

APPENDIX A – PRE-FIELD DOCUMENTS AND FORMS

This appendix contains supporting documents for pre-field activities:

- Pre-Inventory Phone Interview Checklist
- Park Notification Letter
- Kick-Off Meeting Agenda
- Retaining Wall Questionnaire
- RIP Route Identification Report – Example
- Visidata Preliminary Wall Location Form
- Documents and Equipment Checklist

Pre-Inventory Phone Interview Checklist

The following provides general guidance on the information to provide/acquire during the initial phone interview.

WIP Retaining Wall Definition:

- All classes of paved Park roadways and parking areas are included in the inventory, as either described in the Park RIP Route Identification Report or further identified by Park facilities management staff.
- The retaining wall must reside within the existing roadway/parking area prism, generally defined within the known or assumed construction limits, and support or protect the roadway/parking area.
- The maximum wall height – including only that portion of the wall structure intended to actively retain soil and/or rock – must be greater than or equal to four feet, 6 ft for culvert headwalls.
- When known or verifiable, wall embedment is considered in determining maximum retaining wall height for wall acceptance (embedment is *not* used for wall face area dimensioning or condition rating). Include fully buried retaining structures in the inventory when locations are known or verifiable.
- Walls are further defined by an internal wall face angle greater than or equal to 45° ($\geq 1H:1V$ face slope ratio).
- When wall acceptance based on the above criteria is marginal or difficult to discern, include the wall in the inventory, particularly where the intent is to support or protect the roadway/parking area and where failure would significantly impact the roadway/parking area and/or require replacement with a similar structure.

Discussion Checklist:

- Overview of the Retaining Wall Inventory Program, general site inspection procedures, data exchange and reporting processes and responsibilities, etc.
- FHWA personnel traveling to the site and their originating FLH office.
- Desired travel dates, availability of Park personnel, and alternate travel dates.
- Requirements of Park staff:
 - Pre-site information gathering (information package, described below).
 - Kick-off meeting (~1-2 hrs), attended by Facilities Manager, Maintenance Foreman, Cultural Resource Specialist, FMSS Specialist (individuals most knowledgeable with wall locations, repairs, stability issues, historical aspects, etc.).
 - Wall reconnaissance support (typically no more than a day).
 - Traffic control support (manpower and/or signage, as needed).
 - Close-out meeting (~1 hr).
- General WIP safety requirements/standards of practice.

- General retaining wall information:
 - Approximate number of walls in the Park?
 - General types, sizes and ages of walls?
 - Presence of failing or damaged walls?
 - General wall locations (including distance between walls)?
 - Known cultural resource issues?
 - Environmental access issues?
 - Are walls exclusively on RIP-inventoried roads, or do non-RIP roads/gravel roads exist with retaining walls?

- Overview of information package to be sent to the Park:
 - Pre-site questionnaire (describe level of effort required from the Park staff, including general mapping of wall locations within the Park and the approximate age of all wall types).
 - Kick-off meeting agenda.

- Park and FHWA contact information exchange.

- Recommended inventory team lodging?

- Anticipated weather conditions throughout the Park (in particular, high elevation roads)?

Park Notification Letter



U.S. Department
of Transportation
**Federal Highway
Administration**

<Office> Federal Lands Highway Division
Street Address
City, State, Zip

Superintendent
XYZ National Park
Road/Hwy/Street Address
City, State, Zip

<Date>

Subject: NPS Retaining Wall Inventory Program (WIP)

Dear <Superintendent Name>,

The Federal Highway Administration (FHWA) has been requested by NPS WASO to assist with the inventory and condition assessment of retaining walls associated with Park roadways. This effort is in support of on-going NPS asset management actions that are documented in annual “FMP update” memoranda from the Deputy Director to Regional Directors. The most recent was sent on March 6th, 2007.

On-site inspection will provide information for the Facility Management Software System (FMSS) pertaining to roadway retaining walls throughout the Park. This will include static information such as type, size and location, as well as dynamic information about the condition of these facilities. Where deficiencies are identified, repair recommendations with estimated costs will be provided, which can then be used in FMSS as work orders.

