Project Cost Estimating System
UTILITIES ESTIMATE

A. ELECTRICAL

Transmission

	Computed or User	RW or Const	Type of Pole	No Entry Required	Number of Poles	Rural or Urban	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	RW					100%	$0	$0	$0
B	Computed	RW					100%	$0	$0	$0
C	Computed	RW					100%	$0	$0	$0
D	Computed	RW					100%	$0	$0	$0
								$0	$0	$0

Distribution - Aerial

	Computed or User	RW or Const	Type of Pole	No Entry Required	Number of Poles	Rural or Urban	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
E	Computed	RW					100%	$0	$0	$0
F	Computed	RW	Three Phase		12	Rural	50%	$96,000	$48,000	$0
G	Computed	RW					100%	$0	$0	$0
H	Computed	RW	Three Phase		2	Urban	100%	$20,000	$20,000	$0
I	Computed	RW					100%	$0	$0	$0
J	Computed	RW					100%	$0	$0	$0
								$116,000	$68,000	$0

Distribution - Underground - by Linear Foot

	Computed or User	RW or Const	Type of Service	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
K	Computed	RW				100%	$0	$0	$0
L	Computed	RW	Three Phase		1,000	50%	$170,000	$85,000	$0
M	Computed	RW				100%	$0	$0	$0
N	Computed	RW				100%	$0	$0	$0
							$170,000	$85,000	$0

Distribution - Underground - by Pole Equivalent

	Computed or User	RW or Const	Equivalent Type of Pole	No Entry Required	Equiv. # of Poles	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
O	Computed	RW				100%	$0	$0	$0
P	Computed	RW				100%	$0	$0	$0
Q	Computed	RW				100%	$0	$0	$0
R	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Distribution - Conduit for Underground Electrical

	Computed or User	RW or Const	Type of Service	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
S	Computed	RW				0%	$0	$0	$0
T	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Distribution - Underground - Manholes

	Computed or User	RW or Const	Size / Price Range of Manhole	No Entry Required	Number of MH's	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
U	Computed	RW				100%	$0	$0	$0
V	Computed	RW				100%	$0	$0	$0
W	Computed	RW				100%	$0	$0	$0
X	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Misc. Electrical Costs

Y	Misc. Electrical Costs Charged to RW Project:	$5,000
Z	Misc. Electrical Costs Charged to Const. Project:	$5,000

TOTAL ELECTRICAL	Total to RW Proj	Total to Const Proj
$296,000	$158,000	$5,000

B. TELEPHONE

Aerial - Copper Wire

	Computed or User	RW or Const	Type of Cable (Pair Cable)	No Entry Required	Number of Poles	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	RW				100%	$0	$0	$0
B	Computed	RW	300		12	50%	$43,200	$21,600	$0
C	Computed	RW				100%	$0	$0	$0
D	Computed	RW				100%	$0	$0	$0
							$43,200	$21,600	$0

Aerial - Fiber Optic

	Computed or User	RW or Const	Type of Cable (Optical Fiber)	No Entry Required	Number of Poles	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
E	Computed	RW				100%	$0	$0	$0
F	Computed	RW				100%	$0	$0	$0
G	Computed	RW				100%	$0	$0	$0
H	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Underground - Copper Wire

	Computed or User	RW or Const	Type of Cable (Pair Cable)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
I	Computed	RW				100%	$0	$0	$0
J	Computed	RW	300		2,000	50%	$28,000	$14,000	$0
K	Computed	RW				100%	$0	$0	$0
L	Computed	RW				100%	$0	$0	$0
							$28,000	$14,000	$0

Underground - Fiber Optic

	Computed or User	RW or Const	Type of Cable (Optical Fiber)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
M	Computed	RW				100%	$0	$0	$0
N	Computed	RW				100%	$0	$0	$0
O	Computed	RW				100%	$0	$0	$0
P	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Underground - Copper Wire - In Conduit

	Computed or User	RW or Const	Type of Cable (Pair Cable)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
Q	Computed	RW				100%	$0	$0	$0
R	Computed	RW				100%	$0	$0	$0
S	Computed	RW				100%	$0	$0	$0
T	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Underground - Fiber Optic - In Conduit

	Computed or User	RW or Const	Type of Cable (Optical Fiber)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
U	Computed	RW				100%	$0	$0	$0
V	Computed	RW				100%	$0	$0	$0
W	Computed	RW				100%	$0	$0	$0
X	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Manholes for UG Telephone Service

	Computed or User	RW or Const	Item	No Entry Required	Quantity	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
Y	Computed	RW	Telephone Manhole			100%	$0	$0	$0
Z	Computed	RW	Telephone Manhole			100%	$0	$0	$0

