



CHAPTER SIX

COST ESTIMATES AND PROJECT IMPLEMENTATION

This Chapter contains cost estimates for each of the major projects depicted on the Vision 2030 Airport Layout Plan. The total costs of each of the four planning phases have been detailed in **Figure 6.4**. Additionally, based on the estimated development costs and analysis for Airport Improvement Program (AIP) eligibility, potential funding allocations (i.e., FAA, VTRANS (the State of Vermont transportation agency), and Third-Party participants) are presented after each project description. The most detailed estimates are provided for Phase One projects as these will be implemented the soonest. As projects move towards implementation further refinement of the cost estimates should be prepared.

The funding analysis assumes that AIP projects will receive the maximum funding level of up to 95-percent throughout the 20-year planning horizon, VTRANS will contribute 3-percent, and the Third-Party participant (usually the airport sponsor) will contribute 2-percent. Where only a portion of a proposed development item is considered eligible for AIP funding, potential funding levels are estimated based on previous experience in receiving funding from these agencies. Where a project is ineligible for AIP funding, VTRANS becomes responsible for 80-percent of the eligible costs, and Third-Party participants cover the remaining costs.

All cost estimates are in 2010 dollars. The projects are listed in order of assumed implementation. This order may change according to funding availability and airport sponsor preference.

The planned development at Burlington International Airport (BTV) clusters around four items throughout the 20-year planning horizon: Runway 1-19 shift/extension; terminal improvements; road access improvements; and, development of the South End area of the airfield. The projects listed in this chapter are the same projects included for the Preferred Alternative in **Chapter Four**. However for the sake of comparison between alternatives in **Chapter Four**, the list of projects was simpler. For example, the estimate for the Preferred Alternative does not include a cost to construct a Terminal Area Hotel, the Part 150 Noise Control Plan land acquisition, and various planning and project justification studies, which are included in the cost estimates in this chapter. The total cost to implement the projects over the planning horizon is **\$281.9 million**. Approximately \$50-million, or 18-percent of the estimated implementation cost of the Airport Layout Plan, is associated with the construction of a road access plan, including a new highway interchange with direct access to the airport. All projects will occur in Phases One, Two and Three. There are no specific projects scheduled for Phase Four development at this time.



6.1 Phase One (Years 2010-2014) Development

The implementation of development items depicted in Phase One (Years 2010-2014) is estimated to cost **\$116.5 million**. The approximate federal share of Phase One development is \$38 million (33% of total costs) and the VTRANS share of development is \$62.4 million (54% of total costs). The remaining \$16.1 million of Phase One development costs is associated with private/public partnerships, or Third-Party development (14% of total costs).

Figure 6.1: Phase One Estimated Costs		
	FY/Schedule	Cost
Environmental Assessment	TBD	\$300,000
Property Acquisition- Part 150 NCP	TBD	\$16,510,000
Obstruction Removal and Wetland Mitigation	TBD	\$950,000
Justification Study for I-89 Interchange	TBD	\$300,000
Terminal Building Expansions/Improvements		
Air-Side Multi-Story Shell Expansion	TBD	\$23,920,000
Admin. Relocation, Restaurant/Bar Expansion	TBD	\$6,709,560
Commuter Concourse and Baggage Area Expansion	TBD	\$10,539,750
2nd Level Ticketing Fit-Up and Screening	TBD	\$16,744,000
Parallel Taxiway		
Relocate Existing Taxiway G	TBD	\$5,000,000
Complete New Taxiway G	TBD	\$4,200,000
Terminal/SED Access Connection		
Airport Parkway/Airport Drive Connector	TBD	\$2,750,000
Terminal-SED Internal Access (Phase One portion)	TBD	\$3,663,162
SED Area Construction		
Cargo Apron (38,000-SY)	TBD	\$6,194,000
Corporate Hangar Building (32,000-SF)	TBD	\$4,174,222
Cargo Building (60,000-SF)	TBD	\$7,826,667
Maintenance Hangar Building (28,000-SF)	TBD	\$3,652,444
Maintenance Equipment Storage Building	TBD	\$2,968,872
Update Land Re-Use Plan (2014)	2014	\$125,000
TOTAL PHASE ONE		\$116,527,677



6.1.1 Environmental Assessment

An Environmental Assessment (EA) will be conducted to account for the development projects scheduled for Phase One. The total estimated cost for this EA during Phase One is \$300,000. The FAA will cover up to 95% of this cost, and VTRANS and Third Parties will be responsible for the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$300,000	\$285,000	\$9,000	\$6,000

6.1.2 Property Acquisition- Part 150 NCP

As part of its existing Noise Control Plan (NCP), the airport intends to acquire several residential properties within the 65-dB noise contour. The cost of property acquisition during Phase One is anticipated to be \$16,510,000. Federal funds will provide up to 95% of this cost, while VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$16,510,000	\$15,684,500	\$495,300	\$330,200

6.1.3 Obstruction Removal and Wetland Mitigation

Currently approximately 26 acres of penetrations to FAA Part 77 imaginary surfaces exist need to be removed for safety purposes. This obstruction removal may affect up to six acres of wetlands around the airport. The cost for the obstruction removal and wetland mitigation project is estimated to be \$950,000, of which the FAA will contribute up to 95% and VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total: \$950K	FAA	VTRANS	3rd Party
Construction/CM	\$79,167	\$902,500	\$28,500	\$19,000
Design/Admin	\$79,167			

6.1.4 Justification Study for I-89 Interchange

The Justification Study for the proposed I-89 Interchange ("14-N") will occur during Phase One. Construction on the proposed interchange is planned for Phase Four (2030 and Beyond). The total cost for the study is estimated to be \$300,000. The FAA will contribute up to 95% of this cost, and VTRANS and Third Parties will cover the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$300,000	\$285,000	\$9,000	\$6,000



6.1.5 Terminal Building Expansions/Improvements: Air-Side Multi-Story Shell Expansion

Major expansion and improvements are planned for the airport terminal building during the planning horizon. These improvements will ultimately add approximately 100,000-GSF of additional space. The improvements are divided among Phases One through Three, and are further divided into "Project Areas" based on project timing and location of construction (i.e., separate projects may be grouped into one category because they are located near one another and it becomes efficient to construct both at one time). Phasing the projects will allow the airport to expand and remodel specific areas while maintaining consistent airport operations.

