airfield Inspection
- **Weekly**
  - Facility Inspection
    - Admin Building
    - ATCT
    - Customs Building
    - Electrical Vault
  - Gate Inspection
  - Vehicle Equipment Inspection
- **Monthly**
  - PAPI Inspection
  - AWOS Inspection
  - EMAS Inspection
- **Quarterly**
  - FBO Inspections
    - Stationary Fueler
    - Mobile Fueler
- **Annual**
  - FBO [Documentation] Inspection
  - Pre-Hurricane Season Audit

Figure E-5: i3 Inspection Type Initiation via Web User Interface

Figure E-6: i3 Mobile and Web Inspection Forms
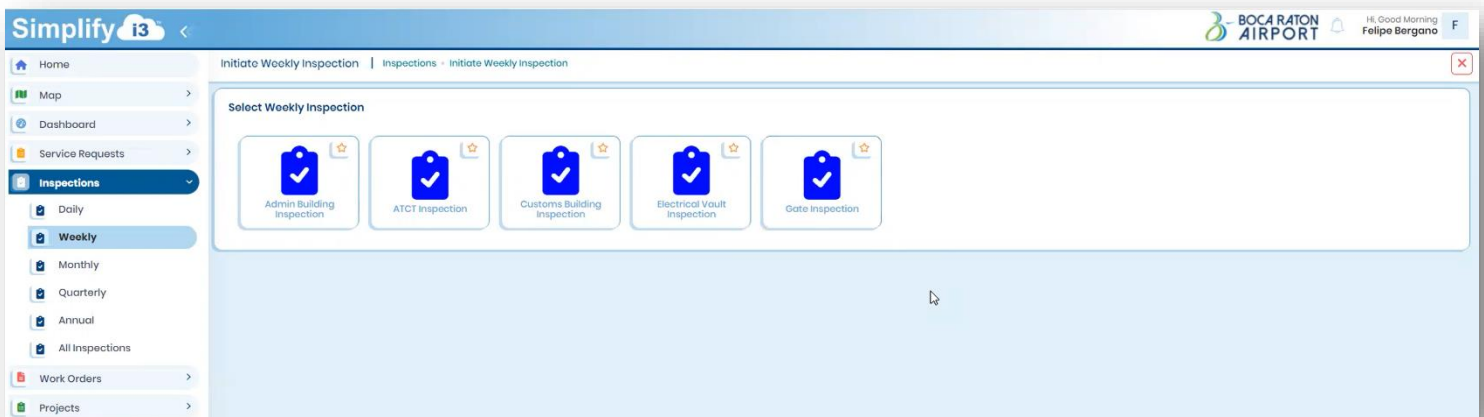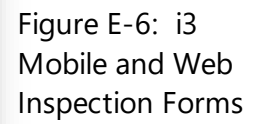
(4.3.1) Corrective Action WO

Inspected discrepancies are immediately addressed via a corrective action WO, initiated from within the inspection form. The WO initiation includes a dedicated WO form, which inherits the discrepancy details identified by the inspection. An initiated WO is immediately sent via an e-mail to designate BRAA's Ops supervising representatives for "triage". The BRAA designated Ops SMS supervisor reviews the discrepancy to be corrected, prioritizes it, and assigns the work to be done with any necessary directions, procedure, etc. via i3. Moreover, the BRAA designated Ops SMS supervisor may visit the discrepancy for a closer inspection and research of corrective options, prior to assigning the work to be done. Additional photos, videos, and audio recordings may be embedded in the i3 WO form as well. For example, an audio recording of equipment noise may be useful for the equipment vendor to ascertain the issue. Speech to text is also provided by i3 to minimize the need for typing in the field to describe issues, work completed, etc.

The corrective work is performed as soon as required by the assigned resource(s) and reported back via the WO form in i3. WO progress should be reported on the i3's form via the 'COMMENTS' tab. WO communications should be documented via the 'COMMUNICATIONS' tab. Work labor hours and materials used may also be reported via the 'COSTS' tab. The WO form is available for use via laptop or desktop computer, via an iPad or Android tablet, or even via a smart phone; although a mobile phone's screen real-estate is limiting.

Figure E-7: i3 Corrective Work Order (WO) Form

(4.4) Incident Reports

i3's SR mechanism supports BRAA with various incident forms, which inherently include safety hazards leading to the incident. Such incidents are immediately addressed by BRAA Operation Supervisor(s) and documented via i3's tools built into the incident SR forms (e.g., data fields, location mapping, photos/videos, triggered WOs and/or SMS, comments, communications, etc.)

The following lists BRAA's current incident forms enabled via i3 SRs:
(Additional incident forms may be added as needed by BRAA or EPIC)

- Disabled Aircraft
- Alert 2
- Alert 3
- Aircraft Damage
- Aircraft Incident
- Fuel Spill
- Wildlife
  - Strike
  - Harassment
- Injury
- Auto Accident
- Property Damage
- Trespassing
- Break-in/Theft
- Vandalism
- General Incident

Figure E-8: i3 Incident Report Initiation
via Web User Interface

(4.5) Operational Change

BRAA staff should initiate an Operational Change SR, to reflect changes to airfield operations due to the following examples:

- Irregular Operations (IROP)s
  - Events
  - Storms
- Tenant changes
- New FAA requirements
- Airfield design changes
- Equipment/System changes
- etc.

Such operational changes may justify initiating an SMS/SRA to mitigate safety hazards. i3's Operational Change SR should also be used to coordinate, collaborate, document, and report the operational change via i3 SR built-in tools (e.g., data fields, location mapping, photos/videos, attached documents, comments, communications, and triggered WOs and/or SMS).

(4.6) Airport Construction Project

BRAA staff should use i3's Projects Module to manage airport construction projects and initiate an SMS/SRA process if justified to mitigate safety hazards associated with a project. i3 enables capturing all project related information and collaboration, as well as project schedules, drawings, O&M manuals, etc. using it's built-in project management module tools (e.g., data fields, location mapping, photos/videos, attached documents, comments, communications, and triggered WOs and/or SMS).

If desired by BRAA, EPIC can integrate the i3 Project management Module with FDOT's JACIP (i.e., enabling automatic data download from JACIP, or vice a versa upload data to JACIP).

Figure E-9: Quarterly and Annual Analyses are to Identify Safety Trends or Safety Gap-Risks
to be Addressed via SMS/SRA
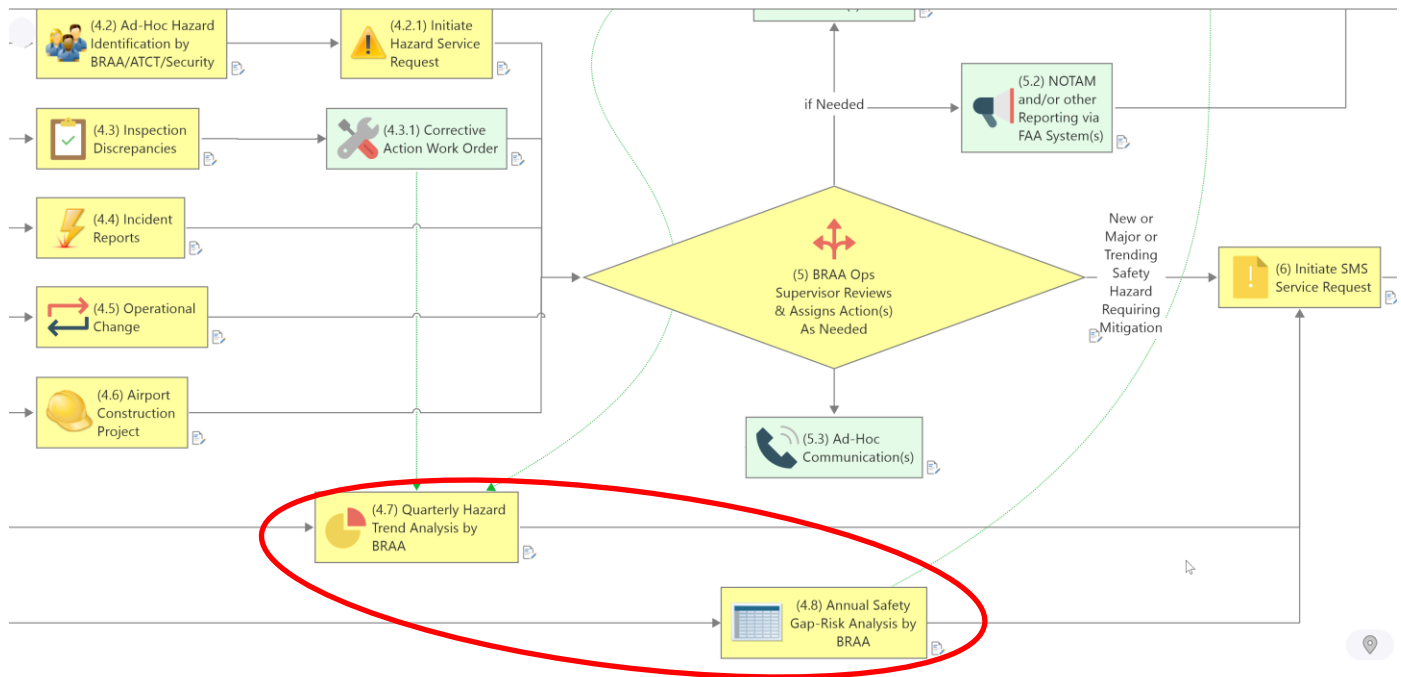
(4.7) Quarterly Safety Hazard Trend Analysis by BRAA

