

Challenges and Opportunities of the Construction Manager at Risk Project Delivery Method



Reno-Tahoe International Airport Gateway Project



Reno-Tahoe
Airport Authority

Project Management Institute
May 22, 2012



Reno-Tahoe Airport Authority

- Quasi-municipal corporation (Nevada Revised Statutes)
- Owner and Operator of the Reno-Tahoe International and Reno-Stead Airports
- Appointed 9-member Board (Reno, Sparks, Washoe County and RSCVA)
- Eminent Domain Powers but no Taxing Authority
- No land use, zoning or development permitting control
- Operationally independent (police, fire, human resources, accounting, etc.)
- Financially self-sufficient (no local taxpayer impact)



Reno-Tahoe International Airport

- 235 Airport Authority employees, 2,500 airport employees
- 63rd busiest commercial airport in the nation
- 84 years of service to be celebrated in November 2012
- 1,450 acres
- 6 airlines, 60 daily departures, 15 non-stop destinations
- 4.0 million annual passengers (12,000 daily), 120 million pounds annual cargo (330,000 pounds daily)
- Capable of handling B-747-400 aircraft



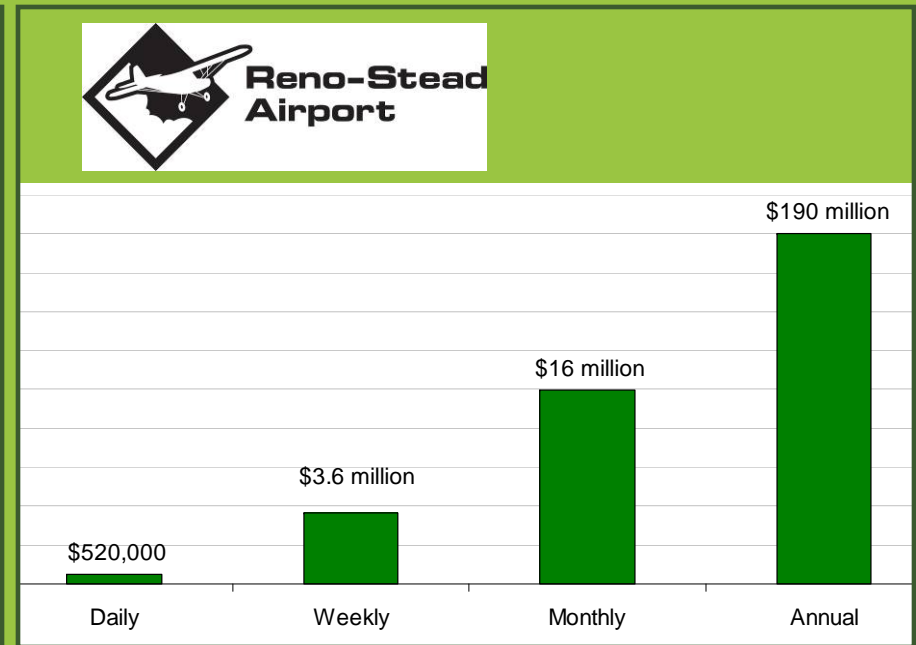
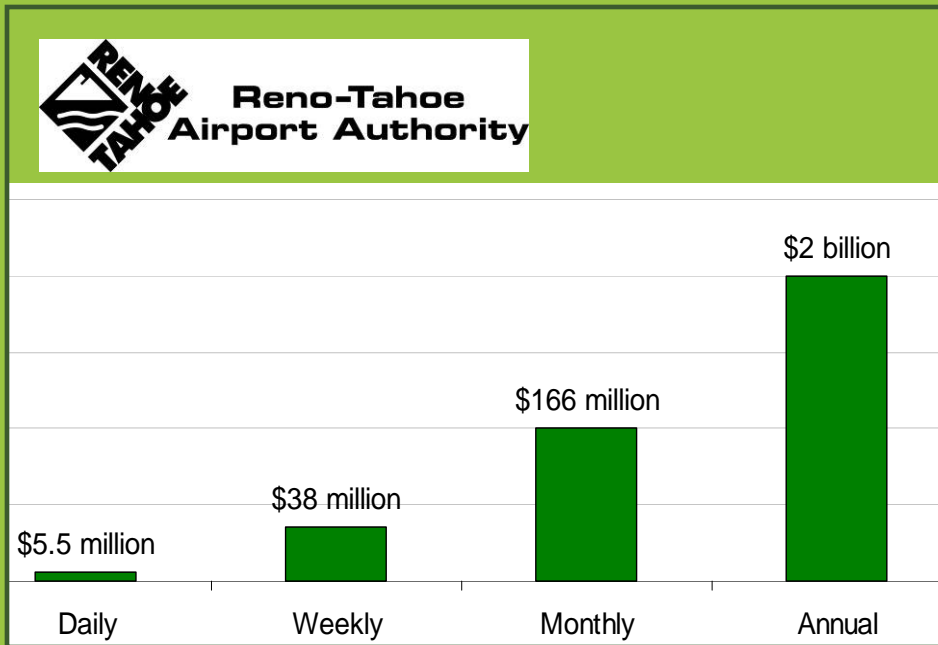
Reno-Stead Airport

- General aviation reliever airport which can handle commercial aircraft
- 5,170 acres
- 230 based aircraft
- 230,000 sq yd of aircraft tie-down parking (70 football fields) and 148 hangars
- Over \$50 million invested in airport improvements over the last 12 years



