

**Table C-1. Studies Confidence Matrix for Bioretention with Design Variants**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Ahiablame, 2012	High	Medium	Medium	High	High	High	High
Blecken et al. 2009a	High	Low	High	High	High	High	High
Blecken et al. 2009b	High	Low	High	High	High	High	High
Bratieres et al. 2008	High	Low	High	High	High	High	High
Brown and Hunt 2009	High	High	High	High	High	High	High
Brown and Hunt 2010	High	High	High	High	High	High	High
Brown and Hunt 2011	High	High	High	High	High	High	High
Brown and Hunt 2012	High	High	High	High	High	High	High
Carpenter and Hallam 2010	High	Low	High	High	High	High	High
Chapman and Horner 2010	High	Medium	High	High	High	High	High
Cho et al., 2009	High	Medium	Medium	High	High	High	High
Clark and Pitt 2009	High	Medium	High	High	High	High	High
Davis et al., 2001	Medium	Medium	High	High	High	High	High
Davis et al., 2003	Medium	Medium	High	High	High	High	High
Davis et al., 2006	High	Medium	High	High	High	High	High
Davis et al., 2006	High	Medium	High	High	High	High	High
Davis et al., 2008	High	Medium	High	High	High	High	High
Davis et al., 2009	High	Medium	High	High	High	High	High
Davis et al., 2011	High	High	High	High	High	High	High
DeBusk and Wynn 2011	High	High	High	High	High	High	High
Denich and Bradford 2010	High	Low	High	High	High	High	High
Dietz and Clausen 2006	High	Low	High	High	High	High	High
Dietz and Clausen, 2005	High	Low	High	High	High	High	High
Dietz, 2007	High	Low	High	High	High	High	High
Dougherty et al. 2007	High	Medium	High	High	High	High	High
Emerson and Traver, 2008	High	Medium	High	High	High	High	High
Garbrecht et al. 2009	High	Medium	Medium	High	High	High	High

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Good et al. 2012	High	Medium	Medium	High	High	High	High
Hatt et al. 2007	High	Medium	Medium	High	High	High	High
Hatt et al. 2008	High	Medium	Medium	High	High	High	High
Hatt et al. 2009	High	Medium	Medium	High	High	High	High
Henderson et al. 2008	High	Medium	Medium	High	High	High	High
Herrera 2012	High	Low	High	Low	Low	High	High
Hong et al. 2006 +	High	Medium	Medium	High	High	High	High
Horner and Reiners 2008	High	Medium	High	Medium	High	High	High
Hsieh and Davis, 2005a	High	Medium	High	High	High	High	High
Hsieh and Davis, 2005b	High	Medium	High	High	High	High	High
Hsieh et al., 2007a	High	Medium	High	High	High	High	High
Hsieh et al., 2007b	High	Medium	High	High	High	High	High
Hunt and Lord, 2006	High	High	High	High	High	High	High
Hunt et al. 2008	High	High	High	High	High	High	High
Hunt et al., 2006	High	High	High	High	High	High	High
Hunt et al., 2011	High	High	High	High	High	High	High
Jones and Hunt, 2009	High	High	High	High	High	High	High
Kim et al., 2003	Medium	Medium	High	High	High	High	High
Le Coustumer et al. 2008	High	Medium	Medium	High	High	High	High
Li and Davis 2008a	High	Medium	Medium	High	High	High	High
Li and Davis 2008b	High	Medium	High	High	High	High	High
Li and Davis 2009	High	Medium	High	High	High	High	High
Line & Hunt 2009	High	High	High	High	High	High	High
Line et al., 2011	High	High	High	High	High	High	High
Lucas & Greenway 2008	High	Medium	Medium	High	High	High	High
Lucas & Greenway 2011a, b	High	Medium	Medium	High	High	High	High
McNett et al., 2011	High	High	High	High	High	High	High
Passeport et al, 2008	High	High	High	High	High	High	High

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Paus et al., 2014a	High	Low	High	Medium	Medium	High	High
Paus et al., 2014b	High	Low	High	Medium	Medium	High	High
Read et al., 2008	High	Medium	Medium	High	High	High	High
Roseen et al. 2006	High	Medium	High	High	High	High	High
Rusciano & Obrupta 2007	High	Medium	Medium	High	High	High	High
Selbig and Balster 2010	High	Medium	High	High	High	High	High
Sharkey, 2006	High	High	High	High	High	High	High
Stander and Borst 2010	High	Medium	High	High	High	High	High
Sun and Davis 2007	High	Medium	High	High	High	High	High
UNHSC, 2005	High	Low	High	High	High	High	High
Van Seters et al., 2006	High	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	63	16	51	62	63	66	66
Medium	3	37	15	3	2	0	0
Low	0	13	0	1	1	0	0