Major projects included in the Terminal Building Expansions/Improvements include:

- Adding a third-floor, to consolidate administrative offices and to include space for a potential revised Observation Deck
- Stacking Ticketing above Baggage Claim (instead of both on Level One, as is existing)
- Consolidating the Passenger Screening Zone into one area
- Expanding the South Concourse to increase gate capacity and to allow space for a future F.I.S. component
- Installing an In-Line Bag Screening System, to efficiently bring baggage from Ticket Counter Zone to the outbound tug equipment

Project Area 1, Air-Side Multi-Story Shell Expansion, will occur during Phase 1. This project area includes construction of a third-floor shell where the administration offices will eventually relocate; a new two-story firewall; construction of a shell for eventual ground floor baggage area expansion; and, a ground-floor escalator/elevator/stair to the Commuter Concourse.

The total project cost is \$23,920,000. Terminal area improvements are generally not eligible for AIP funding- therefore 0% of the cost is anticipated to be covered by the FAA. Eighty-percent of this cost will be funded by VTRANS and the remaining 20% will be funded by Third Parties.

	Total: \$23.9M	FAA	VTRANS	Third Party
Construction	\$18,400,000			
Project Cost	\$5,520,000	\$0	\$19,136,000	\$4,784,000



6.1.6 Terminal Building Expansion/Improvements: Administration Relocation, Restaurant/Bar Expansion

During this project (Project Area 2), the administrative offices are moved to the third-floor shell and their existing locations on Level Two are demolished. The restaurant/bar on Level Two is expanded during this project as well.

The total project cost is \$6,709,560. The project costs will be shared by VTRANS and Third Parties, which will contribute 80% and 20%, respectively.

	Total: \$6.7M	FAA	VTRANS	Third Party
Construction	\$5,161,200	\$0	\$5,367,648	\$1,341,912
Project Cost	\$1,548,360			

6.1.7 Terminal Building Improvements: Commuter Concourse and Baggage Expansion

During this project (Project Area 3), the commuter concourse is expanded and two commercial gates are added in order to accommodate the anticipated increase in passenger demand. The baggage conveyor is increased by 500 linear feet and two out-bound baggage carousel units are added. In addition, a new central escalator/stair is installed in the west lobby.

The total project cost is \$10,539,750. The cost will be shared by VTRANS and Third Parties, which will contribute 80% and 20%, respectfully.

	Total: \$10.5M	FAA	VTRANS	Third Party
Construction	\$8,107,500	\$0	\$8,431,800	\$2,107,950
Project Cost	\$2,432,250			

6.1.8 Terminal Building Improvements: 2nd Level Ticketing Fit-Up and Screening

Ticketing and screening will be moved from Level One to Level Two during this project (Project Area 4). The stacking of Ticketing above Baggage Claim offers both a substantial amount of increased space for each function, as well as easy way-finding and "terminal organization" for passengers.

The total cost for this project is \$16,744,000, of which VTRANS will contribute 80% and Third Parties will contribute 20%.

	Total: \$16.7M	FAA	VTRANS	Third Party
Construction	\$12,880,000	\$0	\$13,395,200	\$3,348,800
Project Cost	\$3,864,000			



6.1.9 Parallel Taxiway: Relocate Existing Taxiway G

The existing Taxiway Golf, which provides access from Runway 15 to Taxiway Alpha, will be extended to become a full parallel taxiway to Runway 15-33. This project involves relocating the existing portion of Taxiway Golf by 100-feet toward the east; and extending it from Taxiway Alpha to the SED area.

The first portion of the project, Relocate Existing Taxiway G, is expected to cost \$5 million. The FAA is expected to contribute up to 95% of these costs, with VTRANS and Third Parties contributing the remaining 3% and 2%, respectively.

	Total: \$5M	FAA	VTRANS	Third Party
Construction	\$4,400,000	\$4,750,000	\$150,000	\$100,000
Design	\$600,000			

6.1.10 Parallel Taxiway: Complete New Taxiway G

The cost to extend the existing Taxiway Golf to a full parallel taxiway to Runway 15-33 is estimated to be \$4.2 million. The FAA is expected to contribute up to 95% of these costs, with VTRANS and Third Parties contributing the remaining 3% and 2%, respectively.

	Total: \$4.2M	FAA	VTRANS	Third Party
Construction	\$3,850,000	\$3,990,000	\$126,000	\$84,000
Design	\$350,000			

6.1.11 Airport Parkway/Airport Drive Connector

A road connecting Airport Parkway from the north of the airport to Airport Drive, which leads to the existing terminal building, will be constructed during Phase One. The purpose of this road is to divert airport traffic coming from Lime Kiln Road (from the north) away from White Street and other residential streets. During Phase Two, the road will connect to the Terminal Loop Road (see **Section 6.2.7**) because Airport Drive will be demolished. This project also includes construction of an access road leading to the new Maintenance Equipment Storage Building (see **Section 6.1.14**).