Total RTAA Economic Impact

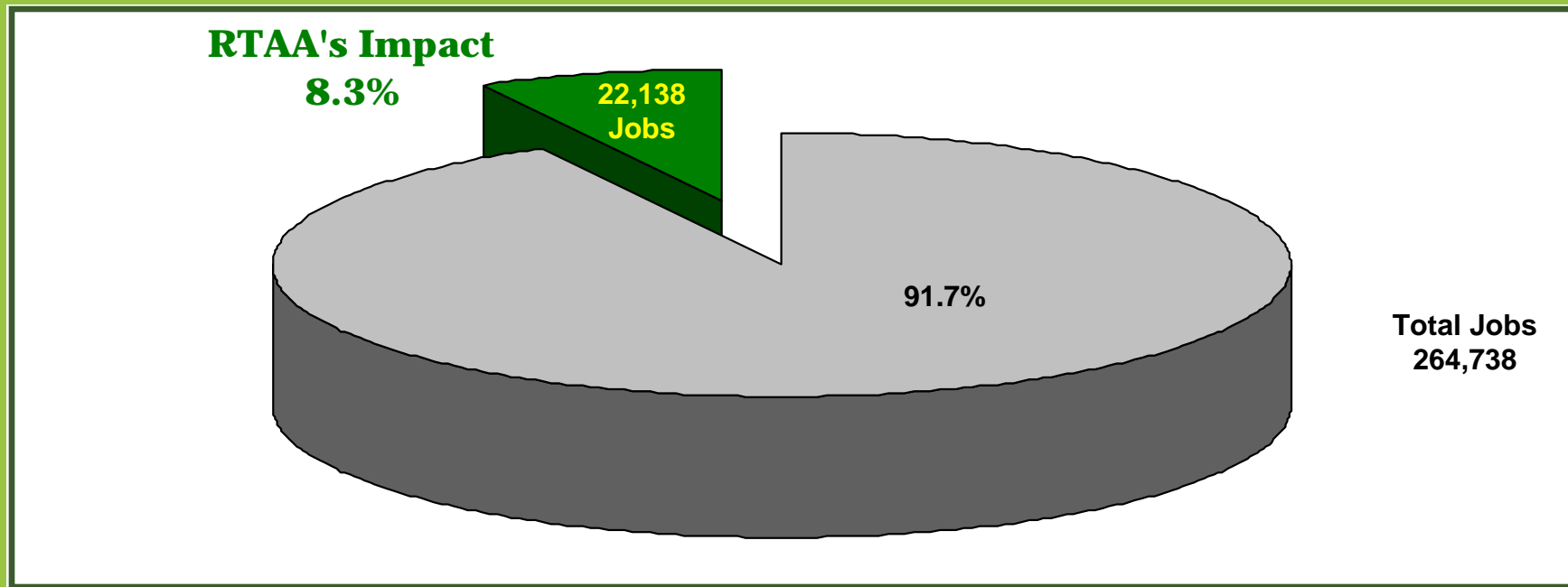
- Airport Economic Impact Study conducted by highly respected UNR College of Business
- Reviewed direct, indirect and induced impacts in 2010



SOURCE: Economic Impact Study, January 2012 – Center of Regional Studies and College of Business at University of Nevada, Reno.

Total RTAA Impact on Jobs

- Total jobs in region in 2010



SOURCE: Economic Impact Study, January 2012 – Center of Regional Studies and College of Business at University of Nevada, Reno.

Economic Impact of Boeing 737 Landings



SOURCE: Economic Impact Study, January 2012 – Center of Regional Studies and College of Business at University of Nevada, Reno.

Capital Project Funding Sources

Airport Improvement Program

\$15 to \$18 million annually

- Federal grants funded by User Fees

Passenger Facility Charge Program

\$7 to \$8 million annually

- Local User Fee program for specific projects

Local Operations & Maintenance Budget

\$2 to \$4 million annually

- Funded by revenues generated at airport
- Used for AIP/PFC ineligible projects



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And
up we
go.

Project Delivery Methods

Project Delivery

Process of planning, designing, procuring, construction and managing a capital improvement

Common Methods

- Design-Bid-Build
- Design-Build
- Construction Manager at Risk



Construction Manager at Risk (CMAR)

- Owner (airport) – Designer (architect/engineer) contract separate from Owner – CMAR (builder) contract
- Both Designer and CMAR selected by qualifications – not based on low-bid process
- Fees negotiated after selection of most qualified firms
- Owner manages program and design development with Designer and CMAR teams working in collaboration

CMAR Services

Pre-Construction Services

- design assistance, cost estimating, value engineering, constructability review, scheduling, subcontractor pre-qualification, bidding, permitting, and preparation of Guaranteed Maximum Price (GMP)

Construction Services

- construction and management of project delivery based on GMP, subcontractor & supplier procurement, contract administration, bonds, insurance, site operations, safety, and quality control

Owner and CMAR generate independent cost estimates.

CMAR bids subcontracts.

GMP is negotiated between Owner and CMAR.

CMAR Opportunities

- Owner retains control of design process
- Owner involved in subcontractor selection process
- Project schedule can be reduced
- Contractor design assistance reduces overall project cost
- Project scope, schedule, and costs controlled during all design stages
- Cost transparency by CMAR, Subcontractors, & Suppliers (“Open Book”)
- Local participation and employment increased
- Change orders and disputes reduced
- Best features from various project delivery methods utilized

Regulations & Guidance

Recognized Project Delivery Method

- Nevada Revised Statutes (NRS) - Section 338.169 Contracts Involving Construction Managers At Risk
- Federal Aviation Administration Order 5100.38C – Alternate Delivery Methods

Funding Source Procurement Rules

- Nevada Bidders Preference
- Prevailing Wages
- DBE/MBE Requirement
- Federal Grant Assurances



Local CMAR Projects

University of Nevada, Reno

- Journalism Building Renovation 2011

Washoe County School District

- 13 schools since 2009

Nevada Department of Transportation

- Moana Lane Diverging Diamond Interchange 2012

Town of Minden

- Buckeye Maintenance Facility 2010

Sierra Nevada College

- Tahoe Center for Environmental Studies 2006

Regional Transportation Commission

- Southeast Connector (future)