At least on a quarterly basis, BRAA should leverage i3's discrepancy/WO "heat" mapping reporting and dashboarding to analyze potential safety hazard trends and root causes. This may also include research of incidents and best practices from other airports. Any trends/root causes identified should be captured via an SMS SR initiation and its associated SRA section, leading to appropriate mitigation actions.

(4.8) Annual Safety Gap-Risk Analysis by BRAA
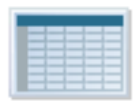
Prior to BRAA's annual internal preparations for FDOT's audit, BRAA staff should perform a gap-risk analysis of the airport's major assets, including safety deficiencies. i3's assets module enables a condition assessment of such assets and identification of any respective safety deficiencies. Research of incidents and best practices from other airports may also be leveraged for such condition assessments of BRAA's assets. Assets involving a safety deficiency concern may trigger an SMS/SRA to justify enhancement of the assets to mitigate safety hazards. BRAA designated Ops SMS supervisor(s) may trigger the SMS SR from the asset details form in i3.

Figure E-10: BRAA SMS Manager/Supervisors "Triage" Safety Hazards
for Immediate Corrective Actions and SMS/SRA Processing if Needed
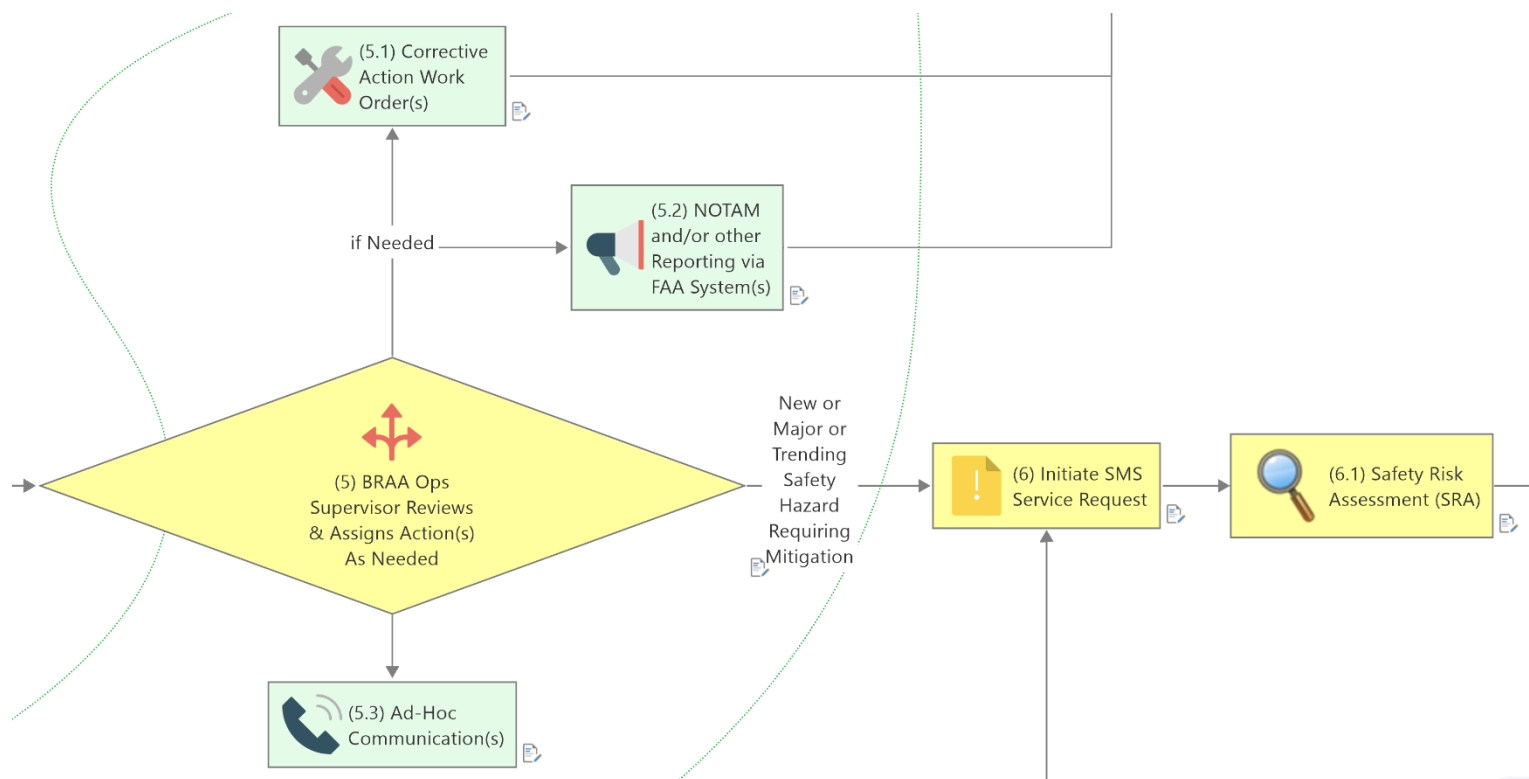
(5) BRAA Ops SMS Manager/Supervisor Reviews & Assigns Action(s) As Needed

BRAA Ops SMS Manager/supervisors will receive notifications from i3 via their respective e-mail with a hyperlink to review and "triage" any initiated hazard identifications, safety inspection discrepancy WOs, incidents, operational changes, airport construction projects, etc. The SMS Manager/supervisor should first address any immediate corrective actions required via i3's WO mechanism, as well as initiate any needed communications such as Notice to Airmen (NOTAM)s, other FAA reporting, and ad-hoc collaboration/notifications with BRAA's security contractor, ATCT, tenants, public, etc.

Not all safety hazards identified require to be processed through an SMS/SRA SR. New or major or trending safety hazards requiring mitigation, are to be processed through SMS/SRA. If the Ops SMS Manager/supervisor determines that SMS/SRA SR is required, then they are to click on the initiate SMS SR button within the i3 form for the given situation (e.g., hazard identifications, safety inspection discrepancy WOs, incident reports, operational changes, airport construction projects, etc.). This will initiate the SMS/SRA SR (see Figures E-11/12), and associate the preceding reporting with it. The i3 'COMMENTS' and 'ATTACHMENT' tabs should be used by the SMS Manager/supervisors for capturing relevant notes, research, documentation, etc. The 'COMMUNICATIONS' tab should be used to capture any relevant communications (e.g., e-mails, phone/radio calls, texts, etc.).

(5.1) Corrective Action WO(s)

BRAA Ops SMS Manager/supervisors may immediately address any safety issue via a corrective action WO, which may be initiated from within the i3 form identifying the issue (e.g., hazard identification, inspection, incident, operational change, construction project, etc.). The WO initiation includes a dedicated WO form, which inherits the initiating i3 form details, identified by the source issue. The SMS Manager/supervisor prioritizes the WO, and assigns the work to be done with any necessary directions, procedure, etc. via i3. Moreover, the SMS Manager/supervisor may visit the issue for a closer inspection and research of corrective options, prior to assigning the work to be done. Additional photos, videos, and audio recordings may be embedded in the i3 WO form as well. For example, an audio recording of equipment noise, may be useful for the equipment vendor to ascertain the issue. Speech to text is also provided by i3 to minimize the need for typing to describe issues, work completed, etc. while in the field.

