	A	С	D	E	G	Н	J	K	L	U
1	System Changes	2010 TYA Network Need Year	2011 TYA Network Need Year	2012 TYA Network Need Year	2011 TYA Projected In-Service Year	2012 TYA Projected In- Service Year	Comment	Planning Zone	Need Category	Planned, Proposed or Provisional
2	Construct 115-kV line from new Woodmin Substation to the Clear Lake Substation	2012	2012	2012	2012	2012	Scheduled ISD of June 2012	1	T-D interconnection	Planned
3	Relocate Engadine 69-kV load	2012	2011	2011	2012	2012		2	reliability (69B2)	Planned
4	Rebuild part of the Y-8 Dane-Dam Heights 69-kV line*	2015	>2026	2012	2012	2012	Project will be completed in 2012	3b	reliability, asset renewal, potential T-D interconnection	Planned
5	Rebuild M38-Atlantic 69-kV line	2009	2011	2011	2013	2013	On SBRM list with 2009 need date.	2	reliability (69B2)	Planned
6	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
7	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
8	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)	Planned
9	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)	Planned
10	Rebuild Pleasant Prairie 345-kV bus	N/A	2013	2013	2013	2013	asset renewal and operating flexibility	5	operating flexibility	Planned
11	Straits Substation: Install redundant bus differentials on 138-kV buses			2013***		2013	Project developed as a result of the NERC Category C.9 analysis	2	reliability (C9)	Planned
12	Christiana Substation: Install redundant bus differentials on 138-kV buses			2013***		2013	Project developed as a result of the NERC Category C.9 analysis	3a	reliability (C9)	Planned
13	Rockdale substation: Install redundant bus differentials on 345-kV and 138-kV buses			2013***		2013	Project developed as a result of the NERC Category C.9 analysis	3a	reliability (C9)	Planned
14	Construct Pleasant Prairie-Zion Energy Center 345-kV line	2014	2014	2014	2014	2014		5	economics	Planned
15	Construct Monroe County-Council Creek 161-kV line and Timberwolf 69-kV switching station	2013	2013	2013	2014	2014		1	economics, reliability (B2, C3)	Planned
16	Install a 161/138-kV transformer at Council Creek Substation	2013	2013	2014	2014	2014	Part of MOC-COC project	1	economics, reliability (B2, C3)	Planned
17	Uprate Council Creek-Petenwell 138-kV line	2013	2013	2014	2014	2014	Part of MOC-COC project	1	economics, reliability (B2)	Planned
18	Rebuild Straits-Pine River lines 6904/5 for 138 kV and operate at 69 kV	2014	2014	2014	2014	2014	U.P. Collaborative based, uncertain status of Frontier T-D, but being built for future conversion to 138 Kv; on SBRM list with 2012 need date.	2	reliability (B2)	Planned
19	Install power flow control at Straits 138-kV Substation	2010	2010	2010	2014	2014	U.P. Collaborative - limitations found during shoulder peak cases, operating/maintenance need years are 2011	2	reliability (B1)	Planned
20	Energize Hiawatha-Indian Lake at 138 kV	2014	2014	2014	2014	2014	U.P. Collaborative - opportunity to energize non-op assets that will also complement the Flow Control Project	2	reliability (B2)	Proposed
21	Construct 18th Road-Chandler double circuit 138-kV lines and operate at 138/69	2014	2014	2014	2014	2014		2	reliability (69B3), economics	Proposed
22	Construct 18th Road 138/69-kV Substation and install one 138/69-kV transformer	2014	2014	2014	2014	2014	Part of 18th Road - Chandler project	2	reliability (69B3)	Proposed

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23	Install 1-8.16 Mvar 69-kV capacitor bank at 18th Road	2014	2014	2014	2014	2014	Part of 18th Road - Chandler project	2	reliability (69B3)	Proposed
	Uprate West Middleton - West Towne 69-kV line 6997			2014**		2014	SBRM Project - enhanced schedule. 2012 TYA models assumed existing rating anticipating mitigation with old ratings until project is implemented	3	reliability (B2)	Planned
