

**Preliminary Needs for 2011 10-Year Assessment Projects  
Stakeholder Needs Review**

	A	B	C	D	E	F	H	I	J	S	T	AG
	System Additions	2009 Network Model Need Year	2010 Network Model Need Year	2011 Network Model Need Year	2010 Projected In-service Year	2011 Projected In-Service Year	Comment	Planning Zone	Need Category	Planned, Proposed or Provi-sional	Sensitive to generation?	CA/ CPCN?
1												
2	Upgrade McKenna 6.3 MVAR capacitor bank to 15.3 MVAR and upgrade Chaffee Creek 8.1 MVAR bank to 14.4 MVAR	2013	2011	2011	2011	2011		1	reliability (69B2, 69B3)	Proposed		N
3	Install 69-kV bus tie breaker at Delta Substation		2011		2011	2011	U.P. Collaborative - reliability/diversity driver	2	reliability (C1), operating flexibility	Proposed	N	N
4	Rebuild Y-33 Brodhead to South Monroe 69-kV line	2011*	2011*	2011*	2011	2012	project need dates are based on the Y33 project scope	3	reliability (B2, 69B2, 69B3)	Planned	N	Y
5	Rebuild 2.37 miles of 69 kV from Sunset Point to Pearl Ave with 477 ACSR		2011	2011	2011	2012	delayed due to easement issues	4	reliability (69B2, 69B3)	Planned		N
6	Reconfigure Kewaunee 345/138-kV switchyard and install a second 500 MVA 345/138-kV transformer		2011		2011	2011	On sch for 2011 ISD	4	reliability (C3), condition	Proposed		Y
7	Construct 115-kV line from new Woodmin Substation to the Clear Lake Substation	2012	2012	2012	2012	2012		1	T-D interconnection	Proposed		Y
8	Install second 138/69-kV transformer and a 138-kV ring bus at Chandler Substation		2012		2012	2012	This project is part of the Escanaba area solution set D, local constraints are frequent so the need is really 2010	2	reliability (69B3)	Proposed		N
9	Replace five 69-kV breakers at Delta Substation		2012		2012	2012	U.P. Collaborative - needed to address existing stability issues	2	stability, operating flexibility	Proposed		N
10	Relocate Engadine 69-kV load		2012	2011	2012	2012		2	reliability (69B2)	Proposed		N
11	Rebuild part of the Y-8 Dane-Dam Heights 69-kV line*	2015	2015	>2026	2012	2012		3b	reliability, asset renewal, potential T-D interconnection	Planned	Y	N
12	Construct Canal-Dunn Road 138-kV line		2012	2012	2012	2012	On sch for 2012 ISD	4	reliability (69A, 69B2, 69B3, 69C3)	Planned	Y	Y
13	Install 100 MVA 138/69-kV transformer at Dunn Road		2012	2012	2012	2012	On sch for 2012 ISD	4	reliability (69A, 69B2, 69B3, 69C3)	Proposed	Y	Y
14	Construct Monroe County-Council Creek 161-kV line and Timberwolf 69-kV switching station	2013	2013	2013	2013	2013		1	economics, reliability (B2, C3)	Proposed	Y	N
15	Install a 161/138-kV transformer at Council Creek Substation	2013	2013	2013	2013	2013	Part of MOC-COC project	1	economics, reliability (B2, C3)	Proposed	Y	N
16	Uprate Council Creek-Petenwell 138-kV line	2013	2013	2013	2013	2013	Part of MOC-COC project	1	economics, reliability (B2)	Proposed	Y	N
17	Reconfigure Petenwell 138-kV bus	-	2011	2011	2013	2015	Work may be done with transformer replacement	1	operating flexibility	Provisional	N	
18	Construct 345-kV line from Rockdale to Cardinal	2013*	2013*	2013*	2013	2013	Project need dates are based on the Rockdale-West Middleton project scope	3	reliability (B2, C5)	Planned	N	Y
19	Construct a 345-kV bus and install a 345/138 kV 500 MVA transformer at Cardinal Substation	2013*	2013*	2013*	2013	2013	Project need dates are based on the Rockdale-West Middleton project scope	3	reliability (B2, C5)	Planned	N	Y
20	Install 2-16.33 MVAR 69-kV capacitor banks at Nine Springs Substation	2008*	2008*	2008*	2013	2013	Project need dates are based on the Nine Springs/Pflaum area project scope	3	reliability (69B2)	Proposed	N	N
21	Uprate Fitchburg-Nine Springs 69-kV and Royster-Pflaum 69-kV lines and move AGA load to the Royster-Femrite 69-kV line	2008*	2008*	2008*	2013	2013	Project need dates are based on the Nine Springs/Pflaum area project scope	3	reliability (69B2)	Proposed	N	N