The corrective work is performed as soon as required by the assigned resource(s) and reported back via the WO form in i3. WO progress should be reported on the i3's form via the 'COMMENTS' tab. WO communications should be documented via the 'COMMUNICATIONS' tab. Work labor hours and materials used may also be reported via the 'COSTS' tab. The WO form is available for use via laptop or desktop computer, via an iPad or Android tablet, or even via a smart phone; although a mobile phone's screen real-estate is limiting.

(5.2) NOTAM and/or other Reporting via FAA System(s)

NOTAM may be required as a result of a given situation (e.g., hazard identifications, safety inspection discrepancy, WOs, incidents, operational changes, or airport construction projects, etc.). In such a situation, the BRAA SMS Manager/supervisor is to initiate a NOTAM via the FAA's web-enabled system, and record within i3's appropriate data fields that a NOTAM was issued and its respective ID for the given situation.
Moreover, wildlife strikes should be reported on the proper FAA hardcopy form and FAA on-line system, etc. i3's wildlife SR forms include the FAA required information, which may be e-mailed from within i3 as well as exported as a PDF.

(5.3) Ad-Hoc Communication(s)

Ad Hoc communication via e-mails, phone calls, text messaging, radio calls, etc. should be documented by BRAA staff using i3's communications tab on the respective i3 forms for hazard identification, incidents, inspections, WOs, etc.

Figure E-11: i3 SMS SR Form with Safety Hazard Description Data Entry Fields

The SMS hazard types used by i3 correspond to the same hazard types defined by the FAA for Part-139 airfield inspections.

Figure E-12: i3 SMS SR Form with SRA Matrix and Data Entry Fields

(6) Initiate SMS SR

> ⚠️ Initiating an SMS process involves launching an SMS SR form via i3, by a BRAA SMS Manager/supervisor. Ideally, the SMS initiation should take place from the form of the source issue already captured in i3 (e.g., hazard identification, safety inspection discrepancy, WO, incident report, operational change, airport construction project, etc.). By doing so, information describing the issue is automatically replicated in the SMS SR form and the form identifying the issue is automatically associated with the SMS SR form via the i3 'ASSOCIATIONS' tab. Otherwise, the information/forms can be manually copied/associated.

Figure E-13: i3 SMS SR Form's Tab for Associations
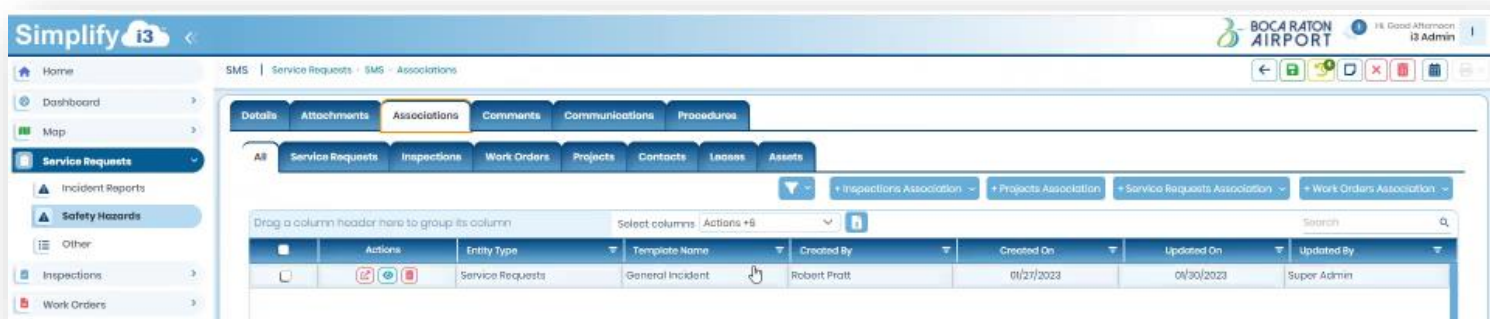
(6.1) Safety Risk Assessment (SRA)

> 🔍 The SRA portion of the SMS SR is essentially the core analysis of SMS leading to safety mitigation. The SRA portion includes use of a risk matrix, tailored for BCT, which enables BRAA to ascertain the severity and then the likelihood of a hazard, and the consequent risk level. This helps prioritize and justify required mitigation actions. The SRA also includes a root cause analysis to help develop the appropriate mitigation actions.

The SRA may be completed in a group setting by a select panel of SMEs, who have been assembled by the BRAA SMS Manager via a special meeting to resolve the safety hazard. i3 provides the hazard matrix, data fields, and action buttons to initiate appropriate safety hazard mitigations via project(s), WO(s), and/or education/training. The i3 'COMMENTS' and 'ATTACHMENT' tabs should be used for capturing relevant notes, research, documentation, etc. The 'COMMUNICATIONS' tab should be used to capture any relevant communications (e.g., e-mails, phone calls, texts, etc.). Other tools provided by i3 include sticky note reminders, data entry/edit history log, scheduler, and more.