The cost of this connector road is \$2,750,000. As the road will be dedicated to airport traffic, it will likely be eligible for AIP funds. Therefore the FAA is anticipated to cover up to 95% of the cost of the project, with VTRANS providing 3% and Third-Parties covering the remaining 2%.

	Total: \$2.75M	FAA	VTRANS	3rd Party
Construction/CM	\$2,520,834	\$2,612,500	\$82,500	\$55,000
Design/Admin	\$229,167			



6.1.12 Terminal-SED Internal Access (Phase One)

A perimeter road will be constructed from the existing Air Guard Road/Eagle Drive intersection to the existing service road around the Runway 1 end. This road will provide access from the South-End Development (SED) area of the airfield to the terminal area.

In addition to the perimeter road, this project comprises the road leading from Eagle Drive to the new Cargo Apron in the SED area, including construction of the tunnel that will eventually go under the General Aviation “nub” apron to be built in Phase Two.

The cost of the road construction during Phase One is estimated to be \$3.7 million. As this road is built entirely on airport property, it is eligible for AIP funding. It is anticipated that the FAA will contribute up to 95% of the funds for this project, and that VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total: \$3.7M	FAA	VTRANS	3rd Party
Construction	\$3,357,899	\$3,480,004	\$109,895	\$73,263
Design	\$305,264			

6.1.13 SED Area Construction

The SED area will be developed during Phase One in order to increase the number of aircraft storage and maintenance storage facilities on the airfield. A new general aviation apron and exit taxiway in this area was already constructed in 2010. Phase One construction projects include:

- Cargo Apron Construction (approximately 38,000-SY)
- Corporate Hangar construction (approximately 32,000-SF)
- Maintenance Hangar Construction (approximately 28,000-SF)
- Cargo Building construction (approximately 60,000-SF)

The total cost of these projects is estimated to be \$21.8 million. The FAA is anticipated to contribute \$5.9 million-of this cost, and VTRANS and Third Parties are anticipated to contribute the remaining \$12.7 million and \$3.3 million, respectively.

	Total: \$21.8M	FAA	VTRANS	3rd Party
Construction	\$20,026,722	\$5,884,300	\$12,708,486	\$3,254,547
Design	\$1,820,611			



6.1.14 Maintenance Equipment Storage Building

A 20,000-SF airport maintenance equipment storage building will be constructed on the western side of the airfield during Phase One. The total cost of this project is estimated to be \$2.9 million. Equipment storage buildings are ineligible to receive federal funding under the AIP; therefore, VTRANS is anticipated to contribute 80% of the cost of this project, and Third Parties are anticipated to contribute the remaining 20% of the costs.

	Total: \$2.9M	FAA	VTRANS	3rd Party
Construction	\$2,721,466	\$0	\$2,375,098	\$593,774
Design	\$247,406			

6.1.15 Update Land Re-Use Plan (2014)

The current airport Land Re-Use Plan was written in October 2008 and will be updated in 2014. The cost of this plan update is estimated to be \$125,000, of which the FAA is anticipated to contribute up to 95% and VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$125,000	\$118,750	\$3,750	\$2,500

6.2 Phase Two (Years 2015-2019) Development

The implementation of development items depicted in Phase Two (Years 2015-2019) is estimated to cost **\$75.2 million**. The approximate federal share of Phase Two development is \$35 million (47% of total costs) and the VTRANS share of development is estimated to be \$31.8 million (42% of total costs). The remaining \$8.4 million (11%) of Phase Two development costs is associated with private/public partnerships, or Third-Party development. Many of the construction projects scheduled for Phase Two are not eligible for Airport Improvement Plan funds (including extensive terminal building improvements and a new fuel farm).



Figure 6.2: Phase Two Estimated Costs		
	FY/Schedule	Cost
Environmental Assessment Study	TBD	\$300,000
Property Acquisition- Part 150 NCP	TBD	\$14,500,000
Runway 1-19 Shift/Extension	TBD	\$2,100,000
Terminal Building Expansions/Improvements		
Expand Screening, Ticketing, Concourse, & Baggage	TBD	\$16,796,325
Terminal/SED Access Connection		
I-89 Terminal Connector Access	TBD	\$1,650,000
Terminal-SED Internal Access (Phase Two portion)	TBD	\$655,438
Terminal Area Circulation		
Terminal Loop Roadway	TBD	\$8,000,000
At-Grade Parking (interim)	TBD	\$3,000,000
Second-Level Curb Access	TBD	\$600,000
New Fuel Farm Construction	TBD	\$3,500,000
SED Area Construction		\$23,969,291
Corporate Apron (17,000-SY)	TBD	\$2,771,000
Corporate Hangar Building (18,500-SF)	TBD	\$2,413,222
Corporate Jet Center Building (60,000-SF)	TBD	\$7,826,667
Parking Spaces (approximately 99 surface spaces)	TBD	\$297,000
GA "Nub" Apron (37,500-SY)	TBD	\$6,112,500
Five Executive Hangar Buildings	TBD	\$2,246,722
Three T-Hangar Buildings	TBD	\$2,145,200
Parking Spaces (approximately 52 surface spaces)	TBD	\$156,000
10 Tie-Downs	TBD	\$980
Update NEM/NCP	TBD	\$150,000
Update Hotel Feasibility Study	TBD	\$10,000
TOTAL PHASE TWO		\$75,231,054



