ANALYSIS OF THE INITIAL APPLICATION OF THE STATE OF WASHINGTON HIGHWAY MOBILITY PROJECT RANKING PROCEDURE AND RECOMMENDED REVISIONS FOR THE UPCOMING BIENNIUM

WA-RD 428.1

Appendices
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Washington State Department of Transportation

Washington State Transportation Commission
Planning and Programming Service Center
in cooperation with the U.S. Department of Transportation
Federal Highway Administration

APPENDIX A

EXAMPLES OF COST-EFFICIENCY WORKSHEETS

Included in this appendix:

- Cost-Efficiency Summary Sheet
- Safety Benefits Worksheet (2 pages)
- Intersection Improvement - User Benefits
- Add General Purpose Lane - User Benefits (2 pages)
- Two Way Left Turn Lane (2 pages)

Additional worksheets not included in this appendix:

- HOV Capacity Improvement Worksheet
- Park and Ride Lot Worksheet
- Cost calculation worksheets

(source: WSDOT, 1995)

COST EFFICIENCY WORKSHEET -
BENEFIT-COST ANALYSIS FOR SAFE MOVEMENT OF PEOPLE AND GOODS

The purpose of this worksheet is to summarize project costs and benefits. Detailed calculations should be included for each project and attached on a separate page. Benefits and costs should be expressed as present values using the following parameters:

Discount Rate (i) = 0.04
Study Period (n) = 20 years
(may vary on some projects, yet MUST be consistent with the time period used to calculate Project Benefits in any case. See accompanying outlines as detailed below.)

Project Cost Estimate: **199_ $'s**

Construction _____ (C)
(Sum ALL relevant line items including: environmental mitigation, and right-of-way; and excepting the following:)

Environmental Retrofit _____ (E_R)
(costs incurred due to a pre-existing condition, e.g. noise barriers, water quality treatment, and fish barrier removal. Some may be exempt.)

Preliminary Engineering _____ (S_P)

Annual Operating and Maintenance _____ (OpM_A)
(based on historical rates in similar area with proposed geometrics, except the following: Snow and Ice Removal, Structures & Ferries, Rest Area Management, and Public Damage Repair)

Calculate the Present Value of Project Costs (PV_C):

$$PV_C = (C) + (E_R) + (S_P) + \left\{ OpM_A \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] \right\}$$

Total Est. Costs (PV_C) = _____

Project Benefit Estimate:

Present Value of User Benefits _____
(includes both Travel Time Savings & User Operating Savings. Calculate as outlined in accompanying "User Benefits Worksheets")

Present Value of Safety Benefits _____
(Calculate as outlined in accompanying "Safety Benefits Worksheets")

Total Est. Benefits (PV_B) = _____

Calculate the BENEFIT-COST RATIO of Proposed Project:

B/C = (PV_B) /(PV_C) = _____

SAFETY BENEFITS WORKSHEET
Accident Savings -All Mobility Project Types-

SR:_____ Posted Speed:_____
Project Title:_____
Subject Section:_____
Length of Subject Section:_____
Number of Lanes:_____ # of Lanes (w/ improvement):_____
Evaluated by:_____

STEP ONE:
Determine what the Safety Improvements are. It may range from one item (e.g. installing a signal) to several items (e.g. flattening of slopes, widening shoulders, installing guardrails). Identify below:

_____
_____
_____
_____

STEP TWO:
Using the appropriate sequence numbers from the *Accident Locator Log* search for the most recent accident history and determine the study period. Record & cite reasoning below:

Sequence Numbers--> Beginning:_____ Ending:_____

Study Period--> Beginning:_____ Ending:_____

STEP THREE:
Use the mainframe (MENU55) or micro computer (MicroCARS) accident data system and conduct a historical collision analysis and sort report by type of collision for a three year summary. Line out those accidents which are not applicable/expected to be benefited by the proposed improvements. The following type of accidents are to be excluded in ALL cases:

- Vehicles striking road machinery
- Rocks or trees falling on vehicles
- Vehicles hitting animals
- Ice or snow accidents (some exceptions, -see Accident Reduction guidelines)
- Pedestrian accidents (unless improvement specifically related)

Detail the number of remaining accidents (No. Before Improvement), and the appropriate reduction factors by type, & complete calculation below *(for single improvements only)*:

(Refer to Appendix C of the *Informational Guide for Highway Safety Improvements, 1978* for accident reduction factors and follow the attached instruction based on whether this is project involves single, independent or combined multiple improvements and adjust the calculation as necessary.)

Collision Type:	(No. Before Improvement) 3 years	* (Reduction Factors)	= Annual Reduction
Fatality	_____	_____	_____
Disabling Injury	_____	_____	_____
Evident Injury	_____	_____	_____
Possible Injury	_____	_____	_____
Property Damage Only	_____	_____	_____

STEP FOUR:
Calculate the Annual Safety Benefits by applying the *(AASHTO, 1989*)recommended Costs per Collision Type to the Annual Collision Benefits (Annual Reduction):

Collision Type	(Cost/Collision)	* (Annual Reduction)	= ANNUAL BENEFITS
Fatality	$500,000	_____	_____
Disabling Injury	$110,000	_____	_____
Evident Injury	$ 10,000	_____	_____
Possible Injury	$ 3,000	_____	_____
Property Damage Only	$ 2,500	_____	_____
		TOTAL:	_____

STEP FIVE:
The final step is to calculate the Present Value of the Annual Benefits. Using the generalized Present Value equation for a series of uniform annual end-of-period payments find the Series Present Value Factor (PVF_S). The Period of the Estimate and the Analysis period will always be the same, and no greater than 20 years (ALWAYS use the SAME time period as is used for the corresponding mobility project). The discount rate will be 4%.

[Note that the term *Net present value (PVF)* is interchangeably referred to as the *Net present worth (f)* of a given project, these definitions are indeed consistent. No adjustments are necessary.]

b) Determine the Present Value Factor where: i = Discount Rate (0.04)
n = Analysis Period (years)

$$PVFs = \left[\frac{(1+i)^n - 1}{i(1+i)^n}\right]$$

= _____

c) Multiply the TOTAL Annual Benefits by the PVF_S to determine the Present Value of the Accident Reduction savings. Record the results below:

Present Value of Accident Reduction Savings = (PVF_S)(Total Annual Benefits)

= _____

CONDITIONAL STEP:

If the roadway is **NOT** on the *Ranked System Plan Collision Prevention Needs List* then record the above Present Value results on the NET PRESENT VALUE WORKSHEET.

OR

If this roadway **IS** on the *Ranked System Plan Collision Prevention Needs List* then conduct a Collision Prevention analysis as detailed in the Safety Improvement Projects Workbook (p.7.5-7.10 in Draft. *Note: Only calculate steps 3, 4, and 5, then repeat STEP FIVE above for Accident Prevention Savings*). The final step in this case is to sum the Accident Reduction Savings and the Accident Prevention Savings for the same Mobility project location, and record the ***TOTAL Present Value of Safety Benefits*** on the NET PRESENT VALUE WORKSHEET.

INTERSECTION CALCULATIONS

USER BENEFIT WORKSHEET

Capacity Improvement (Intersection)

Fill in RED boxes as needed. BLUE boxes will be calculated automatically

SR			Posted Speed		
Project Title					
Subject Section:					
Length of Subject Section:			Miles Proposed		Miles
Year 1			Year 20		
Vehicles per Hour =					
Delay (sec / veh) w/o imprvmnt			Delay (sec / veh) w/o imprvmnt		
Delay (sec / veh) w/ imprvmnt			Delay (sec / veh) w/ imprvmnt		
Year 1			Year 20		
Travel Time (hours) w/o imprvmnt	0.00		Travel Time (hours) w/o imprvmnt	0.00	
Travel Time (hours) w/ imprvmnt	0.00		Travel Time (hours) w/ imprvmnt	0.00	

Travel Time Savings (TTS)

TT(Build)-TT(No-Build)=TTS(Year 1 or 20)

Year 1			Year 20		
Travel Time Savings	0.00	Hrs	Travel Time Savings	0.00	Hrs
Truck %			Truck %		

If HOV percentage is NOT known then the traffic composition is determined from the Truck% and General Purpose% alone (must total 100%) and the TTS distribution is calculated as follow

Year 1			Year 20		
TTS - GP	0.00		TTS - GP	0.00	
TTS - Truck	0.00		TTS - Truck	0.00	

RURAL = 1

URBAN = 2 [1]

User Benefits

Year 1	Year 20
$0	$0

Present Value Factor (PVF)

PVF = 0.00

Present Value of User Benefits

$0

x 2 = *$0*

ADD GENERAL PURPOSE LANE

USER BENEFIT WORKSHEET

Capacity Improvement (additional GP Lane)

Fill in RED boxes as needed. BLUE boxes will be calculated automatically.

SR			Posted Speed		
Project Title					
Subject Section:					
Length of Subject Section:		Miles	Proposed		Miles
Number of Lanes		#of Lanes (w/improvement)			

Evaluated by:

*Note: Use (ADT*K) or (DHV*peak adjust %) for the Working Peak Hour Volumes below.*

Roadway Characteristics

Year 1 = 1995			Year 20 = 2015		
Working Pk hr. Vol.			Working Pk hr. Vols.		
% HOV			% HOV		
% Trucks			% Trucks		

**Attach Data Source citation list, and detail procedures for developing ALL raw data.*

If an HOV % is used input the Average Vehicle Occupancy (AVO)

Capacity

Roadway Type	Base	Section Type	
		No Build	Build
Urban Multilane Highway or Freeway	2200 vphpl		
Rural/Small Urban Freeway	2000 vphpl		
2 Lane Highway	1300 vphpl		
Arterial	1600 vphpl		
HOV Lane	1500 vphpl		

Capacity without improvement	0
Capacity with improvement	0

V/C Ratio

Year 1			Year 20		
Without Improvement			Without Improvement		
With Improvement			With Improvement		

Travel Time (TT) Hours

The following table calculates the TT when the V/C ratio is > 1

Year 1			Year 20		
	V/C > 1	TT		V/C > 1	TT
Without Improvement	YES	0	Without Improvement	YES	0
With Improvement	YES	0	With Improvement	YES	0

TT = ((Volume - Capacity) / 2 x Distance) + (Volume x distance / 30)

If the V/C ratio is < 1, then the following method is used to determine the Travel Time. Using the appropriate charts (Figure 16.1, 8, 13, or 14) from the Traffic Engineering Handbook (Second edition) input the Operating Speed for those scenarios alone.

Year 1		Year 20	
Operating Speed w/o imprvmnt		Operating Speed w/o imprvmnt	
Operating Speed w/ imprvmnt		Operating Speed w/ imprvmnt	

Travel Time is automatically calculated using the Operating Speed and Length of Section being evaluated.

Year 1		Year 20	
Travel Time w/o imprvmnt	0.00	Travel Time w/o imprvmnt	0.00
Travel Time w/ imprvmnt	0.00	Travel Time w/ imprvmnt	0.00

TT = (Volume x Distance / Speed)

Travel Time Savings (TTS)

TT(Build)-TT(No-Build)=TTS(Year 1 or 20)

Year 1			Year 20		
Travel Time Savings	0.00	Hrs	Travel Time Savings	0.00	Hrs

Travel Time Savings Distribution

If the HOV percentage is known then the detailed traffic composition is used to calculate the the following TTS. (Based on the values entered in above Working Peak Hr. Volumes section)

Year 1		Year 20	
TTS - SOV	0.00	TTS - SOV	0.00
TTS - HOV	0.00	TTS - HOV	0.00
TTS - Trucks	0.00	TTS - Trucks	0.00

If HOV percentage is NOT known then the traffic composition is determined from the Truck% and General Purpose% alone (must total 100%) and the TTS distribution is calculated as follow

Year 1		Year 20	
TTS - GP	0.00	TTS - GP	0.00
TTS - Truck	0.00	TTS - Truck	0.00

RURAL = 1

URBAN = 2 | 1

User Benefits

Year 1	Year 20
$0	$0

Present Value Factor (PVF)

PVF = 0.00

Present Value of User Benefits

$0

x 2 = $0

TWO WAY LEFT TURN LANE

USER BENEFIT WORKSHEET

Capacity Improvement (TWLT Lane)

Fill in red boxes as needed. Blue boxes will be calculated automatically

SR			Posted Speed		
Project Title					
Subject Section:					
Length of Subject Section:		Miles	Proposed		Miles
Number of Lanes		# of Lanes (w/improvement)		0	

Evaluated by: _____

Note: Use (ADT*K) or (DHV*peak adjust %) for the Working Peak Hour Volumes below.

Roadway Characteristics

Year 1 = 1995		Year 20 = 2015	
Working Pk hr. Vol.		Working Pk hr. Vols.	
% HOV		% HOV	
% Trucks		% Trucks	

**Attach Data Source citation list, and detail procedures for developing ALL raw data.

If an HOV % is used input the Average Vehicle Occupancy (AVO) [ ]

Capacity

Roadway Type	Base	Section Type With "X"	
		No Build	Build
Urban Multilane Highway or Freeway	2200 vphpl		
Rural/Small Urban Freeway	2000 vphpl		
2 Lane Highway	1300 vphpl		
Arterial	1600 vphpl		
HOV Lane	1500 vphpl		

Capacity without improvement	0		
Capacity with improvement	0	Imp Cap =	0

V/C Ratio

Year 1		Year 20	
Without Improvement	0.00	Without Improvement	0.00
With Improvement	-0.05	With Improvement	-0.05

FOR TWLT W/ IMP V/C = V/C W/O - 0.05

Travel Time (TT) Hours

The following table calculates the TT when the V/C ratio is > 1

Year 1			Year 20		
	V/C > 1	TT		V/C > 1	TT
Without Improvement	NO	0.00	Without Improvement	NO	0.00
With Improvement	NO	0.00	With Improvement	NO	0.00

((Volume - Capacity) / 2 x Distance) + (Volume x Distance / 30)

If the V/C ratio is < 1, then the following method is used to determine the Travel Time. Using the appropriate charts (Figure 16.1, 8, 13, or 14) from the Traffic Engineering Handbook (Second edition) input the Operating Speed for those scenarios alone.

Year 1		Year 20	
Operating Speed w/o imprvmnt		Operating Speed w/o imprvmnt	
Operating Speed w/ imprvmnt		Operating Speed w/ imprvmnt	

Travel Time is automatically calculated using the Operating Speed and Length of Section being evaluated.

Year 1		Year 20	
Travel Time w/o imprvmnt	0.00	Travel Time w/o imprvmnt	0.00
Travel Time w/ imprvmnt	0.00	Travel Time w/ imprvmnt	0.00

(Volume x Distance / Speed)

Travel Time Savings (TTS)

TT(Build)-TT(No-Build)=TTS(Year 1 or 20)

Year 1			Year 20		
Travel Time Savings	0.00	Hrs	Travel Time Savings	0.00	Hrs

Travel Time Savings Distribution

If the HOV percentage is known then the detailed traffic composition is used to calculate the following TTS. (Based on the values entered in above Working Peak Hr. Volumes section)

Year 1		Year 20	
TTS - SOV	0.00	TTS - SOV	0.00
TTS - HOV	0.00	TTS - HOV	0.00
TTS - Trucks	0.00	TTS - Trucks	0.00

If HOV percentage is NOT known then the traffic composition is determined from the Truck% and General Purpose% alone (must total 100%) and the TTS distribution is calculated as follows.

Year 1		Year 20	
TTS - GP	0.00	TTS - GP	0.00
TTS - Truck	0.00	TTS - Truck	0.00

RURAL = 1

URBAN = 2

User Benefits

Year 1	Year 20
$0	$0

Present Value Factor (PVF)

PVF = 0.00

Present Value of User Benefits

$0

x 2 = $0

APPENDIX B

NON-MONETARY CRITERIA WORKSHEETS

Included in this appendix:

- Non-monetary criteria summary sheet
- Community Support Worksheet
- Wetlands Assessment Worksheet
- Water Quality and Permitting Worksheet
- Noise Assessment Worksheet
- Mode Integration Worksheet
- Land Use Worksheet

(source: WSDOT, 1995)

SUMMARY OF SCORES FOR NON-MONETARY CRITERIA

Project Description:

Region #:

SR #:

Project Description:

Milepost #'s:

Enter a one line identification for this project:

This i.d. will appear on all of the separate worksheets.

Summary of Non-Monetary Scores:

Community Support	Wetlands Assessment	Water Quality	Noise Assessment	Modal Integration	Land Use
0	0	0	0	0	0

* These values are automatically taken from each of the completed criteria worksheets.
** They can be copied and pasted directly into the TOPSIS input worksheet.
(paste "Values" under the "Paste Special" command)

Throughout this workbook, cells requiring user input are highlighted in yellow

All calculations are performed automatically, and all cells that aren't yellow are 'write-protected'

COMMUNITY SUPPORT WORKSHEET

The purpose of this worksheet is to assess the community support and potential impact from the proposed project. For each question, check the appropriate answer and log the score in the blank to the right.

Question		Score
1. Is local, regional or TIB financial participation anticipated?	No = 3	
If yes, identify and indicate the scale by percentage of total project costs:	If Yes, < 10% = 2 10-25% = 1 > 25% = 0	
2 a. Have any local governments endorsed this project? **Identify:**	Yes = 0 No = 3	
b. Have any local organizations endorsed this project? **Identify:**	Yes = 0 No = 1	
3 a. Have any local governments indicated opposition? **Indicate scale:**	No = 0 If Yes, minimal = 1 moderate = 2 significant = 3	
b. Have any private groups or individuals indicated opposition? **Indicate scale:**	No = 0 If Yes, minimal = 1 moderate = 2 significant = 3	
4. Will the project divide identifiable neighborhoods, schools, or business areas?	Yes = 1 No = 0	
5. Will this project displace homes, cultivated farmlands, or businesses? If yes, indicate scale of displacement:	No = 0 If Yes, < 6 acres = 1 6 - 10 acres = 2 > 20 = 3	
Has an evaluation of the potential opposition of the displacement been conducted? (check one)	Yes [ ] No [ ]	
TOTAL SCORE:		0

WETLAND WORKSHEET

The purpose of this worksheet is to assess the potential wetlands impact from the proposed project.
For each question check the appropriate answer or enter the appropriate acreage in the blank to the right.

Question				Score
1. Are there any wetlands within 300 feet of the edge of the present roadway?				
	Yes [ ]			
	No [ ]			
If yes, identify the Class and required buffer for each wetland. Enter the total acreage that may be affected as a result of the proposed project below:	No = 0			
Category 1	No. of acres:		(x 6)	0
Category 2 or Category 3				
Forested	No. of acres:		(x 3)	0
Scrub - Shrub	No. of acres:		(x 2)	0
Emergent	No. of acres:		(x 1.5)	0
Category 4	No. of acres:		(x 1.25)	0
All Buffers	No. of acres:		(x 1)	0
TOTAL SCORE:				0

WATER QUALITY AND PERMITTING WORKSHEET

The purpose of this worksheet is to assess the potential watershed impact and permitting requirements associated with the proposed project. For each question, enter the appropriate score in the blank to the right.
If a required permits have already been obtained for the expected duration of need, enter 0 points.

Question			Score
1. Will the project be located within 2000 feet of any body of water? If yes, then address the following:		No = 0	
What will the total impervious surface area be upon completion of the proposed project (within 2000 feet of any water body)?	If yes,	< 6 acres = 1 6 - 20 acres =2 > 20 acres =3	
Will the project require hydraulic permits (HPAs)?	Yes = 4	No = 0	
Is there a known fish passage problem?	Yes = 1	No = 0	
Will the project require COE Section 10, 404 or Coast Guard Section 9 Permit?	Yes = 5	No = 0	
Will the project require Shoreline Development Permits?	Yes = 4	No = 0	
Is the project located within a Shoreline of Statewide Significance?	Yes = 1	No = 0	
Will any water quality permits be required (i.e. NPEDS, Short-Term Modification of Water Quality Standards)?	Yes = 4	No = 0	
Is the project a new roadway?	Yes = 1	No = 0	
2. Have any adjacent areas been identified as sensitive / critical by one or more governing jurisdictions: Identify:	Yes = 5	No = 0	
3. Is the project located within a regulatory floodway?	Yes = 4	No = 0	
4. Will the project increase impervious surface area within an EPA designate sole surface aquifer area? Identify:	Yes = 2	No = 0	
5. Will this project require the purchase of additional right-of-way? If yes, is the project located within:			
-- Forest Lands, as defined by the Dept. of Natural Resources?	Yes = 4	No = 0	
-- U.S. Forest Service 'National Forest' jurisdiction?	Yes = 1	No = 0	
-- Other jurisdiction / resource lands of regional significance? Identify:	Yes = 2	No = 0	
SUBTOTAL:			0
If permitting agencies have been contacted, are there any foreseeable conflicts or disagreements?	Yes = 1	No = 2 (subtotal divided by this number)	1
TOTAL SCORE:			0

NOISE WORKSHEET

The purpose of this worksheet is to assess the potential noise impact and associated costs due to the proposed project. For each question, check the appropriate answer or enter the appropriate number of residences, and the correct score will be calculated.

Question **Score**

1. Have existing noise impacts been identified along the proposed project? Yes [ ] No [ ]

   If yes, include the cost of feasible and reasonable mitigation measures in the project cost estimate, or cite determination otherwise

2. Is this project a new or existing alignment? New [ ] Existing [ ]

   If new, evaluate the number of receptors within **400 feet** of the edge of the proposed roadway. Go to question #4a.

   If existing, go to question #3.

3. Does the proposed project include widening of an existing roadway? Yes [ ] No [ ]

   If yes, evaluate the number of receptors within **200 feet** of the edge of the proposed roadway. Go to question #4b.

   If no, enter scores of 0 in question #4.

4a. **Noise assessment for a new alignment:**

			SUBTOTAL = (No. lanes/2) x (No. receptors) x (Risk factor)
Enter the total number of lanes added / constructed:			
Enter the total number of receptor within each category		**Risk Factor**	
< 100 feet		**4**	0
101 - 200 feet		**2**	0
200 - 400 feet		**1**	0

4b. **Noise assessment for widening of an existing alignment:**

			SUBTOTAL = (No. lanes/2) x (No. receptors) x (Risk factor)
Enter the total number of lanes added / constructed:			
Enter the total number of receptor within each category		**Risk Factor**	
< 100 feet		**2**	0
101 - 200 feet		**1**	0

TOTAL SCORE: 0

MODE INTEGRATION WORKSHEET

The purpose of this worksheet is to assess the level of modal integration supported by the proposed project. For each question, enter the appropriate score in the blank to the right.

Question		Score
1. Does the proposed project increase mobility using existing capacity? (i.e. access control, TDM/TSM, GP to HOV conversion, frontage road improvement)	Yes = 0 No = 1	
2. Does the project improve or facilitate linkage for movement of goods through port or terminal facilities? (i.e. multimodal land-based, rail/trucking, waterborne, airborne)	Yes = 0 No = 1	
3. Is the project, or does the project include, a designated HOV transfer area? (i.e. park & ride lots, sheltered turnouts, flyer stop)	Yes = 0 No = 1	
4. Does the proposed project improve integration between existing HOV facilities and connecting arterials? (i.e. improved on or off ramp transitions, improvements to HOV termini)	Yes = 0 No = 2	
5. Does the proposed project link or extend existing HOV lanes?	Yes = 0 No = 2	
6. Is the project, or does it include, facilities designed to encourage bicycle use, or use of bicycles with other modes? (i.e. bicycle carriers on buses, loop detectors or lane designations at intersections, storage facilities at park & rides)	Yes = 0 No = 1	
7. Does the project link or extend existing or planned bikeways?	Yes = 0 No = 1	
8. Does the proposed project link or extend existing or planned pedestrian facilities, and/or include additional pedestrian amenities?	Yes = 0 No = 1	
TOTAL SCORE:		0

LAND USE WORKSHEET

The purpose of this worksheet is to assess the current land use and local planning / transportation policies, plans, and implementation measures of the governing jurisdictions concerned with the proposed project area. For each question, enter the appropriate responses and enter the scores in the blank to the right.

Question		Score
1. Is the project included in the Comprehensive and / or Transportation Plan of any of the following? (if so, identify by name)		
Regional transportation planning organization:		
Other regional planning agency:		
County and / or City government:		
Other local interests / agencies:		
2. Do all the local governments having an interest in the project include it in their plans, as identified above?	Yes = 5 No = 0	
If **no**, has any action been taken by each of the appropriate planning agencies to approve the project?	Yes = 5 No = 0	
Indicate the action by what agency(cies):		
3. Has the *"Land Use Policy and Implementation"* file for local governments been updated in each jurisdiction that this project passes through?	Yes = 5 No = 0	
4. Is the project on a roadway that directly links two or more designated growth centers?	Yes = 3 No = 0	
5. Is the project on an established or planned transit line / route?	Yes = 1 No = 0	
TOTAL SCORE:		0

APPENDIX C

RANKED 1995-1997 BIENNIUM URBAN AND RURAL LISTS

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
1		1	99	Vic. 60th Ave to SR 525 (stage 2) Widening	291.79	1	0.6	10.5	388	4	14	1,014,000
2		1	99	King/Snohomish CL to Vic. 60th Ave (stage 1) - widening	232.58	1	0.5	10.5	304	4	14	1,217,000
3		5	240	Edison Street I/C	86.32	1	0.5	12	28	4	14	3,253,200
4	0.9437179	3	161	SR 161 / SR 167 Eastbound Ramp	66.50	5	0.5	12	0	8	14	505,336
5	0.9336217	3	510	Martin Way to Pacific Avenue SE	63.83	5	0.5	4	102	3	14	7,706,016
6	0.7138951	3	16	Gig Harbor I/C	47.32	0	0.5	6	0	8	14	1,360,000
7	0.6820286	3	510	SR 5 to Martin Way	45.46	5	0.5	4	0	6	14	2,801,803
8	0.6536401	6	2	SR 2/SR 206/Market St. Intersection	43.40	3	0	2	34	8	8	626,730
9	0.5924772	1	99	35th Ave. W (Lake Rd.) to SR 525 NB Right Turn Lane	39.56	7	0.5	0.5	20	10	14	168,000
10	0.4633551	4	501	Mill Plain Extension	30.55	4	0.5	1.5	180	6	11	500,000
11	0.3957967	3	305	SR 3 to Bond Road	25.86	3	4.5	15	6	7	14	3,441,469
12	0.3694487	3	161	204th St. E to 176 St E	24.06	3	0.5	8	112	9	11	2,948,500
13	0.3634365	3	16	SR 16, SR 5 to Wollochet TSM	23.59	3	0.5	5	0	6	14	4,052,000
14	0.3047884	1	99	Airport Rd: I/S HOV Priority	19.19	0	4.5	7.0	103	10	14	200,000
15	0.2955124	6	90	University Rd I/C	18.87	3	0	2	61	6	9	13,000,000
16	0.2839752	3	161	36th to Jovita	18.36	6	0.5	13	141	9	14	4,695,530
17	0.2536154	3	101	Mottman Road I/C	15.53	1	0.5	6	0	5	14	3,540,589

Table C.1
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
18	0.2524983	6	90	Pines Rd I/C Modification	15.66	2	0	2	0	9	8	460,000
19	0.2460337	3	410	Linden Drive I/C	15.20	2	0.5	21	13.5	8	14	4,157,504
20	0.2372268	3	510	SR 5 O-xing	14.67	3	0.5	4	0	6	11	9,104,160
21	0.2247577	3	410	214th Avenue E to 234th	13.30	0	0.5	13	213	10	11	3,608,693
22	0.2161019	1	527	SR 522/Main St Intersection Improvements	12.99	2	0.5	10.0	36	9	11	1,056,000
23	0.1990186	5	224	SR 240 Interchange	11.90	4	0.5	1	3	3	14	10,180,799
24	0.1967140	3	3	SR 3/SR 303 I/C (Waaga Way)	11.23	1	0.5	12	0	10	14	4,215,120
25	0.1865507	1	522	Lake City Way Multi-Modal Project - SR 5 to SR 405 - HOV Priority	11.53	7	0.5	15.0	287	5	9	6,409,000
26	0.1833276	1	5	Northbound Downtown Rechannelization	11.13	7	0.5	0.0	0	8	9	2,090,000
27	0.1538169	6	2	North Spokane/Division St. -Stage 2	8.43	4	0	2	123	4	14	2,925,000
28	0.1501926	1	9	SR 522 to Clearview (Stage 2): 228th to SR 524/212th-Widening	7.70	2	1.3	11.5	38	10	11	4,792,000
29	0.1481172	1	527	164th St SE to 132nd St SE - Widening	7.99	3	0.7	17.0	345	5	11	14,573,000
30	0.1471207	1	524	24th to SR 527 - Widening	8.72	5	10.5	22.0	704	9	11	6,839,000
31	0.1452497	1	900	Tibbets Creek to SR 90 - Widening	9.34	5	95.0	27.0	680	6	11	5,467,000
32	0.1405114	1	161	Milton Way to S 360th/Milton Rd S Widening	7.94	5	6.5	17.0	290	8	11	10,232,000
33	0.1362334	5	82	I-82 / Yakima Ave.	5.21	0	2	6	19	5	14	2,800,000
34	0.1329624	3	161	234th to 204th	7.19	6	0.5	14	63	9	11	7,565,730

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
35	0.1308939	1	542	Orleans St to Hannegan Rd - Widening	5.47	1	2.0	9.5	128	8	11	4,210,000
36	0.1307642	1	5	Boeing Access Rd I/C - Flyover Structure	5.19	1	0.5	6.0	0	8	14	3,260,000
37	0.1254174	3	410	234th to Hinkleman Ext. Road	5.95	3	2	13	213	10	11	5,800,941
38	0.1224476	1	522	SR 9 to Paradise Lk Rd (Stage 1) New I/C & Widening	6.31	6	2.5	8.0	62	10	10	29,488,000
39	0.1178345	5	240	Stevens Drive to SR 182	4.58	3	0.5	0	0	4	14	15,800,000
40	0.1176460	6	90	Stage 2 (Broadway Ave to Argonne Rd)	4.96	3	0	7	162	9	14	15,138,675
41	0.1167321	1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening	4.26	2	0.5	11.0	17	10	11	8,077,000
42	0.1148717	6	90	Sprague Ave. to Argonne Rd. - Stage 1 (I/C)	4.58	3	0	7	102	9	14	37,765,775
43	0.1114543	1	525	SR 99 to SR 526 - Widening & HOV Lanes	3.62	1	4.2	17.0	474	10	11	17,998,000
44	0.1104412	1	520	NE 40th St I/C & C-D Lanes	0.48	0	0.5	0.0	1	8	14	13,281,000
45	0.1087610	3	3	SR 3/SR 305 Interchange - Stage 2	0.21	0	0.5	6	0	9	11	1,248,000
46	0.1049183	5	395	Lewis / Sylvester Street I/C	0.31	1	0	4	0	4	14	5,860,000
47	0.1040461	1	5	196th St SW (SR 524) I/C Modifications	3.24	4	0.5	3.5	46	1	14	17,589,000
48	0.1038594	1	20	Avon Ave to SR 9 - Channelization & Access Control	2.54	2	1.3	5.0	192	6	13	1,399,000
49	0.1017468	4	5	Burnt Bridge through 78th Street	3.55	4	0.5	14	135	6	14	45,813,311
50	0.1009018	1	9	SR 522 to Clearview (Stage 3): SR 524/212th to 176th-Widening	2.17	2	0.5	12.5	153	10	11	13,578,000
51	0.1006961	6	2	North Spokane/Division St. -Stage 3	3.18	4	0	2	123	5	14	8,046,000

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
52	0.0997746	4	205	4th Plain Road Southbound on-ramp	1.41	2	0.5	1	13	9	6	1,435,000
53	0.0995206	1	5	SR 526 to Marysville - HOV Lanes	2.72	4	0.5	1.0	14	4	14	130,130,000
54	0.0992766	3	20	Port Townsend Vicinity Truck Climbing Lane	3.53	5	0.5	11	0	7	11	864,529
55	0.0985094	3	105	Southbound Truck Climbing Lane	2.89	4	0.5	10	0	9	14	383,936
56	0.0978210	3	20	Port Townsend TWLT Lane	2.78	4	0.5	1	0	9	10	362,265
57	0.0977946	1	20	San Juan / Victoria Ferry Terminal - Widening	0.29	2	0.5	2.5	0	8	13	2,106,000
58	0.0974812	3	410	Hinkleman Ext. Road to Park Avenue	2.63	3	0.6	13	213	9	11	3,478,555
59	0.0973553	1	542	Orleans to Britton (Stage 2): Hannegan Rd to Britton Rd	0.63	1	5.0	9.5	430	8	11	12,209,000
60	0.0967406	2	17	Pioneer Way to Stratford Road	0.70	2	1.6	24	52	6	13	4,850,000
61	0.0966261	1	5	Marysville P&R Lot	1.62	3	1.0	10.0	0	4	11	6,503,000
62	0.0965288	5	24	SR 82 to Keys Road, MP 0.0-0.98	2.63	4	0.5	14.5	21	5	11	10,967,191
63	0.0963986	4	5	Salmon Creek to SR 205	2.37	4	0.5	16	32	3	14	21,541,000
64	0.0951891	1	527	132nd St SE to 112th St SE - Widening	2.53	3	1.4	11.5	387	7	11	13,295,000
65	0.0943611	5	240	SR 182 to Columbia Center I/C	2.73	4	10.5	15.5	41	5	14	21,000,000
66	0.0939291	3	105	Northbound Truck Climbing Lane	2.13	4	0.5	10	0	9	14	455,750
67	0.0938006	1	9	Lake Stevens Park & Ride Lot	0.73	2	11.5	5.5	90	7	11	5,750,000
68	0.0931205	4	205	18th Street Interchange	1.98	4	0.5	2.5	95	6	14	17,686,000

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
69	0.0918899	2	20	MP 277.61 to Bigham Flats	0.27	3	0	11	0	8	13	3,988,000
70	0.0918580	3	101	Cloquallam Rd. Undercrossing I/C	0.22	3	0.5	11	0	7	13	5,161,800
71	0.0913863	3	510	Bingo Hall Vicinity, TWLT Lane	2.23	5	0.5	4	0	9	14	500,300
72	0.0913089	1	5	NE 175th St to NE 205th St - Auxiliary Lane	3.01	7	0.5	10.0	18	8	14	4,031,000
73	0.0912997	1	20	Goldie Rd to Ault Field Rd - TWLT Lane & Access Control	0.16	3	0.5	2.0	14	9	9	5,657,000
74	0.0903848	3	510	93rd to SR 507, TWLT Lane	2.87	8	0.5	4	0	10	14	2,345,346
75	0.0897122	3	304	Bremerton Ferry Terminal to Vic Gorst	2.19	5	0.5	19	84	5	14	25,309,000
76	0.0895167	1	5	41st Street SE to SR 2 - Northbound Auxilary Lane	0.79	4	0.5	0.5	5	8	14	16,035,000
77	0.0891014	5	395	Hillsboro Street I/C	0.57	4	0.5	0	0	8	14	9,577,157
78	0.0890880	2	2	Easy Street	0.38	4	0	1	0	4	9	3,400,000
79	0.0886568	6	290	Mission Ave. to Argonne Rd.	1.18	4	0	8	98	8	14	8,241,551
80	0.0877713	5	2/82	Selah Connection	1.02	4	2.2	12.5	47.5	5	10	27,500,000
81	0.0869987	4	14	Brady Road Interchange (SE 192nd)	1.07	3	16.25	30	6	9	9	10,899,500
82	0.0868021	1	18	Weyerhouser Wy to SR 167 Truck Climbing Shld Lane	2.31	6	5.0	5.0	16	10	13	3,574,000
83	0.0865998	1	522	River (Stage 2) - New I/C & Widening	3.01	5	23.1	7.5	78	10	10	29,155,000
84	0.0865809	1	509	SR 518 I/C Modification	1.44	5	0.5	5.0	3	9	11	15,085,000
85	0.0854158	4	14	SR 14/SR 500 Interchange	0.74	4	3.5	17	3	8	6	8,136,550

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
86	0.0853125	1	5	172nd St I/C Modifications	2.14	7	0.5	0.0	56	8	11	8,606,000
87	0.0851391	1	202	Sahalee Wy (Stage 1 & 2) - Additional Lanes	3.14	6	3.5	21.0	537	7	11	30,456,000
88	0.0844239	4	500	Ward Road to NE 162nd Avenue	1.38	6	0.5	2.5	7	6	11	2,974,390
89	0.0838271	6	395	Hastings Road to MP 172, -Stage 2	0.82	5	0	15.5	28	8	13	11,142,272
90	0.0837727	3	3	Gorst RR Bridge to SR 304	1.74	5	1.82	29	280	5	14	28,554,240
91	0.0831540	1	90	Sunset I/C Modifications	2.75	5	31.0	21.0	26	10	14	5,876,000
92	0.0830740	3	101	Aberdeen/Hoquiam Stage 1	0.22	5	0.5	25	8	6	14	36,220,000
93	0.0827002	1	5	SR 161 to SR 18 Interchange Modification	0.36	5	0.5	23.0	2	10	14	30,684,000
94	0.0796002	4	502	Dollars Corner to Battle Ground	0.70	5	4.63	21	100	9	11	10,553,000
95	0.0788844	5	397	Finley Road to East 10th Avenue	0.69	7	0.5	0	10	9	3	3,630,000
96	0.0783198	1	99	Aurora Br (Geo.Wash Mem Br 99/560) Widening	0.01	7	0.5	15.0	0	7	14	18,722,000
97	0.0752982	1	169	225th SE vic to 220th Pl/Witte Rd - Widening	1.95	8	3.5	25.0	401	7	11	7,914,000
98	0.0745897	3	16	Tacoma Narrows Bridge	0.24	8	0.5	26	160	7	14	421,200,000
99	0.0745114	1	509	South Access Rd Extension	2.16	8	7.3	21.0	1008	3	14	196,030,000
100	0.0710453	3	167	construction of new SR 161 alnmt.)	0.24	8	11.5	23	88	9	14	46,186,400
101	0.0709456	4	5	Rush Road vicinity to Thurston County Line	2.52	4	121.65	29	33	8	13	121,868,000
102	0.0626162	3	167	SR 509 to SR 5 - Stage 1	0.03	8	18.45	27	387	9	14	109,584,000

