

## APPENDIX 1

### PARTIAL LIST OF COMMERCIAL VENDORS FOR TEMPORARY CROSSING OPTIONS

This is not a complete list and some information provided may be inaccurate or out-of-date. Many vendors provide a variety of products but are listed under only one category. Although the listing for a company may not be from your area, there may be a local distributor who can supply information and materials.

#### Geotextiles

Amoco Fabrics and Fibers Company  
900 Circle 75 Parkway, Suite 550  
Atlanta, GA 30339  
Voice: (800) 445-7732  
(770) 984-4444  
Fax: (770) 956-2430

Belton Industries  
8613 Roswell Rd.  
Atlanta, GA 30350  
Voice: (800) 225-4099  
(770) 587-0257  
Fax: (770) 992-6361

Cascade Distribution Ltd.  
15620 - 121A Ave.  
Edmonton, AB Canada T5V 1B5  
Voice: (800) 565-6130  
(403) 454-2400  
Fax: (403) 451-0911

Fireflex Division, SEI Industries  
7400 Wilson Ave.  
Delta, BC Canada V4G 1E5  
Voice: (604) 946-3131  
Fax: (604) 940-9566

Layfield Plastic  
14604-115A Ave.  
Edmonton, AB Canada T5M 3C5  
Voice: (403) 453-6731  
Fax: (403) 455-5218

Linq Industrial Fabrics, Inc.  
Geotextile Division  
2550 West 5th North St.  
Summerville, SC 29843-9669  
Voice: (800) 543-9966  
(803) 875-8277  
Fax: (803) 875-8276

Synthetic Industries, Inc.  
4019 Industry Dr.  
Chattanooga, TN 37416  
Voice: (800) 621-0444  
(423) 899-0444  
Fax: (423) 899-7619

TC Mirafi  
365 S. Holland Dr.  
Pendergrass, GA 30567  
Voice: (800) 234-0484  
Fax: (800) 333-6205

#### Cellular confinement systems

A. G. H. Industries, Inc.  
4600 Post Oak Place  
Suite 111  
Houston, TX 77027  
Voice: (713) 552-1749  
Fax: (713) 552-1147

GeoCHEM, Inc.  
106 Lake Ave. S.  
Seattle, WA 98055  
Voice: (425) 227-9312

Nilex Corporation  
6810 South Jordan Rd.  
Englewood, CO 80112  
Voice: (800) 537-4241  
(303) 766-2000  
Fax: (303) 766-1110

Presto Products Company  
P.O. Box 2399  
Appleton, WI 54913-2399  
Voice: (800) 548-3424  
(920) 738-1118  
Fax: (920) 738-1432

Tenax Corporation  
4800 East Monument St.  
Baltimore, MD 21205  
Voice: (410) 522-7000  
Fax: (410) 522-7015

### **Erosion control products**

American Excelsior Company  
P.O. Box 5067, 850 Ave. H East  
Arlington, TX 76005-5067  
Voice: (800) 777-SOIL  
(817) 640-1555  
Fax: (817) 649-7816

Canadian Forest Products, Ltd.  
Panel and Fibre Division  
430 Canfor Ave.  
New Westminster, BC Canada V3L 5G2  
Voice: (800) 363-8873

Erosion Control Systems, Inc.  
1800 McFarland Blvd., Suite 180  
Tuscaloosa, AL 35406  
Voice: (800) 943-1986

Greenfix America  
P.O. Box 62, 604 E. Mead Rd.  
Brawley, CA 92227  
Voice: (800) GREENFX  
(800) 929-2184  
(760) 344-6700  
Fax: (760) 344-4305

North American Green, Inc.  
14649 Highway 41 North  
Evansville, IN 47711  
Voice: (800) 772-2040  
(812) 867-6632  
Fax: (812) 867-0247

PPS Packaging Company  
204 N. Seventh St.  
P.O. Box 56  
Fowler, CA 93625  
Voice: (209) 834-2011

BonTerra America, Inc.  
355 West Chestnut St.  
Genesee, ID 83832  
Voice: (800) 882-9489  
Fax: (208) 285-0201