**Table C-2. Studies Confidence Matrix for Bioswales & Swales Bioswales and Swales with Design Variants**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results	Does it compare specific design features?
Backstrom, 2002	Medium	Low	High	High	High	High	High	Yes
Barrett et al, 1997	Medium	Low	High	Medium	High	High	High	no
Davis, 2012	High	Medium	High	High	High	High	High	Yes
Deletic, 2006	High	Low	High	High	High	High	High	Yes
Fletcher et al, 2002	Medium	Low	High	High	High	High	High	Yes
Goldberg, 1993	Low	Medium	High	High	High	High	High	no
Harper, 1988	Low	Medium	High	Medium	High	High	High	No
Jefferies, 2004	High	Low	High	medium	High	High	High	Yes
Liptan, and Murase, 2002	Medium	Low	High	Medium	High	High	High	Yes
Schueler, 1994	Medium	Medium	High	High	High	High	High	Yes
Stagge, 2012.	High	Medium	High	High	High	High	High	Yes
Strecker et al, 2004	High	Medium	High	High	High	High	High	no
Yu et al., 2001	Medium	High	High	High	High	High	High	Yes
<b>Number of Rankings</b>								
High	5	1	13	9	13	13	13	
Medium	6	6	0	4	0	0	0	
Low	2	6	0	0	0	0	0	

**Table C-3. Studies Confidence Matrix for Permeable Pavement Design Variants**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Andersen et al., 1999	Medium	Low	High	High	High	High	High
Andersen et al., 2014	High	High	High	High	High	High	High
Bean, E., W. Hunt, and D. Bidelspach. 2004. A Monitoring Field Study of Permeable Pavement Sites in North Carolina. North Carolina State University	High	High	High	Medium	High	High	High
Bean et al., 2005	High	High	High	High	High	High	High
Bean, 2007a	High	High	High	High	High	High	High
Bean, 2007b	High	High	High	High	High	High	High
Brattebo, B. and D. Booth. 2003. Long-Term Stormwater Quantity and Quality Performance of Permeable Pavement Systems. Center for Water and Watershed Studies, University of Washington.	Medium	Low	High	Medium	High	High	High
Collins et al., 2006	High	High	High	High	High	High	High
Collins et al., 2008	High	High	High	High	High	High	High
Collins et al., 2009	High	High	High	High	High	High	High
Collins et al., 2010	High	High	High	High	High	High	High
Dierkes et al., 1999	Medium	Medium	High	High	High	High	High
Dierkes et al., 2005	High	Medium	High	High	High	High	High
Dietz, 2007	High	Low	High	High	High	High	High
Dreelin et al., 2006	High	Medium	High	High	High	High	High
Eck et al., 2011	High	High	High	High	High	High	High
Emerson and Traver, 2008	High	Medium	High	High	High	High	High
Fach and Geiger, 2005	High	Medium	High	High	High	High	High
Fach et al., 2002	Medium	Medium	High	High	High	High	High
Gilbert and Clausen, 2006	High	Medium	High	High	High	High	High
Haselbach et al., 2006	High	High	High	High	High	High	High

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Hunt et al., 2002	Medium	High	High	Medium	High	High	High
James, 2004	High	Medium	High	High	High	High	High
Legret and Colandini, 1999	Medium	Low	High	High	High	High	High
Line et al., 2011	High	High	High	High	High	High	High
Lucke and Beecham, 2011	High	Low	High	High	High	High	High
Myers et al., 2011	High	Low	High	High	High	High	High
Nnadi et al., 2014	High	Low	High	High	High	High	High
Palla et al., 2014	High	Medium	Medium	High	High	High	High
Park et al., 2014	High	Low	High	High	High	High	High
Pezzanti et al., 2009	High	Medium	Medium	High	High	High	High
Rodriguez-Hernandez, et al. 2011	High	Low	High	High	High	High	High
Roseen et al., 2006	High	Low	High	High	High	High	High
Rushton, 2001	Medium	Medium	High	High	High	High	High
Sansalone et al., 2012	High	Medium	High	High	High	High	High
Scholz and Grabowieki, 2007	High	Medium	Medium	High	High	High	High
Scholz and Grabowieki, 2009	High	Low	High	High	High	High	High
Traver, 2006	High	Medium	High	Medium	High	High	High
Valavala et al., 2006	High	Medium	High	High	High	High	High
Vam Duin et al., 2008	High	Low	High	High	High	High	High
Van Seters et al., 2006	High	Medium	High	Medium	High	High	Medium
Wardynski et al., 2012	High	High	High	High	High	High	High
Winston et al., 2011	High	High	High	High	High	High	High
<b>Number of Rankings</b>							
High	36	15	40	38	43	43	42
Medium	7	16	3	5	0	0	1
Low	0	12	0	0	0	0	0