25	Construct Morgan - Stiles and Morgan - Falls - Pioneer -Stiles two separate 138kV lines			2014***		2014	Northern Plan. Need identified in Northern Plan Studies	4	reliability (various TPL)	Provisional
	Rebuild Paddock - Shaw 69-kV line Y-54			2014**		2014	SBRM Project - enhanced schedule.	3b	reliability (B2)	Planned
27	Uprate Ripon-Northwest Ripon 69-kV line Y-93	2019	>2026	>2027	2019	2014	SBRM study need year 2012	1	reliability (69B2)	Proposed
28	Uprate Branch - Kansas 138-kV line 42152			2014**		2014	SBRM Project - enhanced schedule.	5	reliability (B2)	Planned
29	Re-conductor Albers - Kenosha 138-kV line 9352			2014**		2014	SBRM Project - enhanced schedule.	5	reliability (B2)	Planned
	Re-conductor Oak Creek - Ramsey 138-kV line 824			2014**		2014	SBRM Project - enhanced schedule.	5	reliability (B2)	Planned
	Rebuild Nicholson - Barland 138-kV line OACG48			2014**		2014	SBRM Project - enhanced schedule.	5	reliability (B2)	Planned
32	Rebuild Kenosha - Lakeview 138-kV line 9341			2014**		2014	SBRM Project - enhanced schedule.	5	reliability (B2)	Planned
33	Rebuild Omro - Berlin 69-kV line Y-80			2014**		2014	SBRM Project - enhanced schedule.	1	reliability (B2)	Planned
34	Construct a new Arnold 345-kV Substation and install a 345/138-kV transformer	2015	2015	2015	2015	2014	U.P. Collaborative - part of Escanaba area solution set D. Updated ISD based on PR03913.	2	reliability (B1)	Planned
35	Portage Substation: Install redundant bus differentials on 138-kV buses			2014***		2014	Project developed as a result of the NERC Category C.9 analysis	3b	reliability (C9)	Proposed
36	Presque Isle Substation: Install redundant bus differentials on 138-kV buses			2014***		2014	Project developed as a result of the NERC Category C.9 analysis	2	reliability (C9)	Proposed
37	Canal Substation: Install redundant bus differentials on 138-kV buses			2014***		2014	Project developed as a result of the NERC Category C.9 analysis	4	reliability (C9)	Proposed
38	Saukville Substation: Install redundant bus differentials on 138-kV buses			2014***		2014	Project developed as a result of the NERC Category C.9 analysis	5	reliability (C9)	Proposed
39	Reconfigure 138-kV bus and replace 138/69-kV transformer at Petenwell	2015	2018	2015	2015	2015	Need year without Big Pond redispatch	1	reliability (A, 69B2)	Proposed
40	Uprate Empire - Presque Isle 138-kV line Goose Lake			2015**		2015	SBRM project	2	reliability (B2)	Proposed
41	Arnold Subsation: Install 100 Mvar 345kV SVC			2015***		2015	Northen Plan Need identified in Northern Plan Studies	2	reliability (various TPL)	Provisional
42	Plains Substation: Install a 150 MVA 345kV SVC			2015***		2015	Northen Plan Need identified in Northern Plan Studies	2	reliability (various TPL)	Provisional
43	National Substation: Install one 100 MVA 138kV STATCOM and one100 MVA 345 kV STATCOM			2015***		2015	Northen Plan Need identified in Northern Plan Studies	2	reliability (various TPL)	Provisional
44	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	2022	2015	2015	2015	2015	With prior outage of the Gran Grae and its long lead impact, Cat B need year is 2015 per the 2012 TYA analysis. May need to be advanaced due to local customer flicker concerns. That will be determined during project development.	3	reliability (69B2)	Provisional
45	Uprate Manrap - Custer 69-kV line Y-MRP11			2015**		2015	SBRM Project. Need year developed in SBRM study	4	reliability (B2)	Proposed
	Construct 138-kV lines to serve Milwaukee County T-D interconnection	2015	2015	2015	2015	2015	Customer driver D-T interconnection	5	T-D interconnection	Proposed
47	Uprate Chaffee Creek - ACEC Coloma Tap 69-kV line Y-18			2015**		2015	SBRM Project	1	reliability (B2)	Proposed