6.2.1 Environmental Assessment Study

An EA will be conducted for the construction proposed for Phase Two. This study is expected to cost \$300,000. The FAA is anticipated to contribute up to 95% of the cost for the study, with VTRANS and Third Parties contributing the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$300,000	\$285,000	\$9,000	\$6,000

6.2.2 Property Acquisition- Part 150 NCP

The cost for property acquisition as per the airport's approved Noise Control Plan is estimated to be \$14.5 million during Phase Two. The FAA share of this cost is up to 95%; the VTRANS share is 3%; and the Third-Party share is 2%.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$14,500,000	\$13,775,000	\$435,000	\$290,000

6.2.3 Runway 1-19 Shift/Extension

The Runway 19 threshold will be extended to the northeast by 450-feet for safety reasons (to increase situational awareness for pilots on the Runway 19 end). The Runway 1 end will be shifted to the northeast by 300-feet in order to ensure the SED Access Road (see **Section 6.1.12**) can be constructed without interfering with safety surfaces.

This project is estimated to cost \$2.1 million. The FAA will contribute up to 95% of this cost, while VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total: \$2.1M	FAA	VTRANS	Third Party
Construction	\$1,848,000	\$1,995,000	\$63,000	\$42,000
Design	\$252,000			

6.2.4 Terminal Building Expansions/Improvements: Expand Screening, Ticketing, Concourse, and Baggage

This project is a continuation of the comprehensive Terminal Building Expansion/Improvements process, and represents Project Area 5 (See **Section 6.1.5** for explanations on Project Areas). This Project Area expands the Screening and Ticketing shells that were constructed in Phase One. Specifically, projects in this phase include, among other projects:

- Ticket counter expansion
- Demo of existing restrooms and fit-up for Screening expansion in their place
- Two additional baggage belts
- Two additional commercial service gates



The total estimated cost for this project is \$16,796,325. VTRANS is anticipated to contribute 80% of the cost of this project, with Third Parties contributing the remaining 20%.

	Total: \$16.8M	FAA	VTRANS	Third Party
Construction	\$12,920,250			
Project Cost	\$3,876,075	\$0	\$13,437,060	\$3,359,265

6.2.5 Terminal Area Circulation: I-89 Terminal Connector Access

A connector road will be constructed from the Terminal Loop Roadway to Kirby Road during Phase Two. The purpose of this roadway is to provide access to the terminal loop roadway for airport users coming from the south (Patchen Road). Access to the Terminal Loop roadway is already provided for airport users coming from the north (Lime Kiln Road) via the Airport Parkway/Airport Drive connector constructed during Phase One.

This project also includes the construction of cul-de-sacs on Airport Parkway, North Henry Court, Airport Road, and White Street, which is re-routed to the existing cul-de-sac on Maryland Street. The purpose of creating cul-de-sacs on these roads is to eliminate any connection from the residential neighborhoods to the dedicated airport roadways. This will discourage airport users from taking short-cuts through the residential neighborhood on the way to the airport.

The cost for this project is estimated to be \$1,650,000. Because the purpose of this project is to remove airport users from the nearby residential neighborhoods, it is likely to qualify for AIP funding. Therefore the FAA is anticipated to provide up to 95% of the funds for this project, VTRANS is anticipated to contribute 3% of the costs and Third-Parties are anticipated to contribute the remaining 2%.

	Total: \$1.65M	FAA	VTRANS	3rd Party
Construction	\$1,512,500			
Project Cost	\$137,500	\$1,567,500	\$49,500	\$33,000

6.2.6 Terminal/SED Access Connection: Terminal-SED Internal Access (Phase Two)

The SED Access road will be extended from the internal service road around the Runway 1 end (See **Section 6.1.12**) to become one of two new airport access roads.

This project is estimated to cost \$655,438. As it occurs on airport property, it is anticipated to be eligible for federal funds. Therefore the FAA is anticipated to contribute up to 95% of the project cost, while VTRANS and Third Parties will contribute the remaining 3% and 2%, respectively.

	Total: \$655K	FAA	VTRANS	3rd Party
Construction	\$600,818			
Project Cost	\$54,620	\$622,666	\$19,663	\$13,109



6.2.7 Terminal Area Circulation: Terminal Loop Roadway

Phase Two includes extensive construction on the road network leading to and surrounding the airport terminal building. This project includes a dual-grade intersection to be constructed at the existing intersection of U.S. Route 2/Williston Road and Kennedy Drive. Also included in this phase is a series of access roads leading from the dual-grade intersection and extended SED connector road (See **Section 6.2.3**) leading to the terminal building and its associated existing buildings.

The estimated cost of this project is \$8 million. Because the purpose of this road project, including the dual grade intersection, is to provide direct access to airport users without impeding on the surrounding residential neighborhoods, this project will likely qualify for AIP funding. Therefore it is assumed that up to 95% of the cost would be provided by the FAA, while VTRANS and various Third Parties are anticipated to contribute the remaining 3% and 2%, respectively.

	Total: \$8M	FAA	VTRANS	3rd Party
Construction	\$7,333,334	\$7,600,000	\$240,000	\$160,000
Project Cost	\$666,667			

6.2.8 Terminal Area Circulation: At-Grade Parking (interim)

The Master Plan Update provides space for a potential parking garage to be constructed in Phase Four (2030 and Beyond). In the meantime, at-grade parking will be constructed adjacent to the terminal building to provide for the increase in enplanements anticipated over the planning horizon. During Phase Two, 1,000 spaces will be constructed.

The estimated cost of this project is \$3 million. Eighty-percent of the cost is anticipated to be provided by VTRANS, while Third Parties are anticipated to contribute the remaining 20%.