Misc. Telephone Costs

AA Misc. Telephone Costs Charged to RW Project:

BB Misc. Telephone Costs Charged to Const. Project:

TOTAL TELEPHONE	Total to RW Proj	Total to Const Proj
$71,200	$35,600	$0

C. CATV

Aerial CATV

	Computed or User	RW or Const	Type of Service	No Entry Required	Number of Pole Att'mnts	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	RW				100%	$0	$0	$0
B	Computed	RW	1.00 Coax		6	100%	$4,200	$4,200	$0
C	Computed	RW				100%	$0	$0	$0
D	Computed	RW				100%	$0	$0	$0
							$4,200	$4,200	$0

Underground CATV

	Computed or User	RW or Const	Type of Service	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
E	Computed	RW				100%	$0	$0	$0
F	Computed	RW	1.00 Coax		1,000	100%	$16,000	$16,000	$0
G	Computed	RW	12 Fiber		0	100%	$0	$0	$0
H	Computed	RW				100%	$0	$0	$0
							$16,000	$16,000	$0

Power Units

	Computed or User	RW or Const	Item	No Entry Required	Quantity	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
I	Computed	RW	CATV Power Supply			100%	$0	$0	$0
J	Computed	RW	CATV Power Supply			100%	$0	$0	$0

Misc. CATV Costs

Misc. CATV Costs Charged to RW Project:

Misc. CATV Costs Charged to Const. Project:

TOTAL CATV	Total to RW Proj	Total to Const Proj
$20,200	$20,200	$0

D. WATER

Water Line

	Computed or User	RW or Const	Diameter of Water Pipe (in)	Loaded $ per foot	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	User	RW				50%	$0	$0	$0
B	Computed	Const	8		1,000	50%	$125,000	$0	$62,500
C	Computed	Const				100%	$0	$0	$0
D	Computed	Const				100%	$0	$0	$0
							$125,000	$0	$62,500

Misc. Water Costs

E Misc. Water Costs Charged to Const. Project: $25,000

F Misc. Water Costs Charged to RW Project:

TOTAL WATER	Total to RW Proj	Total to Const Proj
$150,000	$0	$87,500

E. SANITARY SEWER

Sewer Line

	Computed or User	RW or Const	Diameter of Sewer Pipe (in)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	Const				100%	$0	$0	$0
B	Computed	Const	8		1,000	75%	$70,000	$0	$52,500
C	Computed	Const				100%	$0	$0	$0
D	Computed	Const				100%	$0	$0	$0
							$70,000	$0	$52,500

Misc. Sewer Costs

E Misc. Sewer Costs Charged to Const. Project: $25,000

F Misc. Sewer Costs Charged to RW Project:

TOTAL SEWER	Total to RW Proj	Total to Const Proj
$95,000	$0	$77,500

F. NATURAL GAS / PROPANE

Distribution

	Computed or User	RW or Const	Diameter of Gas Line (in)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	RW				100%	$0	$0	$0
B	Computed	RW	4		1,000	50%	$45,000	$22,500	$0
C	Computed	RW				100%	$0	$0	$0
D	Computed	RW				100%	$0	$0	$0
							$45,000	$22,500	$0

Transmission

	Computed or User	RW or Const	Diameter of Gas Line (in)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
E	Computed	RW				100%	$0	$0	$0
F	Computed	RW				100%	$0	$0	$0
G	Computed	RW				100%	$0	$0	$0
H	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Misc. Natural Gas / Propane Costs

I Misc. Gas / Pro Costs Charged to RW Project:

J Misc. Gas / Pro Costs Charged to Const. Project:

TOTAL GAS / PROPANE	Total to RW Proj	Total to Const Proj
$45,000	$22,500	$0

G. PETROLEUM

Transmission

	Computed or User	RW or Const	Diameter of Gas Line (in)	No Entry Required	Total Length(ft)	Percent VDOT	Total Cost	$ to RW Project	$ to Const Project
A	Computed	RW				100%	$0	$0	$0
B	Computed	RW				100%	$0	$0	$0
C	Computed	RW				100%	$0	$0	$0
D	Computed	RW				100%	$0	$0	$0
							$0	$0	$0

Misc. Petroleum Costs

E Misc. Petroleum Costs Charged to RW Project:

F Misc. Petroleum Costs Charged to Const. Project:

TOTAL PETROLEUM	Total to RW Proj	Total to Const Proj
$0	$0	$0

H. CELLULAR

Cellular Telephone Costs

A Total Cellular Costs Charged to RW Project:

