

DME DME Assessment Results for NRTHN1 path SIEDL_TTOWN

Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Lisa A-CTR Thrysoe
Project File:	C:\Users\Lisa A-CTR Thrysoe\OneDrive - Federal Aviation Administration\Desktop\DME DME Screening\KMSP 261029\SIDS\KMSP NRTHN ONE SID 260319\KMSP NRTHN1 SID 20260608 (1).tgs
Output File:	C:\Users\Lisa A-CTR Thrysoe\OneDrive - Federal Aviation Administration\Desktop\DME DME Screening\KMSP 261029\SIDS\KMSP NRTHN ONE SID 260319\KMSP [IFPA] NRTHN1 20260608_1238 EDT\SIEDL_TTOWN\KMSP NRTHN1 SID SIEDL TTOWN 20260608_1238 EDT.pdf
Procedure Name:	NRTHN1
Software: DmeDmePlugin:	8.0.0
Date/Time:	06/08/2026 12:38 EDT
Databases:	MITRE 3DEP 3 arcsec

Failures

No Failures

Warnings

No Warnings

Informational

No Informational

Notes For Flight Check

None

Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
SIEDL	WP	N45° 06' 10.4299", W093° 01' 42.6691"	4200	VNAV	200	FLY_BY	TF
NRTHN	WP	N45° 11' 49.8308", W092° 51' 28.6711"	6000	VNAV	200	FLY_BY	TF
PIIKE	WP	N45° 15' 06.7600", W092° 39' 02.8900"	7875.7	VNAV	200	FLY_BY	TF
DWIYT	WP	N45° 18' 12.1600", W092° 17' 15.2400"	10000	VNAV	200	FLY_BY	TF
WLSTN	WP	N45° 28' 26.4400", W091° 00' 55.2700"	12000	VNAV	240	FLY_BY	TF
TYTEL	WP	N45° 17' 59.7056", W089° 22' 42.5344"	12000	VNAV	240	FLY_BY	TF
TTOWN	WP	N44° 59' 31.2355", W086° 55' 13.6349"	12000	VNAV	240	FLY_BY	TF

Flyability

Flight Type:	SID
Selected Airport:	KMSP [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

DME DME Assessment Results for NRTN1 path SIEDL_TTOWN

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC, TACAN
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Not included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	TVC	N44° 40' 04.4971", W085° 33' 00.0403"	2.0 W	130	DH		NO	Enabled	20.7 %	22.1 %
2	ISQ	N45° 58' 34.8062", W086° 10' 24.3707"	-0.0 E	130	DH		NO	Enabled	28.6 %	30.5 %
3	RZN	N45° 49' 13.6015", W092° 22' 28.2562"	-0.0 E	40	L		NO	Enabled	26.1 %	24.8 %
4	MSP	N44° 53' 47.3958", W093° 14' 11.5137"	2.0 E	130	DH		NO	Enabled	41.7 %	38.4 %
5	MNM	N45° 10' 48.5498", W087° 38' 49.7951"	0.0 E	40	L		NO	Enabled	30 %	32 %
6	CMX	N47° 10' 12.9420", W088° 29' 07.4148"	2.0 W	130	DH		NO	Enabled	0.1 %	0.1 %
7	FCM	N44° 49' 31.2603", W093° 26' 33.6793"	1.0 E	40	L		NO	Enabled	3.9 %	3.5 %
8	IMT	N45° 48' 57.7573", W088° 06' 43.6909"	0.0 E	40	L		NO	Enabled	3.9 %	4.2 %
9	FGT	N44° 37' 51.4303", W093° 10' 55.3911"	6.0 E	130	H		NO	Enabled	9.7 %	8.7 %
10	RST	N43° 46' 58.4501", W092° 35' 49.0560"	5.0 E	130	DH		NO	Enabled	22 %	19.5 %
11	RHI	N45° 38' 01.6407", W089° 27' 28.0111"	2.0 E	130	DH		NO	Enabled	56.3 %	57.4 %
12	GEP	N45° 08' 44.4656", W093° 22' 23.4514"	6.0 E	130	H		NO	Enabled	16.6 %	14.8 %
13	GRB	N44° 33' 18.5761", W088° 11' 41.4859"	1.0 E	130	H		NO	Enabled	7.7 %	8.2 %
14	EAU	N44° 53' 51.6121", W091° 28' 42.7259"	4.0 E	130	H		NO	Enabled	17.3 %	15.4 %
15	DWN	N45° 05' 14.8650", W094° 27' 13.8590"	0.0 E	40	L		NO	Enabled	0.8 %	0.7 %