FHWA staff will be performing most of the direct inspection work; however, some assistance from the Park is requested, including the following:

- Completion of a brief questionnaire regarding various aspects of retaining walls in your Park. This information, particularly that pertaining to wall locations and cultural resources, will *greatly* assist the inspection team in planning and completing their work. The questionnaire and a filled-in example are attached to this transmittal. We would ask that this information be completed prior to our arrival on-site to help expedite the inventory.
- Participation in an approximate 1-hour inventory kick-off meeting to discuss the inspection process, expected deliverables, logistics, safety, FMSS issues, etc. A preliminary agenda

accompanies this transmittal. During this meeting we would like to coordinate activities with the Facilities Manager, discuss wall locations and general conditions with maintenance staff, and cover data transfer procedures with staff responsible for maintaining the Park's FMSS database. We would also like to discuss cultural and historical aspects of Park retaining walls with cultural resource staff. Although the inventory does not directly assess the cultural/historical aspects of the structure, we do note its resource value and incorporate this information into any repair recommendations that may arise.

- Assistance with wall reconnaissance in the Park. Knowledgeable Park staff will accompany the inspection team immediately following the kick-off meeting to quickly recon wall locations throughout the Park prior to initiating wall inspections. This effort will assist the inventory team in better determining the total number of walls to be inspected, their location within the Park, and the manner in which to most efficiently conduct the inventory.
- Assistance with traffic control. Park personnel are not generally required for traffic control; however, the Park shall provide the inspection team with appropriate roadway signage warning motorists of roadside work crews. Inspection team members will be responsible for performing all needed traffic control duties (sign placement, traffic spotting, limited flagging, etc.). Road closures will not be required.
- Participation in an approximate 1-hour close-out meeting to discuss inventory findings, FMSS issues, data reporting and transfer, and deliverable schedules.

On behalf of our inspection team, I want to thank you in advance for your assistance with this effort. I have contacted Mr. <Facility Manager> to initiate early planning for inspection activities, and we are currently planning on coming to your Park the week of <Date>. If I can be of any assistance or answer any questions regarding the Park inventory, please feel free to contact me at <Phone Number>. For additional Wall Inventory Program (WIP) information, please contact <NPS WASO Program Coordinator>, NPS WASO Program Coordinator, at <Phone Number>, or <FLH WIP Coordinator>, FLH WIP Coordinator, at <Phone Number>. We look forward to working with you and your staff.

Sincerely,

Team Lead
Title

cc: <Facility Manager, XYZ National Park>
<NPS WASO Program Coordinator>, NPS WASO
<FLH WIP Database Administrator>, FHWA-CFLHD

Kick-Off Meeting Agenda

Introductions/Meeting Logistics

Overview of the NPS Retaining Wall Inventory Program

- **Intent of the WIP**
 - Provide Parks with information regarding roadway retaining walls for FMSS. This includes static spec temp information and dynamic condition and work order information.
 - Provide FHWA with baseline retaining wall condition information to assist with future project analysis and development.
- **General Site Inventory Procedures** – Overview wall location/ages, measurement, description, condition assessment, work order, and cultural resource considerations.
- **Integrating Cultural Resource Needs** – Discussion of cultural/historic wall resources and repair/replace requirements.
- **Data Access and Management (FMSS)** – Overview of FMSS Spec template, NPS transmittal of equipment numbers to FHWA, and data transmittal process.

WIP Safety Program

- **Overview Wall Data Collection Practices** – Roadway and wall measurement procedures.
- **Roadside Safety Practices** – Number of personnel, parking, wall access, safety equipment, designated traffic spotter, etc.
- **Traffic Control** – Warning signs, flaggers/spotters (inspection team) when occupying pavement edge or centerline.
- **General Fall Protection/Hazard Management** – Wall access philosophy (limited to top and toe of walls), and Park-specific safety requirements.
- **Communication Planning** – Emergency contacts/procedures, Park-provided radios.
- **Wildlife/environmental precautions** – Predatory animals, poisonous snakes, insects, plants, water levels in adjacent streams, etc.