Conwed Fibers  
219 Simpson St.  
Conover, NC 28613  
Voice: (800) 366 1180  
Fax: (704) 328-9826

Finn Corporation  
9281 LeSaint Dr.  
Fairfield, OH 45014  
Voice: (800) 543-7166  
(513) 874-2818  
Fax: (513)874-2914

Nedia Enterprises  
89-66 217<sup>th</sup> St.  
Jamaica, NY 11427  
Voice: (888) 725-6999  
(718) 740-5171  
Fax: (718) 740-1049

RoLanka International, Inc.  
365 Toccoa Place  
Jonesboro, GA 30236  
Voice: (800) 760-3215  
(770) 506-8211  
Fax: (770) 506-0391

Verydol Alabama, Inc.  
P.O. Box 605  
Pell City, AL 35125  
Voice: (205) 338-4411

### **Steel/aluminum culverts**

Atlantic Industries Limited  
Dorchester, NB, Canada  
Voice: (506) 379-2455  
Fax: (506) 379-2290

Contech Construction Products, Inc.  
1001 Grove St.  
Middletown, OH 45044  
Voice: (800) 338-1122  
(800) 363-3873

Culverts and Industrial Supply Co.  
7242 W. Yellowstone  
Casper, WY 82644  
Voice: (307) 472-7121  
Fax: (307) 577-4914

Johnston Fargo Culverts, Inc.  
3575 85th. Ave. NE  
St. Paul, MN 55126-1186  
Voice: (651) 780-1760  
Fax: (651) 780-1763

### **Polyethylene culverts**

Advanced Drainage Systems  
3300 Riverside Dr.  
Columbus, OH 43221  
Voice: (800) 733-7473  
(614) 457-3051  
Fax: (614) 459-0169

Crumpler Plastic Pipe  
P.O. Box 2068, Highway 24 West  
Roseboro, NC 28382  
Voice: (800) 334-5071  
Fax: (800) CPP-PIPE

Hancor, Inc.  
401 Olive St.  
Findlay, OH 45839  
Voice: (800) 537-9520  
(419) 423-6913  
Fax: (419) 424-8337

Soleno SPD, Inc.  
1160 Rt. 133, C.P. 147  
Iberville, PQ, Canada J2X 4J5  
Voice: (800) 363-1471  
(514) 347-8315  
Fax: (514) 347-3372

### **High density polyethylene pipe**

CSR Polypipe  
P.O. Box 390  
Gainesville, TX 76241-0390  
Voice: (800) 433-5632  
(817) 665-1721  
Fax: (817) 668-8612

Fluid Controls  
3435 Stanwood Blvd. NE  
Huntsville, AL 35811  
Voice: (800) 462-0860  
(205) 851-6000  
Fax: (205) 852-6005

Forrer Supply  
P.O. Box 220  
Germantown, WI 53022-0220  
Voice: (800) 255-1030  
(414) 255-3030  
Fax: (414) 255-4064

Harvel Plastics  
P.O. Box 757  
Easton, PA 18044-0757  
Voice: (610) 252-7355  
Fax: (610) 253-4436

Plastic Pipe and Supply  
100 Glen Rd.  
P.O. Box 8066  
Cranston, RI 02920  
Voice: (401) 467-9370  
Fax: (401) 461-9520

Plexco Performance Pipe Division  
Chevron Chemical Company  
1050 IL Route 83 - Suite 200  
Bensenville, IL 60106-1048  
Voice: (630) 350-3700  
Fax: (630) 350-2704

### **Stress-laminated bridges**

Forestry and Wildlife Consult. Serv., Inc.  
Rt. 1, Box 531  
Gretna, VA 24557  
Voice: (804) 656-6684

Hughes Brothers  
210 N. 13th St.  
Seward, NE 68434  
Voice: (402) 643-2991  
Fax: (402) 643-2149

### **Dowel-laminated bridges**

Wheeler Lumber, LLC.  
P.O. Box 26100  
St. Louis Park, MN 55426  
Voice: (800) 328-3986  
(612) 929-7854  
Fax: (612) 929-2909