	Total: \$3M	FAA	VTRANS	3rd Party
Construction	\$2,640,000	\$0	\$2,400,000	\$600,000
Project Cost	\$360,000			



6.2.9 Terminal Area Circulation: Second-Level Curb Access

To coincide with the stacking of Ticketing above Baggage Claim (see **Section 6.2.2**), a stacked drop-off roadway system is proposed to be constructed during Phase Two. This system will improve circulation within the terminal building by separating arrivals and departures.

The total estimated cost of this project is \$600,000. Because the purpose of this road project is to improve airport access for airport users, this project will likely qualify for AIP funding. Therefore it is assumed that up to 95% of the cost would be provided by the FAA, while VTRANS and various Third Parties are anticipated to contribute the remaining 3% and 2%, respectively.

	Total: \$600K	FAA	VTRANS	3rd Party
Construction	\$550,000	\$570,000	\$18,000	\$12,000
Project Cost	\$50,000			

6.2.10 New Fuel Farm Construction

A new fuel farm will be constructed adjacent to Eagle Drive during Phase Two.

The total cost of this project is estimated to be \$3.5 million. Fuel farm projects are not eligible for federal funding under the Airport Improvement Program. Therefore VTRANS will contribute 80% of the cost of this project, and Third Parties will contribute the remaining 20%.

	Total: \$3.5M	FAA	VTRANS	3rd Party
Construction	\$2,828,000	\$0	\$2,800,000	\$700,000
Design/Admin	\$420,000			



6.2.11 SED Construction- GA/Air Cargo/Airline Maintenance

The remainder of the SED Area construction will occur in Phase Two (See Section 6.1.13 for a list of Phase One projects in the SED Area). Proposed construction projects in Phase Two include:

- Corporate Hangar (approximately 18,500-SF)
- Corporate Apron (approximately 17,000-SY)
- Corporate Jet Center (approximately 60,000-SF)
- Five Executive Hangars (approximately 3,700-SF each)
- Three T-Hangar Buildings (approximately 18,600-SF each)
- Ten tie-downs
- Associated automobile parking (approximately 52 surface spaces)
- General Aviation “nub” Apron (approximately 37,500-SY)
- Associated automobile parking (approximately 99 surface spaces)

The total estimated cost for this project is \$24 million. The FAA share of this cost is estimated to be \$8.4 million; the VTRANS share of this cost is estimated to be \$12.4 million; and the Third-Party share is estimated to be \$3.1 million.

	Total: \$24M	FAA	VTRANS	3rd Party
Construction	\$21,955,322			
Project Cost	\$2,013,969	\$8,439,325	\$12,335,138	\$3,194,828

6.2.12 Update NEM/NCP

The airport will update its Noise Exposure Map (NEM) and its associated Noise Control Plan (NCP) during Phase Two. The estimated cost of this update is \$150,000. The FAA is anticipated to contribute up to 95% of the cost for this update, with VTRANS contributing 3% and Third-Parties contributing the remaining 2%.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$150,000	\$142,500	\$4,500	\$3,000



6.2.13 Update Hotel Feasibility Study

A hotel feasibility study was conducted in June 2009. The hotel is proposed for Phase Three (Years 2020-2029). It will be necessary to update the 2009 study to reflect market conditions during Phase Two (2015-2019), as up to ten years will have passed.

The cost of this study is anticipated to be \$10,000. The hotel will likely be private investment and as such the study will not be covered by federal or state funds. The Third Party will contribute 100% of the cost of the feasibility study.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$10,000	\$0	\$0	\$10,000

6.3 Phase Three (Years 2020-2029) Development

The implementation of development items depicted in Phase Three (Years 2020-2029) is estimated to cost **\$90.1 million**. The approximate federal share of Phase Three development is \$41.4 million (46% of project costs) and the VTRANS share of development is \$21.4 million (24% of project costs). The remaining \$27.2 million of Phase Three development costs is associated with private/public partnerships, or Third-Party development- this constitutes 30% of project costs. This includes the entire \$21 million terminal area hotel project cost, which will likely be funded by a Third-Party developer.

	FY/Schedule	Cost
Environmental Assessment Study	TBD	\$300,000
Property Acquisition- Part 150 NCP	TBD	\$2,500,000
Terminal Building Expansions/Improvements		
Commuter Concourse Expansion, Loading Dock, EIS	TBD	\$19,976,938
Terminal Area Circulation		
At-Grade Parking (interim)	TBD	\$5,181,000
Terminal Area Hotel	TBD	\$21,340,085
Parallel Taxiway G		
Hold Apron/De-Icing	TBD	\$3,800,000
Terminal-SED Access Connection		
I-89 Interchange ("I4-N")	TBD	\$30,000,000
I-89 Terminal/Connector Access	TBD	\$7,000,000
TOTAL PHASE THREE		\$90,098,023



6.3.1 Environmental Assessment Study

An Environmental Assessment will be conducted for the construction proposed for Phase Three. The estimated cost of this study is \$300,000, of which the FAA is anticipated to contribute up to 95%, VTRANS is anticipated to contribute 3%, and Third-Parties are anticipated to contribute 2%.

	Total	FAA	VTRANS	Third Party
Lump Sum	\$300,000	\$285,000	\$9,000	\$6,000

6.3.2 Property Acquisition-Part 150 NCP

The cost of property acquisition for the airport's approved Noise Control Program during Phase Three is \$2.5 million. The FAA is anticipated to contribute up to 95% of the cost of the acquisitions, with VTRANS and Third Parties contributing the remaining 3% and 2%, respectively.