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal #	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
103	0.0603876	1	516	Wax Rd to SR 169 (Stages 1 & 2) Widening	1.19	8	18.9	18.0	824	10	11	19,778,000

Table C.1 (continued)
Ranked 1995-1997 Biennium Statewide Urban Project List

Ordinal Ranking	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
1	0.9593260	3	101	Chicken Coop Road EB Passing / Truck Climbing Lane	55.54	4	0.5	15	0	10	11	503,109
2	0.6294444	3	101	Dawley Rd. to Blyn Hwy., Truck Climbing Lane	34.96	4	1.4	21	5	9	11	1,096,800
3	0.5478924	3	101	Gardiner Cemetery Road to MP 277.6	30.36	4	1	10	5	9	10	1,355,750
4	0.4573408	5	90	Elk Heights Vic WBND TCL	25.23	4	1.5	2	0	9	14	5,270,516
5	0.4114203	3	101	Blyn Eastbound Passing Lane	22.69	5	0.5	11	0	10	11	595,400
6	0.3979702	5	970	Teanaway River to Virden	21.91	5	0.5	0	0	9	13	1,950,000
7	0.2990208	3	5	Maytown I/C to 93rd I/C	15.89	1	0.5	6	0	9	13	6,662,500
8	0.2458612	5	90	Highline Canal vicinity to Elk Heights I/C vic.	13.04	4	1.5	2	0	9	14	6,889,155
9	0.1757353	5	90	Rygrass Summit to Columbia River Bridges	8.77	4	0.5	1	0	9	9	8,012,319
10	0.1529488	1	20	Fredonia to SR 5 - Widening	6.87	2	0.5	9.0	49	9	11	35,995,000
11	0.1172739	5	90	Ryegrass Summit Vic EBND TCL	4.69	4	0.5	1	0	9	9	1,592,464
12	0.1162245	6	90	Harvard Road I/C	3.72	2	0	4	2	7	14	14,500,000
13	0.1146606	5	12	Airport Rd Interchange Modification	3.05	1	0.5	1	16	5	11	797,000
14	0.1081594	5	24	Vernita Hill Vicinity	3.49	3	0.5	1	0	9	10	850,000
15	0.1070788	1	539	Lynden Park & Ride Lot	0.55	0	0.5	1.5	24	5	14	1,271,000
16	0.1031959	3	101	Mt. Walker N.B. Passing / Truck Climbing Ln	3.49	4	0.5	10	0	9	10	372,879
17	0.1011404	1	539	Horton Rd to Laurel Rd (Stage 1) - Widening	3.73	4	2.8	8.5	326	9	14	20,565,000

Table C.2

Ranked 1995-1997 Biennium Statewide Rural Project List

Ordinal Ranking	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
18	0.1010847	3	104	Kingston Traffic Circulation Imp.	3.19	4	0.5	26	15	5	14	6,377,000
19	0.1005823	3	101	Blyn Westbound Passing Lane	3.60	5	0.5	11	0	10	11	644,600
20	0.0996308	1	539	Laurel Rd to Tenmile Rd (Stage 2) - Widening	1.98	2	0.5	10.0	98	9	14	4,516,000
21	0.0990252	3	104	SR 19 - West WB Passing/Truck Climbing Ln	3.08	4	0.8	14	0	10	11	912,000
22	0.0964435	3	109	NB Truck Climbing Lane, MP 4.5	2.76	4	0.5	10	0	8	11	1,868,900
23	0.0952422	1	2	Sultan City Limits - TWLTL Lane	1.16	2	0.5	0.5	25	10	6	338,000
24	0.0944929	3	109	SB Truck Climbing Lane (EB), MP 4.5	2.54	4	0.5	11	0	8	11	1,391,801
25	0.0910017	2	26	SR 243 I/C TO MP 5.5 VIC	1.35	3	0.5	14	0	10	10	1,516,640
26	0.0907455	3	101	Northbound Passing Lane	2.10	4	0.5	15	0	10	11	599,400
27	0.0890817	3	3	Belfair Vicinity	2.70	6	0.5	10	0	7	14	1,069,260
28	0.0890453	1	2	Index vicinity	0.83	3	2.5	27	3	9	14	3,382,000
29	0.0880429	1	5	Blaine - NB Pace Lane Extension	0.78	3	0.5	0.5	25	10	5	2,366,000
30	0.0877006	6	195	Plaza to Spangle	0.36	3	1.3	0	5	8	8	17,450,000
31	0.0876280	5	12	Waitsburg By-pass	1.20	3	13.5	24	6	8	13	5,401,792
32	0.0875094	3	101	Southbound Passing Lane	1.61	4	0.5	15	0	10	11	623,540
33	0.0865483	6	904	Cheney to SR 90	1.27	3	9.8	19	67	8	9	9,915,350
34	0.0845619	6	195	Rosalia to Plaza	0.27	3	7.9	25	4	8	8	24,307,500

Table C.2 (continued)
Ranked 1995-1997 Biennium Statewide Rural Project List

Ordinal Ranking	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
35	0.0845480	2	215	Omak vicinity	0.33	4	0	1	0	6	13	1,150,000
36	0.0843674	3	109	SB Passing Lane, MP 14.5 to 15.0	0.89	4	0.5	9	0	9	11	290,900
37	0.0842929	3	109	NB Passing Lane, MP 14.5 to 15.0	0.87	4	0.5	9	0	9	11	299,800
38	0.0841929	5	12	Old Naches Road Interchange	0.94	4	2.5	5.5	0	9	11	12,920,000
39	0.0841014	3	109	SB Passing Lane, MP 14.0 to 15.0	0.90	4	0.6	14	0	9	11	587,900
40	0.0839392	3	101	Shore Road to Joslin Road	3.90	8	24	16	408	9	14	17,331,550
41	0.0834373	3	109	NB Passing Lane, MP14.0 to 15.0	0.71	4	0.6	14	0	9	11	765,110
42	0.0824158	1	2	SR 2 to SR 522 Monroe Bypass	1.11	4	2.2	12.0	116	7	11	28,534,000
43	0.0821144	6	395	Hamilton Road to Montgomery Road	1.10	4	1.5	25	71	8	8	12,078,200
44	0.0816318	5	12	SR 124 Interchange	0.21	4	13.25	8	0	3	14	8,000,000
45	0.0813873	4	6	Pluvius Vicinity Realignment	0.30	4	0.625	7	0	7	0	1,176,000
46	0.0798295	4	6	Rock Creek Bridge Replacement & Realignment	0.12	4	2.35	23	0	7	0	2,067,000
47	0.0789433	4	4	Svensons Curve Realignment	0.34	4	4.625	24	12	10	0	1,561,000
48	0.0782212	5	12	SR 124 to Boise Cascade	0.49	4	35	9.5	32	3	14	17,300,000
49	0.0772224	4	503	Lewisville Park vicinity Climbing Lanes	1.03	5	2	22	4	10	1	2,879,000
50	0.0771221	6	395	MP 172 to Hamilton Road	0.98	5	2.5	24	36	8	8	9,508,800
51	0.0764939	1	5	SR 5, 9, 539 and 543 SC&DI	1.25	6	0.5	0.5	0	8	5	2,386,000

Table C.2 (continued)
Ranked 1995-1997 Biennium Statewide Rural Project List

Ordinal Ranking	Priority Index	RE	SR	Project Weight Max/Min.	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
52	0.0763381	1	530	SR 5 to Old SR 99 Wye Connection - Widening	0.43	5	1.0	11.0	7	10	5	1,062,000
53	0.0758851	5	12	SR 410 to Naches	0.38	4	43.5	15.5	15	8	13	16,208,740
54	0.0749631	1	539	Fishtrap Creek to W Main St (Stage 1) - Widening	1.87	5	2.8	12.5	537	9	14	18,053,000
55	0.0747044	6	270	Johnson Rd. to Idaho State Line	0.71	5	10.6	24	10	7	9	12,502,525
56	0.0746696	3	12	Passing lanes MP 32.00 to MP 33.83	0.39	6	0.5	15	0	10	14	1,047,864
57	0.0742399	5	22	I-82 to SR 97	0.26	5	6.5	30	96	8	14	34,000,000
58	0.0737033	4	101	Smith Creek Road vicinity Climbing Lane	0.51	5	8.875	24	0	9	5	5,655,000
59	0.0731818	3	101	Carlsborg/Hooker Roads I/C	1.73	10	0.5	15	0	7	14	6,049,480
60	0.0721130	1	522	Snohomish Riv Br to SR 2 (Stage 3) - Widening	0.23	5	0.8	13.0	227	10	10	38,498,000
61	0.0693401	3	101	SR 101/SR 107 I/C	0.27	7	0.5	14	0	8	9	777,230
62	0.0659870	4	97	Brooks Park to Summit Climbing Lane	0.52	8	0.5	8.5	3.5	9	0	3,789,000
63	0.0610426	5	90	Hyak to Stampede Road I/C	0.76	7	30.25	13.5	10	9	4	26,838,000
64	0.0525655	1	96	Seattle Hill Rd to SR 9 - Widening & Realignment	0.25	6	4.0	11.5	1318	8	11	15,960,000

