



Alberni-Clayoquot
Regional District

Alberni Clayoquot Regional District – West Coast Committee



Tofino – Long Beach Airport Terminal Building Expansion Pre-Design Initial Assessment

February 28, 2024



AGENDA & OBJECTIVES

- Airport History and Local Context
- Existing Conditions
- Airport Planning and Forecasts
- Terminal Site Options
- Terminal Expansion Concepts
- Cost Estimates
- Conclusions and Recommendations



Airport History and Local Context

- The Tofino-Long Beach Airport is located on the unceded territory of the Tla-o-qui-aht First Nation (TFN). The airport lands and surrounding region have been home to the nation for thousands of years.
- LBA originally established as RCAF Station Tofino in 1941
- Officially transferred to the ACRD in 2000 from Transport Canada.
 - Many existing airfield pavement structures and surrounding groundside facilities are remnants from the original development of the property.
- LBA provides a critical transportation route, for both leisure travel and essential access, that allows the west coast to remain connected to the mainland and other parts of Vancouver Island.

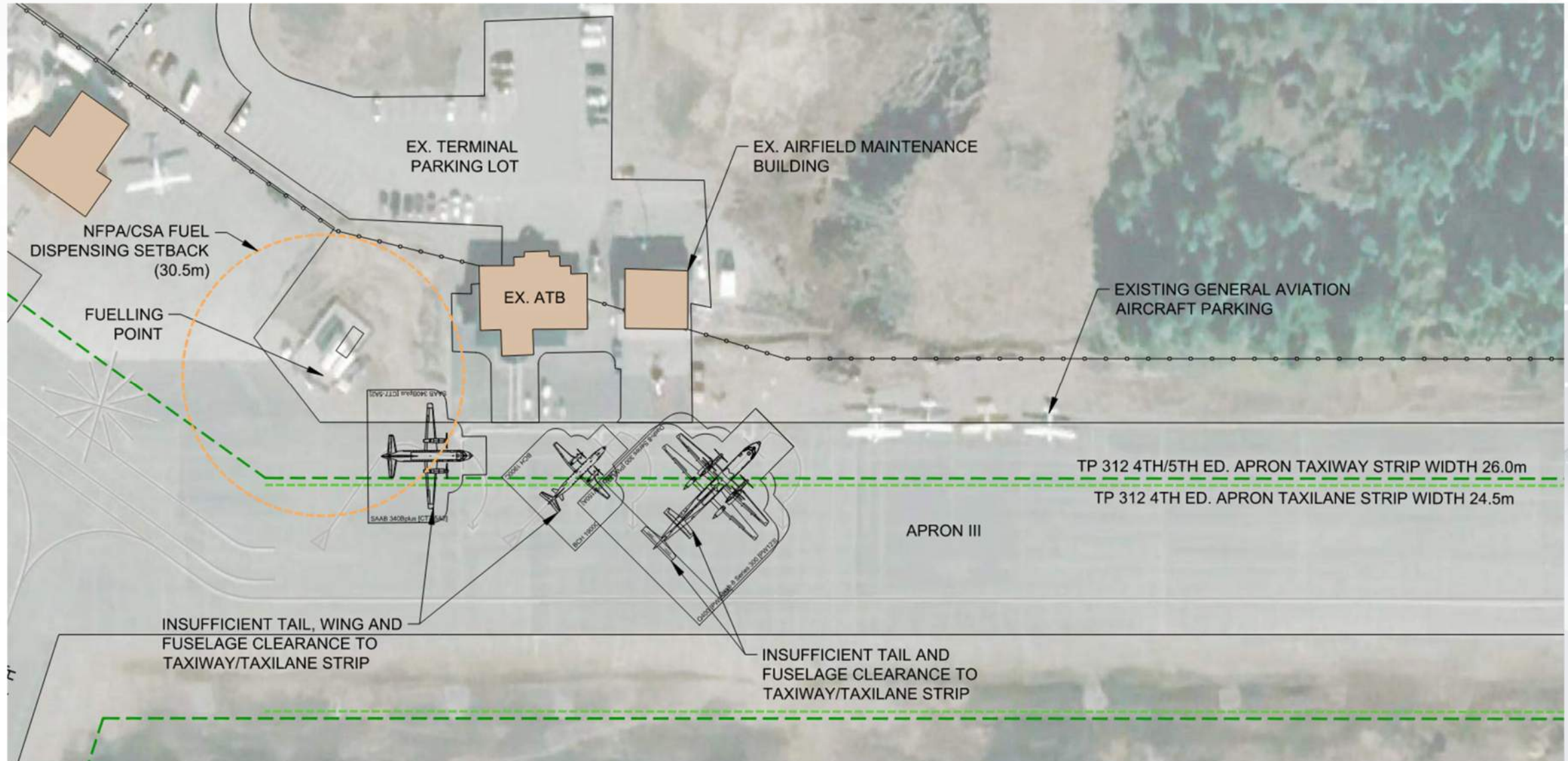


Existing Conditions

- Three bi-directional use runways – only one with lights for night use.
 - Similar runway lengths (5,000') but with threshold displacements due to off-site obstacles on each approach.
 - Low runway usability due to the frequent presence of low-lying cloud, poor visibility conditions, and a lack of mitigating Instrument Approach Procedures (IAPs) supplemented appropriately by approach lighting systems.
 - The Airport + NavCan will soon be implementing a Wide Area Augmentation System (WAAS) / Localizer Performance With Vertical Guidance (LPV) system to the primary runway, Runway 11-29.
- Existing commercial apron III is severely constrained to accommodate increased traffic
 - Parking depth for aircraft stands and the clearances do not currently conform to Transport Canada TP 312 4th Edition recommendations for Code C (AGN III) aircraft use, nor would it comply with the latest standards for Aprons with through route taxiways as defined in TP 312 5th Edition.
 - To safely and efficiently accommodate scheduled and future aircraft flights improvements are required to increase the available stand depth, and the clearances for aircraft taxiing through the apron