	Total	FAA	VTRANS
Lump Sum	\$2,500,000	\$2,375,000	\$75,000

6.3.3 Terminal Building Expansions/Improvements: Commuter Concourse Expansion, Loading Dock, FIS

The final portion of the Terminal Building Expansions/Improvements projects is this project (Project Area 6). This project completes the concourse expansion to the south of the terminal by adding five additional commercial gates. Also included in this project is:

- Kitchen/restaurant relocation and expansion
- Federal Inspection Service (F.I.S.) area complete
- Three additional baggage belts
- New loading dock
- Lobby Concessions area complete

The total estimated cost for this project is \$19,976,937.50. VTRANS is anticipated to contribute 80% of the cost of the project, and Third-Parties are anticipated to contribute the remaining 20%.

	Total: \$19.97M	FAA	VTRANS	Third Party
Construction	\$15,366,875			
Project Cost	\$4,610,063	\$0	\$15,981,550	\$3,995,388

6.3.4 Terminal Area Circulation: At-Grade Parking (interim)

Additional at-grade parking will be constructed adjacent to the terminal building in Phase Three. An additional 1,727 spaces will be constructed in order to meet increased demand over the planning horizon. The total estimated cost for this project is \$5,181,000.

Because parking is normally a revenue-producing land use for the airport, this project is unlikely to qualify for federal funding. Therefore VTRANS is anticipated to contribute 80% of the cost of



this project; Third Parties are anticipated to contribute the remaining 20%.

	Total: \$5.1M	FAA	VTRANS	3rd Party
Construction	\$4,559,280			
Project Cost	\$621,720	\$0	\$4,144,800	\$1,036,200

6.3.5 Terminal Area Circulation: Terminal Area Hotel

A hotel is proposed to be constructed adjacent to the terminal building in Phase Three. Funding for this project will likely be entirely through private and Third-Party investments. The estimated cost for this project is \$21,340,085.

		FAA	VTRANS	Third Party
Lump Sum Estimate	Total: \$21.3M	\$0	\$0	\$21,340,085

6.3.6 Hold Apron/De-icing

A new hold/de-icing apron will be constructed on the airfield during Phase Three. The estimated cost of this project is \$3.8 million. The FAA is anticipated to contribute up to 95% of the cost of this project, with VTRANS and Third Parties contributing the remaining 3% and 2%, respectively.

	Total: \$3.8M	FAA	VTRANS	3rd Party
Construction	\$3,483,334			
Project Cost	\$316,667	\$3,610,000	\$114,000	\$76,000

6.3.7 I-89 Interchange (“14-N”)

An interchange is proposed which will provide direct access from Interstate 89 to the airport via the limited access roads constructed earlier in the planning process. The interchange provides access for airport users traveling from both the north and the south and is located between the existing Exits 15 and 14. The concept to restrict this interchange for airport traffic only potentially qualifies this project for funding under the FAA grant program. If the concept strays from being classified as for dedicated airport use, the funding would have to come from other non-aviation sources (i.e., highway funding sources).

	Total: \$30M	FAA	VTRANS	3rd Party
Construction	\$25,781,250			
Project Cost	\$4,218,750	\$28,500,000	\$9,000,000	\$6,000,000

6.3.8 I-89 Terminal/Connector Access

Two parallel limited-access roads will be constructed in Phase Three which connect the I-89 Interchange 14-N to the terminal loop road and the dual-grade intersection of Rt. 2/Williston Road and Kennedy Drive that was constructed in Phase Two. Each road is two lanes, and supports one-way traffic. The western-most (bottom) road begins at Kirby Road where it links to



the Connector Road constructed in Phase Two. It continues to Interchange 14-N and Kirby Road becomes a cul-de-sac. This prevents airport traffic from accessing the limited-access roadway from Kirby Road, and therefore removes airport traffic from the residential community northwest of the terminal building.

The estimated cost of this project is \$7,000,000. Because the purpose of this road project is to provide direct access to the airport for airport users without impeding on the surrounding residential neighborhoods, this project will likely qualify for AIP funding. Therefore it is assumed that up to 95% of the cost would be provided by the FAA, while VTRANS and various Third Parties are anticipated to contribute the remaining 3% and 2%, respectively.

	Total: \$7M	FAA	VTRANS	3rd Party
Construction	\$6,416,666	\$6,650,000	\$210,000	\$140,000
Project Cost	\$58,333			

6.4 Phase Four (2030 and Beyond) Development

There are no specific development items planned for Phase Four at this time. The 2010 Airport Layout Plan (ALP) denotes two areas of airport property for potential development in Phase Four: an approximately 1.04-acre area for a Future Rental Car Wash Facility and an approximately 3.6-acre area for Future Landside/Airport Support Development. As the projects proposed for these areas are abstract, no cost estimations will be provided at this time. As projects move towards implementation more specific cost estimates should be prepared.

6.5 Cost Summary

The total estimated cost of the projects included in all four phases is \$281.9 million. See **Figure 6.5** for a compilation of costs and of estimated funding streams per project and per phase.