Reno-Tahoe Airport Authority

- Snow Removal Equipment Building 2012
- Gateway Project 2012

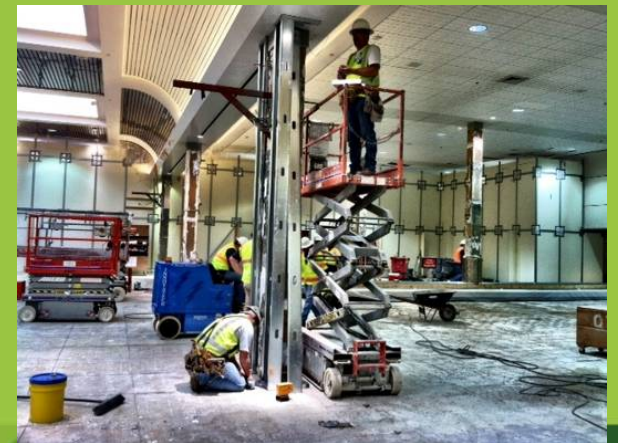
Case Study: The Gateway Project

- Extend useful life of aging terminal building
- Continue northern Nevada (Lake Tahoe to Truckee River) theme through terminal
- Relocate and combine two checkpoints into consolidated state-of-the-art security checkpoint on the first floor
- Create infrastructure to handle current and future TSA screening technology
- Relocate and expand restaurants/concessions to second floor
- Create a good first and last impression for 4 million annual passengers



Challenges of Working on Airport

- 24/7 Operations
- Proximity (Aircraft and Passengers)
- Aging Facilities and Long Forgotten Issues (50 year building)
- Stakeholders (City, County, State, Federal, Airlines, Tenants, Passengers)
- Daily Re-Opening of Critical Facilities
- Security and Safety Requirements (Zero Tolerance)
 - Badges, Background Checks & Training
 - Security Gate Monitoring
 - Vendor Escorting
 - TSA Security Waivers
 - Safety Management & Contingency Plans



The Gateway Project

Project Overview

- **Design** - Gresham Smith & Partners
- **CMAR** - Q&D Construction
- **Owner's Representative** - Atkins North America
- **Phase 1** - Terminal Refurbishment
- **Phase 2** - IT Reconfiguration
- **Phase 3** - Consolidated Security Checkpoint of the Future
- \$27 million
- 17-month construction duration
- 275 construction workers
- **April 2013** - Project Completion