### **Glued-laminated bridges**

Structural Wood Systems, Inc.  
P.O. Box 250  
Greenville, AL 36037  
Voice: (334) 382-6534  
Fax: (334) 382-9860

### **Modular steel bridges**

Acrow Corporation of America  
P.O. Box 812  
Carlstadt, NJ 07072-0812  
Voice: (800) 524-1363  
(201) 933-0450  
Fax: (201) 933-3961

Big R Manufacturing  
P.O. Box 1290  
Greeley, CO 80632  
Voice: (800) 234-0734  
(970) 356-9600  
Fax: (970) 356-9621

Hamilton Construction Company  
P.O. Box 659  
Springfield, OR 97477-0121  
Voice: (541) 746-2426  
Fax: (541) 746-7635

Modular Bridge Systems  
8035 Alexander Rd.  
Delta, BC Canada V4G 1C6  
Voice: (604) 946-1524  
Fax: (604) 946-1514

Van Straten and Sons Manufacturing  
RFD #1, US 41 North  
Baraga, MI 49908  
Voice: (906) 353-8177  
(906) 353-6490  
Fax: (906) 353-7115

### **Hinged bridges**

ADM Welding and Fabrication  
Pennsylvania Ave. West Ext., Rear  
Warren, PA 16365  
Voice: (814) 723-7227  
Fax: (814) 723-7227

### **Concrete decked steel bridges**

SureSpan Bridge  
Suite 216  
545 Clyde Ave.  
West Vancouver, BC Canada V7T 1C5  
Voice: (604) 925-3377  
Fax: (604) 925-3394

### **Railroad flatcar bridges**

Rick Franklin Corporation  
101 Industrial Way  
P. O. Box 365  
Lebanon, OR 97355  
Voice: (800) 428-1516  
(541) 451-1275  
Fax: (541) 258-6444

### **Expanded metal grating**

Alabama Metal Industries, Inc.  
P.O. Box 3928  
Birmingham, AL 35208  
Voice: (800) 366-2642  
Fax: (205) 780-7838

Brown-Campbell Steel Co.  
14290 Goddard St.  
Detroit, MI 48212  
Voice: (800) 521-4512  
(313) 891-2390  
Fax: (313) 891-2903

McNichols Co.  
1951 Lively Blvd.  
Elk Grove, IL 60007  
Voice: (800) 237-3820  
Fax: (847) 640-8388

### **Wood mats/panels**

Carolina Mat Company  
P.O. Box 339  
Plymouth, NC 27962  
Voice: (800) 624-6027  
(919) 793-4045  
Fax: (919) 793-5187

Clemons Forest Products  
P.O. Box 982  
Amite, LA 70422  
Voice: (504) 748-9079  
Fax: (504) 748-9719

### **Wood pallets**

Uni-Mat International  
503 Martin St.  
Houston, TX 77018  
Voice: (800) 445-7850  
(713) 697-3585  
Fax: (713) 697-1227

### **Tire mats**

Terra Mat Corporation  
462 Arbor Circle  
Youngstown, OH 44505  
Voice: (330) 759-9412  
Fax: (330) 759-7679

Unique Tire Recycling, Inc.  
155 LaFarge Rd.  
Kamloops, BC Canada V2C 6T5  
Voice: (800) 446-5955  
Fax: (604) 573-3492

### **High flotation tires**

Ardco-Traverse Lift, LLC.  
322 Riley Rd.  
Houston, TX 77047  
Voice: (713) 433-6751  
Fax: (713) 433-5655

Continental General Tire Co.  
1800 Continental Blvd.  
Charlotte, NC 28273  
Voice: (704) 583-3900  
Fax: (704) 583-8540

Firestone Agricultural Tire Co.  
730 E. Second St.  
Des Moines, IA 50309  
Voice: (515) 242-2306  
Fax: (515) 242-2329

OTR Wheel Engineering  
Box 5811  
Rome, GA 30162-5811  
Voice: (706) 235-9781  
Fax: (706) 234-8137

Rolligon Corporation  
10635 Brighton Lane  
Stafford, TX 77477  
Voice: (281) 495-1140  
Fax: (281) 495-1145