Figure 6.4: Total Estimated Costs by Phase		
	Cost	% of Total
Phase One	\$116,527,677	41.3%
Phase Two	\$75,231,054	26.7%
Phase Three	\$90,098,023	32.0%
Phase Four	\$0	0.0%
TOTAL	\$281,856,754	100.0%

Figure 6.5: Compilation of Estimated Costs

ORDER OF IMPLEMENTATION	PHASE ONE	Qnty	Unit	Cost/Unit	Cost	Design/Admin. Fees	CM Fees	Total Estimated Costs	Estimated FAA Share		Estimated State Share		Estimated Third Party Share	
									%	\$	%	\$	%	\$
1	Environmental Assessment	1	LS		\$300,000	\$0	\$0	\$300,000	95%	\$285,000	3%	\$9,000	2%	\$6,000
2	Property Acquisition- Part 150 NCP	1	LS		\$14,356,522	\$2,153,478	\$0	\$16,510,000	95%	\$15,684,500	3%	\$495,300	2%	\$330,200
2	Wetland Mitigation	6	AC	\$65,000										
3	Obstruction Removal	26	AC	\$12,500	\$791,667	\$79,167	\$0	\$980,000	95%	\$902,500	3%	\$28,500	2%	\$19,000
2	Justification Study for I-89 Interchange	1	LS		\$300,000	\$0	\$0	\$300,000	95%	\$285,000	3%	\$9,000	2%	\$6,000
3	Terminal Building Expansions/Improvements	64,500	SF	\$248	\$16,000,000	\$5,520,000	\$2,400,000	\$23,920,000	0%	\$0	80%	\$19,136,000	20%	\$4,784,000
3	Air-Side Multi-Story Shell Expansion	29,920	SF	\$150	\$4,488,000	\$1,548,360	\$673,200	\$6,709,560	0%	\$0	80%	\$5,367,648	20%	\$1,341,912
3	Admin. Relocation, Restaurant/Bar Expansion	26,000	SF	\$266	\$7,050,000	\$2,432,250	\$1,057,500	\$10,539,750	0%	\$0	80%	\$8,431,800	20%	\$2,107,950
3	Commuter Concourse and Baggage Area Expansion	55,500	SF	\$202	\$11,200,000	\$3,864,000	\$1,680,000	\$16,744,000	0%	\$0	80%	\$13,395,200	20%	\$3,348,800
3	2nd Level Ticketing Fit-Up and Screening													
3	PARALLEL TAXIWAY G	1	LS		\$4,000,000	\$600,000	\$400,000	\$5,000,000	95%	\$4,750,000	3%	\$150,000	2%	\$100,000
3	Relocate Existing Taxiway G	1	LS		\$3,500,000	\$350,000	\$350,000	\$4,200,000	95%	\$3,990,000	3%	\$126,000	2%	\$84,000
3	Complete New Taxiway G													
3	TERMINAL/SED ACCESS CONNECTION	12,283	SY	\$187	\$2,291,667	\$229,167	\$229,167	\$2,750,000	95%	\$2,612,500	3%	\$82,500	2%	\$55,000
4	Alphabet Highway/Airport Drive Connector	15,705	S	\$194	\$3,052,635	\$305,264	\$305,264	\$3,663,162	95%	\$3,480,004	3%	\$109,895	2%	\$73,263
5	Terminal-SED Internal Access (Phase One portion)													
5	SED AREA CONSTRUCTION	38,000	SY	\$136	\$5,161,667	\$516,167	\$516,167	\$6,194,000	95%	\$5,884,300	3%	\$185,820	2%	\$123,880
4	Cargo Apron (38,000-SY)	32,000	SF	\$109	\$3,478,518	\$347,852	\$347,852	\$4,174,222	0%	\$0	80%	\$3,339,378	20%	\$834,844
4	Corporate Hangar Building (32,000-SF)	60,000	SF	\$109	\$6,522,223	\$652,222	\$652,222	\$7,826,667	0%	\$0	80%	\$6,261,334	20%	\$1,565,333
4	Cargo Building (60,000-SF)	28,000	SF	\$109	\$3,043,703	\$304,370	\$304,370	\$3,652,444	0%	\$0	80%	\$2,921,955	20%	\$730,489
4	Maintenance Hangar Building (28,000-SF)	20,000	SF	\$124	\$2,474,040	\$247,406	\$247,406	\$2,968,872	0%	\$0	80%	\$2,375,098	20%	\$593,774
5	Maintenance Equipment Storage Building	1	LS		\$125,000	\$0	\$0	\$125,000	95%	\$118,750	3%	\$3,750	2%	\$2,500
5	Update Land Re-Use Plan (2014)													
	TOTAL PHASE ONE				\$88,135,661	\$19,149,702	\$9,242,314	\$116,527,677	\$37,992,554	\$62,428,177		\$16,106,946		
	PHASE TWO													
1	Environmental Assessment Study	1	LS		\$300,000	\$0	\$0	\$300,000	95%	\$285,000	3%	\$9,000	2%	\$6,000
2	Property Acquisition- Part 150 NCP	1	LS		\$14,500,000	\$252,000	\$168,000	\$15,910,000	95%	\$15,175,000	3%	\$435,000	2%	\$290,000
3	Runway 1-19 Shift/Extension	1	LS		\$1,680,000	\$0	\$0	\$1,680,000	95%	\$1,595,000	3%	\$63,000	2%	\$42,000
3	TERMINAL BUILDING EXPANSIONS/IMPROVEMENTS	51,800	SF	\$217	\$11,235,000	\$3,876,075	\$1,685,250	\$16,796,325	0%	\$0	80%	\$13,437,060	20%	\$3,359,265
3	Expand Screening, Ticketing, Concourse, & Baggage													
