7

Implementation

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EXHIBITS

TABLES

7 IMPLEMENTATION

7.1 OVERVIEW

The timeframe for implementation of each ADP project is intended to provide sufficient capacity to accommodate demand as it materializes over time. Therefore, the sequence of project implementation is based primarily on the aviation activity forecast, although factors such as construction feasibility, enabling projects, financial factors, organizational capacity, and Airport policy directives were also considered. These additional considerations are important, as sequencing construction projects based solely on demand could result in an excessive number of simultaneous construction projects. Therefore, a holistic approach was taken in developing the implementation plan.

As previously discussed, the ADP recognizes Ongoing Projects already in the environmental review, programming, design, or construction phase. These projects were incorporated into the ADP to provide a complete picture of future development opportunities and constraints. The ADP identifies these Ongoing Projects and ADP Projects with the symbols as indicated as follows:

Ongoing Projects

These projects have been authorized to proceed by the Airport Commission or have been identified by Airport management as needing to be implemented in the near future, subject to Airport Commission and other necessary approvals. They are in various stages of planning, programming, design, or construction. Appropriate environmental reviews, as required under the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA), are completed, in process, or will be conducted. These projects are proceeding, or would proceed if approved, irrespective of any ADP projects and do not address long-term demands and capacity needs.

ADP Projects

These are ADP recommended long-term projects and are anticipated to undergo appropriate environmental review, financial assessment, programming, and design prior to consideration for approval and implementation.

The Ongoing Projects and ADP Projects are listed on **Tables 7.1-1** and **7.1-2**, respectively, and shown on **Exhibit 7.1-1**.

Certain ADP projects become possible only after another project (or projects) has been implemented. While projects may be independently necessary and useful, in certain cases their sequencing is vital to the timely completion of other projects. Examples of such circumstances include the relocation of a facility to a more appropriate location, leaving the previous site available for new development, or the completion of the first phase of a project before construction can begin on the second phase. The sequence in which projects are implemented could ensure the success of the overall ADP, while failure to sequence projects appropriately may prevent a project from being completed in time to meet projected demand. Therefore, adequate advance planning is necessary. The ADP also considered building conditions and lease terms in assessing project phasing and potential reuse, changes in land use, or new construction.

The phases of implementation are presented by program area, which encompasses a major project along with projects that are related either in function, location, or phasing dependency. Because of the interrelated nature of Airport development, programs can consist of projects from various functional areas and may span more than one phase of ADP development.

Table 7.1-1 | Ongoing Projects

Airfield
Helipad
Taxiway C East
Taxiway C3
Taxiways E and J
Taxiway F East
Taxiway F West
Taxiway F1
Taxiway F2
Taxiway N
Taxiway R North
Taxiway R South
Taxiway S3
Taxiways T and D

Passenger Terminal
B/A A, F, and G Near-Term BHS Screening Projects
B/A C Improvements
B/A F Passenger Boarding Bridge and Modernization
Demolish Old Airport Traffic Control Tower
Gate Enhancements
ITB Arrivals Level Improvements
ITB BHS Upgrade

Passenger Terminal (continued)
Terminal 1 Redevelopment and BHS
T2-T3 Secure Connector and Office Block
Terminal 2 Aircraft Parking Enhancement
Terminal 3 West Expansion and Renovation

Ground Access and Parking
AirTrain Track Extension
Long Term Parking Garage #2

Support Facilities
Airport Hotel and AirTrain Station
Building 730 Conversion to Airline and Airport GSE Maintenance
Consolidated Administration Campus
West Field Cargo Buildings Redevelopment
ERF #3
West Field GSE Building 624 Replacement
GTU Redevelopment
High-Speed Gate Checkpoints
Materials Testing Lab
Police Training Range Improvements
Relocate Fire Suppression Tanks
South McDonnell Road Realignment and RON Parking
Superbay Hangar Fire and Life Safety Systems Improvements

Support Facilities (continued)
Taxiways H and M
West Cargo Checkpoint Relocation
West Field Cargo Facility
West Field Parking Garage #2

Utilities
Airfield Utility Improvements
Airport Shoreline Protection Project – Flood Control
Airport Shoreline Protection Project – Sea Level Rise
Airport-wide GSE Electrical Infrastructure
Boarding Areas A and G 400 Hertz System Upgrade
Central Utility Plant Improvement
Fuel Supply Improvements
Lot DD Utilities Improvements
New Fuel Storage Tanks
Perimeter Intrusion Detection System
Separation of Fire and Domestic Water Systems
SFO and City of Millbrae Water Tie-ins
Upgrade Substation M
Wastewater System

Source: Landrum & Brown, Inc., 2016

Table 7.1-2 | ADP Projects

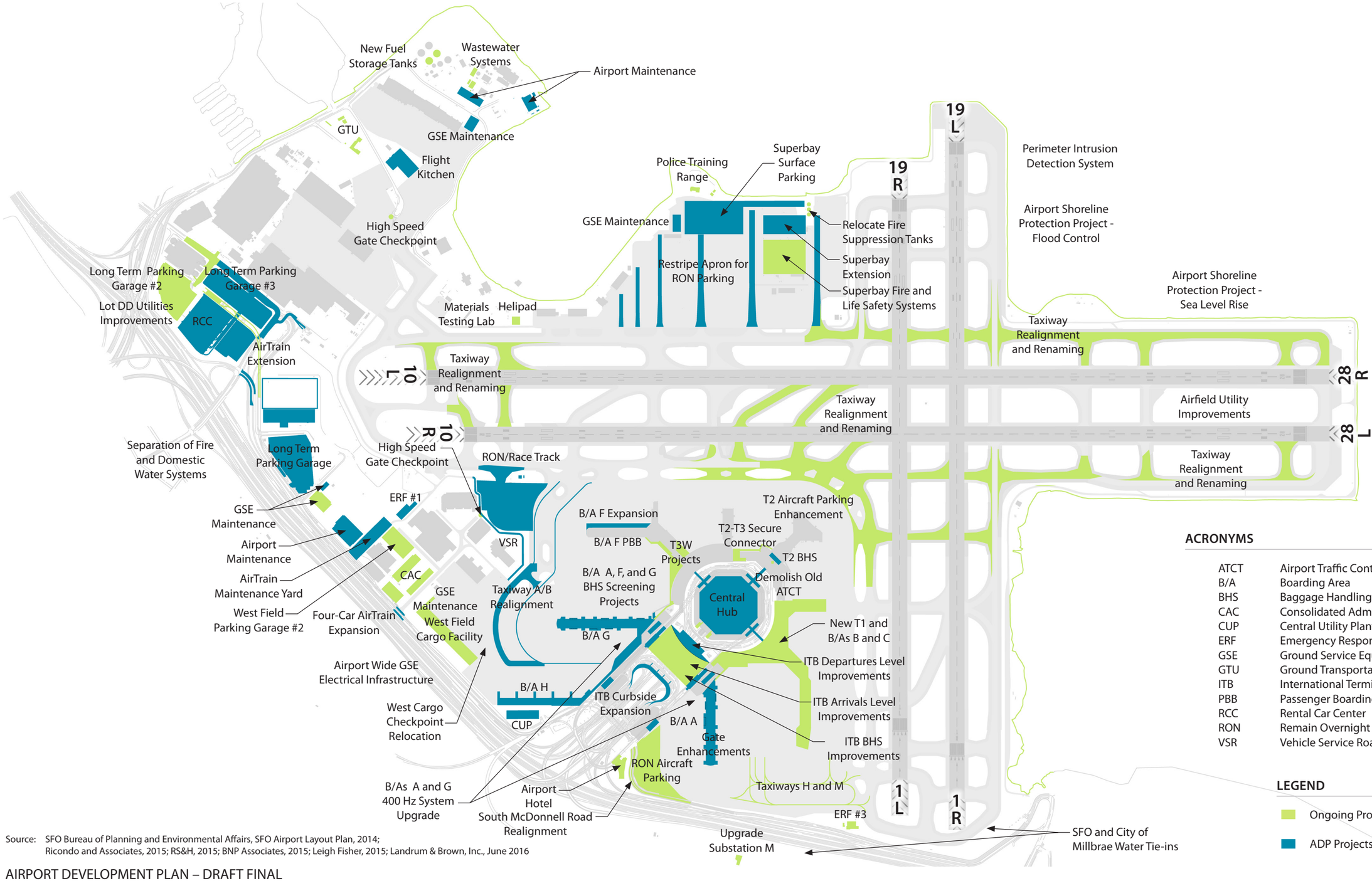
Airfield
New Parallel Taxilane around B/A G
Taxiway A Realignment
Taxiway B Realignment
Passenger Terminal
B/A A and ITB South BHS
B/A F Improvements
B/A G and ITB North BHS
B/A H BHS
B/A H Phase 1
B/A H Phase 2
B/As A and G Improvements
ITB Departures Level Improvements – Phase 1
ITB Departures Level Improvements – Phase 2
Terminal 2 BHS
Ground Access and Parking
AirTrain Maintenance Yard Expansion
AirTrain Vehicle Acquisition
Central Hub
Conversion of the Existing RCC to Public Parking