**Table C-4. Studies Confidence Matrix for Infiltration Devices**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Bardin et al., 2001	Medium	Low	High	High	High	High	High
Barraud et al., 2005	High	Medium	High	High	High	High	High
Barraud et al., 1999	Medium	Medium	High	High	High	High	High
Bright et al., 2011	High	Medium	High	High	High	High	High
Bright et al., 2010	High	Medium	High	High	High	High	High
Bright, 2007	High	Medium	High	High	High	High	High
Burchell et al., 2007	High	Medium	High	High	High	High	High
CWP, 2007	High	Medium	Medium	Medium	Medium	High	High
Datry, 2004	High	Low	High	High	High	High	High
Datry, 2003	Medium	Low	High	High	High	High	High
dechesne, 2004a	High	Low	High	High	High	High	High
dechesne, 2004b	High	Low	High	High	High	High	High
dechesne, 2005	High	Low	High	High	High	High	High
Emerson, 2008	High	Medium	High	High	High	High	High
Galli, 1993	Low	Medium	High	Medium	Medium	High	High
Gaus, 1993	Low	Medium	High	Medium	Medium	High	High
Lecoustumer, 2007	High	Low	High	High	High	High	High
Pitt et al, 1999	Medium	Medium	High	High	High	High	High
Pitt et al, 1994	Medium	Medium	High	High	High	High	High
Siriwardene, 2007	High	Medium	High	High	High	High	High
UNH, 2007	High	High	High	High	High	High	High
Warnaars, 1999	Medium	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	14	1	21	19	19	22	22
Medium	6	13	1	3	3	0	0
Low	2	8	0	0	0	0	0

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Mittman, Tamara 2009	High	High	High	High	High	High	High
Band, L et al date unknown*	n/a	Medium	High	Medium	High	High	High
Herrera 2008	High	Low	Low	Medium	Medium	Medium	Medium
Plumb, 2008	High	Low	Low	Medium	Medium	Low	Low
Wang et al. 2008	High	Medium	High	High	High	High	High
<b>Number of Rankings</b>							
High	4	1	3	2	3	3	3
Medium	0	2	0	3	2	1	1
Low	0	2	2	0	0	1	1

\* completed within past 5 years

**Table C-6. Studies Confidence Matrix for Land or Forest Protection**

This practice is currently credited as a part of the Chesapeake Bay Watershed Model, and this technique can potentially serve as a model.



**Table C-7. Studies Confidence Matrix for Structural Stormwater Devices**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results	Notes
Yu and Stanford 2007	High	Medium	High	High	Medium	High	High	Filterra, TARP, evaluated in the field
Rubin, R 2014	High	High	High	TBD	Low	TBD	TBD	Challenge to evaluate, conference proceedings, little detail on methods, supporting science. Additional data likely available upon request
McGill Associates 2011	High	Low	High	Low	Low	High	High	hydrodynamic separator, field tested
<b>Number of Rankings</b>								
High	3	1	3	1	0	2	2	
Medium	0	1	0	0	1	0	0	
Low	0	1	0	1	2	0	0	

**Table C-8. Studies Confidence Matrix for Sand Filters**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Aulenbach and Chan, 1988	Low	Medium	Low	High	High	High	High
Barrett, 2001	Medium	Low	High	High	High	High	High
Barrett, 2005	High	Low	High	High	High	High	High
Bell et al., 1995	Medium	High	High	Medium	Medium	High	High
Clark and Pitt, 1999	Medium	Medium	High	High	High	High	High
Horner, 1995	Medium	Medium	High	Medium	Medium	High	High
Kebelin, 1997	Medium	Low	High	High	High	High	High
Leif, 1999	Medium	Medium	High	Medium	Medium	High	High
Nielsen et al., 1994	Medium	Medium	High	High	High	High	High
Shaver and Baldwin, 1991	Low	Medium	High	High	High	High	High
Stewart, 1992	Low	Medium	High	Low	Medium	High	High
Urbonas, 1994	Low	Low	High	High	High	High	High
Vollertsen, 2009	High	Low	High	High	High	High	High
Yu, 1994	Medium	High	High	High	High	High	High
<b>Number of Rankings</b>							
High	2	2	13	10	10	14	14
Medium	8	7	0	3	4	0	0
Low	4	5	1	1	0	0	0