22	Rebuild Pleasant Prairie 345-kV bus	N/A	N/A	2013	N/A	2013	new, related to P4-Zion EC	5	operating flexibility	Proposed		

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1												
23	Rebuild Straits-Pine River lines 6904/5 for 138 kV and operate at 69 kV		2014		2014	2014	U.P. Collaborative based, uncertain status of Frontier T-D, but being built for future conversion to 138 Kv;	2	reliability (B2)	Proposed	Y	N
24	Uprate overhead portions of Straits-McGulpin 138-kV circuits #1 & #3 to 230 F degree summer emergency ratings		2012		2014	2012	U.P. Collaborative based, required to fully utilize Flow Control as well as provide additional capacity during outages;	2	reliability (B2)	Proposed		N
25	Install power flow control at Straits 138-kV Substation		2010	2010	2014	2014	U.P. Collaborative - violations found during shoulder peak cases, operating/maintenance need years are 2011	2	reliability (B1)	Proposed		
26	Energize Hiawatha-Indian Lake at 138 kV		2014		2014	2014	U.P. Collaborative - opportunity to energize non-op assets that will also complement the Flow Control Project	2	reliability (B2)	Proposed		
27	Uprate Munising-Seney-Blaney Park 69-kV line to 167 degrees F		2014		2014	2014	U.P. Collaborative - local reliability/diversity	2	reliability (69B2)	Provisional		
28	Construct 18th Road-Chandler double circuit 138-kV lines and operate at 138/69		2014		2014	2014		2	reliability (69B3), economic	Proposed		
29	Construct 18th Road 138/69-kV Substation and install two 138/69-kV transformers		2014		2014	2014		2	reliability (69B3), economic	Proposed		
30	Install 1-8.16 MVAR 69-kV capacitor banks at 18th Road		2014		2014	2014		2	reliability (69B3)	Proposed		
31	Rebuild the Y-119 Sun Valley Tap to Oregon 69-kV line	2008	2025	>2026	2014	2020	Project ISD delayed due to higher validated line ratings; project status is changed from proposed to provisional; 4087 PRF ISD 2014. It was decided to use 2020 ISD based on preliminary AM need date for rebuilding this line	3	reliability, condition (69B3, 69C3), economic benefits?	Provisional	N	N
32	Install 3-75 MVAR capacitor banks at Bluemound Substation			TBD	2014	2015	no issues found in screen, but vars at Oak Creek are bumping up against their max in our peak cases. Suggest revisiting this in fall 2011 to determine if this project is no longer needed. Delay to 2015 for now.	5	reliability (B1)	Provisional	N	N
33	Upgrade 4.1 MVAR capacitor bank to 8.2 MVAR and install a new 8.2 MVAR capacitor bank at Ripon 69-kV Substation	2016	2015	>2026	2015	2015		1	reliability (69B2)	Provisional		N
34	Construct a 69-kV line from SW Ripon to the Ripon-Metomen 69-kV line	2014	2015	2016	2015	2016	customer postponed	1	T-D interconnection	Provisional		N
35	Replace Petenwell 138/69-kV transformer	-	2015	2018	2015	2015	Need year without Big Pond redispatch 2009TYA heavily loading 95% in 2024	1	reliability (A, 69B2)	Provisional	Y	
36	Construct a new Arnold 345-kV Substation and install a 345/138-kV transformer		2015		2015	2015	U.P. Collaborative - part of Escanaba area solution set D	2	reliability (B1)	Proposed		
37	Uprate 6927 West Middleton-Stage Coach 69-kV line to 106 MVA SE	N/A	2015	>2026	2015	2015	Need date beyond 2026 in 2011 TYA (96% in 2026 sp model), 3817 PRF ISD 2015 -- Keep 2015 date	3	reliability (69B2, 69B3)	Provisional	N	
38	Uprate Arcadian-Waukesha 138-kV lines KK9942/KK9962		2010	2016	2015	2016		5	reliability (B2)	Provisional	Y	N

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1												
39	Replace two existing 345/138-kV transformers at Arcadian Substation with 1-500 MVA transformer		2020	2023	2015	2020	2023 is new need date based on 2011 analyses;	5	reliability (B3)	Provisional	Y	
