

**MICHIGAN AIRPORT DEVELOPMENT
PROGRAM PACKAGE
MDOT Airports Division**

**Ten Year Airport Capital Improvement Plan
2012-2022**

Prepared for:

**Wexford County Airport
Cadillac, Michigan**

**August 2011
Final December 2011**

Contact:

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Prepared by:

Mead&Hunt

MICHIGAN STATE BLOCK GRANT PROGRAM
TEN-YEAR AIRPORT CAPITAL IMPROVEMENT PROGRAM (CIP) FY-2012 to FY-2022

*ACIP includes current development year (2012 already programmed - minor changes acceptable)

Airport Name: Wexford County Airport										Date prepared: 6/28/10, Rev. 11/21/11, RGN	
Associated City: Cadillac, MI										Prepared By: Gary Siegfried	
Sponsor: Wexford County										Sponsor email address & phone: John Jenkins, jenkinsjc@cadillacairport.com	
Airport Identifier: CAD (NPIAS Airport Code B)										FINAL ACIP due to MDOT AERO: no later than 12/01/11	
Development Year	Project Description	Shown on ALP?* (Yes or No)	ACIP Code**	NPIAS Priority Rating**	Federal Entitlements	Federal Apportionment	Federal Discretionary	State	Local	Total	Remarks/Item Justification - Provide as much detail as possible.
2012	Construct Hangars	Yes	STBDMS	32	\$0	\$0	\$0	\$0	\$550,000	\$550,000	Due to the continued demand for aircraft storage, it is necessary to develop additional hangar facilities.
	Construct Taxiway to Provide Access to New Hangars	Yes	CATWCO	59	\$150,000	\$0	\$0	\$3,947	\$3,947	\$157,895	New taxiway will be required to provide aircraft access to hangar.
2013	Airport Security Fence for Parcel 6, Install Electric Gates in Terminal Area	Yes	STEQSE	41	\$114,000	\$0	\$0	\$3,000	\$3,000	\$120,000	Maintaining the security of the airport from wildlife as well as pedestrians and vehicles is essential to the safety of the airport and its users. This fencing would enclose new property acquisition. The airport has also wishes to install new gates and surveillance cameras in the terminal area to increase security.
	Purchase Four-wheel Drive Pickup with Snow Plow	NA	STEQSN	47	\$0	\$0	\$0	\$0	\$55,000	\$55,000	Existing airport pickup truck is starting to near the end of its useful life.
	Carry over remainder of GA entitlements for 2014 construction (\$36,000)										
2014	Rehab Terminal Apron	NA	REAPIM	60	\$186,000	\$374,500	\$0	\$14,750	\$14,750	\$590,000	The terminal apron is showing numerous cracks and is becoming difficult to maintain. Construction is anticipated to consist of removing existing asphalt pavement, fine grading and compacting existing base course and repaving. PCI calculated in 2010 was 71.
	Expand Terminal Apron	Yes	CAAPEX	46	\$0	\$617,500	\$0	\$16,250	\$16,250	\$650,000	The airport's terminal apron is too small during peak use times. Transient aircraft parking on the apron can cause congestion and safety concerns. An apron expansion will help mitigate this issue.
2015	Rehab Parallel Taxiway (PFC Overlay)	NA	RETWIM	66	\$150,000	\$163,500	\$0	\$8,250	\$8,250	\$330,000	Rehabilitation of parallel taxiway is required to maintain the integrity of the airport. Rehabilitation is anticipated to consist of repairing and sealing existing cracks followed by placement of a 3/4" porous friction course. PCI calculated in 2010 ranged from 77 to 94.
2016	Rehab Airport Parking Lot and Airport Entrance Road	NA	OTOTPA	18	\$142,500	\$0	\$0	\$3,750	\$3,750	\$150,000	Existing airport parking lot is in poor condition and requires repair. Construction is anticipated to consist of pulverizing the existing asphalt and fine grading and compacting for use as base course.
	Improve Apron and Parking Lot Lighting	NA	STAPLI	41	\$7,500	\$106,500	\$0	\$3,000	\$3,000	\$120,000	Apron and lighting in automobile parking lot are inadequate.
2017	Install New Monopole Beacon Tower and Refurbished Beacon	Yes	STOTIN	42	\$57,000	\$0	\$0	\$1,500	\$1,500	\$60,000	Beacon tower and beacon are beyond useful life and need to be replaced. Tower also needs to be brought into compliance with OSHA standards.
	Restripe Airfield	NA	RERWIM	70	\$24,700	\$0	\$0	\$650	\$650	\$26,000	Airport management anticipates that runway will require restriping by 2017.
	Carry over remainder of GA entitlements for 2018 construction (\$68,300)										
2018	Construct Perimeter Fence	Yes	STEQSE	41	\$171,000	\$0	\$0	\$4,500	\$4,500	\$180,000	Replacing existing perimeter fence with 10' tall fence will increase airport security and help keep wildlife and pedestrians off active airfield pavements. Includes additional gates
	Carry over remainder of GA entitlements for 2019 construction (\$47,300)										
2019	Purchase 40 acres in west approach	No	STLASZ	44	\$197,300	\$70,200	\$0	\$7,039	\$7,039	\$281,579	Airport intends to purchase land in west approach to own all property in RPZ for ease of maintaining approach and for potential future extension of approach lighting system.
2020	Carry over GA Entitlements for paving rwy 18/36 in 2023 (\$150,000)	Yes	CARWCO	63							
2021	Carry over GA Entitlements for paving rwy 18/36 in 2023 (\$150,000)	Yes	CARWCO	63							
2022	Carry over GA Entitlements for paving rwy 18/36 in 2023 (\$150,000)	Yes	CARWCO	63							

