

## BEST MANAGEMENT PRACTICES FOR GATE INSTALLATION

July 2007

The Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) lists the following information for the proper construction sequence for the installation of gates within the park. These Best Management Practices (BMP) are to be followed in accordance with the review and approval of this BMP through the National Environmental Policy Act (NEPA), the National Historic Preservation Act (Section 106), Director's Order 12 and Director's Order 28, Maryland Standards and Specifications for Soil Erosion and Sediment Control (latest version), Regional Letter of Authorization between the NPS and Maryland Department of Environment, The Secretary of Interior's Standards for Historic Preservation, and cyclic maintenance guides.

This BMP is submitted as an attachment to PEPC Project #14594.

The C & O Canal NHP has established gates at various locations to restrict vehicle access onto or within park property. Most of these gates were designed as metal pipe swing gates with a hinge post and a lock post. A few areas in the park use bollards or chains as a method to restrict vehicle access. Vehicle access is typically restricted to emergency, law enforcement, and park maintenance.

The swing gate style forces pedestrian, bicyclist, and equestrian park users to pass each gate on the outside of either post. In many locations, only a narrow area is available for this purpose due to sloping terrain. As a result, park visitors are being placed in a compromised safety situation. Additionally, impacts to surrounding natural and cultural resources often occur.

The C&O Canal NHP will replace the metal pipe swing gates with a new style gate that allows for visitor passage along the center line of the towpath or other sanctioned access route. The new style gates have hinged panels with two posts. The gates are fabricated from round pipe stock. These gates can be manufactured either by contract or by park staff.

It is anticipated that the new gates will be installed within the limits of disturbance (LOD) of the existing swing gates. The LOD is a two foot radius from an existing gate post. **Any gate that falls outside of the previous LOD will require separate compliance to evaluate impacts to both natural and cultural resources.**

In order to install the gates, the following criteria must be met:

1. All gates will be produced to specifications as determined by the park civil engineer using round pipe stock.
2. Gates will be painted NPS brown, with reflective safety tape installed.
3. Gates will have appropriate signage attached. Signage could include, but is not limited to, STOP signs, park closure signs, park hour signs, etc.

4. Gates will be constructed to match the current distance between swing gate posts. Center opening will be at least five (5) feet, NTE seven (7) feet.
5. New gates posts will be installed within two feet of existing gate posts. Any distance greater than two feet in any direction will need separate project clearances through National Environmental Policy Act and the National Historic Preservation Act.
6. Gate exchange will be made during the same work day. Plans must be developed to ensure this is accomplished.
7. Pedestrian pathways that have developed as a result of bypassing the swing gates will be attended with appropriate turf management practices using park approved grass mix, etc.
8. For gate locations within the park that need to accommodate larger equipment, such as agricultural equipment, wider gate panels will be fabricated to allow the wider access. Center opening of wider gates will retain the standard center opening specifications.

In areas where farm machinery and equipment must access the park towpath, gate panels will be wider to allow for appropriate clearance of larger machinery. The typical gate over-all width from post to post is fifteen (15) feet four (4) inches. In locations of agricultural permits, the access gates are typically twenty (20) feet post-to-post. All gates will have a center opening of five (5) feet four (4) inches.

Gates posts will be stabilized with NTE 1 cubic yard of 3,000 psi concrete/post.

New gates will utilize the posthole of the existing gates when possible.

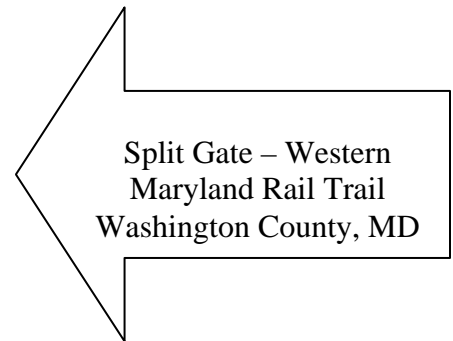
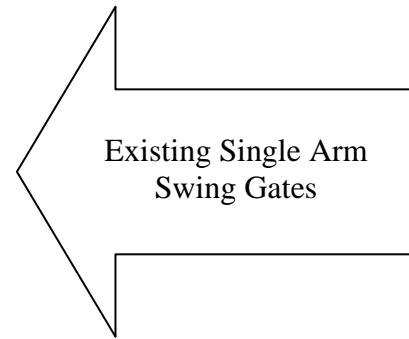
PHASE I - Swing gates across the towpath and other sanctioned trails, such as the Capital Crescent Trail, and the Western Maryland Rail Trail, will be replaced first.

PHASE II - Gates located on pathways between sanctioned parking lots and the towpath or other official pathways (Capital Crescent Trail, Western Maryland Rail Trail, etc) will be replaced on the second round.

PHASE III - All other gates will be replaced upon completion of phase I and II.

