Table PR-2
Transmission System Additions for 2010

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Construct 69-kV line from new Warrens Substation to the Council Creek-Tunnel City 69-kV line	2010	2010	1	T-D interconnection	Planned	F2173
Install 2-8.0 MVAR capacitor bank at Indian Lake 69-kV Substation	2010	2010	2	reliability (B1)	Proposed	F2223
Install reactor at Straits Substation	2010	2010	2	reliability (B1)	Proposed	F2966
Uprate Y-61 McCue-Lamar 69-kV line to achieve 300 deg F line ratings and install 2-12.45 MVAR 69-kV capacitor banks at Lamar Substation	2008	2010	3	reliability (69B2)	Planned	F2324
Uprate the Royster Substation terminals	2010	2010	3	reliability (B2)	Planned	F2317
Uprate Y-61 Sheepskin-Dana 69-kV line to 95 MVA	2017	2010	3	reliability (69B2)	Planned	F1868
Uprate Y-40 Gran Grae-Boscobel 69-kV line to achieve a 99 MVA summer emergency rating*	2017	2010	3	reliability (B2, 69B2)	Planned	F1444
Construct a 138-kV bus at Pleasant Valley Substation to permit second distribution transformer interconnection	2010	2010	5	T-D interconnection	Planned	F2086

Table PR-2
Transmission System Additions for 2010 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Expand 345-kV switchyard at Oak Creek to interconnect one new generator	2010	2010	5	new generation	Planned	F1729
Construct second Shorewood-Humboldt 138-kV underground cable*	2012	2010	5	reliability (B2)	Proposed	F2487

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-3
Transmission System Additions for 2011

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Upgrade McKenna 69-kV 6.3 MVAR capacitor bank to 15.3 MVAR and upgrade Chaffee Creek 69-kV 8.1 MVAR bank to 14.4 MVAR	2011	2011	1	reliability (69B2, 69B3)	Proposed	F2519
Replace two overhead Blount-Ruskin 69-kV lines with one underground 69-kV line	2010	2011	3	Completion of earlier project per agreement with the City of Madison	Planned	F2628
Install 2-16.33 MVAR 69-kV capacitor banks at Spring Green Substation	2011	2011	3	reliability (A, 69B3)	Planned	F2327
Install 1-32.66 MVAR 138-kV capacitor bank at Femrite Substation	2011	2011	3	reliability (A, C5)	Planned	F2516
Install 1-32.66 MVAR 138-kV capacitor bank at Kegonsa Substation	2011	2011	3	reliability (A, C5)	Planned	F3008
Rebuild Y-33 Brodhead to South Monroe 69-kV line	2011	2011	3	reliability (B2, 69B2, 69B3)	Planned	F2526
Uprate terminal limitations at McCue for the Y-79 McCue-Milton Lawns 69-kV line	2011	2011	3	reliability (69B2)	Proposed	F2405
Rebuild 2.37 miles of 69 kV from Sunset Point to Pearl Ave with 477 ACSR	2011	2011	4	reliability (69B2, 69B3)	Planned	F1361

Table PR-3
Transmission System Additions for 2011 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Reconfigure Kewaunee 345/138-kV switchyard and install a second 500 MVA 345/138-kV transformer	2011	2011	4	reliability (C3), condition	Proposed	F2437

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-4
Transmission System Additions for 2012

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Construct 115-kV line from new Woodmin Substation to the Clear Lake Substation	2012	2012	1	T-D interconnection	Proposed	F2495
Install second 138/69-kV transformer and a 138-kV ring bus at Chandler Substation	2012	2012	2	reliability (69B3)	Proposed	F3040
Relocate Engadine 69-kV load	2012	2012	2	reliability (69B2)	Provisional	F3073
Upgrade 69-kV equipment at Delta Substation	2012	2012	2	reliability (C1), operating flexibility	Proposed	F3066
Rebuild part of the Y-8 Dane-Dam Heights 69-kV line*	2015	2012	3	reliability, asset renewal, potential T-D interconnection	Planned	F1602
Construct Canal-Dunn Road 138-kV line	2012	2012	4	reliability (69A, 69B2, 69B3, 69C3)	Planned	F1358
Install 100 MVA 138/69-kV transformer at Dunn Road	2012	2012	4	reliability (69A, 69B2, 69B3, 69C3)	Planned	F1358