DME DME Assessment Results for NRTN1 path SIEDL_TTOWN

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0	FGT	GEP	MSP	FCM		
3.9	FGT	GEP	DWN	MSP	FCM	
5.8	FGT	GEP	MSP	FCM		
9.2	FGT	GEP	MSP			
9.7	GEP	MSP				
16.0						
17.3	RZN	GEP				
20.8	RZN	GEP	RST	MSP		
27.2	GEP	RZN	RST	MSP	FGT	
40.5	RZN	MSP	RST			
42.9	RZN	MSP	EAU	RST		
48.8	RZN	MSP	EAU	RHI	RST	
56.0	EAU	MSP	RHI	RST		
69.9	EAU	RHI	MSP			
75.1	EAU	RHI	MSP	RST		
77.9	EAU	RHI	MSP			
83.8						
86.4	RZN	MSP				
109.4						
120.2	RZN	RHI				
124.4						
147.8	MNM	RHI				
180.0						
184.1	RHI	ISQ				
198.1	GRB	MNM	ISQ	CMX	RHI	
198.5	RHI	ISQ				
199.9	IMT	RHI	GRB	MNM	ISQ	
211.1	GRB	MNM	RHI	TVC	ISQ	
221.5	RHI	ISQ	TVC			
228.6	MNM	RHI	ISQ	TVC		
229.9	RHI	ISQ	TVC			
235.3	MNM	ISQ	RHI	TVC		