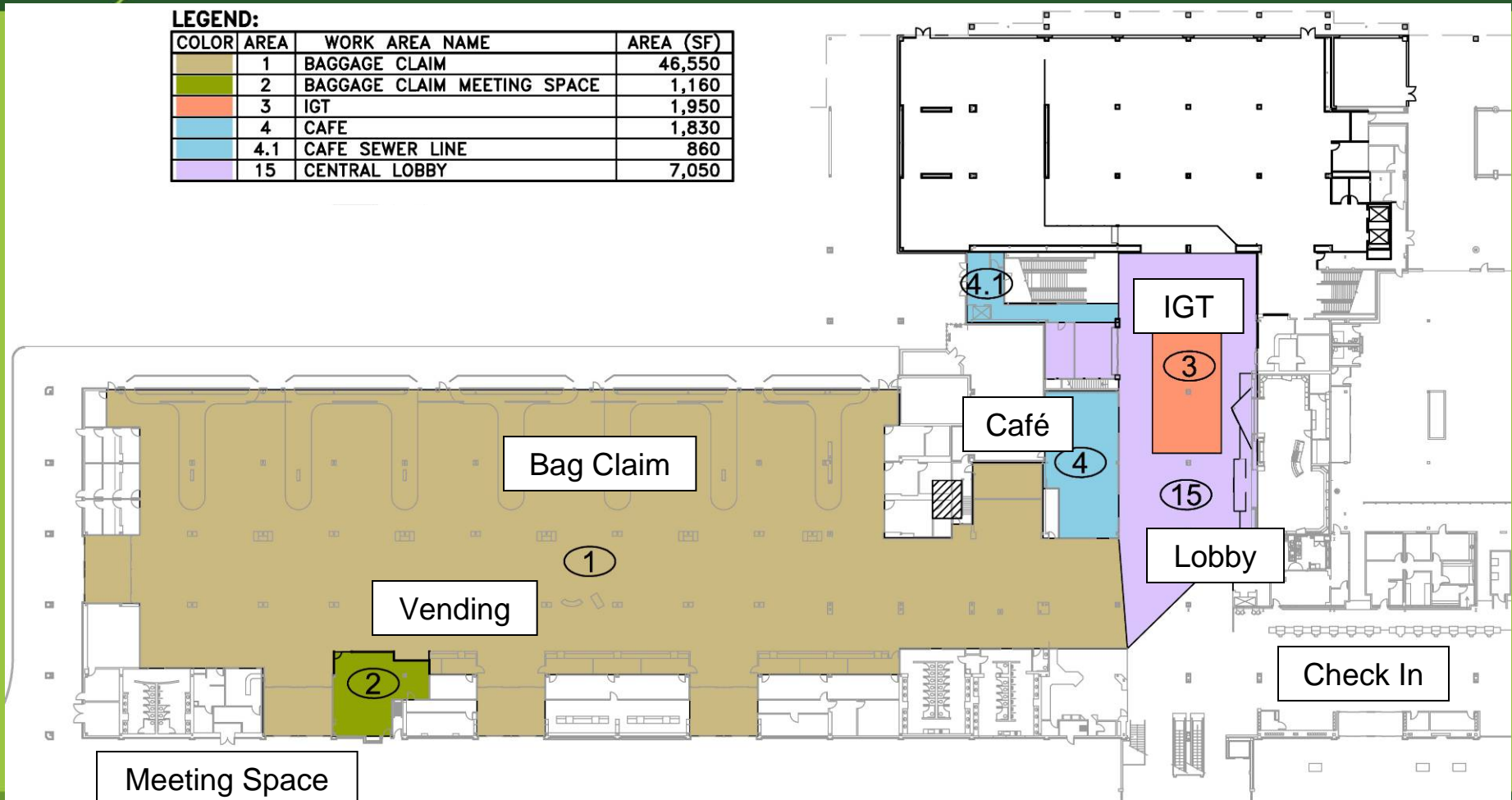
Before the Gateway Project



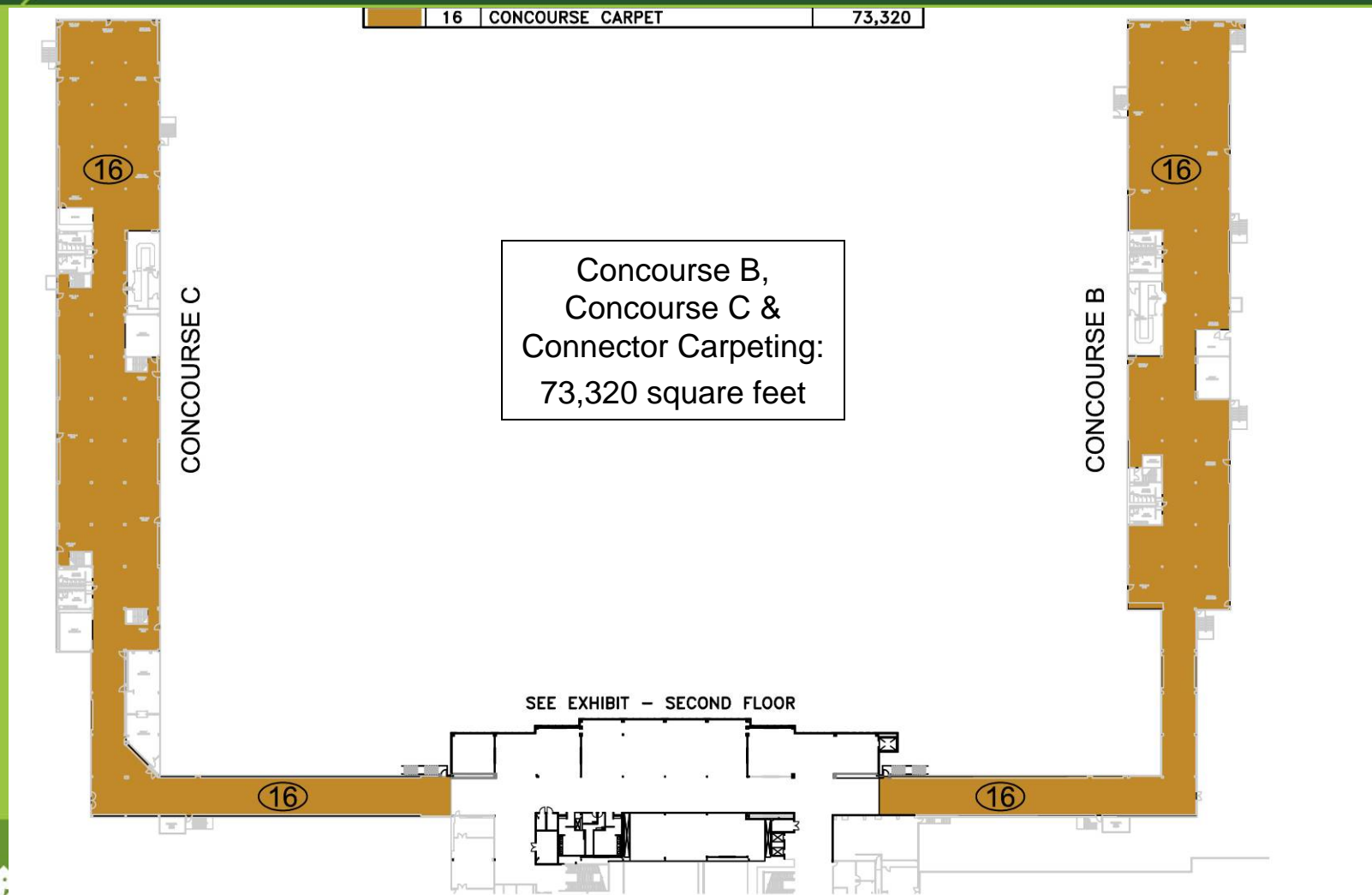
Planned Configuration – Baggage Claim

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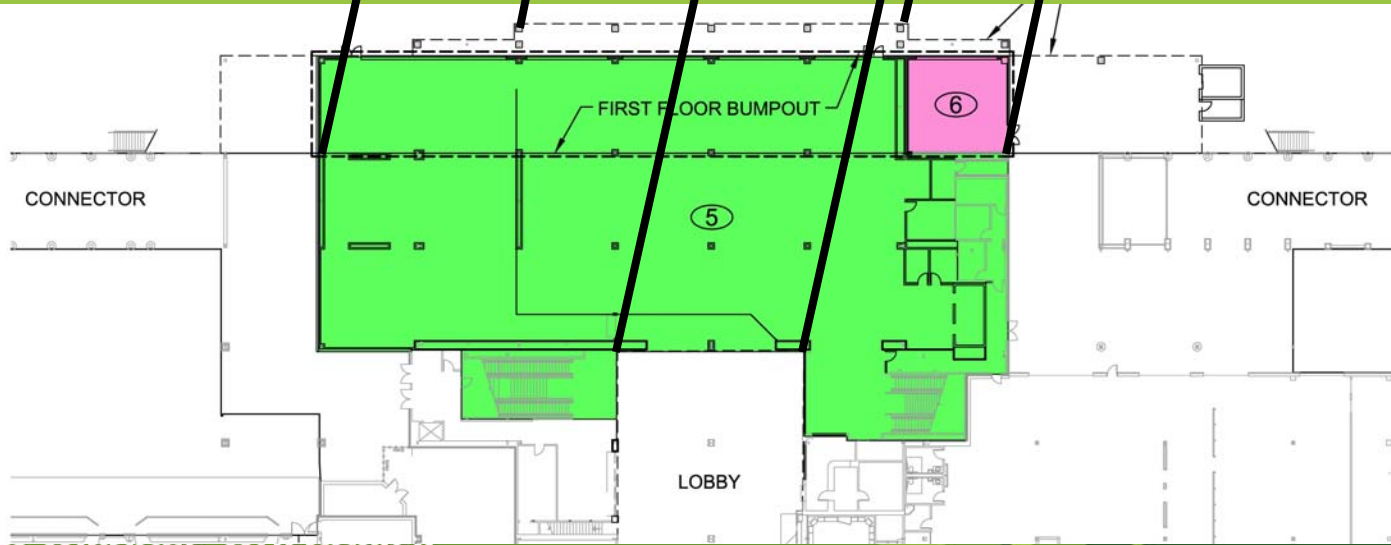