40	Construct double-circuit 138-kV line to serve Milwaukee County T-D interconnection		2015	2015	new	2015	Customer driver D-T interconnection	5	T-D interconnection	Proposed		
41	Replace existing 56 MVA Harrison 138/69-kV transformer with a 100 MVA transformer	-	2016	>2026	2016	2016	Harrison transformer (mfg 1989) could be used to replace Arnott transformer (mfg 1956).	1	reliability (A)	Provisional		
42	Uprate Pine River-Nine Mile 69-kV line 6923 to 167 degrees F and asset renewal for 6921/3		2016		2016	2016	This project will become a rebuild of Pine River-9 Mile if Frontier T/D materializes	2	reliability (69B2), condition	Proposed		
43	Construct new 138-kV bus and install a 138/69-kV 100 MVA transformer at South Lake Geneva Substation	2016	2016	>2026	2016	2018		3b	reliability (69B2)	Proposed	Y	N
44	Construct new 138-kV line from North Lake Geneva to South Lake Geneva Substation	2016	2016	>2026	2016	2018		3b	reliability (69B2), T-D interconnection	Proposed	Y	N
45	Replace 138/69-kV transformer at Metomen Substation	2017	2017	2017	2017	2017		1	reliability (A, 69B3)	Proposed		N
46	Install a second 138/69-kV transformer at Wautoma Substation	2017	2018	>2026	2018	2018	PRF ISD 6/1/2017	1	reliability (A, 69B2)	Provisional		N
47	Uprate Castle Rock-Mckenna 69-kV line	2017	2016	2024	2017	2017		1	reliability (69B2, 69B3)	Provisional	Y	N
48	Install 2-24.5 Mvar 138-kV capacitor bank and 1-18 Mvar 69-kV capacitor bank at Brick Church substation	2011	2017	>2026	2017	2017		3b	reliability (69B2)	Provisional	N	
49	Construct 69-kV double-circuit line between McCue and Lamar substations	2017	2017	>2026	2017	2017	Need slid even with 2009 load forecast, was help as could be an economic driven project. It was decided to wait until economic screening is finished before revising the ISD.	3	reliability (A, 69B2), economics	Provisional	Y	N
50	Construct Pleasant Prairie-Zion Energy Center 345-kV line		2017	2017	new	2014	not a reliability driven project, need is economic benefits	5	economics	Provisional		
51	Uprate Oak Creek-Bluemound 230-kV line	N/A	N/A	?	new	2021	long lead time outage of transformer T884 overloads Oak Creek-Bluemound 230-kV line to 109% in 2021 flo Oak Creek bus tie 6-7; write provisional PRF by April	5	operating flexibility?	Provisional		
52	Construct Fairwater-Mackford Prairie 69-kV line	2018	2019	>2026	2018	2018	Need year far enough out no need to delay now	1	reliability (69B2), economics?	Provisional	Y	
53	Reconfigure the North Randolph-Ripon 69-kV line to form a second Ripon-Metomen 69-kV line and retire the circuit between Metomen and the Mackford Prairie tap	2021	2019	>2026	2018	2018	Section of Y-26 to be retired can be maintained until 2018 without major work	1	reliability (69B2), economics?	Provisional		Y
54	Convert Necedah distribution substation from 69 kV to 138 kV	2018	2018	>2026	2018	2018		1	reliability (69B2, 69B3)	Provisional		N
55	Replace existing Caroline 115/69-kV transformer	-	2018	>2026	2018	2018		1	reliability (69B3)	Provisional		N
56	Install a second 100 MVA 138/69 kV transformer at Hillman Substation	2018	2018	>2026	2018	2018	need date beyond 2026 in 2011 TYA; 3825 PRF ISD 2018. Itt was decided to hold the 2018 ISD.	3	reliability (69B2, 69B3)	Provisional	N	
57	Rebuild Y-32 Colley Road-Brick Church 69-kV line	2013	2013	>2026	2018	2018		3b	reliability (B2, 69B3, 69C5, C3) condition	Provisional	Y	Y

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58	Install a second 138/69-kV transformer at Spring Green with a 100 MVA summer normal rating	2016	2019	>2026	2018	2018	need date beyond 2026 in 2011 TYA; 3152 PRF ISD 2018. It was decided to hold the 2018 ISD. Would pick 2019 based on 2010 TYA, but want to save some PRF work since ISD is 2018.	3	reliability (69B3)	Provisional	N	N