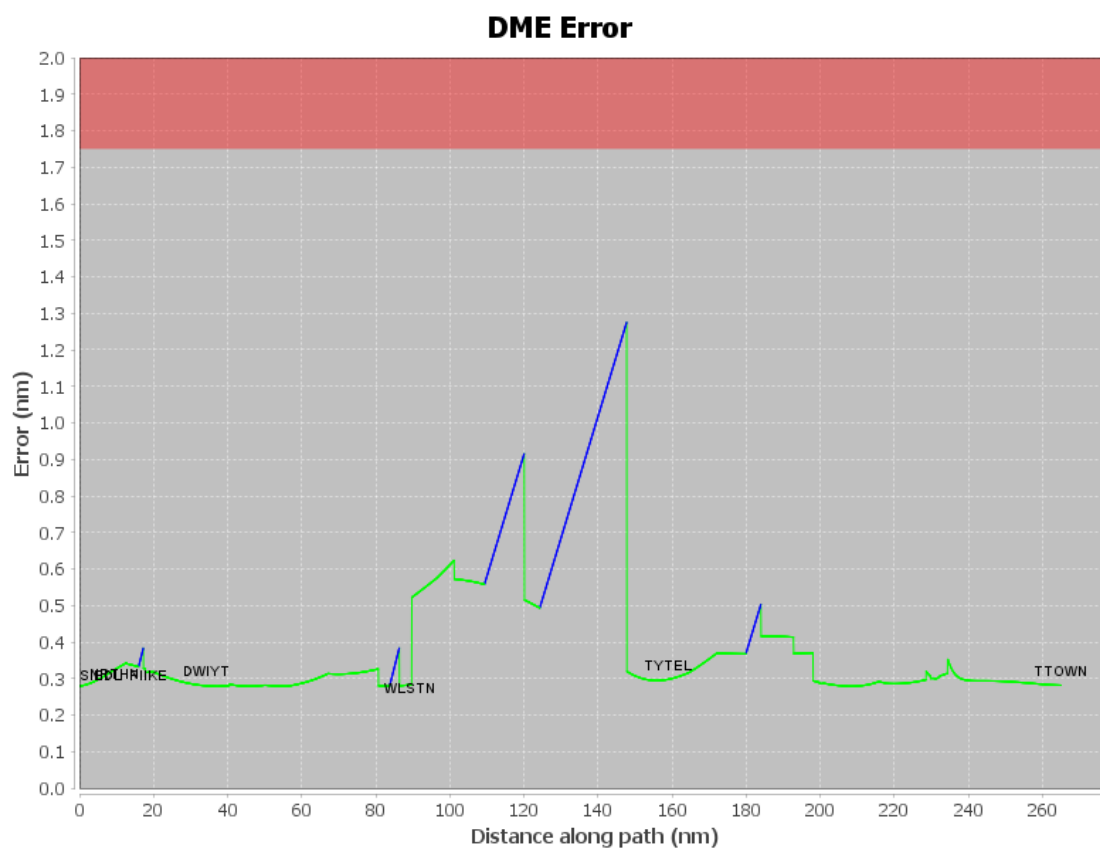
Inertial Drift Segments				
#	Start Location	End Location	Length [NM]	
1	N45° 14' 13.2922", W092° 42' 26.0253"	N45° 14' 40.0387", W092° 40' 44.4709"	1.2764	
2	N45° 27' 30.0819", W091° 08' 13.0771"	N45° 27' 58.3192", W091° 04' 34.2038"	2.6103	
3	N45° 25' 32.5202", W090° 32' 14.2549"	N45° 23' 58.1244", W090° 17' 09.9486"	10.7333	
4	N45° 23' 20.6457", W090° 11' 16.3187"	N45° 19' 45.6515", W089° 38' 22.9072"	23.4667	
5	N45° 14' 35.3994", W088° 53' 23.1022"	N45° 13' 54.9657", W088° 47' 42.7952"	4.0641	

Available DMEs by Waypoints			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
SIEDL	NRTN	FCM, FGT, GEP, DWN, MSP	
NRTN	PIKE	FGT, GEP, RZN, MSP	
PIKE	DWIYT	RST, FGT, GEP, RZN, MSP	
DWIYT	WLSTN	RST, FGT, RHI, GEP, RZN, EAU, MSP	
WLSTN	TYTEL	RHI, RZN, MSP, MNM	
TYTEL	TTOWN	TVC, IMT, RHI, ISQ, GRB, MNM, CMX	