Toyo Tire USA Corporation  
300 W. Artesia Blvd.  
Compton, CA 90220  
Voice: (310) 537-2820  
Fax: (310) 604-1519

United Tire & Rubber Company  
275 Belfield Rd.  
Rexdale, ON Canada M9W 5C6  
Voice: (416) 675-3077  
Fax: (416) 675-4337

### **Single and bogie tire tracks**

Hultdins, Inc.  
22 Morton Ave. East  
Brantford, ON Canada N3T 5T3  
Voice: (519) 754-0044  
Fax: (519) 754-1569

Pedno Tracks, Inc.  
3641 rue des Forges  
Laterriere, PQ Canada G0V 1K0  
Voice: (418) 678-1506  
Fax: (418) 678-9748

### **Central tire inflation equipment**

Eaton Air Control Products  
1303 Durham Rd.  
P.O. Box 241  
Roxboro, NC 27573-0241  
Voice: (910) 503-6411  
Fax: (910) 503-6425

## **APPENDIX 2**

### **SPECIFICATIONS FOR SOME TEMPORARY STREAM CROSSING OPTIONS**

Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>4</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
<b>Ford</b>								
Plastic ford	28 ft [8.5 m] long by 16 ft [4.9 m] wide	---	114 lbs [52 kg] per panel	---	4 people for 6 hrs each \$2,400	Bulldozer	---	Milauskas (1988)
Plastic ford	40 ft [12.2 m] long by 16 ft [4.9 m] wide	---	---	\$860	3 people for 1.5 hrs each	Bulldozer	---	Pence (1987)
Plastic ford	80 ft [24.4 m] long by 16 ft [4.9 m] wide	---	---	\$1,325	3 people for 8 hrs each	Backhoe, small crawler tractor	---	Tufts et al. (1994)
Concrete plank ford	Each plank is 16 in [41 cm] long by 14 ft [4.3 m] wide by 5.5 in [14 cm] thick	---	1,300 lbs [590 kg] per panel	---	---	---	---	McNemar (1983), Milauskas (1988)
Rubber mat	0.5 in [1.3 cm] thick	---	1,600 lbs [725 kg]	Used material	2 people for 2 hrs each	Skidder or pulley block	---	Looney (1981)
<b>Culverts</b>								
Steel arch culvert	---	---	---	---	---	No special equipment is needed for small culverts, an excavator is needed for large culverts.	---	Provencher (1992)



Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>4</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Steel arch culvert	39 ft [12 m] long by 26 ft [8 m] wide by 9.2 ft [2.8 m] tall	---	---	\$36,207 (Canadian)	\$23,000 (Canadian)	Crane	---	MacGregor and Provencer (1995)
<b>PVC pipe bundle</b>								
Schedule 40 PVC pipe bundle	9 ft [2.7 m] long by 20 ft [6.1 m] wide	---	---	\$602	3 people for 3 hours each	Front-end loader or skidder	---	Mason (1993a), Mason (1993b), Mason and Moll (1995)
<b>Bridges (timber, used railroad cars, steel, or pre-stressed concrete)</b>								
Log stringer bridge	30 ft [9.1 m] long	118,000 lbs [53,500 kg]	---	\$6,500 (includes fabrication, transport, installation, and removal, and storage)	2 days needed to install the bridge and build approaches	Excavator and front-end loader	---	Grabinski (1993)
Log stringer truck bridge	30 ft [9.1 m] long	50,000 lbs [22,600 kg]	---	---	½ day	Skidder	---	Hancock (1987)
Solid sawn stringer skidder bridge	26 ft [7.9 m] long by 12 ft [3.7 m] wide	---	---	\$500	3 people for 30 min each	Skidder	---	Thompson (1988)
Solid sawn stringer skidder bridge	12 ft [3.7 m] long by 12 ft [3.7 m] wide	16,200 lbs [7,300 kg]	---	\$342	2 people for 1 day to purchase, deliver, and assemble	Skidder	---	Bihun (1991)

Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>1</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Solid sawn stringer skidder bridge	21 ft [6.4 m] long by 12 ft [3.7 m] wide	---	---	\$1,600	1 hr	Loader or skidder	---	Bates (1995)
Oak solid sawn stringer skidder bridge panels	24 ft [7.3 m] long by 6 ft [1.8 m] wide	---	---	\$45 per panel	---	---	---	Beasley (1991)
Stress-laminated panel skidder bridge	Each panel is 19 to 24 ft [5.8 to 7.3 m] long by 4.5 ft [1.4 m] wide	---	---	between \$200 and \$1,200 for two panels	About 8 hrs to assemble two panels	Loader or skidder	---	Kittredge and Woodall (1997)
Stress-laminated panel truck bridge	63 ft [19.2 m] long by 23 ft [7 m] wide	---	---	\$79,500	\$10,500 labor; cranes were on-site for 30 hrs and used for 15 hrs	Two cranes	---	Dickson (1995)
Stress-laminated panel truck bridge	33 ft [10 m] long by 21 ft [6.4 m] wide	---	---	\$45,200	\$9,900	---	---	Dickson (1995)
Stress-laminated panel truck bridge	40 ft [12.2 m] long by 16 ft [4.9 m] wide	---	---	\$7,000	2-3 hrs	Bulldozer equipped with a winch and knuckleboom loader	---	Hassler (1990)
Glulam panel truck bridge	50 ft [15.2 m] long	---	---	\$44,000	\$11,100	---	---	Groenier (1995)

Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>1</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Glulam panel truck bridge	32 ft [9.8 m] long by 9 ft [2.7 m] wide	---	Each 4.5 ft wide panel weighs 6,500 lbs [2,950 kg]	\$16,100	---	Loader or small truck-mounted crane	---	Taylor et al. (1995)
Glulam panel truck bridge	30 ft [9.1 m] long by 16 ft [4.9 m] wide by 10.5 in [27 cm] thick	80,000 lbs [36,300 kg]	Four panels, each 4 ft [1.2 m] wide, totaling 5,500 lbs [2,500 kg]	\$15,500	\$375 (3 people for about 4.5 hrs each)	Loader or small truck-mounted crane	\$375 (3 people for about 4.5 hrs)	Taylor (1994), Taylor et al. (1995)
Glulam panel skidder bridge	Two panels, each one is 26 ft [7.9 m] long by 4 ft [1.2 m] wide by 8.5 in [21.5 cm] thick	34,000 lbs [15,400 kg]	---	\$9,300 (this was a prototype; the estimated cost was less than \$8,000 for a commercial bridge)	---	Loader with a grapple skidder	---	Kelther and Taylor (1994), Kelther et al. (1995)
Glulam panel truck bridge	Two panels, each one is 40 ft [12 m] long by 6 ft [1.8 m] wide	---	---	\$17,000	\$1,680 (less than 3 hrs)	Tracked backhoe	---	Taylor and Ritter (1996)
Dowel-laminated panel skidder or truck bridge (Wheeler Lumber, I.L.C.)	Two panels, each one is 26 ft [7.9 m] long by 5 ft [1.5 m] wide by 7.8 in [20 cm] thick	---	About 4,200 lbs [1,900 kg] per panel	\$3,300 per panel, 2 panels required for a skidder crossing and 4 panels for a truck crossing	1 hr	Loader or small truck-mounted crane	30 min	Wheeler Lumber, I.L.C.

Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>1</sup>	Installation equipment	Removal cost or time	Reference <sup>2</sup>
Railroad flatcars (Rick Franklin Corporation)	41 ft [12.5 m] long by 8.5 ft [2.6 m] wide	80,000 lbs [36,300 kg]	18,000 lbs [8,100 kg]	\$5,000	---	Excavator for the smaller units and a crane for larger railcars	---	Rick Franklin Corporation
	53 ft [16.1 m] long by 10.5 ft [3.2 m] wide	80,000 lbs [36,300 kg]	45,000 lbs [20,400 kg]	\$9,000	---			
	60 ft [18.3 m] long by 10.5 ft [3.2 m] wide	80,000 lbs [36,300 kg]	60,000 lbs [27,200 kg]	\$9,000	---			
	89 ft [27.1 m] long by 9 ft [2.7 m] wide	80,000 lbs [36,300 kg]	130,000 lbs [59,000 kg]	\$12,000	---			
Railroad flatcar subframes	20 ft [6.1 m] long by 18.7 ft [5.7 m] wide	---	---	\$17,100 (Canadian)	---	Excavator with front-end loader	---	Bradley and Pronker (1994)
	40 ft [12.2 m] long by 18.7 ft [5.7 m] wide	---	---	\$20,700 (Canadian)	---			
	52.5 ft [16 m] long by 18.7 ft [5.7 m] wide	---	---	---	---			