**Table C-9. Studies Confidence Matrix for Enhancement of Constructed Wetlands**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Adeola et al., 2009	High	Low	Medium	High	High	High	High
Borne, 2014	High	Low	High	High	High	High	High
Athanas and Stevenson, 1991	Low	Medium	High	Medium	High	High	High
Carleton, 1997	Medium	Medium	High	High	High	High	High
Carleton, 2001	Medium	Medium	High	High	High	High	High
Egan et al, 1995	Medium	Medium	High	High	High	High	High
Farrell, 2003	Medium	low	High	High	High	High	High
Hathaway et al,2009a	High	High	High	High	High	High	High
Hathaway et al,2009b	High	High	High	High	High	High	High
Hathaway et al., 2011	High	High	High	High	High	High	High
He et al., 2007	High	Low	High	High	High	High	High
Hey et al, 1994a	Medium	Medium	High	High	High	High	High
Hey et al, 1994b	Medium	Medium	High	High	High	High	High
Hunt et al., 2011	High	High	High	High	High	High	High
Jones and Hunt, 2010	High	High	High	High	High	High	High
Lenhart et al., 2012	High	High	High	High	High	High	High
Li et al, 2007	High	Medium	Medium	High	High	High	High
Merriman and Hunt, 2014	High	High	High	High	High	High	High
Mitsch et al, 1992	Low	Medium	High	High	High	High	High
Moore et al., 2011	High	High	High	High	High	High	High
Qi, 2002	Medium	Low	High	High	High	High	High
Revitt et al., 2004	High	Low	High	High	High	High	High
Roseen et al., 2006	High	Low	High	High	High	High	High
Rosenquist et al., 2011	High	High	High	High	High	High	High
Strecker et al, 2001	Medium	Medium	High	High	High	High	High

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Wadzuk et al., 2010	High	Medium	High	High	High	High	High
Wang, 2014a	High	High	High	High	High	High	High
Wang, 2014b	High	High	High	High	High	High	High
White and Cousins, 2013	High	Medium	High	High	High	High	High
Winston et al., 2013	High	High	High	High	High	High	High
Zhao, 2012	High	Low	High	High	High	High	High
Zhao, 2006	High	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	22	12	30	31	32	32	32
Medium	8	11	2	1	0	0	0
Low	2	9	0	0	0	0	0

**Table C-10. Studies Confidence Matrix for Soil Amendment**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Balusek (2003)	Medium	Medium	High	Medium	Medium	High	High
Cogger, 2005	High	Medium	Medium	High	High	High	High
Hielima (1999)	Medium	Low	High	High	High	High	High
Kolsti et al (1995)	Medium	Medium	High	Medium	Medium	High	High
Pitt, 1998	Medium	Medium	High	High	High	High	High
Pitt et al (1999)	Medium	Medium	High	High	High	High	High
Pitt, 2000	Medium	Medium	High	High	High	High	High
Pitt et al (2002)	Medium	Medium	High	High	High	High	High
Haynes et al 2013	High	High	Medium	High	High	High	High
<b>Number of Rankings</b>							
High	2	1	7	7	7	9	9
Medium	7	7	2	2	2	0	0
Low	0	1	0	0	0	0	0

**Table C-11. Studies Confidence Matrix for Enhancing or Repairing Riparian Buffers**

No studies were identified for this measure. Assign to other practices.

**Table C-12. Studies Confidence Matrix for Repairing or Enhancing Failing BMPs**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Bean, 2007	High	High	High	High	High	High	High
Brattebo, 2003	Medium	Low	High	medium	High	High	High
Brown, 2012	High	High	High	High	High	High	High
Emerson, 2008	High	Medium	High	High	High	High	High
Haselbach et al., 2006	High	High	High	High	High	High	High
Emerson, 2008	High	Medium	High	High	High	High	High
Hunt, 2011	High	High	High	High	High	High	High
Hunt, 2006	High	High	High	High	High	High	High
James, 2004	High	medium	High	High	High	High	High
Le Coustumer et al. 2008	High	Medium	Medium	High	High	High	High
Lenhart et al., 2012	High	High	High	High	High	High	High
Merriman, 2014	High	High	High	High	High	High	High
Pitt, 2008	High	Medium	High	High	High	High	High
Siriwardene, 2007	High	Medium	High	High	High	High	High
Vam Duin et al., 2008	High	Low	High	High	High	High	High
Warnaars, 1999	Medium	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	14	7	15	15	16	16	16
Medium	2	6	1	1	0	0	0
Low	0	3	0	0	0	0	0