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-5
Transmission System Additions for 2013

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Reconfigure Petenwell 138-kV bus	2013	2013	1	reliability (C1), operating flexibility	Provisional	F3046
Construct Monroe County-Council Creek 161-kV line and Timberwolf 69-kV switching station	2013	2013	1	economics, reliability (A, B2, C3)	Proposed	F2454
Install a 161/138-kV transformer at Council Creek Substation	2013	2013	1	economics, reliability (A, B2, C3)	Proposed	F2454
Uprate Council Creek-Petenwell 138-kV line	2013	2013	1	economics, reliability (B2)	Proposed	F2454
Install 2-16.33 MVAR 69-kV capacitor banks at Nine Springs Substation	2006	2013	3	reliability (69B2)	Proposed	F2088
Uprate Fitchburg-Nine Springs 69-kV and Royster-Pflaum 69-kV lines and move AGA load to the Royster-Femrite 69-kV line	2006	2013	3	reliability (69B2)	Proposed	F2088
Install a 138/69-kV transformer at Bass Creek Substation	2010	2013	3	reliability (69B2)	Planned	F1869
Uprate X-12 Town Line Road-Bass Creek 138-kV line to 300 deg F	2010	2013	3	reliability (69B2)	Planned	F1869

Table PR-5
Transmission System Additions for 2013 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Construct 345-kV line from Rockdale to West Middleton	2013	2013	3	reliability (B2, C5)	Planned	F1435
Construct a 345-kV bus and install a 345/138 kV 500 MVA transformer at West Middleton Substation	2013	2013	3	reliability (B2, C5)	Planned	F1435

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-6
Transmission System Additions for 2014

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Energize Hiawatha-Indian Lake at 138 kV	2014	2014	2	reliability (B2)	Provisional	F3068
Install power flow control at Straits 138-kV Substation	2010	2014	2	reliability (B1)	Provisional	F2894
Uprate overhead portions of Straits-McGulpin 138-kV circuits #1 & #3 to 230 F degree summer emergency ratings	2012	2014	2	reliability (B2)	Proposed	F2874
Rebuild Straits-Pine River lines 6904/5 for 138 kV and operate at 69 kV	2014	2014	2	reliability (B2)	Proposed	F2833
Uprate Munising-Seney-Blaney Park 69-kV line to 167 degrees F	2014	2014	2	reliability (69B2)	Provisional	F3071
Construct 18th Road-Chandler double circuit 138-kV lines and operate at 138/69	2014	2014	2	reliability (69B3)	Provisional	F3077
Construct 18th Road 138/69-kV Substation and install two 138/69-kV transformers	2014	2014	2	reliability (69B3)	Provisional	F3077
Install 1-8.16 MVAR 138-kV capacitor bank at 18th Road	2014	2014	2	reliability (69B3)	Provisional	F3077

Table PR-6
Transmission System Additions for 2014 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Rebuild the Y-119 Verona to Oregon 69-kV line	2008	2014	3	reliability, condition (69B3, 69C3)	Proposed	F2469
Install 3-75 MVAR capacitor banks at Bluemound Substation	2012	2014	5	reliability (B1)	Provisional	F2650

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-7
Transmission System Additions for 2015