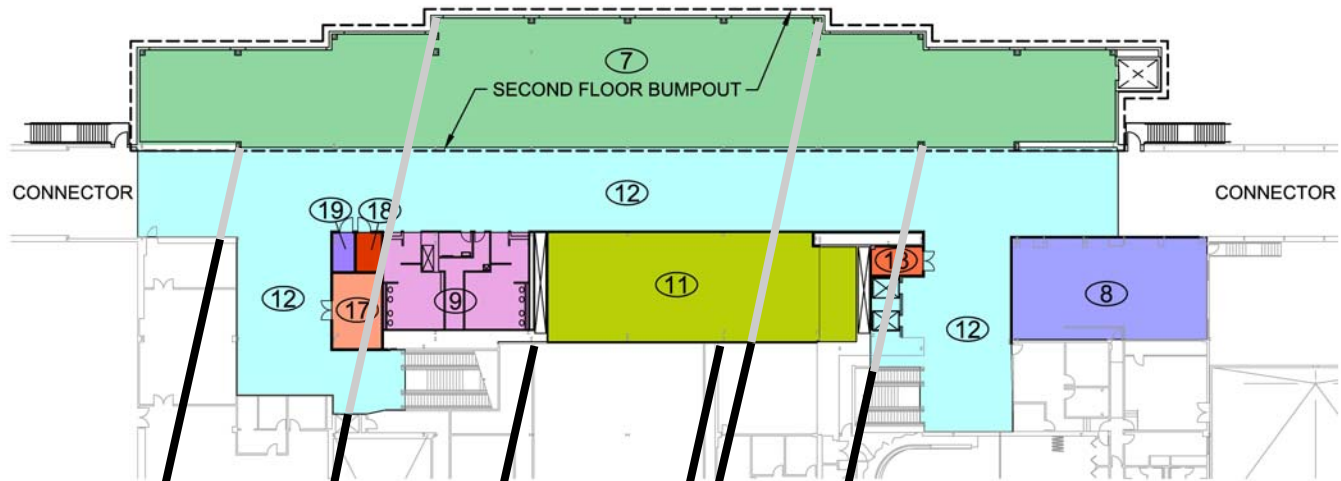
COLOR	AREA	WORK AREA NAME	AREA (SF)
Light Brown	1	BAGGAGE CLAIM	46,550
Green	2	BAGGAGE CLAIM MEETING SPACE	1,160
Orange	3	IGT	1,950
Blue	4	CAFE	1,830
Light Blue	4.1	CAFE SEWER LINE	860
Purple	15	CENTRAL LOBBY	7,050