Table C.2 (continued)
Ranked 1995-1997 Biennium Statewide Rural Project List

APPENDIX D

HISTOGRAMS OF 1995-1997 CRITERIA SCORING DISTRIBUTIONS

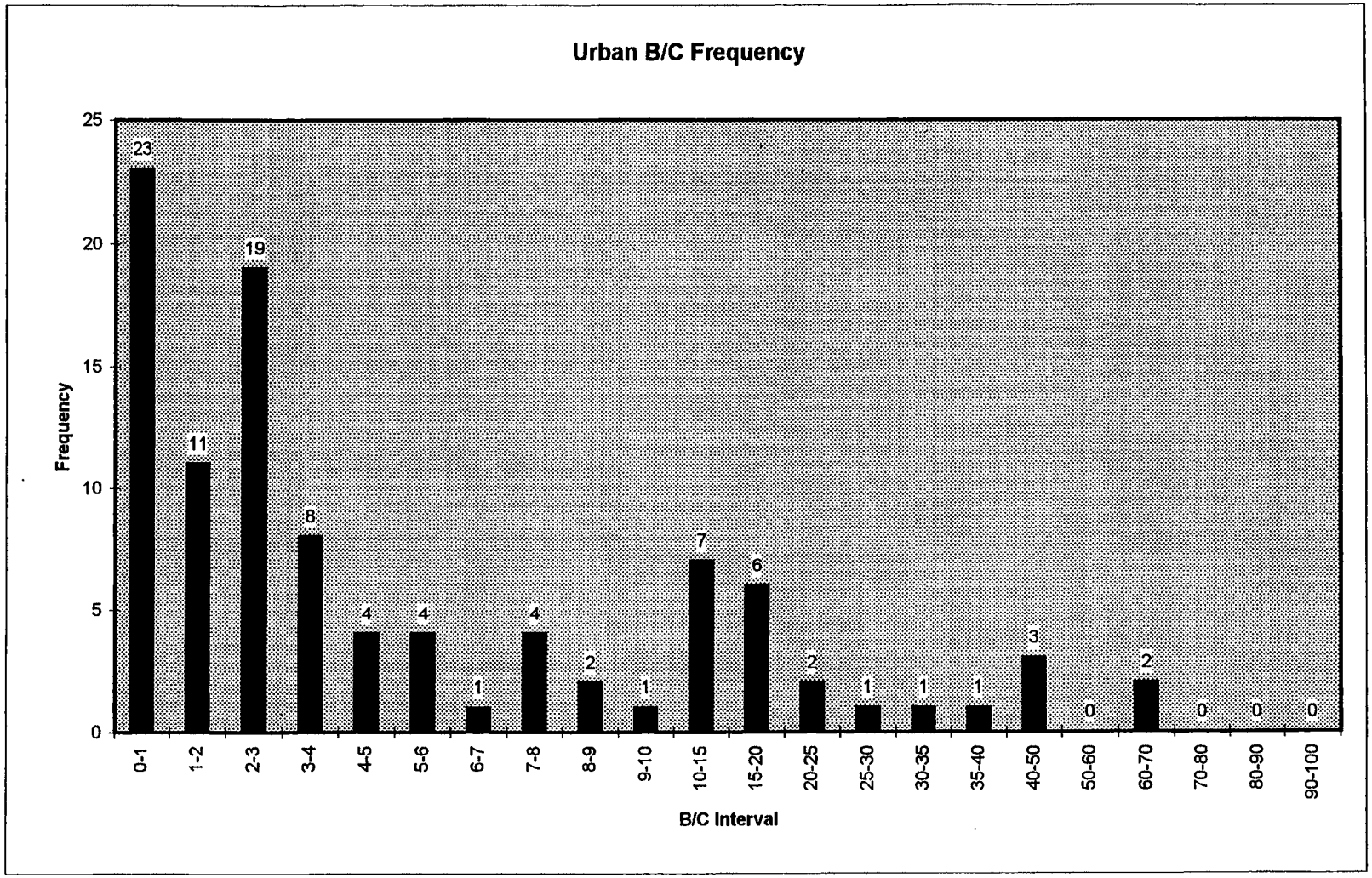

Figure D.1
Distribution of 1995-1997 Scores
Urban B/C

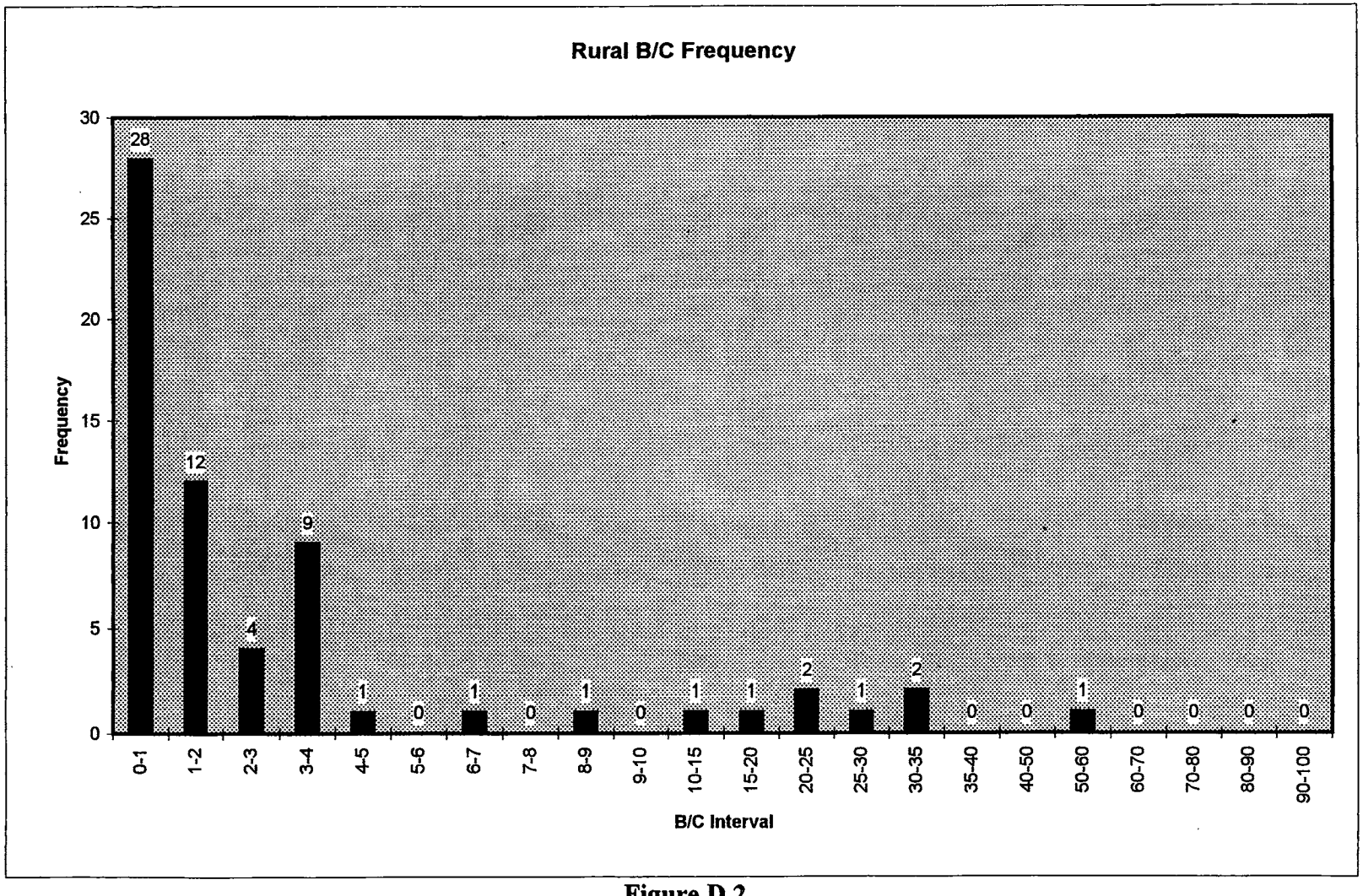

Figure D.2
Distribution of 1995-1997 Scores
Rural B/C

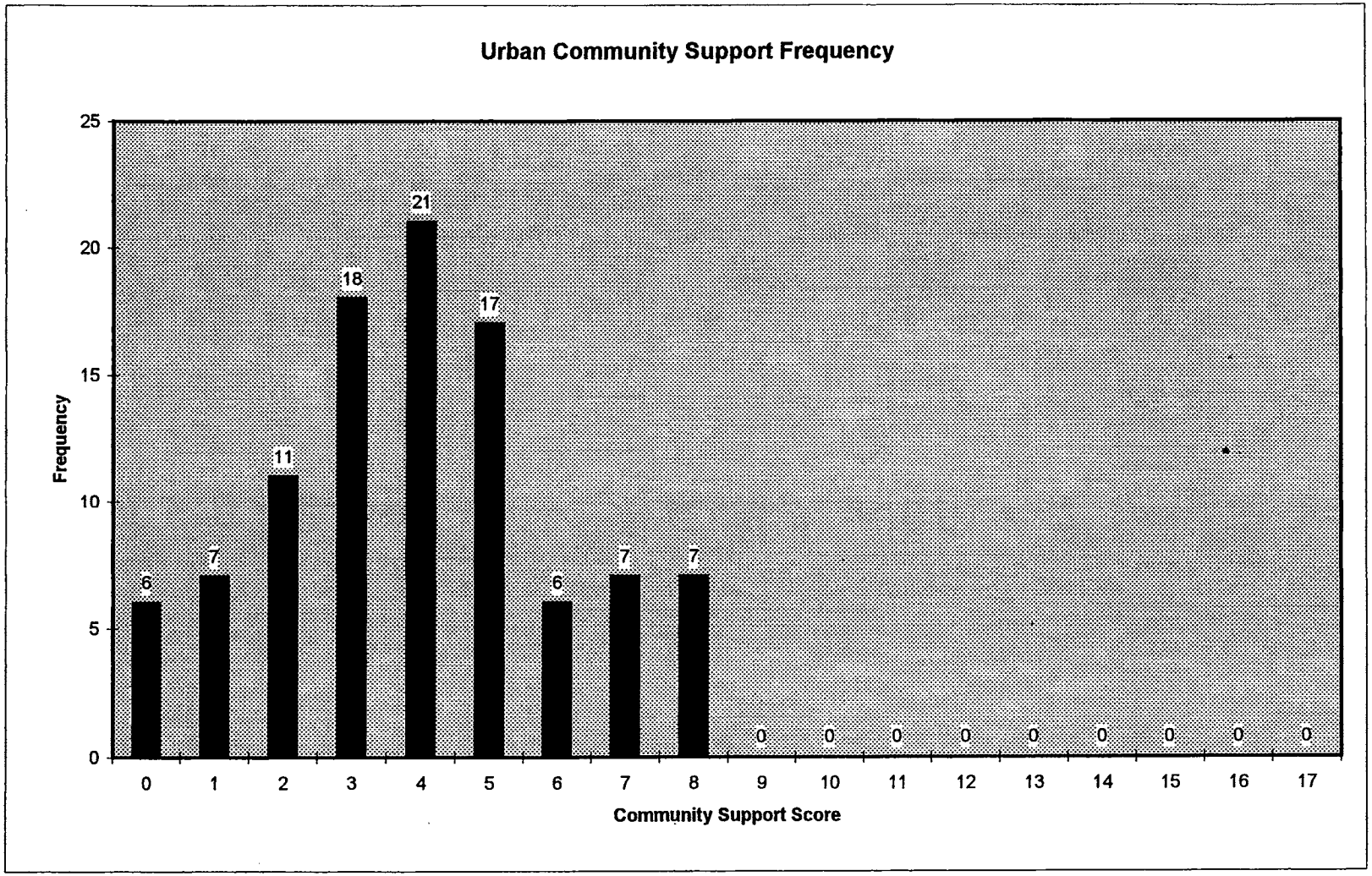

Figure D.3
Distribution of 1995-1997 Scores
Urban Community Support

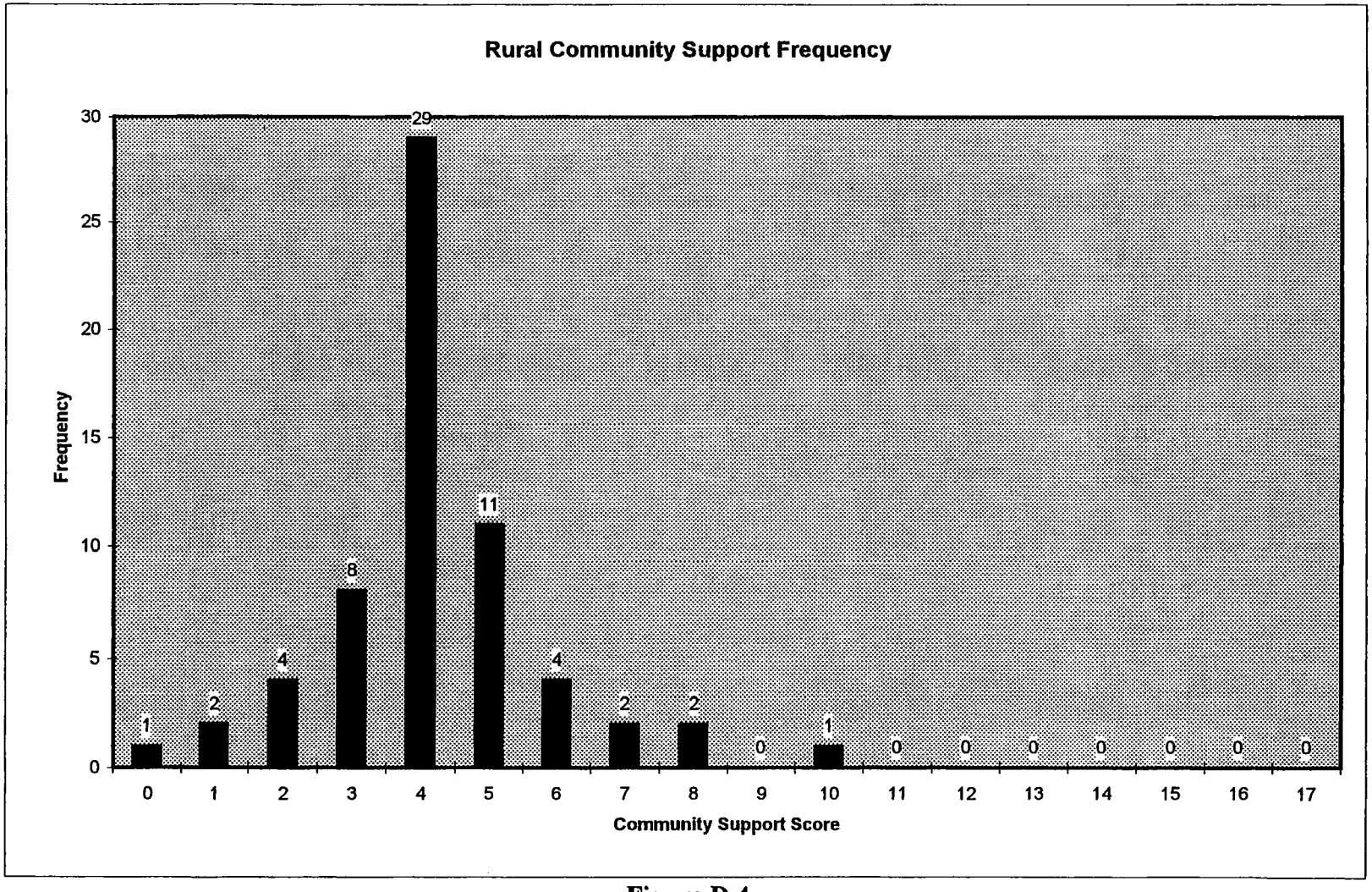

Figure D.4
Distribution of 1995-1997 Scores
Rural Community Support

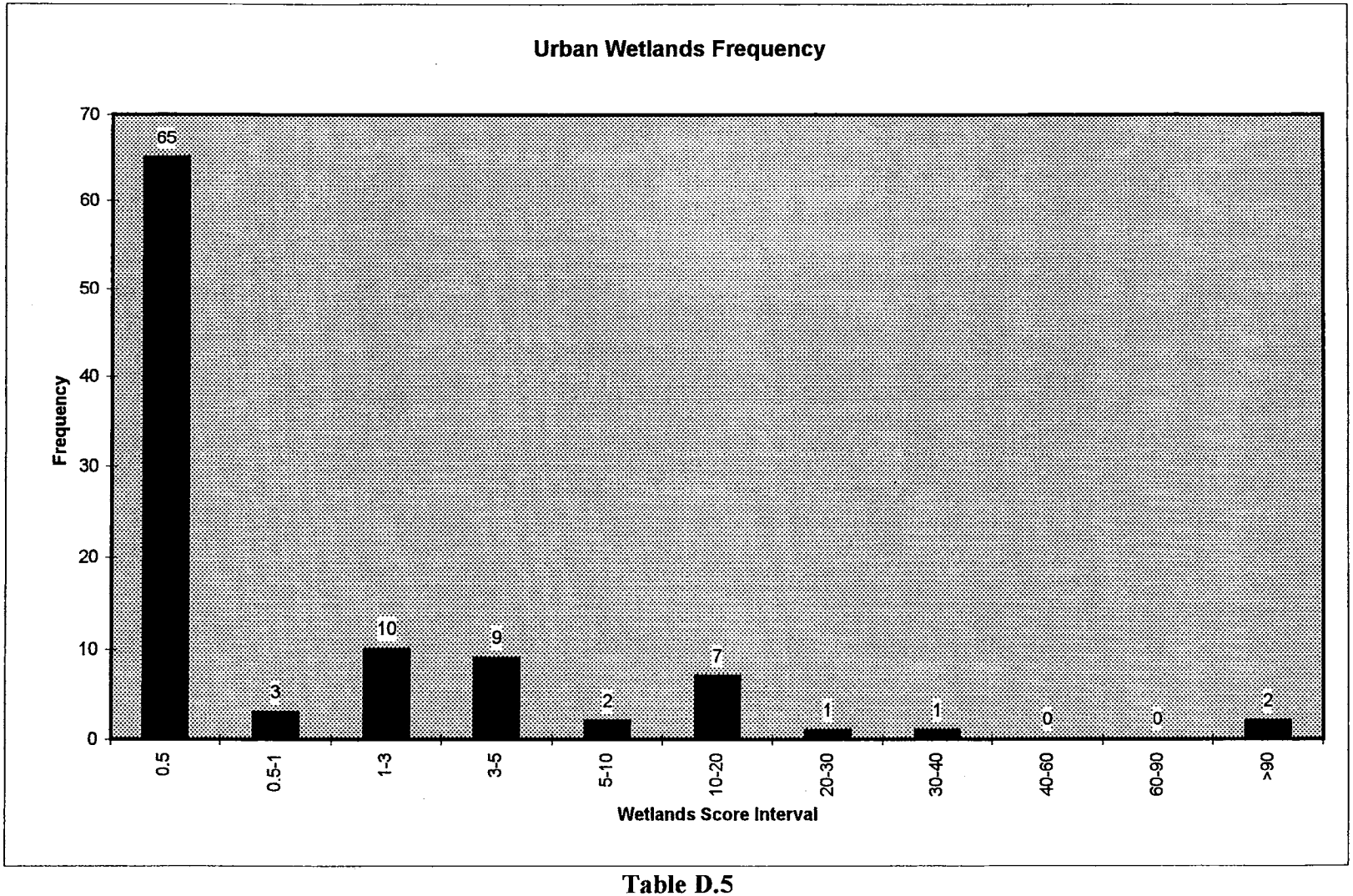

Table D.5
Distribution of 1995-1997 Scores
Urban Wetlands Assessment

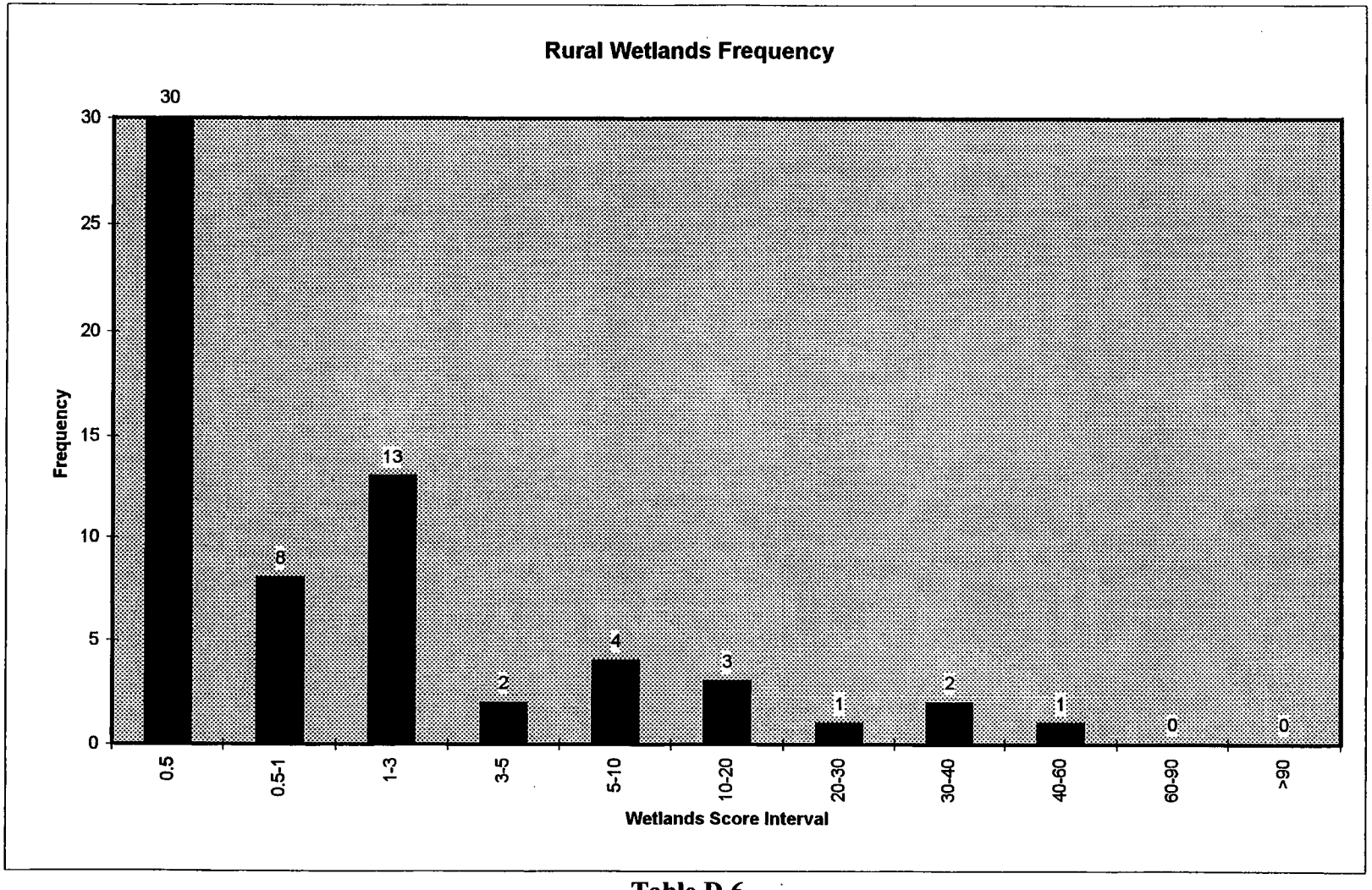

Table D.6
Distribution of 1995-1997 Scores
Rural Wetlands Assessment

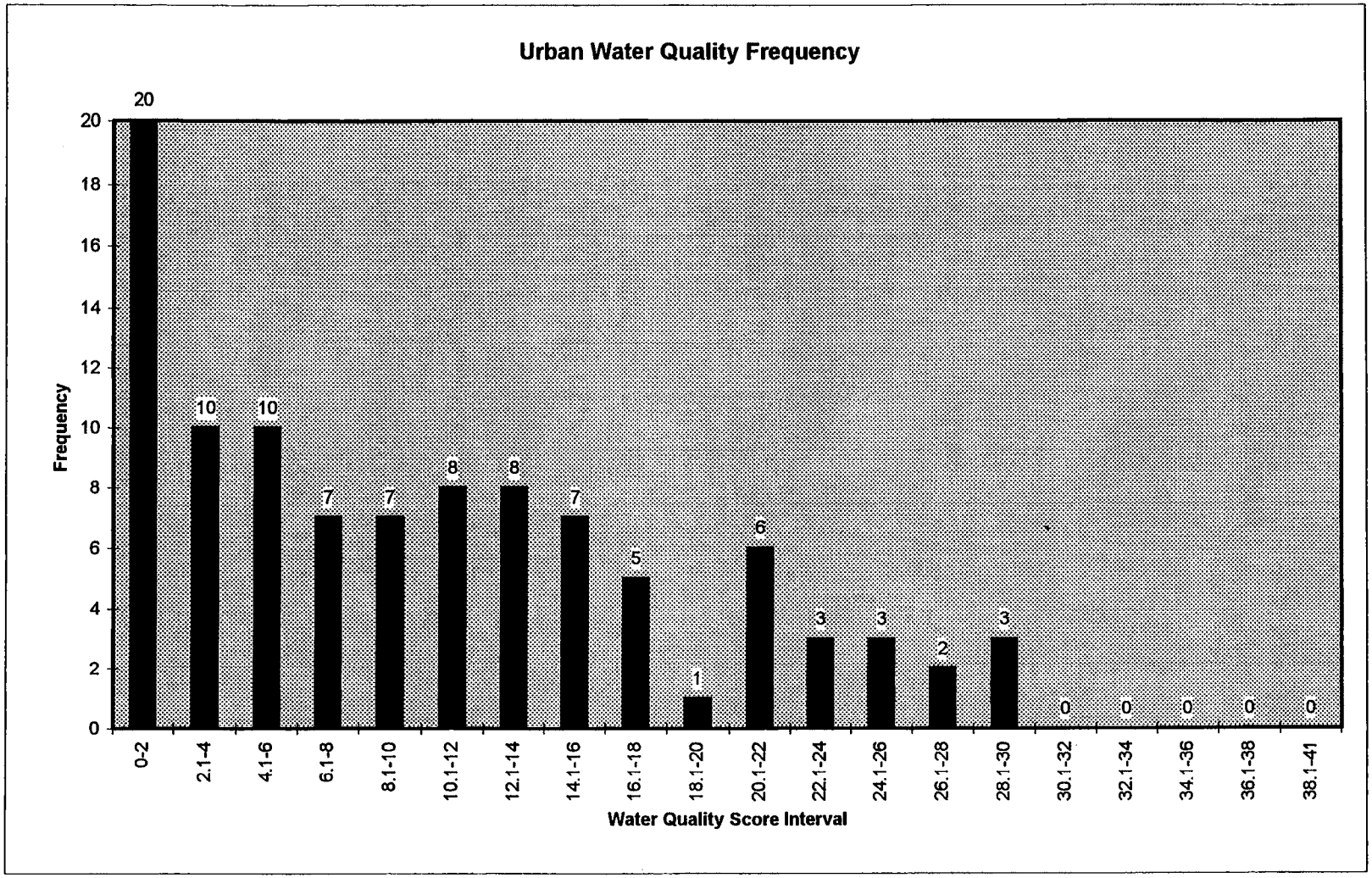

Table D.7
Distribution of 1995-1997 Scores
Urban Water Quality

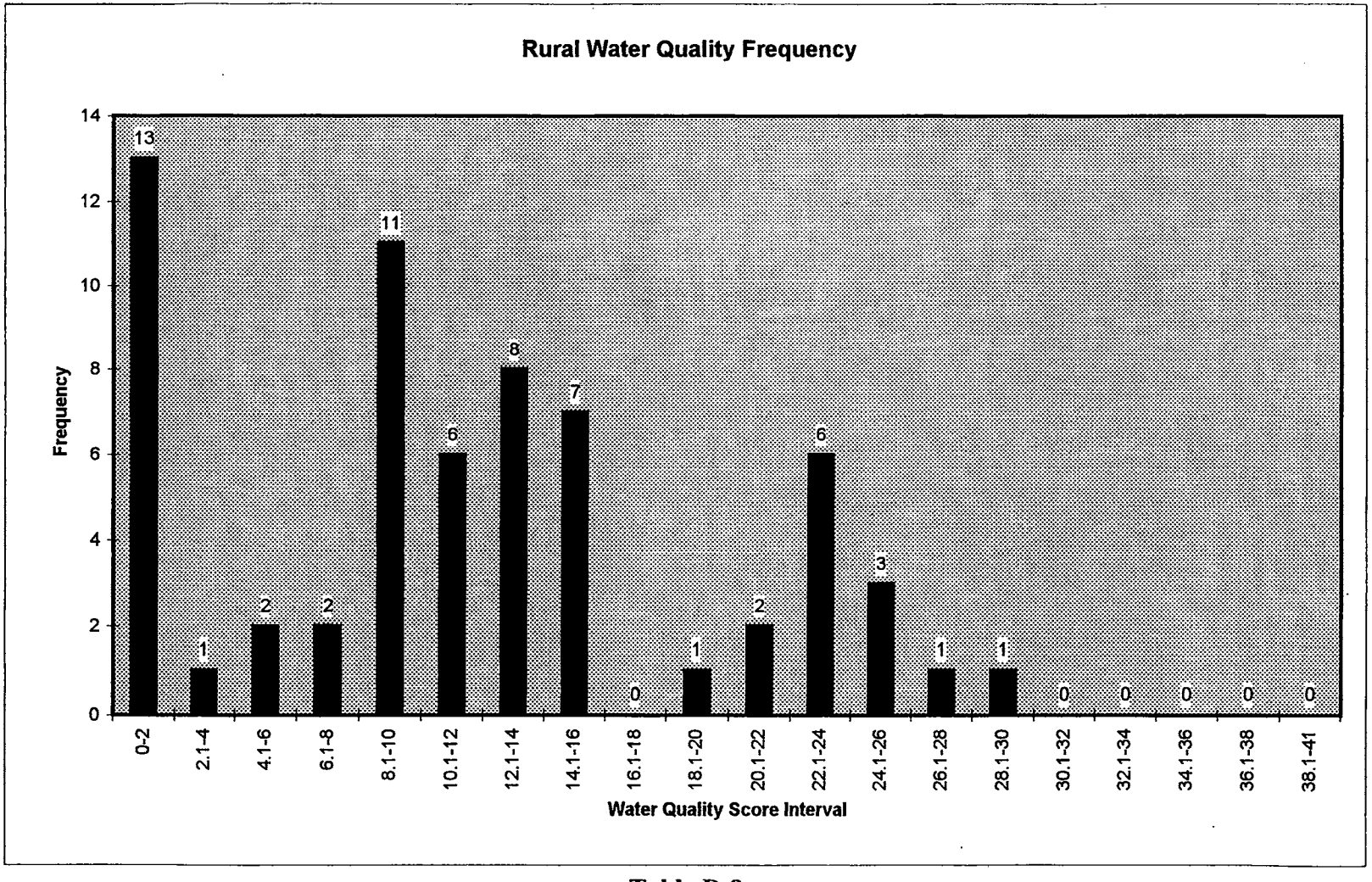

Table D.8
Distribution of 1995-1997 Scores
Rural Water Quality

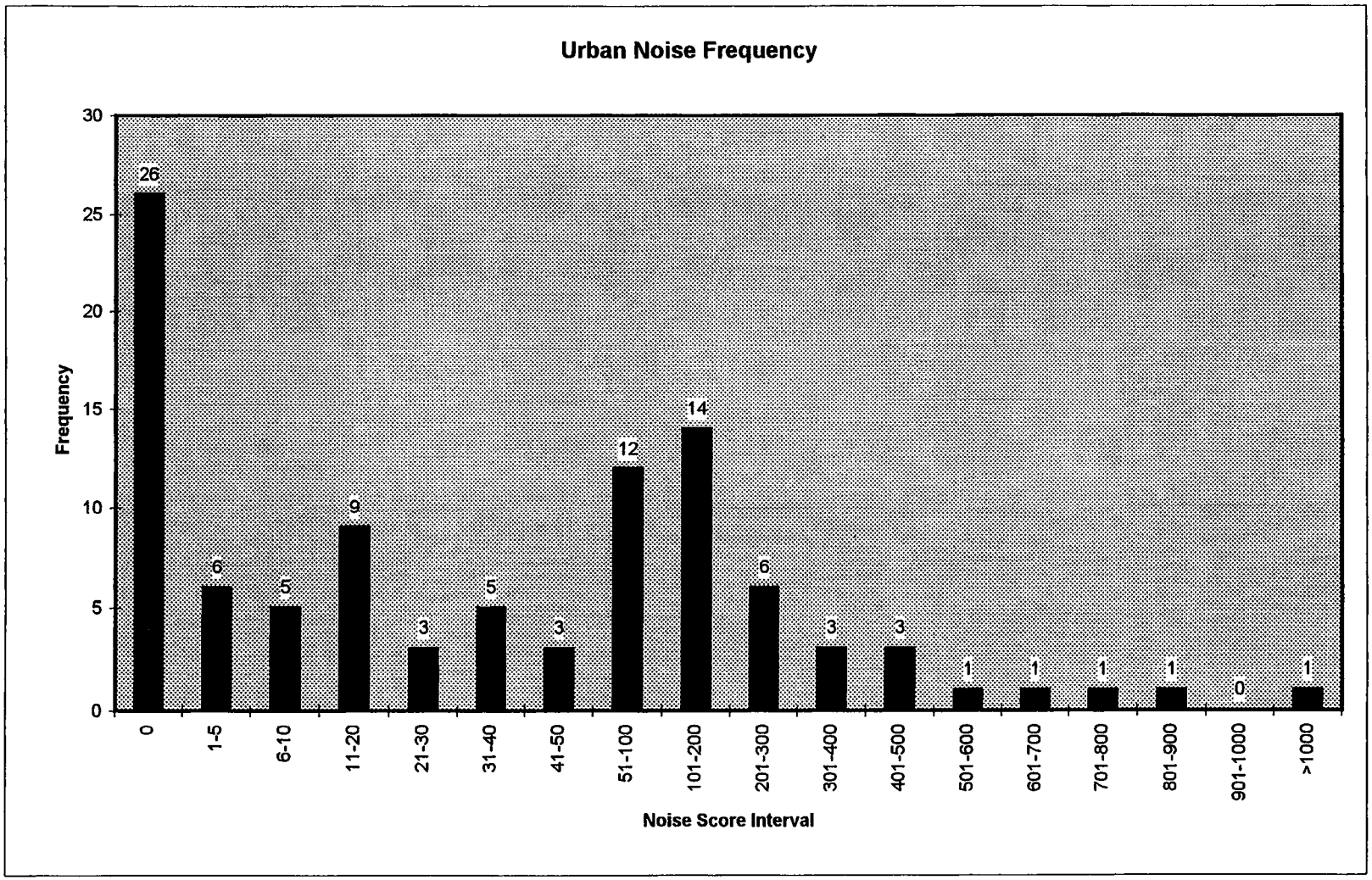

Table D.9
Distribution of 1995-1997 Scores
Urban Noise Assessment

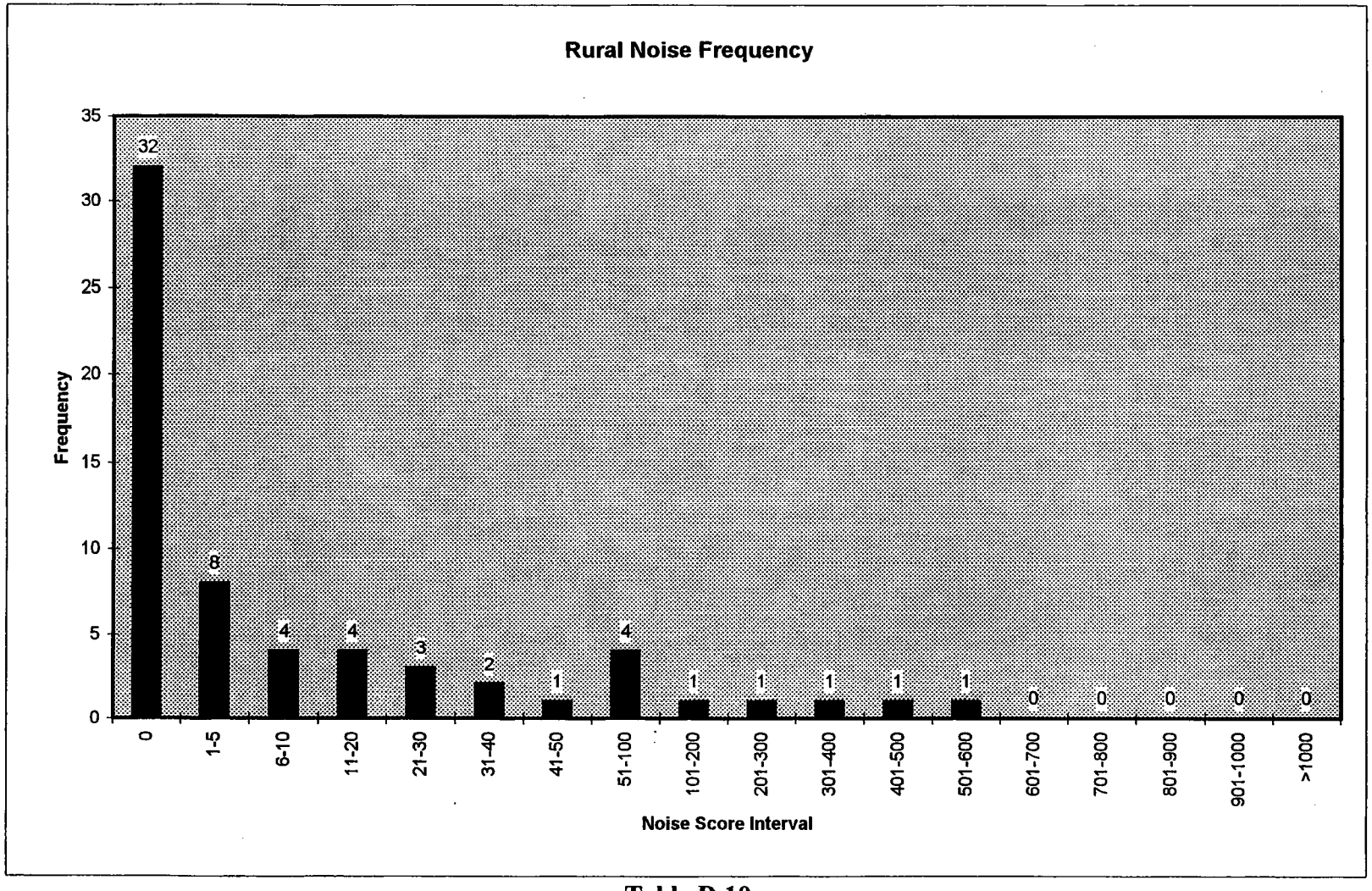

Table D.10
Distribution of 1995-1997 Scores
Rural Noise Assessment

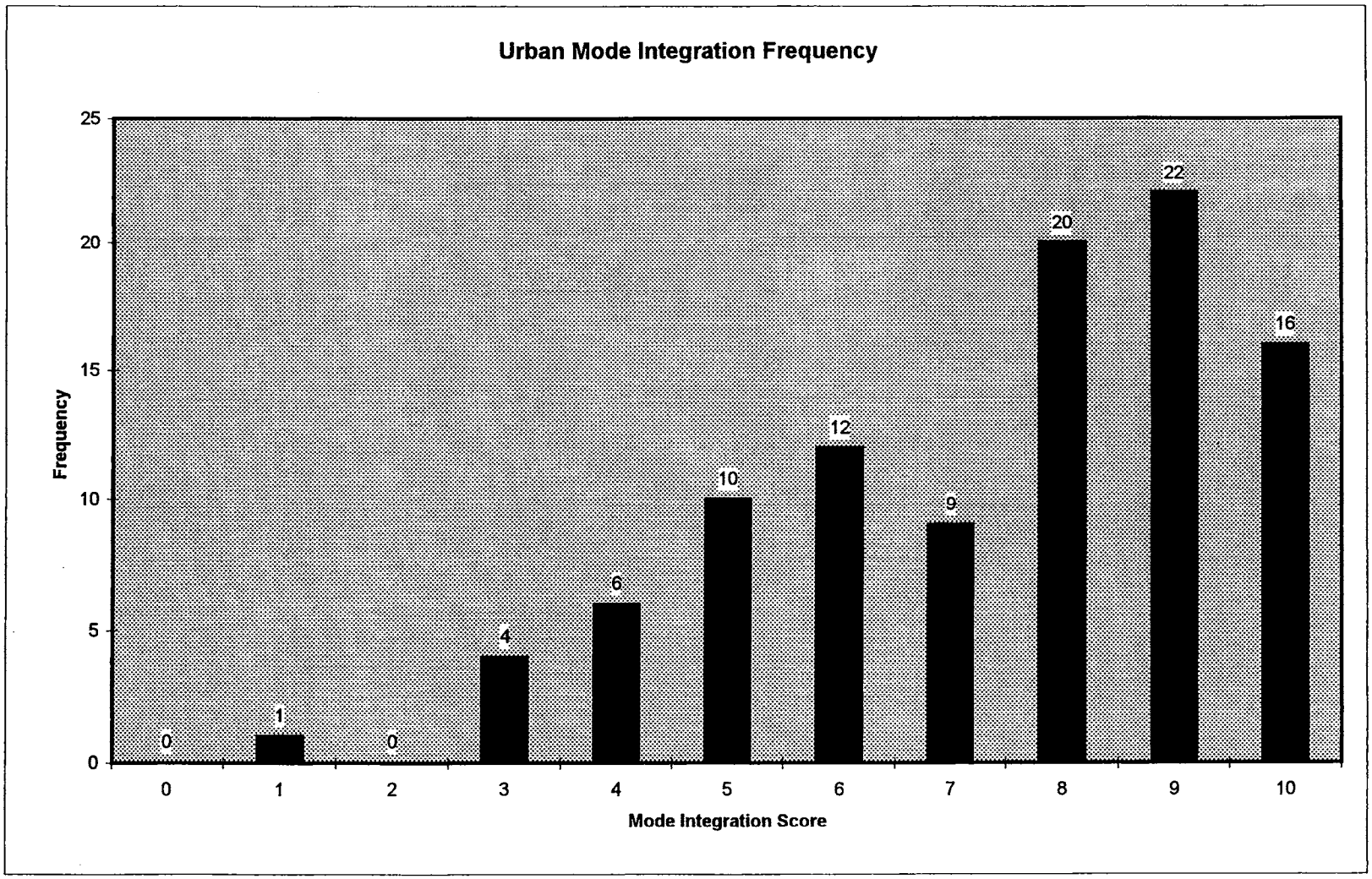

Table D.11
Distribution of 1995-1997 Scores
Urban Modal Integration

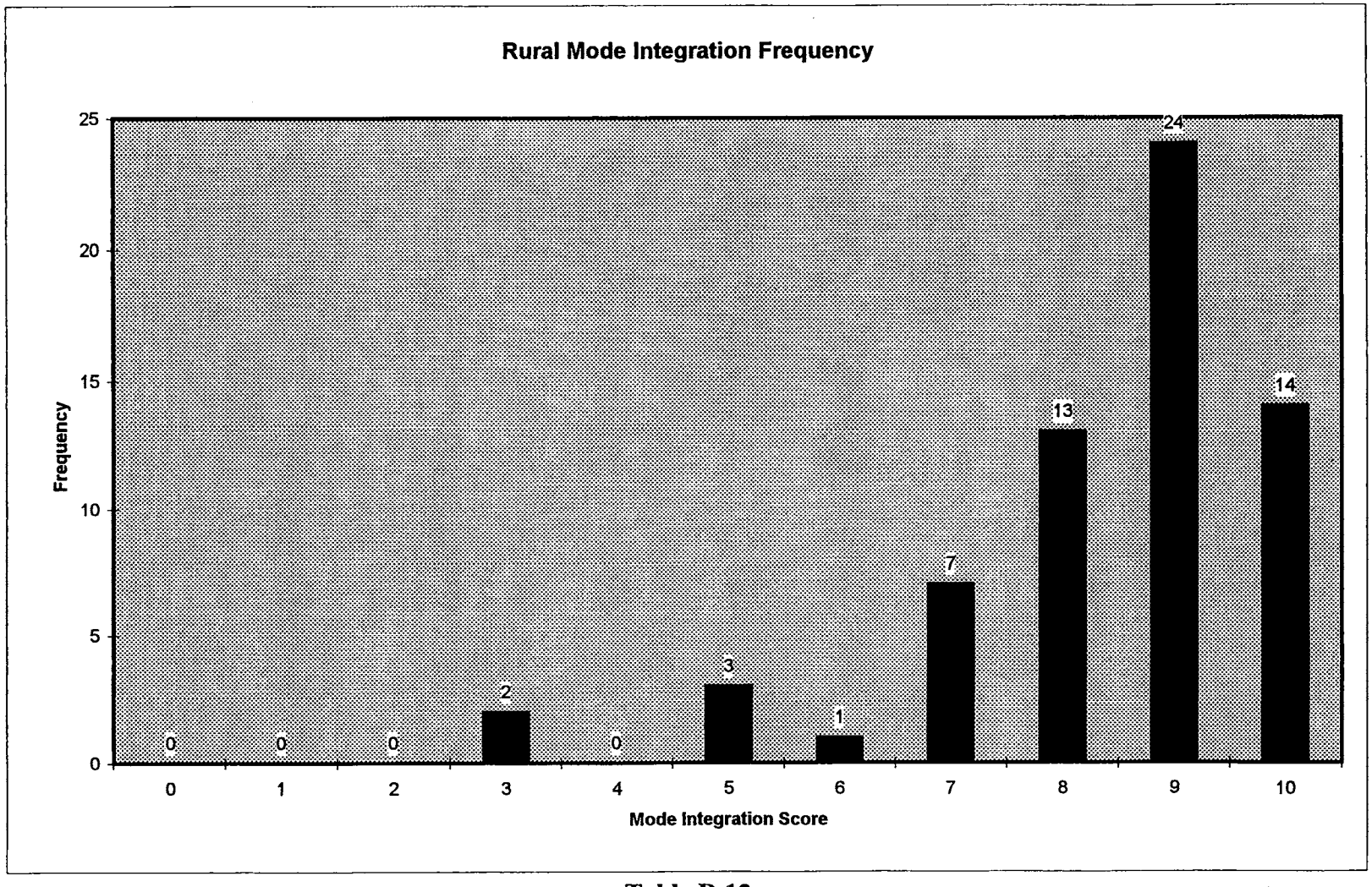

Table D.12
Distribution of 1995-1997 Scores
Rural Modal Integration

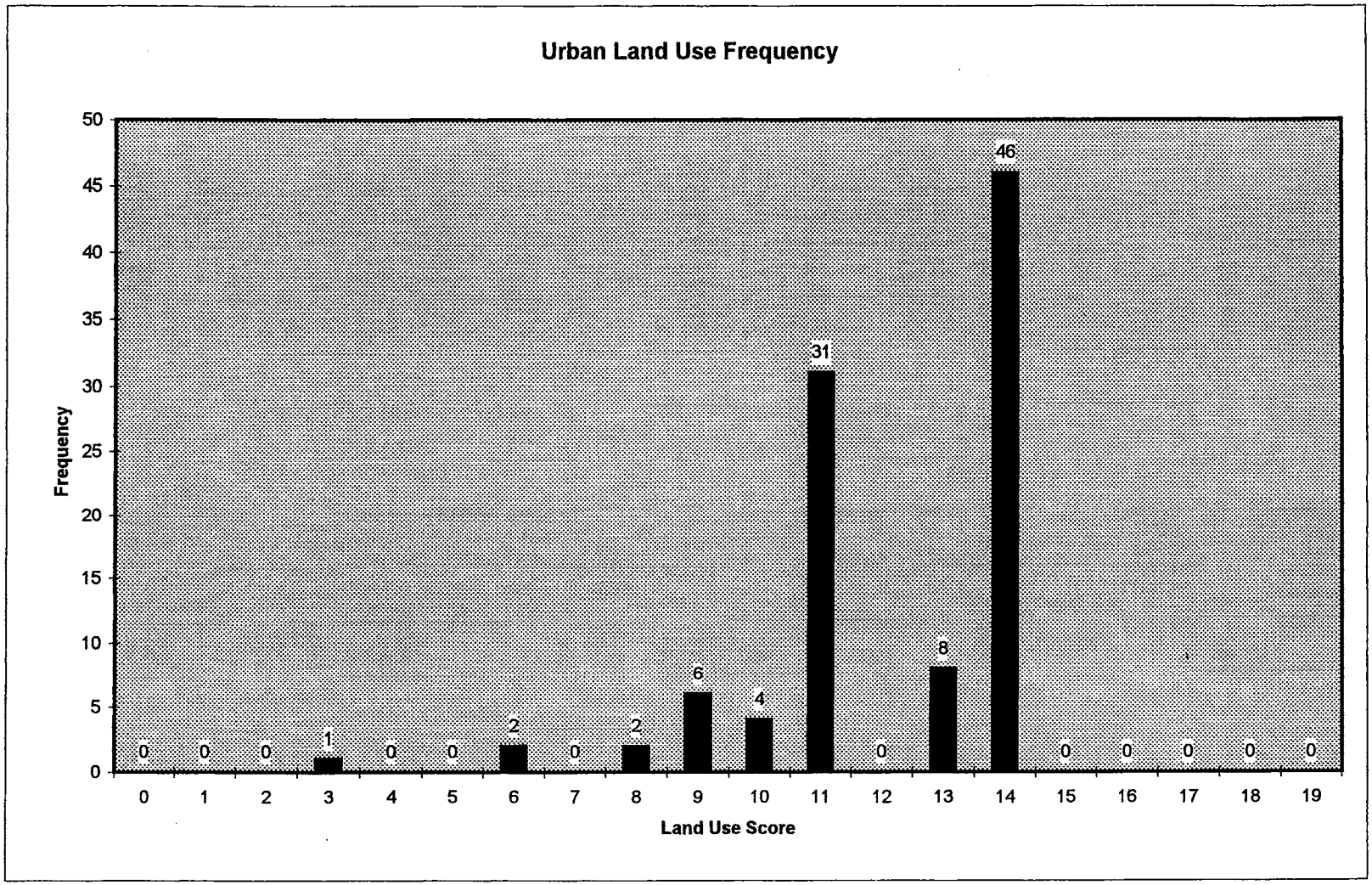

Table D.13
Distribution of 1995-1997 Scores
Urban Land Use

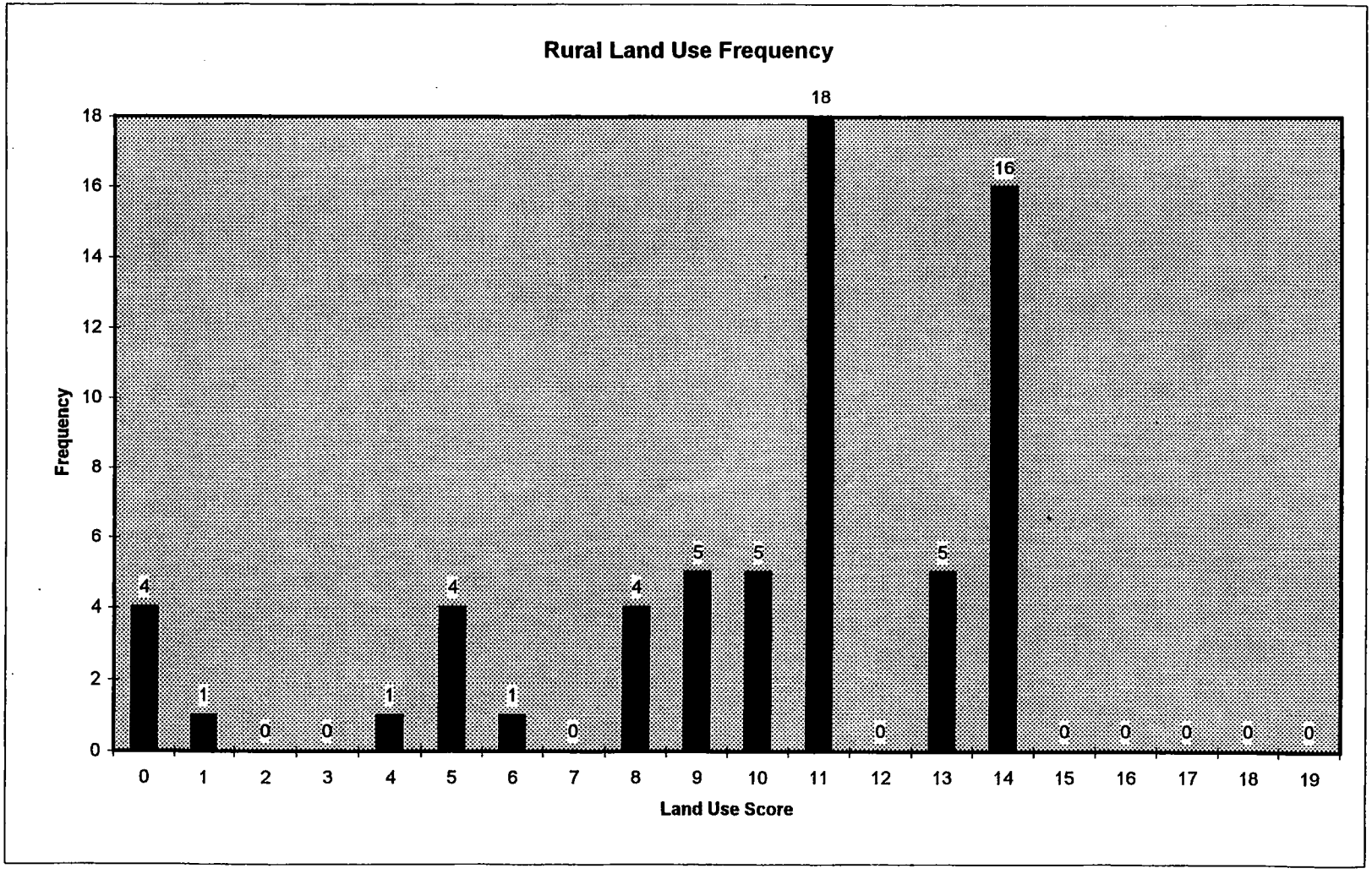

Table D.14
Distribution of 1995-1997 Scores
Rural Land Use

APPENDIX E

EXPLANATION OF CORRELATION COEFFICIENT CALCULATION

Correlation coefficients are calculated under two scenarios in this report:

1. The *statewide rankings* ("x" variable) of a region's list of projects, plotted against those projects' *regional rankings* ("y" variable)

2. The *TOPSIS rankings* ("x" variable) of all the projects on a statewide list, plotted against the *B/C rankings* ("y" variable) of the same list of projects

For each of these scenarios, "n" represents the number of project rankings being compared on a given list. The regression line under each scenario is x = y, meaning that if perfectly correlated, the two rankings being compared for each project on the list is exactly the same.

Given these definitions, the following equation for the calculation of correlation coefficient is given by Crow, et. al (1960)...

$$r = \frac{\Sigma(x-\bar{x})(y-\bar{y})}{(n-1)s_x s_y} = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{\left[n\Sigma x^2 - (\Sigma x)^2\right]\left[n\Sigma y^2 - (\Sigma y)^2\right]}}$$

The correlation always lies between -1 and +1. If, and only if, all points lie on the regression line, then r = +1. If r = 0, there is no correlation between the points and the given regression line. A negative r indicates that high values of y are associated with low values of x (an inverse linear relationship).