Existing Conditions





Existing Conditions

- Existing ATB is ~285 m² (3,067 sq. ft.)
 - Building is generally in acceptable condition. Requires some preventative and routine maintenance. Not accessible as per most recent code updates.
 - Difficult to service flights larger than 30 passengers
 - Insufficient seating, food services (including vending), and washrooms. Limited space for car rental operations. No pilot services or FBO accommodations for general aviation or charter operations.
- Layout Challenges
 - Congestion due to single entrance/exit (airside and groundside), with no groundside departure or arrival procedures.
 - No baggage handling capacity or ability to upgrade to Canadian Air Transport Security Authority (CATSA) requirements.
- Future Expansion Limitations
 - Site and building layout do not allow for simple building expansion or reconfiguration.
- Building Aesthetics
 - Lack of appropriate First Nations Land Recognition. Architecture is not representative of BC's West Coast or a suitable "gateway" to the area.



Existing Conditions





Airport Planning and Forecasts

- Terminal Building sizing and layout based on peak hour demand
 - Peak hour of 115 PAX is based on a 50-seat aircraft (DHC Dash 8-300) and 78-seat aircraft (DHC Dash 8-400) departing within the peak hour and that peak hour arrivals would be based on the arrival of a 78-seat aircraft arriving within a 20-minute period.
- Used peak hour to develop a Functional Program based on the International Air Transport Association's (IATA) Airport Development Reference Manual (ADRM) Level of Service Guidelines and other industry recognized terminal design standards, as well as discussions with stakeholders.
 - Phase 0 – Minimum space required to meet standards based on currently scheduled flights and operating conditions – 1,374m² required – Current size 285 m²
 - Phase 1 – 1,746m² required



Terminal Site Options



- Four (4) potential development areas :
 - Site #1 Existing ATB location, inclusive of the brownfield area located west of the ATB;
 - Site #2 North of Apron III and south of Airport Road;
 - Site #3 North and West of Apron 1; and
 - Site #4 South of Runway 07-25.