Appendix 2. Specifications for some temporary stream crossing options.<sup>1, 2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>1</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Railroad boxcar for log trucks	50 ft [15.2 m] long by 10 ft [3 m] wide	---	---	\$3,000	---	Transported on lowboy trailer. One end of bridge lifted with Prentice 210 D knuckleboom loader	---	Caraway (1997)
Hamilton EZ steel truck or skidder bridge	50 ft [15.2 m] long	---	---	\$37,800	\$7,260	---	---	Groenier (1995), Muchmore (1978)
Steel panel skidder bridge	26 ft [7.9 m] long by 4 ft [1.2 m] wide	34,000 lbs [15,422 kg]	4 ft [1.2 m] wide panels each about 5,000 lbs [2,267 kg].	\$3,600 per panel	10 - 15 min	Grapple or cable skidder	---	Weatherford (1996)
Steel plank skidder bridge	Two panels, each one is 24 ft [7.3 m] long by 4 ft [1.2 m] wide	99,000 lbs [45,000 kg]	2,200 lbs [1,000 kg] per panel	\$8,000 (Canadian)	---	Excavator	---	Plamondon and Maranda (1996)
Steel panel forwarder bridge	16 ft [3.3 m] long	---	Two panels, each about 3,000 lbs [680 kg]	\$2,500 (Canadian) total for the two panels	---	Trailer and loader	---	Makkonen (1991)
Steel small-vehicle bridge	20 ft [6.1 m] long	19,800 lbs [9,000 kg]	6,280 lbs [2,850 kg]	\$11,200 (Canadian)	16 hrs for frame assembly; 1 hr to install	Dual-axle flatbed truck and a loader	45 min	Hamilton (1990b)

Appendix 2. Specifications for some temporary stream crossing options.<sup>1, 2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>4</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Van Straten and Sons steel truck bridge	32 ft [9.8 m] long by 12 ft [3.7 m] wide 40 ft [12.2 m] long by 12 ft [3.7 m] wide 50 ft [15.2 m] long by 12 ft [3.7 m] wide	100,000 lbs [45,350 kg]	The bridge comes in two 6 ft [1.8 m] wide panels that are bolted together. Each panel weighs about 5,000 - 6,000 lbs [2,270 - 2,720 kg]	\$6,500  \$6,800  \$8,500	---	Front-end loader, crane, or a skidder	---	Van Straten and Sons
Hinged steel small-vehicle bridge	16 ft [4.8 m] long	2,000 lbs [907 kg]	---	\$12,500	---	Half-ton pickup truck	---	Moller (1989)
Hinged steel small-vehicle bridge	18 ft [5.5 m] long	6,600 lbs [3,000 kg]	---	\$10,600 (Canadian)	2 people for 1 hr each	Half-ton pickup truck	2 people for 1 hr each	Hamilton (1989, 1992)
Modular steel truck bridge	30 ft [9.1 m] long 80 ft [24.4 m] long 110 ft [33.5 m] long	---	---	---	---	---	---	Groenier (1995)

Appendix 2. Specifications for some temporary stream crossing options.<sup>1,2</sup>