*Proposed airport development must be shown on current FAA-approved ALP prior to funding project.

**In accordance with FAA Order 5100.39A, Appendix 6 - Fields should be completed

(Refer to Airport Code spreadsheet provided on MDOT Aeronautics website under Block Grant Program for specific airport code)

ENGINEERING COST ESTIMATE

PROJECT: Construct access taxiway to new hangar area.
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 08/01/2011
 PREPARED BY: GWS

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2011 DOLLARS

WORK DESCRIPTION: Construct access taxiway to new hangars (portion of future apron expansion) - approximately 20,000 sf

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 10,000.00	\$ 10,000
Safety and Security	LS	1	\$ 10,000.00	\$ 10,000
Unclassified Excavation - See Note 2	CY	2,200	\$ 8.00	\$ 17,600
Gravel Base (6")	CY	400	\$ 40.00	\$ 16,000
Bituminous Surface (5")	TON	600	\$ 85.00	\$ 51,000
Pavement Marking (Taxiway)	LS	1	\$ 1,000.00	\$ 1,000
Soil Erosion & Sedimentation Controls	LS	1	\$ 4,000.00	\$ 4,000
Turfing and Mulching	AC	1	\$ 3,000.00	\$ 3,000
CONSTRUCTION TOTAL = \$				112,600
CONSTRUCTION CONTINGENCIES (20%) = \$				22,520
CONSTRUCTION TOTAL = \$				135,120
ENGINEERING DESIGN (7%) = \$				9,458
CONSTRUCTION ADMIN (10%) = \$				13,512
\$				158,090
ANTICIPATED CONSTRUCTION YEAR =				2012
PROJECT YEAR BUDGET ESTIMATE = \$				160,000



Note 1: These costs were developed without the benefit of field surveys or soils investigation. A final cost estimate will be dependent upon development of these items and further design.

Note 2: Unclassified excavation estimate assumes that existing sand subgrade will be non-frost susceptible and suitable for use in the pavement section. If material is not acceptable as subbase cost will increase for additional unclassified excavation and sand subbase.

ENGINEERING COST ESTIMATE

PROJECT: Install Security Fence, Power Gates, and Security Cameras
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/8/09
 PREPARED BY: BJH

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2010 DOLLARS

WORK DESCRIPTION: Install 10' tall animal control fence on south side of airport, install 2 power gates in terminal area.