APPENDIX F

STATEWIDE & REGIONAL CORRELATION GRAPHS - TOPSIS-6

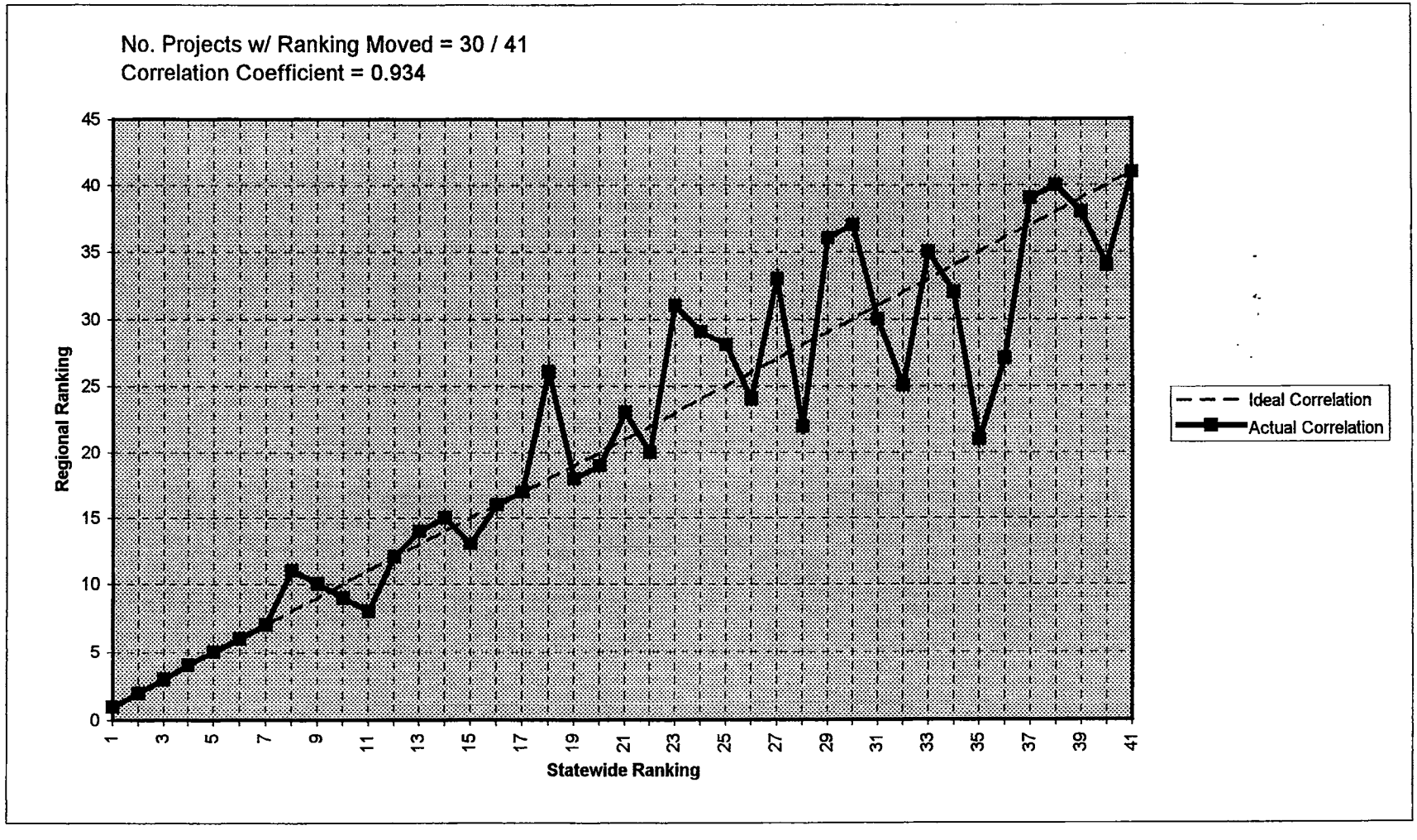

Table F.1
Consistency Between Statewide and By-Region Rankings
Region 1 - Urban

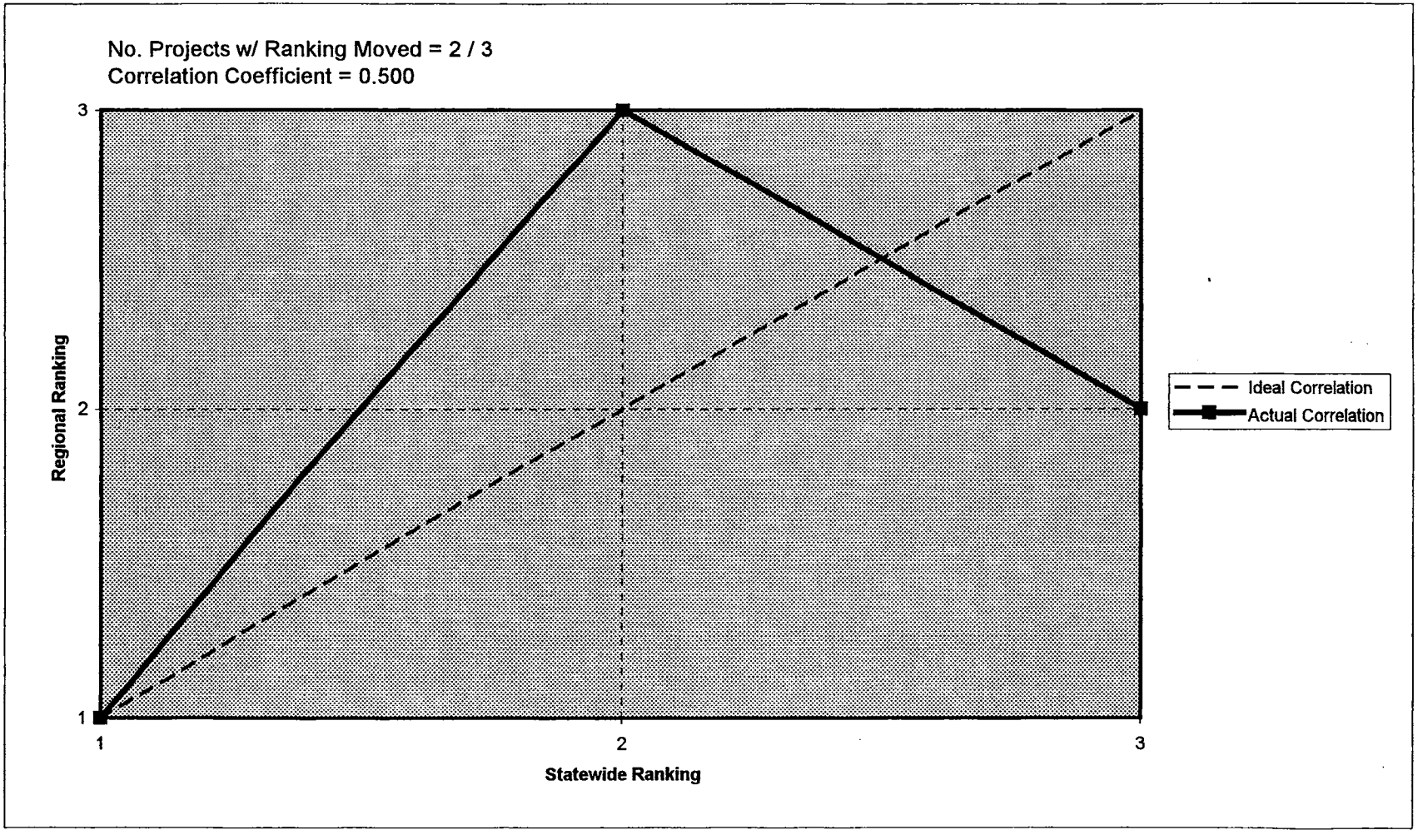

Table F.2
Consistency Between Statewide and By-Region Rankings
Region 2 - Urban

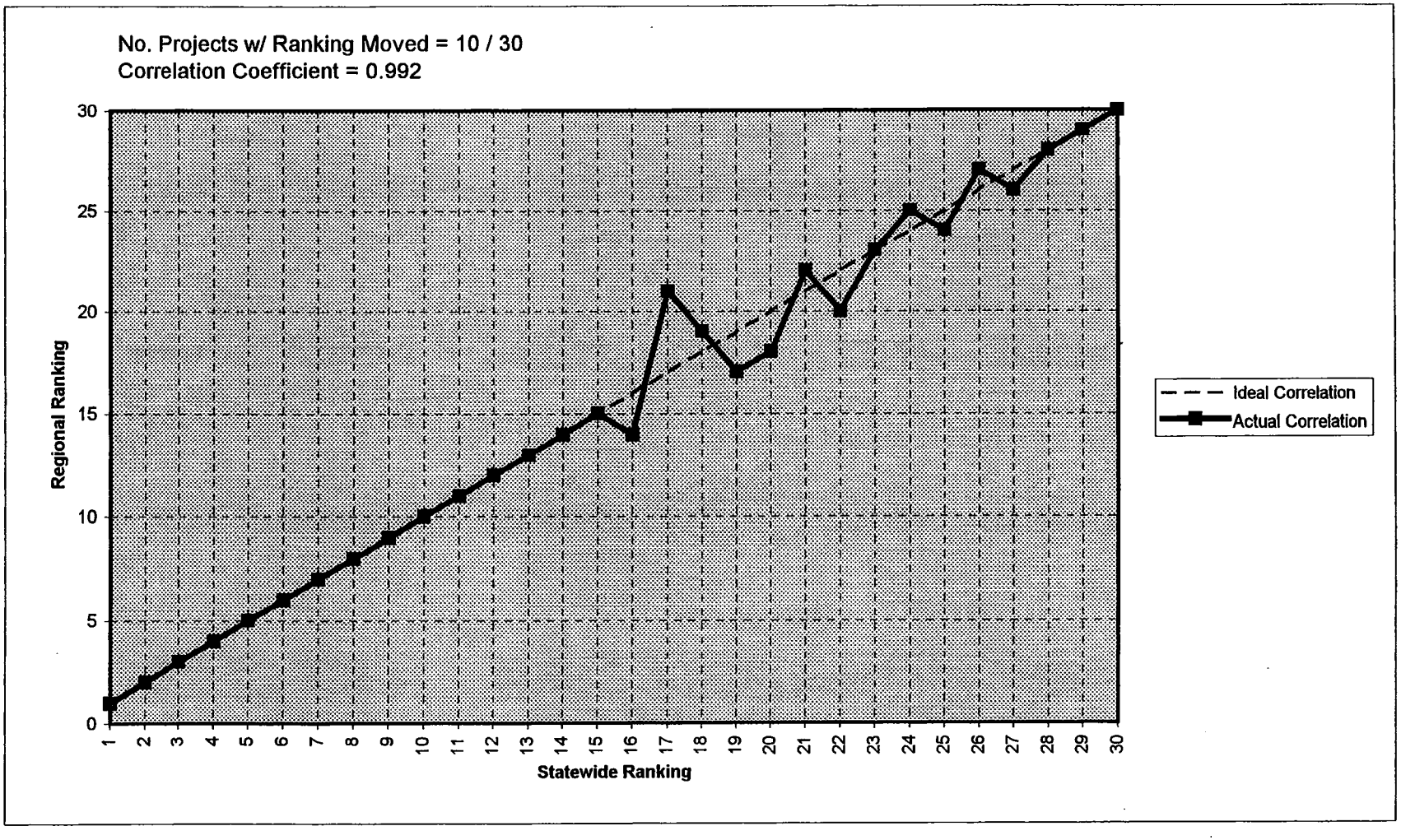

Table F.3
Consistency Between Statewide and By-Region Rankings
Region 3 - Urban

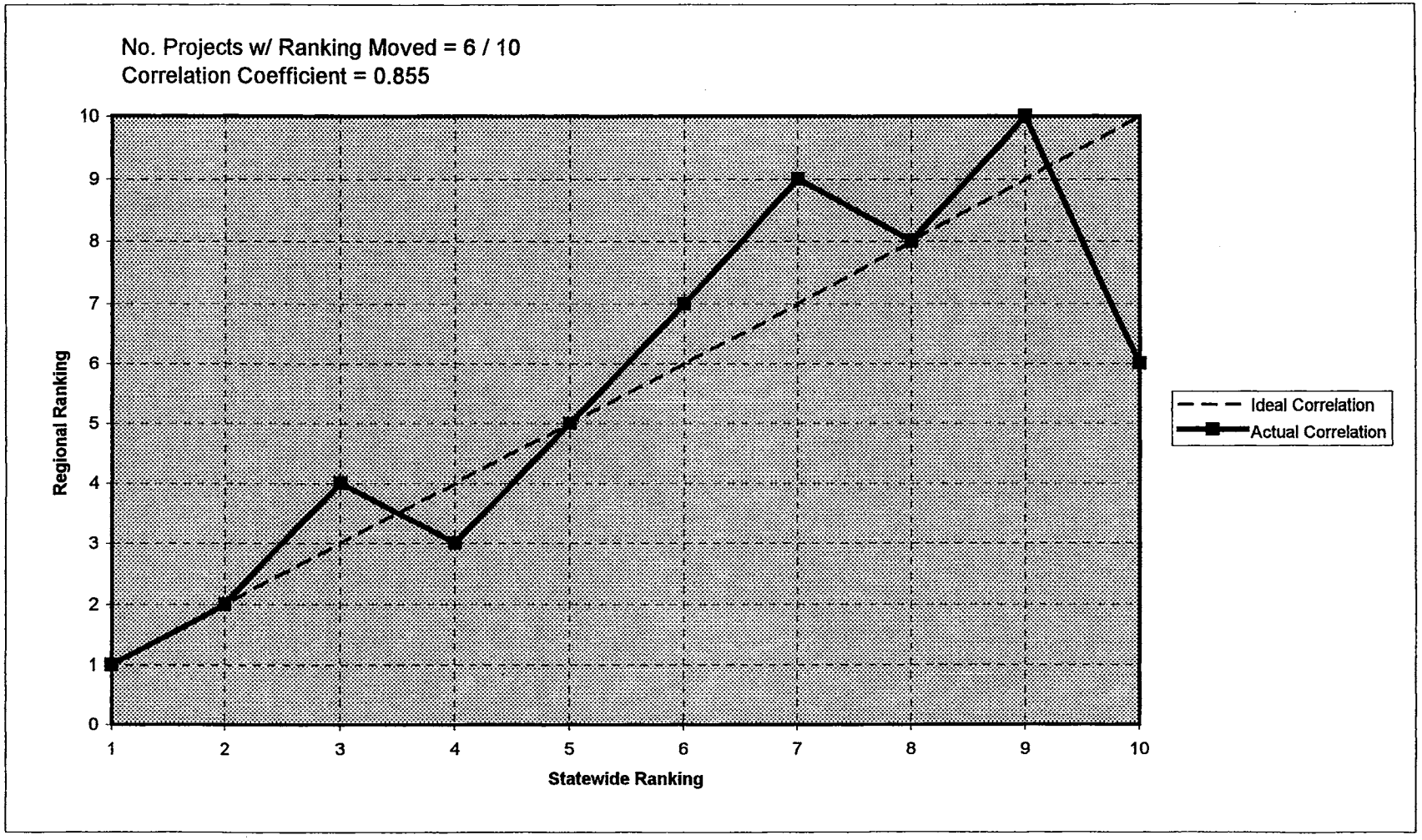

Table F.4
Consistency Between Statewide and By-Region Rankings
Region 4 - Urban

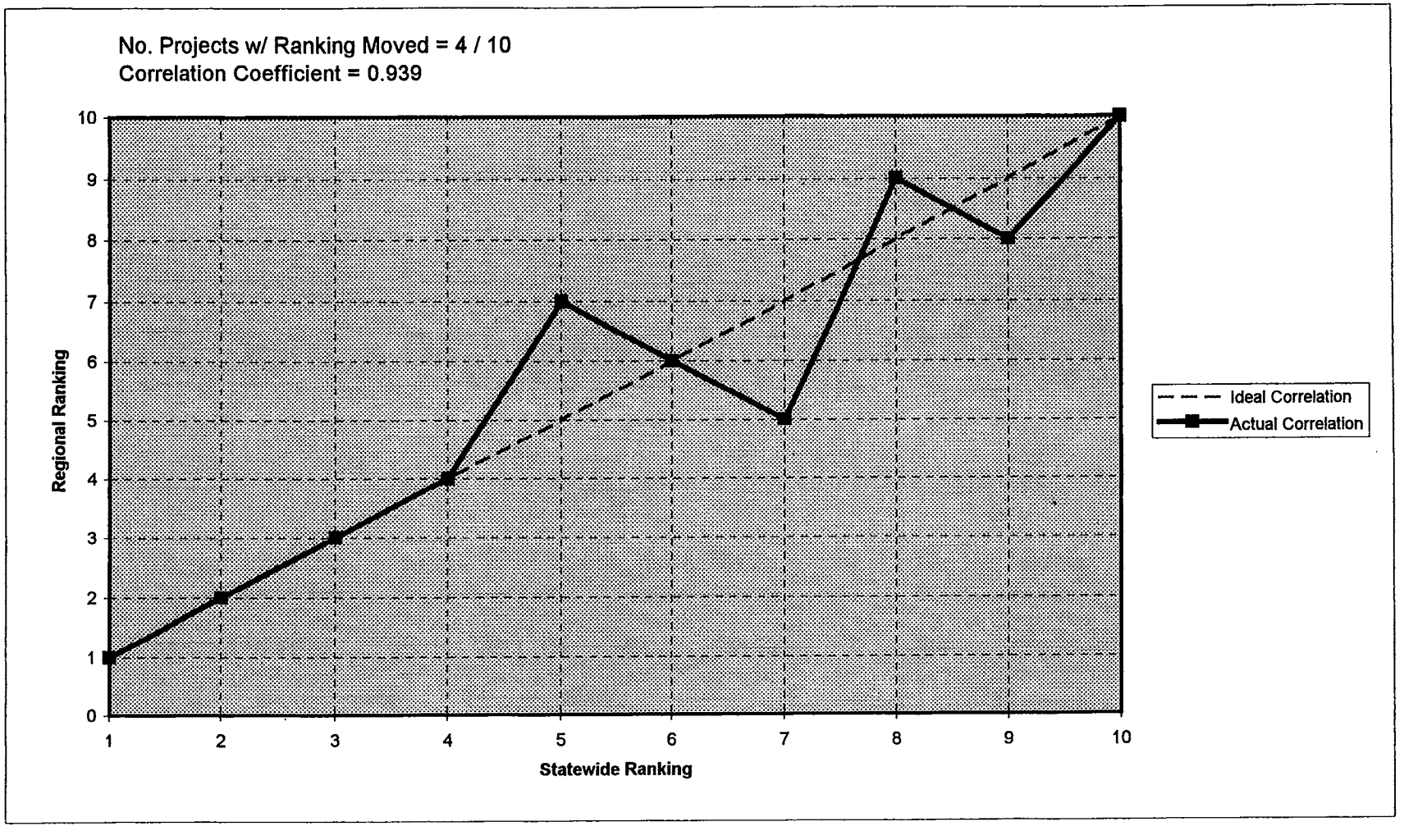

Table F.5
Consistency Between Statewide and By-Region Rankings
Region 5 - Urban

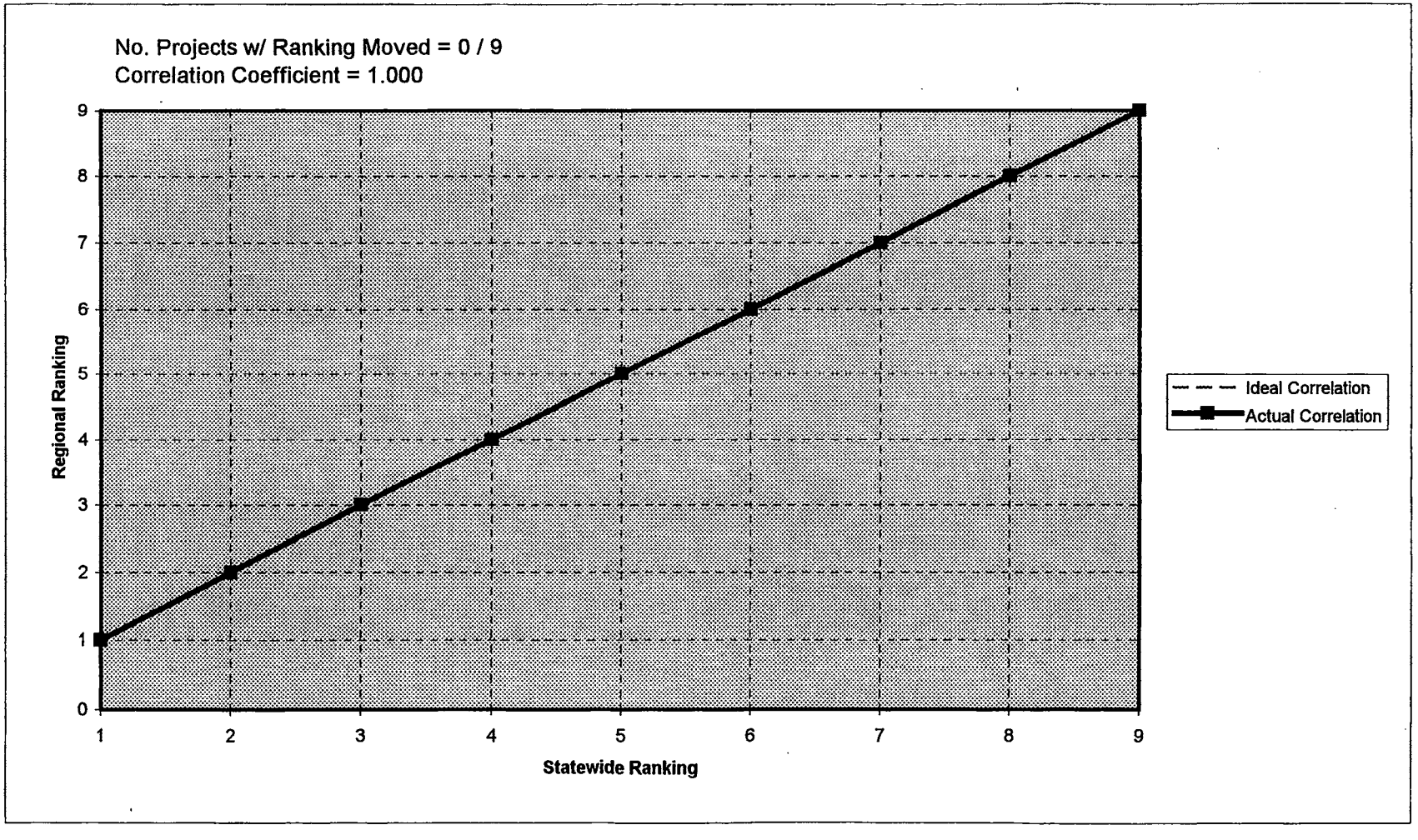

Table F.6
Consistency Between Statewide and By-Region Rankings
Region 6 - Urban

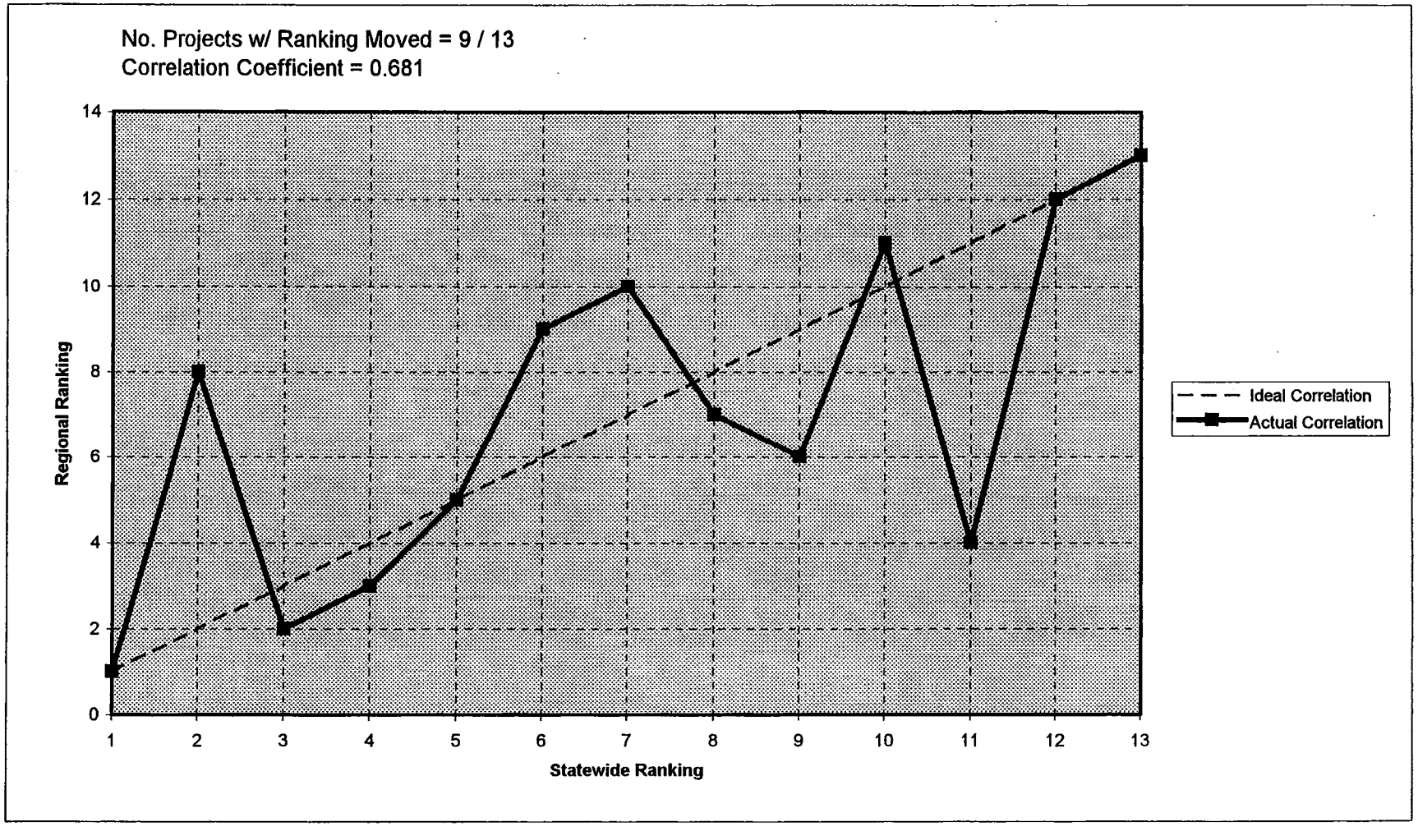

Table F.7
Consistency Between Statewide and By-Region Rankings
Region 1 - Rural

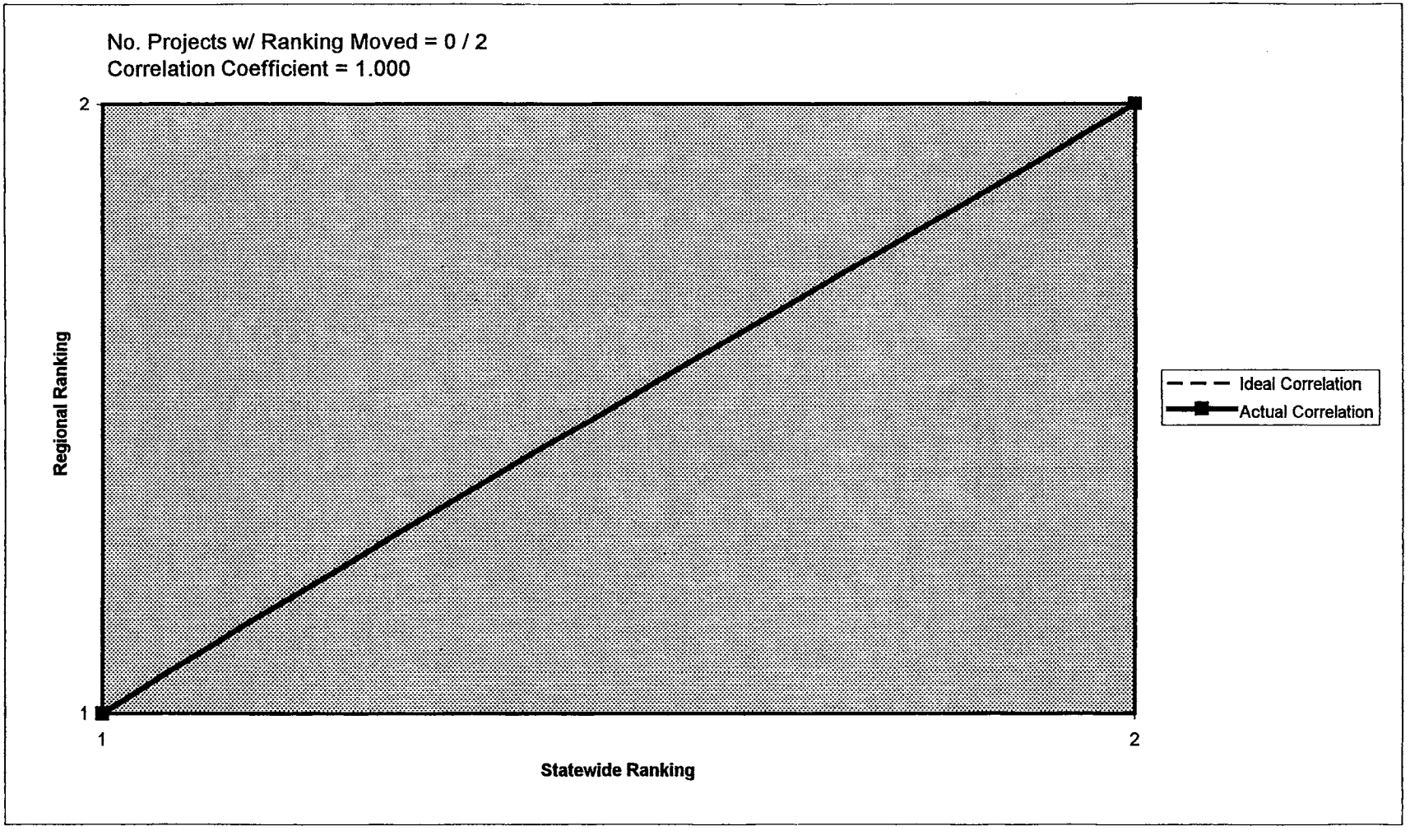

Table F.8
Consistency Between Statewide and By-Region Rankings
Region 2 - Rural

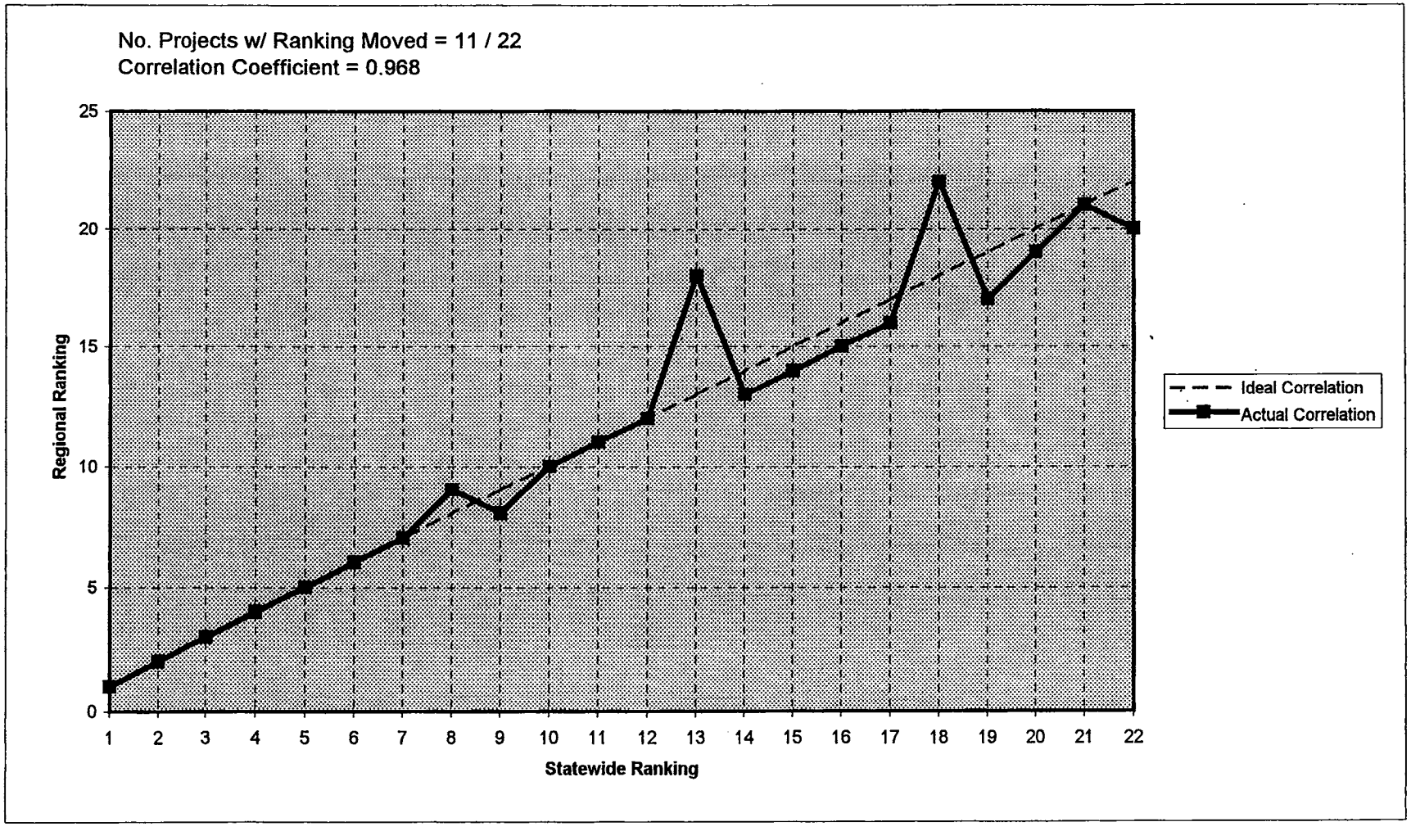

Table F.9
Consistency Between Statewide and By-Region Rankings
Region 3 - Rural

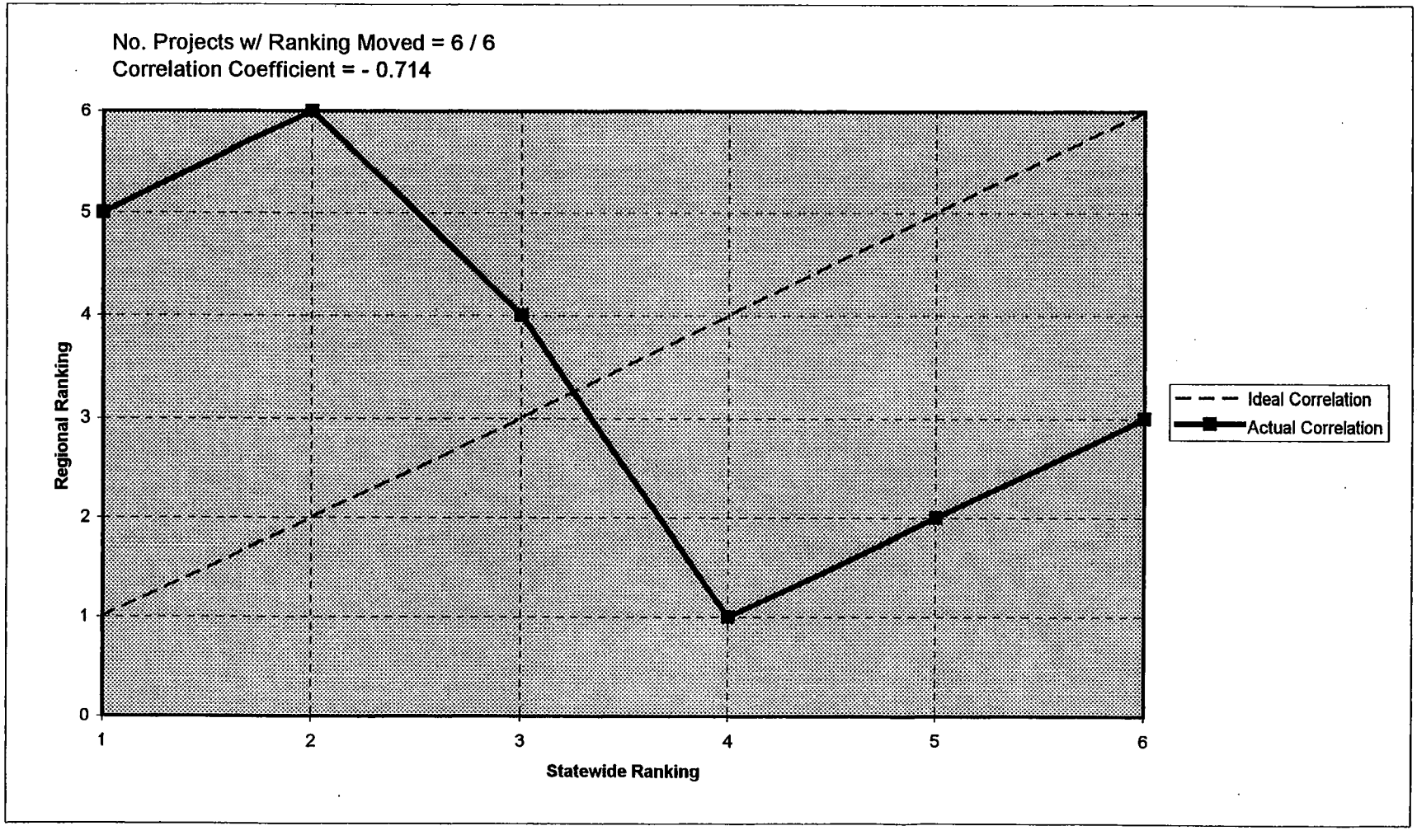

Table F.10
Consistency Between Statewide and By-Region Rankings
Region 4 - Rural

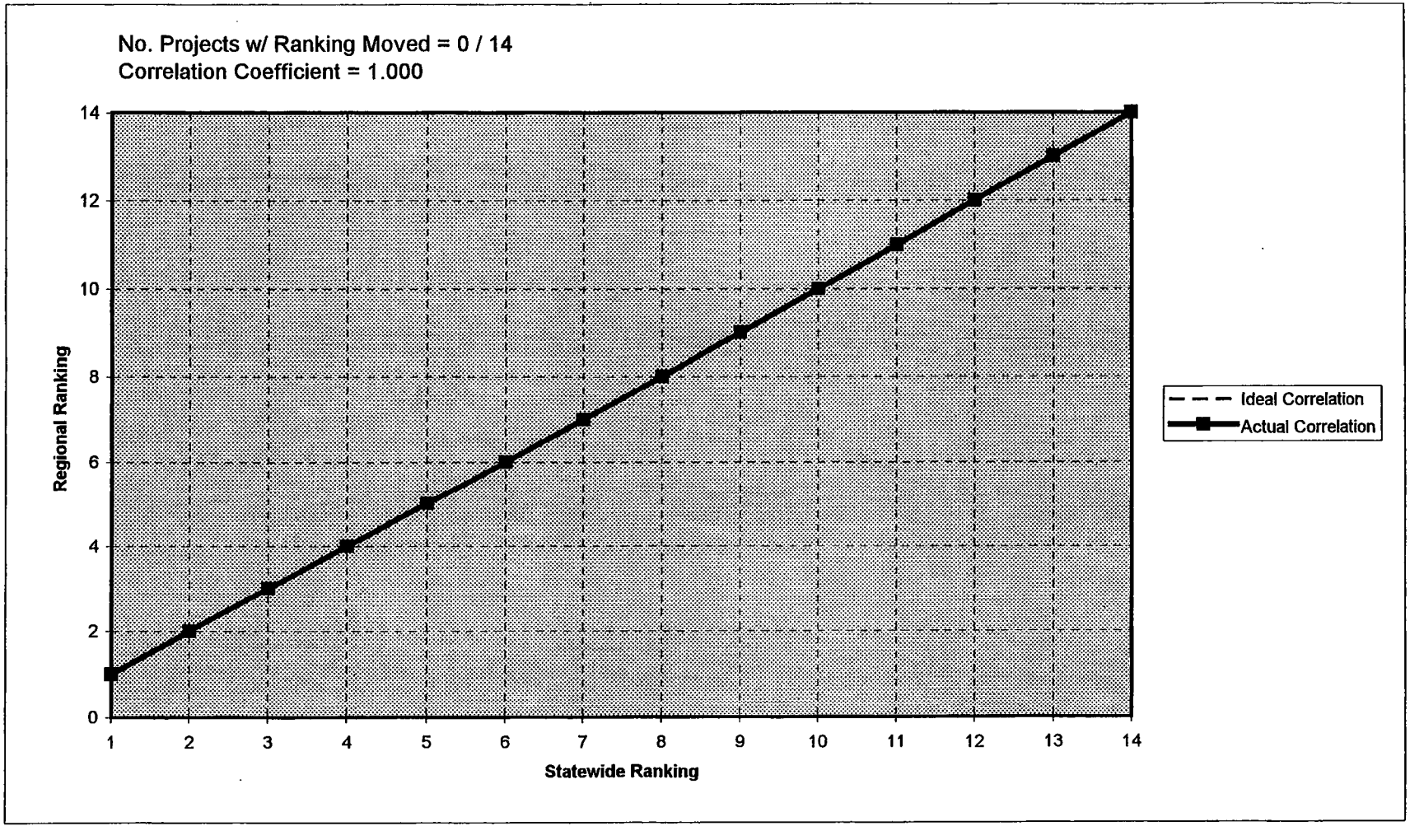

Table F.11
Consistency Between Statewide and By-Region Rankings
Region 5 - Rural

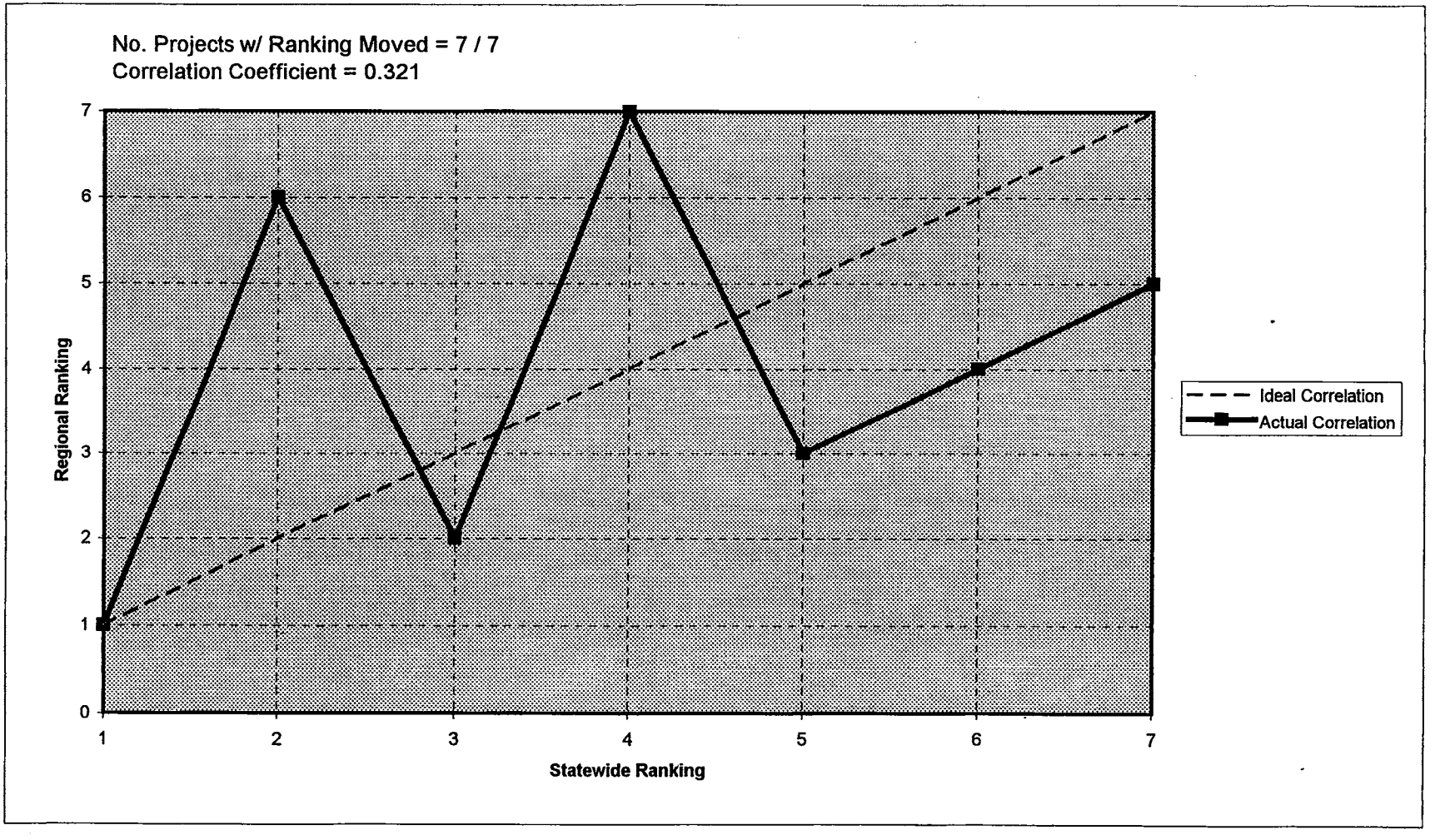

Table F.12
Consistency Between Statewide and By-Region Rankings
Region 6 - Rural

APPENDIX G

MATHEMATICAL SUMMARY OF TOPSIS

The following mathematical explanation of TOPSIS is excerpted from Hwang and Yoon (1981):

Yoon and Hwang developed the Technique for Order Preference by Similarity to Ideal Solution based upon the concept that the chosen alternative should have the shortest distance from the ideal solution and the farthest from the negative-ideal solution.

Assume that each attribute takes the monotonically increasing (or decreasing) utility; then it is easy to locate the "ideal" solution which is composed of all best attribute values attainable, and the "negative-ideal" solution composed of all worst attribute values attainable. One approach is to take an alternative which has the (weighted) minimum Euclidean distance to the ideal solution in a geometrical sense. It is argued that this alternative should be farthest from the negative ideal solution at the same time. Sometimes the chosen alternative, which has the minimum Euclidean distance from the ideal solution, has the shorter distance (to the negative-ideal) than the other alternative(s). For example, in Figure G.1, an alternative A_1 has shorter distances (both to ideal solution A^* and to the negative-ideal solution A^- than the other alternative A_2. Then it is very difficult to justify the selection of A_1. TOPSIS considers the distances to both the ideal and negative-ideal solutions simultaneously by taking the relative closeness to the ideal solution. This method is simple and yields an indisputable preference order of solution.

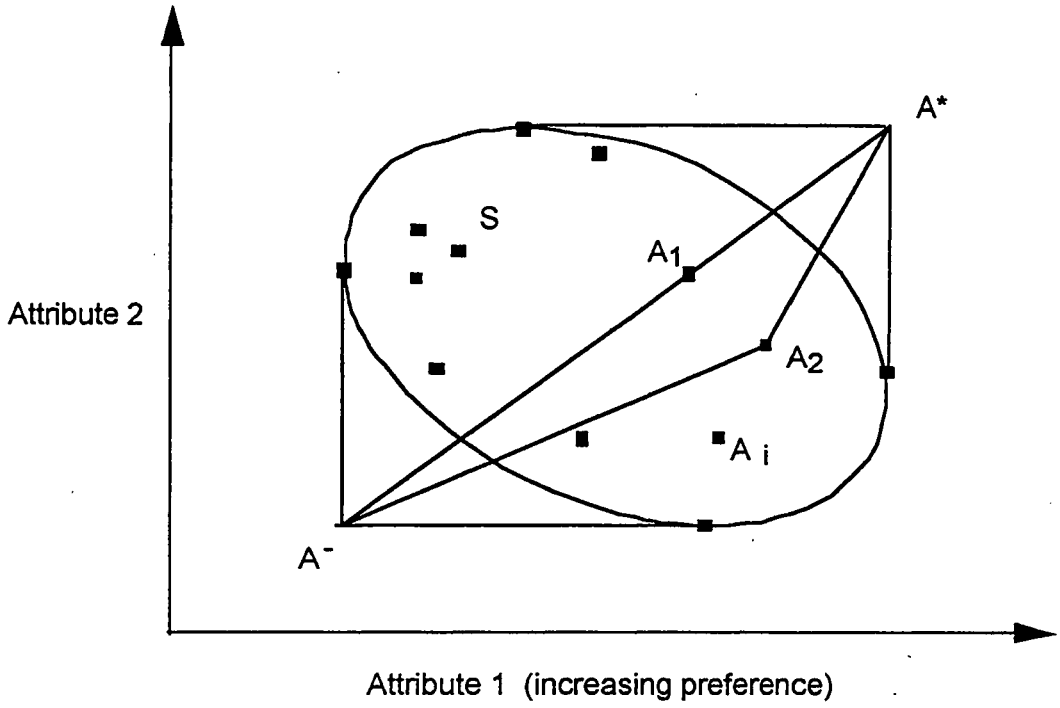

Figure G.1
Euclidean Distances to the Ideal Solutions
in Two Dimensional Space
(source: Reed et al., 1995)

Detailed Algorithm

The TOPSIS method evaluates the following decision matrix which contains m alternatives associated with n attributes (or criteria):

$$D = \begin{array}{c} \\ A_1 \\ A_2 \\ \vdots \\ A_i \\ \vdots \\ A_m \end{array} \begin{bmatrix} X_1 & X_2 & & X_j & & X_n \\ x_{11} & x_{12} & \cdots\cdots & x_{1j} & \cdots\cdots & x_{1n} \\ x_{21} & x_{22} & \cdots\cdots & x_{2j} & \cdots\cdots & x_{2n} \\ \vdots & \vdots & & \vdots & & \vdots \\ x_{i1} & x_{i2} & \cdots\cdots & x_{i3} & \cdots\cdots & x_{in} \\ \vdots & \vdots & & \vdots & & \vdots \\ x_{m1} & x_{m2} & \cdots\cdots & x_{mj} & \cdots\cdots & x_{mn} \end{bmatrix}$$

where A_i = the ith project considered,
X_j = the jth criteria considered in the decision, and
x_{ij} = the numerical outcome of the ith alternative with respect to jth criterion.