Ground Access and Parking (continued)
Four-Car AirTrain Station Expansion
ITB Curbside Expansion
Long Term Parking Garage #3
Phased Demolition of Central Parking Garage
Rental Car Center and Quick Turn Around Facility
Roadway Improvements for RCC
Support Facilities
Building 710 and 750 Renovations
Demolish Airport Maintenance Building 692
Demolish the SFO Business Center
East Field Building Demolition
East Field GSE Maintenance Facility
North Field Airport Maintenance Facility
North Field Airport Maintenance Conversion
North Field Flight Kitchen
North Field GSE Maintenance Facility
Relocation of ERF #1 and Closure of Taxilane Y
Restripe Aircraft Parking Positions for RON Parking
Superbay Hangar Extension and Employee Surface Parking Lot

Support Facilities (continued)
Vehicle Service Road Relocations
West Field Building Demolitions
West Field Checkpoints
West Field RON Parking and Race Track
Utilities
B/A H Utility Extensions
Relocate Central Utility Plant
Relocate Fuel Vault Test Station
Relocate Utilities (B/A H)
Relocate Utilities (San Bruno Avenue)

Source: Landrum & Brown, Inc., 2016

Exhibit 7.1-1 | Ongoing and ADP Projects



ACRONYMS

ATCT	Airport Traffic Control Tower
B/A	Boarding Area
BHS	Baggage Handling System
CAC	Consolidated Administration Campus
CUP	Central Utility Plant
ERF	Emergency Response Facility
GSE	Ground Service Equipment
GTU	Ground Transportation Unit
ITB	International Terminal Building
PBB	Passenger Boarding Bridges
RCC	Rental Car Center
RON	Remain Overnight
VSR	Vehicle Service Road

LEGEND

- Ongoing Projects
- ADP Projects

N

Source: SFO Bureau of Planning and Environmental Affairs, SFO Airport Layout Plan, 2014; Ricondo and Associates, 2015; RS&H, 2015; BNP Associates, 2015; Leigh Fisher, 2015; Landrum & Brown, Inc., June 2016

7.2 NEAR-TERM DEVELOPMENT PROJECTS

The Near-Term Development Projects, shown on **Exhibit 7.2-1**, are proposed to be implemented between 2016 and 2021, pending necessary approvals.

1 Airfield Compliance, Taxiway Realignment, and Renaming

Eliminate the complex intersections between Taxiways A, B, E, F, F1, and J and the related complex intersection of Taxiways T and D. Realign the access taxiways for Runways 10L, 10R, 28L, and 28R to conform to FAA design standards. Rename select taxiways to conform to FAA standard naming conventions.

- **Taxiway F2:** Provide a second runway-entrance taxiway to Runway 28L.
- **Taxiway S3:** Add a fillet to Taxiway S (to be renamed Taxiway S3 later) at the end of Runway 10R.
- **Taxiway C East:** Shift Taxiway C to a separation distance of 550 feet from the Runway 28R centerline along the eastern 6,850 feet of the runway. Relocate the existing Stormwater Pump Station 1B to the northwest. Rename Taxiway W to Taxiway C2.
- **Taxiway C3:** Realign Taxiway C1 perpendicular to Runway 10L-28R and rename it Taxiway C3.
- **Taxiway R North:** Realign Taxiway R perpendicular to the runway between Runway 10L-28R and Taxiway C.
- **Taxiway R South:** Upgrade Taxiway R between Runways 10L-28R and 10R-28L to accommodate larger aircraft and close Taxiway U between Taxiway C and Runway 10R-28L.
- **Taxiway F1:** Realign Taxiway F1 at a separation of 800 feet from Taxiway F and rename it Taxiway W.
- **Taxiways T and D:** Realign Taxiway T to a similar angle as Taxiway Q and separate Taxiways D and T at the Runway 10R-28L crossing point.
- **Taxiways E and J:** Reconfigure Taxiway E as an acute-angled exit taxiway and realign and shift Taxiway J farther from Runway 1L-19R.
- **Taxiway F West:** Shift Taxiway F farther from Runway 10R-28L between Taxiways B and L.
- **Taxiway F East:** Shift Taxiway F farther from Runway 10R-28L between Taxiways L and N.
- **Taxiway N:** Realign Taxiway N at its intersection with Taxiway F.
- **Helipad:** Provide a dedicated helipad northwest of Building 1050.

2 International Terminal Building Arrivals Level Improvements

Reconfigure the arrivals facilities within the ITB to optimize operational flexibility and allocation of staffing resources. Enhance the guest experience through redeveloped arrivals lobby and concession areas.

- **ITB Arrivals Level Improvements:** Reconfigure U.S. Customs and Border Protection secondary processing facilities and combine the two international bag claim halls. Provide improved concessions in the meeter/greeter lobby.
- **ITB BHS Upgrade:** Upgrade the ITB BHS by replacing controls and installing appropriate conveyors and diverters; implement a reporting system to monitor and manage performance.
- **B/A A, F, and G Near-Term BHS Screening Projects:** Replace BHS screening equipment in B/As A, F, and G with newer screening devices.

3 Terminal 1 Redevelopment

Replace existing Terminal 1 and B/As B and C with a modern facility designed to accommodate forecast demand, enhance passenger level of service, address Terminal 1 foundation deficiencies, and provide an enhanced and modernized guest experience.

- **T1 Redevelopment and BHS:** Reconstruct Terminal 1 and B/A B, providing 18 gates for widebody and narrowbody aircraft or up to 27 aircraft parking positions with all narrowbody aircraft. Redevelop B/A C upon completion of B/A B (see Project #23). The project includes new security screening checkpoints, baggage screening updates, secure and sterile connections to the ITB, and a new BHS incorporating ICS technologies.

Terminal 1 Redevelopment
Source: San Francisco International Airport

4 Terminal 3 Improvements

Upgrade Terminal 3 to provide additional gate flexibility, enhance the guest experience, and allow improved movement of passengers and baggage between Terminal 3 and B/As D and G.

- **T2-T3 Secure Connector and Office Block:** Construct a secure connector between Terminals 2 and 3 to enable post-security passenger access, enhance existing pre-security passenger circulation, and add a new security checkpoint. An office block up to six stories tall is proposed to be built above and adjacent to the connector.
- **Terminal 3 West Expansion and Renovation:** Expand Terminal 3 frontage gate holdrooms, add domestic/international swing gate capability, improve concessions and guest amenities, modernize the BHS, and enhance building efficiency.
- **B/A F Passenger Boarding Bridge and Modernization:** Replace five passenger boarding bridges. Reconfigure the aircraft parking area and install two new hydrant fueling pits.

5 Terminal (Other)

- **Terminal 2 Aircraft Parking Enhancement:** Reconfigure the aircraft parking area at B/A D by down-gauging two widebody parking positions and modify the existing aircraft parking area to include an additional narrowbody aircraft parking position.
- **Gate Enhancements:** Enhance gate flexibility by improving the A380 gates at B/A A, providing B/A A fleet flexibility, and installing bus-gate access at B/As A and G.

6 Security Improvements

- **High-Speed Gate Checkpoints:** Upgrade existing vehicle checkpoints with new security features and install high-speed gates and crash barriers at gates.
- **Perimeter Intrusion Detection System:** Install a ground-based radar perimeter intrusion detection system, comprising multiple radar units located at points on Airport property to detect objects over large open areas such as the waterfront and airfield.

7 Long Term Parking Garage #2 and AirTrain Extension

Provide additional long-term parking capacity and improve passenger access to the terminals.