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48	Uprate Castle Rock-Mckenna 69-kV line	2016	2024	2015**	2017	2015	SBRM Project; checking with PM to find out if we should roll 2015 SBRM project into existing 2017 PRF. Also may need to be coordinated with Strategic Projects for Cardinal Bluffs.	1	reliability (69B2, 69B3)	Proposed
49	Fitzgerald Substation: Install 2nd 345/138-kV transformer			2015*		2015		4		
50	Uprate Seney-Blaney Park 69-kV line to 167 degrees F	2014	2014	> 2027	2014	2015	U.P. Collaborative - local reliability/diversity. Original project is to uprate Munising-Seney- Blaney Park 69-kV line. The Munising-Seney section will be coverred by NP in 2020. The Seney-Balney portion is not currently covered by the NP. Some futures in the UP collaborative showed a overload need by 2014, Asset Renewal need is ASAP.	2	reliability (69B2)	Provisional
51	Uprate 6927 West Middleton-Stage Coach 69-kV line	2015	>2026	2027	2015	2016	2027 Cat B need year per the 2012 TYA. But special rating exception was applied in the 2012 TYA model. Per 2011 SBRM Impact Study with reduced ratings, the need date is 2012 and the preliminary ISD for the existing line rebuild is 2016.	3	reliability (69B2, 69B3)	Provisional
52	Uprate the 6986 Royster to Sycamore 69-kV line	2020	2018	>2027	2018	2016	Cat B need date is beyond 2027 in 2012 TYA mainly due to MGE load reduction near Royster area; Per 2011 SBRM Impact Study with reduced ratings, the need date for existing line rebuild is 2012 and the preliminary ISD is 2016.	3	reliability (69B3)	Provisional
53	Uprate Y87 North Monroe-South Monroe 69-kV line	2018	>2026	>2027	2018	2016	need date beyond 2027 in 2012TYA. Per 2011 SBRM Impact Study with reduced ratings, the need date for existing line rebuild is 2016 and the preliminary ISD is 2016.	3	reliability (69B2)	Provisional
54	Rebuild the Y-119 Sun Valley Tap to Oregon 69-kV line	2025	>2026	2026	2020	2016	2026 need year per the 2012 TYA. Special rating exception was applied in the 2012 TYA model. Per 2011 SBRM Impact Study with reduced ratings , the need date for the existing line rebuild is 2012 and the preliminary ISD is 2016.	3	reliability, condition (69B3, 69C3)	Provisional
55	Rebuild Stagecoach - Wick Drive 69-kV line Y-62			2016**		2016	SBRM Project	3a	reliability (B2)	Proposed
56	Loop Presque Isle - Tilden 138 kV line into National and upgrade National-Tilden 138 kV line			2016***		2016	Northen Plan - may delay to Montain Lake project	2	reliability (various TPL)	Provisional
57	Holmes - Delta County 138-kV two circuit project			2016***		2016	Northern Plan. Need identified in Northern Plan Studies	2 & 4	reliability (various TPL)	Provisional
58	Beardsley St. Substation: Install 3 69-kV line breakers to sectionalize 69-kV circuit J-10			2016***		2016		4	operating flexibility	
59	Uprate Winneconne-Sunset Point 69-kV line Y-103	>2025	>2026	>2027	2019		SBRM study need year 2015	1	reliability (69B2)	Proposed
60	Uprate Granville - Tamarack 138-kV line 3444			2016**		2016	SBRM Project	5	reliability (B2)	Proposed

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61	Uprate Racine - St. Rita 138-kV line 8531			2016**		2016	SBRM Project	5	reliability (B2)	
	Re-conductor Port Washington - Saukville 138-kV line 742			2016**		2016	SBRM Project	5	reliability (B2)	
63	Re-conductor Port Washington - Saukville 138-kV line 762			2016**		2016	SBRM Project	5	reliability (B2)	
	Uprate Morrison Ave - Sherman 115-kV line Z-52			2016**		2016	SBRM Project	1	reliability (B2)	
65	Rebuild Arcadian-Waukesha 138-kV lines KK9942/KK9962	2010	2016	2016	2016	2016	on 2009 SBRM list with 2011 need date	5	reliability (B2)	Proposed
	Uprate Rocky Run - Plover 115-kV line S-45			2016**		2016	SBRM Project	1	reliability (B2)	
	Uprate Wautoma - Wautoma tap 69-kV line Y-19			2016**		2016	SBRM Project	1	reliability (B2)	