**Table C-13. Studies Confidence Matrix for Stream Restoration**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Pamer and Filoso 2011	High	Low	High	High	High	High	High
Miller and Kochel 2009	High	High	High	High	High	High	High
Walter	High	Low	High	High	High	High	High
Ensign and Doyle 2005	High	Low	Low	High	High	High	High
Harrison et al 2011	High	Medium	Medium	High	High	High	High
Andrews et al 2011	High	Low	Low	High	High	High	High
Bukaveckas, P 2007	High	Low	Low	High	High	High	High
Doheny et al 2012	High	High	Medium	High	High	High	High
Sudduth et al 2011	High	High	High	High	High	High	High
Mayer et al 2010	High	High	High	High	High	High	High
Kaushal et al 2008	High	High	High	High	High	High	High
Sivirichi et al 2011	High	High	High	High	High	High	High
Sudduth et al 2011	High	High	High	High	High	High	High
Schueler and Stack 2014*	High						
<i>* Not evaluated for data quality; provided overview of scientific literature to inform credit development</i>							
<b>Number of Rankings</b>							
High	13	7	8	13	13	13	13
Medium	0	1	2	0	0	0	0
Low	0	5	3	0	0	0	0

**Table C-14. Studies Confidence Matrix for Riparian Buffer with Varying Widths**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Weller et al 2011	High	Medium	Low	High	High	High	High
Jordan et al 1993	Low	Low	Low	High	High	High	High
Orzetti et al 2010	High	High	High	High	High	High	High
Klapproth and Johnson 2009	High	Medium	Medium	Medium	Medium	Low	Low
Mayer et al 2007	High	Low	Low	High	High	High	High
Castelle et al 1994	Medium	Low	Low	High	High	Medium	Low
Sweeney and Newbold	High	Low	Low	High	High	Medium	Medium
Mankin et al 2007	High	Low	Low	High	High	High	High
Spieran 2012*							
Messer et al 2012	High	Low	Medium	High	High	High	High
Johnson et al 2013	High	Low	Medium	High	High	High	High
Tilak et al 2014	Medium	Low	Medium	High	High	High	Medium
<i>* Not evaluated for data quality; provided overview of scientific literature to inform credit development</i>							
<b>Number of Rankings</b>							
High	8	1	1	10	10	8	7
Medium	2	2	4	1	1	2	2
Low	1	8	6	0	0	1	2



**Table C-15. Studies Confidence Matrix for Leaf Litter Recovery**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Kalinosky et al 2013	High	Low	High	Medium	Low	High	High
Stack et al. 2013	High	Medium	High	Low	Medium	Medium	Medium
Berretta and Sansalone 2011	High	Low	Medium	Medium	Medium	High	High
Rushton 2006	High	Low	High	Medium	High	Medium	High
<b>Number of Rankings</b>							
High	4	0	3	0	1	2	3
Medium	0	1	1	3	2	2	1
Low	0	3	0	1	1	0	0

**Table C-16. Studies Confidence Matrix for Filter Strip with Design Variants**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Line and Hunt 2009	High	High	High	High	High	High	High
Hunt et al 2010	High	High	High	High	High	High	High
Knight et al 2013	High	High	High	High	High	High	High
Winston et al 2012	High	High	High	High	High	High	High
Winston et al 2011	High	High	High	High	High	High	High
Barrett et al 1998	Low	Low	Low	High	High	High	Medium
Hunt et al 2013	High	High	High	High	High	High	High
<b>Number of Rankings</b>							
High	6	6	6	7	7	7	6
Medium	0	0	0	0	0	0	1
Low	1	1	1	0	0	0	0

**Table C-17. Studies Confidence Matrix for Impervious Disconnection/Rain Catchers**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Carmen et al 2013	High	High	High	Medium	High	High	High
Mueller et al 2009	High	Low	High	Medium	High	High	High
<b>Number of Rankings</b>							
High	2	1	2	0	2	2	2
Medium	0	0	0	2	0	0	0
Low	0	1	0	0	0	0	0

**Table C-18. Studies Confidence Matrix for Urban Nutrient Management**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Bierman et al 2010	High	Low	Medium	High	High	High	High
Bowman et al 2002	Medium	High	Medium	High	High	High	High
Cahill et al 2010	High	High	Medium	High	High	High	High
Easton and Petrovic 2004	High	Low	Medium	High	High	High	High
Frank et al 2005	High	Low	Medium	High	High	High	High
Guillard and Koop 2004	High	Low	Medium	High	High	High	High
Lee et al 2003	Medium	High	Medium	High	High	High	High
Horgan et al 2002	Medium	Medium	Medium	High	High	High	High
Mangiafico and Guillard 2006	High	Medium	Medium	High	High	High	High
Quiroga-Garza et al 2001	Low	Low	Low	High	High	High	High
Raciti et al 2008	High	Medium	High	High	High	High	High
Raciti et al 2011	High	Medium	High	High	High	High	High
Spence et al 2012	High	High	High	High	High	High	High
<b>Number of Rankings</b>							
High	9	4	3	13	13	13	13
Medium	3	4	9	0	0	0	0
Low	1	5	1	0	0	0	0