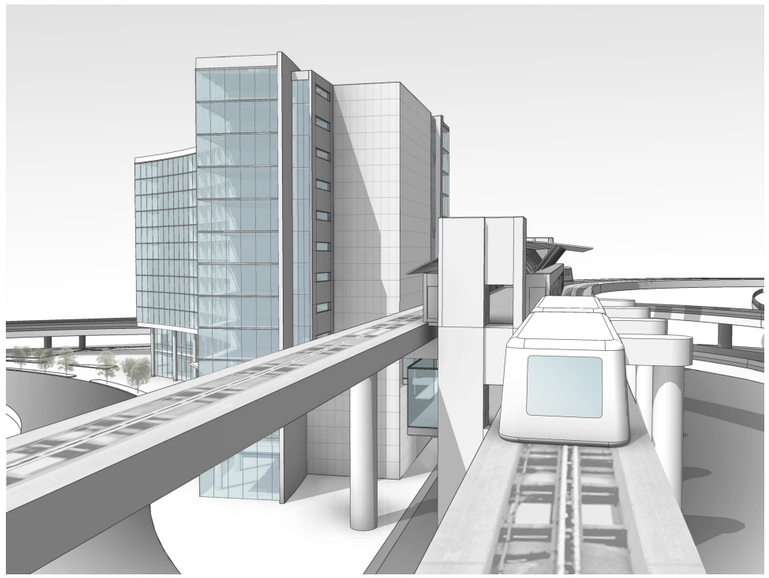
- **Long Term Parking Garage #2:** Construct Long Term Parking Garage #2 with 3,600 parking spaces in Lot DD. Relocate existing Sanitary Sewer Force Main (SSFM) within Lot DD.
- **AirTrain Track Extension:** Extend the AirTrain tracks approximately 1,800 feet from the current terminus to a new AirTrain station in Lot DD.
- **Lot DD Utilities Improvements:** Construct an Industrial Waste Line from Lot DD to the Bus Vehicle Maintenance Yard.

8 International Terminal Building Curbside Expansion

- **ITB Curbside Expansion:** Construct a new ITB Arrivals Level and Departures Level curbside beyond the existing outer curbsides, providing an additional island curb and three additional lanes on both levels for passenger pick-up and drop-off.

9 Airport Hotel

- **Airport Hotel and AirTrain Station:** Construct a new 350-room full-service hotel and a new AirTrain station with direct hotel access.



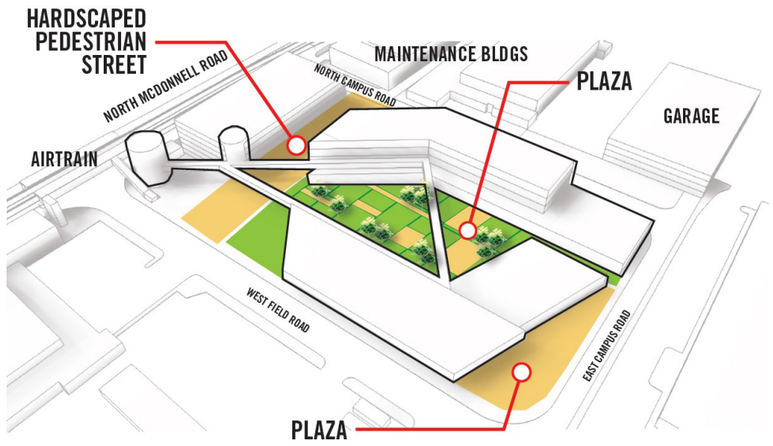
Airport Hotel and AirTrain Station
Source: HNTB Corp., April 2013

10 Demolish Old Airport Traffic Control Tower

- **Demolish Old Airport Traffic Control Tower:** Demolish the old Airport Traffic Control Tower (ATCT) upon completion of new ATCT.

11 Consolidated Administration Campus

- **Consolidated Administration Campus:** Demolish the existing Jason Yuen Architecture & Engineering Building and the Airport Museum warehouse (Buildings 676 and 670) and construct new office buildings and employee parking to accommodate Airport Commission employees.



Consolidated Administration Campus
Source: San Francisco International Airport

12 Remain Overnight Parking

Expand close-in and RON aircraft parking positions to accommodate forecast demand.

- **South McDonnell Road Realignment and RON Parking:** Realign South McDonnell Road and expand the B/A A RON ramp to better accommodate existing and near-term close-in RON demand.
- **Restripe Aircraft Parking Positions for RON Parking:** Restripe the Plot 41 East Field RON area to provide additional aircraft parking capabilities.
- **East Field Building Demolition:** Demolish Building 1070 (offices) in the East Field.

13 Superbay Hangar

- **Superbay Hangar Fire and Life Safety Systems Improvements:** Replace fire suppression system and associated utilities within the Superbay Hangar. Provide abatement of asbestos and other hazardous materials from the Superbay Hangar.
- **Relocate Fire Suppression Tanks:** Relocate the existing fire suppression tanks north of Taxiway C from near the Superbay Hangar to an area east of the Superbay Hangar Extension.
- **Superbay Hangar Extension and Employee Surface Parking Lot:** Expand the Superbay Hangar to accommodate two additional widebody aircraft (for a total of six) and expand the employee surface parking lot.

14 South Field Redevelopment

- **ERF #3:** Relocate and upgrade ERF #3 to a location near the existing ERF #3 building.
- **Taxiways H and M:** Realign Taxiways H and M to the southwest; rename to Taxiways M1 and M2, respectively, to conform to FAA naming convention.

15 East Field Facility Renewal

- **Materials Testing Lab:** Replace the existing deteriorated materials testing lab trailer group with a new lab structure.
- **Police Training Range Improvements:** Replace the existing deteriorated facilities with public safety training and range facilities in the East Field area. The new facility would include new offices, indoor training classrooms, restroom facilities, gun cleaning/storage, K-9 facilities, and associated site improvements.
- **East Field GSE Maintenance Facility:** Construct a new GSE maintenance facility for East Field ground handlers and airlines.

16 North Field Facility Renewal

- **GTU Redevelopment:** Relocate the existing GTU, Shop, shuttle bus parking area, and fueling station.
- **New Fuel Storage Tanks:** Construct two 75,000-barrel fuel storage tanks to provide additional on-Airport storage capacity necessary to maintain sufficient supply during tank closures for regular maintenance, extended outages, and contingency for fuel supply interruptions.
- **Fuel Supply Improvements:** Increase fuel supply throughput by upgrading the existing fuel supply pipeline or providing a supplemental pipeline.
- **North Field Airport Maintenance Facility:** Construct a new Airport maintenance facility consisting of 37,000 square feet of building and 492,000 square feet of landside area.
- **North Field GSE Maintenance Facility:** Construct a new GSE maintenance facility for North Field ground handlers and airlines.

17 West Field Facility Renewal

Renovate or replace aging West Field support facilities with modern and energy efficient facilities.

- **West Field Cargo Facility:** Construct a two-level cargo facility totaling approximately 220,000 square feet with employee parking provided on the roof.
- **West Cargo Checkpoint Relocation:** Relocate and provide blast-proofing for the checkpoint guard shack between Building 606 and B/A G.
- **West Field Cargo Buildings Redevelopment:** Demolish aging Cargo Buildings 602, 606, and 612 to permit construction of the West Field Cargo Facility.
- **Building 730 Conversion to Airline and Airport GSE Maintenance:** Convert Building 730 from a belly cargo facility to a mixed-use building accommodating the relocation of Airport tenants.
- **West Field Parking Garage #2:** Construct an additional parking garage in the West Field to accommodate Airport tenants, including federal, concessions, and airline employees.
- **West Field GSE Building 624 Replacement:** Demolish existing Building 624 and construct a new facility for GSE use.
- **Building 710 and 750 Renovations:** Convert Building 710 for Airport maintenance use and add GSE maintenance facilities in Building 750.

18 Airport Shoreline Protection

- **Airport Shoreline Protection Project – Flood Control:** Fill remaining gaps within the existing seawall along the San Francisco Bay, close potential water infiltration paths, and establish additional flood control protection at existing seawalls.

19 Central Utility Plant Improvement

- **Central Utility Plant Improvement:** Replace the existing Chiller No. 1 with a new unit with lower operating costs and improved environmental performance.