	Uprate North Fond Du Lac - Metomen 69-kV line Y-27			2016**		2016	SBRM Project	1	reliability (B2)	
	Rebuild Boscobel - Muscoda 69-kV line Y-124			2016**		2016	SBRM Project	3a	reliability (B2)	
	Uprate Crystal Falls - Aspen 69-kV line ASPY51			2016**		2016	SBRM project	2	reliability (B2)	
	Rebuild Danz Ave - University 69-kV line O-15			2016**		2016	SBRM Project	4	reliability (B2)	
	Rebuild Pflaumn - Royster 69-kV line 6934			2016**		2016	SBRM Project	3a	reliability (B2)	
73	Uprate Whitewater - University 138-kV line 4453			2016**		2016	SBRM Project	3b	reliability (B2)	
	Uprate Rock Springs Tap - Kirkwood 138-kV line X-70			2016**		2016	SBRM Project	3b	reliability (B2)	
	Uprate Pleasant Prairie - Zion 345-kV line 2221			2016**		2016	SBRM Project	5	reliability (B2)	
76	Rebuild Fitchburg - Nine Springs 69-kV line 6943			2016**		2016	SBRM Project	3a	reliability (B2)	
	Rebuild Waunakee - Westport 69-kV line Y-131			2016**		2016	SBRM Project	3a	reliability (B2)	
	Uprate Oak Creek - St. Rita 138-kV line 885			2016**		2016	SBRM Project	5	reliability (B2)	
	Uprate Racine - Oak Creek 138-kV line 812			2016**		2016	SBRM Project	5	reliability (B2)	
	Uprate Ramsey - Barland 138-kV line NWHG41			2016**		2016	SBRM Project	5	reliability (B2)	
	Uprate Bain - Albers 138-kV line 63143			2016**		2016	SBRM Project	5	reliability (B2)	
82	Rebuild McCue - Redhawk Tap 69-kV line Y-171			2016**		2016	SBRM Project	3a	reliability (B2)	
83	Canal Substation: Install 138-kV and 69-kV breakers on 138/69-kV transformers			2017***		2017	Added for 2012 TYA. Project developed to reduce the severity of transformer fault. No room at substation. Substation rebuild would be needed (hence 2017 ISD).	4		
84	Highway V Substation: Install 138-kV and 69-kV breakers on 138/69-kV transformers			2017***		2017	Added for 2012 TYA. Project developed to reduce the severity of transformer fault. No room at substation. Substation rebuild would be needed (hence 2017 ISD)	4		
85		2017	2017	2017	2017	2017		1	reliability (A, 69B3)	Proposed
86	Construct a new Green Bay - Morgan - Plains - National 345 kV line			2017***		2017	Northern Plan. Need identified in Northern Plan Studies	2 & 4	reliability (various TPL)	Provisional
87	Construct Badger Coulee 345-kV line	2018	2018	2017	2018	2017	Project ISD changed from 2018 to 2017 Study Need year based on MVP projects.	3	policy benefits	Proposed
88	Construct a new National - Empire 138kV line			2018***		2018	Northen Plan - moved to Moutain Lake project Need identified in Northern Plan Studies	2	reliability (various TPL)	Provisional
89	Uprate X-67 Portage-Trienda 138-kV line to 373 MVA	2022	>2026	2018**	2022		SBRM list - 2018	3b	reliability (69B2)	Provisional
90	Upgrade Oak Creek-Pennsylvania 138-kV line	>2025	>2026	2018**	2022		SBRM Project no issues in 2011 analyses but on SBRM list w/2012 need date	5	reliability (B2)	Provisional
91	Upgrade 4.1 Mvar capacitor bank to 8.2 Mvar and install a new 8.2 Mvar capacitor bank at Ripon 69-kV Substation	2015	>2026	>2027	2015	2018		1	reliability (69B2)	Provisional

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92	Construct Fairwater-Mackford Prairie 69-kV line	2019	>2026	>2027	2017	2018	2018 date is driven by maintenance, network delayable, needs to stay synch'd with reconfig project	1	reliability (69B2)	Provisional
93	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	2019	>2026	>2027	2017	2018	SBRM study need year 2016 Section of Y-26 to be retired can be maintained until 2018 without major work, , needs to stay synch'd with Fairwater project	1	reliability (69B2), condition	Provisional
04	Convert Forest Junction - Howards Grove and a portion of the Howards Grove - Holland 138-kV circuits to 345-kV		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