3	TERMINAL/SED ACCESS CONNECTION	7,528	SY	\$183	\$1,375,000	\$137,500	\$137,500	\$1,650,000	95%	\$1,567,500	3%	\$49,500	2%	\$33,000
3	I-89 Terminal Connector Access	3,361	SY	\$163	\$546,198	\$54,620	\$54,620	\$655,438	95%	\$622,666	3%	\$19,663	2%	\$13,109
3	Terminal-SED Internal Access (Phase Two portion)													
4	TERMINAL ACCESS CIRCULATION	39,398	SY	\$169	\$6,666,667	\$666,667	\$666,667	\$8,000,000	95%	\$7,600,000	3%	\$240,000	2%	\$160,000
4	Terminal Loop Roadway	1,000	UNIT	\$2,400	\$2,400,000	\$360,000	\$240,000	\$3,000,000	0%	\$0	80%	\$2,400,000	20%	\$600,000
4	At-Grade Parking (Interim)	2,811	SY	\$178	\$500,000	\$50,000	\$50,000	\$600,000	95%	\$570,000	3%	\$18,000	2%	\$12,000
5	Second-Level Curb Access	1	LS		\$2,800,000	\$420,000	\$280,000	\$3,500,000	0%	\$0	80%	\$2,800,000	20%	\$700,000
5	New Fuel Farm Construction													
5	SED AREA CONSTRUCTION	17,000	SY	\$136	\$2,309,167	\$230,917	\$230,917	\$2,771,000	95%	\$2,632,450	3%	\$88,130	2%	\$55,420
3	Corporate Apron (17,000-SY)	18,500	SF	\$109	\$2,011,018	\$201,102	\$201,102	\$2,413,222	0%	\$0	80%	\$1,930,578	20%	\$482,644
3	Corporate Hangar Building (18,500-SF)	60,000	SF	\$109	\$6,522,223	\$652,222	\$652,222	\$7,826,667	0%	\$0	80%	\$6,261,334	20%	\$1,565,333
3	Corporate Jet Center Building (60,000-SF)	99	UNIT	\$2,400	\$237,600	\$35,640	\$23,760	\$297,000	0%	\$0	80%	\$237,600	20%	\$59,400
3	Parking Spaces (approximately 99 surface spaces)	37,500	SY	\$136	\$5,093,750	\$509,375	\$509,375	\$6,112,500	95%	\$5,806,875	3%	\$183,375	2%	\$122,250
3	GA "Nub" Apron (37,500-SY)	5	SF	\$187,268	\$187,268	\$187,267	\$187,267	\$2,246,722	0%	\$0	80%	\$1,797,378	20%	\$449,344
3	Five Executive Hangar Buildings													
3	Three I-Hangar Buildings	52	UNIT	\$2,400	\$124,800	\$18,720	\$18,720	\$156,000	0%	\$0	80%	\$124,800	20%	\$31,200
3	Parking Spaces (approximately 52 surface spaces)	10	UNIT	\$98	\$980	\$0	\$0	\$980	0%	\$0	80%	\$784	20%	\$196
3	10 tie-Downs	1	LS		\$150,000	\$0	\$0	\$150,000	95%	\$142,500	3%	\$4,500	2%	\$3,000
4	Update NEM/NCP	1	LS		\$10,000	\$0	\$0	\$10,000	0%	\$0	0%	\$0	100%	\$10,000
4	Update Hotel Feasibility Study													
	TOTAL PHASE TWO				\$62,122,338	\$7,830,831	\$5,277,866	\$75,231,054	\$34,996,991	\$31,810,861		\$8,423,202		
	PHASE THREE													
1	Environmental Assessment Study	1	LS		\$300,000	\$0	\$0	\$300,000	95%	\$285,000	3%	\$9,000	2%	\$6,000
2	Property Acquisition- Part 150 NCP	1	LS		\$2,083,333	\$208,333	\$0	\$2,500,000	95%	\$2,375,000	3%	\$75,000	2%	\$50,000
2	Terminal Building Expansions/Improvements	60,000	SF	\$223	\$13,362,500	\$4,610,063	\$2,004,375	\$19,976,938	0%	\$0	80%	\$15,981,550	20%	\$3,995,388
2	Commuter Concourse Expansion, Loading Dock, EIS													
2	Terminal Area Circulation	1,727	UNIT	\$2,400	\$4,144,800	\$621,720	\$414,480	\$5,181,000	0%	\$0	80%	\$4,144,800	20%	\$1,036,200
2	At-Grade Parking (Interim)	1	LS		\$21,340,085	\$0	\$0	\$21,340,085	0%	\$0	100%	\$21,340,085		\$0
2	Terminal Area Hotel													
2	Parallel Taxiway G	1	LS		\$3,166,667	\$316,667	\$316,667	\$3,800,000	95%	\$3,610,000	3%	\$114,000	2%	\$76,000
2	Hold Apron/De-Icing													
3	Terminal-SED Access Connection	1	LS		\$23,437,500	\$4,218,750	\$2,343,750	\$30,000,000	95%	\$28,500,000	3%	\$900,000	2%	\$600,000
3	I-89 Interchange ("I-4-N")	33,494	SY	\$174	\$5,833,333	\$583,333	\$58,333	\$7,000,000	95%	\$6,650,000	3%	\$210,000	2%	\$140,000
3	I-89 Terminal/Connector Access													
	TOTAL PHASE THREE				\$62,328,133	\$10,568,865	\$5,137,605	\$90,098,023	\$41,420,000	\$21,454,350		\$27,248,673		
	PHASE FOUR													
	TOTAL PHASE FOUR				\$0	\$0	\$0	\$0	\$0	\$0		\$0		\$0
	TOTAL ALL PHASES				\$202,586,132	\$37,539,399	\$19,657,805	\$281,856,754	\$114,409,545	\$115,673,388		\$51,773,821		