Inventory Schedule Review

- **Pre-Site Questionnaire Review** – In-office pre-location of retaining walls, identification of problem walls, preparation for wall reconnaissance. Review pre-site questionnaire.
- **Wall Location Reconnaissance** – Conduct maintenance staff interview (or other facilities knowledgeable Park personnel) and perform wall reconnaissance.
- **Retaining Wall Inventory** – Discuss general strategy for systematically conducting the inventory (safety/traffic considerations), refine preliminary wall inventory schedule (developed based on Park questionnaire prior to arriving on-site), set up tentative close-out meeting schedule.
- **Close-Out Meeting** – Review inventory findings, discuss FMSS products, discuss forthcoming inspection report, establish tentative schedule for reporting and data delivery.

Additional Questions/Discussion

Retaining Wall Questionnaire

Note: This questionnaire is intended to provide cursory information that will assist the retaining wall inspection team during on-site wall inventories. Field visits by Park personnel for preliminary wall locations and/or extensive file review are NOT required to answer any of the following questions. The intent of this questionnaire is to quickly query knowledgeable personnel and obtain most of this information based on current experience and knowledge.

Retaining Wall Acceptance Criteria:

- All classes of paved Park roadways and parking areas are included in the inventory, as either described in the Park RIP Route Identification Report or further identified by Park facilities management staff.
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Preliminary Information Needs

- (1) Estimated number of walls in the park and their approximate age?
- (2) Which routes have retaining walls and approximately where along the routes are they located? (Provide RIP route names/numbers when possible, approximate mileposts defining retaining wall areas, and/or standard page-size Park maps indicating approximate wall locations.)
- (3) Have any repairs been done to existing retaining walls? If so, are repair cost data/plans/drawings available (do not provide the actual plans, just note whether or not they exist and are accessible)?
- (4) Are there any anticipated cultural resource issues associated with retaining walls in the Park? If so, does documentation exist describing the cultural aspects of the walls?

- (5) Does the park currently maintain a retaining wall inventory or similar source of structures information? If yes, please provide to inventory team.
- (6) Are there specific walls with serious or known problems? If yes, please list RIP route name and number and approximate milepoint location.

RIP Route ID Report - Example

Roadway Inventory Program	NPS/RIP Route ID Report	Page 1 of 3
(Numerical By Route #)		