**Table C-19. Studies Confidence Matrix for Street Sweeping**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
NC DNRCM 1983	Medium	High	High	High	High	High	High
Selbig and Bannerman 2007	High	Low	High	High	High	High	High
Waschbusch 2003	High	Low	High	High	High	High	High
Zarriello 2002	Low	Low	High	High	High	High	High
Law et al 2008	High	Medium	High	Low	High	High	Medium
Bender and Terstriep 1984	High	Low	High	High	High	High	High
Kuhns et al 2003	Medium	Low	High	High	High	High	High
Sorenson 2013	High	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	5	1	8	7	8	8	7
Medium	2	1	0	0	0	0	1
Low	1	6	0	1	0	0	0

**Table C-20. Studies Confidence Matrix for Enhanced Erosion and Sediment Control**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Line and White 2007	High	High	High	High	High	High	High
CBP Expert Panel Report 2014	High	High	Medium	Medium	High	Medium	Medium
McLaughlin 2002	Medium	High	High	Medium	High	High	High
McLaughlin 2005	High	Low	Medium	Medium	Low	Medium	Medium
McLaughlin and Markusic 2007	High	High	High	Medium	High	High	High
McLaughlin 2008	High	Low	High	Medium	High	High	High
McLaughlin et al 2009	High	High	High	High	High	High	High
McLaughlin et al 2006	High	High	High	High	High	High	High
McLaughlin and King 2008	High	High	High	High	High	High	High
McLaughlin 2013	High	High	High	High	High	High	Medium
<b>Number of Rankings</b>							
High	9	8	8	5	9	8	7
Medium	1	0	2	5	0	2	3
Low	0	2	0	0	1	0	0

**Table C-21. Studies Confidence Matrix for Regenerative Stormwater Conveyances**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Filoso and Palmer 2011	High	Low	High	High	High	High	High
Cizek, A 2014*	High	High	High	Medium	TBD	High	TBD
<b>Number of Rankings</b>							
High	2	1	2	1	1	2	1
Medium	0	0	0	1	0	0	0
Low	0	1	0	0	0	0	0

\*Not in published format. Summary of results from NCSU

**Table C-22. Studies Confidence Matrix for Hydraulic Modification of Urban, Degraded Streams**

Research indicates that the components that would make up this practice are generally covered by other measures that are included in this project.

**Table C-23. Studies Confidence Matrix for Blue Roof**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
New York City DEP 2012	High	Low	High	Low	Medium	High	High

**Table C-24. Studies Confidence Matrix for Existing Stormwater Management Structures**

No studies were identified for this practice. Crediting for this practice may be calculated for individual projects.

**Table C-25. Studies Confidence Matrix for Pond Retrofits/Upflow Filters**

There are no additional reports or publications to add to the Tetra Tech (2013) review for this practice.

**Table C-26. Studies Confidence Matrix for Conversion of Impervious Surfaces to Pervious Surfaces**

No studies were identified for this practice. Crediting for this practice may be based on modeling.

**Table C-27. Studies Confidence Matrix for Reducing Pet Waste Transmission to Surface Waters**

No studies were identified for this practice. Crediting for this practice may be based on modeling.



**Table C-28. Studies Confidence Matrix for Wood Chip Bioreactors/Permeable Reactive Barriers**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
<b>Bioreactor</b>							
Christianson, 2011	High	Low	High	Medium	High	High	High
Christianson et al., 2009	High	Low	High	High	High	High	High
Christianson, Castello et al., 2010	High	Low	Low	High	High	High	High
Christianson, Christianson et al., 2013	High	Low	High	High	High	High	High
Christianson, Helmers et al., 2012	High	Low	High	High	High	High	High
Christianson, Knoot et al., 2013	High	Low	High	High	High	High	High
Christianson, Bhandari et al., 2011	High	Low	High	High	High	High	High
Christianson, Bhandari et al., 2013	High	Low	High	High	High	High	High
Christianson, Hanly et al., 2011	High	Low	Medium	High	High	High	High
Schipper et al., 2010	High	Low	Medium	High	High	High	High
<b>Number of Rankings</b>							
High	10	0	7	9	10	10	10
Medium	0	0	2	1	0	0	0
Low	0	10	1	0	0	0	0
<b>Barrier</b>							
Long et al., 2011	High	Low	Medium	High	High	High	High
Robertson et al., 2000	Medium	Low	Low	High	High	High	High
Robertson and Cherry, 1995	Medium	Low	Low	High	High	High	High
Robertson et al., 2008	High	Low	Low	High	High	High	High
Schipper et al., 2005	High	Low	Medium	High	High	High	High
Schipper and Vojvodic-Vukovic, 1998	Medium	Low	Medium	High	High	High	High
Schipper and Vojvodic-Vukovic, 2000	Medium	Low	Medium	High	High	High	High
Schipper and Vojvodic-Vukovic, 2001	Medium	Low	Medium	High	High	High	High
Schmidt and Clark, 2012a	High	Low	Medium	High	High	High	High