95	Barnhart Substation: Construct new 345/138-kV substation with new 500 MVA 345/138-kV transformer		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
96	Branch River Substation: Construct new 345-kV switching station		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
97	Uprate the Edgewater-Cedarsauk 345-kV circuit		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
98	Construct a new Barnhart - Plymouth - Howards Grove - Erdman 138-kV circuit		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
	Point Beach Substation: Install new series 345-kV breaker for circuit Q-303		2018	2018	2018	2018	BBR projects related to Point Beach long- term upgrades	4	new generation	Proposed
100	Construct a new Green Bay - Morgan 138 kV line			2018***		2018	Northern Plan. Need identified in Northern Plan Studies	4	reliability (various TPL)	Provisional
101	Construct a new Gardner Park - Venus - National 345 kV line			2018***		2018	Northen Plan Need identified in Northern Plan Studies	1 & 2	reliability (various TPL)	Provisional
102	Rebuild Bunker Hill - Blackbrook 115 kV line			2018***		2018	Northen Plan, SBRM requires an uprate project need year 2015.	1	reliability (various TPL)	Provisional
103	Install a second 100 MVA 138/69 kV transformer at Hillman Substation	2018	>2026	>2027	2018	2018	Cat B need date based on SE beyond 2027 in 2012 TYA; However, the need date is current if we use Rate A. Affected by DPC load. Keep the 2018 ISD for Rate A need	3	reliability (69B2, 69B3)	Provisional
104	Install a second 138/69-kV transformer at Spring Green with a 100 MVA summer normal rating	2019	>2026	2019	2018	2018	2027 Cat B need date based on SE ratings in the 2012 TYA. 2019 need date based on SE ratings with Gran Grae xfmr prior outage. Keep 2018 ISD for now, but could consider delay to 2019.	3	reliability (69B3)	Provisional
105	Uprate University - Sugar Creek 138-kV line 6552			2018**		2018	SBRM Project	3b	reliability (B2)	
106	Construct Cardinal Bluffs 345-kV line	2020	2020	2018	2020	2018	Project ISD changed from 2020 to 2018. Study Need year based on MVP projects.	3	policy benefits	Provisional
107	Uprate Oak Creek-Bluemound 230-kV line	N/A	2021	2018**	2021	2018	SBRM Project (2018 ISD) long lead time outage of transformer T884 overloads Oak Creek-Bluemound 230-kV line to 109% in 2021	5	operating flexibility?	Provisional
108	Rebuild Y-32 Colley Road-Brick Church 69-kV line	2013	>2026	2021	2018	2018		3b	reliability (B2, 69B3, 69C5, C3) condition	Provisional

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109	Construct a new Spring Valley-North Lake Geneva 138-kV circuit	2016	>2026	2020	2019	2019	Scope changed to include the N Lake Geneva-S Lake Gneneva project from the 2011 Assessment. Urgent need to loop distribution substations, hence 2019 ASAP in- service date.	3b & 5	T-D interconnection,reliability (69B2)	Proposed
110	Construct a new 138/69-kV substation on Spring Valley - North Lake Geneva 138-kV circuit	2016	>2026	2020	2019	2019	Part of Spring Valley-Lake Geneva Project	3b & 5	T-D interconnection,reliability (69B2)	Proposed
111	Construct a new 69-kV circuit from Twin Lakes to the new substation	2016	>2026	2020	2019	2019	Part of Spring Valley-Lake Geneva Project	3b & 5	T-D interconnection,reliability (69B2)	Proposed
112	Uprate the Bain - Spring Valley 138-kV circuit	2016	>2026	2020	2019	2019	Part of Spring Valley-Lake Geneva Project	3b & 5	T-D interconnection,reliability (69B2)	Proposed
113	Uprate the Twin Lakes - Katzenberg 69-kV circuit	2016	>2026	2020	2019		Part of Spring Valley-Lake Geneva Project	3b & 5	T-D interconnection,reliability (69B2)	Proposed
114	Gran Grae - Boscobel 69-kV line rebuild Y-40			2019**		2019	SBRM Project	3a	reliability (B2)	
115	Marquette - Mackinac 138 kV project			2020***			Northen Plan Need identified in Northern Plan Studies Some components of this project may need to be advanced for either SBRM, D-T, G-T, or Asset Renewal ISDs	2	reliability (various TPL)	Provisional