Option	Dimensions	Maximum weight supported	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time <sup>4</sup>	Installation equipment	Removal cost or time	Reference <sup>5</sup>
Modular steel skidder and truck bridge <sup>8</sup> (Acrow Corp. of America)	80 ft [24.4 m] long by 15.7 ft [4.8 m] wide 120 ft [37 m] long by 15.7 ft [4.8 m] wide	204,000 lbs [92,500 kg] 204,000 lbs [92,500 kg]	50,000 lbs [22,700 kg]	\$60 per ft <sup>2</sup> of deck space \$85 per ft <sup>2</sup> of deck space	100 ft [30 m] bridge would require three 10-hr days with a crew of 5 or 6 people (No more than 16% of the purchase price)	Small loader	100 ft [30 m] bridge would require three 10 hr days with a crew of 5 or 6 people (No more than 16% of the purchase price)	Acrow Corporation of America, Muchmore (1978)
Truck bridge	30 ft [9.1 m] long by 14 ft [4.3 m] wide 40 ft [12.2 m] long by 14 ft [4.3 m] wide	150,000 lbs [68,000 kg]	---	\$18,000 (Canadian) \$24,000 (Canadian)	---	Excavator	---	Ross (1997)
Precast prestressed concrete truck bridge	50 ft [15.2 m] long	---	---	\$43,300	\$4,400	---	---	Groenier (1995)
Precast prestressed concrete truck bridge	35 ft [10.6 m] long by 12 ft [3.7 m] wide	100,000 lbs [45,350 kg]	---	\$7,100	\$950	Crane	---	Jenkins (1991)

<sup>1</sup>All data represent information obtained from published sources, promotional materials, or from personal contacts with vendors. No attempt was made by the authors to validate the accuracy of the information. This is not a complete listing; other vendors and options are available. It is important to consider your needs and applications before making a purchase or rental decision. Evaluate and compare vendor recommendations and specifications. Where appropriate, consider factors such as travel speed, maximum span distance, and abutment requirements. Verify that bridging products have been certified by a licensed engineer. Inspect all products before each installation. Conform to all appropriate regulations.

<sup>2</sup>For some criteria, metric equivalent measurements are shown in brackets immediately following the English units. Unless otherwise specified, all costs and prices are given in \$US.

<sup>3</sup>For commercial products, the approximate purchase price does not include shipping. Where two or more references are noted for an option, all cost information reflects information obtained from the most current source or the manufacturer.

<sup>4</sup>Bridge installations assume that all required stream bank abutments are in-place and that the crossing is already on-site.

<sup>5</sup>A list of commercial product vendors is presented in Appendix 1. Other references are noted in the listing of references.

<sup>6</sup>Wider bridges can be fabricated, if needed, for high flotation equipment. Rental units are also available.

<sup>7</sup>Bridges 16 ft (4.9 m) wide and up to 156 ft (47.6 m) long are also available. Each bridge is divided longitudinally into either a 7- or 8-ft (2.1-m or 2.4-m) panel. Add about 6 to 8 percent to purchase the 16-ft- (4.9-m)-wide bridge.

<sup>8</sup>Longer bridges to almost any length are available in increments of 10 ft (3 m).



## **APPENDIX 3**

### **SPECIFICATIONS FOR SOME TEMPORARY WETLAND CROSSING OPTIONS**

Appendix 3. Specifications for some temporary wetland crossing options.<sup>1,2</sup>

Option	Dimensions	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time	Installation equipment	Removal cost or time	Reference <sup>4</sup>
<b>Wood mats/panels</b>							
Oak wood mats (Carolina Mat Company)	14 ft [4.3 m] long by 10 ft [3 m] wide  16 ft [4.9 m] long by 10 ft [3 m] wide	15,500 lbs [7,000 kg] per mat  17,500 lbs [7,900 kg] per mat	\$130 per mat  \$150 per mat	---	Knuckleboom loader	---	Carolina Mat Company
Random-length hardwood planks	Lumber: 125 ft [38 m] long by 12 ft [3.7 m] wide by 2.5 in [6.4 cm] thick	---	Lumber and nails: \$620	---	---	---	Bridge (1989)
Oak dragline mats (Clemons Forest Products)	Many lengths, from 16 ft [4.9 m] to 36 ft [9.1 m]; either 4 or 5 ft [1.2 or 1.5 m] wide and 8, 10, or 12 in [20, 25, or 30 cm] thick	---	\$210 for a 16 ft [4.9 m] long by 4 ft [1.2 m] wide by 8 in [20 cm] thick mat  \$980 for a 36 ft [11 m] long by 5 ft [1.5 m] wide by 12 in [30 cm] thick mat	---	---	Knuckleboom loader	Clemons Forest Products