TOPSIS assumes that each attribute in the decision matrix takes with monotonically increasing or monotonically decreasing utility. In other words, the larger the attribute outcomes, the greater the preference for the "benefit" criteria and the less preference for the "cost" criteria. Further, any outcome which is expressed in a nonnumerical way should be quantified through the appropriate scaling technique. Since all criteria cannot be assumed to be of equal importance, the method receives a set of weights from the decision maker. For the sake of simplicity the proposed method will be presented as a series of successive steps.

Step 1 **Construct the normalized decision matrix**: This process transforms the various attribute dimensions into non-dimensional attributes, which allows comparison across the attributes. One way is to take the outcome of each criterion divided by the norm of the total outcome vector of the criterion at hand. An element r_{ij} of the normalized decision matrix R can be calculated as:

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}^2}} \qquad \text{(G.1)}$$

Consequently, each attribute has the same unit length of vector.

Step 2 **Construct the weighted normalized decision matrix**: A set of weights $\underline{w} = (w1, w2, \ldots\ldots, wj, \ldots\ldots wm)$, $\sum_{j=1}^{n} w_j = 1$ from the decision maker is accommodated to the decision matrix in this step. This matrix can be calculated by multiplying each column of matrix R by its associated weight w_j, to create the weighted normalized decision matrix V :

$$v_{ij} = r_{ij} * W_j \text{ , for every element } r_{ij} \qquad \text{(G.2)}$$

Step 3 **Determine ideal and negative-ideal solutions**: Let the two artificial alternatives A^* and A^- be defined as:

$$A^* = \{ (\max_i v_{ij} \mid \text{Œ } J), (\min_i v_{ij} \mid j \text{ Œ } J') \mid i = 1,2, \ldots\ldots,m) \}$$

$$= \{ v1^*, v2^*, \ldots\ldots vi^*, \ldots\ldots vn^* \} \qquad \text{(G.3)}$$

$$A^- = \{ (\min_i v_{ij} \mid \text{Œ } jJ), (\max_i v_{ij} \mid j \text{ Œ } J') \mid i = 1,2, \ldots\ldots,m) \}$$

$$= \{ v1^-, v2^-, \ldots\ldots vi^-, \ldots\ldots vn^- \} \qquad \text{(G.4)}$$

where $J = \{ j = 1,2, \ldots\ldots, n \mid j \text{ associated with benefit criteria} \}$

$J' = \{ j = 1,2, \ldots\ldots, n \mid j \text{ associated with benefit criteria} \}$.

Step 4 **Calculate the separation measure:** The separation between each alternative can be measured by the n-dimensional Euclidean distance. The distance of each project from the ideal one is then given by

$$S_i^* = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^*)^2}, \qquad i = 1, 2, \ldots\ldots, m \qquad (G.5)$$

Similarly, the distance from the negative-ideal one is given by

$$S_i^- = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^-)^2}, \qquad i = 1, 2, \ldots\ldots, m \qquad (G.6)$$

Step 5 **Calculate the relative closeness to the ideal solution:** The relative closeness of A_i with respect to A^* is defined as:

$$PI^* = S_i^- / (S_i^* + S_i^-), \quad 0 < PI^* < 1, \; i = 1, 2, \ldots\ldots, m \qquad (G.7)$$

It is clear that $PI^* = 1$ if $A_i = A^*$ and $PI^* = 0$ if $A_i = A-$. An alternative Ai is closer to A^* as PI^* approaches to 1.

Step 6 **Rank the priority order:** A set of projects can now be priority ranked according to the descending order of PI^*.

APPENDIX H

SAMPLE INPUT AND OUTPUT FORMATS FOR TOPSIS-6 AND TOPSIS-8

Project	B/C	Cmty Support	Wetlands	Water Quality	Noise	Mode Int.	L/U	WSDOT
Weight	0.65	0.14	0.0267	0.0267	0.0266	0.07	0.06	Project Cost
Max/Min.	1	0	0	0	0	0	1	
D- 3, SR 109, SB Passing Lane, MP 14.5 to 15.0	0.89	4	0.5	9	0	9	11	290,900
D- 3, SR 109, NB Passing Lane, MP 14.5 to 15.0	0.87	4	0.5	9	0	9	11	299,800
D-1, SR 2, Sultan City Limits - TWLTL Lane	1.16	2	0.5	0.5	25	10	6	338,000
D- 3, SR 101, Mt. Walker N.B. Passing / Truck Climbing Lane	3.49	4	0.5	10	0	9	10	372,879
D- 3, SR 101, Chicken Coop Road EB Passing / Truck Climbing Lane	55.54	4	0.5	15	0	10	11	503,109
D- 3, SR 101, Blyn Eastbound Passing Lane	22.69	5	0.5	11	0	10	11	595,400
D- 3, SR 101, Blyn Westbound Passing Lane	3.60	5	0.5	11	0	10	11	644,600
D- 3, SR 101, SR 101/SR 107 I/C	0.27	7	0.5	1	0	8	9	777,230
D-5, SR 12, Airport Rd Interchange Modification	3.05	1	0.5	1	16	5	11	797,000
D- 5, SR 24, Vernita Hill Vicinity	3.49	3	0.5	1	0	8	10	850,000
D- 3, SR 104, SR 19 - West WB Passing / Truck Climbing Lane	3.08	4	0.8	14	0	10	11	912,000
D- 3, SR 12, Passing lanes MP 32.00 to MP 33.83	0.39	6	0.5	15	0	10	14	1,047,864
D-1, SR 530, SR 5 to Old SR 99 Wye Connection - Widening	0.43	5	1.0	11.0	7	10	5	1,062,000
D- 3, SR 3, Belfair Vicinity	2.70	6	0.5	10	0	7	14	1,069,260
D- 3, SR 101, Dawley Rd. to Blyn Hwy., Truck Climbing Lane	34.96	4	1.4	21	5	9	11	1,096,800
D- 2, SR 215, Omak vicinity	0.33	4	0	1	0	6	13	1,150,000
D- 4, SR 6, Pluvius Vicinity Realignment	0.30	4	0.625	7	0	7	0	1,176,000
D-1, SR 539, Lynden Park & Ride Lot	0.55	0	0.5	1.5	24	5	14	1,271,000
D- 3, SR 101, Gardiner Cemetery Road to MP 277.6	30.36	4	1	10	5	9	10	1,355,750
D- 3, SR 109, SB Truck Climbing Lane (EB), MP 4.5	2.54	4	0.5	11	0	8	11	1,391,801
D-2, SR 26, SR 243 I/C TO MP 5.5 VIC	1.35	3	0.5	14	0	10	10	1,516,640
D- 4, SR 4, Svensons Curve Realignment	0.34	4	4.625	24	12	10	0	1,561,000
D-5, SR 90, Ryegrass Summit Vic EBND TCL	4.69	4	0.5	1	0	9	9	1,592,464

Table H.1
Sample TOPSIS-6 Input File

0.9389518 D- 3, SR 101, Chicken Coop Road EB Passing / Truck Climbing Lane
0.62694646 D- 3, SR 101, Dawley Rd. to Blyn Hwy., Truck Climbing Lane
0.54601653 D- 3, SR 101, Gardiner Cemetery Road to MP 277.6
0.40970779 D- 3, SR 101, Blyn Eastbound Passing Lane
0.10890992 D-5, SR 90, Ryegrass Summit Vic EBND TCL
0.10728773 D-5, SR 12, Airport Rd Interchange Modification
0.10193633 D-1, SR 539, Lynden Park & Ride Lot
0.09968411 D- 5, SR 24, Vernita Hill Vicinity
0.09278832 D- 3, SR 101, Mt. Walker N.B. Passing / Truck Climbing Lane
0.09012858 D- 3, SR 101, Blyn Westbound Passing Lane
0.0869993 D- 3, SR 104, SR 19 - West WB Passing / Truck Climbing Lane
0.08302212 D- 3, SR 109, SB Truck Climbing Lane (EB), MP 4.5
0.08085714 D-1, SR 2, Sultan City Limits - TWLTL Lane
0.07930658 D- 3, SR 3, Belfair Vicinity
0.07927263 D-2, SR 26, SR 243 I/C TO MP 5.5 VIC
0.07834603 D- 3, SR 101, Northbound Passing Lane
0.07524993 D- 2, SR 215, Omak vicinity
0.07446737 D- 3, SR 101, Southbound Passing Lane
0.070988 D- 3, SR 109, SB Passing Lane, MP 14.5 to 15.0
0.07089766 D- 3, SR 109, NB Passing Lane, MP 14.5 to 15.0
0.06994364 D- 3, SR 109, SB Passing Lane, MP 14.0 to 15.0
0.069131 D- 3, SR 109, NB Passing Lane, MP14.0 to 15.0
0.06509472 D- 4, SR 6, Pluvius Vicinity Realignment
0.06150691 D- 3, SR 12, Passing lanes MP 32.00 to MP 33.83
0.05573867 D- 3, SR 101, SR 101/SR 107 I/C
0.05258756 D-1, SR 530, SR 5 to Old SR 99 Wye Connection - Widening
0.043098 D- 4, SR 4, Svensons Curve Realignment

Table H.2
Sample TOPSIS-6 Output File

REG	SR	Project Weights Logic	Begin MP	End MP	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
5	240	Edison Street I/C			86.32	1	0.5	12.0	28	4	14	3,253,200
3	161	SR 161 / SR 167 Eastbound Ramp			66.50	5	0.5	12	0	8	14	505,336
1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane			39.56	7	0.5	0.5	20	10	14	168,000
4	501	Mill Plain Extension			30.55	4	0.5	1.5	180	6	11	500,000
1	99	Airport Rd: I/S HOV Priority			19.19	0	4.5	7.0	103	10	14	200,000
6	90	University Rd I/C			18.87	3	0	2	61	6	9	13,000,000
3	161	36th to Jovita			18.36	6	0.5	13	141	9	14	4,695,530
5	82	I-82 / Yakima Ave.			5.21	0	2	6	19	5	14	2,800,000
6	2	North Spokane/Division St. -Stage 2			8.43	4	0	2	123	4	14	2,925,000
1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening			7.94	5	6.5	17.0	290	8	11	10,232,000
3	410	234th to Hinkleman Ext. Road			5.95	3	2	1	213	10	11	5,800,941
1	525	SR 99 to SR 526 - Widening & HOV Lanes	333.0	340.0	3.62	1	4.2	17	474	10	11	17,998,000
1	520	NE 40th St I/C & C-D Lanes			0.48	0	0.5	0	1	8	14	13,261,000
1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening			4.26	2	0.5	11.0	17	10	11	8,077,000
3	3	SR 3/SR 305 Interchange - Stage 2			0.21	0	0.5	6	0	9	11	1,248,000
5	240	Stevens Drive to SR 182			4.58	3	0.5	0	0	4	14	15,800,000
6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)			4.96	3	0	7	162	9	14	15,138,675
4	205	4th Plain Road Southbound on-ramp			1.41	2	0.5	1	13	9	6	1,435,000
1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	111.0	120.0	6.31	6	2.5	8.0	62	10	10	29,488,000
1	20	SPUR, Commercial Ave./ 12th to San Juan / Victoria Ferry Terminal - Widening			0.29	2	0.5	2.5	0	8	13	2,106,000
2	17	Pioneer Way to Stratford Road			0.70	2	1.6	24	52	6	13	4,850,000
1	9	Lake Stevens Park & Ride Lot			0.73	2	11.5	5.5	90	7	11	5,750,000

Table H.3
Sample TOPSIS-8 Input File

Priority Index	REG	SR	Project Description	Begl MP	End MP	B/C 0.65 1	Comm Spp 0.14 0	Wetland 0.0267 0	Water Qua 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
	5	240	Edison Street I/C			86.32	1	0.5	12.0	28	4	14	3,253,200
0.907626	3	161	SR 161 / SR 167 Eastbound Ramp			66.50	5	0.5	12	0	8	14	505,336
0.568614	1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane			39.56	7	0.5	0.5	20	10	14	168,000
0.461794	4	501	Mill Plain Extension			30.55	4	0.5	1.5	180	6	11	500,000
0.346522	1	99	Airport Rd: I/S HOV Priority			19.19	0	4.5	7.0	103	10	14	200,000
0.326306	6	90	University Rd I/C			18.87	3	0	2	61	6	9	13,000,000
0.302326	3	161	36th to Jovita			18.36	6	0.5	13	141	9	14	4,695,530
0.234826	5	82	I-82 / Yakima Ave.			5.21	0	2	6	19	5	14	2,800,000
0.220843	6	2	North Spokane/Division St. -Stage 2			8.43	4	0	2	123	4	14	2,925,000
0.216888	1	520	NE 40th St I/C & C-D Lanes			0.48	0	0.5	0.0	1	0	14	13,281,000
0.214971	3	3	SR 3/SR 305 Interchange - Stage 2			0.21	0	0.5	0	0	0	11	1,248,000
0.213116	1	525	SR 99 to SR 526 - Widening & HOV Lanes	333	340	3.62	1	4.2	17.0	474	10	11	17,998,000
0.210906	1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening			4.26	2	0.5	11.0	17	10	11	8,077,000
0.208799	3	410	234th to Hinkleman Ext. Road			5.95	3	2	13	213	10	11	5,800,941
0.206523	5	240	Stevens Drive to SR 182			4.58	3	0.5	0	0	4	14	15,800,000
0.205210	6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)			4.96	3	0	7	162	9	14	15,138,675
0.201474	1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening			7.94	5	6.5	17.0	290	8	11	10,232,000
0.200139	4	205	4th Plain Road Southbound on-ramp			1.41	2	0.5	1	13	9	6	1,435,000
0.198143	1	20	SPUR, Commercial Ave./ 12th to San Juan / Victoria Ferry Terminal - Widening			0.29	2	0.5	2.5	0	8	13	2,106,000
0.196584	2	17	Pioneer Way to Stratford Road			0.70	2	1.6	24	52	6	13	4,850,000
0.195528	1	9	Lake Stevens Park & Ride Lot			0.73	2	11.5	5.5	90	7	11	5,750,000
0.185000	1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	111	120	6.31	6	2.5	8.0	62	10	10	29,488,000

Table H.4
Sample TOPSIS-8 Output File

APPENDIX I

TOPSIS-8 INPUT WORKBOOK

I-1 Mobility Improvement Program
Statewide Ranking

			Project			B/C	Comm Suppt	Wetlands	Water Qual	Noise	Mode Int.	L/U	
			Weights	Begin	End	0.65	0.14	0.0267	0.0267	0.0266	0.07	0.06	WSDOT
	REG	SR	Logic	MP	MP	1	0	0	0	0	0	1	Proj Cost

Instructions for TOPSIS-8

Step 1 Enter data into input worksheet

- Scores must be input each of the seven criteria for every project
- Weights should be input in row 2 of the title block - all of the weights should sum up to 1.0
- A "1" or a "0" should be input in row 3 ("Logic") of the title block

  "1" indicates that a higher score in that category is more favorable than a lower score

  "0" indicates that a lower score in that category is more favorable than a higher score

Step 2 Open TOPSIS-8 macro

Step 3 Select (highlight) the input data range, specified as follows:

- Top left corner of range to highlight is indicated by bold red lines on the input worksheet

- For TOPSIS-8 to run correctly, the highlighted range must include the following elements:

  Rows: The title block (top three rows) immediately followed by

  the rows of projects

  (No blank rows should be included in the highlighted range)

  Columns: Five columns of identification (first five columns)

  Seven columns of criteria (seven columns following the i.d. columns)

  One final column containing project costs

- In TOPSIS-8, the rows in the highlighted range should equal (the 'number of projects' + 3), and the number of columns should equal 13!!!

Step 4 Run the TOPSIS-8 macro

- While still in the input file, select "Macro" from the pulldown menu (under "Tools")
- Highlight "TOPSIS-8" in the dialogue box
- Select "Run"

Step 5 is automatic - a formatted output file will be created by TOPSIS-8, which displays the prioritized list of project along with their original scores

NOTE!! Output file should be saved in "NORMAL" format - default is "TEXT" format

Instructions for TOPSIS-8

In this worksheet, the columns are used as follows:

Columns A & B - Can be used for project identification (at user's discretion)
These columns will not be carried into the output file

Columns C through G - Project identification as specified - these columns will be carried into the output file

Columns H through N - Input criteria scores necessary to rank the projects using TOPSIS-8

Column O - Project cost - not used for ranking, but used by algorithm to determine list of funded projects

Columns P through U - Can be used for additional project identification (at user's discretion) not to be carried into the output file

Columns V through AB - Used for intermediate calculations - any information in these columns will be overwritten

Columns AI through AX - Used for intermediate calculations - any information in these columns will be overwritten

I-1 Mobility Improvement Program
TOPSIS-8 - Sample Input File

REG	SR	Project / Weights / Logic	Begin MP	End MP	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1	WSDOT Proj Cost
5	240	Edison Street I/C			86.32	1	0.5	12.0	28	4	14	3,253,200
3	161	SR 161 / SR 167 Eastbound Ramp			66.50	5	0.5	12	0	8	14	505,336
1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane			39.56	7	0.5	0.5	20	10	14	168,000
4	501	Mill Plain Extension			30.55	4	0.5	1.5	180	6	11	500,000
1	99	Airport Rd: I/S HOV Priority			19.19	0	4.5	7.0	103	10	14	200,000
6	90	University Rd I/C			18.87	3	0	2	61	6	9	13,000,000
3	161	36th to Jovita			18.36	6	0.5	13	141	9	14	4,695,530
3	101	Mottman Road I/C			15.53	1	0.5	6	0	5	14	3,540,589
6	90	Pines Rd I/C Modification	345.0	346.0	15.66	2	0	2	0	9	8	460,000
5	224	SR 240 Interchange			11.90	1	0.5	1	3	3	14	10,180,799
1	9	SR 522 to Clearview (Stage 2): 228th to SR 524/212th-Widening			7.70	2	1.5	1.5	38	10	11	4,792,000
5	82	I-82 / Yakima Ave.			5.21	0	2	6	19	5	14	2,800,000
6	2	North Spokane/Division St. -Stage 2			8.43	4	0	2	123	4	14	2,925,000
1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening			7.94	5	6.5	17.0	290	8	11	10,232,000
3	410	234th to Hinkleman Ext. Road			5.95	3	2	13	213	10	11	5,800,941
1	525	SR 99 to SR 526 - Widening & HOV Lanes	333.0	340.0	3.62	1	4.2	17.0	474	10	11	17,998,000
1	520	NE 40th St I/C & C-D Lanes			0.48	0	0.5	0.0	1	8	14	13,281,000
1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening			4.26	2	0.5	11.0	17	10	11	8,077,000
3	3	SR 3/SR 305 Interchange - Stage 2			0.21	0	0.5	6	0	9	11	1,248,000
5	240	Stevens Drive to SR 182			4.58	3	0.5	0	0	4	14	15,800,000
6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)			4.96	3	0	7	162	9	14	15,138,675
4	205	4th Plain Road Southbound on-ramp			1.41	2	0.5	1	13	9	6	1,435,000
1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	111.0	120.0	6.31	6	2.5	8.0	62	10	10	29,488,000

APPENDIX J

CONVERSION GRAPHS FOR *WETLANDS* AND *NOISE* CRITERIA SCORING

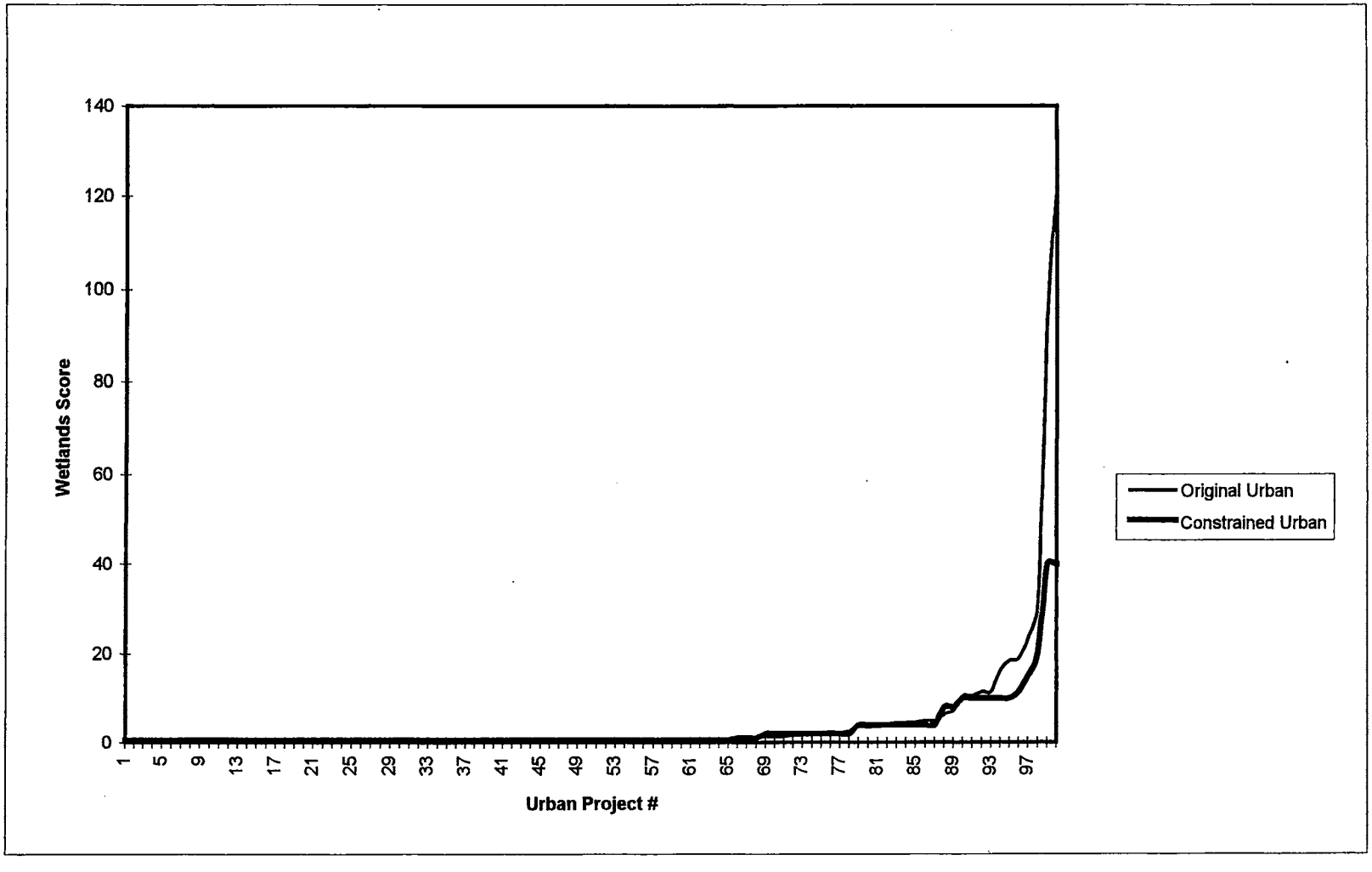

Table J.1
Orignal vs. Constrained Wetlands Scores
1995-1997 Biennium Urban Projects

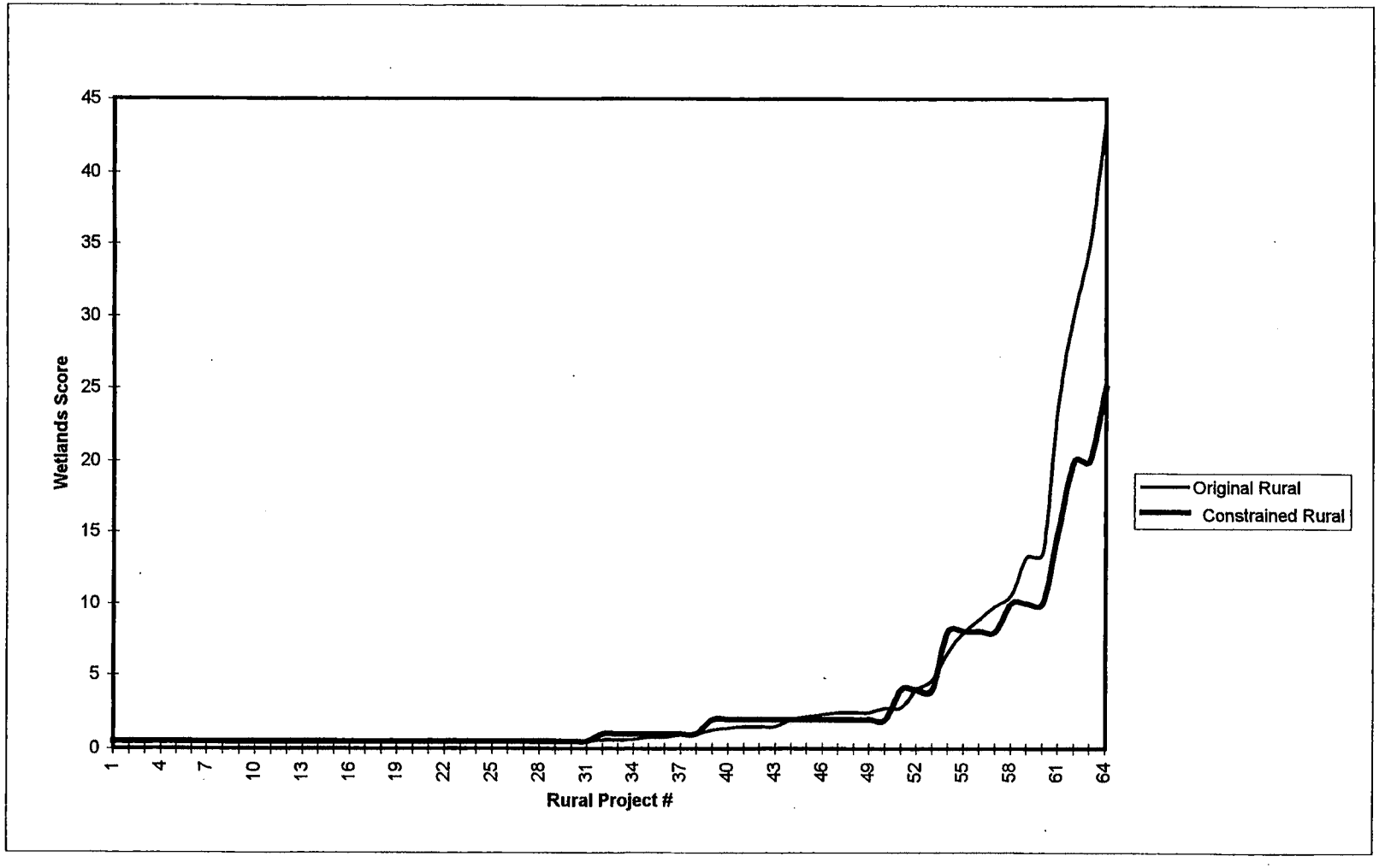

Table J.2
Orignal vs. Constrained Wetlands Scores
1995-1997 Biennium Rural Projects

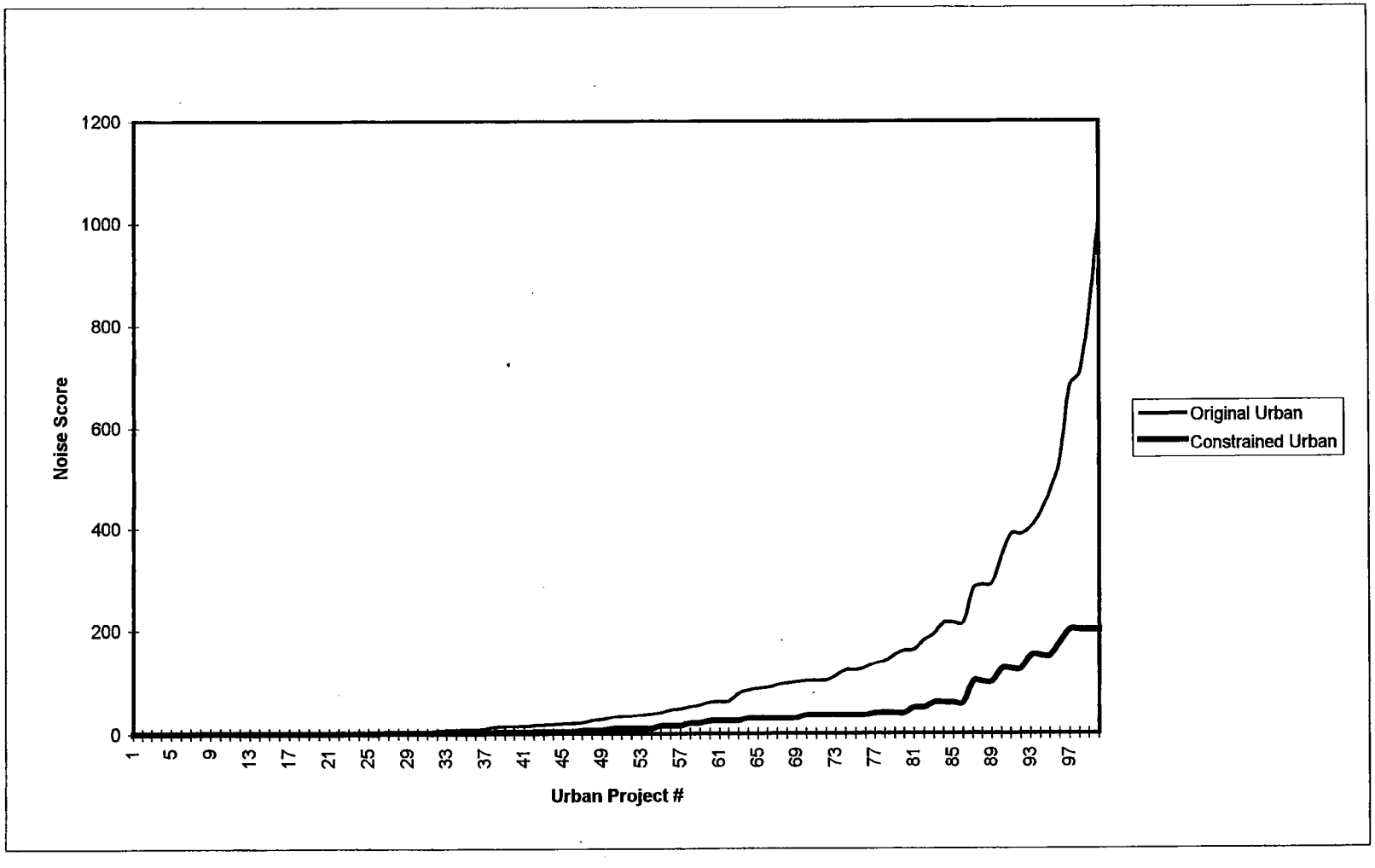

Table J.3
Orignal vs. Constrained Wetlands Scores
1995-1997 Biennium Urban Projects

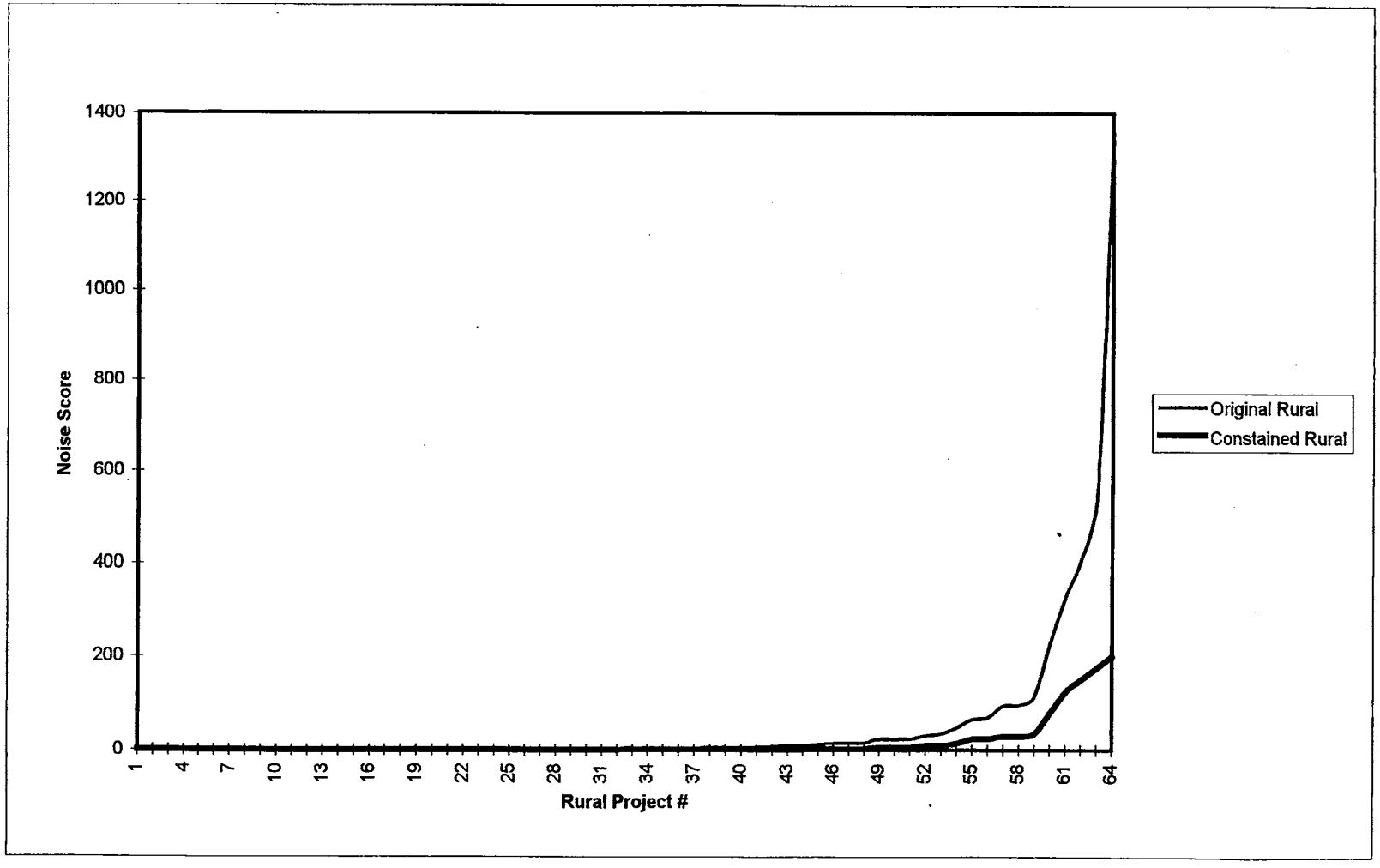

Table J.4
Orignal vs. Constrained Wetlands Scores
1995-1997 Biennium Rural Projects

APPENDIX K

LISTING OF TOPSIS-8 PROGRAM

	A	B
1	Topsis (t)	TOPSIS - version 8 - requires TOPSIS-8 input format
2	=SET.NAME("range",SELECTION())	assigns the name "range" to the highlighted area
3	=ROWS(range)	variable 'A3' equals the number of highlighted rows (in 'range')
4	=COLUMNS(range)	variable 'A4' equals the number of highlighted columns (in 'range')
5		
6	=IF(A4=13,GOTO(A10))	stop program if the # of columns does not equal 13
7	=ALERT("Error! Input does not match required input format for TOPSIS-8!")	"
8	=RETURN()	"
9		
10	=SET.NAME("temp",OFFSET(range,3,A4+1))	assigns names to areas of the input worksheet
11	=SET.NAME("workspace",INDEX(temp,1,6):INDEX(temp,A3-1,A4-1))	these areas are used for various intermediate and final
12	=SET.NAME("weight",INDEX(range,2,6):INDEX(range,2,A4-1))	spreadsheet calculations
13	=SET.NAME("logic",INDEX(range,3,6):INDEX(range,3,A4-1))	"
14	=SET.NAME("sum1",INDEX(workspace,1,1):INDEX(workspace,1,A4-6))	"
15	=SET.NAME("sum",OFFSET(sum1,A3,0))	"
16	=SET.NAME("positive",OFFSET(sum,1,0))	"
17	=SET.NAME("negative",OFFSET(positive,1,0))	"
18	=SET.NAME("pos_ideal",OFFSET(logic,A3-2,0))	"
19	=SET.NAME("neg_ideal",OFFSET(pos_ideal,1,0))	"
20	=SET.NAME("origin",INDEX(range,4,6):INDEX(neg_ideal,1,A4-6))	"
21	=SET.NAME("ido",INDEX(range,4,1):INDEX(range,A3,5))	"
22	=SET.NAME("scoreso",INDEX(range,4,6):INDEX(range,A3,A4-1))	"
23	=SET.NAME("costo",INDEX(range,4,A4):INDEX(range,A3,A4))	"
24	=SET.NAME("titles",INDEX(range,1,1):INDEX(range,3,A4))	"
25	=SET.NAME("dummy",INDEX(workspace,1,1):INDEX(workspace,A3-1,1))	"
26	=SET.NAME("sep",OFFSET(dummy,0,A4))	"
27	=SET.NAME("sepn",OFFSET(sep,0,1))	"
28	=SET.NAME("ci",OFFSET(sepn,0,1))	"
29	=SET.NAME("id",OFFSET(ci,0,1):OFFSET(ci,0,5))	"
30	=SET.NAME("scores",OFFSET(ci,0,6):OFFSET(ci,0,A4-1))	"
31	=SET.NAME("cost",OFFSET(ci,0,A4))	"
32	=SET.NAME("projects",INDEX(range,4,1):INDEX(range,A3,A4))	"
33	=SET.NAME("projectso",OFFSET(projects,0,A4+22))	"
34		
35	=SELECT(projects:OFFSET(projects,0,50))	selects entire list of projects - w/o headings
36	=SORT(1,INDEX(projects,1,6),2)	sorts projects by descending B/Cs