116	Construct Cardinal-Blount 138-kV line	2020	2020	2020	2020	2020	(1) Cat B: need date is beyond 2027 in 2012. (2) C5: Christiana-Kegonsa DCKT outage in the 2022 SP causes West Middleton-Pleasant View 138 102% overload (partially due to the derate from 323 to 272 MVA 200 deg F SN/SE). (3) Detailed cascading analysis showed the project will help the unbounded cascading of Keg-Femrite + NMA-Yahara River identified in 2016 study. (4) The original C5 + ROE-WMD maintance outage concerns didn't show up with Badger-Coulee line in service. Less load in Dane County, but more generation at West Campus, MGE less import in the 2022 shoulder case. Therefore, keep the existing 2020 ISD as earliest achievable given needs described	3	reliability (C5)	Provisional
117	Construct a Lake Delton-Birchwood 138-kV line	2022	>2026	>2027	2020	2020	Create the new SBRM Rock Springs- Kirkwood and cancel Lake D-Birchwood	3b	reliability (B2)	Provisional
	Replace two existing 345/138-kV transformers at Arcadian Substation with 1-500 MVA transformer	2020	2023	>2027	2020	2020	INTERWOOD AND CANCEL LAKE D-DITCHWOOD	5	reliability (B3)	Provisional
119	Uprate Y159 Brick Church-Walworth 69-kV line to 115 MVA	2021	>2026	>2027	2021	2021	Match the 2010 date (to hedge if load forecast risesback to 2010 forecast levels)	3b	reliability (69B2)	Provisional

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120	Install 2-24.5 Mvar 138-kV capacitor bank and 1-18 Mvar 69-kV capacitor bank at Brick Church substation	2017	>2026	2021	2017	2021		3b	reliability (69B2)	Provisional
121	Install 2-16.33 Mvar 69-kV capacitor banks at North Monroe	2021	>2026	>2027	2021	2021	need date beyond 2027 in 2012 TYA; Keep 2021 ISD.	3	reliability (B2)	Provisional
122	Install 1-16.33 Mvar 69-kV capacitor bank at Verona Substation	2021	>2026	>2027	2021	2021	need date beyond 2027 in 2012 TYA; Keep 2021 ISD.	3	reliability (A, B2, B3)	Provisional
123	Replace existing 56 MVA Harrison 138/69-kV transformer with a 100 MVA transformer	2016	>2026	>2027	2016	2022	Harrison transformer (mfg 1989) could be used to replace Arnott transformer (mfg 1956).	1	reliability (A)	Provisional
124	Install a second 138/69-kV transformer at Wautoma Substation	2018	>2026	>2027	2018	2022		1	reliability (A, 69B2)	Provisional
125	Convert Necedah distribution substation from 69 kV to 138 kV	2018	>2026	>2027	2018	2022		1	reliability (69B2, 69B3)	Provisional
126	Replace existing Caroline 115/69-kV transformer	2018	>2026	>2027	2018	2022		1	reliability (69B3)	Provisional
127	Construct Shoto to Custer 138-kV line	2022	>2026	>2027	2022	2022	This project alone will not mitigate limitations due to potential generation retirements in the area. More study is needed to determine the full project keep ISD for now.	4	reliability (69B2, 69B3)	Provisional
128	Install 138/69-kV transformer at Custer Substation	2022	>2026	>2027	2022	2022	keep ISD for now	4	reliability (69B2, 69B3)	Provisional
129	Construct 69-kV double-circuit line between McCue and Lamar substations	2017	>2026	>2027	2019	2022		3	reliability (A, 69B2)	Provisional
130	Install 2-16.33 Mvar 69-kV capacitor banks at Eden Substation	2019	>2026	>2027	2019	2022	need date beyond 2027 in 2012 TYA;Use 2022 ISD.	3	reliability (A, B2)	Provisional
131	Install 2-16.33 Mvar 69-kV capacitor banks at Sun Prairie	2022	>2026	>2027	2022	2022	need date beyond 2027 in 2012 TYA; Keep 2022 ISD.	3	reliability (69B2, 69B3)	Provisional
132	Construct a Hubbard-East Beaver Dam 138-kV line	2022	>2026	>2027	2022	2022		3b	reliability (B2)	Provisional