In locations where bollards are the current means of pathway closure, a separate compliance package will be undertaken to evaluate and potential resource concerns. If the location for a gate to replace bollards is within the standard categorical exclusion, then these Best Management Practices for the construction sequence of gate installation will be followed.

If an existing swing gate is not at public access use area, such as park personnel only areas or areas restricted to agricultural personnel, the park reserves the right to retain the single arm swing gate.





Prototype park gate, installed  
at public access Lock 56,  
Allegany County, MD. Mile  
136.21



**TOWPATH/ACCESS GATES  
PARKWIDE**

(as of 3/17/06)

LOCATION	SIZE	TYPE
M.P. 000.02 (entrance to CCT off Water St.)		bollard
M.P. 000.04 (Rock Creek Parkway on towpath)		bollard
M.P. 000.48 (30th St. - Lock 3 plaza)		chain gate
M.P. 000.56 (Thomas Jefferson Street)		bollards (both sides)
M.P. 000.59 (31st Street - on towpath)		bollard
M.P. 000.84 (33rd Street - on towpath)		bollard
M.P. 003.02 (Fletcher's - access to picnic area)		pipe gate
M.P. 003.10 (Fletcher's - towpath access)		bollard
M.P. 003.14 (Fletcher's - towpath access)		cable gate
M.P. 005.04 (Lock 5 - towpath access)		cable gate
M.P. 008.30 (Lock 8 from Clara Barton)		cable gate
M.P. 008.36 (Lock 8 - at end on 79th St.)		cable gate
M.P. 008.81 (Lock 10 - towpath access)		pipe gate
M.P. 010.43 (Carderock - towpath access)		pipe gate
M.P. 010.49 (Carderock - Pavillion access)		cable gate
M.P. 010.54 (Carderock- Parking Lot B)		pipe gate
M.P. 011.04 (Brickyard Rd.-service rd access)		cable gate
M.P. 011.07 (Brickyard Rd.-private property)		cable gate
M.P. 012.17 (Angler's - towpath access)		pipe gate
M.P. 014.27 (access to Service Road)		chain gate
M.P. 014.53 (Boneyard access)		cable gate
M.P. 016.67 (Swains - towpath access)		chain gate
M.P. 019.66 (Pennyfield - towpath access)		cable gate
M.P. 019.64 (access to Pennyfield House)		pipe gate
M.P. 022.12 (Violettes Lock)		cable gate
M.P. 022.14 (Violettes Lock Road)		pipe gate
M.P. 022.89 (Seneca)	14'	single swing gate
M.P. 027.21 (Sycamore Landing)	14'	single swing gate
M.P. 030.09 (Edwards Ferry)	14'	single swing gate
M.P. 030.10 (Edwards Ferry)	14'	single swing gate
M.P. 035.50 (Whitse Ferry)	14'	single swing gate
M.P. 035.52 (Whites Ferry)	14'	single swing gate
M.P. 039.50 (Warmwater)	14'	single swing gate
M.P. 042.16 (Monocacy Aqueduct)		new style double swing gate
M.P. 044.58 (Nolands Ferry)	14'	single swing gate
M.P. 044.59 (Nolands Ferry)	14'	single swing gate
M.P. 048.35 (Point of Rocks)	20'	double swing gate
M.P. 048.50 (Point of Rocks)	14'	single swing gate
M.P. 050.91 (Lander access)	14'	single swing gate
M.P. 050.92 (Lander Boat Ramp)	14'	single swing gate



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(as of 3/17/06)

M.P. 050.93 (Lander access)	14'	single swing gate
M.P. 053.60 (Brunswick Campground)	14'	single swing gate
M.P. 055.25 (Brunswick)	14'	single swing gate
M.P. 058.06 (Weaverton)	14'	single swing gate
M.P. 061.61 (Lock 34)	14'	single swing gate
M.P. 062.97 (Myers Property)	14'	single swing gate
M.P. 064.88 (Dargan Bend access)		single swing gate
M.P. 064.90 (Dargan Bend access)		single swing gate
M.P. 065.40 (Compost site access)		single swing gate
M.P. 067.16 (Mt. Lock parking area)		single swing gate
M.P. 069.03 (Ladies Aid Lane)		single swing gate
M.P. 069.33 (Bussard Property)		single swing gate
M.P. 069.40 (Antietam access)		single swing gate
M.P. 069.67 (Long Property)		single swing gate
M.P. 076.66 (Snyders Landing)		single swing gate
M.P. 076.68 (Snyders Landing)		single swing gate
M.P. 081.02 (Taylors Landing)		single swing gate
M.P. 081.04 (Taylors Landing)		single swing gate
M.P. 084.30 (Dam #4 access)		split gate
M.P. 085.36 (Big Slackwater - towpath)		single swing gate
M.P. 085.37 (Big Slackwater - towpath)		single swing gate
M.P. 085.38 (Dyke wall - Slackwater)		single swing gate
M.P. 085.39 (Dyke wall - Slackwater)		single swing gate
M.P. 085.55 (Dam #4 picnic area)		single swing gate
M.P. 088.11 (McMahon's Mill)		split gate
M.P. 089.02 (Galloway Bluff)		single swing gate
M.P. 089.06 (Burnside Property)		single swing gate
M.P. 093.00 (Potomac Fish & Game)		single swing gate
M.P. 093.34 (Potomac Fish & Game)		single swing gate
M.P. 094.41 (Schetrompf Road)		single swing gate
M.P. 094.50 (Schetrompf access)		single swing gate
M.P. 099.41 (Williamsport towpath gate)		single swing gate
M.P. 099.42 (Williamsport towpath gate)		single swing gate
M.P. 099.42 (bermside of towpath)		single swing gate
M.P. 099.50 (Lock 44)		single swing gate
M.P. 099.83 (Williamsport turning basin)		single swing gate
M.P. 099.84 (Fenton Avenue access)		single swing gate
M.P. 100.51 (Banzhoff Road access)		single swing gate
M.P. 103.26 (Gift Road access)		single swing gate
M.P. 106.21 (Dam 5 Road access)	16'2"	
M.P. 106.84 (Dam #5 access)	14'	
M.P. 107.30 (Small Property)	15'	

