

CONTENTS

Appendix H: Examples of GMP Cost Estimating Tools.....	H-1
H.1 Facility Planning Model	H-1
H.2 CRV Calculator	H-5

APPENDIX H: EXAMPLES OF GMP COST ESTIMATING TOOLS

H.1 FACILITY PLANNING MODEL

This model estimates the size of facility that your project needs. The model takes you through a series of questions about visitor numbers, the uses of the structure, and other aspects related to the facility. It then generates a report like the one below which details the recommended size of the facility and documents characteristics of the facility.

NPS Facility Planning Model Report

NOTE: Nothing in this report should be published as an Official Report of the NPS Facility Planning Model without Approval by the Office of Construction Program Management

Identification:

Project Title:	MIMI VC-Admin APPROVED
Model:	Visitor Facility
Type of Project:	New Construction
PMIS Number:	
Region:	MW
Park Name:	Badlands NP
Your Name:	Mark Herberger & others
Job Title:	Superintendent
Park Suggested GSF:	7,700
Concurred by (Region):	Alan M. Hutchings
Recommended by (WASO, CPM):	7,700 GSF
Approved by (DAB):	
Created Date:	8/17/2006 8:24:55 AM
Modified Date:	11/3/2006 10:48:55 AM
Calculator Mode:	Custom Calculator

Comments on this report:

The model calculates a need for 7,700 GSF for a combined VC-Administration facility, plus or minus 10%.

This run is based on an original effort by Park Superintendent Mark Herberger on 12/15/2003 and then modified by DSC and WASO-CPM with use of later information. Some revision of site details may be required.

Drivers:

Visitation and Staff	<u>Standard Database Drivers</u>	<u>Park-Modified Drivers</u>
Annual Visitation	909,146	909,146
Projected Annual Visitation	768,861	479,000
Average Peak Months	24.9%	24.9%
Capture Rate	25.0%	25.0%
Time Spent	0.50 hr	0.50 hr
Average Peak Visitors in VC at one time	239	149
Total Staff (NPS and Others)	8	8
Total Volunteers and Cooperating Associates	5	5

Benchmark Calculations:

	<u>A - Core VC with Standard Drivers</u>	<u>B - Core VC with Park Modified Drivers</u>
Public Spaces (NSF, nearest 100)	4,800	3,000
VF Staff Area (NSF, nearest 100)	2,500	2,100
Administrative Staff (NSF, nearest 100)	700	500
Tare at 25% (nearest 100)	2,700	1,900
Building (GSF, nearest 100)	10,700	7,500
Recommended:		
Area Per Person in Public Spaces (NTE)	20-25	20-25
Percentage of VF Staff Areas (NTE)	SF or 23%	SF or 28%
Percentage of Total Staff Areas (NTE)	SF or 30%	SF or 35%

NPS Park Specific Calculations:

	<u>C - Park Modified VC Spaces with Standard Drivers</u>	<u>D - Park Modified VC Spaces with Park Modified Drivers</u>
Public Spaces (NSF, nearest 100)	5,600	3,700
VF Staff Area (NSF, nearest 100)	1,800	1,500
Administration (NSF, nearest 100)	500	500
Tare at 25% (nearest 100)	2,600	1,900
Building (GSF, nearest 100)	10,600	7,700
Site (Acres)	2.30	1.60
Exterior Requirements	0.90	0.60

	U.90	U.60
Exterior Requirements		
Site Access / Utility Extensions (Cost)	\$1,616,000	\$1,616,000
Unique Construction Factors (Cost)	\$402,001	\$402,001
Total Net Construction Cost (Not Calculated)	-	-
Actual:		
Area Per Person in Public Spaces	23	25
Percentage of VF Staff Areas	17%	19%
Percentage of Total Staff Areas	22%	26%
Recommended:		
Area Per Person in Public Spaces (NTE)	20-25	20-25
Percentage of VF Staff Areas (NTE)	SF or 28%	SF or 28%
Percentage of Total Staff Areas (NTE)	SF or 35%	SF or 35%

Estimated Square Footage Report:

<u>Room Description</u>	<u>C - Park Modified Spaces with Standard Drivers</u>	<u>D - Park Modified Spaces with Park Modified Drivers</u>	<u># Persons</u>	<u># Spaces or Units</u>
Core Visitor Facility				
Public Area: Lobby Spaces				
Interpretive Materials Storage	100	100	-	1
Lobby/Orientation	1,215	765	51	1
Information Desk	120	120	-	1
Vestibules	140	140	7	1
Public Area: Exhibit Spaces				
Exhibit Area	1,721	1,073	-	1
Public Area: Theater Spaces				
Audio/Visual Storage	114	72	-	1
Projection Booth	114	80	-	1
Multipurpose Room	1,140	720	48	1
Public Area: Cooperating Assoc. & Concessionaire				
Interpretive Sales Office	100		-	1
Interpretive Sales Storage	210	131	-	1
Interpretive Sales	841	524	-	1
Staff Area: Office Area				
Staff Restrooms	170	170	2	-
Offices	0	0	-	1
General Storage	120	120	8	1
Recycle bins	40	40	-	4
Staff Lockers	35	35	5	5
Interpretive Work Area	160	160	2	1
Library	200	200	-	1
Staff Break Room	100	100	4	1
Restrooms				
Family Restrooms	170	170	-	1
Male/Female Restrooms	420	355	-	2
<i>Core VF: Net Assignable</i>	7,230	5,075		
<i>Tare at 25%</i>	2,410	1,692		
<i>Gross Square Feet</i>	9,640	6,767		
Park Specific Functions				
Other Staff and Support Spaces				
Fee Counting Room	80	80	-	1
First Aid Station	100	100	-	1
<i>Park Specific Functions: Net Assignable</i>	180	180		
<i>Tare at 25%</i>	60	60		
<i>Gross Square Feet</i>	240	240		
Administration				