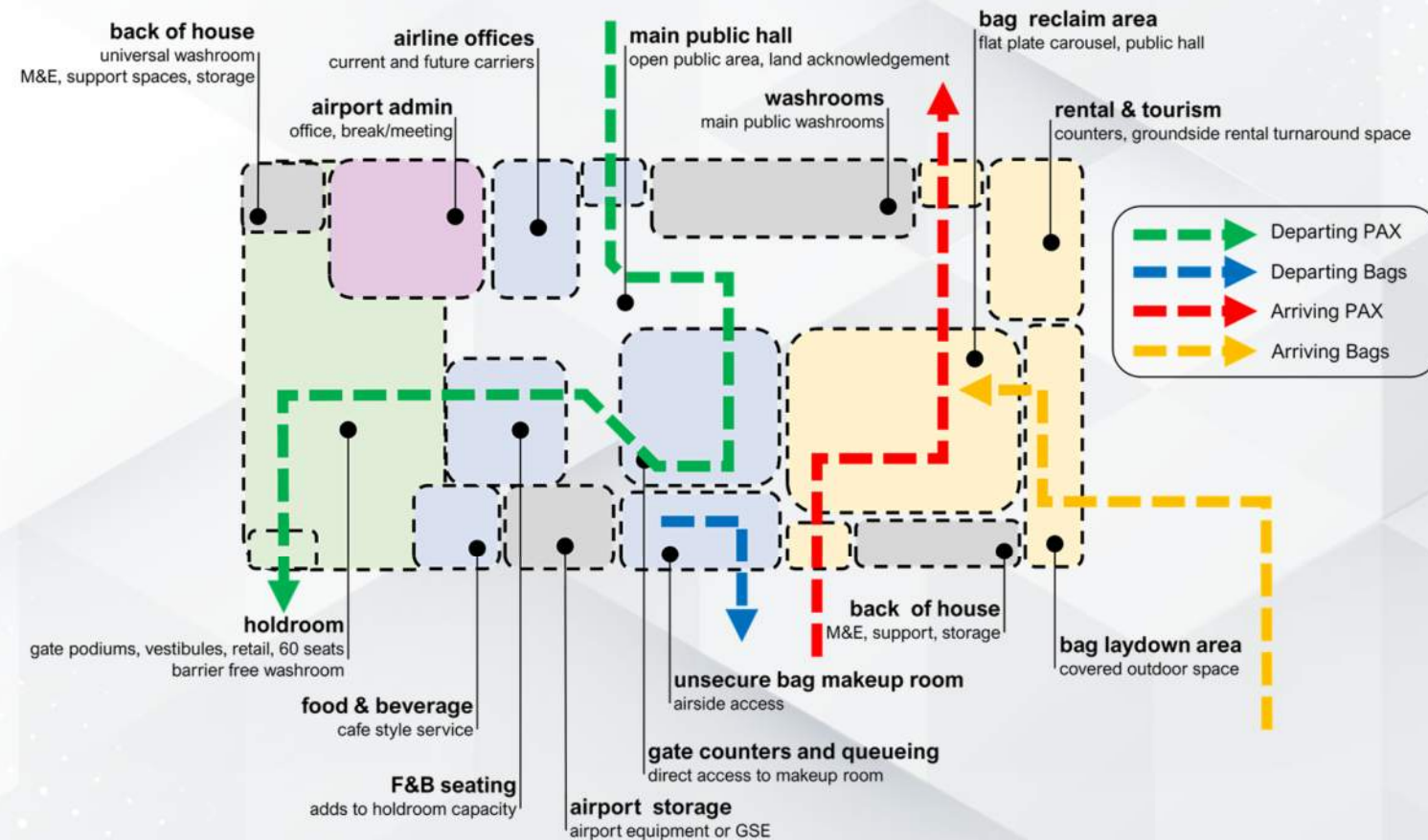
Terminal Expansion Concepts

- Potential functional concepts developed for Site #1 and Site #2 identified as viable options
 - Primarily focused on greenfield construction but designed to be adaptable to expansion of existing ATB
- Phased construction planned to accommodate budget and operations
 - Phase 0 – Partial build-out to current peak passenger hour (74 PAX) with non-secure flights;
 - Phase 1a – Full build-out to target peak passenger hour (115 PAX) with non-secure flights;
 - Phase 1b – Modification of Phase 1 to service CATSA secure flights at target peak passenger hour; and,
 - Phase 2 – Conceptual expansion beyond target peak passenger hour



Terminal Expansion Concepts

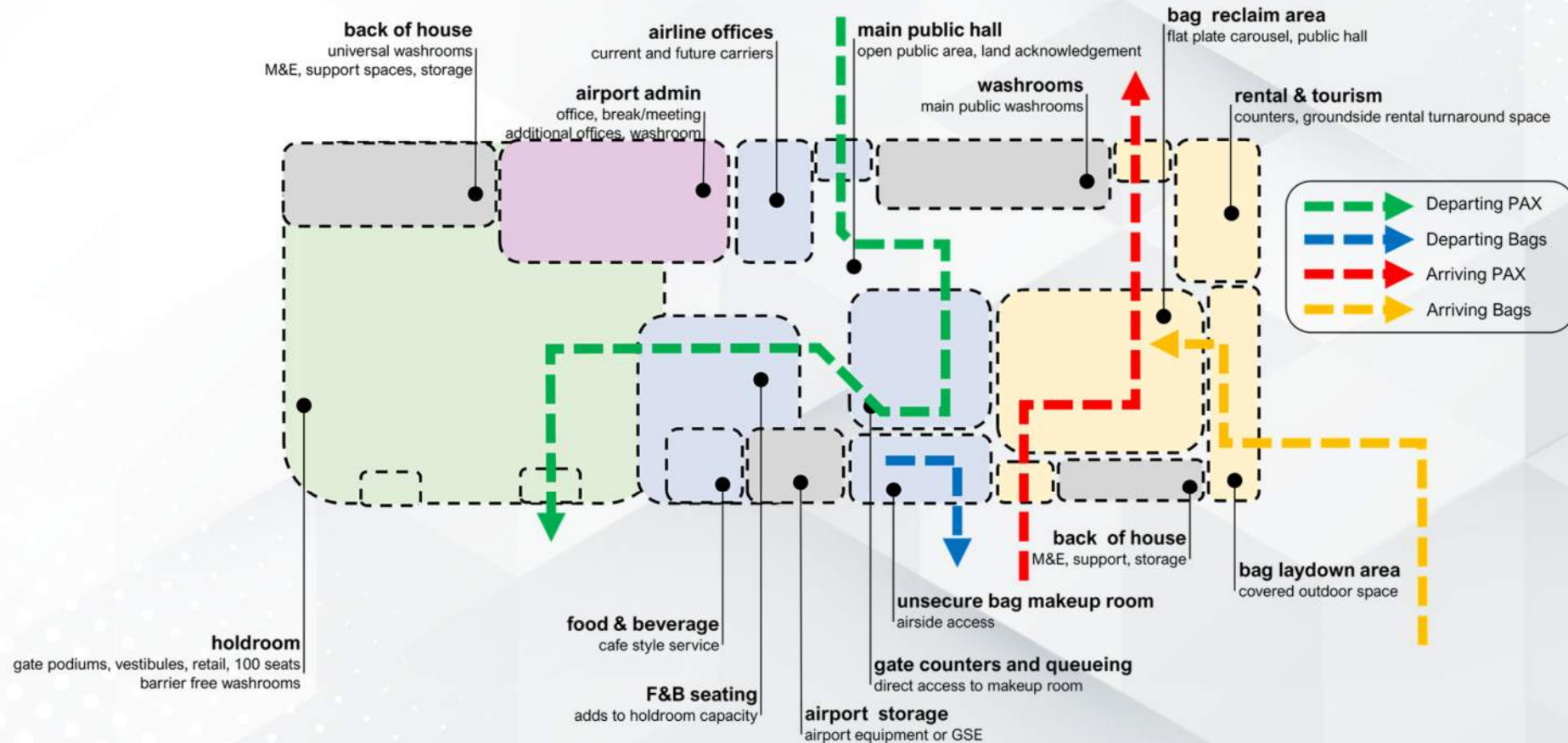
- Phase 0 – Partial build-out to current peak passenger hour (74 PAX) with non-secure flights;