133	Rebuild West Middleton-Pheasant Branch 69-kV line with double circuits to achieve a 240 MVA SE on each circuit	2024	2022	>2027	2022	2022	need date beyond 2027 (but very close 98.6% SE) in 2012 TYA; The SBRM driven Waunakee - Westport rebuild project may delay the project. Will keep 2022 ISD because of 2011 need year.	3	reliability (69B2)	Provisional
134	Install 2-16.33 Mvar 69-kV capacitor banks at Dam Heights	2021	>2026	>2027	2019	2023		3b	reliability (69B2)	Provisional
135	Install 4-49 Mvar 138-kV capacitor banks at Concord Substation	2021	>2026	>2027	2020	2023		3b	reliability (B2)	Provisional
136	Install 2-12.25 Mvar 69-kV capacitor banks at Mazomanie Substation	2023	>2026	>2027	2023	2023	need date beyond 2027 in 2012 TYA;Keep 2023 ISD.	3	reliability (69B2)	Provisional
137	Replace two existing 138/69-kV transformers at Sunset Point Substation with 100 MVA transformers	2024	>2026	>2027	2024	2024	Keep date for now	4	reliability (69B3)	Provisional
138	Rebuild Rock Springs - Artesian 138-kV line X-70			2024		2024	Lake Delton - Birchwood 138kV line would provide relief.	3b		

System Changes Network Need Year Network Need Year Projected In-Service Year		Α	С	D	Е	G	Н	J	K	L	U
Replace two existing 138/69-kV transformers at Glenview Substation with 100 MVA transformers 2025 Replace two existing 138/69-kV transformers at Glenview Substation with 100 MVA transformers 2025 2025 2025 2025 2025 2025 2025 2025 2025 2026 2025 2026 2027 2028 Provision A reliability (69B3) Provision Provision Provision 2027 2028 2028 2028 2029 2029 2029 2029 2029 2029 2029 2029 2029 2020 2020 2020 Provision 3b 141 Rebuild Portage - Columbia 138-kV line X-13 2025 2025 2025 2025 2025 2026 2026 2026 2026 2026 Provision	1	System Changes	Network	Network Need	Network	Projected In-Service	Projected In-		_	Need Category	Planned, Proposed or Provisional
Rebuild Portage - Columbia 138-kV line X-20 142 Uprate Center St - South Beaver Dam 2026 Construct a 345-kV bus, install a 345/138-kV 500 MVA transformer at North Randolph and loop the Columbia to 2025 2025 3b 3c potential economic benefits justification, if so, scope would need to be revised if not 3c reliability (B2) Provision	139	Substation with 100 MVA transformers	2025+	>2026	>2027	2025	2025	much higher than what is seen in the 2012 TYA Models. This is because of an interruptable customer. Due to historical loadings, a reasonable higher summertime load was simulated. Resulted in 100.4% loading in 2027SP model. Hold 2025 date for	4	reliability (69B3)	Provisional
142 Uprate Center St - South Beaver Dam 2026 2026 3b	140	Rebuild Portage - Columbia 138-kV line X-13			2025		2025		3b		
Construct a 345-kV bus, install a 345/138-kV 500 MVA transformer at North Randolph and loop the Columbia to 2025 >2026 >2027 2025 Cancel ? potential economic benefits justification, if so, scope would need to be revised if not 3b reliability (B2) Provision	141	Rebuild Portage - Columbia 138-kV line X-20			2025		2025		3b		
transformer at North Randolph and loop the Columbia to 2025 >2026 >2027 2025 Cancel ? scope would need to be revised if not 3b reliability (B2) Provision	142	Uprate Center St - South Beaver Dam			2026		2026		3b		
	143	transformer at North Randolph and loop the Columbia to	2025	>2026	>2027	2025	Cancel ?	scope would need to be revised if not	3b	reliability (B2)	Provisional
144											
145											
146 Legend			<u>'</u>		·						
147 * = dates based on approved project scope ISDs											
148 ** = SBRM Study Need Year											
149 *** = Other Major Project Study need year											
150											
151 No Shading = no change to project since the previous Assessment											
152 Orange Shading = new project, was not in Assessment project list											
153 Gray Shading = some change (e.g., In-service year or scope) since previous Assessment	153	Gray Shading = some change (e.g., In-service year or scope) s	ince previous i	Assessment							