Administration				
Offices	390	390	4	1
Workstations	160	160	2	1
<i>Administration: Net Assignable</i>	550	550		
<i>Tare at 25%</i>	183	183		
<i>Gross Square Feet</i>	733	733		
Subtotal Building				
<i>Net Assignable (nearest 100)</i>	8,000	5,800		
<i>Gross Square Feet (nearest 100)</i>	10,600	7,700		
Site				
Building (nearest 100)	10,600	7,700	-	-
Parking: Staff Vehicles	4,290	4,290	-	13
Special Landscape Features	100	100	-	1
Bus Parking	1,530	1,530	-	1
Parking: Private Vehicles	26,730	16,500	-	50
Plaza	7,170	4,470	149	1
Site: Net Assignable (nearest 100)	50,400	34,600		
Tare + Site Constraints (nearest 100)	50,400	34,600		
Site GSF (nearest 100)	100,800	69,200		
Site Acres	2.30	1.60		
Utilities				
Utility Extensions (Linear Feet)	6,100		-	-
Physical and Environmental Constraints				
Environmental	1.00		-	-
Soils	1.00		-	-
Slope	1.00		-	-
Archaeology	1.00		-	-

Definitions:

GSF- Gross Square Feet
 NASF- Net Assignable Square Feet
 NSF- Net Square Feet
 NTE- Not to exceed
 Tare (for buildings)- Corridors, walls, mechanical, electrical, vertical shafts, vertical circulation, janitor closets, etc.

Additional Responses:

Park Staff Housed In Other Location
 Current trailer location will be eliminated.

Special Events
 Historical lectures, Cold War film classics, Cold War seminar and conferences, Air Force alumni gatherings, artist-in-residence show

Unusual Functions Noted by Facility Calculator

Park Administrative, Law Enforcement or Museum Collection Mgmt staff: included in model.
 Modified Visitation.
 Special Landscaping Features: additional space generated.
 First Aid Station: additional space generated.
 Fee Counting Room: additional space generated.
 Park Administrative Staff: additional space generated.

Justification of Unusual Functions

Facility will include park administration offices.
 Visitation is based on State Transportation study.
 Landscape feature could be a missile.

Landscape feature could be a missile.

First Aid station needed for remote location.

Fee counting for ticket income is required.

Existing trailer will be replaced by new building for housing staff.

Unique Construction Factors

Site is remote from population center for labor and materials costs

\$1

Development at actual missile site \$402,000

Environmental Costs

HAZMAT Remediation

\$

Additional study required for HAZMAT costs.

Sustainable Design

%

Additional study required for sustainable design costs.

Additional Costs

Exhibit costs

\$900,000

Planned exhibit types:

Type to be developed.

Interpretive film costs

\$

Additional study required for interpretive film.

H.2 CRV CALCULATOR

The following is an example of the cost replacement value (CRV) calculator in use. This excel spreadsheet has two parts; the first is the summary sheet, where you may enter the Park name and asset code. Then, you would click on the “Asset Worksheet” button, which takes you to another spreadsheet specific to that asset. In this example, the park is not specified “located at national average”, and the asset is “7100 – Outdoor Sculpture/Monuments/Memorials”. Once on the spreadsheet specific to sculptures, monuments, and memorials, you can enter the number of sculptures, etc to be replaced or built. The calculator automatically calculates the total cost based on a location factor, the number of units and the cost per unit. In this case, the total cost for one life-sized bronze sculpture is estimated as \$144,000.

7100 Outdoor Sculpture/Monument/Memorials

RECORD CRV

FMSS Location	Description	CRV
	Located at National Average	CRV based on national average \$144,000 Park Location Factor 1.000
		CRV with XXXX Location Factor \$144,000

Asset/Feature/Type	Description	Quantity	Units	Unit Price	Cost
Sculptures	Stone Statuary: Average		CF	\$515.00	\$0
	Stone Statuary: Ornate		CF	\$850.00	\$0
	Stone Statuary: Very Ornate		CF	\$1,185.00	\$0
	Life Size - Bronze Statuary	1	EA	\$144,000.00	\$144,000
	2-1/2 Life Size - Bronze Statuary		EA	\$360,000.00	\$0
Monuments	Stone Monuments: Average		CF	\$269.00	\$0
	Stone Monuments: Ornate		CF	\$332.00	\$0
	Stone Monuments: Very Ornate (Detailed cornices)		CF	\$0.00	\$0
Plaques	20" x 30", up to 450 Letters, Cast Bronze		EA	\$1,138.00	\$0
	30" x 36", up to 900 Letters, Cast Bronze		EA	\$2,151.00	\$0
	36" x 48", up to 1300 Letters, Cast Bronze		EA	\$3,276.00	\$0
Historic/					\$0
Other Costs					\$0
					\$0
					\$0