20 Wastewater System Improvements

- **Wastewater System:** Upgrades and expansion of sewer, wastewater treatment, and recycled water systems including:
  - *Industrial Wastewater Treatment Plant Upgrade*
  - *Recycled Water Distribution System*
  - *Storm Drainage Pipeline Improvements*
  - *Sewer System Improvements*
  - *New Sewer Outfall*
  - *Industrial Waste System Improvements*

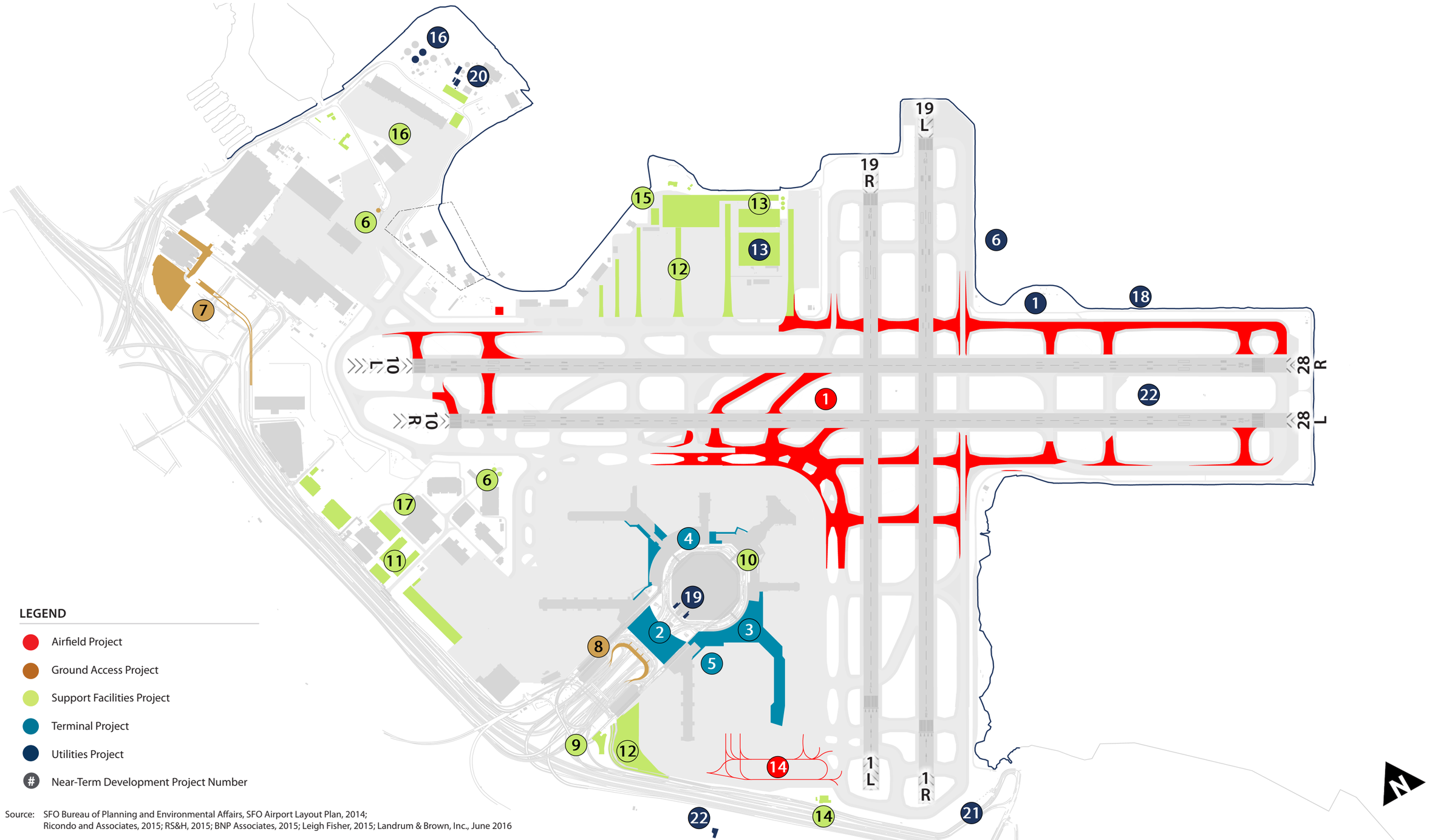
21 Water System Improvements

- **Separation of Fire and Domestic Water Systems:** The existing combined fire main waterline and domestic waterline would be replaced with a dual waterline system, preventing water stagnation in the potable water system.
- **SFO and City of Millbrae Water Tie-ins:** This project would install equipment to tie-in the domestic water systems between SFO and the city of Millbrae.

22 Energy and Lighting Improvements

- **Airfield Utility Improvements:** Modify airfield utilities to replace aging infrastructure, meet FAA Advisory Circular requirements, and eliminate conflicts with recommended airfield modifications. These projects include:
  - *Airfield Lighting Building No. 1 Renovation:* Replace and upgrade switchgear and associated electrical equipment.
  - *Airfield Lighting 5kV Cable Replacement:* Replace the aging primary circuit cables feeding the runways and taxiways in various locations.
  - *Airfield Lighting System Upgrade:* Replace lighting, signage, cabling, and underground infrastructure to meet FAA Advisory Circular standards. The Airfield Lighting Control System Computer hardware and software would also be upgraded.
- **Airport-wide GSE Electrical Infrastructure:** This project would install or upgrade power distribution equipment and electrical infrastructure in support of electric-powered GSE vehicles.
- **Boarding Areas A and G 400 Hertz System Upgrade:** This project would install additional 400 hertz power systems to increase available capacity in B/As A and G to support the additional electrical loads required for many new widebody aircraft.
- **Upgrade Substation M:** Upgrade Substation M to include a second 55 MVA transformer, related switchgear, and protection equipment.

Exhibit 7.2-1 | Near-Term Development Projects



Source: SFO Bureau of Planning and Environmental Affairs, SFO Airport Layout Plan, 2014;
Ricondo and Associates, 2015; RS&H, 2015; BNP Associates, 2015; Leigh Fisher, 2015; Landrum & Brown, Inc., June 2016

7.3 LONG-TERM DEVELOPMENT PROJECTS

The Long-Term Development Projects, shown on **Exhibit 7.3-1**, would be initiated beginning in 2022 through the High Constrained planning activity level.

(23) Terminal 1 Redevelopment (Continuation of Project #5)

- **B/A C Improvements:** Reconstruct B/A C to provide enhanced concession spaces, public restrooms, and other passenger amenities.

(24) Boarding Area F Improvements

Upgrade Terminal 3 to provide additional gate flexibility and to enhance the guest experience.

- **B/A F Improvements:** To enhance the guest experience, B/A F would be reconstructed and upgraded to improve facilities and services, including airside concession spaces, public restrooms, and other passenger amenities.

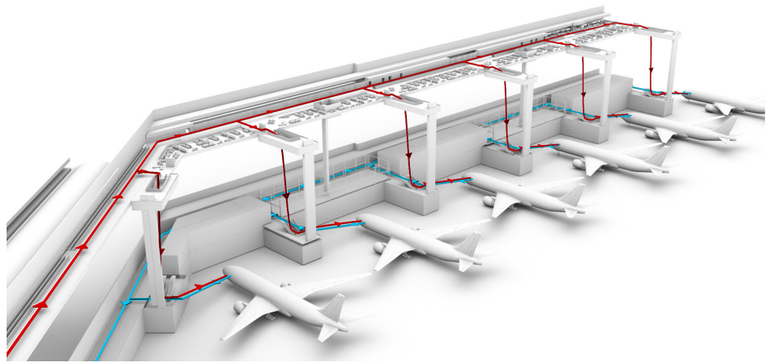
(25) Terminal 2 Baggage Handling System Improvements

- **Terminal 2 BHS:** Extend the Terminal 3 ICS BHS backbone into Terminal 2 to connect the transfer input, makeup, and sortation systems.

(26) International Terminal Building Departures Level and Boarding Area Capacity

Reconfigure and expand the capacity of ITB facilities to accommodate the forecast increases in international passenger traffic and enhance the guest experience through redeveloped concessions areas.