DME DME Assessment Results for NRTN1 path SIEDL_TTOWN

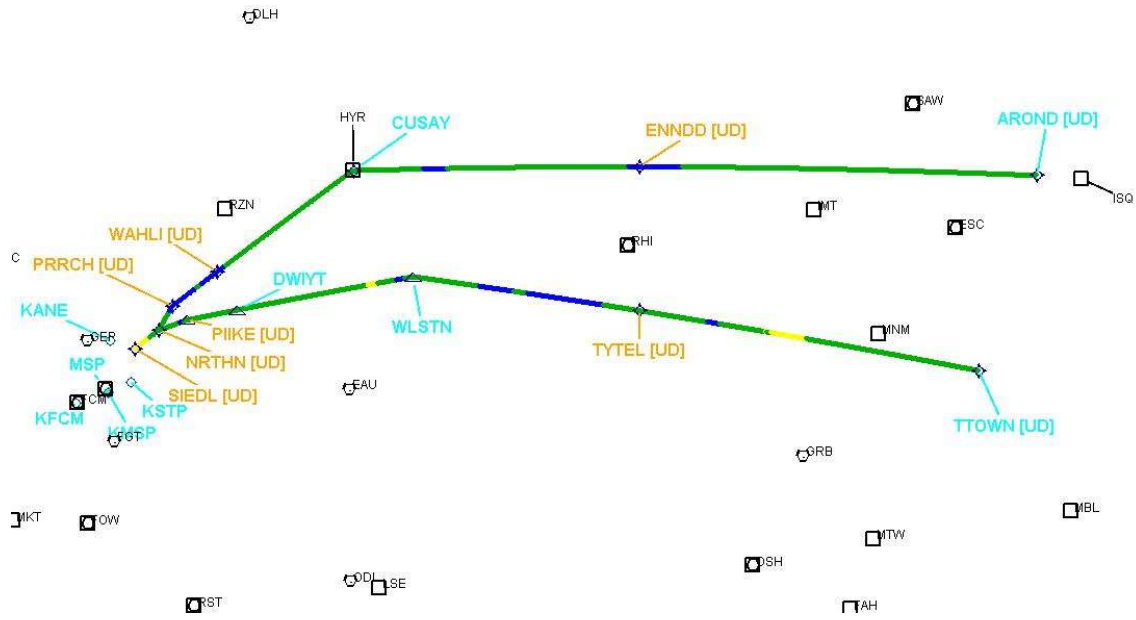
User Data Files								
#	File Name							
None								
User DMEs								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ESV MNM [IFPA] MNM	N45° 10' 48.5498", W087° 38' 49.7951"	0.0 E	40	649.3	109.6	ESV MNM [IFPA]	
ESV:		Bearing [True]: 267.0° to 282.0° Bearing [Mag]: 267.0° to 282.0°				Arc Distance: Out to 85.0 NM Altitude: 7500.0 to 15500.0 ft		
2	ESV GEP [IFPA] GEP	N45° 08' 44.4656", W093° 22' 23.4514"	6.0 E	130	877.3	117.3	ESV GEP [IFPA]	
ESV:		Bearing [True]: 68.0° to 89.0° Bearing [Mag]: 62.0° to 83.0°				Arc Distance: Out to 64.0 NM Altitude: 9000.0 to 17000.0 ft		
3	DWN FAA 703966-20 DWN	N45° 05' 14.8650", W094° 27' 13.8590"	0.0 E	40	1130	109.0	DWN FAA 703966-20	
ESV:		Bearing [True]: 326.0° to 89.0° Bearing [Mag]: 326.0° to 89.0°				Arc Distance: Out to 65.0 NM Altitude: 4200.0 to 20000.0 ft		
4	ESV FGT [IFPA] FGT	N44° 37' 51.4303", W093° 10' 55.3911"	6.0 E	130	926.4	115.7	ESV FGT [IFPA]	
ESV:		Bearing [True]: 31.0° to 55.0° Bearing [Mag]: 25.0° to 49.0°				Arc Distance: Out to 72.0 NM Altitude: 9000.0 to 17000.0 ft		
5	ESV RZN [IFPA] RZN	N45° 49' 13.6015", W092° 22' 28.2562"	-0.0 E	40	986.6	109.4	ESV RZN [IFPA]	
ESV:		Bearing [True]: 67.0° to 114.0° Bearing [Mag]: 67.0° to 114.0°				Arc Distance: Out to 96.0 NM Altitude: 9900.0 to 19000.0 ft		