59	Convert Forest Junction - Howards Grove and a portion of the Howards Grove - Holland 138-kV circuits to 345-kV	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
60	Barnhart Substation: Construct new 345/138-kV substation with new 500 MVA 345/138-kV transformer	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
61	Branch River Substation: Construct new 345-kV switching station	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
62	Uprate the Edgewater-Cedarsauk 345-kV circuit	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
63	Construct a new Barnhart - Plymouth - Howards Grove - Erdman 138-kV circuit	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
64	Point Beach Substation: Install new series 345-kV breaker for circuit Q-303	N/A	N/A	2018	N/A	2018	BBR projects related to Point Beach long-term upgrades	4	new generation	Proposed		Y
65	Install 2-16.33 Mvar 69-kV capacitor banks at North Monroe	2018	2021	>2026	2018	2021	need date beyond 2026 in 2011 TYA; 2073 PRF ISD 2018. It was decided to delay to 2021 based on 2010 TYA.	3	reliability (B2)	Provisional	N	
66	Install 1-16.33 MVAR 69-kV capacitor bank at Verona Substation	2014	2021	>2026	2018	2021	need date beyond 2026 in 2011 TYA; 3899 PRF ISD 2018; It was decided to delay to 2021 based on 2010 TYA.	3	reliability (A, B2, B3)	Provisional	N	N
67	Uprate Y87 North Monroe-South Monroe 69-kV line to 115 MVA SE	N/A	2018	>2026	2018	2018	need date beyond 2026 in 2011 TYA; 3818 PRF ISD 2018. It was decided to hold the 2018 ISD based on 2010 TYA.	3	reliability (69B2)	Provisional	N	
68	Construct second Dunn Road-Egg Harbor 69-kV line	2024+	2025+	2026+	2018	2018	proposal to defer to 2021, unless economic benefits show ASAP	4	reliability (69B2)	Provisional	Y	Y
69	Construct Spring Valley-Twin Lakes-South Lake Geneva 138-kV line		2018		2018	2019		3 & 5	T-D interconnection, reliability (69B2)	Provisional	Y	N
70	Construct Badger Coulee 345-kV line	N/A	2018*	2018*	new	2018		3	policy benefits	Provisional		
71	Uprate Winneconne-Sunset Point 69-kV line Y-103	-	2019	>2026	2019	2019		1	reliability (69B2)	Provisional	N	N
72	Uprate Ripon-Northwest Ripon 69-kV line Y-93	-	2019	>2026	2019	2019		1	reliability (69B2)	Provisional	N	N

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1												
73	Uprate Y159 Brick Church-Walworth 69-kV line to 115 MVA	2017	2021	>2026	2021	2021	Match the 2010 date	3b	reliability (69B2)	Provisional	N	N
74	Construct Dubuque-Spring Green-Cardinal 345-kV line	N/A	2020*	2020*	new	2020		3	policy benefits			
75	Uprate the 6986 Royster to Sycamore 69-kV line to 115 MVA	2020	2020	2018	2019	2018	need date is advanced by two years in 2011 TYA; 3902 PRF ISD 2019. It was decided to advance the ISD to 2018.	3	reliability (69B3)	Provisional	N	N
76	Install 2-16.33 Mvar 69-kV capacitor banks at Dam Heights	2017	2021	>2026	2019	2019	2023 need and ISD	3b	reliability (69B2)	Provisional	N	Y
77	Install 4-49 MVAR 138-kV capacitor banks at Concord Substation	2016	2021	>2026	2019	2020	new need date is 2021	3b	reliability (B2)	Provisional	Y	N
78	Install 2-16.33 MVAR 69-kV capacitor banks at Eden Substation	2019	2019	>2026	2019	2019	need date beyond 2026 in 2011 TYA; 3176 PRF ISD 2019. It was decided to hold the 2019 ISD based on 2010 TYA.	3	reliability (A, B2)	Provisional	N	N
79	Install 1-8.16 MVAR capacitor bank at Boscobel 69-kV Substation and upgrade existing 5.4 MVAR bank with an 8.16 MVAR bank	2019	2022	>2026	2019	2015	Change the ISD from 2019 to 2015 considering Gran Grae Xfmr long lead impact. Need advance the existing PRF. The 2015 date is chosen because of the 4 year lead time from PM.	3	reliability (69B2)	Provisional	N	
80	Construct a Lake Delton-Birchwood 138-kV line	2017	2022	>2026	2020	2020		3b	reliability (B2)	Provisional	Y	