Terminal Expansion Concepts

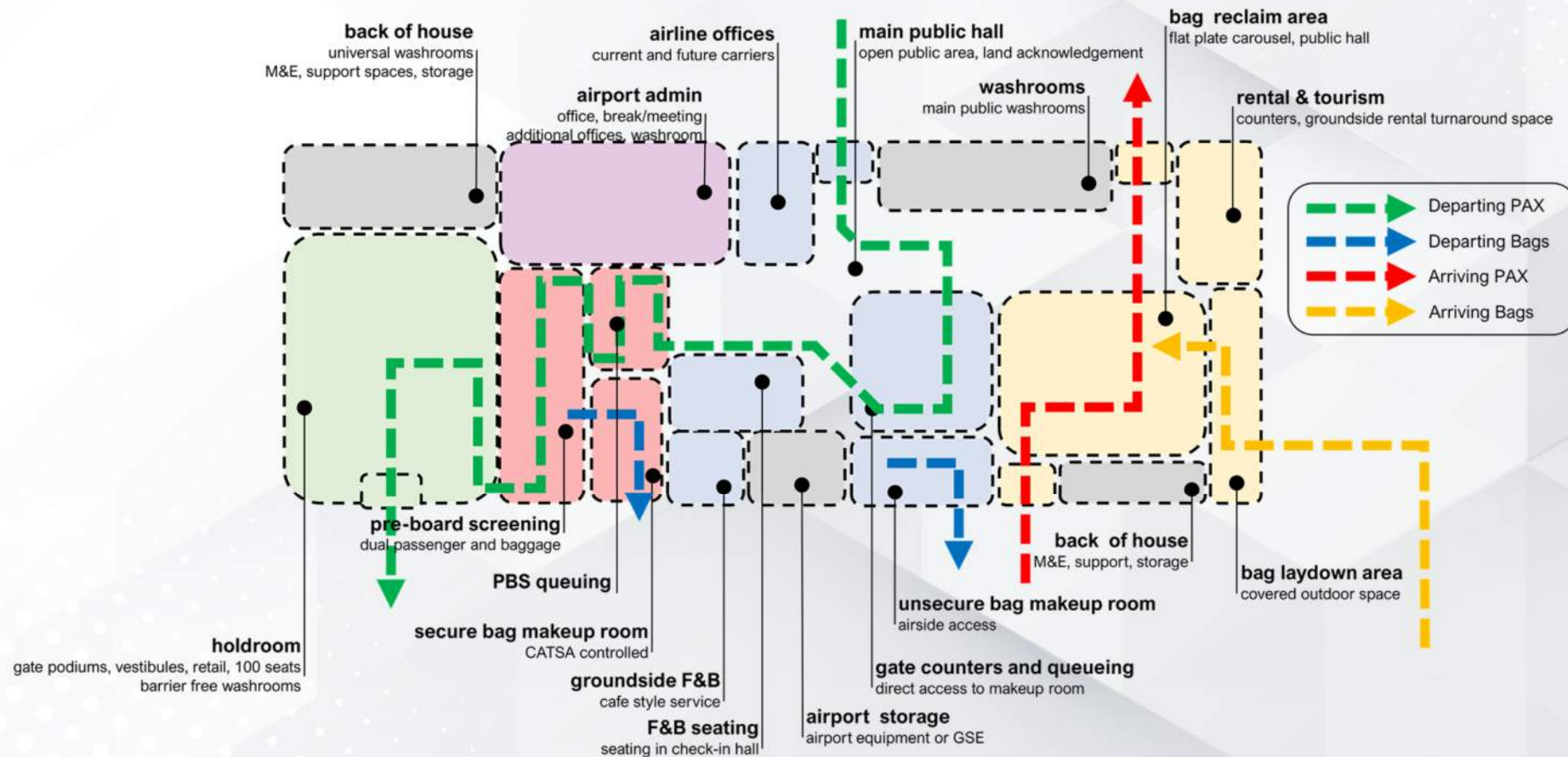
- Phase 1a – Full build-out to target peak passenger hour (115 PAX) with non-secure flights;