Shading Color Key: Red text denotes approx. mileage	White - Paved Routes, ARAN Driven Grey - Paved Routes, ARAN not Driven Black - Paved State, Local or Private non-NPS Routes, ARAN Driven	Yellow - Unpaved Routes, ARAN not Driven Red - Purple -	Blue - All Paved Parking Areas Green - All Unpaved Parking Areas
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COLM	<i>Colorado National Monument</i>
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Rte. #	FMS Asset #	Route Name	Route Description From To	Paved Miles	Un-Paved Miles	Rte. Lgth	Func. Class	Rte. Lanes	Manual Rated SQ/FT	Surf. Type
0010	80034	RIMROCK DRIVE	From Northwest Entrance To East Entrance	22.41	0.00	22.41	1	2	0	AS
0011		GLADE PARK ROAD	From Route 0010 at MP 18.4 To Park Boundary	0.72	0.00	0.72	1	2	0	AS
0100		WEST GLADE PARK ROAD	From Route 0010 at MP 10.92 To West Boundary	0.00	0.13	0.13	2	2	0	GR
0200		SADDLEHORN AMPHITHEATER/ CAMPGROUND ROAD	From Route 0010 at MP 4.3 To end of loop	0.95	0.00	0.95	3	2,1	0	AS
0201A		SADDLEHORN CAMPGROUND LOOP A	From Route 0200 To End of Loop	0.22	0.00	0.22	3	1	0	OC
0201B		SADDLEHORN CAMPGROUND LOOP B	From Route 0201A To End of loop	0.31	0.00	0.31	3	2,1	0	AS
0201C		SADDLEHORN CAMPGROUND LOOP C	From Route 0200 To Route 0200	0.26	0.00	0.26	3	1	0	OC
0202		DEVILS KITCHEN PICNIC AREA RD	From Route 0010 at MP 19.44 To Route 0918	0.12	0.00	0.12	3	2	0	OC
0400		MAINTENANCE/ RESIDENCE AREA ROAD	From Route 0010 at MP 4.2 To Dead End	0.33	0.00	0.33	4	2	0	AS
0401		WATER TANK ROAD	From Route 0010 at MP 4.38	0.00	0.27	0.27	4	2	0	GR
0402		EAST SHOP ROAD	From Route 0010 at MP 19.28 To End of Pavement at Gate	0.11	0.00	0.11	4	2	0	AS
0403		STONE HOUSE SERVICE RD	From Route 0200 To Behind Visitor Center	0.08	0.00	0.08	4	1	8,268	OC
0700	80045	R3-Unpaved Admin Use Road	From To	0.00	1.00	1.00	ZZ		0	GR
0900		VISITOR CENTER PARKING	Adjacent To Route 0010 at MP 4.4	0.00	0.00	0.00	9		26,488	OC
0901		VISITOR CENTER ANNEX PARKING	Adjacent To Route 0200	0.00	0.00	0.00	9		2,151	OC
0902		AMPHITHEATER PARKING	Adjacent To Route 0200	0.00	0.00	0.00	9		43,463	OC
0903		OTTO'S TRAILHEAD PARKING	Adjacent To Route 0010 at MP 5.3	0.00	0.00	0.00	9		3,838	OC
0904		WINDOW ROCK NATURE TRAIL PARKING	Adjacent To Route 0200	0.00	0.00	0.00	9		3,820	OC
0905		PARK MAINTENANCE LOT PARKING	Adjacent To Route 0400	0.00	0.00	0.00	9		30,740	OC
0906		BOOK CLIFF VIEW PARKING	Adjacent To Route 0200	0.00	0.00	0.00	9		4,401	OC
0907		INDEPENDENCE MONUMENT VIEW PARKING	Adjacent To Route 0010 at MP 5.5	0.00	0.00	0.00	9		11,442	OC
0908		GRAND VIEW PARKING	Adjacent To Route 0010 at MP 6.04	0.00	0.00	0.00	9		5,770	OC
0909		COKE OVENS OVERLOOK PARKING	Adjacent To Route 0010 at MP 7.94	0.00	0.00	0.00	9		4,907	OC
0910		HIGHLAND VIEW PARKING	Adjacent To Route 0010 at MP 9.9	0.00	0.00	0.00	9		6,271	OC
0911		UPPER UTE CANYON PARKING	Adjacent To Route 0010 at MP 13	0.00	0.00	0.00	9		3,560	OC
0912		FALLEN ROCK OVERLOOK PARKING	Adjacent To Route 0010 at MP 13.3	0.00	0.00	0.00	9		3,993	OC

10/10/2004

Visidata Preliminary Wall Location Form

Visidata Retaining Wall Location Form						
Park Name:		Prepared By:			Date:	
RIP Route Name and/or Number	Side of Road	~Wall Start Visidata Milepoint	~Wall End Visidata Milepoint	Wall Function	Wall Type	Access/Comments

Documents and Equipment List

Electronic Files

WIP Team and Park Contacts
Visidata Park Files
WIP Database for the Park
WIP Field Forms
WIP Field Guide
WIP Cost Guide
WIP Procedures Manual
RIP Route Inventory Report (comprehensive report)
RIP Route Identification Report (summary route listing)

Hard Documents

WIP Pre-Inventory Interview Checklist (phone interview notes)
Park Notification Letter (as sent to the Park)
WIP Kick-off Meeting Agenda (extra copies)
WIP Retaining Wall Questionnaire
Visidata Wall Location Form (filled out)
WIP Retaining Wall Reconnaissance Form (extra copies)
WIP FMSS Data – Manual Input Procedure and Test Guide
FMSS Spec Data Template
RIP Route Inventory Report (comprehensive report)
RIP Route Identification Report
RIP Intersection Report
Visidata Quick Start Guide
Field Forms (3x expected wall count – weather-proof paper)
Park Maps
WIP Field Guide
WIP Cost Guide
WIP Procedures Manual

Equipment

Laptop (with writeable CD, USB ports, mouse, etc.)
External Hard Drive (RIP report and Visidata-loaded)
Power Adaptor (with two standard AC outlets)
Field Form (clipboard case for forms management)
Wall Measuring Tools (tapes (hand/reel), clinometers, distance meter, etc.)
Rock Hammer
Camera (with spare storage card/batteries)
Safety equipment (vests, hard hats, gloves, boots, harnesses/ropes/hardware, first aid box)
Field glasses
Spare Batteries/car fuses
Flashlight
Surveyors Tape
Spray Paint