Figure E-14: i3 SMS SR Form's Tabs for Comments-Attachments-Communications and
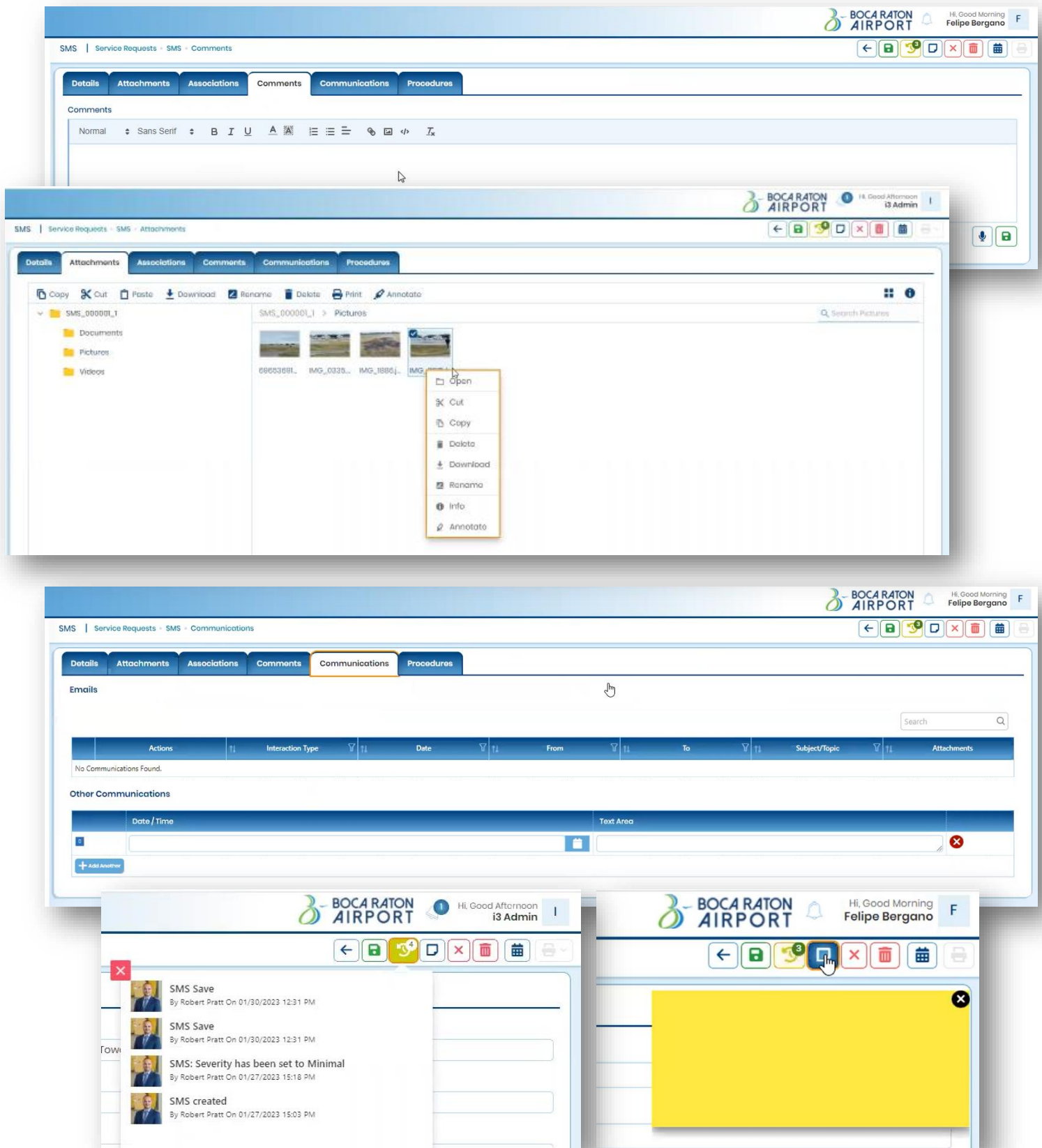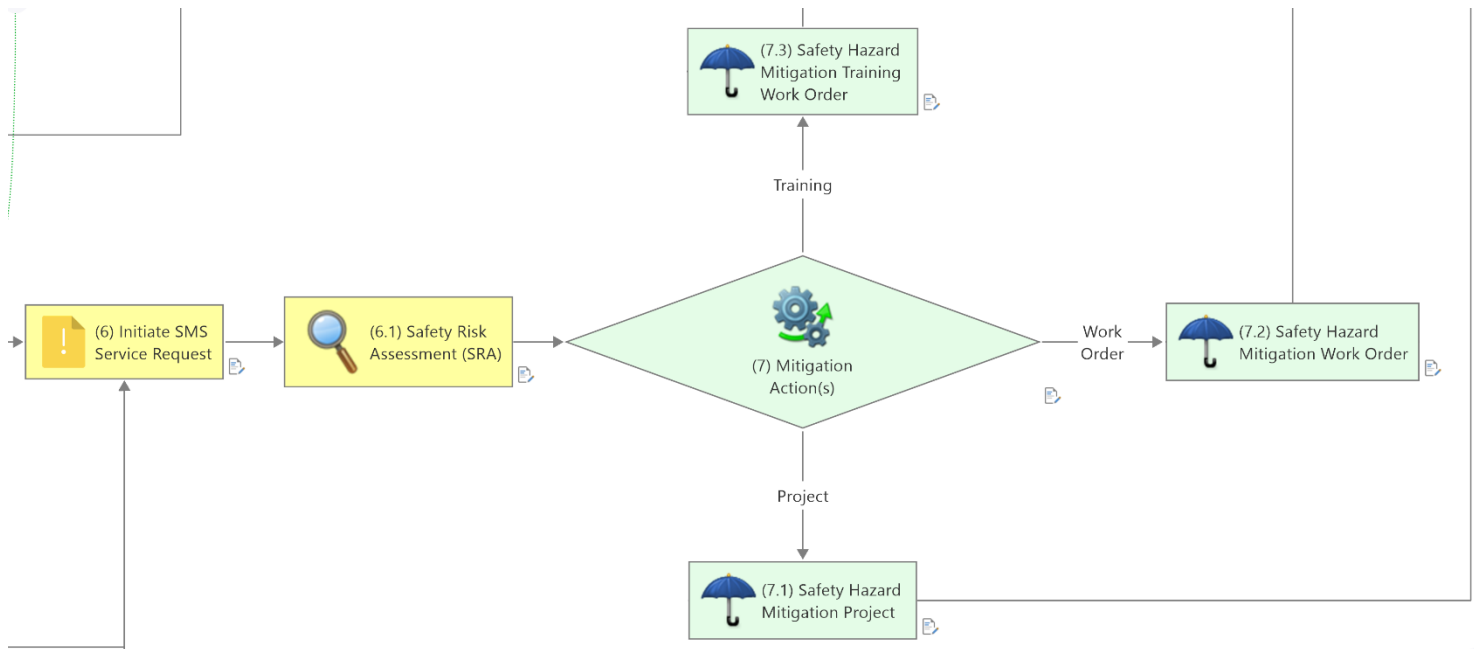Other Functions Such as Sticky Notes and History Log

Figure E-15: SMS/SRA Mitigation Actions may Involve
Project(s) and/or WOs including Training/Communications

(7) Mitigation Action(s)

Several safety mitigation actions may be initiated from i3's SMS SR form, as a result of the SRA.

Mitigations include:

- Safety Hazard Mitigation Project (i.e., for mitigation of root cause(s) requiring a funded project to implement significant changes involving construction or other work, beyond the scope of a safety hazard mitigation WO)

- Safety Hazard Mitigation WO (i.e., for mitigation of root cause(s) that is more involved/deeper than an immediate corrective action WO, but less involved than a safety hazard mitigation project)

- Safety Hazard Mitigation Training WO (i.e., for mitigation via re-training or updated training/process/procedures and/or communication with staff, contractors, tenants, etc. to avoid such future hazards)

Initiating such actions should be done by clicking on the respective action button on the i3 SMS SR form. By doing so, SMS/SRA information is automatically replicated in the mitigation project/WO form, and the SMS/SRA SR is automatically associated with the project/WO form via the i3 'ASSOCIATIONS' tab. Otherwise, the information/forms can be manually copied/associated.

(7.1) Safety Hazard Mitigation Project

BRAA SMS Manager/supervisor may mitigate safety hazards via a Safety Hazard Mitigation Project (i.e., for mitigation of root cause(s) requiring a funded project to implement significant changes involving construction or other work, beyond the scope of a safety hazard mitigation WO). The Safety Hazard Mitigation Project should be initiated from the respective button within the i3 SMS form; this automatically transfers the mitigation project description to the Project form and associates the SMS/SRA SR and the Safety Hazard Mitigation Project via their respective 'ASSOCIATIONS' tabs.

The BRAA SMS manager/supervisor enters additional information on the Safety Hazard Mitigation Project form and its associated data fields and project tabs, enabled by i3. The mitigation project is managed and tracked via the Project form in i3. Project cost estimate, schedule, milestones, progress, documentation, etc should be reported on the i3's form via the respective project management tabs. The project form is available for use via laptop or desktop computer, via an iPad or Android tablet, or even via a smart phone; although a mobile phone's screen real-estate is limiting.

(7.2) Safety Hazard Mitigation WO

BRAA SMS Manager/supervisor may mitigate safety hazards via a Safety Hazard Mitigation WO (i.e., for mitigation of root cause(s) that is more involved/deeper than an immediate corrective action WO, but less involved than a safety hazard mitigation project). The Safety Hazard Mitigation WO should be initiated from the respective button within the i3 SMS SR; this automatically transfers the mitigation work description to the WO and associates the SMS/SRA SR and the Safety Hazard Mitigation WO via their respective 'ASSOCIATIONS' tabs.

The BRAA SMS Manager/supervisor prioritizes the WO, and assigns the work to be done with any necessary directions, procedure, etc. via i3. The mitigation work is performed by the assigned resource(s) and reported back via the WO form in i3. WO progress should be reported on the i3's form via the 'COMMENTS' tab. WO communications should be documented via the 'COMMUNICATIONS' tab. Work labor hours and materials used may also be reported via the 'COSTS' tab. The WO form is available for use via laptop or desktop computer, via an iPad or Android tablet, or even via a smart phone; although a mobile phone's screen real-estate is limiting.

(7.3) Safety Hazard Mitigation Training WO

BRAA SMS Manager/supervisor may mitigate safety hazards via a Training WO (i.e., for mitigation via re-training or updated training/process/ procedures and/or communication with staff, contractors, tenants, etc. to avoid such future hazards). The Safety Hazard Mitigation Training WO should be initiated from the respective button within the i3 SMS form; this automatically transfers the mitigation training description to the training WO, and associates the SMS/SRA SR and the Safety Hazard Mitigation Training WO via their respective 'ASSOCIATIONS' tabs.

The BRAA SMS Manager/supervisor prioritizes the training WO, and assigns the training enhancement work to be done with any necessary directions, new process/procedures, etc. via i3. The mitigation training work is performed by the assigned resource(s) and reported back via the training WO form in i3. Training WO progress should be reported on the i3's form via the 'COMMENTS' tab. Training WO communications should be documented via the 'COMMUNICATIONS' tab. Updated training course documentation (e.g., MS Word, MS PowerPoint, PDF, etc.) is to be attached via the 'ATTACHMENTS' tab and uploaded into the i3 training module. Any required training quiz updates are to be performed in the training module for the given course. Training deadline requirements and personnel to be trained are to be updated in the training course parameters. The training WO form is available for use via laptop or desktop computer.