Planned Configuration - Concourses



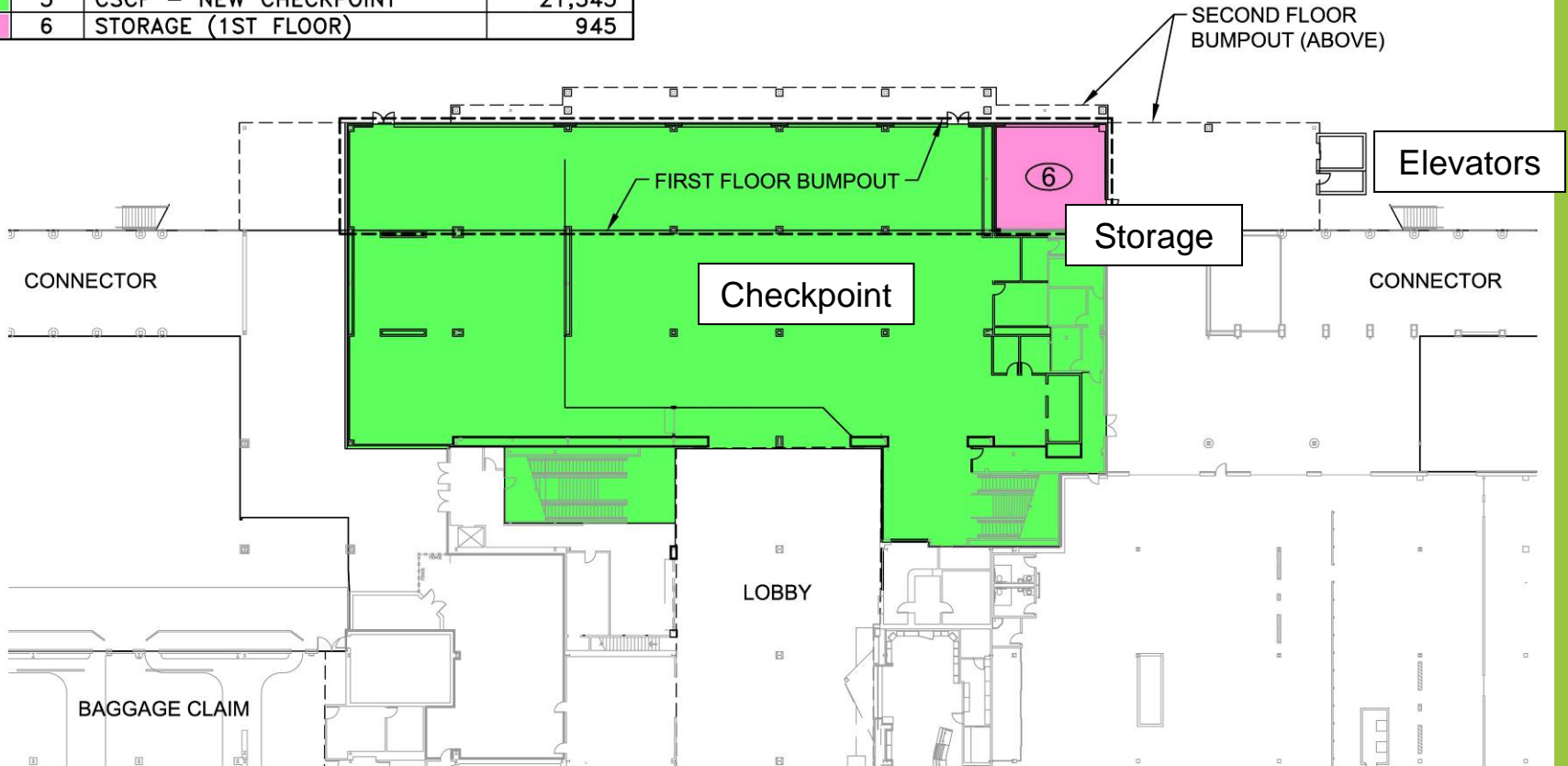
Planned Configuration – Two Story View



Planned Configuration – Checkpoint

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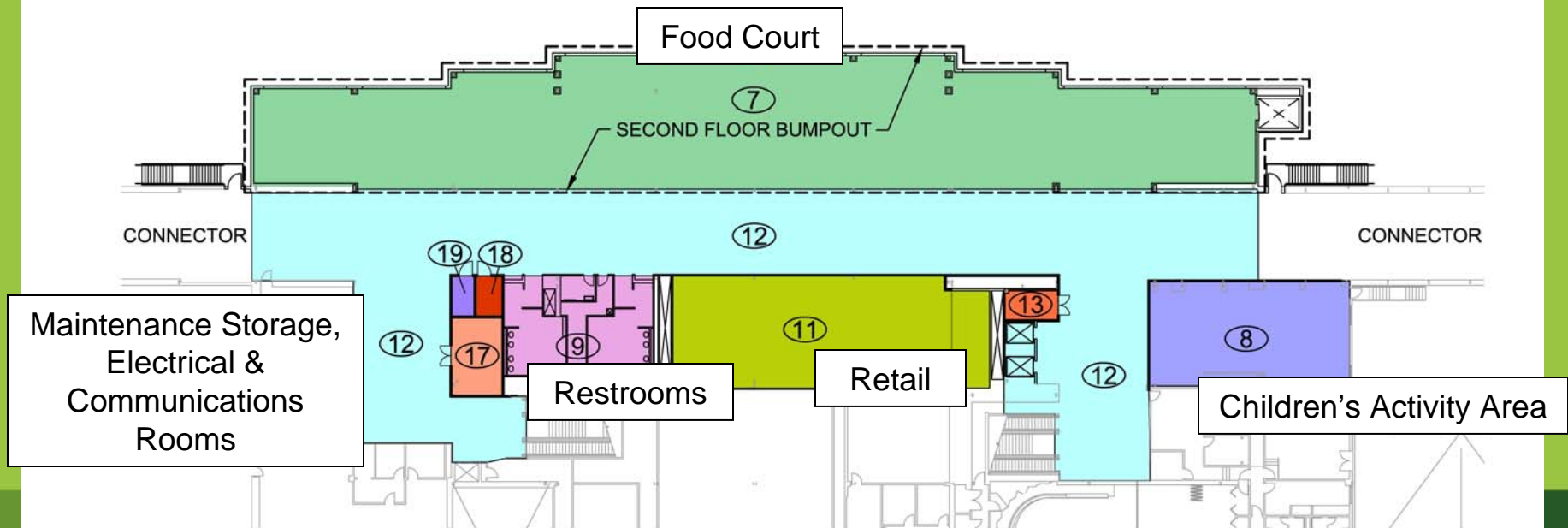
COLOR	AREA	WORK AREA NAME	AREA (SF)
Green	5	CSCF – NEW CHECKPOINT	21,345
Pink	6	STORAGE (1ST FLOOR)	945



Planned Configuration – Concessions/Retail

LEGEND:

COLOR	AREA	WORK AREA NAME	AREA (SF)
Green	7	FOOD COURT – 2ND FLOOR CONCESSIONS	10,885
Blue	8	CHILDRENS ACTIVITY AREA	1,950
Pink	9	NEW RESTROOMS (EX NORTH MECH ROOM)	1,400
Yellow	11	HIGH BAY SPACE	3,280
Cyan	12	CIRCULATION – MAIN CORRIDOR	12,280
Orange	13	IDF ROOM – SOUTH	155
Light Orange	17	NEW ELECTRIC ROOM	380
Red	18	MAINTENANCE STORAGE ROOM	105
Purple	19	IDF ROOM – NORTH	90
	20	IT RECONFIGURATION (NOT SHOWN)	N/A



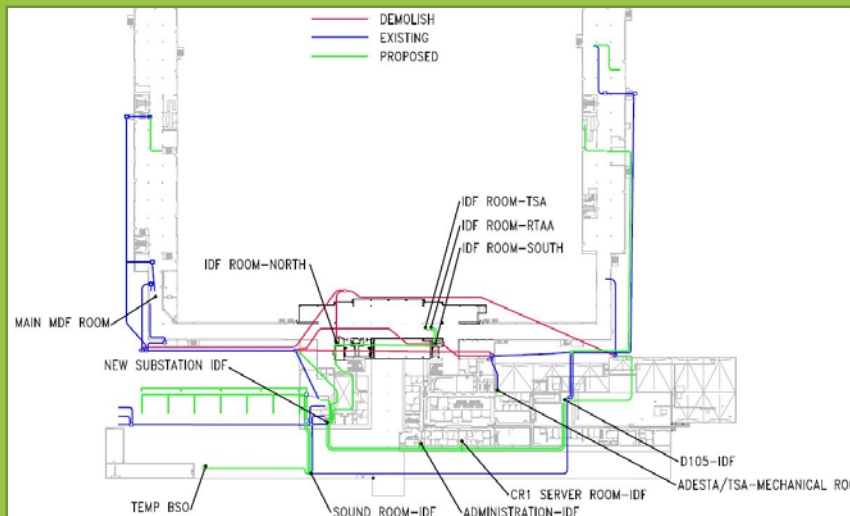
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Design – CMAR Discoveries