DME DME Assessment Results for NRTN1 path SIEDL_TTOWN



Graphic Depiction 1

DME DME Assessment Results for NRTN1 path SIEDL_TTOWN



DME DME Assessment Results for NRTHN1 path NRTHN_AROND

Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Lisa A-CTR Thrysoe
Project File:	C:\Users\Lisa A-CTR Thrysoe\OneDrive - Federal Aviation Administration\Desktop\DME DME Screening\KMSP 261029\SIDS\KMSP NRTHN ONE SID 260319\KMSP NRTHN1 SID 20260608 (1).tgs
Output File:	C:\Users\Lisa A-CTR Thrysoe\OneDrive - Federal Aviation Administration\Desktop\DME DME Screening\KMSP 261029\SIDS\KMSP NRTHN ONE SID 260319\KMSP [IFPA] NRTHN1 20260608_1238 EDT\NRTHN_AROND\KMSP NRTHN1 SID NRTHN AROND 20260608_1238 EDT.pdf
Procedure Name:	NRTHN1
Software: DmeDmePlugin:	8.0.0
Date/Time:	06/08/2026 12:38 EDT
Databases:	MITRE 3DEP 3 arcsec

Failures

No Failures

Warnings

No Warnings

Informational

No Informational

Notes For Flight Check

None

Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
NRTHN	WP	N45° 11' 49.8308", W092° 51' 28.6711"	6000	VNAV	200	FLY_BY	TF
PRRCH	WP	N45° 19' 14.2819", W092° 45' 32.8652"	6000	VNAV	200	FLY_BY	TF
WAHLI	WP	N45° 29' 49.5476", W092° 25' 59.1228"	9000	VNAV	200	FLY_BY	TF
CUSAY	WP	N46° 01' 07.8400", W091° 26' 47.1400"	12000	VNAV	240	FLY_BY	TF
ENNDD	WP	N46° 02' 24.6226", W089° 22' 42.5344"	12000	VNAV	240	FLY_BY	TF
AROND	WP	N45° 59' 36.9996", W086° 30' 09.0000"	12000	VNAV	240	FLY_BY	TF

Flyability

Flight Type:	SID
Selected Airport:	KMSP [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

DME DME Assessment Results for NRTN1 path NRTN_AROND

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC, TACAN
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Not included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	HYR	N46° 01' 08.4250", W091° 26' 47.0246"	0.0 E	40	L		NO	Enabled	3 %	2.6 %
2	TVC	N44° 40' 04.4971", W085° 33' 00.0403"	2.0 W	130	DH		NO	Enabled	14.6 %	15.4 %
3	ISQ	N45° 58' 34.8062", W086° 10' 24.3707"	-0.0 E	130	DH		NO	Enabled	35.8 %	37.8 %
4	RZN	N45° 49' 13.6015", W092° 22' 28.2562"	-0.0 E	40	L		NO	Enabled	22.1 %	20.6 %
5	SAW	N46° 21' 32.1237", W087° 23' 50.7186"	4.0 W	130	H		NO	Enabled	21.1 %	22.2 %
6	MSP	N44° 53' 47.3958", W093° 14' 11.5137"	2.0 E	130	DH		NO	Enabled	29.1 %	26.9 %
7	SSM	N46° 24' 43.5967", W084° 18' 53.5378"	4.0 W	130	DH		NO	Enabled	8.9 %	9.4 %
8	CMX	N47° 10' 12.9420", W088° 29' 07.4148"	2.0 W	130	DH		NO	Enabled	54 %	56.9 %
9	FCM	N44° 49' 31.2603", W093° 26' 33.6793"	1.0 E	40	L		NO	Enabled	0.8 %	0.7 %
10	IMT	N45° 48' 57.7573", W088° 06' 43.6909"	0.0 E	40	L		NO	Enabled	13.4 %	14.1 %
11	FGT	N44° 37' 51.4303", W093° 10' 55.3911"	6.0 E	130	H		NO	Enabled	1.3 %	1.1 %
12	RHI	N45° 38' 01.6407", W089° 27' 28.0111"	2.0 E	130	DH		NO	Enabled	67.3 %	69.2 %
13	GEP	N45° 08' 44.4656", W093° 22' 23.4514"	6.0 E	130	H		NO	Enabled	3.5 %	3 %
14	ESC	N45° 43' 21.4870", W087° 05' 22.5538"	0.0 E	40	L		NO	Enabled	10.6 %	11.2 %