Terminal Expansion Concepts

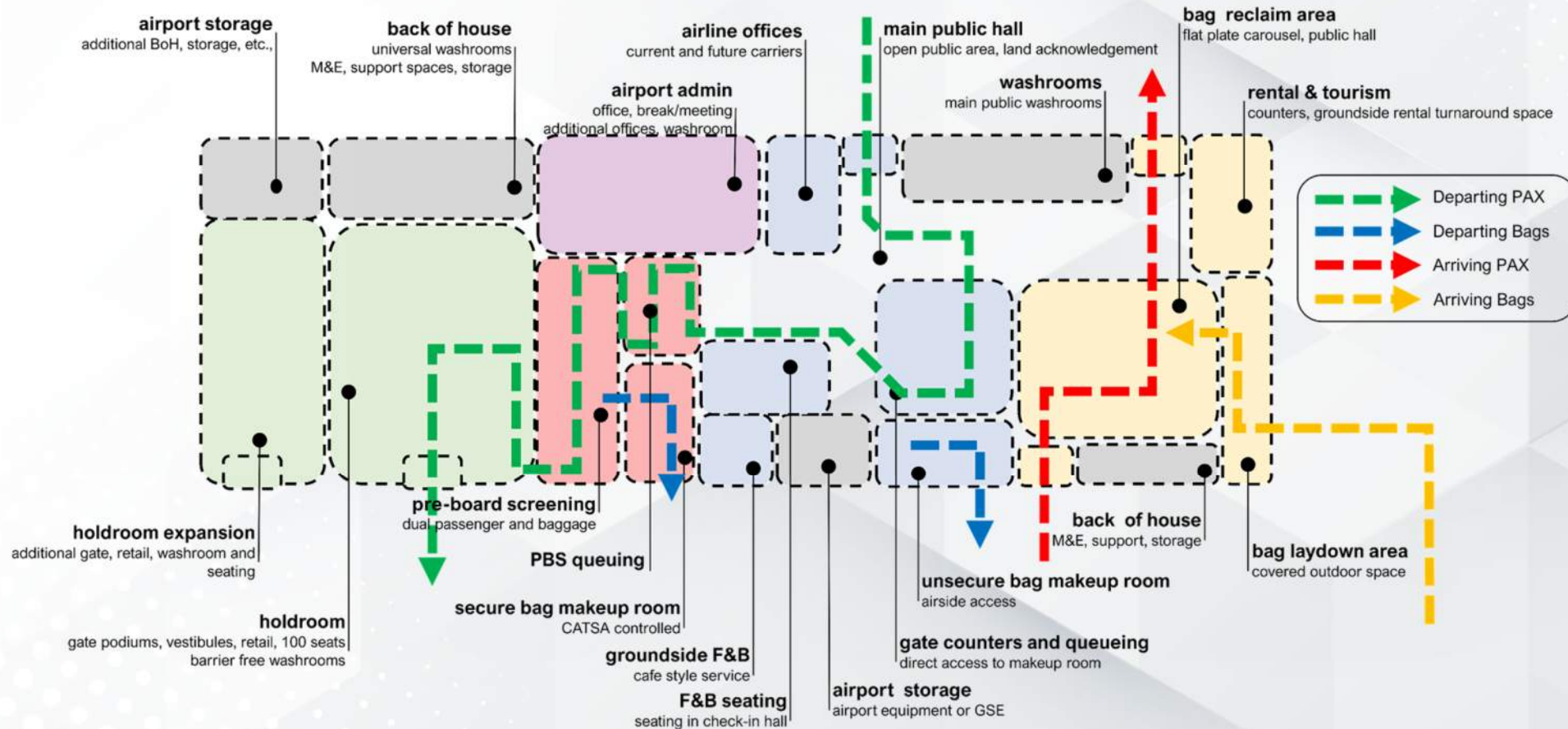
- Phase 1b – Modification of Phase 1 to service CATSA secure flights at target peak passenger hour;





Terminal Expansion Concepts

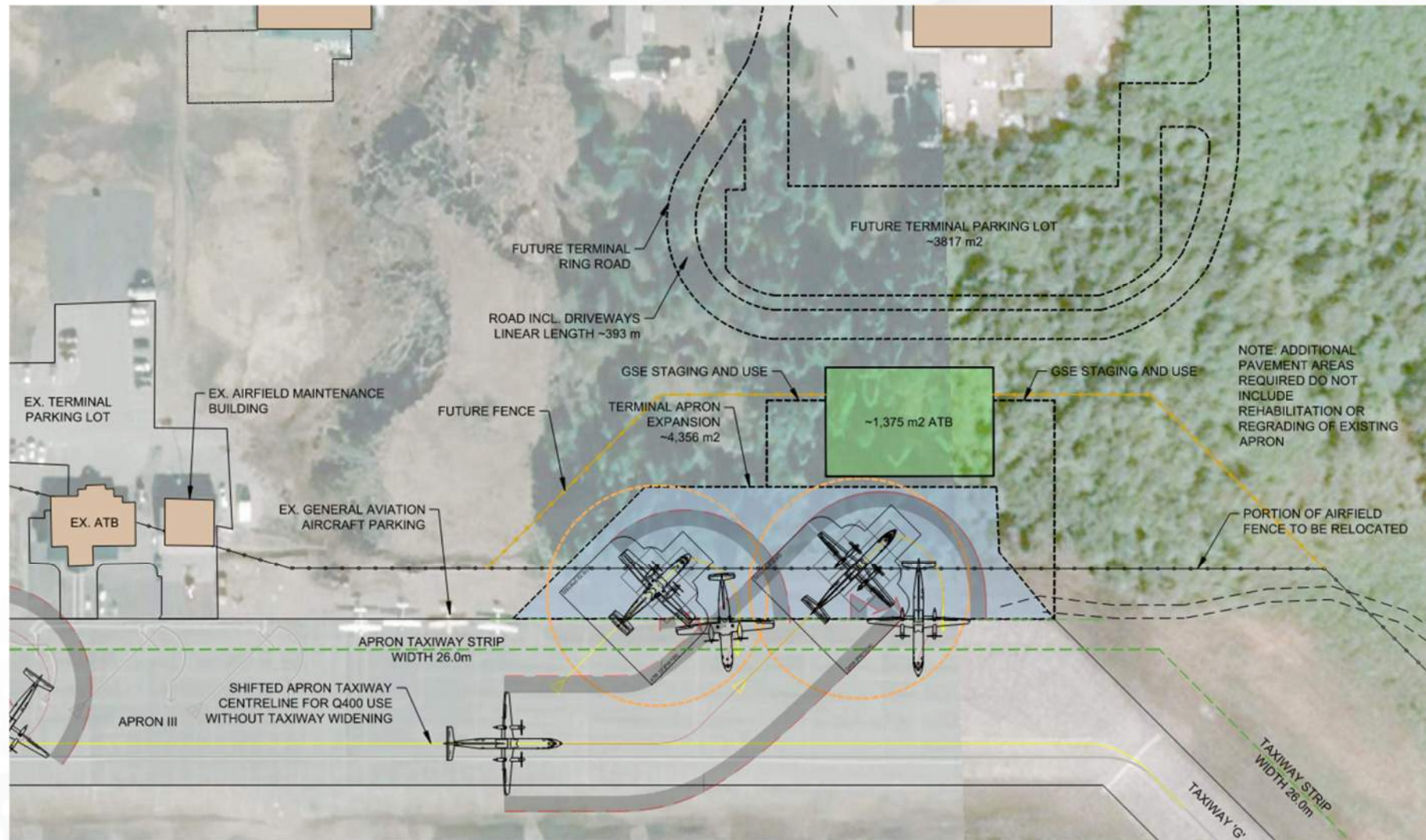
- Phase 2 – Conceptual expansion beyond target peak passenger hour