- **ITB Departures Level Improvements – Phase 1:** Combine the existing security screening checkpoints, reconfigure the ticketing hall, expand the concession areas, and provide a post-security connector between B/As A and G.
- **ITB Departures Level Improvements – Phase 2:** Expand the Departures Level of the ITB in the area immediately beyond the new centralized security checkpoint.
- **B/As A and G Improvements:** Integrate upper level holdroom areas with concessions and provide additional holdroom seating area on the Departures and, potentially, Arrivals Levels of B/As A and G.
- **B/A A and ITB South BHS:** Upgrade the B/A A and ITB South BHS to connect with the ICS.
- **B/A G and ITB North BHS:** Upgrade the B/A G and ITB North BHS to connect with the ICS.

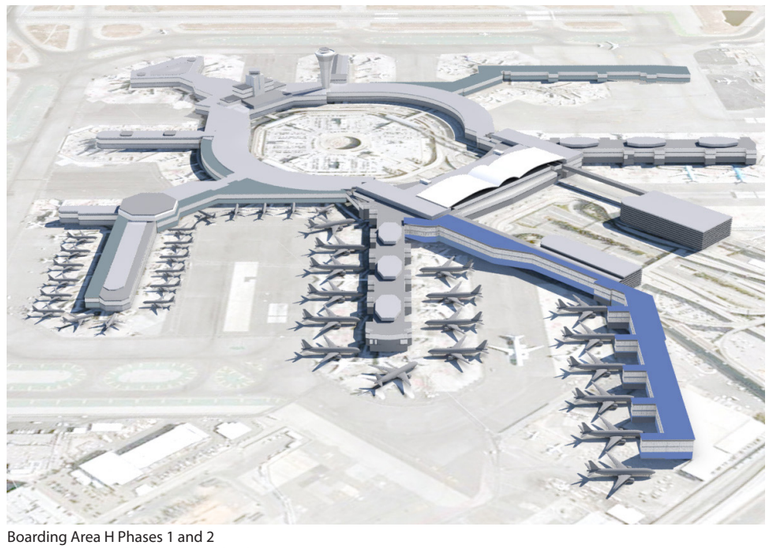


Boarding Area H Phases 1 and 2
Source: Landrum & Brown, Inc., March 2016

(27) Boarding Area H Phase 1

Construct new Boarding Area H to provide sufficient international and domestic gate capacity to accommodate forecast demand.

- **B/A H Phase 1:** Construct a new boarding area with three widebody or five narrowbody swing gates with domestic and international arrivals capability and create an additional domestic and preclear bag claim area.
- **B/A H Utility Extensions:** Extend aviation fuel, natural gas, and potable water service lines.
- **Demolish the SFO Business Center:** Demolish Building 575 to permit the construction of B/A H Phase 1 and the relocated Central Utility Plant.
- **Relocate Utilities (B/A H):** Relocate Sanitary Sewer Pump Station SSPS-11 and Industrial Waste Pump Station IWPS-B to avoid the B/A H apron.



Boarding Area H Phases 1 and 2
Source: Landrum & Brown, Inc., March 2016

(28) Boarding Area H Phase 2

Expand B/A H to provide sufficient international and domestic gate capacity to accommodate forecast demand.

- **B/A H Phase 2:** Extend B/A H Phase 1 to provide an additional three widebody or five narrowbody contact gates.
- **B/A H BHS:** Extend the BHS backbone and provide baggage makeup area for B/A H.
- **New Parallel Taxilane around B/A G:** Construct a second taxilane around B/A G.
- **Taxiway B Realignment:** Shift Taxiway B 22 feet to the northwest to meet FAA design standards.
- **Taxiway A Realignment:** Shift Taxiway A 15 feet to the northwest to meet FAA design standards.
- **Relocation of ERF #1 and Closure of Taxilane Y:** Relocate the West Field ERF #1 to an area just north of the U.S. Postal Service facility and close the majority of Taxilane Y.
- **West Field RON Parking and Race Track:** Construct a new apron to accommodate RON aircraft parking demand and to provide a relocated Race Track (flow-through aircraft parking positions so that passenger aircraft can hold while waiting for an available gate).
- **Vehicle Service Road Relocations:** Reconfigure the West Field VSRs to accommodate and serve the new and relocated facilities in the West Field area.
- **West Field Checkpoints:** Construct three new West Field security checkpoints to replace existing checkpoints to accommodate changes to West Field facilities.
- **North Field Flight Kitchen:** Renovate or rebuild a North Field cargo building (Building 944) for use as a flight kitchen.
- **North Field Airport Maintenance Conversion:** Convert the North Field Education Facilities (Buildings 928 and 928A) for use by Airport maintenance.
- **Relocate Fuel Vault Test Station:** Modify the drain and vent structures associated with Aviation Fuel Vault #5.
- **West Field Building Demolitions:**
  - Demolish belly cargo and GSE maintenance building (Building 585) to allow for construction of B/A H Phase 2 and/or the relocated CUP (see Project #33).
  - Demolish one bay of a GSE maintenance building (Building 642) to allow for the shift of Taxilanes A and B.
  - Demolish the flight kitchen (Building 649) and ERF #1 (Building 650) to allow for construction of the Race Track, RON parking, and the shift of Taxilanes A and B.

(29) Rental Car Center and Quick Turn Around Facility

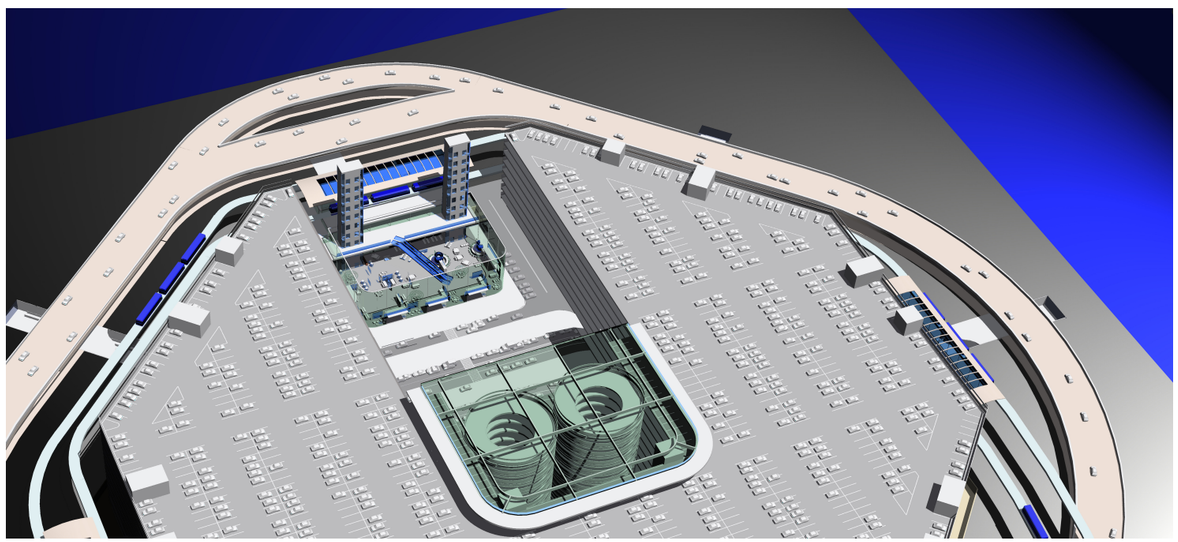
Provide a new RCC and ground transportation upgrades to accommodate forecast demand and to elevate the passenger experience.

- **Rental Car Center and Quick Turn Around Facility:** Construct a new RCC and QTA facility in Lot DD with 4,400 ready/return spaces and 2,880 stacking spaces.
- **Conversion of the Existing RCC to Public Parking:** Convert the existing RCC to a public parking garage with 3,700 parking spaces.
- **Roadway Improvements for RCC:** Reconfigure the connection of South Airport Boulevard, North McDonnell Road, San Bruno Avenue, and the U.S. 101 North on/off ramps.
- **Relocate Utilities (San Bruno Avenue):** Relocate Sanitary Sewage Pump Station SSPS-17 and Industrial Waste Pump Station IWPS-G to accommodate the roadway improvements.

(30) AirTrain System Capacity

Upgrade the AirTrain system to accommodate four-car trains.

- **AirTrain Vehicle Acquisition:** Acquire 30 additional AirTrain vehicles.
- **Four-Car AirTrain Station Expansion:** Expand the platforms at each AirTrain station to accommodate the length of four-car trains (currently accommodates length of three-car trains).
- **AirTrain Maintenance Yard Expansion:** Extend the tracks at the AirTrain Maintenance Building into the adjacent aircraft ramp area.
- **Demolish Airport Maintenance Building 692:** Demolish Building 692 to permit expansion of the AirTrain storage facility.