Figure E-16: SMS/SRA Initiated Safety Hazard Mitigation Training/Communication WO

(8) Staff SMS Update/Training

Regardless if a training WO has been issued via the SMS form, BRAA staff, contractors, tenants, ATCT, etc should be updated as to the safety hazard mitigations implemented via SMS. This staff update should be accomplished by e-mailing the completed SMS SR details, using the i3 e-mail button within the SR form itself. This e-mail communication will then be automatically captured/recorded under the SMS SR's 'COMMUNICATIONS' tab.

Any required new training or updated training coursework is to be administered, per the training WO described earlier in the process (step 7.3). Such training may be administered to i3 users via the self-training function or to the wider airport SMS stakeholders (i.e., including contractors, tenants, etc.) via the group training function, where a BRAA Ops supervisor would administer the training and record within i3 who attended.

Moreover, special safety hazard mitigation guidelines directed at the tenants and airport users, may be provided via the i3 public portal. BRAA's i3 system administrator is to upload such documentation via the appropriate i3 mechanism.

Figure E-17: BRAA Staff and other Stakeholders are to be Updated/Trained as Needed on the SMS/SRA Mitigation Actions Taken
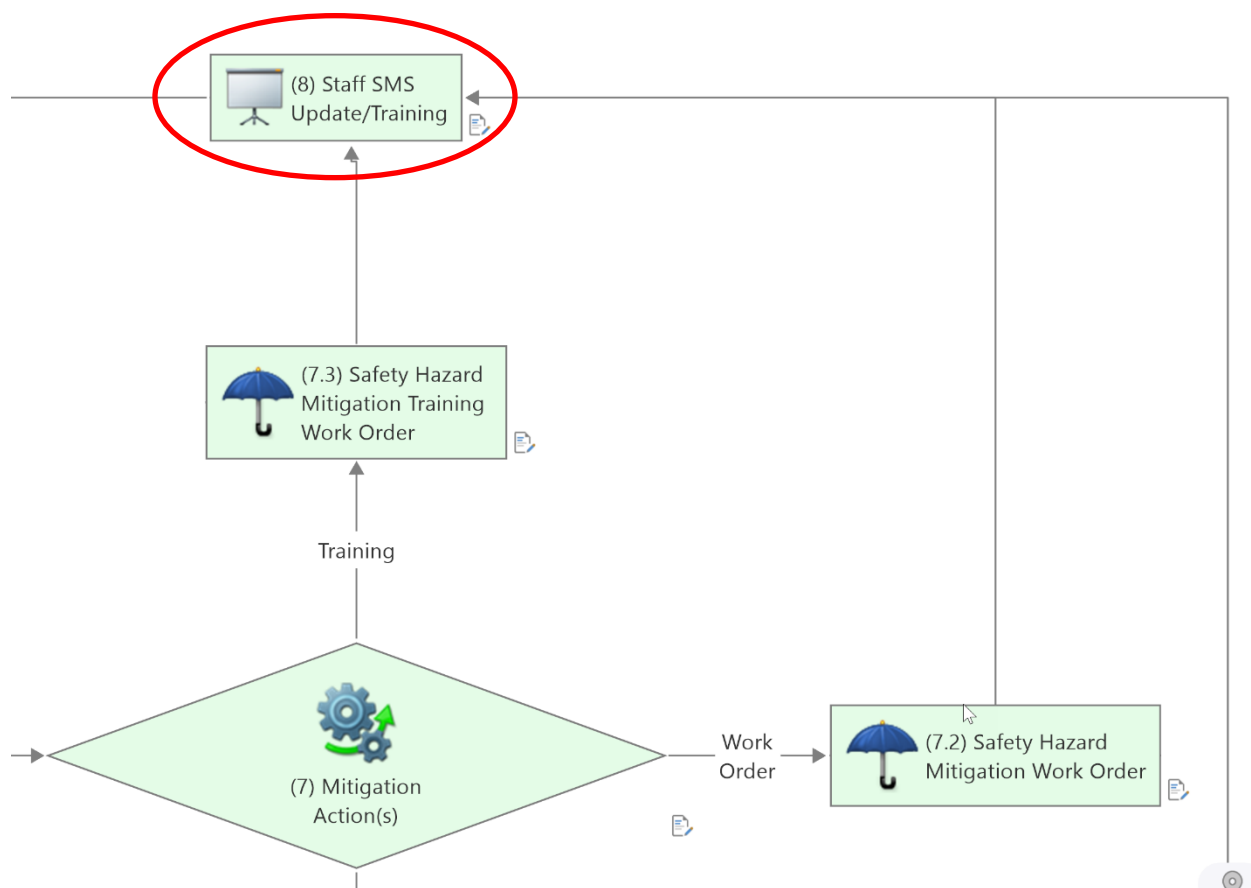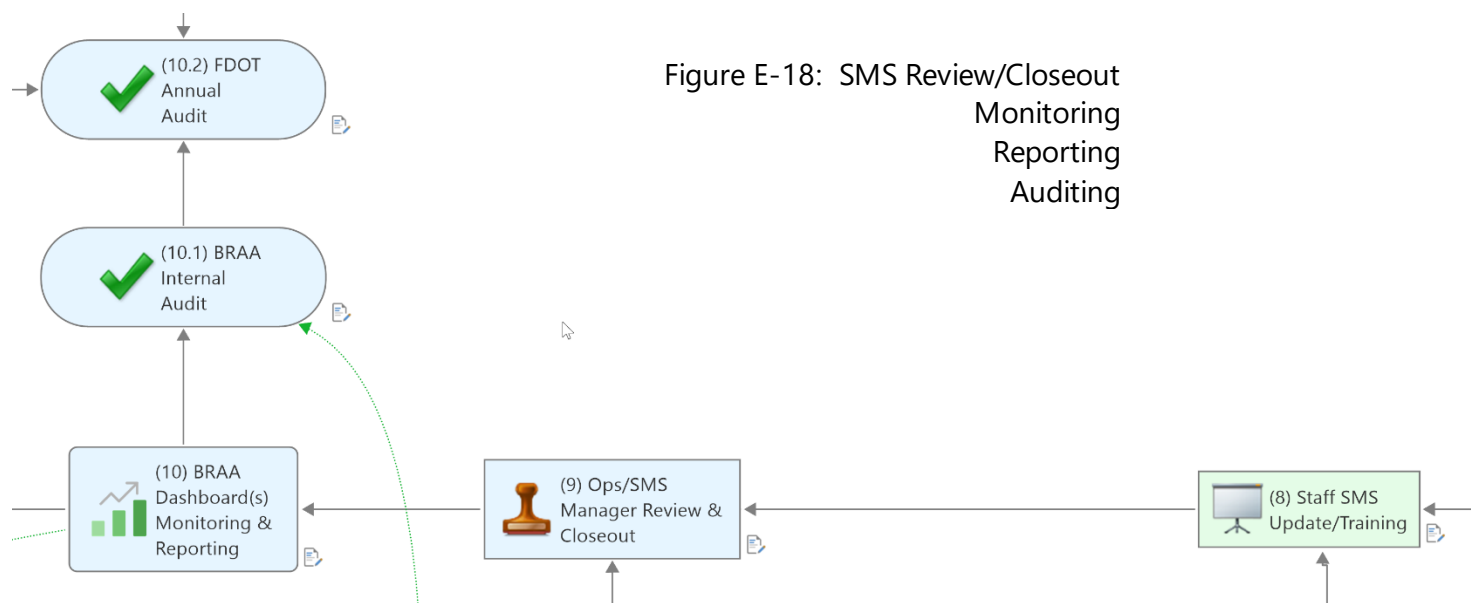
Figure E-18: SMS Review/Closeout
Monitoring
Reporting
Auditing

(9) BRAA Ops Director/SMS Manager Review & Closeout

BRAA's Ops Director, as the designated BCT SMS Manager, reviews and closes the status within i3 of any completed Hazard and SMS SRs, as well as WOs, incident reports, operational changes, construction projects, etc. Such reviews and closeouts should be performed at least on a monthly basis, or as items are completed and assigned to the BRAA Ops Director automatically via e-mail notification from i3.

The BRAA Ops Director may examine the i3 'HISTORY' metadata log of each completed form to review all transactions that took place (e.g., date initiated, initiating individual, data field entries/edits, and respective individuals making the entries/edits). The Ops Director may examine any communications involving this form/issue via the 'COMMUNICATIONS' tab. The Ops Director may also examine the various associations with the form/issue (i.e., other associated inspections, WOs, SRs, assets, etc.) via the 'ASSOCIATIONS' tab. Moreover, the Ops Director may examine any attachments (e.g., documents, photos, videos, audio, etc.) via the 'ATTACHMENTS' tab.