Site Development Concepts

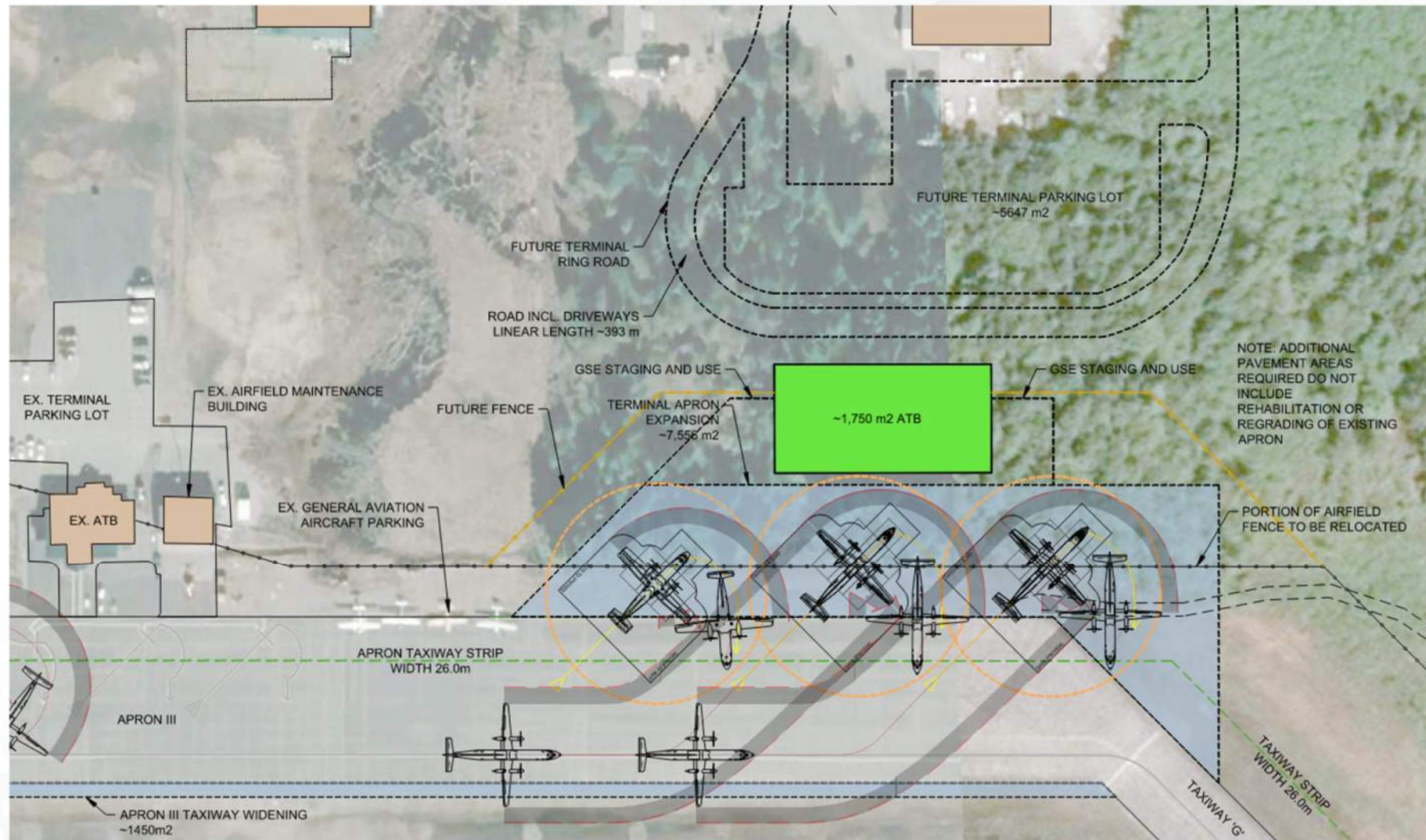
- Option 1 – Greenfield at New ATB Site – Phase 0