Cutaway, Central Hub
Source: LeighFisher, December 2015

(31) Central Hub

Replace the existing Central Parking Garage with a modern parking and ground transportation facility to accommodate forecast demand for close-in parking and terminal curbside length.

- **Central Hub:** Replace the Central Parking Garage with a new structure consisting of approximately 11,000 public parking spaces and one level of curbside to augment passenger pick-up and drop-off at the domestic terminals and ITB.
- **Phased Demolition of Central Parking Garage:** Demolish the Central Parking Garage in phases to accommodate construction of the Central Hub.

(32) Long Term Parking Garage #3

- **Long Term Parking Garage #3:** Construct Long Term Parking Garage #3 on Lot DD.

(33) Central Utility Plant

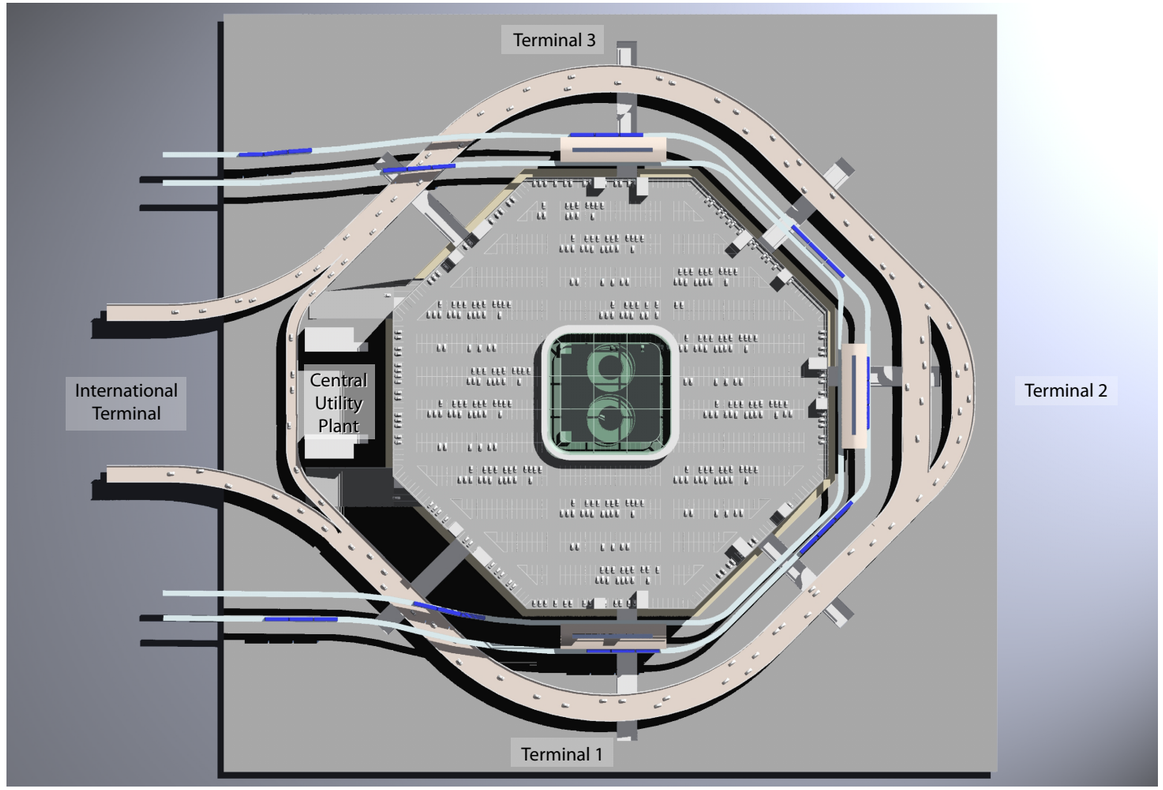
- **Relocate Central Utility Plant:** Construct a new replacement CUP southwest of the proposed B/A H expansion to assist in achieving Airport sustainability goals.

(34) Airport Shoreline Protection

- **Airport Shoreline Protection Project – Sea Level Rise:** Improve the seawall along the San Francisco Bay for protection against sea level rise.

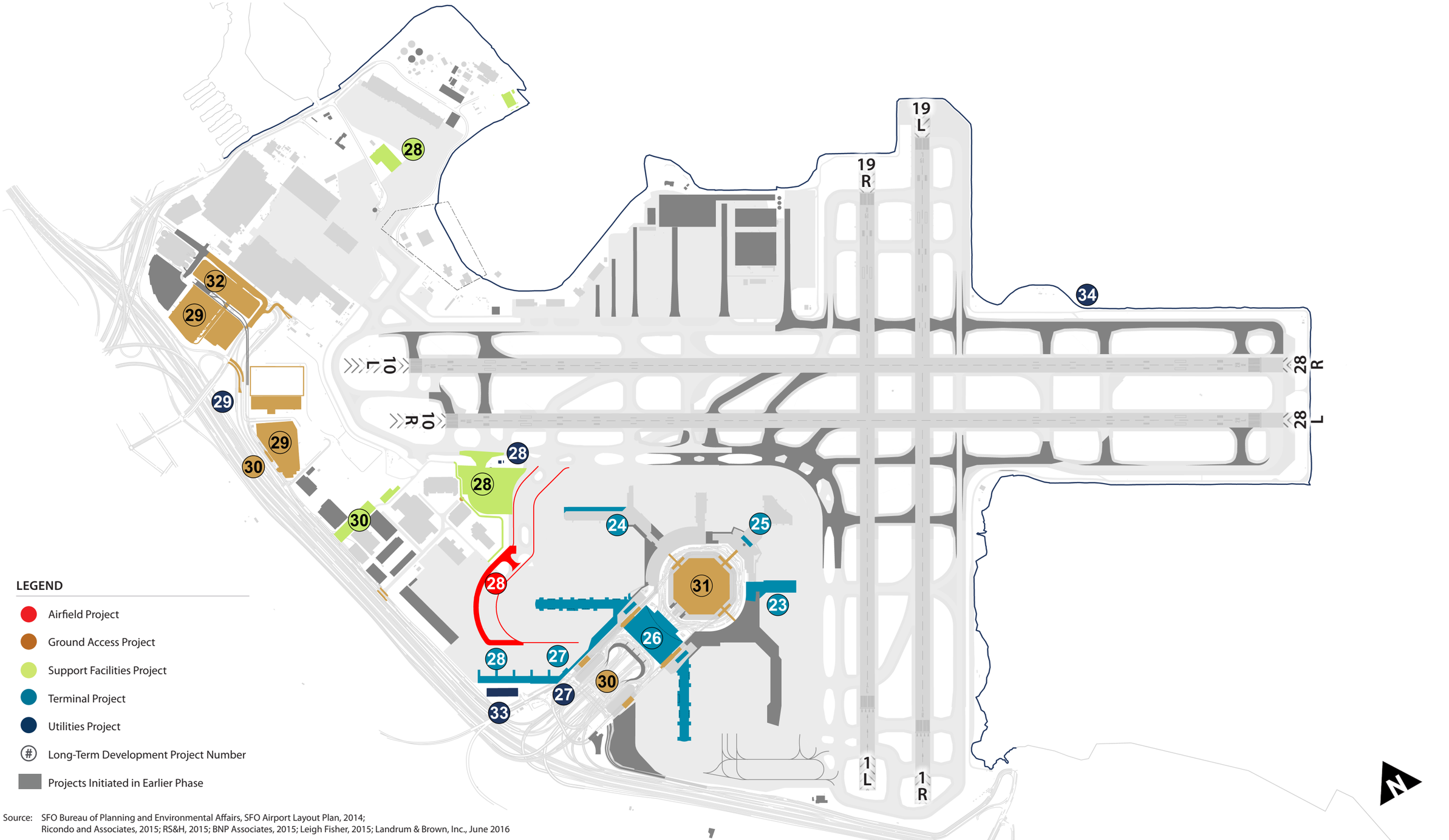
7.4 DEMOLISHED AND FUTURE FACILITIES

In order to construct the future facilities identified in Section 7.3, a number of buildings and taxiways would be demolished. Facilities to be demolished are shown on **Exhibit 7.4-1**. A summary of the Ongoing Projects and recommended ADP Projects that would be constructed are shown on **Exhibit 7.4-2.**