In order to close-out the Safety Hazard SR or SMS SR and/or other forms (e.g., WOs, incident reports, operational changes, construction projects, etc.), the Ops Director needs to change the status field to 'CLOSED' on the respective form.

(10) BRAA Dashboard(s) Monitoring & Reporting

BRAA management and staff should review and monitor on a monthly basis safety-related metrics dashboards and reports, which include the following Key Performance Indicators (KPI)s:

Safety Hazards Metrics:
> Number of active safety hazard items
> Safety hazards distribution by type/category
> Safety hazard items per identification mechanism
> Safety hazard spatial distribution (i.e., "heat" map analysis)
> Duration to safety hazard corrective action WO completion (i.e., aging report)

SMS Metrics (i.e., safety hazards elevated to SMS process):
> Number of active SMS items
> SMS items distribution by hazard type/category
> SMS items per identification mechanism
> SMS items per risk level
> Construction projects (not completed) requiring SMS
> Duration to SMS mitigation WO completion by risk level
> Duration to SMS mitigation project completion by risk level
> Duration to SMS mitigation training WO completion by risk level

Conclusions should be drawn from these dashboards and reports to improve BRAA's safety performance.

Figure E-19: Sample i3 Safety Hazard & SMS Dashboards

36
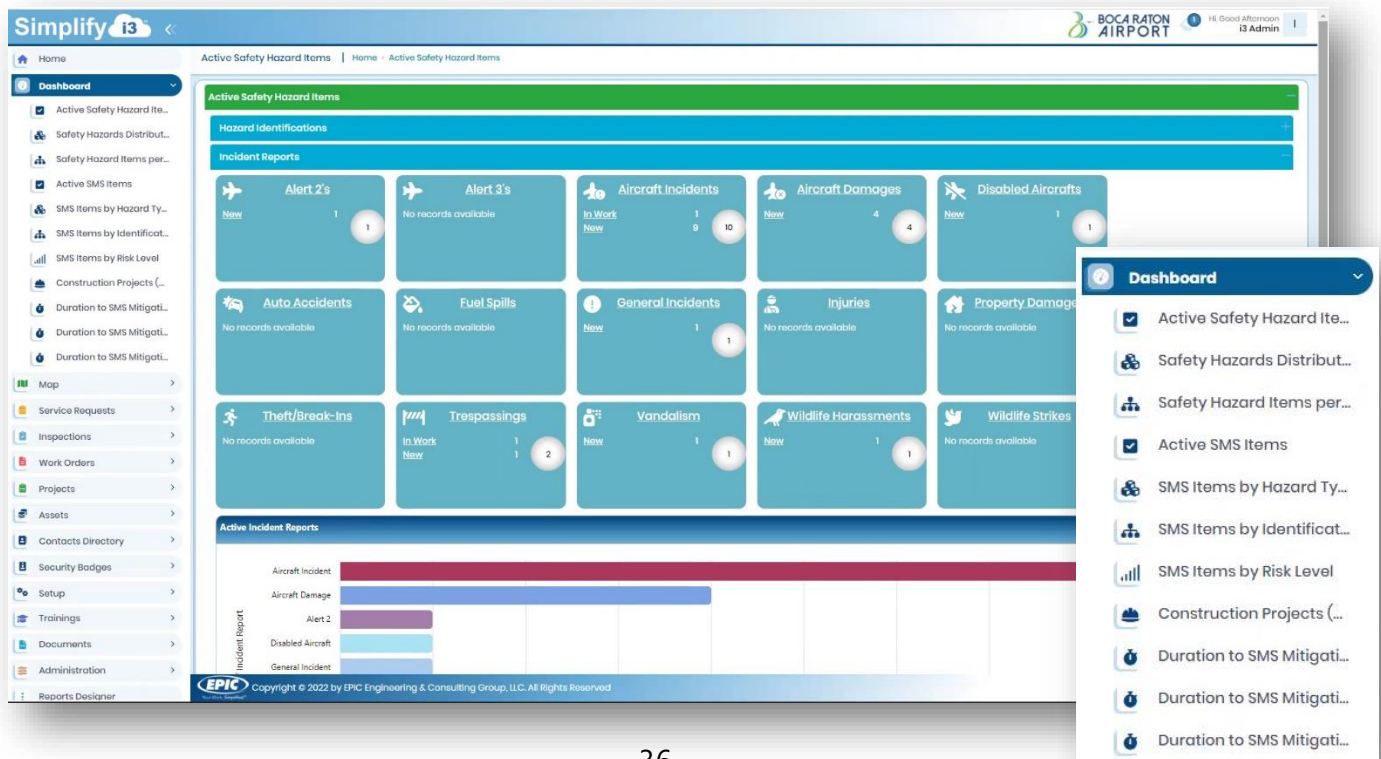
(10.1) BRAA Internal Audit

BRAA management should conduct an internal self-audit of its safety performance, leveraging i3's dashboards and reports. This internal audit should be conducted in preparation for FDOT's annual audit of BRAA/BCT. These preparations may include exports and screenshots from i3 to facilitate presentation of BRAA's safety performance to BRAA's Board of Directors and FDOT.

(10.2) FDOT Annual Audit

BRAA may prepare a computer workstation with guest user log-in for FDOT's visiting auditor, to directly browse and review through BRAA's data in i3 (e.g., safety hazard identifications, inspections, WOs, incident reports, operational changes, construction projects, SMS SRs, etc.). BRAA may also present via i3 list views, detail views, map views, dashboard views, and reports of BRAA's annual data related to safety.

Appendix-1: Safety Policy Statement

Boca Raton Airport
Safety Policy Statement
Effective February 1, 2023

Safety is the highest priority at Boca Raton Airport. To ensure that our safety goals are met, the Boca Raton Airport Authority (BRAA) is committed to the implementation of Safety Management Systems (SMS) that enable the prevention of incidents and accidents, protect life and property, and create an environment that facilitates efficient airport operations. The BRAA will work with the Airport tenants, employees, pilots, Air Traffic Controllers, and other partners to create a safety culture that recognizes the importance and value of safety management. Together we will implement, develop, and improve strategies that ensure our aviation activities are conducted with the highest level of safety focus.

Best Regards,

Clara Bennett | Executive Director
Boca Raton Airport Authority **|** Always First Class
903 NW 35TH Street **|** Boca Raton, FL 33431
o: (561) 391-2202, Ext. 211 **| c:** (561) 325-5199
clara@bocaairport.com **|** www.bocaairport.com

Appendix-2: Simplify i3® System Information

Original Equipment Manufacturer (OEM):   EPIC Engineering & Consulting Group LLC

Headquarters Address: 1049 Willa Springs Blvd, Suite 1001, Winter Springs, FL 32708

Contact Information:

Aviation Director   David Tamir   +1.805.236.3286   david.tamir@epicgroupllc.com

Technology Director   Suresh Sanka   +1.407.429.1489   suresh@epicgroupllc.com

Operations Director   Julee Clark   +1.321.217.5440   julee@epicgroupllc.com

System Description:

Simplify i3® is a Commercial-Off-The-Shelf (COTS) solution that streamlines airport data management and delivers actionable intelligence to airport managers. It leverages state-of-the-art technologies from Microsoft, Google, Apple, Android, and Esri. Simplify i3® is a cloud-based platform, which supports and optimizes a wide spectrum of airport business processes including but not limited to: master planning and environmental management, Capital Improvement Programming (CIP) and project management, Part-139 compliant operations and safety management, facilities asset and maintenance management, tenant leases and concessions management, training and certification management, plus more...

Simplify i3® leverages web-enabled forms and spreadsheets with a common database repository, integrated with documents, photos, audio/video, geospatial mapping, business analytics dashboards, IoT devices/sensors, mobile phones/tablets, and various other airport business systems as needed. Esri Geospatial Information System (GIS) is embedded for mapping assets, issues and safety trend analysis heat maps; including interoperability with airport's and FAA's GIS data (e.g., eALP, airfield pavement, lights, signage, NAVAIDs, utilities, facilities, etc.). Google user friendly human interface technology is also embedded, including speech to text for field inspections and user-configurable icons, colorization, dashboards, reports, etc. Apple iOS iPad and Android native apps leverage built-in GPS, camera, microphone, etc. e-Mail send, receive, and automated sortation functions are provided for easy communication record keeping in support of managing incidents, safety mitigation, work orders, projects, leases, etc. Simplify i3®'s interconnected modules provide cross association/linking of inspections, service requests, workorders, projects, documents, tenants/contacts, etc. Application Programming Interface (API) integration is supported with airport systems, sensors, etc. and FAA information systems as needed. Easy import and export from Microsoft Excel and export to Adobe Acrobat (PDF) is also provided.