CMAR input prevented some potentially expensive change orders

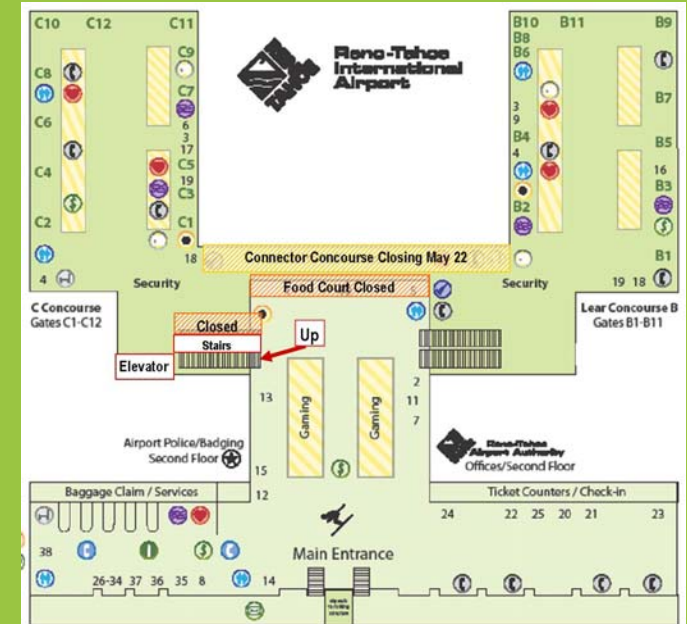
- IT Reconfiguration
- Additional depth required for expansion bracing
- Roof top additions needed to accommodate increased snow/ice drift
- Cost savings as a result of owner purchased carpet



Passenger Challenges

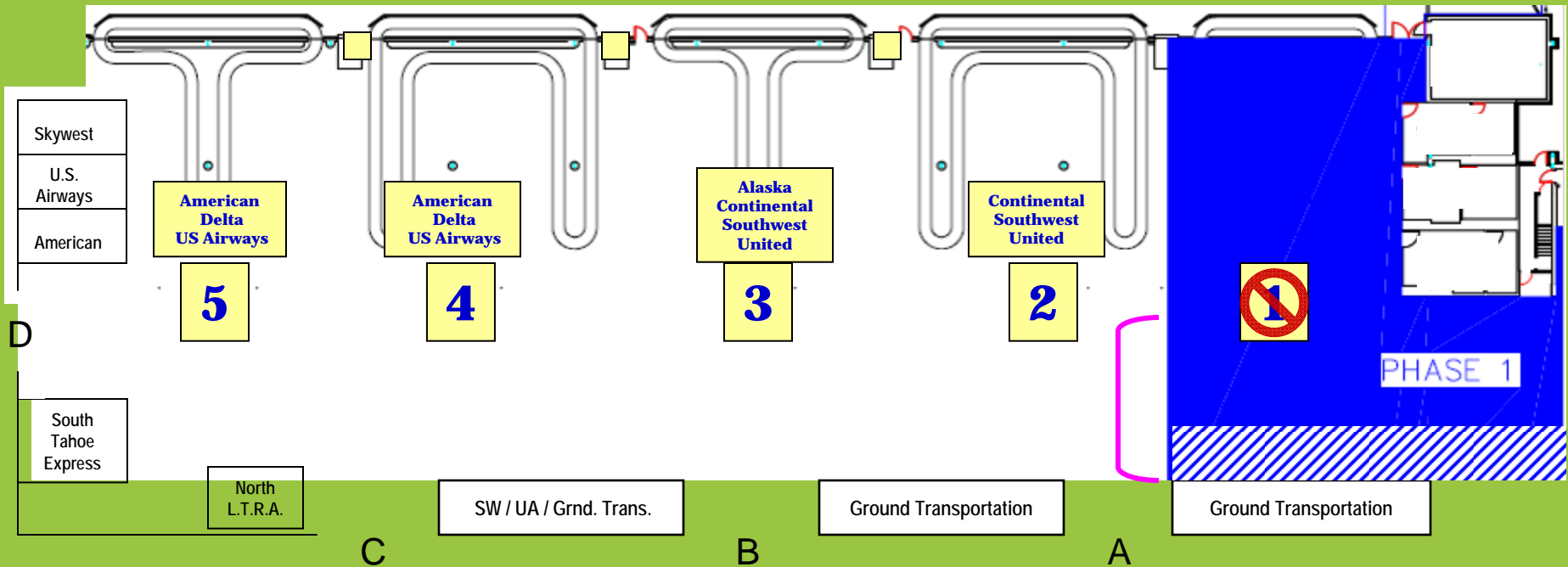
Owner – CMAR collaboration established a more responsive and streamlined process to mitigate passenger inconveniences

- Closure of connector concourse – no access between concourses without returning to first floor
- Closure of B Concourse elevator – creation of temporary access route through administrative offices



Passenger Challenges, continued

- Baggage claim phasing isolated north baggage carousels from south carousels – passengers routed outside



- ✦ Public doors remain open
- ✦ Restrooms temporarily Closed
- ✦ Rental Car queuing space limited
- ✦ Budget, Avis, Hertz impacted
- ✦ Stanchion & sign queuing area for customers