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
37		
38	=SELECT(projects)	copy original scores to another area in the worksheet
39	=COPY()	"
40	=SELECT(projectso)	"
41	=PASTE()	"
42		DETERMINE # PROJECTS W/ B/C OVER MAXIMUM
43	=SET.VALUE(A50,0)	initialize the number of projects with b/c over maximum
44	=SET.VALUE(A48,1)	initialize row number
45	=SET.VALUE(A46,0)	initialize b/c value
46	=A46+INDEX(projects,A48,6)	
47	=IF(A46<=30,GOTO(A50))	defines ideal b/c as 70
48	=A48+1	
49	=GOTO(A45)	
50	=A50+A48-1	variable A50 equals the number of projects with b/c over the maximum
51	=IF(A50=0,GOTO(A55))	
52	=ALERT("Projects with B/C greater than 30 are excluded from the ranking algorithm, but are in	*{...edit lines A47, A52 & A102 to change ideal B/C definition...}*
53		
54		CONVERT WETLANDS SCORES TO CONSTRAINED SCALE
55	=SET.VALUE(A70,1)	"
56	=IF(INDEX(projects,A70,8)<=0.5,SET.VALUE(A67,0.5))	"
57	=IF(AND(INDEX(projects,A70,8)>0.5,INDEX(projects,A70,8)<=1),SET.VALUE(A67,1))	"
58	=IF(AND(INDEX(projects,A70,8)>1,INDEX(projects,A70,8)<=3),SET.VALUE(A67,2))	"
59	=IF(AND(INDEX(projects,A70,8)>3,INDEX(projects,A70,8)<=5),SET.VALUE(A67,4))	"
60	=IF(AND(INDEX(projects,A70,8)>5,INDEX(projects,A70,8)<=10),SET.VALUE(A67,8))	"
61	=IF(AND(INDEX(projects,A70,8)>10,INDEX(projects,A70,8)<=20),SET.VALUE(A67,10))	"
62	=IF(AND(INDEX(projects,A70,8)>20,INDEX(projects,A70,8)<=30),SET.VALUE(A67,15))	"
63	=IF(AND(INDEX(projects,A70,8)>30,INDEX(projects,A70,8)<=40),SET.VALUE(A67,20))	"
64	=IF(AND(INDEX(projects,A70,8)>40,INDEX(projects,A70,8)<=60),SET.VALUE(A67,25))	"
65	=IF(AND(INDEX(projects,A70,8)>60,INDEX(projects,A70,8)<=90),SET.VALUE(A67,35))	"
66	=IF(INDEX(projects,A70,8)>90,SET.VALUE(A67,40))	"
67	=A67	"
68	=SELECT(INDEX(projects,A70,8))	"
69	=FORMULA(A67)	"
70	=A70+1	"
71	=IF(A70<(A3-2),GOTO(A56))	"
72		

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
73		CONVERT NOISE SCORES TO CONSTRAINED SCALE
74	=SET.VALUE(A97,1)	"
75	=IF(INDEX(projects,A97,10)=0,SET.VALUE(A94,0))	"
76	=IF(AND(INDEX(projects,A97,10)>0,INDEX(projects,A97,10)<=10),SET.VALUE(A94,1))	"
77	=IF(AND(INDEX(projects,A97,10)>10,INDEX(projects,A97,10)<=20),SET.VALUE(A94,3))	"
78	=IF(AND(INDEX(projects,A97,10)>20,INDEX(projects,A97,10)<=30),SET.VALUE(A94,6))	"
79	=IF(AND(INDEX(projects,A97,10)>30,INDEX(projects,A97,10)<=40),SET.VALUE(A94,10))	"
80	=IF(AND(INDEX(projects,A97,10)>40,INDEX(projects,A97,10)<=50),SET.VALUE(A94,15))	"
81	=IF(AND(INDEX(projects,A97,10)>50,INDEX(projects,A97,10)<=60),SET.VALUE(A94,20))	"
82	=IF(AND(INDEX(projects,A97,10)>60,INDEX(projects,A97,10)<=80),SET.VALUE(A94,25))	"
83	=IF(AND(INDEX(projects,A97,10)>80,INDEX(projects,A97,10)<=100),SET.VALUE(A94,30))	"
84	=IF(AND(INDEX(projects,A97,10)>100,INDEX(projects,A97,10)<=130),SET.VALUE(A94,35))	"
85	=IF(AND(INDEX(projects,A97,10)>130,INDEX(projects,A97,10)<=160),SET.VALUE(A94,40))	"
86	=IF(AND(INDEX(projects,A97,10)>160,INDEX(projects,A97,10)<=190),SET.VALUE(A94,50))	"
87	=IF(AND(INDEX(projects,A97,10)>190,INDEX(projects,A97,10)<=220),SET.VALUE(A94,60))	"
88	=IF(AND(INDEX(projects,A97,10)>220,INDEX(projects,A97,10)<=260),SET.VALUE(A94,80))	"
89	=IF(AND(INDEX(projects,A97,10)>260,INDEX(projects,A97,10)<=300),SET.VALUE(A94,100))	"
90	=IF(AND(INDEX(projects,A97,10)>300,INDEX(projects,A97,10)<=400),SET.VALUE(A94,125))	"
91	=IF(AND(INDEX(projects,A97,10)>400,INDEX(projects,A97,10)<=500),SET.VALUE(A94,150))	"
92	=IF(AND(INDEX(projects,A97,10)>500,INDEX(projects,A97,10)<=600),SET.VALUE(A94,175))	"
93	=IF(INDEX(projects,A97,10)>600,SET.VALUE(A94,200))	"
94	=A94	"
95	=SELECT(INDEX(projects,A97,10))	"
96	=FORMULA(A94)	"
97	=A97+1	"
98	=IF(A97<(A3-2),GOTO(A75))	"
99		
100		append positive-ideal project to the end of the project list
101	=SELECT(INDEX(pos_ideal,1,1))	high 'benefit/cost'
102	=FORMULA(30)	"
103	=SELECT(INDEX(pos_ideal,1,2))	low 'community support'
104	=FORMULA(0.001)	"
105	=SELECT(INDEX(pos_ideal,1,3))	low 'wetlands'
106	=FORMULA(0.5)	"
107	=SELECT(INDEX(pos_ideal,1,4))	low 'water quality'
108	=FORMULA(0.001)	"

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
109	=SELECT(INDEX(pos_ideal,1,5))	low 'noise'
110	=FORMULA(0.001)	"
111	=SELECT(INDEX(pos_ideal,1,6))	low 'mode integration'
112	=FORMULA(0.001)	"
113	=SELECT(INDEX(pos_ideal,1,7))	high 'land use'
114	=FORMULA(19)	"
115		append negative-ideal project to the end of the project list
116	=SELECT(INDEX(neg_ideal,1,1))	low 'benefit/cost'
117	=FORMULA(0.001)	"
118	=SELECT(INDEX(neg_ideal,1,2))	high 'community support'
119	=FORMULA(17)	"
120	=SELECT(INDEX(neg_ideal,1,3))	high 'wetlands'
121	=FORMULA(40)	"
122	=SELECT(INDEX(neg_ideal,1,4))	high 'water quality'
123	=FORMULA(41)	"
124	=SELECT(INDEX(neg_ideal,1,5))	high 'noise'
125	=FORMULA(200)	"
126	=SELECT(INDEX(neg_ideal,1,6))	high 'mode integration'
127	=FORMULA(10)	"
128	=SELECT(INDEX(neg_ideal,1,7))	low 'land use'
129	=FORMULA(0.001)	"
130		
131	=SET.VALUE(A135,0.001)	replace 0 with .001 for calculations
132	=SET.VALUE(A140,1)	this eliminates the possibility of the sum of squares equaling zero -
133	=SET.VALUE(A138,1)	which would result in a math error
134	=IF((INDEX(scoreso,A138,A140))>0,GOTO(A138))	"
135	=A135	"
136	=SELECT(INDEX(scoreso,A138,A140))	"
137	=FORMULA(A135)	"
138	=A138+1	"
139	=IF((A138<A3-2),GOTO(A134))	"
140	=A140+1	"
141	=IF((A140<A4-5),GOTO(A133))	"
142		
143		SUM OF SQUARES CALCULATION
144	=SET.VALUE(A152,1)	initialize column loop

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
145	=SET.VALUE(A147,0)	initialize the 'sum of squares' total
146	=SET.VALUE(A148,A50+1)	initialize row loop
147	=A147+INDEX(origin,A148,A152)^2	sum of squares equation
148	=A148+1	
149	=IF(A148<(A3),GOTO(A147))	next row
150	=SELECT(INDEX(sum,1,A152))	
151	=FORMULA(A147)	
152	=A152+1	
153	=IF(A152<A4-5,GOTO(A145))	next column
154		
155		CREATE THE NORMALIZED WEIGHTED MATRIX
156	=SET.VALUE(A177,1)	initialize column loop
157	=SET.VALUE(A161,A50+1)	initialize row loop
158	=SELECT(INDEX(workspace,A161,A177))	
159	=INDEX(origin,A161,A177)/SQRT(INDEX(sum,1,A177))*INDEX(weight,1,A177)	divide score by criteria sum of squares & multiply by criteria weight
160	=FORMULA(A159)	
161	=A161+1	
162	=IF(A161<A3,GOTO(A158))	next row
163		*{...lines A165 through A178 determine the ideal projects*
164		*- they should match scores defined in lines A100 through A129...}*
165	=MAX(INDEX(workspace,A50+1,A177):INDEX(workspace,A3-1,A177))	extract the highest (max) value from the criteria column
166	=MIN(INDEX(workspace,A50+1,A177):INDEX(workspace,A3-1,A177))	extract the lowest (min) value from the criteria column
167	=IF(INDEX(logic,1,A177)=0,GOTO(A173))	
168	=SELECT(INDEX(positive,1,A177))	establishes max value as ideal-positive if criteria logic=1
169	=FORMULA(A165)	"
170	=SELECT(INDEX(negative,1,A177))	establishes min value as ideal-negative if criteria logic=1
171	=FORMULA(A166)	"
172	=GOTO(A177)	
173	=SELECT(INDEX(positive,1,A177))	establishes min value as ideal-positive if criteria logic=0
174	=FORMULA(A166)	"
175	=SELECT(INDEX(negative,1,A177))	establishes max value as ideal-negative if criteria logic=0
176	=FORMULA(A165)	"
177	=A177+1	
178	=IF(A177<A4-5,GOTO(A157))	next column
179		
180		CALCULATE SEPARATION MEASURES & PRIORITY INDEX #'s

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
181	=SET.VALUE(A212,A50+1)	initialize row loop
182	=SET.VALUE(A191,0)	initialize positive separation value / signs different
183	=SET.VALUE(A193,0)	initialize positive separation value / signs same
184	=SET.VALUE(A196,0)	initialize negative separation value / signs different
185	=SET.VALUE(A198,0)	initialize negative separation value / signs same
186	=SET.VALUE(A199,1)	initialize column loop
187	=SET.VALUE(A202,0)	initialize sum of positive separation values
188	=SET.VALUE(A203,0)	initialize sum of negative separation values
189	=IF((AND(INDEX(positive,1,A199)>0,INDEX(workspace,A212,A199)>0)),goto A193)	
190	=IF((AND(INDEX(workspace,A212,A199)<0,INDEX(positive,1,A199)<0)),goto A193)	
191	=A191+(INDEX(workspace,A212,A199)+(0-INDEX(positive,1,A199)))^2	calculate positive separation / signs different
192	=goto A194	
193	=A193+(INDEX(workspace,A212,A199)-INDEX(positive,1,A199))^2	calculate positive separation / signs same
194	=IF((AND(INDEX(workspace,A212,A199)>0,INDEX(negative,1,A199)>0)),goto A198)	
195	=IF((AND(INDEX(workspace,A212,A199)<0,INDEX(negative,1,A199)<0)),goto A198)	
196	=A196+((INDEX(workspace,A212,A199))+(0-INDEX(negative,1,A199)))^2	calculate negative separation / signs different
197	=goto A199	
198	=A198+(INDEX(workspace,A212,A199)-INDEX(negative,1,A199))^2	calculate negative separation / signs same
199	=A199+1	
200	=IF(A199<A4-5,GOTO(A189))	next column (next criteria)
201	=SELECT(INDEX(sep,A212,1))	
202	=A191+A193	sum positive separation values across criteria for project
203	=A196+A198	sum negative separation values across criteria for project
204	=SQRT(A202)	composite positive separation value for project
205	=FORMULA(A204)	"
206	=SELECT(INDEX(sepn,A212,1))	"
207	=SQRT(A203)	composite negative separation value for project
208	=FORMULA(A207)	"
209	=SELECT(INDEX(ci,A212,1))	"
210	=INDEX(sepn,A212,1)/(INDEX(sepn,A212,1)+INDEX(sep,A212,1))	calculate priority index number for project
211	=FORMULA(A210)	"
212	=A212+1	
213	=IF(A212<A3,GOTO(A182))	next row (next project)
214		
215	=SELECT(projectso)	copy original scores back on the input worksheet
216	=COPY()	"

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
217	=SELECT(projects)	"
218	=PASTE()	"
219		
220	=SELECT(INDEX(workspace,1,1):INDEX(negative,1,A4-6))	clean up intermediate calculations
221	=CLEAR(3)	"
222	=SELECT(INDEX(sep,1,1):INDEX(sepn,A3-3,1))	"
223	=CLEAR(3)	"
224	=SELECT(INDEX(pos_ideal,1,1):INDEX(ci,A3-1,1))	"
225	=CLEAR(3)	"
226		
227	=INPUT("Enter a new file name (non-existing):",2)	create an output file with name determined by the user
228	=FOPEN(A227,3)	"
229	=FCLOSE(A228)	"
230		
231	=SELECT(INDEX(ci,A50+1,1):INDEX(cost,A3-3,1))	sort project list and scores by descending priority index #'s
232	=SORT(1,,2)	"
233		
234	=IF(A50=0,goto A238)	insert blank row below 'high b/c' projects (if applicable)
235	=SELECT(INDEX(ci,A50+1,1):INDEX(cost,A50+1,1))	"
236	=INSERT(2)	"
237		
238	=SELECT(INDEX(ci,1,1):INDEX(cost,A3-2,1))	cut ranked project list from input file and paste into output file
239	=CUT()	"
240	=OPEN(A227)	"
241	=SELECT("r4c2")	"
242	=PASTE()	"
243		
244	=SET.NAME("b_range",SELECTION())	assigns the name 'b_range' to the cut and paste area
245	=ROWS(b_range)	variable A245 equals the number of rows in 'b_range'
246	=COLUMNS(b_range)	variable A246 equals the number of columns in 'b_range'
247		
248	=SELECT("r3c2")	set up headings in output file
249	=FORMULA("Priority Index")	"
250	=SELECT("r1c3")	"
251	=COPY(titles)	"
252	=PASTE()	"

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
253	=SELECT("rc[13]")	"
254	=FORMULA("Total Budget")	"
255	=SELECT("r[3]c")	"
256	=FORMULA("Remainings")	"
257	=SELECT("r[-2]c[1]")	"
258	=FORMULA("Funded Projects")	"
259	=SELECT("r[1]c")	"
260	=FORMULA("Region")	"
261	=SELECT("rc[1]")	"
262	=FORMULA("State Route")	"
263	=SELECT("rc[1]")	"
264	=FORMULA("Description")	"
265		
266		CALCULATE AND LIST FUNDED PROJECTS, BASED ON BUDGET
267	=SELECT("r[-1]c[-3]")	input the total budget
268	=INPUT("Enter the total budget (units should be consistent with the raw data!)",1)	"
269	=FORMULA(A268)	"
270	=IF(A268>=INDEX(b_range,1,A246),GOTO(A272))	alert user if total budget is less than first project
271	=ALERT("No projects can be funded under this ranking order! Please check your total budget."	"
272	=SET.VALUE(A275,0)	initialize 'cumulative cost'
273	=SET.VALUE(A274,0)	initialize row counter loop
274	=A274+1	
275	=A275+INDEX(b_range,A274,A246)	cumulative cost
276	=IF(A275>A268,GOTO(A282))	
277	=IF(A274=A245,ALERT("all projects can be funded!"),GOTO(A274))	alert user if total budget is greater than the total cost of all projects
278	=SELECT("r[3]c")	calculate remainder of budget if all projects are funded
279	=A268-SUM(INDEX(b_range,1,A246):INDEX(b_range,A245,A246))	"
280	=FORMULA(A279)	"
281	=GOTO(A286)	"
282	=A268-(A275-INDEX(b_range,A274,A246))	calculate remainder of budget if less than all projects are funded
283	=SELECT("r[3]c")	"
284	=FORMULA(A282)	"
285	=IF(A268<INDEX(b_range,1,A246),GOTO(A294))	skip directly to formatting if no projects can be funded
286	=SELECT(INDEX(b_range,1,2):INDEX(b_range,A274-1,4))	copy and paste list of funded projects
287	=COPY()	"
288	=SET.VALUE(A289,0)	"

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
289	=A4+1	"
290	=SELECT("rc[14]")	"
291	=PASTE()	"
292		REMAINING LINES OF MACRO FORMAT THE OUTPUT FILE
293		*{...lines A294 through A348 are not needed to run TOPSIS...}*
294	=SELECT("R1C1:R250C26")	font & point size
295	=FORMAT.FONT("Helvetica Narrow",8,FALSE,FALSE,FALSE,FALSE,,FALSE,FALSE)	"
296	=SELECT("R1C5:R3C5")	fix title block
297	=CLEAR(3)	"
298	=SELECT("R3C5")	"
299	=FORMULA("Project Description")	"
300	=SELECT("R1C1:R3C15")	shade title block
301	=PATTERNS(1,,40,TRUE)	"
302	=SELECT("R3C1:R3C15")	border on title block
303	=BORDER(0,0,0,0,1,,,,,,0)	"
304	=SELECT("R1C1:R1C15")	"
305	=BORDER(0,0,0,1,0,,,,,0)	"
306	=SELECT("R1C1")	set column widths
307	=COLUMN.WIDTH(7)	"
308	=SELECT("R1C2")	"
309	=COLUMN.WIDTH(9)	"
310	=SELECT("R1C3:R1C4")	"
311	=COLUMN.WIDTH(3)	"
312	=SELECT("R1C5")	"
313	=COLUMN.WIDTH(28)	"
314	=SELECT("R1C6:R1C7")	"
315	=COLUMN.WIDTH(4)	"
316	=SELECT("R1C8")	"
317	=COLUMN.WIDTH(6)	"
318	=SELECT("R1C9:R1C12")	"
319	=COLUMN.WIDTH(8)	"
320	=SELECT("R1C13:R1C14")	"
321	=COLUMN.WIDTH(6)	"
322	=SELECT("R1C15")	"
323	=COLUMN.WIDTH(9)	"
324	=SELECT("R1C16:R1C18")	"

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

	A	B
325	=COLUMN.WIDTH(10)	"
326	=SELECT("R1C19")	"
327	=COLUMN.WIDTH(30)	"
328	=SELECT("R2C16")	format $$ cells
329	=FORMAT.NUMBER("$#,##0_);($#,##0)")	"
330	=SELECT("R5C16")	"
331	=FORMAT.NUMBER("$#,##0_);($#,##0)")	"
332	=SELECT("R4C2:R250C2")	set decimal places for priority index #
333	=FORMAT.NUMBER("0.0000000")	"
334	=SELECT("R1C1:R250C19")	set alignments in columns
335	=ALIGNMENT(3,,3,0)	"
336	=SELECT("R1C5:R250C5")	"
337	=ALIGNMENT(2,,3,0)	"
338	=SELECT("R4C15:R250C15")	"
339	=ALIGNMENT(4,FALSE,3,0)	"
340	=SELECT("R1C19:R250C19")	"
341	=ALIGNMENT(2,,3,0)	"
342	=SELECT("R2C17")	format "funded projects" title
343	=FORMAT.FONT(,,TRUE)	"
344	=ALIGNMENT(2,FALSE,3,0)	print setup
345	=SELECT("R1C1:R120C15")	"
346	=SET.PRINT.AREA()	"
347	=SET.PRINT.TITLES("R1:R3","")	"
348	=PAGE.SETUP("&CI-1 Mobility Improvement Program□Statewide Ranking","&L&""Helvetica N	"
349	=SELECT("R1C1")	END OF PROGRAM!!
350	=ALERT("This is the end!",3)	"
351	=ALERT("Reminder - Do not save changes to input file - Save output file as NORMAL (default i	"
352	=RETURN()	"
353		
354		