B Total Cellular Costs Charged to Const. Project:

TOTAL CELLULAR	Total to RW Proj	Total to Const Proj
$0	$0	$0

I. ADDITIONAL COSTS

Additional Utility Costs to Right-of-Way Project : $0

Comments:

Additional Utility Costs to Construction Project : $0

Comments:

Additional Utility Costs to Utility Owners/Others : $0

Comments:

TOTAL UTILITY COST - RIGHT-OF-WAY PROJECT	$236,000
TOTAL UTILITY COST - CONSTRUCTION PROJECT	$170,000
TOTAL UTILITY COST - UTILITY OWNER / OTHERS	$271,100
GRAND TOTAL UTILITY COSTS	**$677,100**

Project Cost Estimating System
COMMENTS

	General / Miscellaneous Comments from CONST, RW, & UTILITY Worksheets:	Team Member and Section:	Date Entered:
1	Cost Estimates are for comparative purposes with regards to Tier 1 improvements and do not include all items that might be	Gannet Fleming	08/04/04
2	needed for final project construction, such as rehabilitation of existing pavement.		
3	Updated to 2005 Ad Date	Gannett Fleming	05/26/05
4			
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Project Cost Estimating System

SUMMARY PAGE

DISTRICT	Bristol, Salem & Staunton
PROJECT NUMBER	I-81 Study (Cloverleaf Int.)
PPMS NUMBER	n/a
AD DATE	2005
PROJECT MANAGER / DESIGNER	Chris Collins/VHB
Data Source for Construction Estimate:	CES
Data Source for Right-of-Way Estimate:	CES
Data Source for Utilities Estimate:	CES
DATE	*11/16/2005*

THE FOLLOWING DATA WILL BE PROVIDED UPON COMPLETION OF THE REMAINDER OF THE WORKBOOK, WHICH IS ACCESSED BY SELECTING THE **CONST**, **RW**, & **UTIL** TABS BELOW

CONSTRUCTION ESTIMATE	*$29,115,000*
PRELIMINARY ENGINEERING ESTIMATE	*$2,828,000*
RIGHT-OF-WAY & UTILITIES ESTIMATE	*$6,549,800*
TOTAL PROJECT ESTIMATE	*$38,492,800*

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Revised 12/08/03 RDW

Estimate Class: PFI

Version 2.0

Project Cost Estimating System
CONSTRUCTION / BRIDGE / PE

Project / PPMS #				
Interstate Project ?	YES			
Route Number	81		Interstate Highway	
Geometric Standard	Interstate	*	Principal Arterial - Freeway	
Ad Date	2005		Design Year =	2027
Design Year ADT	30,000	*	Project Terrain	Rolling
Box Must Be Empty			Approx. DHV = Minimum	4,500
Enter Design Speed (MPH) (Enter 60 or 70)	70	*	Design Speed =	70 MPH
Box Must Be Empty				
Box Must Be Empty				
Project Length (mi.)	3.00	*	*Number of Additional Lanes:*	*Length of Add'l. Lanes (mi.):*
Total Length -Adding or Building Two Lanes (mi.)	0.00	*	*+ One Add'l. Lane*	*3.41*
Total Length - Adding or Building Four Lanes (mi.)	0.00	*	*None*	
Total Length - Building Ramps and Loops (mi.)	4.14	*	*None*	
Box Must Be Empty				
Box Must Be Empty			Normal Lane Width (ft.)	12
Box Must Be Empty			Total Alignment Miles Computed (Required for LD-430 Scoping Report)	8.28
Box Must Be Empty				
Box Must Be Empty				
Box Must Be Empty				
Number of Right Turn Lanes - Left PLUS Right Side	4	*		
Box Must Be Empty				*Project Location: SALEM*
			95%	*of Statewide Avg.*
Number of New Traffic Signals Required	0	*		
Number of Traffic Signals Requiring Adjustment	0	*	Base Estimate	*$18,490,000*
Cost of Large Drainage Structures ($)	$100,000	*	*Constr. Engr.*	*$2,033,900*
In-Plan Utility Costs	*$170,000*		Const. Est. (Today)	*$20,523,900*
Adjustment for Unusual Construction Costs ($)	$300,000	*		

Examples - Add $'s for: Bicycle Facilities, Landscaping, Retaining Walls, Lighting, Wetlands Mitigation Sites, etc.