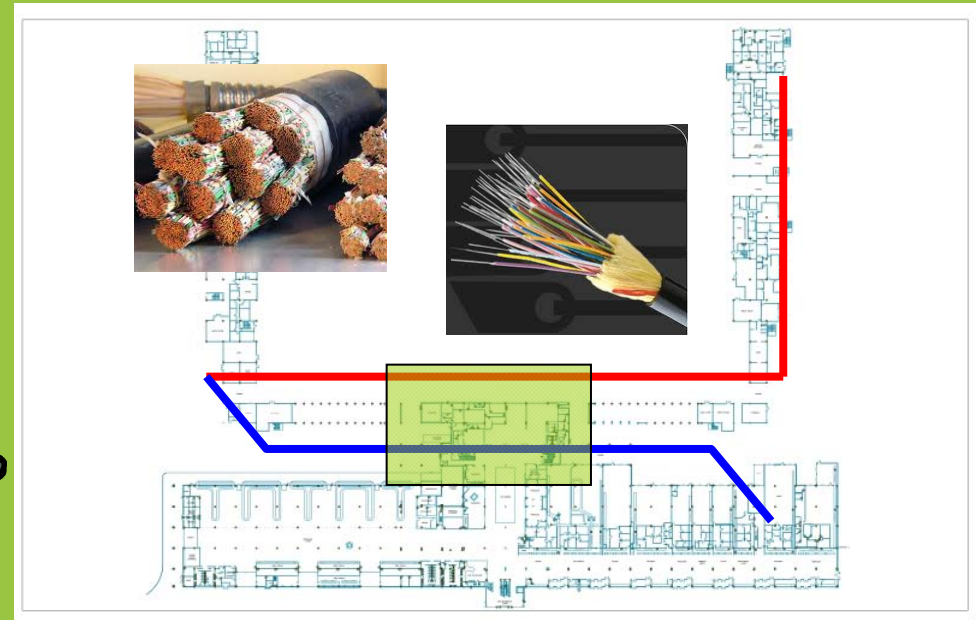


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Construction Challenges

- Security Sensitive Information (SSI)
- Part 77 Surface restrictions for crane on apron
- TSA equipment procured, installed and tested separately
- IT reconfiguration risked impact to all critical security functions and communications



Baggage Claim



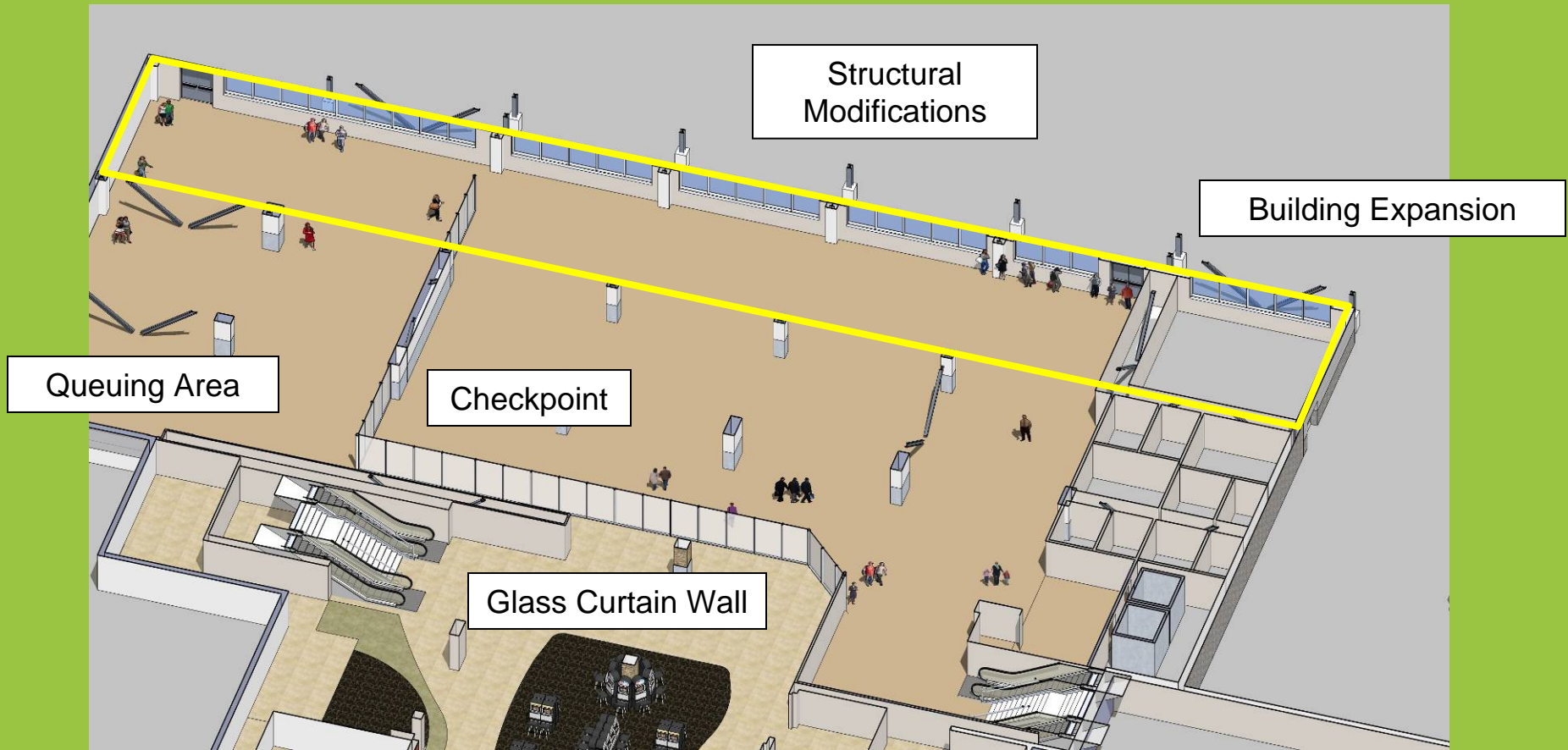
New Restaurant



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Consolidated Security Checkpoint of the Future



New Second Floor Concessions/Retail



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