Appendix 3. Specifications for some temporary wetland crossing options.<sup>1,2</sup>

Option	Dimensions	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time	Installation equipment	Removal cost or time	Reference <sup>4</sup>
<b>Wood pallets</b>							
Oak interlocking wood pallets (Uni-Mat International)	12 ft [3.7 m] long by 8 ft [2.4 m] wide	1,200 lbs [544 kg]	\$188 per mat (As pallets interlock, two pallets are needed)	1,200 lineal ft [366 m] per day	Front-end loader	---	Uni-Mat International
<b>Expanded metal grating</b>							
Expanded metal grating	200 ft [60 m] long	---	Metal safety grating: \$238 per 3-ft x 10-ft [0.9 x 3.0-m] section  Non-woven geotextile: \$380 per 12.5-ft x 360-ft [3.8 x 110-m] roll	4 people for 2 hrs each	Front-end loader	---	Mason (1992), Mason (1993a), Mason (1993b), Mason and Greenfield (1995)
<b>Tire mats</b>							
Terra Mat	10 ft [3 m] long by 5 ft [1.5 m] wide	1,200 lbs [550 kg]	\$300 for 2 mats each 10 ft [3 m] x 5 ft [1.5 m]	80 ft [24.4 m] per hr with a loader, 50 ft [15.2 m] per hr with a skidder; estimated to be \$1.43 per lineal ft [\$4.69 per lineal m]	Knuckleboom loader or skidder	Estimated to be \$1.91 per lineal ft [\$6.27 per lineal m]	Terra Mat Corporation, Goldberg (1993), Howe (1990), Wilson (1990)

Appendix 3. Specifications for some temporary wetland crossing options.<sup>1,2</sup>

Option	Dimensions	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time	Installation equipment	Removal cost or time	Reference <sup>1</sup>
<b>Low ground pressure equipment</b>							
Tracks for a single tire (Pedno Tracks, Inc.)	23.1 x 26 with 42 in [1.1 m] pad width	4,762 lbs [2,160 kg] (set of two tracks)	\$6,950 for a set of two tracks	---	---	---	Pedno Tracks, Inc.
	30.5 x 32 with 50 in [1.3 m] pad width A variety of pad widths are available from 42 in [1.1 m] to 65 in [1.6 m] for different tire dimensions	5,118 lbs [2,320 kg] (set of two tracks)	\$7,250 for a set of two tracks	---	---	---	
Tracks for a single tire (Hultdins, Inc.)	23.1 x 26 with 32 in [0.88 m] pad width	2,132 lbs [967 kg] (set of two tracks)	\$4,240 for a set of two tracks	---	---	---	Hultdins, Inc.
	30.5 x 32 with 37 in [0.95 m] pad width A variety of sizes are available - consult the manufacturer for further information	2,838 lbs [1287 kg] (set of two tracks)	\$6,320 for a set of two tracks	---	---	---	

Appendix 3. Specifications for some temporary wetland crossing options.<sup>1,2</sup>

Option	Dimensions	Product weight	Approximate purchase price <sup>3</sup>	Installation cost or time	Installation equipment	Removal cost or time	Reference <sup>4</sup>
Tracks for adjacent bogie tires (Hultdins, Inc.)	Many sizes available in four different designs - consult the manufacturer for further information	Ranges from about 3000 lb [1360 kg] to about 5000 lbs [2268 kg]	Ranges from about \$8,000 to about \$12,000 for a set of two tracks	---	---	---	Hultdins, Inc.

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<sup>2</sup>For some criteria, metric equivalent measurements are shown in brackets immediately following the English units. Unless otherwise specified, all costs and prices are given in \$US.

<sup>3</sup>For commercial products, the approximate purchase price does not include shipping. Where two or more references are noted for an option, all cost information reflects information obtained from the most current source or the manufacturer.

<sup>4</sup>A list of commercial product vendors is presented in Appendix 1. Other references are noted in the listing of references.