Using Simplify i3®, airports are able to consolidate multiple, traditional, expensive, and complex systems into a single, simpler, holistic, cloud-served solution platform, which is an order of magnitude less expensive. EPIC's overall objective is to SIMPLIFY integrated infrastructure intelligence (i3)®, resulting in reduced owner costs, streamlined user experience, improved level of service and higher performance.
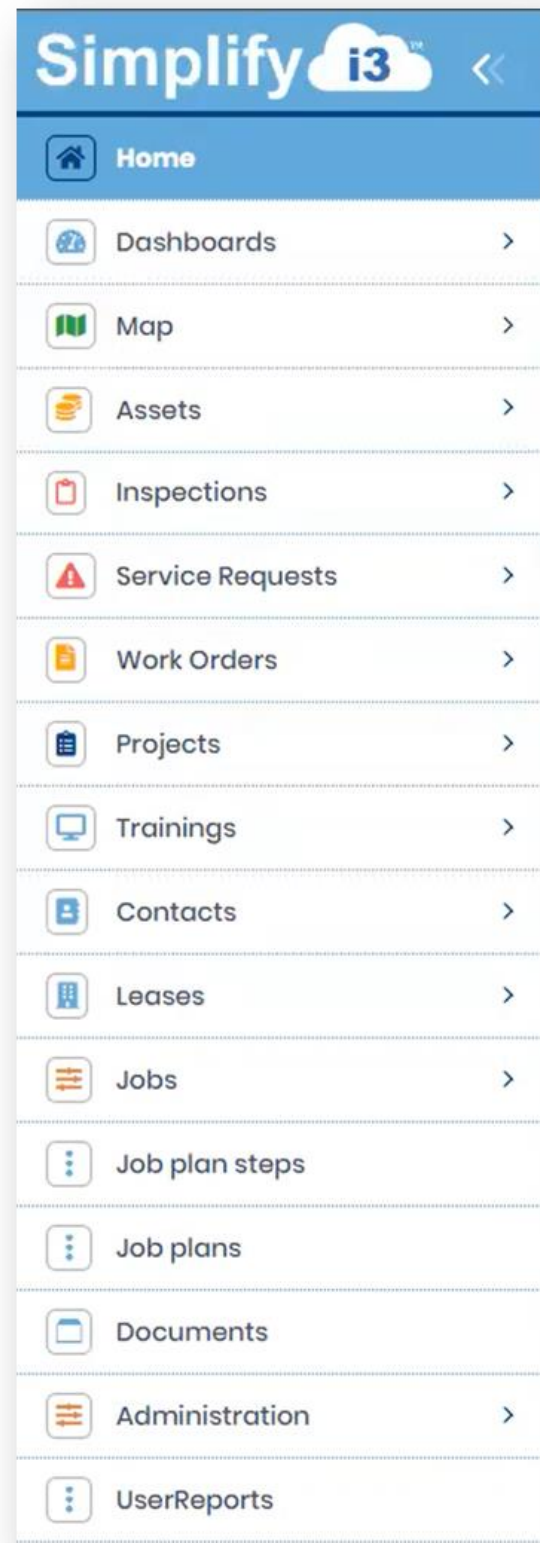
EPIC's Simplify i3®

**Airport Management Applications**

Features Summary

Simplify i3® is a modular airport digital twin transformation platform which has been configured to facilitate various airport management processes, including Part-139 compliance. The following is a sampling of Simplify i3's airport management tools. More applications may be configured as needed by the client with drag-and-drop ease; no need for programming.

- **Configurable Forms** for various issues, events, tasks (a.k.a., service requests):
  - ✓ Incidents/Events
    - o Aircraft Alert
    - o Airfield Incursion
    - o Accident
    - o Wildlife Harassment
    - o Wildlife Strike
    - o Injury
    - o Fuel Spill
    - o Theft/Break-in
    - o Trespassing
    - o Vandalism
    - o Storm
  - ✓ Daily Ops Log
  - ✓ Safety Management System (SMS)
  - ✓ Badge Tracking
  - ✓ Insurance Certificates
  - ✓ Public/Tenant Web Portal
    - o Hazards
    - o Complaints
    - o Suggestions
    - o Announcements
    - o Guidelines
  - ✓ Other Service Requests
    - o Repair
    - o Cleaning
    - o IT Support

- **Inspections**
  - ✓ Airfield Safety
  - ✓ Fixed & Mobile Fueler
  - ✓ Lighting
  - ✓ NAVAIDs
  - ✓ Pavement
  - ✓ Facilities
  - ✓ Roofing
  - ✓ Equipment
  - ✓ Inventory
  - ✓ Wildlife
  - ✓ Environmental
  - ✓ Hazardous Materials
  - ✓ Storm Preparedness
  - ✓ Inspection Scheduling
  - ✓ Discrepancy Resolution Report
  - ✓ Discrepancy Heat Maps & Dashboard
 - ✓ Map Annotation & Markup
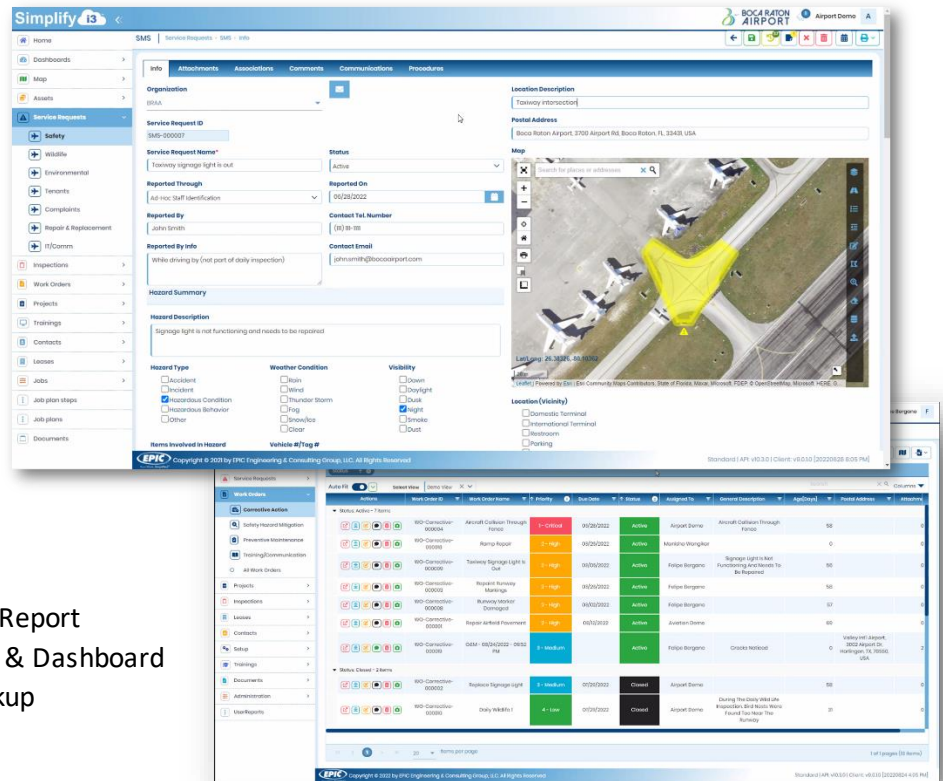
- **Work Orders**
  - ✓ Corrective
  - ✓ Preventive
  - ✓ Work Scheduling
  - ✓ Cost Tracking (Labor & Parts)
  - ✓ Inventory Tracking
  - ✓ Procedure Check Lists
  - ✓ O&M Manuals
  - ✓ Work Order Mapping
 - ✓ Work Order Aging Report & Dashboard