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 8,500.00	\$ 8,500
Safety and Security	LS	1	\$ 1,500.00	\$ 1,500
Permit Fee Allowance	LS	1	\$ 1,000.00	\$ 1,000
10' Fencing	LF	1,700	\$ 10.00	\$ 17,000
20' Swing Gate	EA	2	\$ 4,000.00	\$ 8,000
20' Power Gate	EA	2	\$ 25,000.00	\$ 50,000
CONSTRUCTION TOTAL =				\$ 86,000
CONSTRUCTION CONTINGENCIES (10%) =				\$ 8,600
CONSTRUCTION TOTAL =				\$ 94,600
ENGINEERING DESIGN (7%) =				\$ 6,622
CONSTRUCTION ADMIN (10%) =				\$ 9,460
				\$ 110,682
ANTICIPATED CONSTRUCTION YEAR =				2013
PROJECT YEAR BUDGET ESTIMATE =				\$ 120,000



Note: These costs were developed without the benefit of field surveys or soils investigation.
 A final cost estimate will be dependent upon development of these items and further design.

ENGINEERING COST ESTIMATE

PROJECT: Rehab and Expand Terminal Apron
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/13/09 rev 11/12/2009, 06/29/2010
 PREPARED BY: BJH rev GWS

___ FINAL DESIGN
 ___ PROJECT PROGRAMMING
 ___ FEASIBILITY STUDY
x STATE PLANNING
 BASED ON FY 2009 DOLLARS

WORK DESCRIPTION: Rehab terminal apron (pulverize, fine grade, compact, and repave)

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 45,000.00	\$ 45,000
Safety and Security	LS	1	\$ 20,000.00	\$ 20,000
Misc. Subgrade Repair	CY	2,000	\$ 10.00	\$ 20,000
Bituminous Surface (5")	TON	3,600	\$ 85.00	\$ 306,000
Cold Mill/Pulverize Existing Pavement	SY	12,000	\$ 1.50	\$ 18,000
Salvage Pulverized Material (4")	CY	500	\$ 5.00	\$ 2,500
Fine Grade & Compact Aggregate Base	SY	12,000	\$ 1.50	\$ 18,000
Pavement Marking (Taxiway)	LS	1	\$ 2,000.00	\$ 2,000
Soil Erosion & Sedimentation Controls	LS	1	\$ 2,000.00	\$ 2,000
Turfing and Mulching	AC	1	\$ 3,000.00	\$ 3,000
CONSTRUCTION TOTAL = \$				436,500
CONSTRUCTION CONTINGENCIES (15%) = \$				65,475
CONSTRUCTION TOTAL = \$				501,975
ENGINEERING DESIGN (7%) = \$				35,138
CONSTRUCTION ADMIN (10%) = \$				50,198
\$				587,311
ANTICIPATED CONSTRUCTION YEAR =				2014
PROJECT YEAR BUDGET ESTIMATE = \$				590,000



Note: These costs were developed without the benefit of field surveys or soils investigation.
 A final cost estimate will be dependent upon development of these items and further design.

ENGINEERING COST ESTIMATE

PROJECT: Expand Terminal Apron
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/13/09 rev 11/12/2009, 06/29/2010
 PREPARED BY: BJH rev GWS

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2010 DOLLARS

WORK DESCRIPTION: Expand terminal apron to west with new connector taxiway (does not include hangar area site development) - 13500 sy

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 45,000.00	\$ 45,000
Safety and Security	LS	1	\$ 20,000.00	\$ 20,000
Unclassified Excavation - See Note 2	CY	7,000	\$ 5.00	\$ 35,000
Gravel Base (6")	CY	1,850	\$ 40.00	\$ 74,000
Bituminous Surface (5")	TON	3,450	\$ 85.00	\$ 293,250
Pavement Marking (Taxiway)	LS	1	\$ 5,000.00	\$ 5,000
Soil Erosion & Sedimentation Controls	LS	1	\$ 4,000.00	\$ 4,000
Turfing and Mulching	AC	2	\$ 3,000.00	\$ 6,000
				CONSTRUCTION TOTAL = \$ 482,250
				CONSTRUCTION CONTINGENCIES (15%) = \$ 72,338
				CONSTRUCTION TOTAL = \$ 554,588
				ENGINEERING DESIGN (7%) = \$ 38,821
				CONSTRUCTION ADMIN (10%) = \$ 55,459
				\$ 648,867
				ANTICIPATED CONSTRUCTION YEAR = 2014
				PROJECT YEAR BUDGET ESTIMATE = \$ 650,000



Note 1: These costs were developed without the benefit of field surveys or soils investigation. A final cost estimate will be dependent upon development of these items and further design.