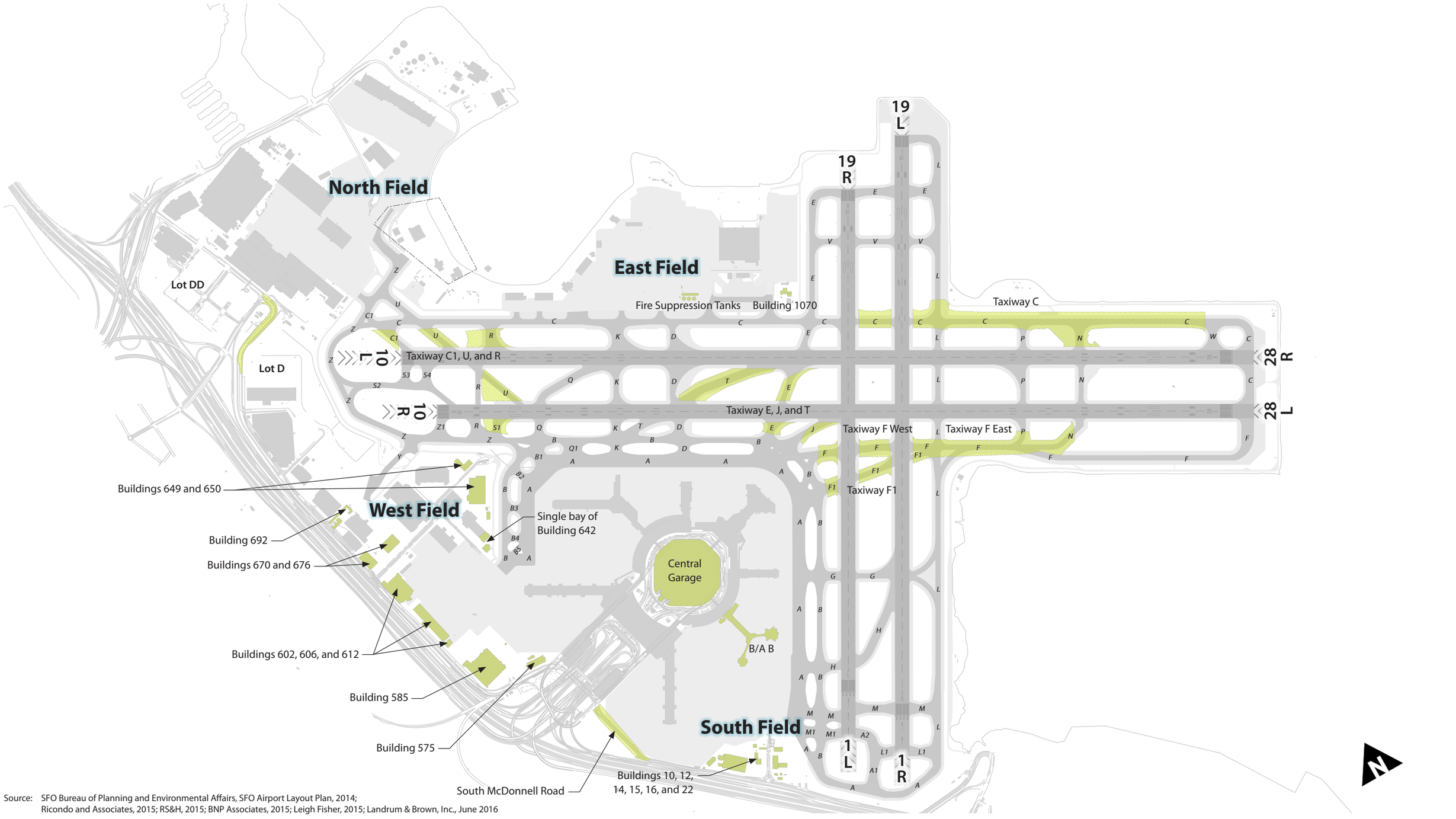
Roof Level, Central Hub
Source: LeighFisher, December 2015

Exhibit 7.3-1 | Long-Term Development Projects



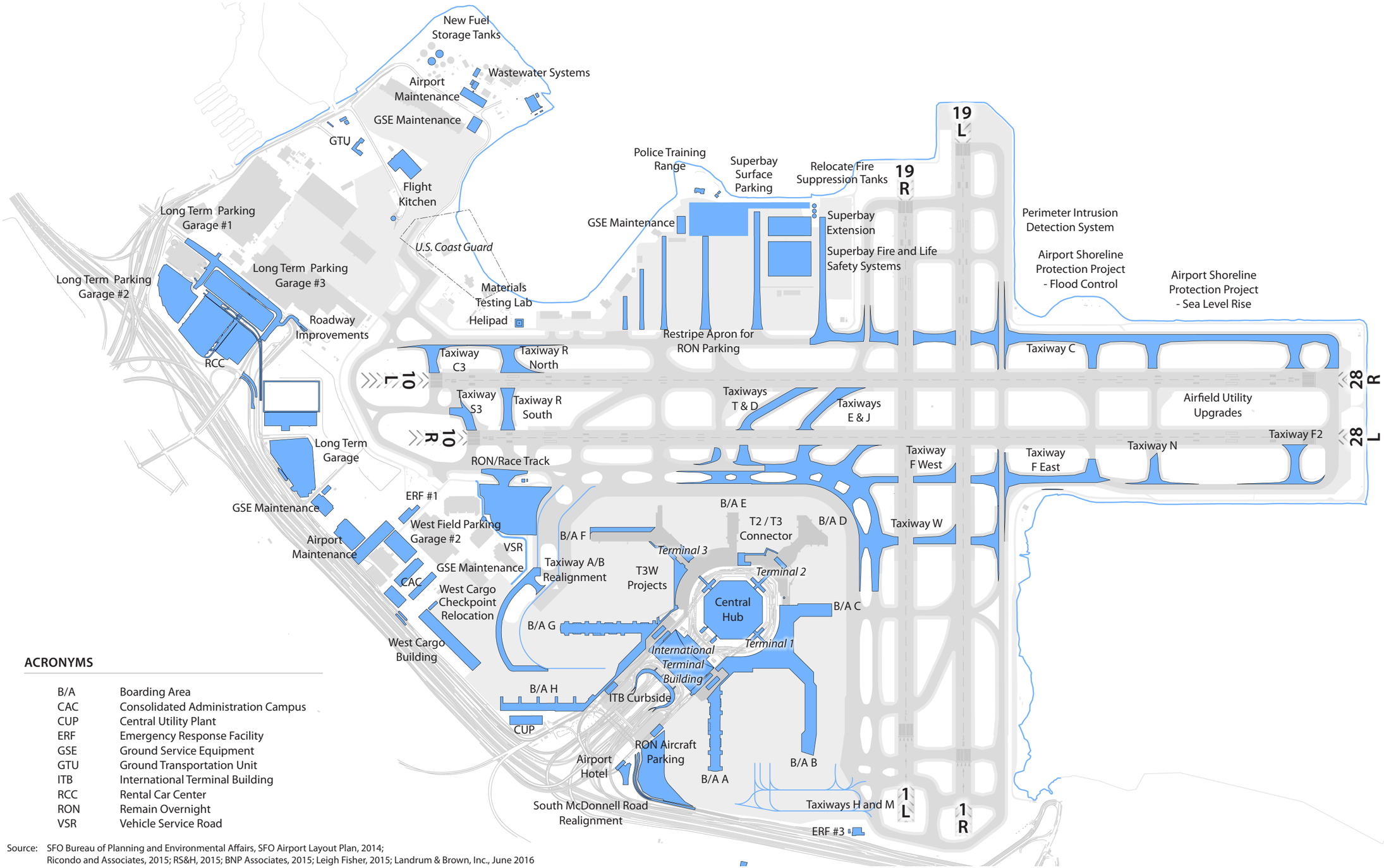
Source: SFO Bureau of Planning and Environmental Affairs, SFO Airport Layout Plan, 2014;
Ricondo and Associates, 2015; RS&H, 2015; BNP Associates, 2015; Leigh Fisher, 2015; Landrum & Brown, Inc., June 2016