81	Construct Cardinal-Blount 138-kV line	>2024	2020*	>2026	2020	2020	need date beyond 2026 in 2011 (based on manual study of COL-NMA N-2 and CHR-KEG N-2 on year 5, 10 and 15 models); 3965 PRF ISD 2020. After talking with David, it was decided to keep the 2020 ISD considering the potential ROE-WMD maintenance outage + C5.	3	reliability (C5)	Provisional	Y	
82	Install 2-16.33 Mvar 69-kV capacitor banks at Sun Prairie	2021	2022	>2026	2020	2022	need date beyond 2026 in 2011 TYA; 3901 PRF ISD 2020. It was decided to delay to 2022 based on 2010 TYA.	3	reliability (69B2, 69B3)	Provisional	N	
83	Install 2-12.25 MVAR 69-kV capacitor banks at Mazomanie Substation	2024	2023	>2026	2020	2023	need date beyond 2026 in 2011 TYA; 3174 PRF ISD 2020. It was decided to delay to 2023 based on 2010 TYA.	3	reliability (69B2)	Provisional	N	N
84	Replace two existing 138/69-kV transformers at Glenview Substation with 100 MVA transformers	2024+	2025+	2026+	2020	2020	proposal to defer to 2025, but may hold at 2020 until economic benefits determined	4	reliability (69B3)	Provisional	Y	Y
85	Upgrade Oak Creek-Pennsylvania 138-kV line		>2025	>2026	2022	2022	no issues in 2011 analyses	5	reliability (B2)	Provisional	N	N
86	Install 2-32 Mvar capacitor banks at Mukwonago 138-kV Substation		>2025	>2026	2022	TBD	no issues in 2011 analyses; suggest cancelling PRF and changing idev ISD to 2050	5	reliability (B2)	Provisional	N	Y

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87	Rebuild West Middleton-Pheasant Branch 69-kV line with double circuits to achieve a 240 MVA SE on each circuit	2024	2024	2022	new	2022	it was decided to list the double circuit project in the provisional PRF for now and build to 138-kV standards. The existing 6967 line is 4.52 miles; 2.57 miles of merlin needs to be rebuilt at least. The rest of line has 954 ACSR.					
88	Construct a Hubbard-East Beaver Dam 138-kV line	2019	2022	>2026	2022	2022		3b	reliability (B2)	Provisional	Y	N
89	Uprate X-67 Portage-Trienda 138-kV line to 373 MVA	2017	2022	>2026	2022	2022		3b	reliability (69B2)	Provisional		N
90	Construct Shoto to Custer 138-kV line		2022	2026+	2022	2022	keep date until MPU unit retirements fully understood.	4	reliability (69B2, 69B3)	Provisional	Y	Y
91	Install 138/69-kV transformer at Custer Substation		2022	2026+	2022	2022	keep date until MPU unit retirements fully understood.	4	reliability (69B2, 69B3)	Provisional	Y	N
92	Replace two existing 138/69-kV transformers at Sunset Point Substation with 100 MVA transformers	2025	2024	2026+	2024	2024	Keep date for now	4	reliability (69B3)	Provisional	Y	N
93	Construct a 345-kV bus, install a 345/138-kV 500 MVA transformer at North Randolph and loop the Columbia to South Fond Du Lac 345-kV line into the substation	2021	2025	>2026	2025	2025		3b	reliability (B2)	Provisional		Y
94	Rebuild M38-Atlantic 69-kV line		2009	?	TBD	2013	this has been recently changed to a rebuild due to the number of structures required to be replaced and the Portage Generation concerns.	2	reliability (69B2)	Planned		N
95	Construct Gwinn-Forsyth second 69-kV line		2016		TBD	TBD	Recent review of this U.P. Collaborative project shows no need for the project in the 15-year horizon, no PRF to be developed at this time.	2	reliability (69B2)	Provisional		N
96	Uprate Columbia 345/138-kV transformer T-22 to 527 MVA	2015	TBD	>2026	TBD	TBD	PRF cancelled, leave in list with TBD ISD	3b	reliability (B3)	Provisional		N
97	Reconductor Ramsey-Harbor 138-kV line		TBD	>2026	TBD	TBD	no issues in 2011 analyses -- Off Peak conditions create problems. Suggest running remaining analyses before determining whether to cancel this PRF.	5	reliability	Provisional	Y	
98												
99												
100												
101												
102												
103	* = dates based on approved project scope ISDs											