Note 2: Unclassified excavacation estimate assumes that existing sand subgrade will be non-frost susceptible and suitable for use in the pavement section. If material is not acceptable as subbase cost will increase for additional unclassified excavation and sand subbase.

ENGINEERING COST ESTIMATE

PROJECT: Rehab Parallel Taxiway (PFC)
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/10/09
 PREPARED BY: BJH

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2011 DOLLARS

WORK DESCRIPTION: Rehab parallel taxiway (repair cracks and pave with porous friction course)

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 20,000.00	\$ 20,000
Safety and Security	LS	1	\$ 10,000.00	\$ 10,000
Crack Repair	LF	5,000	\$ 10.00	\$ 50,000
Porous Friction Course (3/4")	TON	1,500	\$ 85.00	\$ 127,500
Pavement Marking (Taxiway)	SF	24,000	\$ 0.50	\$ 12,000
Turfing and Mulching	AC	4	\$ 3,000.00	\$ 12,000
CONSTRUCTION TOTAL = \$				231,500
CONSTRUCTION CONTINGENCIES (10%) = \$				46,300
CONSTRUCTION TOTAL = \$				277,800
ENGINEERING DESIGN (7%) = \$				19,446
CONSTRUCTION ADMIN (10%) = \$				27,780
				\$ 325,026
ANTICIPATED CONSTRUCTION YEAR =				2015
PROJECT YEAR BUDGET ESTIMATE = \$				330,000



Note: These costs were developed without the benefit of field surveys or soils investigation.
 A final cost estimate will be dependent upon development of these items and further design.

ENGINEERING COST ESTIMATE

PROJECT: Rehabilitate Airport Parking Lot and Entrance Drive
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/10/09 rev 11/12/2009, 06/29/2010, 7/29/2011
 PREPARED BY: BJH rev GWS

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2011 DOLLARS

WORK DESCRIPTION: Rehab airport parking lot and entrance drive (pulverize, fine grade, compact, and pave)

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 10,000.00	\$ 10,000
Safety and Security	LS	1	\$ 2,000.00	\$ 2,000
Bituminous Surface (3")	TON	863	\$ 95.00	\$ 82,014
Cold Mill/Pulverize Existing Pavement	SY	3,597	\$ 1.50	\$ 5,396
Saw Bituminous Pavement	LF	300	\$ 5.00	\$ 1,500
Fine Grade & Compact Aggregate Base	SY	3,597	\$ 1.50	\$ 5,396
Pavement Marking	LS	1	\$ 2,000.00	\$ 2,000
Soil Erosion & Sedimentation Controls	LS	1	\$ 1,000.00	\$ 1,000
Turfing and Mulching	AC	1	\$ 3,000.00	\$ 3,000
CONSTRUCTION TOTAL = \$				112,305
CONSTRUCTION CONTINGENCIES (10%) = \$				11,231
CONSTRUCTION TOTAL = \$				123,536
ENGINEERING DESIGN (7%) = \$				8,648
CONSTRUCTION ADMIN (10%) = \$				12,354
				\$ 144,537
ANTICIPATED CONSTRUCTION YEAR =				2016
PROJECT YEAR BUDGET ESTIMATE = \$				150,000



Note: These costs were developed without the benefit of field surveys or soils investigation. A final cost estimate will be dependent upon development of these items and further design.

ENGINEERING COST ESTIMATE

PROJECT: Install Area Lights
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/13/09, reviewed 7/29/2011
 PREPARED BY: GWS

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2011 DOLLARS

WORK DESCRIPTION: Install area lighting at fuel farm and parking lot.