Exhibit 7.4-1 | Demolished Facilities



Source: SFO Bureau of Planning and Environmental Affairs, SFO Airport Layout Plan, 2014; Ricondo and Associates, 2015; RS&H, 2015; BNP Associates, 2015; Leigh Fisher, 2015; Landrum & Brown, Inc., June 2016

Exhibit 7.4-2 | Future Facilities



ACRONYMS

B/A	Boarding Area
CAC	Consolidated Administration Campus
CUP	Central Utility Plant
ERF	Emergency Response Facility
GSE	Ground Service Equipment
GTU	Ground Transportation Unit
ITB	International Terminal Building
RCC	Rental Car Center
RON	Remain Overnight
VSR	Vehicle Service Road

Source: SFO Bureau of Planning and Environmental Affairs, SFO Airport Layout Plan, 2014;
Ricondo and Associates, 2015; RS&H, 2015; BNP Associates, 2015; Leigh Fisher, 2015; Landrum & Brown, Inc., June 2016

7.5 IMPLEMENTATION PLANNING

Flexibility

Recognizing that actual demand often does not materialize as forecast, the phased nature of the implementation plan allows Airport management to adjust project timelines accordingly. If demand materializes sooner than expected, Airport management may choose to accelerate a project. Conversely, if demand does not materialize as expected, Airport management may choose to defer, change, or cancel a project.

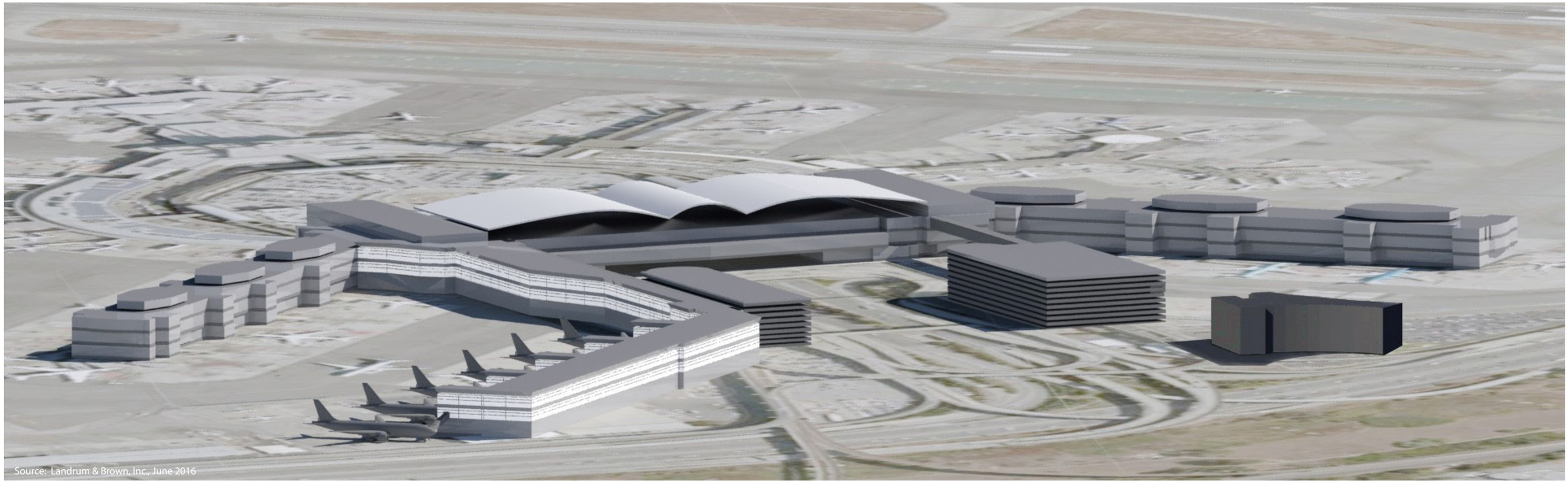
An example of the flexibility built into the ADP is preservation of the capability to accommodate an extension of B/A F. A four-gate extension of B/A F was evaluated as an alternative in the ADP, but a new B/A H was recommended to better accommodate forecast demand. However, if additional narrowbody domestic gate capability beyond the High Constrained forecast demand requirements is required, the ADP provides sufficient flexibility to relocate additional facilities in the West Field (employee parking garage, cargo building, and GSE maintenance facilities) to accommodate a B/A F extension.

Decision Points

The implementation path of each project includes decision points which provide opportunities for Airport management to reevaluate the need for a project based on demand or other factors. This framework allows the Airport to operate as efficiently as possible without compromising operational performance or the guest experience. Some projects include a phased approach where later phases could be deferred; other projects may be deferred or canceled entirely. These decision points allow Airport management to respond to changes with appropriate adjustments instead of following plans that may no longer be justified.

Project financing is another important consideration for the timing of decision points. Depending on the source of project financing, obtaining funding may require substantial lead time that needs to be built into the decision point schedule. The availability of project financing may also be a prerequisite for determining whether the project proceeds to the next step. In cases such as enabling projects, project financing may be obtained in advance for multiple project elements, or for a group of projects. Certain forms of financing can be accessed in advance of beginning construction. Others require that the project be planned, designed, and ready to proceed before the financing is secured.

While the decision points associated with some projects provide the flexibility for Airport management and the Airport Commission to determine if a project should proceed, the substantial lead time needed for many projects requires that the Airport Commission commit to a project by a decision point several years in advance. Adhering to these decision points will ensure that enough time is allocated to ensure the project's success. The decision point chart shows the relationship among multiple ADP project elements, identifies enabling or dependent projects, and shows the decision points for several major projects.



Source: Landrum & Brown, Inc., June 2016

Exhibit 7.5-1 | Decision Points For Major ADP Projects

ADP Project	Component Project	Lead Time For Decision (Years)	Fiscal Year[1] '19/'20	'20/'21	'21/'22	'22/'23	'23/'24	'24/'25	'25/'26	'26/'27	'27/'28	'28/'29	'29/'30	Trigger
B/A H – PHASE 1														
	Demolish the SFO Business Center (575)	5												Based on gate demand, which is forecast to be at the end of the near term.
	Relocate Utilities (B/A H)													
	B/A H Utility Extensions													
	B/A H – Phase I													
B/A H – PHASE 2														
	West Field Checkpoints	9												The project can be accelerated or deferred based on international and domestic demand. The West Field Cargo Facility and B/A H Phase 1 must be completed before B/A H Phase 2.
	Vehicle Service Road Relocations													
	Demolish Belly Cargo and GSE Maintenance Building (585)													
	Relocation of ERF and Closure of Taxilane Y													
	North Field Flight Kitchen													
	Demolish Flight Kitchen (649) and ERF #1 (650)													
	Relocate Fuel Vault Test Station													
	West Field RON Parking and Race Track													
	B/A H BHS													
	Demolish One Bay of a GSE Maintenance Building (642)													
	New Parallel Taxilane around B/A G													
	Taxiway B Realignment													
	Taxiway A Realignment													
	B/A H – Phase 2													
RELOCATE CENTRAL UTILITY PLANT														
	West Field Checkpoint (Partial)	5												Location of the new CUP (relocate or replace the CUP in-place). Airport policy decisions on carbon neutrality. The location and timing of this project could affect the timing of the West Field Cargo Facility and B/A H Phase 2 projects.
	Vehicle Service Road Relocations (Partial)													
	Demolish Belly Cargo and GSE Maintenance Building (585)													
	New Central Utility Plant													
B/A A AND G IMPROVEMENTS														
	B/A G Improvements	5												Airport policy decisions on guest experience. This project can be accelerated or deferred on a gate-by-gate basis.
	B/A A Improvements													
ITB DEPARTURES LEVEL IMPROVEMENTS – PHASE 2														
	ITB Departures Level Improvements – Phase 2	4												Completion of ITB Departures Level Improvements – Phase 1. Timing based on availability of funding and concessions demand. Expansion can be deferred indefinitely, if needed.
CENTRAL HUB														
	Demolish Central Parking Garage	5												Demand already outstrips capacity and the existing Central Parking Garage is seismically deficient. The Long Term Parking Garage #3 and/or the conversion of the existing RCC to public parking could assist in accommodating public parking demand during construction.
	Central Hub													

Note: [1]*CCSF Fiscal year from July 1 through June 30.*
Source: Landrum & Brown, Inc., June 2016

Primary Project Enabling Project Decision Point