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Schmidt and Clark, 2012b	High	Low	Medium	High	High	High	High
<b>Number of Rankings</b>							
High	5	0	0	10	10	10	10
Medium	5	0	7	0	0	0	0
Low	0	10	3	0	0	0	0

**Table C-29. Studies Confidence Matrix for Livestock Exclusion**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Line et al., 2000	Medium	High	High	High	High	High	High
Agouridis et al., 2005	High	Low	Medium	High	High	Low	Low
Line, 2003	Medium	High	High	High	High	High	High
Line and Osmond, 2014	High	High	High	Medium	Medium	Medium	Medium
Meals, 2001	Medium	Low	High	High	High	High	High
Owens et al., 1996	Medium	Low	High	High	High	High	High
Ranganath et al., 2009	High	Medium	High	High	High	Medium	Medium
Sheffield et al., 1997	Medium	Medium	Medium	High	High	Medium	Medium
Meals et al., 2010	High	Low	Medium	High	High	Medium	Medium
Mosley et al., 1997	Medium	Low	Medium	High	High	Medium	Medium
Vidon et al., 2008	High	Low	High	High	High	High	High
Novotny, 2003	Medium	Low	Low	High	High	Low	Low
Simpson and Weammert, 2009	High	Medium	Medium	Medium	Medium	Medium	Medium
<b>Number of Rankings</b>							
High	6	3	7	11	11	5	5
Medium	7	3	5	2	2	6	6
Low	0	7	1	0	0	2	2

**Table C-30. Studies Confidence Matrix for Buffer Restoration/Installation in Agricultural Areas**

The method proposed for estimating credits for buffers of varying width in the urban section may be used to estimate credits associated with buffer restoration/installation in agricultural areas as well. If this practice is selected for further credit development, practice standards developed for applications in urban/suburban areas would differ from those developed in agricultural areas.

**Table C-31. Studies Confidence Matrix for Managed Grazing**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Hubbard et al., 2004	High	Low	Low	High	High	Medium	Medium
Mosley et al., 1997	Medium	Low	Low	High	High	Medium	Medium
Simpson and Weammert, 2009	High	Medium	Medium	Medium	Medium	Medium	Medium
Butler et al., 2008	High	Low	Low	High	High	Low	High
Stout et al., 2000	Medium	Low	Medium	High	High	High	High
Schepers and Francis, 1982	Low	Low	Medium	High	High	High	Medium
Pionke et al., 2000	Medium	Low	Medium	High	High	High	High
Beaulac and Reckhow, 2007	Low	Low	Low	High	High	High	Medium
Edwards, et al., 2000	Low	Medium	Medium	High	High	High	Medium
<b>Number of Rankings</b>							
High	3	0	0	8	8	5	3
Medium	3	2	5	1	1	3	6
Low	3	7	4	0	0	1	0

**Table C-32. Studies Confidence Matrix for Proper Animal Waste Handling, Storage and Disposal**

No studies were identified for this practice. Crediting for this practice may be calculated for individual projects.

**Table C-33. Studies Confidence Matrix for Proper Animal Nutrient Supplementation and Feeding Strategies**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Simpson and We	High	Medium	Medium	Medium	Medium	Medium	Medium
Knowlton et al., 2	High	Medium	Medium	High	High	High	High
Wadman et al., 1	Low	Low	Medium	High	High	Medium	Medium
Mahan and Howe	Medium	Medium	Medium	Low	Medium	Medium	High
USEPA, 2002	Medium	Medium	Low	High	Medium	Low	Low
Klopfenstein and	Medium	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	2	0	1	4	3	2	3
Medium	3	4	4	1	3	3	2
Low	1	2	1	1	0	1	1