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 10,000.00	\$ 10,000
Safety and Security	LS	1	\$ 5,000.00	\$ 5,000
30' Tall Area Lights	EA	6	\$ 5,000.00	\$ 30,000
Sawcut Asphalt, As Specified	LF	500	\$ 2.00	\$ 1,000
Underground Electrical	LF	2,200	\$ 10.00	\$ 22,000
Electrical Duct	LF	200	\$ 20.00	\$ 4,000
Asphalt Patching	SY	100	\$ 65.00	\$ 6,500
				CONSTRUCTION TOTAL = \$ 78,500
				CONSTRUCTION CONTINGENCIES (20%) = \$ 15,700
				CONSTRUCTION TOTAL = \$ 94,200
				ENGINEERING DESIGN (7%) = \$ 6,594
				CONSTRUCTION ADMIN (10%) = \$ 9,420
				\$ 110,214
				ANTICIPATED CONSTRUCTION YEAR = 2016
				PROJECT YEAR BUDGET ESTIMATE = \$ 120,000



Note: These costs were developed without the benefit of field surveys or soils investigation.
 A final cost estimate will be dependent upon development of these items and further design.

ENGINEERING COST ESTIMATE

PROJECT: Install 10' high perimeter fence
 LOCATION: Wexford County Airport
 CITY: Cadillac, MI
 DATE: 7/13/09, REV 06/29/2010
 PREPARED BY: GWS

FINAL DESIGN
 PROJECT PROGRAMMING
 FEASIBILITY STUDY
 STATE PLANNING
 BASED ON FY 2011 DOLLARS

WORK DESCRIPTION: Install 9500 lf of 10' tall woven wire fence and 350 feet of 10' tall chain link fence.

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	ITEM COST
Mobilization and General Conditions	LS	1	\$ 15,000.00	\$ 15,000
Safety and Security	LS	1	\$ 5,000.00	\$ 5,000
Fence Removal	LF	9,850	\$ 1.00	\$ 9,850
10' Woven Wire Fence	LF	9,500	\$ 10.00	\$ 95,000
10' Chain Link Fence	LF	350	\$ 25.00	\$ 8,750
20' Double Leaf Swing Gate	EA	3	\$ 2,000.00	\$ 6,000
CONSTRUCTION TOTAL = \$				139,600
CONSTRUCTION CONTINGENCIES (5%) = \$				6,980
CONSTRUCTION TOTAL = \$				146,580
ENGINEERING DESIGN (7%) = \$				10,261
CONSTRUCTION ADMIN (10%) = \$				14,658
\$				171,499
ANTICIPATED CONSTRUCTION YEAR =				2018
PROJECT YEAR BUDGET ESTIMATE = \$				180,000



Note: These costs were developed without the benefit of field surveys or soils investigation.
 A final cost estimate will be dependent upon development of these items and further design.