Listing of TOPSIS-8 Program
Column A: Program Coding / Column B: Comments

APPENDIX L

STATEWIDE & REGIONAL CORRELATION GRAPHS AFTER REVISIONS

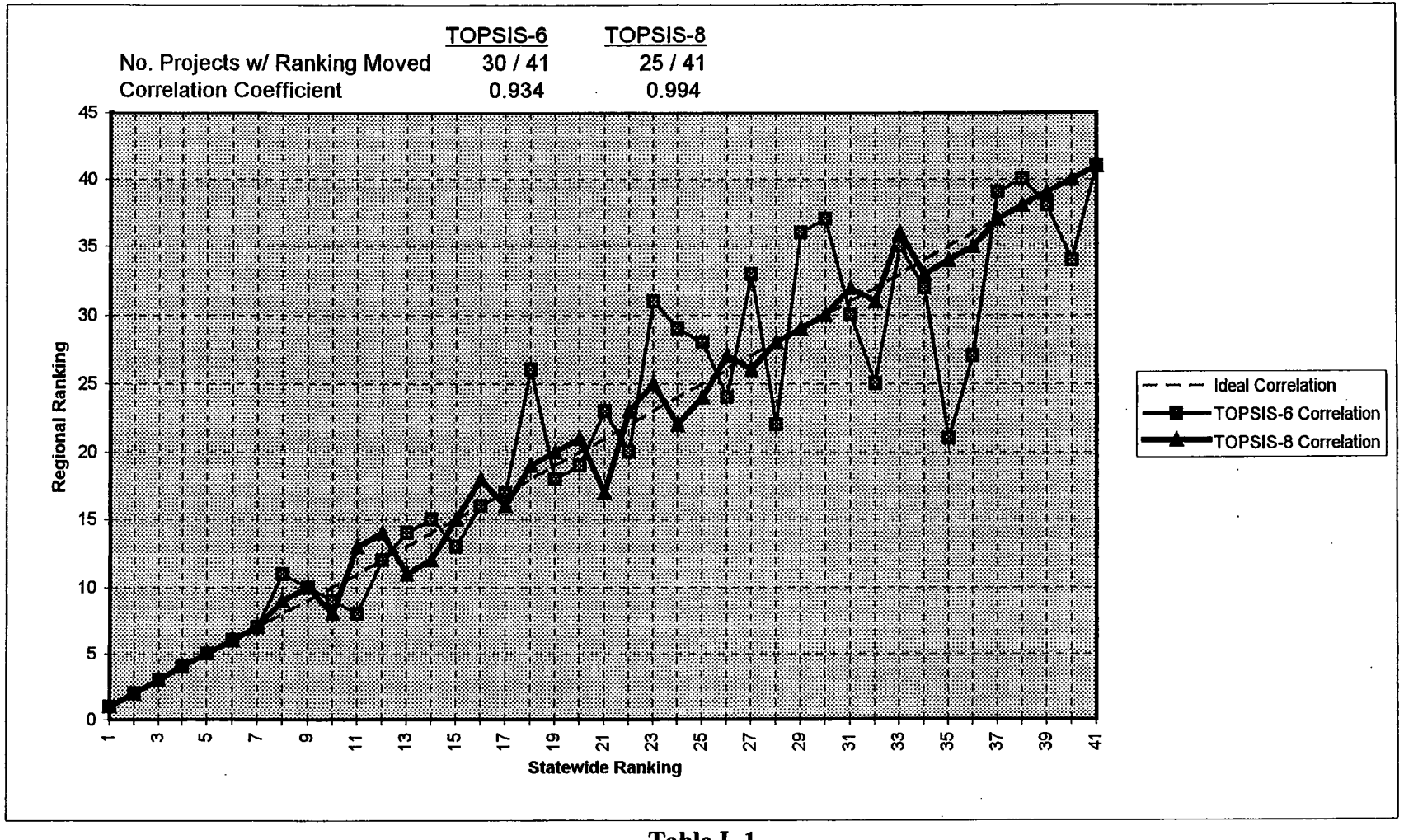

Table L.1
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 1 - Urban

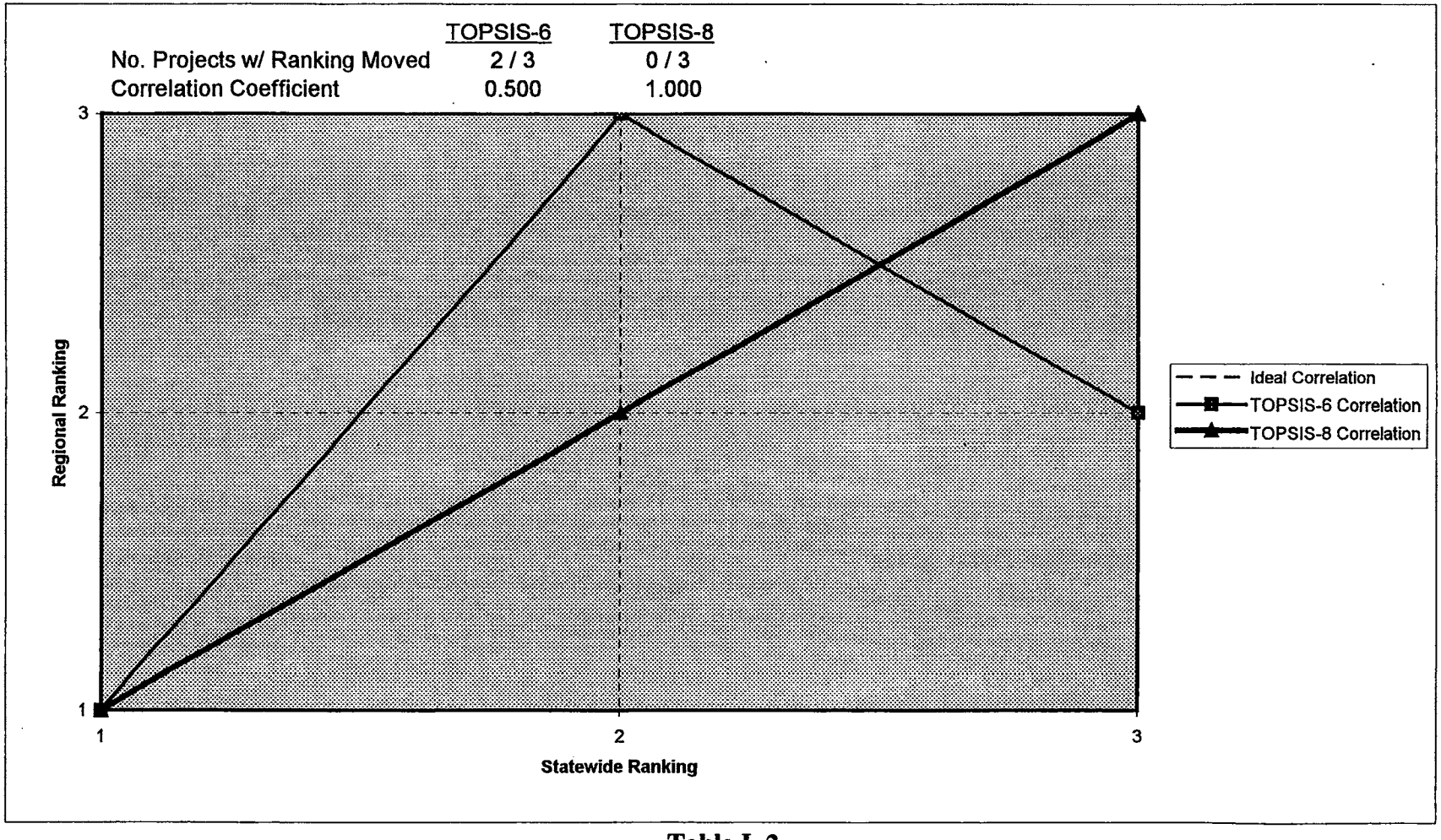

Table L.2
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 2 - Urban

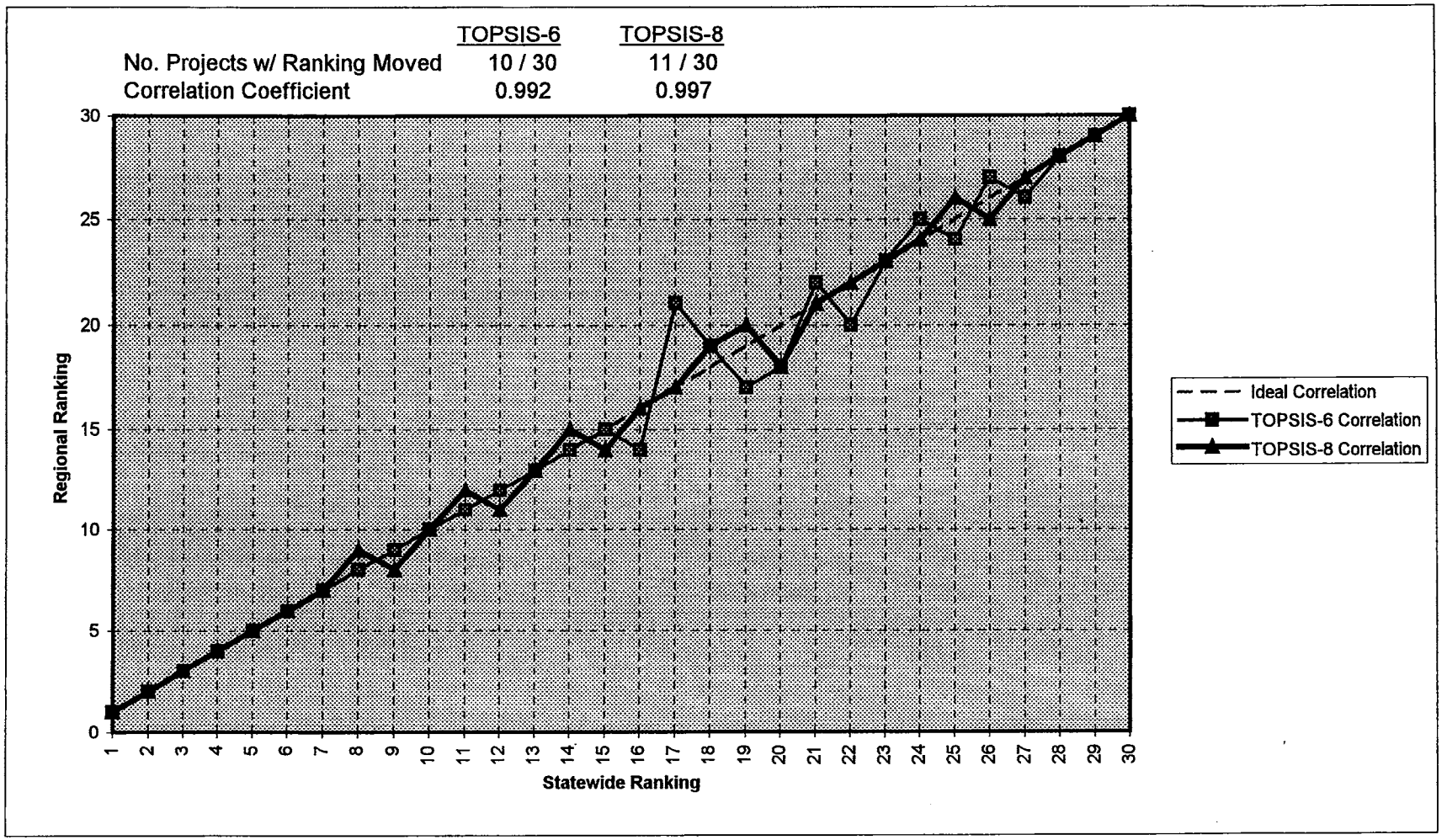

Table L.3
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 3 - Urban

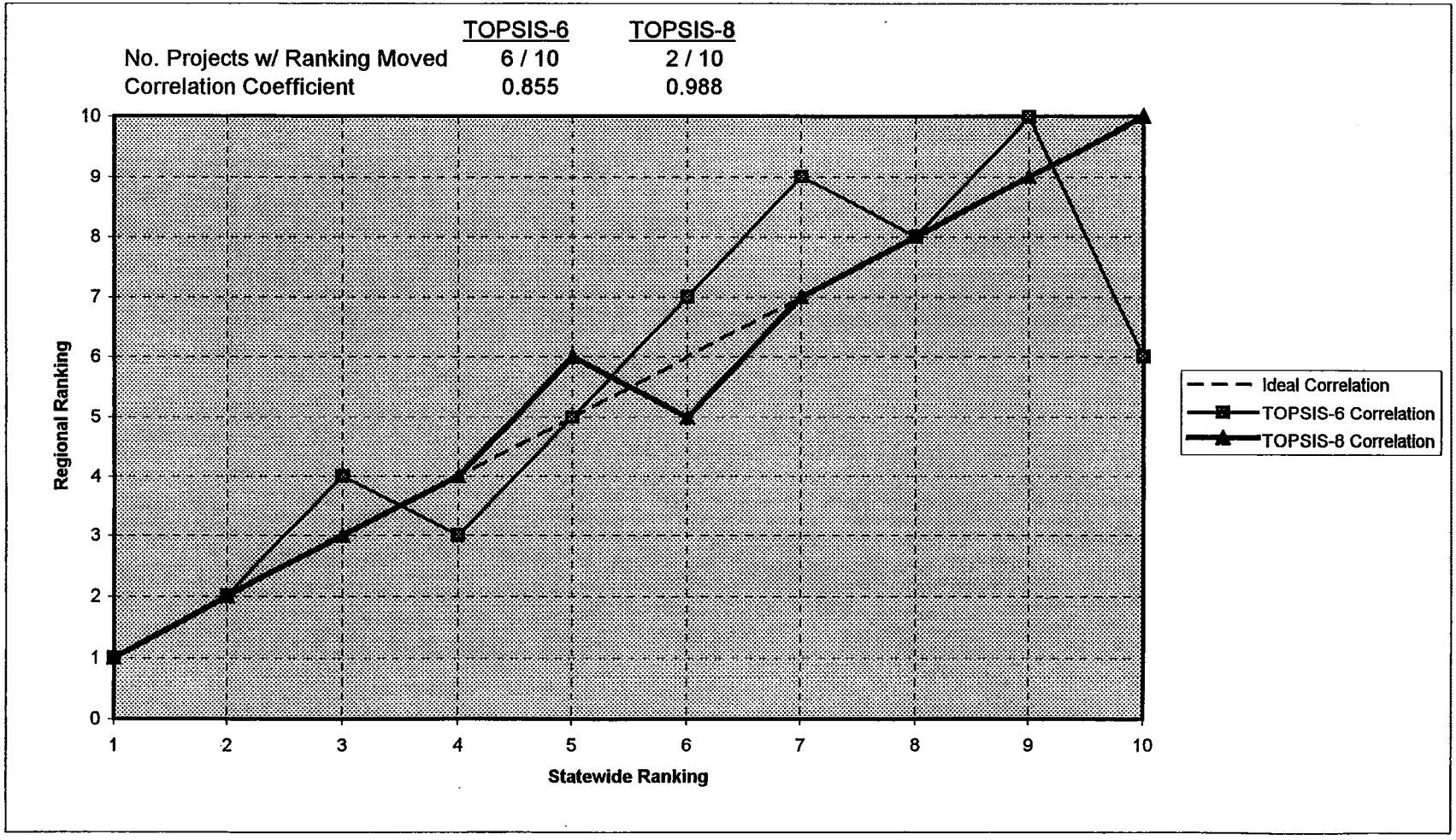

Table L.4
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 4 - Urban

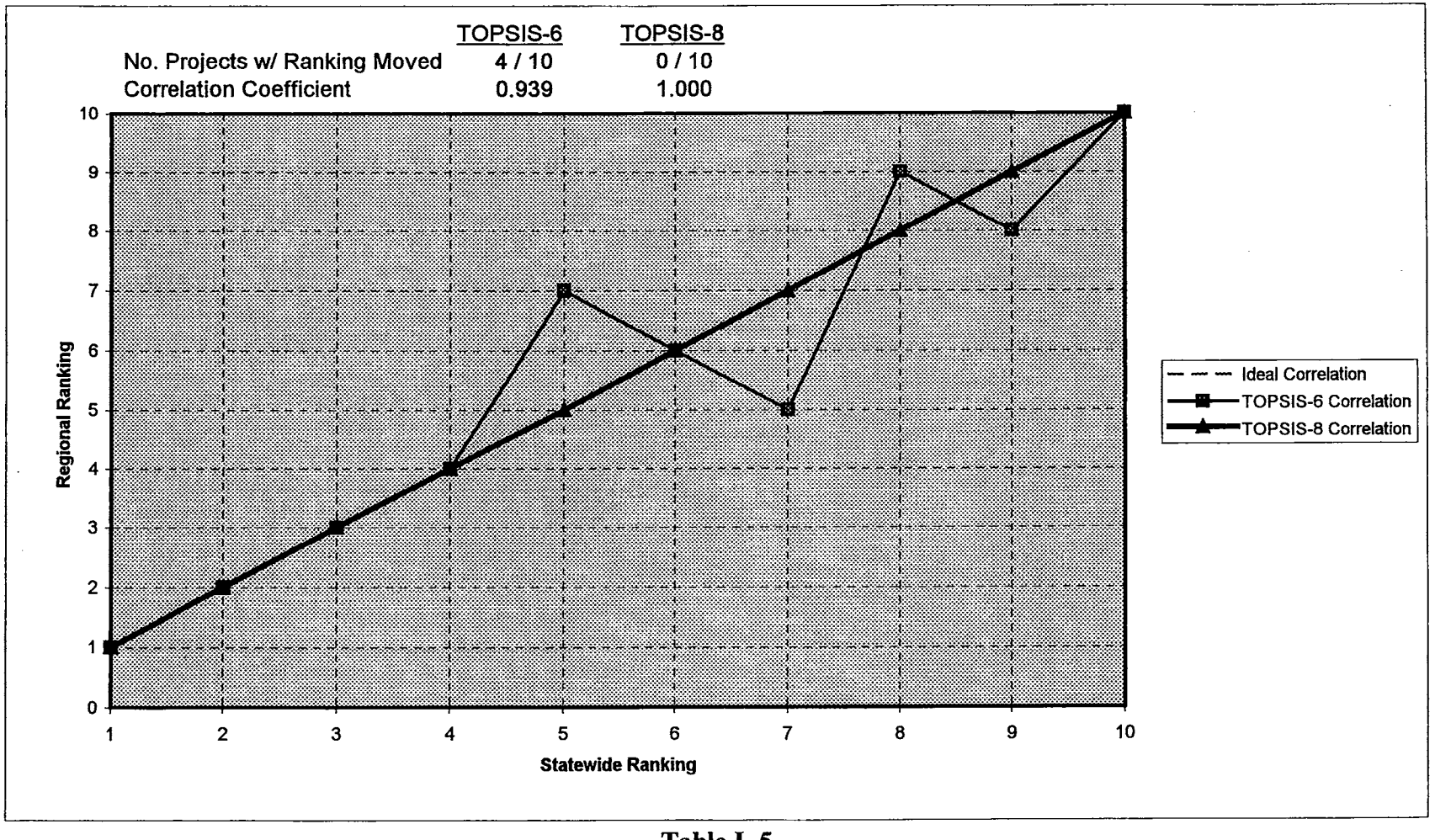

Table L.5
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 5 - Urban

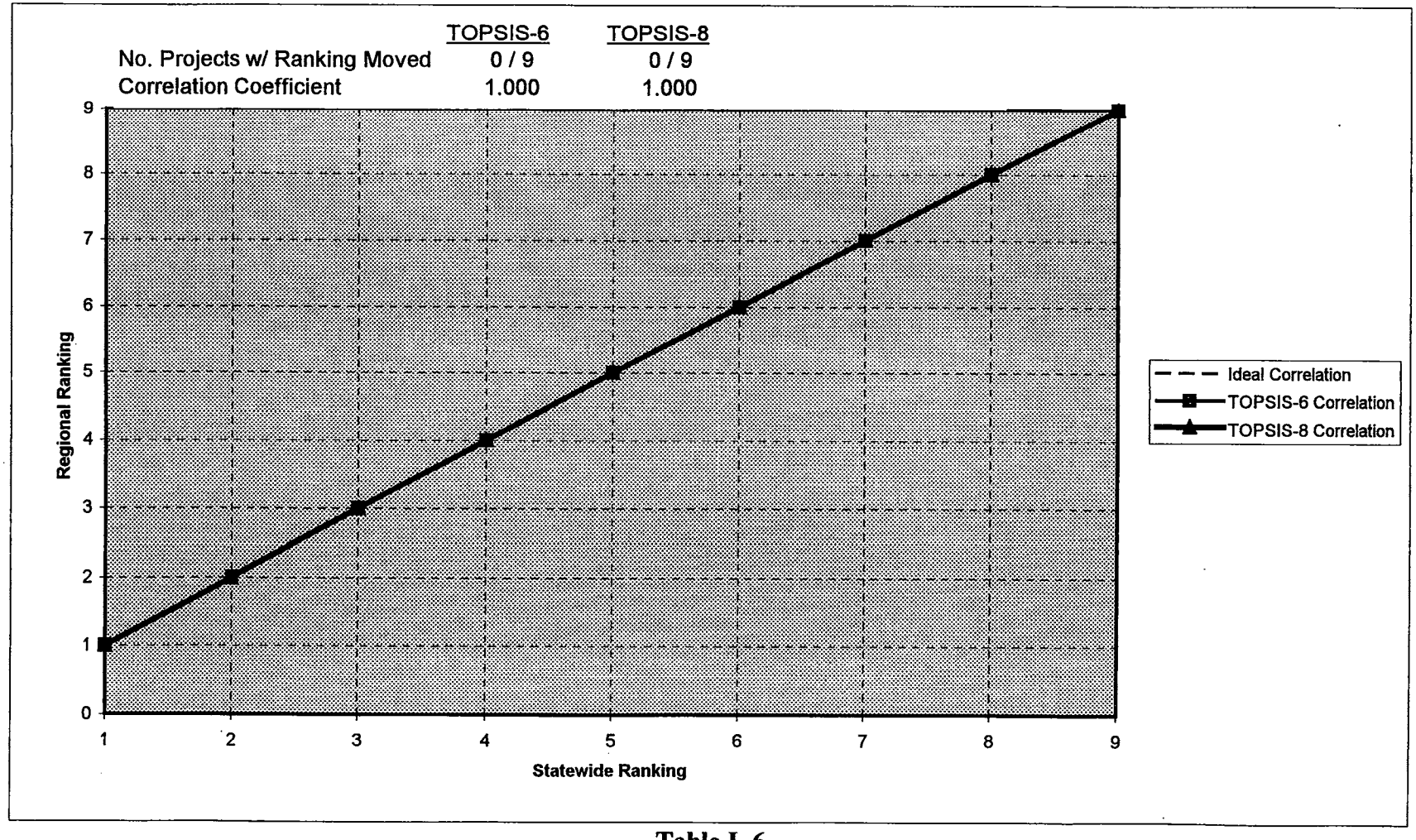

Table L.6
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 6 - Urban

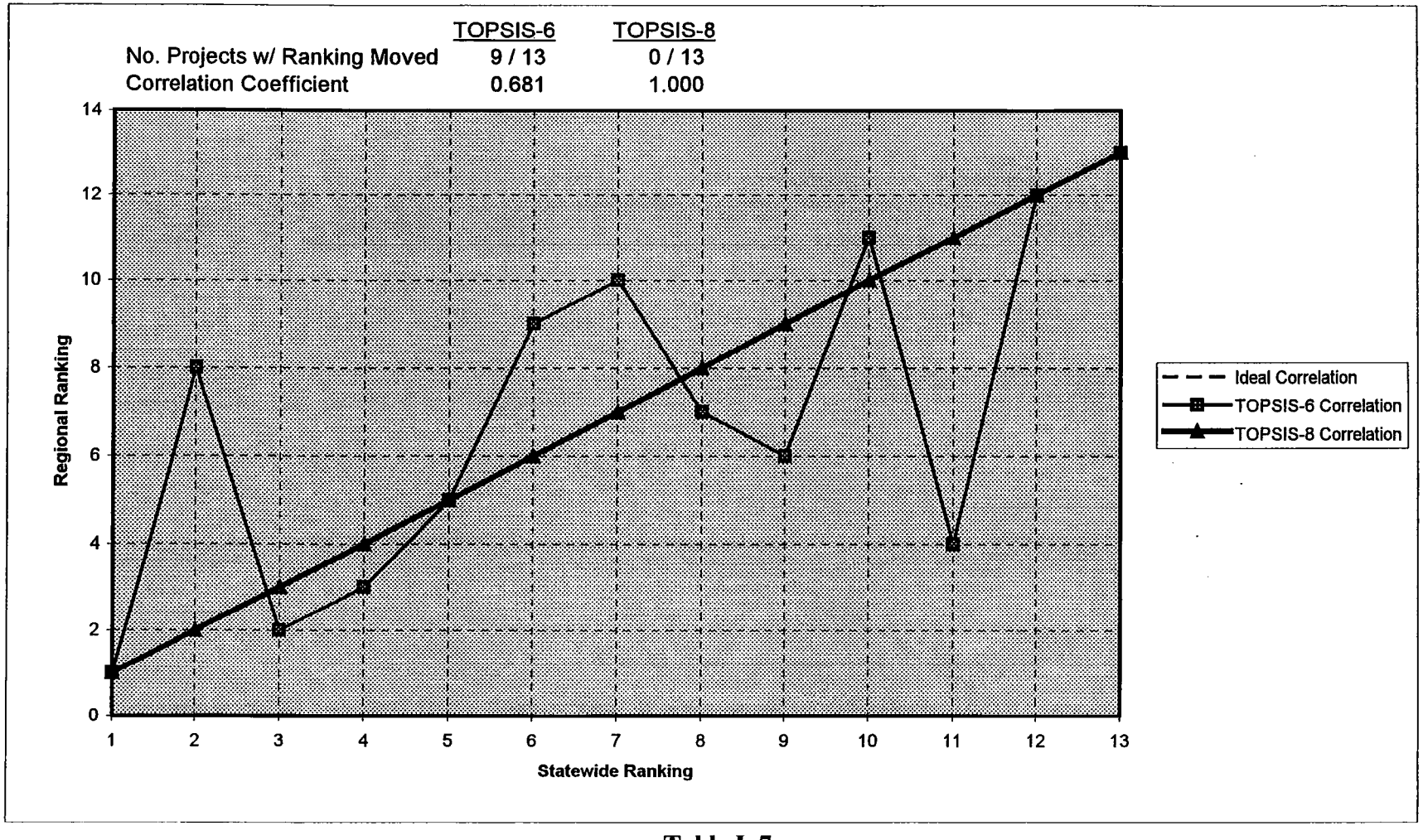

Table L.7
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 1 - Rural

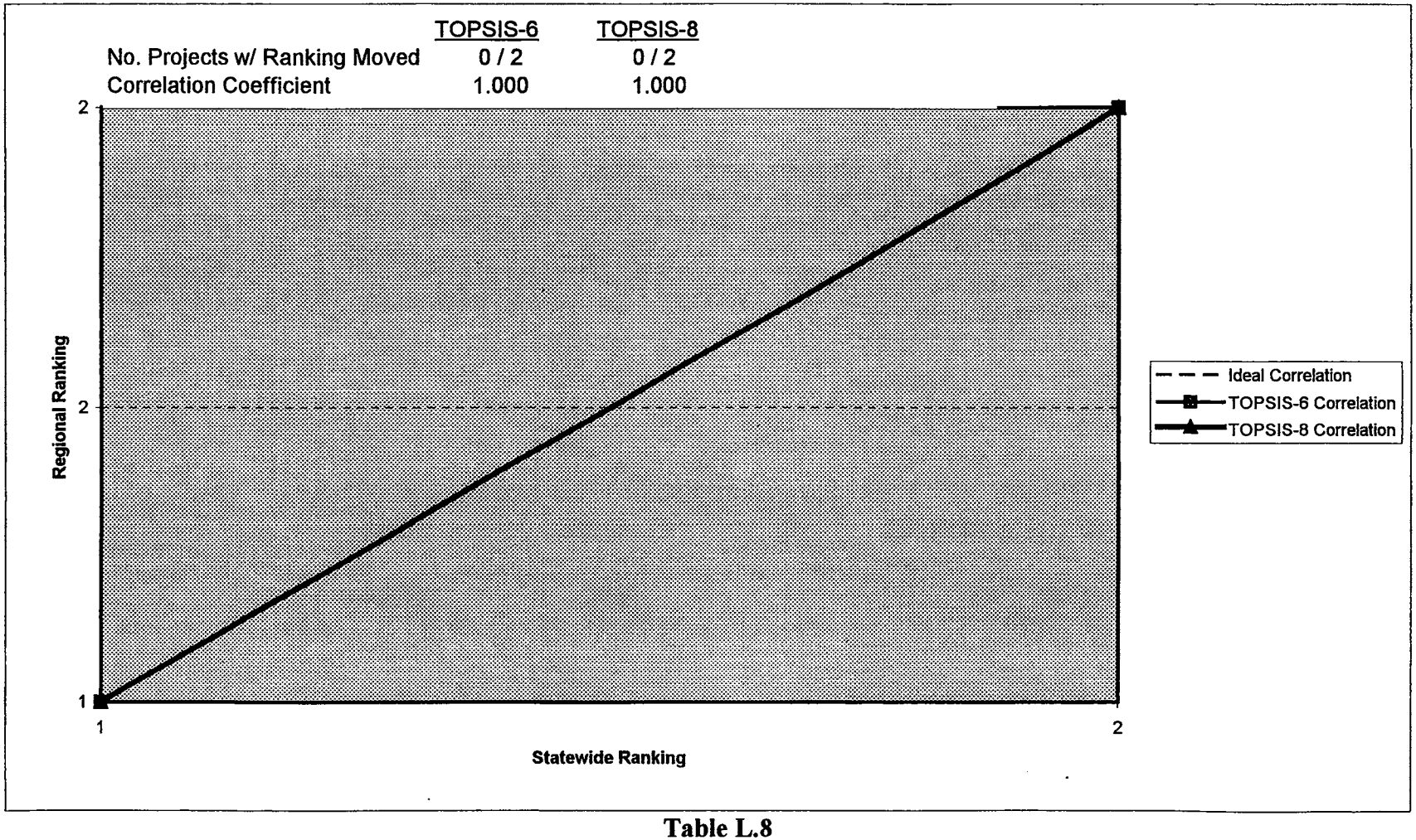

Table L.8
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 2 - Rural

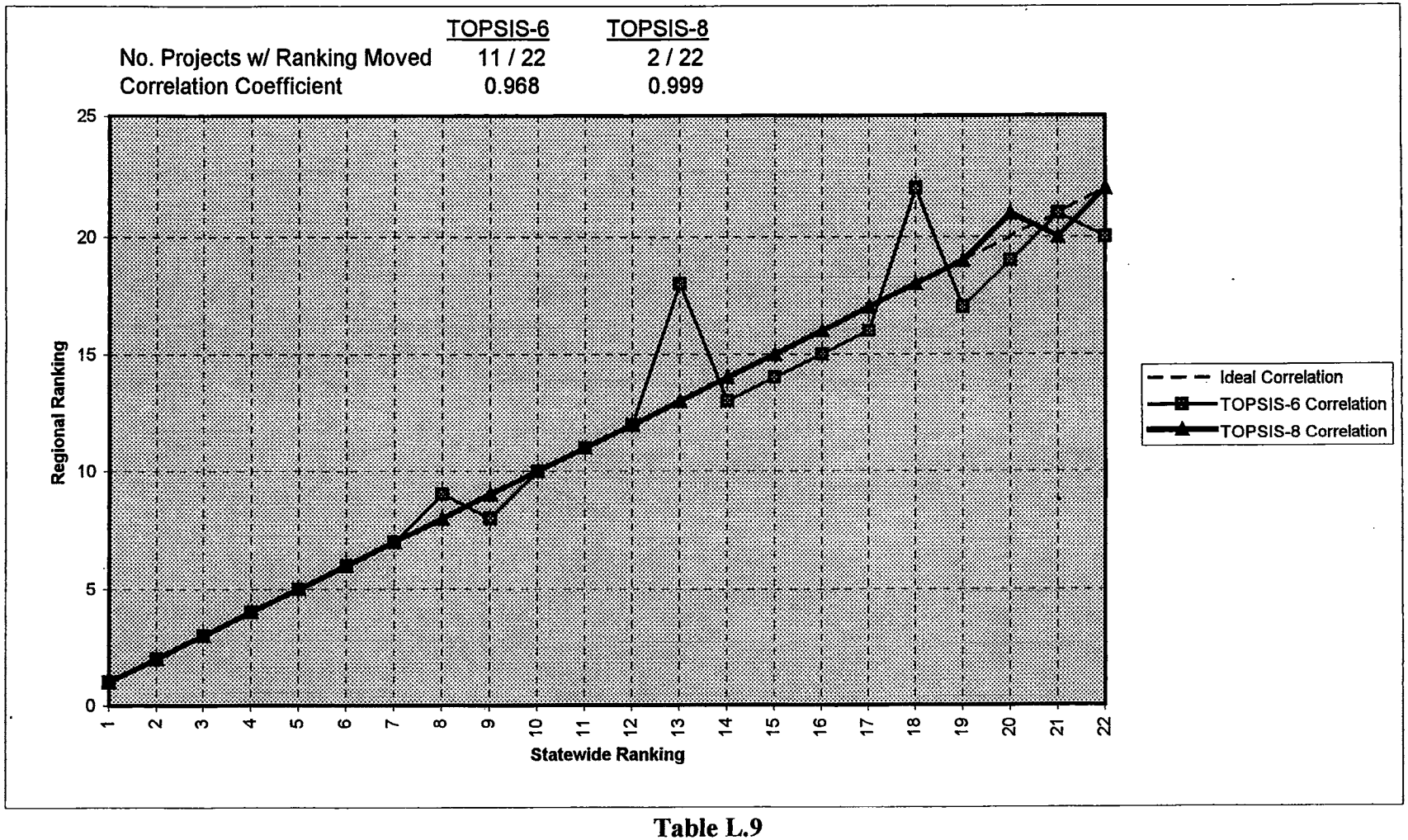

Table L.9
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 3 - Rural

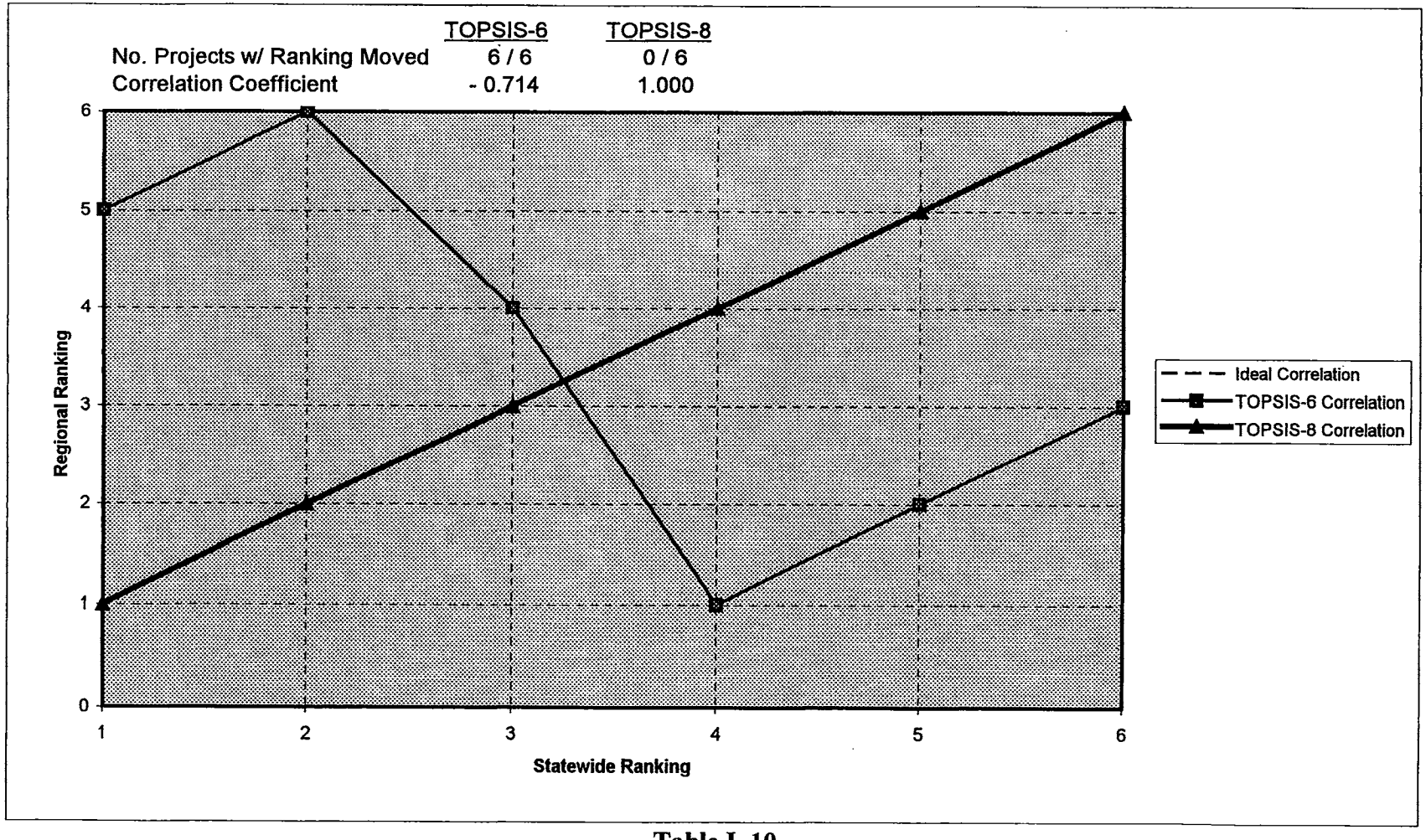

Table L.10
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 4 - Rural

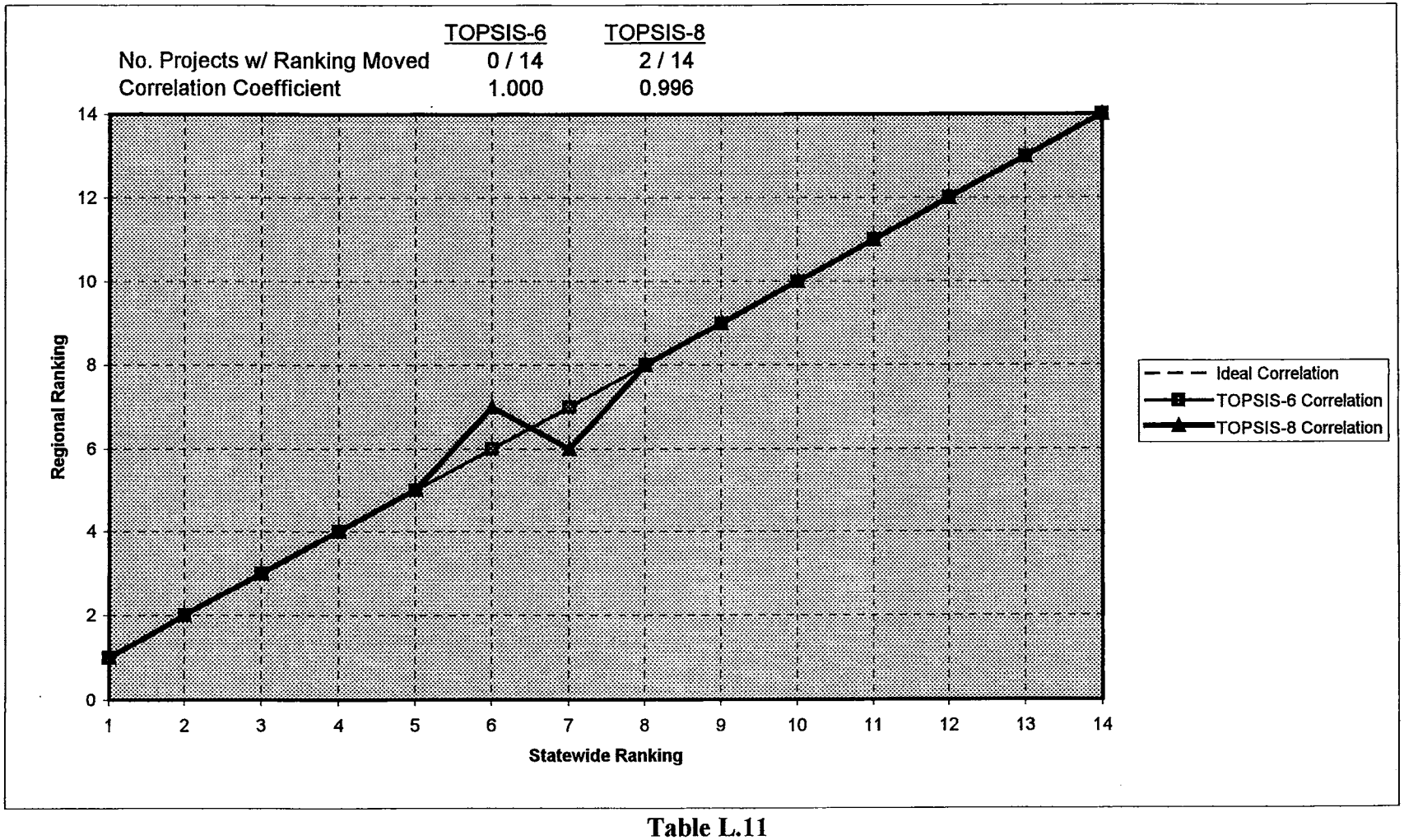

Table L.11
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 5 - Rural

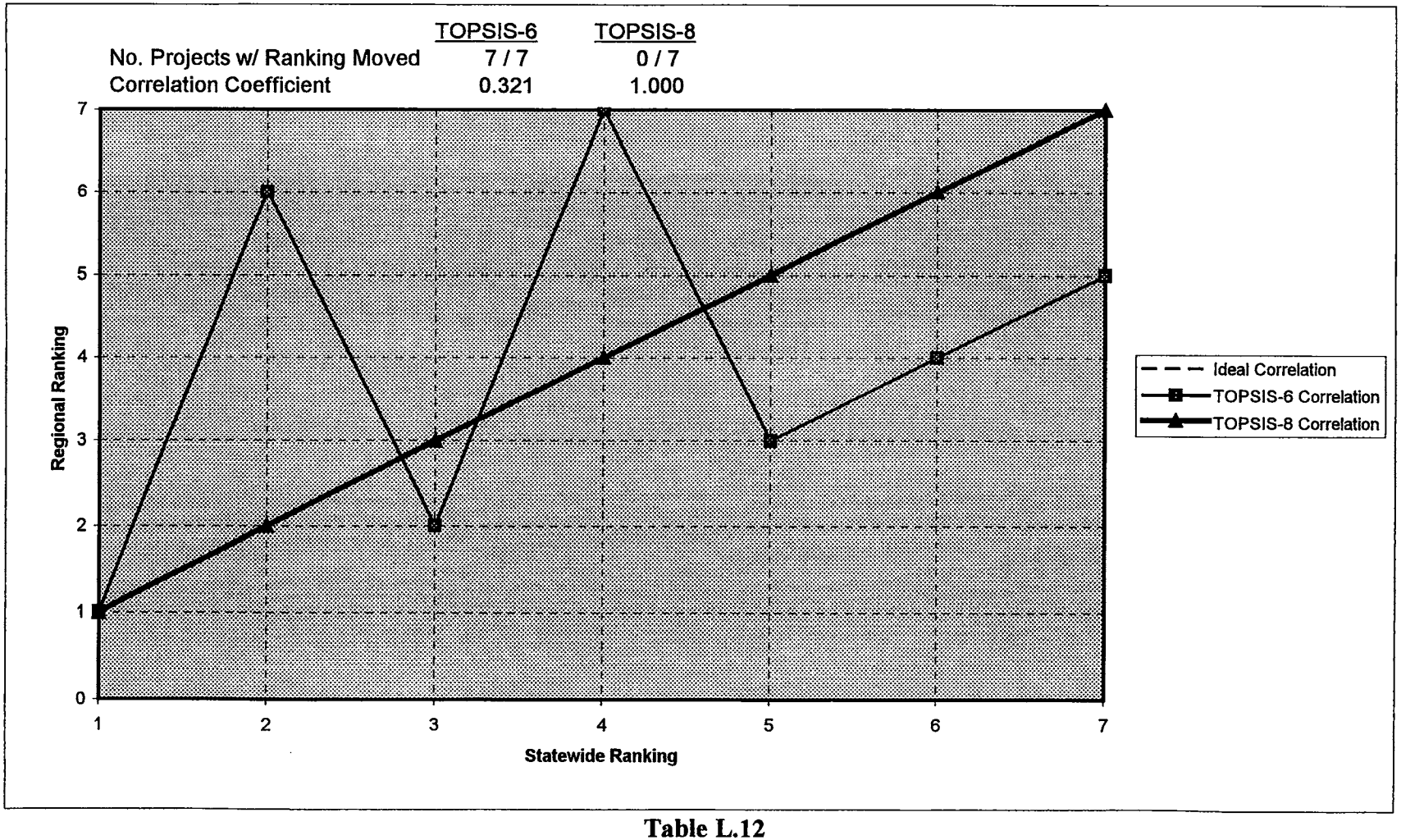

Table L.12
Comparison of Consistency Before and After TOPSIS Revisions
1995-1997 Biennium List
Region 6 - Rural

APPENDIX M

COMPARISON OF STATEWIDE & REGIONAL RANKINGS AND PIS

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
		1	1	1	99	Vic. 60th Ave to SR 525 (Stage 2) - Widening	291.79	1	0.6	10.5	388	4	14
		2	2	1	99	King/Snohomish CL to Vic. 60th Ave (Stage 1) - Widening	232.58	1	0.5	10.5	304	4	14
0.56591	0.56684	3	3	1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane	39.56	7	0.5	0.5	20	10	14
0.29815	0.31554	4	4	1	99	Airport Rd: I/S HOV Priority	19.19	0	4.5	7.0	103	10	14
0.21608	0.23736	5	5	1	527	SR 522/Main St Intersection Improvements	12.99	2	0.5	10.0	36	9	11
0.18272	0.19640	6	6	1	522	Lake City Way Multi-Modal Project - SR 5 to SR 405 - HOV Priority	11.53	7	0.5	15.0	287	5	9
0.17858	0.19362	7	7	1	5	Northbound Downtown Rechannelization	11.13	7	0.5	0.0	0	8	9
0.16894	0.17705	8	10	1	900	Duvall Ave SE to SR 90 (Stage 1): Tibbets Creek to SR 90 - Widening	9.34	5	95.0	27.0	680	6	11
0.16823	0.18671	9	8	1	9	SR 522 to Clearview (Stage 2): 228th to SR 524/212th-Widening	7.70	2	1.3	11.5	38	10	11
0.15643	0.19206	10	9	1	527	164th St SE to 132nd St SE - Widening	7.99	3	0.7	17.0	345	5	11
0.15420	0.17359	11	13	1	524	24th to SR 527 - Widening	8.72	5	10.5	22.0	704	9	11
0.14630	0.16739	12	14	1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening	7.94	5	6.5	17.0	290	8	11
0.14381	0.17696	13	11	1	542	Orleans to Britton (Stage 1): Orleans St to Hannegan Rd - Widening	5.47	1	2.0	9.5	128	8	11
0.14278	0.17671	14	12	1	5	Boeing Access Rd I/C - Flyover Structure	5.19	1	0.5	6.0	0	8	14
0.13006	0.16439	15	15	1	525	SR 99 to SR 526 - Widening & HOV Lanes	3.62	1	4.2	17.0	474	10	11
0.13004	0.16337	16	17	1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening	4.26	2	0.5	11.0	17	10	11

Table M.1
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.12661	0.14956	17	21	1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	6.31	6	2.5	8.0	62	10	10
0.12618	0.15422	18	16	1	520	NE 40th St I/C & C-D Lanes	0.48	0	0.5	0.0	1	8	14
0.12060	0.15457	19	15	1	20	Avon Ave to SR 9 - Channelization & Access Control	2.54	2	1.3	5.0	192	6	13
0.11930	0.15389	20	19	1	542	Orleans to Britton (Stage 2): Hannegan Rd to Britton Rd	0.63	1	5.0	9.5	430	8	11
0.11812	0.15282	21	20	1	9	SR 522 to Clearview (Stage 3): SR 524/212th to 176th-Widening	2.17	2	0.5	12.5	153	10	11
0.11540	0.14667	22	24	1	5	196th St SW (SR 524) I/C Modifications	3.24	4	0.5	3.5	46	1	14
0.11386	0.14916	23	22	1	20	SPUR, Commercial Ave./ 12th to San Juan / Victoria Ferry Terminal - Widening	0.29	2	0.5	2.5	0	8	13
0.11347	0.14576	24	25	1	527	132nd St SE to 112th St SE - Widening	2.53	3	1.4	11.5	387	7	11
0.11278	0.14712	25	23	1	9	Lake Stevens Park & Ride Lot	0.73	2	11.5	5.5	90	7	11
0.11178	0.14353	26	27	1	5	SR 526 to Marysville - HOV Lanes	2.72	4	0.5	1.0	14	4	14
0.11132	0.14619	27	26	1	5	Marysville P&R Lot	1.62	3	1.0	10.0	0	4	11
0.10703	0.14092	28	28	1	20	Goldie Rd to Ault Field Rd - TWLT Lane & Access Control	0.16	3	0.5	2.0	14	9	9
0.10355	0.13606	29	29	1	5	41st Street SE to SR 2 - Northbound Auxilary Lane	0.79	4	0.5	0.5	5	8	14
0.10314	0.13112	30	30	1	522	Paradise Lk Rd to Snohomish River (Stage 2) - New I/C & Widening	3.01	5	23.1	7.5	78	10	10
0.10123	0.12920	31	32	1	90	Sunset I/C Modifications	2.75	5	31.0	21.0	26	10	14
0.09849	0.12941	32	31	1	509	SR 518 I/C Modification	1.44	5	0.5	5.0	3	9	11
0.09849	0.12457	33	34	1	202	E Lk Sammamish Pkwy to Sahalee Wy (Stage 1 & 2) - Additional Lanes	3.14	6	3.5	21.0	537	7	11

Table M.1 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65	Comm Suppt 0.14	Wetlands 0.0267	Water Qual 0.0267	Noise 0.0266	Mode Int. 0.07	L/U 0.06
							1	0	0	0	0	0	1
0.09818	0.12451	34	35	1	18	Weyerhouser Wy to SR 167 Truck Climbing Shld Lane	2.31	6	5.0	5.0	16	10	13
0.09523	0.12169	35	36	1	5	NE 175th St to NE 205th St - Auxiliary Lane	3.01	7	0.5	10.0	18	8	14
0.09499	0.12592	36	33	1	5	SR 161 to SR 18 Interchange Modification	0.36	5	0.5	23.0	2	10	14
0.09032	0.11748	37	37	1	5	172nd St I/C Modifications	2.14	7	0.5	0.0	56	8	11
0.08339	0.11136	38	38	1	99	Aurora Br (Geo.Wash Mem Br 99/560) Widening	0.01	7	0.5	15.0	0	7	14
0.08242	0.10540	39	39	1	509	South Access Rd Extension	2.16	8	7.3	21.0	1008	3	14
0.07973	0.10346	40	40	1	169	SR 516 to 196th Ave (Stage 1): 225th SE vic to 220th Pl/Witte Rd - Widening	1.95	8	3.5	25.0	401	7	11
0.07511	0.09834	41	41	1	516	Wax Rd to SR 169 (Stages 1 & 2) - Widening	1.19	8	18.9	18.0	824	10	11
0.16554	0.14840	1	1	2	17	Pioneer Way to Stratford Road	0.70	2	1.6	24	52	6	13
0.15702	0.14121	2	2	2	20	MP 277.61 to Bigham Flats	0.27	3	0	11	0	8	13
0.15204	0.13511	3	3	2	2	Easy Street	0.38	4	0	1	0	4	9
0.90802	0.92408	1	1	3	161	SR 161 / SR 167 Eastbound Ramp	66.50	5	0.5	12	0	8	14
0.88914	0.89857	2	2	3	510	Martin Way to Pacific Avenue SE	63.83	5	0.5	4	102	3	14
0.69032	0.68384	3	3	3	16	Gig Harbor I/C	47.32	0	0.5	6	0	8	14
0.65472	0.65195	4	4	3	510	SR 5 to Martin Way	45.46	5	0.5	4	0	6	14
0.40686	0.38978	5	5	3	305	SR 3 to Bond Road	25.86	3	4.5	15	6	7	14
0.38468	0.36628	6	6	3	161	204th St. E to 176 St E	24.06	3	0.5	8	112	9	11
0.38100	0.36104	7	7	3	16	SR 16, SR 5 to Wollochet TSM	23.59	3	0.5	5	0	6	14
0.30448	0.27069	8	9	3	101	Mottman Road I/C	15.53	1	0.5	6	0	5	14
0.30312	0.28424	9	8	3	161	36th to Jovita	18.36	6	0.5	13	141	9	14
0.29342	0.26168	10	10	3	410	Linden Drive I/C	15.20	2	0.5	21	13.5	8	14

Table M.1 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.28703	0.24981	11	12	3	410	214th Avenue E to 234th	13.30	0	0.5	13	213	10	11
0.28274	0.25186	12	11	3	510	SR 5 O-xing	14.67	3	0.5	4	0	6	11
0.26476	0.22502	13	13	3	3	SR 3/SR 303 I/C (Waaga Way)	11.23	1	0.5	12	0	10	14
0.21295	0.16274	15	15	3	3	SR 3/SR 305 Interchange - Stage 2	0.21	0	0.5	6	0	9	11
0.20753	0.16587	14	14	3	410	234th to Hinkleman Ext. Road	5.95	3	2	13	213	10	11
0.19280	0.15737	16	16	3	161	234th to 204th	7.19	6	0.5	14	63	9	11
0.19159	0.14687	17	17	3	410	Hinkleman Ext. Road to Park Avenue	2.63	3	0.6	13	213	9	11
0.18792	0.14124	19	20	3	101	Cloquallam Rd. Undercrossing I/C	0.22	3	0.5	11	0	7	13
0.18771	0.14266	19	18	3	105	Southbound Truck Climbing Lane	2.89	4	0.5	10	0	9	14
0.18716	0.14219	20	19	3	20	Port Townsend TWLT Lane	2.78	4	0.5	1	0	9	10
0.18481	0.13943	21	21	3	105	Northbound Truck Climbing Lane	2.13	4	0.5	10	0	9	14
0.18128	0.13825	22	22	3	20	Port Townsend Vicinity Truck Climbing Lane	3.53	5	0.5	11	0	7	11
0.17708	0.13301	23	23	3	510	Bingo Hall Vicinity, TWLT Lane	2.23	5	0.5	4	0	9	14
0.17508	0.13176	24	24	3	304	Bremerton Ferry Terminal to Vic Gorst	2.19	5	0.5	19	84	5	14
0.17016	0.12807	25	26	3	101	Aberdeen/Hoquiam Stage 1	0.22	5	0.5	25	8	6	14
0.16933	0.12798	26	25	3	3	Gorst RR Bridge to SR 304	1.74	5	1.82	29	280	5	14
0.15395	0.11452	27	27	3	510	93rd to SR 507, TWLT Lane	2.87	8	0.5	4	0	10	14
0.14124	0.10252	28	28	3	16	Tacoma Narrows Bridge	0.24	8	0.5	26	160	7	14
0.13561	0.09912	29	29	3	167	SR 5 to SR 161 (Stage 2 construction of new SR 161 alnmt.)	0.24	8	11.5	23	88	9	14
0.13010	0.09660	30	30	3	167	SR 509 to SR 5 - Stage 1	0.03	8	18.45	27	387	9	14
0.44991	0.44990	1	1	4	501	Mill Plain Extension	30.55	4	0.5	1.5	180	6	11
0.15255	0.15113	2	2	4	205	4th Plain Road Southbound on-ramp	1.41	2	0.5	1	13	9	6
0.14730	0.14531	3	3	4	5	Burnt Bridge through 78th Street	3.55	4	0.5	14	135	6	14
0.14451	0.14108	4	4	4	5	Salmon Creek to SR 205	2.37	4	0.5	16	32	3	14