Site Development Concepts

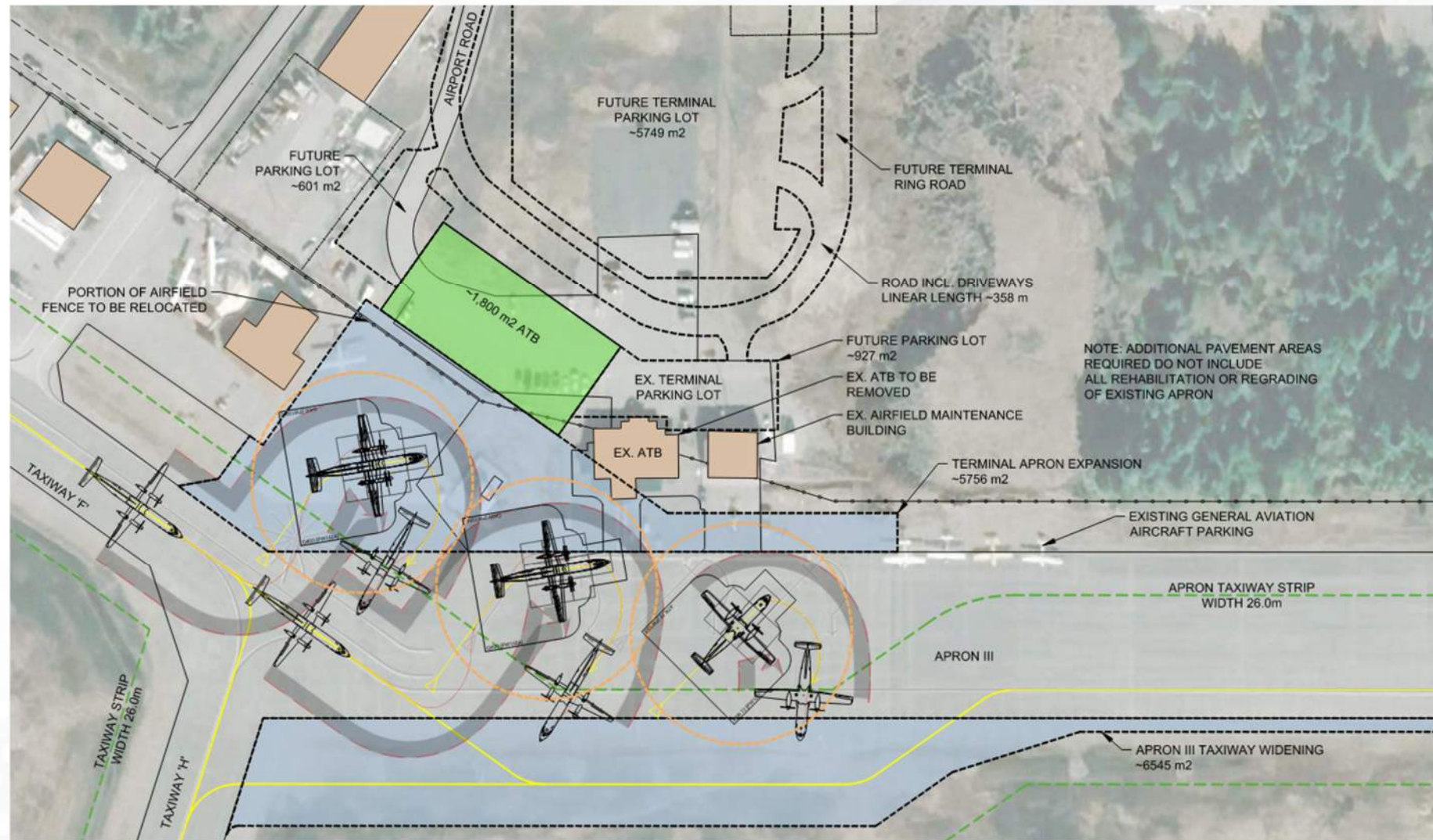
- Option 1 – Greenfield at New ATB Site – Phase 1





Site Development Concepts

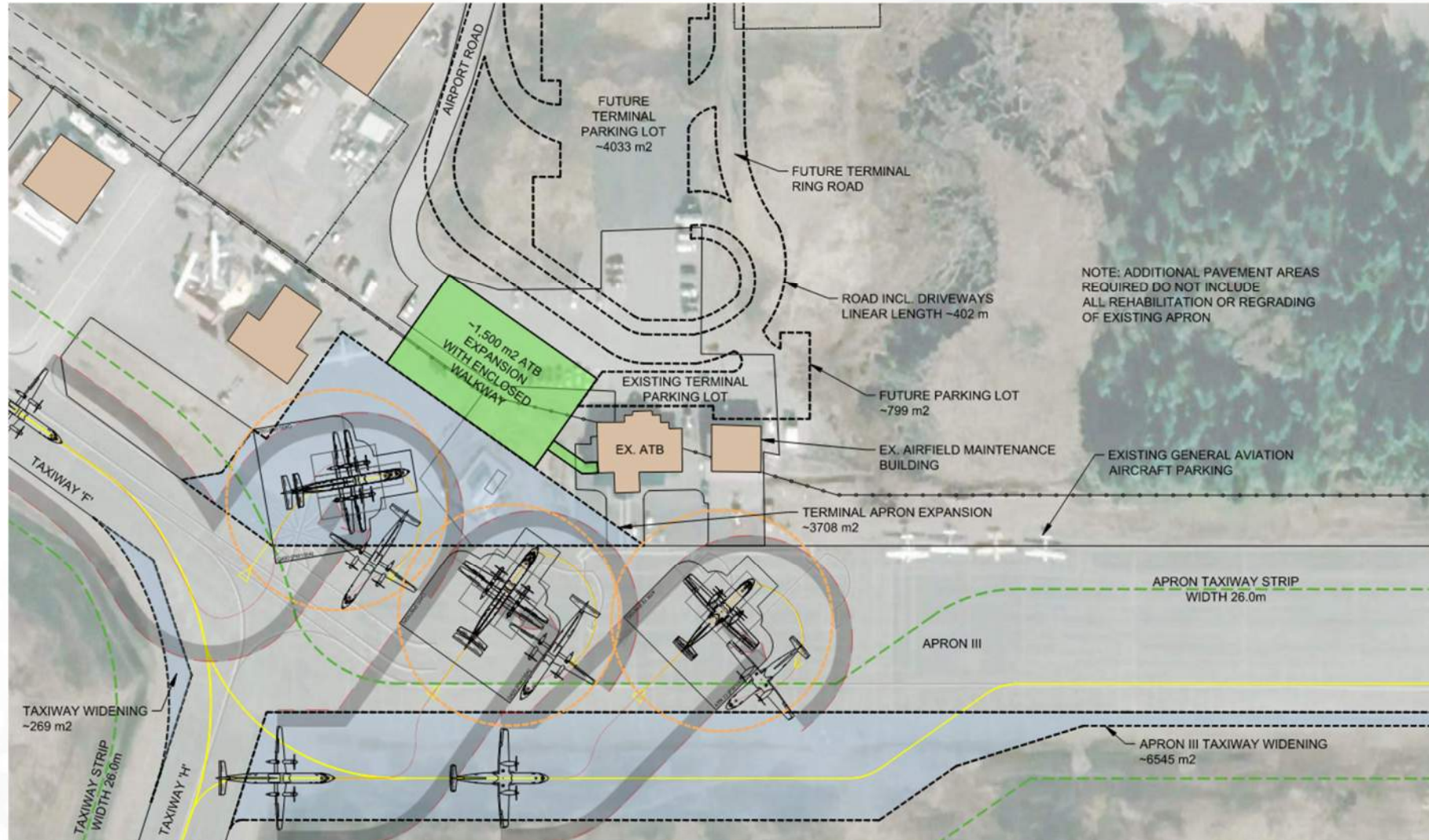
- Option 2 – Greenfield at Existing ATB Site