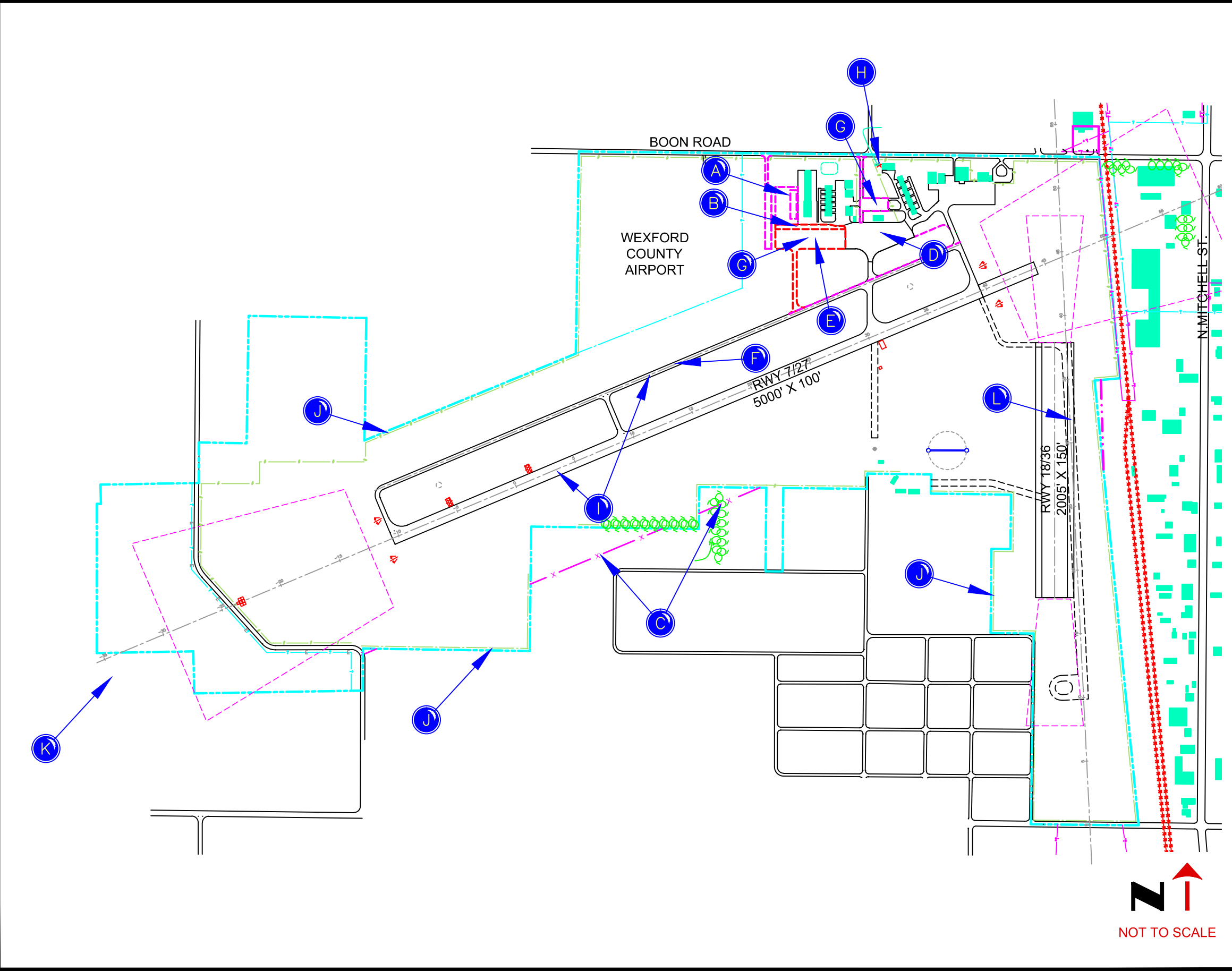
WEXFORD COUNTY AIRPORT CADILLAC, MICHIGAN

TEN-YEAR DEVELOPMENT PLAN - YEARS 2012 TO 2022



FAA IDENTIFIER: CAD
STATE ID: 83-01

<p>YEAR - 2012</p> <ul style="list-style-type: none"> A CONSTRUCT HANGARS B CONSTRUCT TAXIWAY TO PROVIDE ACCESS TO NEW HANGARS
<p>YEAR - 2013</p> <ul style="list-style-type: none"> C AIRPORT SECURITY FENCE FOR PARCEL 6, INSTALL ELECTRIC GATES IN TERMINAL AREA PURCHASE FOUR-WHEEL DRIVE PICKUP WITH SNOW PLOW
<p>YEAR - 2014</p> <ul style="list-style-type: none"> D REHAB TERMINAL APRON E EXPAND TERMINAL APRON
<p>YEAR - 2015</p> <ul style="list-style-type: none"> F REHAB PARALLEL TWY (PFC OVERLAY)
<p>YEAR - 2016</p> <ul style="list-style-type: none"> G REHAB AIRPORT PARKING LOT AND AIRPORT ENTRANCE ROAD, IMPROVE APRON AND PARKING LOT LIGHTING
<p>YEAR - 2017</p> <ul style="list-style-type: none"> H INSTALL NEW MONOPOLE BEACON TOWER AND REFURBISHED BEACON I RESTRIPE AIRFIELD
<p>YEAR - 2018</p> <ul style="list-style-type: none"> J CONSTRUCT PERIMETER FENCE
<p>YEAR - 2019</p> <ul style="list-style-type: none"> K PURCHASE 40 ACRES IN WEST APPROACH
<p>YEAR - 2020</p> <p>CARRY OVER GA ENTITLEMENTS FOR PAVING RWY 18/36 IN 2023</p>
<p>YEAR - 2021</p> <p>CARRY OVER GA ENTITLEMENTS FOR PAVING RWY 18/36 IN 2023</p>
<p>YEAR - 2022</p> <ul style="list-style-type: none"> L CARRY OVER GA ENTITLEMENTS FOR PAVING RWY 18/36 IN 2023



August 2, 2011 -- 83-01_CAD_sketch2012.dwg