- **Project Management**
  - ✓ Budgeting
  - ✓ Work Breakdown Structure
  - ✓ Scheduling
  - ✓ Milestone Reporting
  - ✓ Invoices & PayApps
  - ✓ Requests for Information (RFI)s
  - ✓ Change Requests/Amendments/Change Orders
  - ✓ Project Inspections
  - ✓ Project Documentation & Photos/Videos
  - ✓ Project Logistics Coordination Mapping
  - ✓ Project Drawings/Floor Plan Overlay
 - ✓ Project Reports & Dashboard
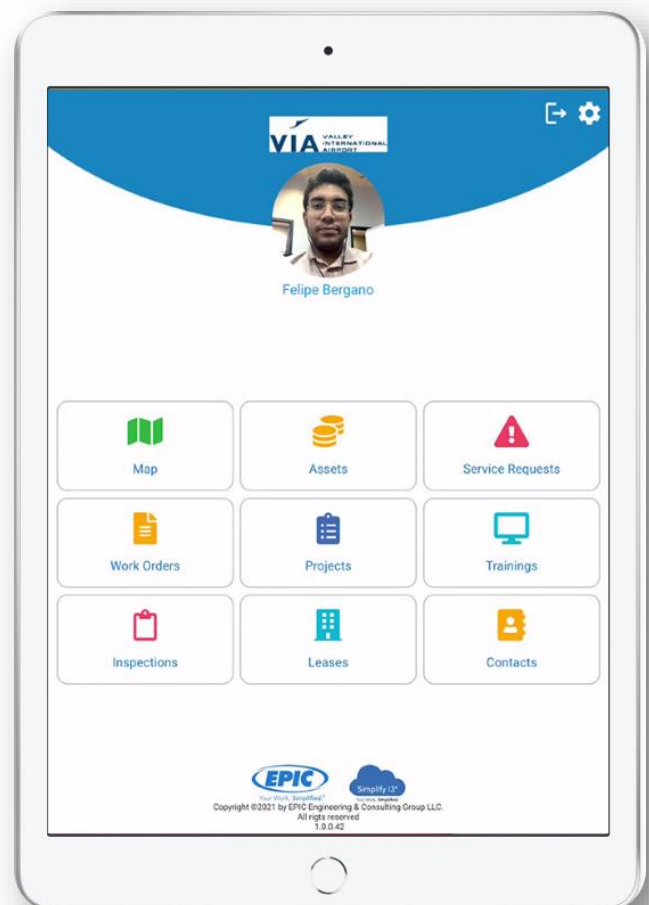
- **Asset Management**
  - ✓ Unlimited Asset Types
  - ✓ Condition Inventory
  - ✓ Gap-Risk Analysis
  - ✓ Configurable Attribution
  - ✓ Asset Mapping
  - ✓ Asset Reports & Dashboards
  - ✓ Attached Documents & Photos/Videos
  - ✓ Associations
    - o Inspection Discrepancies
    - o Work Orders
    - o Projects
   - o Leasing
    - o Contacts
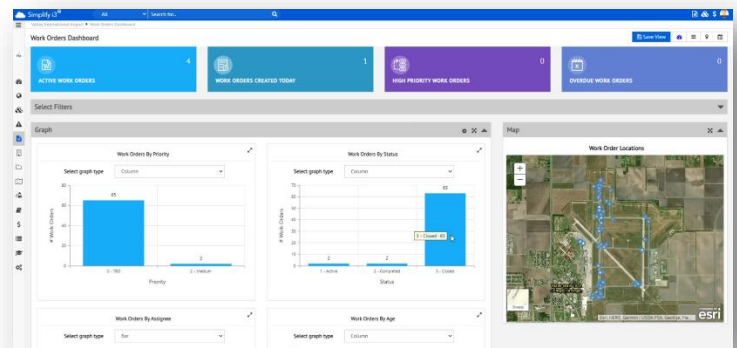
- **Tenant Lease Management**
  - ✓ Lease Information
  - ✓ GASB-87 Attribution
  - ✓ Mapping & Measurements
  - ✓ Integrated Tenant Contact Info
  - ✓ Lease Change History Log
  - ✓ Lease Agreement Documentation
  - ✓ Insurance Certificate Tracking
  - ✓ Leasing Report(s) with Calculations
  - ✓ Alerting for Lease Expiration
 - ✓ Integrated e-Mail Records
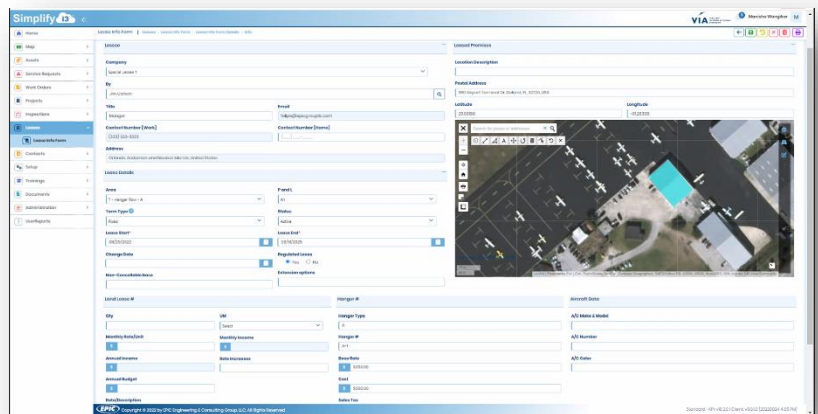
- **Contacts Management**
  - ✓ Individual Information
  - ✓ Organization Information
  - ✓ Office Location Mapping
  - ✓ Contact/Organization Grouping
  - ✓ Group Messaging/Notification
  - ✓ Automated e-Mail Record Association
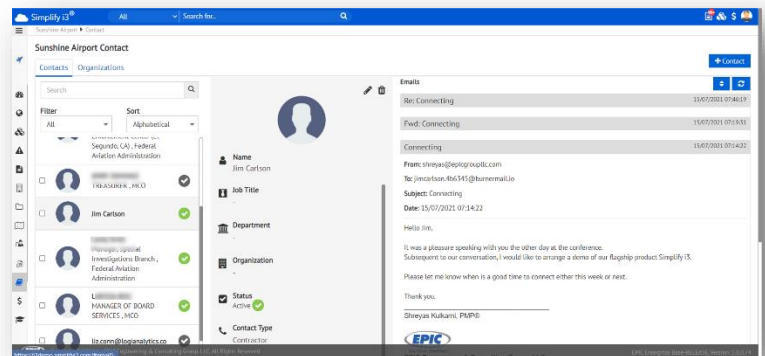
- **GIS Mapping**
  - ✓ Esri GIS Mapping of Above Functions
  - ✓ Selectable Mapping Icons/Colors
  - ✓ Aerial Imagery Basemap
  - ✓ CAD/GIS Map Overlays
  - ✓ Map Layer Selection
  - ✓ Integrated Addressing
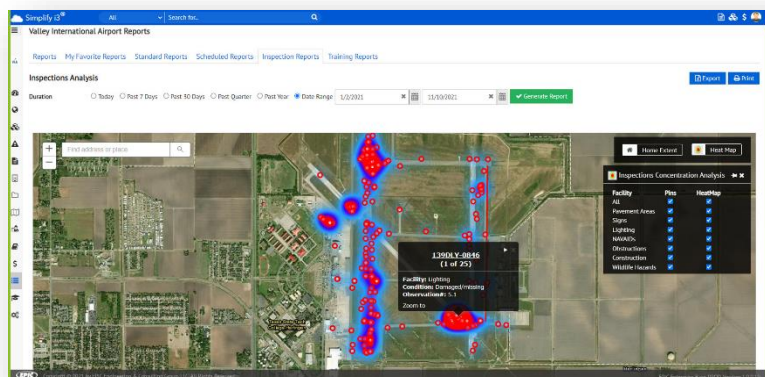
- **Training Management**
  - ✓ Group Training
  - ✓ Self-Training
  - ✓ Course & Chapter Management
  - ✓ Embedded Documents & Presentations
  - ✓ Embedded Video Support
  - ✓ Configurable Quizzes
  - ✓ Training Compliance Color-Coded Matrix
  - ✓ Training Compliance Expiration Alerts
  - ✓ Reporting & Dashboards

i3's User-Friendly Features

User Configurable

- ➔ Icons & Colors
- ➔ Tool Tips
- ➔ Procedure Checklists
- ➔ Form Templates
- ➔ List/Table Views
- ➔ Map Views
- ➔ Reports & PDFs
- ➔ Dashboards

- ➔ Speech to Text
- ➔ Photo-Video-Audio Capture
- ➔ Association Links
- ➔ Sticky Note Reminders

- ➔ Collaboration Comments
- ➔ e-Mail Communication
- ➔ Calendar Scheduling
- ➔ Change Tracking

Embedded