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Replace Petenwell 138/69-kV transformer	2015	2015	1	reliability (A, 69B2)	Provisional	F3036
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	2015	1	reliability (69B2)	Provisional	F2477
Construct a 69-kV line from SW Ripon to the Ripon-Metomen 69-kV line	2015	2015	1	T-D interconnection	Provisional	TBD
Construct a new Arnold 345-kV Substation and install a 345/138-kV transformer	2015	2015	2	reliability (B1)	Provisional	F3080
Uprate 6927 West Middleton-Stage Coach 69-kV line to 106 MVA SE	2015	2015	3	reliability (69B2, 69B3)	Provisional	F3103
Replace two existing 345/138-kV transformers at Arcadian Substation with 1-500 MVA transformer	2010	2015	5	reliability (B3)	Provisional	F2539
Uprate Arcadian-Waukesha 138-kV lines KK9942/KK9962	2010	2015	5	reliability (B2)	Provisional	F2142

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-8
Transmission System Additions for 2016

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Replace existing 56 MVA Harrison 138/69-kV transformer with a 100 MVA transformer	2016	2016	1	reliability (A)	Provisional	F3063
Uprate Pine River-Nine Mile 69-kV line 6923 to 167 degrees F and Asset Renewal for 6921/3	2016	2016	2	reliability (69B2)	Proposed	F2836
Construct new 138-kV bus and install a 138/69-kV 100 MVA transformer at South Lake Geneva Substation	2016	2016	3	reliability (69B2)	Proposed	F2587
Construct new 138-kV line from North Lake Geneva to South Lake Geneva Substation	2016	2016	3	reliability (69B2), T-D interconnection	Proposed	F2587

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-9
Transmission System Additions for 2017

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Replace 138/69-kV transformer at Metomen Substation	2017	2017	1	reliability (A, 69B3)	Proposed	F1867
Uprate Castle Rock-McKenna 69-kV line	2016	2017	1	reliability (69B2, 69B3)	Provisional	F2491
Install a second 138/69-kV transformer at Wautoma Substation	2018	2017	1	reliability (A, 69B2)	Provisional	F2480
Construct 69-kV double-circuit line between McCue and Lamar substations	2017	2017	3	reliability (A, 69B2), economics	Provisional	F2558
Install 2-24.5 MVAR 138-kV capacitor bank and 1-18 MVAR 69-kV capacitor bank at Brick Church substation	2017	2017	3	reliability (69B2)	Provisional	F2404

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-10
Transmission System Additions for 2018

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Replace existing Caroline 115/69-kV transformer	2018	2018	1	reliability (69B3)	Provisional	TBD
Construct Fairwater-Mackford Prairie 69-kV line	2019	2018	1	reliability (69B2)	Provisional	F2105
Convert Necedah distribution substation from 69 kV to 138 kV	2018	2018	1	reliability (69B2, 69B3)	Provisional	F2560
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	2018	1	reliability (69B2)	Provisional	F2105
Rebuild Y-32 Colley Road-Brick Church 69-kV line	2013	2018	3	reliability (B2, 69B3, 69C5, C3), condition	Provisional	F1670
Install a second 100 MVA 138/69 kV transformer at Hillman Substation	2018	2018	3	reliability (69B2, 69B3)	Provisional	F0339
Install a second 138/69-kV transformer at Spring Green with a 100 MVA summer normal rating	2018	2018	3	reliability (69B3)	Provisional	F2445
Uprate Y87 North Monroe-South Monroe 69-kV line to 115 MVA SE	2018	2018	3	reliability (69B2)	Provisional	TBD

Table PR-10
Transmission System Additions for 2018 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Install 1-16.33 MVAR 69-kV capacitor bank at Verona Substation	2018	2018	3	reliability (A, B2, B3)	Provisional	F2520
Install 2-16.33 MVAR 69-kV capacitor banks at North Monroe	2018	2018	3	reliability (B2)	Provisional	F2472
Construct Spring Valley-Twin Lakes-South Lake Geneva 138-kV line	2018	2018	3 & 5	T-D interconnection, reliability (69B2)	Provisional	F2570
Construct second Dunn Road-Egg Harbor 69-kV line	2018	2018	4	reliability (69B2)	Provisional	F0181