DME DME Assessment Results for NRTN1 path NRTN_AROND

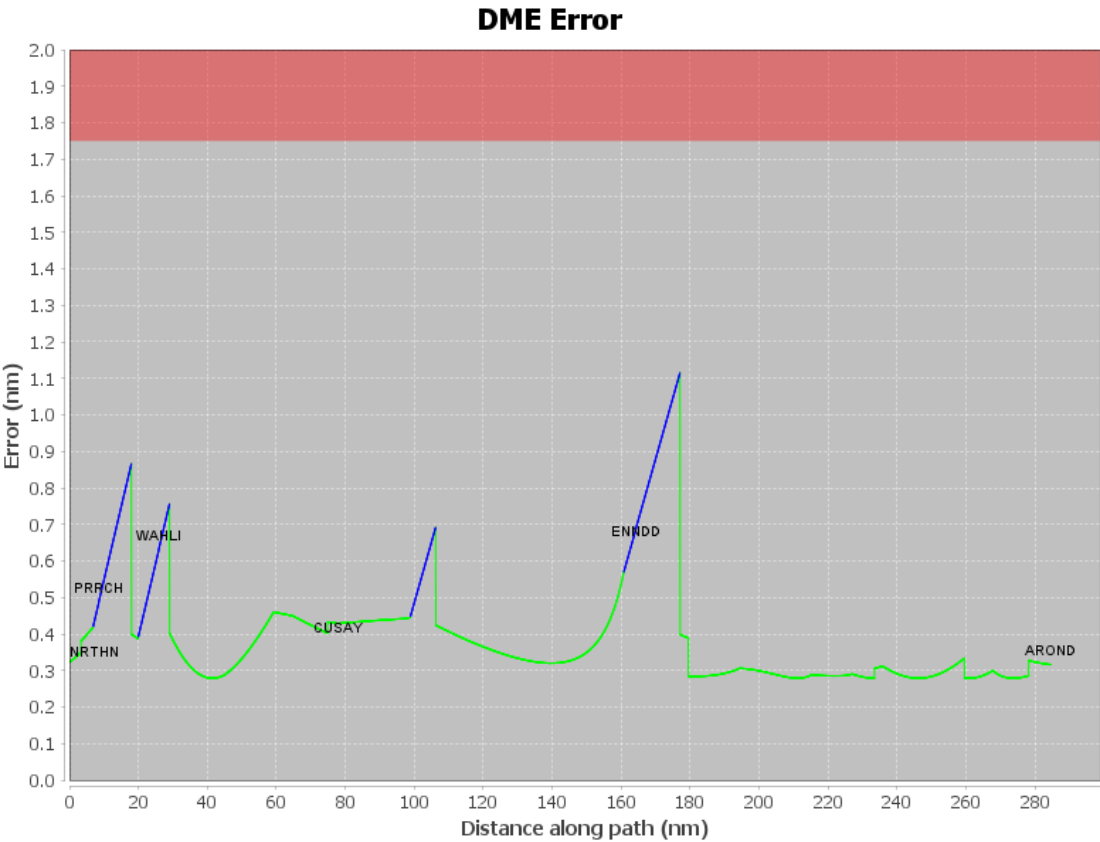
Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0	FGT	GEP	MSP	FCM		
2.0	FGT	GEP	MSP			
2.7	GEP	MSP				
2.9	RZN	GEP	MSP			
5.7	GEP	MSP				
6.9						
18.0	RZN	GEP				
19.9						
29.1	RZN	MSP				
35.7	RZN	MSP	FGT			
36.3	RZN	MSP				
52.6	RZN	MSP	RHI			
58.2	RZN	MSP	RHI	HYR		
64.2	RHI	MSP	HYR			
65.7	RHI	MSP				
98.8						
106.2	CMX	RHI				
115.0	CMX	RHI	RZN			
133.8	CMX	RHI				
160.8						
177.1	CMX	ISQ	RHI			
181.1	CMX	IMT	RHI	ISQ		
214.9	IMT	RHI	CMX	SAW	ISQ	
221.4	CMX	RHI	SAW	ISQ		
226.6	CMX	RHI	SAW	ESC	ISQ	
233.5	CMX	RHI	ISQ	SAW		
240.8	SAW	ISQ	CMX	RHI	TVC	
273.5	SAW	ESC	CMX	TVC	ISQ	SSM
278.2	TVC	ESC	CMX	SSM	ISQ	

Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N45° 17' 47.7254", W092° 46' 42.2991"	N45° 25' 01.7617", W092° 34' 52.5253"	11.1518
2	N45° 26' 10.7315", W092° 32' 44.9464"	N45° 31' 44.8081", W092° 22' 24.7037"	9.1475
3	N46° 01' 38.8711", W090° 56' 39.6880"	N46° 01' 47.9137", W090° 46' 02.6522"	7.3991
4	N46° 02' 24.1252", W089° 27' 46.8294"	N46° 02' 19.1806", W089° 04' 20.5588"	16.3155

Available DMEs by Waypoints			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
NRTN	PRRCH	FCM, FGT, GEP, RZN, MSP	
PRRCH	WAHLI	GEP, RZN	
WAHLI	CUSAY	HYR, FGT, RHI, RZN, MSP	
CUSAY	ENNDD	RHI, RZN, MSP, CMX	
ENNDD	AROND	TVC, IMT, RHI, ESC, ISQ, SAW, SSM, CMX	

DME DME Assessment Results for NRTHN1 path NRTHN_AROND

User Data Files								
#	File Name							
None								
User DMEs								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ESV MNM [IFPA] MNM	N45° 10' 48.5498", W087° 38' 49.7951"	0.0 E	40	649.3	109.6	ESV MNM [IFPA]	
ESV:		Bearing [True]: 267.0° to 282.0° Bearing [Mag]: 267.0° to 282.0°				Arc Distance: Out to 85.0 NM Altitude: 7500.0 to 15500.0 ft		
2	ESV GEP [IFPA] GEP	N45° 08' 44.4656", W093° 22' 23.4514"	6.0 E	130	877.3	117.3	ESV GEP [IFPA]	
ESV:		Bearing [True]: 68.0° to 89.0° Bearing [Mag]: 62.0° to 83.0°				Arc Distance: Out to 64.0 NM Altitude: 9000.0 to 17000.0 ft		
3	DWN FAA 703966-20 DWN	N45° 05' 14.8650", W094° 27' 13.8590"	0.0 E	40	1130	109.0	DWN FAA 703966-20	
ESV:		Bearing [True]: 326.0° to 89.0° Bearing [Mag]: 326.0° to 89.0°				Arc Distance: Out to 65.0 NM Altitude: 4200.0 to 20000.0 ft		
4	ESV FGT [IFPA] FGT	N44° 37' 51.4303", W093° 10' 55.3911"	6.0 E	130	926.4	115.7	ESV FGT [IFPA]	
ESV:		Bearing [True]: 31.0° to 55.0° Bearing [Mag]: 25.0° to 49.0°				Arc Distance: Out to 72.0 NM Altitude: 9000.0 to 17000.0 ft		
5	ESV RZN [IFPA] RZN	N45° 49' 13.6015", W092° 22' 28.2562"	-0.0 E	40	986.6	109.4	ESV RZN [IFPA]	
ESV:		Bearing [True]: 67.0° to 114.0° Bearing [Mag]: 67.0° to 114.0°				Arc Distance: Out to 96.0 NM Altitude: 9900.0 to 19000.0 ft		



DME DME Assessment Results for NRTHN1 path NRTHN_AROND

Graphic Depiction 1