Site Development Concepts

- Option 3 – Expansion of Existing ATB Site





Order of Magnitude Cost Estimate

Item	Description	Option 1 New Greenfield ATB		Option 2 New ATB @ Existing Site	Option 3 ATB Extension
		Phase 0	Phase 1a		
Base Building	New ATB with standard finishes - including structure, mechanical, electrical, finishes	\$7,776,000	\$9,885,000	\$9,885,000	\$8,374,000
	Upgraded building finishes ^[1] - provisions for exposed timber structure, upgraded finishes	\$1,123,000	\$1,427,000	\$1,427,000	\$1,427,000
	Renovation of existing ATB	-	-	-	\$1,272,000
	Demolition of Existing ATB and/or construction phasing	-	-	\$200,000	\$100,000
IT & Security	Including servers, access control, cameras, FIDS, gate displays, CUTE	\$215,000	\$247,000	\$247,000	\$247,000
FF&E	Millwork, counters, F&B and holdroom seating, office furniture	\$238,000	\$397,000	\$397,000	\$397,000
Baggage Handling	Inbound flat-plate carousel and outbound BHS - not including CATSA equipment	\$100,000 ^[3]	\$769,000	\$769,000	\$769,000
F&B Fit-Out	Café style F&B with equipment and finishes	\$47,000	\$47,000	\$47,000	\$47,000
	Sub-Total ATB	\$9,499,000	\$12,772,000	\$12,972,000	\$12,633,000
Airside	New airside pavement including aprons, stands, taxiways, markings	\$1,285,000	\$2,657,000	\$1,931,000	\$2,010,000
	Rehab of existing airside pavements ^[2]	-	-	\$1,842,000	\$1,187,000
	Relocation of existing fuel farm	-	-	\$100,000 ^[4]	\$100,000 ^[4]
Groundside	Airside electrical includes apron lighting and taxiway edge lights	\$263,000	\$375,000	\$341,000	\$350,000
	New groundside pavements including curbs, lay-bys, drive lanes, and line marking	\$1,399,000	\$1,758,000	\$1,657,000	\$1,413,000
	Parking lot lighting, pay parking infrastructure, provisions for electric charging, etc.	\$150,000	\$200,000	\$200,000	\$200,000
Site Servicing	New electrical service, domestic and fire water, sanitary, and stormwater infrastructure	\$250,000	\$250,000	\$100,000	\$100,000
	Sub-Total Civil Work	\$3,347,000	\$5,240,000	\$6,171,000	\$5,360,000
	Total ATB Expansion Costs	\$12,846,000	\$18,012,000	\$19,143,000	\$17,993,000

- Notes: [1] Upgraded building finishes are not a requirement for the ATB expansion project and can be removed, if preferred.
 [2] Existing airside pavements assumed to require full rehab including removal of existing pavement and gravel structure.
 [3] Inbound baggage handling operations as gravity roller system in Phase 0 with provision to implement flat plate carousel with expansion.
 [4] Conditional upon remediation requirements.



Conclusions & Recommendations

- Existing ATB cannot accommodate existing or projected passenger demands
 - Does not provide an appropriate level of service or accessibility requirements.
 - Terminal apron does not comply with recommendations provided in Transport Canada's TP312 4th Edition
- New ATB located at Site #2 as a greenfield construction is strongly recommended
 - Provides maximum flexibility for expansion and does not impact current operations at the ATB or apron
 - Phase 0 option could provide initial budget savings
 - Existing ATB could be converted to FBO / sold for other uses
- Further analysis of existing conditions at Site #2 (particularly environmental and geotechnical investigations) and formal schematic design should be undertaken to confirm the suitability of the site for development.
- A land use/development plan should be undertaken following selection of a final site to ensure that development of the site is undertaken in an efficient manner that optimizes future development opportunities and is in keeping with the overall Airport Master Plan.