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-11
Transmission System Additions for 2019

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Uprate Ripon-Northwest Ripon 69-kV line Y-93	2019	2019	1	reliability (69B2)	Provisional	TBD
Uprate Winneconne-Sunset Point 69-kV line Y-103	2019	2019	1	reliability (69B2)	Provisional	F3062
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	2019	3	reliability (69B2)	Provisional	F2518
Uprate the 6986 Royster to Sycamore 69-kV line to 115 MVA	2019	2019	3	reliability (69B3)	Provisional	F2471
Install 2-16.33 MVAR 69-kV capacitor banks at Eden Substation	2019	2019	3	reliability (A, B2)	Provisional	F2515
Install 4-49 MVAR 138-kV capacitor banks at Concord Substation	2021	2019	3	reliability (B2)	Provisional	F2489
Uprate Y159 Brick Church-Walworth 69-kV line to 115 MVA	2021	2019	3	reliability (69B2)	Provisional	F2153
Install 2-16.33 MVAR 69-kV capacitor banks at Dam Heights	2021	2019	3	reliability (69B2), asset renewal, potential T-D interconnection	Provisional	F2474

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-12
Transmission System Additions for 2020

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Construct Cardinal-Blount 138-kV line	2020	2020	3	reliability (C5)	Provisional	F2466
Install 2-16.33 MVAR 69-kV capacitor banks at Sun Prairie	2020	2020	3	reliability (69B2, 69B3)	Provisional	F2475
Install 2-12.25 MVAR 69-kV capacitor banks at Mazomanie Substation	2020	2020	3	reliability (69B2)	Provisional	F2517
Construct a Lake Delton-Birchwood 138-kV line	2022	2020	3	reliability (B2)	Provisional	F1638
Replace two existing 138/69-kV transformers at Glenview Substation with 100 MVA transformers	2020	2020	4	reliability (69B3)	Provisional	F2079
Upgrade Oak Creek-Pennsylvania 138-kV line	2021	2020	5	reliability (B2)	Provisional	F2473
Install 2-32 Mvar capacitor banks at Mukwonago 138-kV Substation	2021	2020	5	reliability (B2)	Provisional	F2493

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment

Table PR-13
Transmission System Additions beyond 2020

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Uprate X-67 Portage-Trienda 138-kV line to 373 MVA	2022	2022	3	reliability (69B2)	Provisional	F2092
Construct a Hubbard-East Beaver Dam 138-kV line	2022	2022	3	reliability (B2)	Provisional	F1640
Construct Shoto to Custer 138-kV line	2022	2022	4	reliability (69B2, 69B3)	Provisional	F2081
Install 138/69-kV transformer at Custer Substation	2022	2022	4	reliability (69B2, 69B3)	Provisional	F2081
Replace two existing 138/69-kV transformers at Sunset Point Substation with 100 MVA transformers	2024	2024	4	reliability (69B3)	Provisional	F2080
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	2025	2025	3	reliability (B2)	Provisional	F2093
Increase ground clearance of M38-Atlantic 69-kV line from 120 to 167 degrees F and asset renewal	2009	TBD	2	reliability (69B2)	Provisional	TBD
Construct Gwinn-Forsyth second 69-kV line	2016	TBD	2	reliability (69B2)	Provisional	TBD
Uprate Columbia 345/138-kV transformer T-22 to 527 MVA	TBD	TBD	3	reliability (B3)	Provisional	F2135

Table PR-13
Transmission System Additions beyond 2020 (continued)

System Additions	System Need Year	Projected In-Service Year	Planning Zone	Need Category	Planned, Proposed or Provisional	Cost Estimate - Refer to *Funding Project* and *Sum of Total (2010-2019)* in Financial Table
Reconductor Ramsey-Harbor 138-kV line	TBD	TBD	5	reliability	Provisional	TBD

Defined in Previous 10-Year Assessment
Revised in scope from Previous 10-Year Assessment
New to this 10-Year Assessment