**TOWPATH/ACCESS GATES  
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(as of 3/17/06)

M.P. 107.38 (Two Locks access)	15'	
M.P. 108.78 (Four Locks access)	11'	
M.P. 109.00 (Costlow Property)	11'	
M.P. 110.30 (McCoy's Ferry Campground)	11'	
M.P. 110.35 (McCoy's Ferry access)	12'	
M.P. 110.42 (McCoy's Ferry access)	11'	
M.P. 112.41 (Fort Frederick access)	11'6"	
M.P. 112.42 (Fort Frederick access)	11'6"	
M.P. 114.52 (Ernstville access)	19'2"	
M.P. 116.95 (Parkhead access)	16'10"	
M.P. 122.84 (Little Property access)	15'	
M.P. 124.85 (Hancock Maintenance)	11'2"	
M.P. 124.33 (Little Tonoloway access)	12'	
M.P. 124.34 (Little Tonoloway access)	11'2"	
M.P. 130.71 (Cohill access)	13'	
M.P. 136.24 (Lock 56 access)	New	
M.P. 140.77 (15 Mile Creek access)	12'	
M.P. 140.78 (15 Mile Creek Campground)	12'	
M.P. 140.79 (15 Mile Creek access)	12'	
M.P. 140.85 (Compost Site access)	12'	
M.P. 146.93 (state gate below Higgins Property)		single swing gate
M.P. 147.73 (Higgins Property gate)		single swing gate
M.P. 150.69 (Bonds Landing)		double gate
M.P. 150.70 (Bonds Landing)		double gate
M.P. 153.28 (Outdoor Club Road)		single swing gate
M.P. 155.60 (Tunnel Hill Trail)		single swing gate
M.P. 156.24 (Arbaugh Property)		single swing gate
M.P. 156.35 (Arbaugh Property - Route 51)		single swing gate
M.P. 156.45 (Larkin Addition)		single swing gate
M.P. 157.27 (Elsie's/Purslane Cemetary)		single swing gate
M.P. 161.79 (Lock 67)		single swing gate
M.P. 161.83 (Town Creek Crossover)		single swing gate
M.P. 162.30 (Roeder Property)		single swing gate
M.P. 164.83 (Lock 68)		single swing gate
M.P. 166.45 (Oldtown RR Bed)		single swing gate
M.P. 166.50 (Moore Property)		single swing gate
M.P. 166.73 (Lock 70)		double gate
M.P. 166.74 (Lock 70)		double gate
M.P. 170.80 (Zihlman Property)		single swing gate
M.P. 173.03 (Spring Gap Campground)		single swing gate
M.P. 173.37 (Spring Gap water pump)		single swing gate
M.P. 173.38 (Spring Gap access)		double gate



**TOWPATH/ACCESS GATES  
PARKWIDE**

(as of 3/17/06)

M.P. 173.39 (Spring Gap access)		double gate
M.P. 175.50 (North Branch access)		double gate
M.P. 175.51 (Lock 74 access)		double gate
M.P. 178.50 (Mexico Farms - Old RR Bridge)		single swing gate
M.P. 178.90 (Briem Road)		double gate
M.P. 178.91 (Briem Road)		double gate
M.P. 181.76 (Offutt Street)		double gate
M.P. 181.77 (Offutt Street)		double gate
M.P. 182.62 (Wiley Ford Bridge)		single swing gate
M.P. 183.02 (Pony Farm)		double gate
M.P. 183.03 (Elizabeth Street)		double gate
M.P. 184.30 (Cumberland-electric power plant)		single swing gate
M.P. 184.50 (Entrance to new pumping station)		single swing gate