**Table C-34. Studies Confidence Matrix for Animal Waste Composting**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Imbeah, 1998	Medium	Low	Medium	High	High	High	High
Haga, 1999	Medium	Low	Medium	Medium	Medium	Medium	Medium
Harada et al., 1993	Low	Low	Medium	Medium	Medium	Medium	Medium
Sharpley et al., 1998	Medium	Low	Medium	High	High	Medium	Medium
Kirchmann, 1994	Medium	Low	Medium	High	High	Medium	Medium
<b>Number of Rankings</b>							
High	0	0	0	3	3	1	1
Medium	4	0	5	2	2	4	4
Low	1	5	0	0	0	0	0

**Table C-35. Studies Confidence Matrix for Cover Crops**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Simpson and Weammert, 2009	High	Medium	Medium	Medium	Medium	Medium	Medium
Dinnes, 2004	High	Low	High	High	High	High	High
Kaspar et al., 2003	Medium	Low	High	High	High	High	High
Kaspar et al., 2001	Medium	Low	High	High	High	High	High
Kaspar et al., 2007	High	Low	High	High	High	High	High
Kaspar et al., 2008	High	Low	High	High	High	High	High
Kovar et al., 2011	High	Low	High	High	High	High	High
Pederson et al., 2010	High	Low	High	Low	Medium	High	High
PFI, 2011	High	Low	High	Low	Medium	High	High
Qi and Helmers, 2008	High	Low	High	High	High	High	High
Qi et al., 2011	High	Low	High	High	High	High	High
Sawyer et al., 2010	High	Low	High	Low	Medium	High	High
Sawyer et al., 2011	High	Low	High	Low	Medium	High	High
Strock et al., 2004	High	Low	High	Medium	Medium	High	High
Meisinger et al., 1991	Low	Medium	Medium	High	High	Medium	Medium
<b>Number of Rankings</b>							
High	12	0	13	9	9	13	13
Medium	2	2	2	2	6	2	2
Low	1	13	0	4	0	0	0

**Table C-36. Studies Confidence Matrix for Cropland Conversion to Trees or Grass**

No studies were identified for this practice. Modeling may be used to evaluate this practice.

**Table C-37. Studies Confidence Matrix for Pond Creation**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
NCDENR, 2009	High	High	Low	Medium	Medium	Low	Low

**Table C-38. Studies Confidence Matrix for Pond Renovation**

Evaluate individual practices

**Table C-39. Studies Confidence Matrix for Conservation Tillage**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
Simpson and Weammert, 2009	High	Medium	Medium	Medium	Medium	Medium	Medium
Coverdale et al., 2013	High	Medium	Medium	Medium	Medium	Medium	Medium



**Table C-40. Studies Confidence Matrix for Constructed Wetland**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
USEPA, 2003	Medium	Low	Low	Medium	Medium	Medium	Medium
Tetra Tech, 2008	High	Low	High	Low	Low	Low	Low
Ockenden, 2012	High	Low	Medium	High	High	High	High
Crumpton, 2014	High	Low	Medium	Medium	Medium	High	High
Higgins et al., 1993	Low	Low	High	High	High	High	High
Hammer, 1992	Low	Low	High	High	High	High	High
<b>Number of Rankings</b>							
High	3	0	3	3	3	4	4
Medium	1	0	2	2	2	1	1
Low	2	6	1	1	1	1	1

**Table C-41. Studies Confidence Matrix for NMP and Comprehensive NMP**

Reference	Year	Study Location	Site Characteristics	Peer Review	Scientific Support	Data Collection, Methods	Analysis Results
USEPA, 2003	Medium	Low	Medium	Medium	Medium	High	High
HRWCI, 2005	High	Low	Low	Medium	Medium	Medium	Medium

**Table C-42. Studies Confidence Matrix for Repair/Replace Leaking Collection System Lines**

Lilly et al. (2014) provides a synthesis of the literature and was not evaluated as a specific study.

**Table C-43. Studies Confidence Matrix for Removing Illegal Wastewater Connection to Stormwater System or Surface Waters**

Lilly et al. (2014) provides a synthesis of the literature and was not evaluated as a specific study.

**Table C-44. Studies Confidence Matrix for Improved Biosolids Management**

<b>Reference</b>	<b>Year</b>	<b>Study Location</b>	<b>Site Characteristics</b>	<b>Peer Review</b>	<b>Scientific Support</b>	<b>Data Collection, Methods</b>	<b>Analysis Results</b>
Dayton, 2003	Medium	Low	High	High	High	High	High
Penn, 2002	Medium	Medium	Medium	High	High	High	High
Su, 2007	High	Low	High	High	High	High	High
Sui, 2000	Medium	Low	High	High	High	High	High
Wang, 2008	High	Medium	Medium	High	High	High	High
<b>Number of Rankings</b>							
High	2	0	3	5	5	5	5
Medium	3	2	2	0	0	0	0
Low	0	3	0	0	0	0	0