Construction Estimate in Mid- 2005 ***$21,774,000***

Continued on Next Page

Continued from Previous Page

Additional (or Unusual) P. E. Costs ($)	$15,000	Preliminary Engineering Cost	$2,635,000
Select % of PE to be performed by Consultants	100%		

Note: Do Not Include Bridge P. E. Costs Here

Roadway P. E. $ / Roadway Const. $ = 12.1%

BRIDGE TOTALS

BRIDGE COUNT: 1

Bridge Estimate (Today)	$6,919,500
Total Bridge Estimate in Mid- 2005	$7,341,000
Total Bridge P. E. Costs	$193,000

CONSTRUCTION & PE TOTALS

Total Construction Estimate (Roadway plus Bridge)	$29,115,000
Total Preliminary Engineering Estimate (Roadway plus Bridge)	$2,828,000

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Revised 12/08/03 RDW

Today's Date: 11/16/05

Version 2.0

BRIDGE CONSTRUCTION AND PRELIMINARY ENGINEERING COSTS

		BRIDGE CONSTRUCTION	BRIDGE P. E.
Proposed BRIDGE # 1 Length (ft.)	420		% by Consultants:
Width (ft.)	132	$6,165,500	100%
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)	C		
		Constr. Engr. Br. # 1	P.E.Bridge # 1
		$678,000	$193,000
Removal of Existing Structure # 1:		11.0%	Misc. Cost Bridge # 1
Length of Existing Structure (ft.)	200		
Width of Existing Structure (ft.)	40	$76,000	
Proposed BRIDGE # 2 Length (ft.)			% by Consultants:
Width (ft.)		$0	
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 2	P.E.Bridge # 2
		$0	$0
Removal of Existing Structure # 2:		0.0%	Misc. Cost Bridge # 2
Length of Existing Structure (ft.)			
Width of Existing Structure (ft.)		$0	
Proposed BRIDGE # 3 Length (ft.)			% by Consultants:
Width (ft.)		$0	
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 3	P.E.Bridge # 3
		$0	$0
Removal of Existing Structure # 3:		0.0%	Misc. Cost Bridge # 3
Length of Existing Structure (ft.)			
Width of Existing Structure (ft.)		$0	
Proposed BRIDGE # 4 Length (ft.)			% by Consultants:
Width (ft.)		$0	
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 4	P.E.Bridge # 4
		$0	$0
Removal of Existing Structure # 4:		0.0%	Misc. Cost Bridge # 4
Length of Existing Structure (ft.)			
Width of Existing Structure (ft.)		$0	
Proposed BRIDGE # 5 Length (ft.)			% by Consultants:
Width (ft.)		$0	
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 5	P.E.Bridge # 5
		$0	$0
Removal of Existing Structure # 5:		0.0%	Misc. Cost Bridge # 5
Length of Existing Structure (ft.)			
Width of Existing Structure (ft.)		$0	

BRIDGE CONSTRUCTION AND PE COSTS (continued)

		BRIDGE CONSTRUCTION	BRIDGE P. E.
Proposed BRIDGE # 6 Length (ft.)		$0	% by Consultants:
Width (ft.)			
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 6 $0	P.E.Bridge # 6 $0
Removal of Existing Structure # 6:		0.0%	Misc. Cost Bridge # 6
Length of Existing Structure (ft.)		$0	
Width of Existing Structure (ft.)			
Proposed BRIDGE # 7 Length (ft.)		$0	% by Consultants:
Width (ft.)			
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 7 $0	P.E.Bridge # 7 $0
Removal of Existing Structure # 7:		0.0%	Misc. Cost Bridge # 7
Length of Existing Structure (ft.)		$0	
Width of Existing Structure (ft.)			
Proposed BRIDGE # 8 Length (ft.)		$0	% by Consultants:
Width (ft.)			
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 8 $0	P.E.Bridge # 8 $0
Removal of Existing Structure # 8:		0.0%	Misc. Cost Bridge # 8
Length of Existing Structure (ft.)		$0	
Width of Existing Structure (ft.)			
Proposed BRIDGE # 9 Length (ft.)		$0	% by Consultants:
Width (ft.)			
Complexity / Type of New Bridge (C, M, S, WEB, or SRO)			
		Constr. Engr. Br. # 9 $0	P.E.Bridge # 9 $0
Removal of Existing Structure # 9:		0.0%	Misc. Cost Bridge # 9
Length of Existing Structure (ft.)		$0	
Width of Existing Structure (ft.)			

NOTE: Structure Complexity is based upon Height, Difficulty of Construction, and other Factors

NOTE: Projected Estimate Requires Route Number, Ad Date (Year), and other applicable data to be Entered / Selected previously on This Worksheet

Bridge Estimate (Today)	$6,919,500
Total Bridge Estimate in Mid- 2005	$7,341,000
Total Bridge P. E. Costs	$193,000