Table M.1 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.14231	0.13919	5	6	4	14	Brady Road Interchange (SE 192nd)	1.07	3	16.25	30	6	9	9
0.14139	0.13930	6	5	4	205	18th Street Interchange	1.98	4	0.5	2.5	95	6	14
0.13944	0.13373	7	7	4	5	Rush Road vicinity to Thurston County Line	2.52	4	121.65	29	33	8	13
0.13422	0.13243	8	8	4	14	SR 14/SR 500 Interchange	0.74	4	3.5	17	3	8	6
0.12611	0.12445	9	9	4	502	Dollars Corner to Battle Ground	0.70	5	4.63	21	100	9	11
0.12426	0.12257	10	10	4	500	Ward Road to NE 162nd Avenue	1.38	6	0.5	2.5	7	6	11
		1	1	5	240	Edison Street I/C	86.32	1	0.5	12	28	4	14
0.22005	0.21777	2	2	5	224	SR 240 Interchange	11.90	4	0.5	1	3	3	14
0.18471	0.18372	3	3	5	82	I-82 / Yakima Ave.	5.21	0	2	6	19	5	14
0.16286	0.16047	4	4	5	240	Stevens Drive to SR 182	4.58	3	0.5	0	0	4	14
0.15890	0.15717	5	5	5	395	Lewis / Sylvester Street I/C	0.31	1	0	4	0	4	14
0.14245	0.14115	6	6	5	24	SR 82 to Keys Road, MP 0.0-0.98	2.63	4	0.5	14.5	21	5	11
0.14173	0.13953	7	7	5	240	SR 182 to Columbia Center I/C	2.73	4	10.5	15.5	41	5	14
0.13691	0.13561	8	8	5	395	Hillsboro Street I/C	0.57	4	0.5	0	0	8	14
0.13604	0.13479	9	9	5	2/82	Selah Connection	1.02	4	2.2	12.5	47.5	5	10
0.11293	0.11201	10	10	5	397	Finley Road to East 10th Avenue	0.69	7	0.5	0	10	9	3
0.62854	0.62619	1	1	6	2	SR 2/SR 206/Market St. Intersection	43.40	3	0	2	34	8	8
0.31586	0.30123	2	2	6	90	University Rd I/C	18.87	3	0	2	61	6	9
0.28556	0.26702	3	3	6	90	Pines Rd I/C Modification	15.66	2	0	2	0	9	8
0.20674	0.18256	4	4	6	2	North Spokane/Division St. -Stage 2	8.43	4	0	2	123	4	14
0.18777	0.16057	5	5	6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)	4.96	3	0	7	162	9	14
0.18609	0.15844	6	6	6	90	Sprague Ave. to Argonne Rd. -Stage 1 (I/C)	4.58	3	0	7	102	9	14
0.17299	0.14468	7	7	6	2	North Spokane/Division St. -Stage 3	3.18	4	0	2	123	5	14

Table M.1 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.16366	0.13585	8	8	6	290	Mission Ave. to Argonne Rd.	1.18	4	0	8	98	8	14
0.15353	0.12718	9	9	6	395	Hastings Road to MP 172, -Stage 2	0.82	5	0	15.5	28	8	13

Table M.1 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Urban List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	I/U 0.06 1
0.16971	0.16026	1	1	1	20	Fredonia to SR 5 - Widening	6.87	2	0.5	9.0	49	9	11
0.15159	0.13854	2	2	1	539	Lynden Park & Ride Lot	0.55	0	0.5	1.5	24	5	14
0.14085	0.12928	3	3	1	539	Laurel Rd to Tenmile Rd (Stage 2) - Widening	1.98	2	0.5	10.0	98	9	14
0.13754	0.12656	4	4	1	2	Sultan City Limits - TWLTL Lane	1.16	2	0.5	0.5	25	10	6
0.13483	0.12406	5	5	1	539	Horton Rd to Laurel Rd (Stage 1) - Widening	3.73	4	2.8	8.5	326	9	14
0.12956	0.11946	6	6	1	2	Index vicinity	0.83	3	2.5	27	3	9	14
0.12952	0.11934	7	7	1	5	Blaine - NB Pace Lane Extension	0.78	3	0.5	0.5	25	10	5
0.12316	0.11315	8	8	1	2	SR 2 to SR 522 Monroe Bypass	1.11	4	2.2	12.0	116	7	11
0.11841	0.10765	9	9	1	539	Tenmile Rd to Int'l Boundary: Fishtrap Creek to W Main St (Stage 1) - Widening	1.87	5	2.8	12.5	537	9	14
0.11366	0.10565	10	10	1	530	SR 5 to Old SR 99 Wye Connection - Widening	0.43	5	1.0	11.0	7	10	5
0.11319	0.10358	11	11	1	522	Snohomish Riv Br to SR 2 (Stage 3) - Widening	0.23	5	0.8	13.0	227	10	10
0.11024	0.10271	12	12	1	5	SR 5, 9, 539 and 543 SC&DI	1.25	6	0.5	0.5	0	8	5
0.10537	0.09530	13	13	1	96	Seattle Hill Rd to SR 9 - Widening & Realignment	0.25	6	4.0	11.5	1318	8	11
0.15904	0.12098	1	1	2	26	SR 243 I/C TO MP 5.5 VIC	1.35	3	0.5	14	0	10	10
0.15371	0.11401	2	2	2	215	Omak vicinity	0.33	4	0	1	0	6	13
0.78977	0.79161	1	1	3	101	Chicken Coop Road EB Passing / Truck Climbing Lane	55.54	4	0.5	15	0	10	11
0.51042	0.50606	2	2	3	101	Dawley Rd. to Blyn Hwy., Truck Climbing Lane	34.96	4	1.4	21	5	9	11
0.44910	0.44294	3	3	3	101	Gardiner Cemetery Road to MP 277.6	30.36	4	1	10	5	9	10
0.34632	0.33743	4	4	3	101	Blyn Eastbound Passing Lane	22.69	5	0.5	11	0	10	11

Table M.2
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Rural List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.27964	0.26047	5	5	3	5	Maytown I/C to 93rd I/C	15.89	1	0.5	6	0	9	13
0.15395	0.12488	6	6	3	101	Mt. Walker N.B. Passing / Truck Climbing Ln	3.49	4	0.5	10	0	9	10
0.15327	0.12371	7	7	3	104	Kingston Traffic Circulation Imp.	3.19	4	0.5	26	15	5	14
0.15167	0.12239	8	8	3	104	SR 19 - West WB Passing/Truck Climbing Ln	3.08	4	0.8	14	0	10	11
0.15089	0.12115	9	9	3	109	NB Truck Climbing Lane, MP 4.5	2.76	4	0.5	10	0	8	11
0.14986	0.12003	10	10	3	109	SB Truck Climbing Lane (EB), MP 4.5	2.54	4	0.5	11	0	8	11
0.14770	0.11991	11	11	3	101	Blyn Westbound Passing Lane	3.60	5	0.5	11	0	10	11
0.14764	0.11778	12	12	3	101	Northbound Passing Lane	2.10	4	0.5	15	0	10	11
0.14592	0.11589	13	13	3	101	Southbound Passing Lane	1.61	4	0.5	15	0	10	11
0.14436	0.11402	14	14	3	109	SB Passing Lane, MP 14.5 to 15.0	0.89	4	0.5	9	0	9	11
0.14431	0.11397	15	15	3	109	NB Passing Lane, MP 14.5 to 15.0	0.87	4	0.5	9	0	9	11
0.14378	0.11365	16	16	3	109	SB Passing Lane, MP 14.0 to 15.0	0.90	4	0.6	14	0	9	11
0.14331	0.11318	17	17	3	109	NB Passing Lane, MP14.0 to 15.0	0.71	4	0.6	14	0	9	11
0.13790	0.10999	18	18	3	3	Belfair Vicinity	2.70	6	0.5	10	0	7	14
0.12951	0.10117	19	19	3	12	Passing lanes MP 32.00 to MP 33.83	0.39	6	0.5	15	0	10	14
0.12078	0.09393	20	21	3	101	SR 101/SR 107 I/C	0.27	7	0.5	14	0	8	9
0.11747	0.09810	21	20	3	101	Shore Road to Joslin Road	3.90	8	24	16	408	9	14
0.10720	0.08292	22	22	3	101	Carlsborg/Hooker Roads I/C	1.73	10	0.5	15	0	7	14
0.12719	0.11178	1	1	4	6	Pluvius Vicinity Realignment	0.30	4	0.625	7	0	7	0
0.12573	0.11044	2	2	4	6	Rock Creek Bridge Replacement & Realignment	0.12	4	2.35	23	0	7	0
0.12501	0.10996	3	3	4	4	Svensons Curve Realignment	0.34	4	4.625	24	12	10	0
0.12010	0.10601	4	4	4	503	Lewisville Park vicinity Climbing Lanes	1.03	5	2	22	4	10	1
0.11935	0.10336	5	5	4	101	Smith Creek Road vicinity Climbing Lane	0.51	5	8.875	24	0	9	5

Table M.2 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Rural List

By-Region Priority Index	Statewide Priority Index	Ordinal Rankings Reg	Sta	REG	SR	Project Description	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
0.09895	0.08776	6	6	4	97	Brooks Park to Summit Climbing Lane	0.52	8	0.5	8.5	3.5	9	0
0.37907	0.37360	1	1	5	90	Elk Heights Vic WBND TCL	25.23	4	1.5	2	0	9	14
0.33324	0.32742	2	2	5	970	Teanaway River to Virden	21.91	5	0.5	0	0	9	13
0.22860	0.21690	3	3	5	90	Highline Canal vicinity to Elk Heights I/C vic.	13.04	4	1.5	2	0	9	14
0.18386	0.16908	4	4	5	90	Rygrass Summit to Columbia River Bridges	8.77	4	0.5	1	0	9	9
0.16435	0.14105	5	5	5	12	Airport Rd Interchange Modification	3.05	1	0.5	1	16	5	11
0.15158	0.13120	6	7	5	24	Vernita Hill Vicinity	3.49	3	0.5	1	0	9	10
0.15136	0.13307	7	6	5	90	Ryegrass Summit Vic EBND TCL	4.69	4	0.5	1	0	9	9
0.14046	0.11862	8	8	5	12	Waitsburg By-pass	1.20	3	13.5	24	6	8	13
0.13406	0.11397	9	9	5	12	Old Naches Road Interchange	0.94	4	2.5	5.5	0	9	11
0.13401	0.11196	10	10	5	12	SR 124 Interchange	0.21	4	13.25	8	0	3	14
0.13312	0.11029	11	11	5	12	SR 124 to Boise Cascade	0.49	4	35	9.5	32	3	14
0.13037	0.10816	12	12	5	12	SR 410 to Naches	0.38	4	43.5	15.5	15	8	13
0.12221	0.10343	13	13	5	22	I-82 to SR 97	0.26	5	6.5	30	96	8	14
0.10697	0.08877	14	14	5	90	Hyak to Stampede Road I/C	0.76	7	30.25	13.5	10	9	4
0.16573	0.13893	1	1	6	90	Harvard Road I/C	3.72	2	0	4	2	7	14
0.14353	0.11865	2	2	6	195	Plaza to Spangle	0.36	3	1.3	0	5	8	8
0.14346	0.11795	3	3	6	904	Cheney to SR 90	1.27	3	9.8	19	67	8	9
0.14127	0.11589	4	4	6	195	Rosalia to Plaza	0.27	3	7.9	25	4	8	8
0.13560	0.11225	5	5	6	395	Hamilton Road to Montgomery Road	1.10	4	1.5	25	71	8	8
0.12814	0.10620	6	6	6	395	MP 172 to Hamilton Road	0.98	5	2.5	24	36	8	8
0.12723	0.10403	7	7	6	270	Johnson Rd. to Idaho State Line	0.71	5	10.6	24	10	7	9

Table M.2 (continued)
Comparison of Statewide and By-Region Rankings and PIs
TOPSIS-8 Rankings - 1995-1997 Rural List

APPENDIX N

SIMPLE WEIGHTED ADDITIVE MODEL RESULTS

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
1	46.97	1	99	Vic. 60th Ave to SR 525 (Stage 2) - Widening	1	291.79	1	0.6	10.5	388	4	14
2	40.49	1	99	King/Snohomish CL to Vic. 60th Ave (Stage 1) - Widening	2	232.58	1	0.5	10.5	304	4	14
3	24.50	5	240	Edison Street I/C	3	86.32	1	0.5	12	28	4	14
4	19.77	3	16	Gig Harbor I/C	6	47.32	0	0.5	6	0	8	14
5	19.14	3	510	Martin Way to Pacific Avenue SE	5	63.83	5	0.5	4	102	3	14
6	17.27	3	161	SR 161 / SR 167 Eastbound Ramp	4	66.50	5	0.5	12	0	8	14
7	16.53	3	101	Mottman Road I/C	18	15.53	1	0.5	6	0	5	14
8	16.21	5	82	I-82 / Yakima Ave.	37	5.21	0	2	6	19	5	14
9	16.06	3	510	SR 5 to Martin Way	7	45.46	5	0.5	4	0	6	14
10	15.64	1	99	Airport Rd: I/S HOV Priority	14	19.19	0	4.5	7.0	103	10	14
11	15.33	3	16	SR 16, SR 5 to Wollochet TSM	13	23.59	3	0.5	5	0	6	14
12	15.31	5	395	Lewis / Sylvester Street I/C	93	0.31	1	0	4	0	4	14
13	15.22	6	2	SR 2/SR 206/Market St. Intersection	8	43.40	3	0	2	34	8	8
14	14.82	1	520	NE 40th St I/C & C-D Lanes	90	0.48	0	0.5	0.0	1	8	14
15	14.70	3	305	SR 3 to Bond Road	11	25.86	3	4.5	15	6	7	14
16	14.49	5	224	SR 240 Interchange	23	11.90	4	0.5	1	3	3	14
17	14.33	4	501	Mill Plain Extension	10	30.55	4	0.5	1.5	180	6	11
18	14.21	5	240	Stevens Drive to SR 182	40	4.58	3	0.5	0	0	4	14
19	14.21	1	5	Boeing Access Rd I/C - Flyover Structure	38	5.19	1	0.5	6.0	0	8	14
20	14.14	1	5	196th St SW (SR 524) I/C Modifications	46	3.24	4	0.5	3.5	46	1	14
21	13.84	3	3	SR 3/SR 303 I/C (Waaga Way)	25	11.23	1	0.5	12	0	10	14
22	13.80	3	410	214th Avenue E to 234th	21	13.30	0	0.5	13	213	10	11
23	13.76	3	410	Linden Drive I/C	19	15.20	2	0.5	21	13.5	8	14
24	13.56	3	510	SR 5 O-xing	20	14.67	3	0.5	4	0	6	11

Table N.1
Simple Additive Weighted (SAW) Model Results
1995-1997 Unconstrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
25	13.52	6	2	North Spokane/Division St. -Stage 2	29	8.43	4	0	2	123	4	14
26	13.50	6	90	University Rd I/C	15	18.87	3	0	2	61	6	9
27	13.32	1	20	Avon Ave to SR 9 - Channelization & Access Control	59	2.54	2	1.3	5.0	192	6	13
28	13.32	3	3	SR 3/SR 305 Interchange - Stage 2	100	0.21	0	0.5	6	0	9	11
29	13.12	3	161	204th St. E to 176 St E	12	24.06	3	0.5	8	112	9	11
30	13.08	1	542	Orleans to Britton (Stage 1): Orleans St to Hannegan Rd - Widening	36	5.47	1	2.0	9.5	128	8	11
31	13.07	1	5	SR 526 to Marysville - HOV Lanes	56	2.72	4	0.5	1.0	14	4	14
32	12.77	1	527	SR 522/Main St Intersection Improvements	22	12.99	2	0.5	10.0	36	9	11
33	12.73	4	5	Salmon Creek to SR 205	62	2.37	4	0.5	16	32	3	14
34	12.67	1	20	SPUR, Commercial Ave./ 12th to San Juan / Victoria Ferry Terminal - Widening	94	0.29	2	0.5	2.5	0	8	13
35	12.66	6	90	Pines Rd I/C Modification	17	15.66	2	0	2	0	9	8
36	12.61	1	5	Marysville P&R Lot	73	1.62	3	1.0	10.0	0	4	11
37	12.55	6	2	North Spokane/Division St. -Stage 3	47	3.18	4	0	2	123	5	14
38	12.46	2	17	Pioneer Way to Stratford Road	85	0.70	2	1.6	24	52	6	13
39	12.23	1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane	9	39.56	7	0.5	0.5	20	10	14
40	12.19	1	9	Lake Stevens Park & Ride Lot	84	0.73	2	11.5	5.5	90	7	11
41	12.17	1	527	164th St SE to 132nd St SE - Widening	30	7.99	3	0.7	17.0	345	5	11
42	12.11	1	542	Orleans to Britton (Stage 2): Hannegan Rd to Britton Rd	88	0.63	1	5.0	9.5	430	8	11
43	12.03	4	205	18th Street Interchange	70	1.98	4	0.5	2.5	95	6	14
44	11.89	5	240	SR 182 to Columbia Center I/C	55	2.73	4	10.5	15.5	41	5	14
45	11.83	6	90	Sprague Ave. to Argonne Rd. -Stage 1 (I/C)	41	4.58	3	0	7	102	9	14

Table N.1 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Unconstrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/o order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
46	11.80	3	101	Cloquallam Rd. Undercrossing I/C	99	0.22	3	0.5	11	0	7	13
47	11.79	6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)	39	4.96	3	0	7	162	9	14
48	11.71	1	9	SR 522 to Clearview (Stage 2): 228th to SR 524/212th-Widening	32	7.70	2	1.3	11.5	38	10	11
49	11.64	4	5	Burnt Bridge through 78th Street	44	3.55	4	0.5	14	135	6	14
50	11.47	2	2	Easy Street	91	0.38	4	0	1	0	4	9
51	11.42	2	20	MP 277.61 to Bigham Flats	95	0.27	3	0	11	0	8	13
52	11.39	1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening	42	4.26	2	0.5	11.0	17	10	11
53	11.33	5	395	Hillsboro Street I/C	89	0.57	4	0.5	0	0	8	14
54	11.33	1	5	41st Street SE to SR 2 - Northbound Auxilary Lane	82	0.79	4	0.5	0.5	5	8	14
55	11.28	1	525	SR 99 to SR 526 - Widening & HOV Lanes	43	3.62	1	4.2	17.0	474	10	11
56	11.24	5	24	SR 82 to Keys Road, MP 0.0-0.98	58	2.63	4	0.5	14.5	21	5	11
57	10.97	1	527	132nd St SE to 112th St SE - Widening	60	2.53	3	1.4	11.5	387	7	11
58	10.92	6	290	Mission Ave. to Argonne Rd.	78	1.18	4	0	8	98	8	14
59	10.91	1	9	SR 522 to Clearview (Stage 3): SR 524/212th to 176th-Widening	66	2.17	2	0.5	12.5	153	10	11
60	10.85	3	304	Bremerton Ferry Terminal to Vic Gorst	65	2.19	5	0.5	19	84	5	14
61	10.82	5	2/82	Selah Connection	80	1.02	4	2.2	12.5	47.5	5	10
62	10.76	3	105	Southbound Truck Climbing Lane	51	2.89	4	0.5	10	0	9	14
63	10.67	3	105	Northbound Truck Climbing Lane	69	2.13	4	0.5	10	0	9	14
64	10.55	4	205	4th Plain Road Southbound on-ramp	75	1.41	2	0.5	1	13	9	6
65	10.41	3	161	36th to Jovita	16	18.36	6	0.5	13	141	9	14
66	10.37	3	410	Hinkleman Ext. Road to Park Avenue	57	2.63	3	0.6	13	213	9	11
67	10.34	3	410	234th to Hinkleman Ext. Road	35	5.95	3	2	13	213	10	11

Table N.1 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Unconstrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
68	10.30	1	20	Goldie Rd to Ault Field Rd - TWLT Lane & Access Control	101	0.16	3	0.5	2.0	14	9	9
69	10.08	3	3	Gorst RR Bridge to SR 304	72	1.74	5	1.82	29	280	5	14
70	10.08	3	510	Bingo Hall Vicinity, TWLT Lane	64	2.23	5	0.5	4	0	9	14
71	10.08	3	101	Aberdeen/Hoquiam Stage 1	98	0.22	5	0.5	25	8	6	14
72	10.06	3	20	Port Townsend TWLT Lane	53	2.78	4	0.5	1	0	9	10
73	9.87	3	20	Port Townsend Vicinity Truck Climbing Lane	45	3.53	5	0.5	11	0	7	11
74	9.51	4	500	Ward Road to NE 162nd Avenue	76	1.38	6	0.5	2.5	7	6	11
75	9.49	6	395	Hastings Road to MP 172, -Stage 2	81	0.82	5	0	15.5	28	8	13
76	9.26	1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening	31	7.94	5	6.5	17.0	290	8	11
77	9.12	1	509	SR 518 I/C Modification	74	1.44	5	0.5	5.0	3	9	11
78	9.00	4	14	Brady Road Interchange (SE 192nd)	79	1.07	3	16.25	30	6	9	9
79	8.69	1	522	Lake City Way Multi-Modal Project - SR 5 to SR 405 - HOV Priority	24	11.53	7	0.5	15.0	287	5	9
80	8.63	1	5	SR 161 to SR 18 Interchange Modification	92	0.36	5	0.5	23.0	2	10	14
81	8.62	1	90	Sunset I/C Modifications	54	2.75	5	31.0	21.0	26	10	14
82	8.62	4	5	Rush Road vicinity to Thurston County Line	61	2.52	4	121.65	29	33	8	13
83	8.52	1	5	Northbound Downtown Rechannelization	26	11.13	7	0.5	0.0	0	8	9
84	8.51	1	5	NE 175th St to NE 205th St - Auxiliary Lane	49	3.01	7	0.5	10.0	18	8	14
85	8.43	1	18	Weyerhouser Wy to SR 167 Truck Climbing Shld Lane	63	2.31	6	5.0	5.0	16	10	13
86	8.41	3	161	234th to 204th	33	7.19	6	0.5	14	63	9	11
87	8.38	4	14	SR 14/SR 500 Interchange	83	0.74	4	3.5	17	3	8	6

Table N.1 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Unconstrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/o order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int 0.07 0	L/U 0.06 1
88	8.37	1	99	Aurora Br (Geo.Wash Mem Br 99/560) Widening	103	0.01	7	0.5	15.0	0	7	14
89	8.26	1	900	Duvall Ave SE to SR 90 (Stage 1): Tibbets Creek to SR 90 - Widening	27	9.34	5	95.0	27.0	680	6	11
90	8.18	1	522	Paradise Lk Rd to Snohomish River (Stage 2) - New I/C & Widening	50	3.01	5	23.1	7.5	78	10	10
91	8.16	4	502	Dollars Corner to Battle Ground	86	0.70	5	4.63	21	100	9	11
92	8.14	1	524	24th to SR 527 - Widening	28	8.72	5	10.5	22.0	704	9	11
93	7.99	1	5	172nd St I/C Modifications	68	2.14	7	0.5	0.0	56	8	11
94	7.90	1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	34	6.31	6	2.5	8.0	62	10	10
95	7.77	1	202	E Lk Sammamish Pkwy to Sahalee Wy (Stage 1 & 2) - Additional Lanes	48	3.14	6	3.5	21.0	537	7	11
96	7.62	1	509	South Access Rd Extension	67	2.16	8	7.3	21.0	1008	3	14
97	7.14	3	510	93rd to SR 507, TWLT Lane	52	2.87	8	0.5	4	0	10	14
98	6.82	3	16	Tacoma Narrows Bridge	97	0.24	8	0.5	26	160	7	14
99	6.15	3	167	SR 5 to SR 161 (Stage 2 construction of new SR 161 alnmt.)	96	0.24	8	11.5	23	88	9	14
100	5.88	1	169	SR 516 to 196th Ave (Stage 1): 225th SE vic to 220th Pl/Witte Rd - Widening	71	1.95	8	3.5	25.0	401	7	11
101	5.48	3	167	SR 509 to SR 5 - Stage 1	102	0.03	8	18.45	27	387	9	14
102	5.32	5	397	Finley Road to East 10th Avenue	87	0.69	7	0.5	0	10	9	3
103	4.22	1	516	Wax Rd to SR 169 (Stages 1 & 2) - Widening	77	1.19	8	18.9	18.0	824	10	11

Table N.1 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Unconstrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
1	42.37	3	101	Chicken Coop Road EB Passing / Truck Climbing Lane	1	55.54	4	0.5	15	0	10	11
2	30.51	3	101	Dawley Rd. to Blyn Hwy., Truck Climbing Lane	2	34.96	4	1.4	21	5	9	11
3	28.10	3	101	Gardiner Cemetery Road to MP 277.6	3	30.36	4	1	10	5	9	10
4	26.29	5	90	Elk Heights Vic WBND TCL	4	25.23	4	1.5	2	0	9	14
5	23.55	5	970	Teanaway River to Virden	6	21.91	5	0.5	0	0	9	13
6	22.59	3	101	Blyn Eastbound Passing Lane	5	22.69	5	0.5	11	0	10	11
7	22.55	3	5	Maytown I/C to 93rd I/C	7	15.89	1	0.5	6	0	9	13
8	19.14	5	90	Highline Canal vicinity to Elk Heights I/C vic.	8	13.04	4	1.5	2	0	9	14
9	16.80	5	12	Airport Rd Interchange Modification	20	3.05	1	0.5	1	16	5	11
10	16.65	1	539	Lynden Park & Ride Lot	47	0.55	0	0.5	1.5	24	5	14
11	16.03	6	90	Harvard Road I/C	14	3.72	2	0	4	2	7	14
12	15.95	1	20	Fredonia to SR 5 - Widening	10	6.87	2	0.5	9.0	49	9	11
13	15.64	5	90	Rygrass Summit to Columbia River Bridges	9	8.77	4	0.5	1	0	9	9
14	14.31	3	104	Kingston Traffic Circulation Imp.	18	3.19	4	0.5	26	15	5	14
15	13.99	5	12	SR 124 Interchange	63	0.21	4	13.25	8	0	3	14
16	13.63	1	539	Laurel Rd to Tenmile Rd (Stage 2) - Widening	25	1.98	2	0.5	10.0	98	9	14
17	13.46	5	24	Vernita Hill Vicinity	17	3.49	3	0.5	1	0	9	10
18	13.39	5	12	SR 124 to Boise Cascade	50	0.49	4	35	9.5	32	3	14
19	13.25	5	90	Ryegrass Summit Vic EBND TCL	11	4.69	4	0.5	1	0	9	9
20	13.06	2	215	Omak vicinity	56	0.33	4	0	1	0	6	13
21	13.02	1	539	Horton Rd to Laurel Rd (Stage 1) - Widening	13	3.73	4	2.8	8.5	326	9	14
22	12.64	3	109	NB Truck Climbing Lane, MP 4.5	21	2.76	4	0.5	10	0	8	11

Table N.2
Simple Additive Weighted (SAW) Model Results
1995-1997 Rural Unconstrained List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int 0.07 0	L/U 0.06 1
23	12.47	3	109	SB Truck Climbing Lane (EB), MP 4.5	23	2.54	4	0.5	11	0	8	11
24	12.36	3	101	Mt. Walker N.B. Passing / Truck Climbing Ln	16	3.49	4	0.5	10	0	9	10
25	12.35	3	3	Belfair Vicinity	22	2.70	6	0.5	10	0	7	14
26	11.92	1	2	SR 2 to SR 522 Monroe Bypass	34	1.11	4	2.2	12.0	116	7	11
27	11.83	5	12	Waitsburg By-pass	32	1.20	3	13.5	24	6	8	13
28	11.71	6	195	Plaza to Spangle	54	0.36	3	1.3	0	5	8	8
29	11.65	3	104	SR 19 - West WB Passing/Truck Climbing Ln	19	3.08	4	0.8	14	0	10	11
30	11.54	1	2	Index vicinity	42	0.83	3	2.5	27	3	9	14
31	11.43	1	2	Sultan City Limits - TWLTL Lane	33	1.16	2	0.5	0.5	25	10	6
32	11.39	3	101	Blyn Westbound Passing Lane	15	3.60	5	0.5	11	0	10	11
33	11.29	6	904	Cheney to SR 90	30	1.27	3	9.8	19	67	8	9
34	11.22	5	12	Old Naches Road Interchange	38	0.94	4	2.5	5.5	0	9	11
35	11.13	2	26	SR 243 I/C TO MP 5.5 VIC	29	1.35	3	0.5	14	0	10	10
36	11.09	3	109	SB Passing Lane, MP 14.5 to 15.0	40	0.89	4	0.5	9	0	9	11
37	11.08	3	109	NB Passing Lane, MP 14.5 to 15.0	41	0.87	4	0.5	9	0	9	11
38	11.04	3	101	Northbound Passing Lane	24	2.10	4	0.5	15	0	10	11
39	10.87	3	109	SB Passing Lane, MP 14.0 to 15.0	39	0.90	4	0.6	14	0	9	11
40	10.84	1	539	Tenmile Rd to Int'l Boundary: Fishtrap Creek to W Main St (Stage 1) - Widening	26	1.87	5	2.8	12.5	537	9	14
41	10.76	3	109	NB Passing Lane, MP14.0 to 15.0	45	0.71	4	0.6	14	0	9	11
42	10.75	3	101	Southbound Passing Lane	28	1.61	4	0.5	15	0	10	11
43	10.34	6	195	Rosalia to Plaza	59	0.27	3	7.9	25	4	8	8
44	10.30	1	5	Blaine - NB Pace Lane Extension	43	0.78	3	0.5	0.5	25	10	5
45	10.26	6	395	Hamilton Road to Montgomery Road	35	1.10	4	1.5	25	71	8	8
46	10.10	5	12	SR 410 to Naches	53	0.38	4	43.5	15.5	15	8	13

Table N.2 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Rural Unconstrained List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
47	9.95	5	22	I-82 to SR 97	60	0.26	5	6.5	30	96	8	14
48	9.87	6	270	Johnson Rd. to Idaho State Line	46	0.71	5	10.6	24	10	7	9
49	9.54	6	395	MP 172 to Hamilton Road	37	0.98	5	2.5	24	36	8	8
50	9.50	1	5	SR 5, 9, 539 and 543 SC&DI	31	1.25	6	0.5	0.5	0	8	5
51	9.47	4	6	Pluvius Vicinity Realignment	57	0.30	4	0.625	7	0	7	0
52	9.28	3	12	Passing lanes MP 32.00 to MP 33.83	52	0.39	6	0.5	15	0	10	14
53	9.26	3	101	Shore Road to Joslin Road	12	3.90	8	24	16	408	9	14
54	8.88	1	522	Snohomish Riv Br to SR 2 (Stage 3) - Widening	62	0.23	5	0.8	13.0	227	10	10
55	8.76	3	101	Carlsborg/Hooker Roads I/C	27	1.73	10	0.5	15	0	7	14
56	8.60	4	6	Rock Creek Bridge Replacement & Realignment	64	0.12	4	2.35	23	0	7	0
57	8.48	3	101	SR 101/SR 107 I/C	58	0.27	7	0.5	14	0	8	9
58	8.27	1	96	Seattle Hill Rd to SR 9 - Widening & Realignment	61	0.25	6	4.0	11.5	1318	8	11
59	8.23	1	530	SR 5 to Old SR 99 Wye Connection - Widening	51	0.43	5	1.0	11.0	7	10	5
60	7.96	4	101	Smith Creek Road vicinity Climbing Lane	49	0.51	5	8.875	24	0	9	5
61	7.20	4	503	Lewisville Park vicinity Climbing Lanes	36	1.03	5	2	22	4	10	1
62	7.11	4	4	Svensons Curve Realignment	55	0.34	4	4.625	24	12	10	0
63	6.29	5	90	Hyak to Stampede Road I/C	44	0.76	7	30.25	13.5	10	9	4
64	5.74	4	97	Brooks Park to Summit Climbing Lane	48	0.52	8	0.5	8.5	3.5	9	0

Table N.2 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Rural Unconstrained List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
1	329.81	1	99	Vic. 60th Ave to SR 525 (Stage 2) - Widening	1	291.79	1	1.0	10.5	125	4	14
2	265.69	1	99	King/Snohomish CL to Vic. 60th Ave (Stage 1) - Widening	2	232.58	1	0.5	10.5	125	4	14
3	107.98	5	240	Edison Street I/C	3	86.32	1	0.5	12	6	4	14
4	83.50	3	161	SR 161 / SR 167 Eastbound Ramp	4	66.50	5	0.5	12	0	8	14
5	82.39	3	510	Martin Way to Pacific Avenue SE	5	63.83	5	0.5	4	35	3	14
6	64.98	3	16	Gig Harbor I/C	6	47.32	0	0.5	6	0	8	14
7	61.67	3	510	SR 5 to Martin Way	7	45.46	5	0.5	4	0	6	14
8	58.61	6	2	SR 2/SR 206/Market St. Intersection	8	43.40	3	0.5	2	10	8	8
9	53.15	1	99	35th Ave. W (Lake Rd.) to SR 525 - NB Right Turn Lane	9	39.56	7	0.5	0.5	3	10	14
10	45.20	4	501	Mill Plain Extension	10	30.55	4	0.5	1.5	50	6	11
11	40.43	3	305	SR 3 to Bond Road	11	25.86	3	4	15	1	7	14
12	38.77	3	16	SR 16, SR 5 to Wollochet TSM	13	23.59	3	0.5	5	0	6	14
13	37.42	3	161	204th St. E to 176 St E	12	24.06	3	0.5	8	35	9	11
14	33.42	1	99	Airport Rd: I/S HOV Priority	14	19.19	0	4.0	7.0	35	10	14
15	32.80	6	90	University Rd I/C	15	18.87	3	0.5	2	25	6	9
16	31.18	3	101	Mottman Road I/C	18	15.53	1	0.5	6	0	5	14
17	30.29	3	161	36th to Jovita	16	18.36	6	0.5	13	40	9	14
18	28.85	3	410	Linden Drive I/C	19	15.20	2	0.5	21	3	8	14
19	28.69	6	90	Pines Rd I/C Modification	17	15.66	2	0.5	2	0	9	8
20	28.66	3	510	SR 5 O-xing	20	14.67	3	0.5	4	0	6	11
21	26.87	5	224	SR 240 Interchange	23	11.90	4	0.5	1	1	3	14
22	26.32	3	410	214th Avenue E to 234th	21	13.30	0	0.5	13	60	10	11
23	25.94	1	527	SR 522/Main St Intersection Improvements	22	12.99	2	0.5	10.0	10	9	11
24	24.57	3	3	SR 3/SR 303 I/C (Waaga Way)	25	11.23	1	0.5	12	0	10	14

Table N.3
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/o order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	I/U 0.06 1
25	22.63	1	522	Lake City Way Multi-Modal Project - SR 5 to SR 405 - HOV Priority	24	11.53	7	0.5	15.0	100	5	9
26	22.50	6	2	North Spokane/Division St. -Stage 2	29	8.43	4	0.5	2	35	4	14
27	22.30	1	5	Northbound Downtown Rechannelization	26	11.13	7	0.5	0.0	0	8	9
28	20.51	1	527	164th St SE to 132nd St SE - Widening	30	7.99	3	1.0	17.0	125	5	11
29	20.34	5	82	I-82 / Yakima Ave.	37	5.21	0	2	6	3	5	14
30	19.76	1	9	SR 522 to Clearview (Stage 2): 228th to SR 524/212th-Widening	32	7.70	2	2.0	11.5	10	10	11
31	19.04	5	240	Stevens Drive to SR 182	40	4.58	3	0.5	0	0	4	14
32	18.93	1	5	Boeing Access Rd I/C - Flyover Structure	38	5.19	1	0.5	6.0	0	8	14
33	18.65	1	900	Duvall Ave SE to SR 90 (Stage 1): Tibbets Creek to SR 90 - Widening	27	9.34	5	40.0	27.0	200	6	11
34	18.51	1	161	Jovita Blvd to SR 18 (Stage 2): Milton Way to S 360th/Milton Rd S-Widening	31	7.94	5	8.0	17.0	100	8	11
35	18.36	1	542	Orleans to Britton (Stage 1): Orleans St to Hannegan Rd - Widening	36	5.47	1	2.0	9.5	35	8	11
36	18.11	1	524	24th to SR 527 - Widening	28	8.72	5	10.0	22.0	200	9	11
37	18.01	1	5	196th St SW (SR 524) I/C Modifications	46	3.24	4	0.5	3.5	15	1	14
38	17.78	3	161	234th to 204th	33	7.19	6	0.5	14	25	9	11
39	17.14	6	90	Sprague Ave. to Argonne Rd. -Stage 2 (Broadway Ave to Argonne Rd)	39	4.96	3	0.5	7	50	9	14
40	17.07	3	410	234th to Hinkleman Ext. Road	35	5.95	3	2	13	60	10	11
41	16.83	6	90	Sprague Ave. to Argonne Rd. -Stage 1 (I/C)	41	4.58	3	0.5	7	35	9	14
42	16.56	1	5	SR 526 to Marysville - HOV Lanes	56	2.72	4	0.5	1.0	3	4	14
43	16.47	1	522	SR 9 to Paradise Lk Rd (Stage 1) - New I/C & Widening	34	6.31	6	2.0	8.0	25	10	10

Table N.3 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
44	16.46	6	2	North Spokane/Division St. -Stage 3	47	3.18	4	0.5	2	35	5	14
45	16.15	1	9	SR 522 to Clearview (Stage 1B): SR 522 to 228th-Widening	42	4.26	2	0.5	11.0	3	10	11
46	16.09	4	5	Burnt Bridge through 78th Street	44	3.55	4	0.5	14	40	6	14
47	15.99	4	5	Salmon Creek to SR 205	62	2.37	4	0.5	16	10	3	14
48	15.77	1	20	Avon Ave to SR 9 - Channelization & Access Control	59	2.54	2	2.0	5.0	60	6	13
49	15.35	5	240	SR 182 to Columbia Center I/C	55	2.73	4	10	15.5	15	5	14
50	15.19	3	20	Port Townsend Vicinity Truck Climbing Lane	45	3.53	5	0.5	11	0	7	11
51	15.18	5	24	SR 82 to Keys Road, MP 0.0-0.98	58	2.63	4	0.5	14.5	6	5	11
52	15.10	5	395	Lewis / Sylvester Street I/C	93	0.31	1	0.5	4	0	4	14
53	15.01	1	5	Marysville P&R Lot	73	1.62	3	1.0	10.0	0	4	11
54	14.83	4	205	18th Street Interchange	70	1.98	4	0.5	2.5	30	6	14
55	14.72	3	105	Southbound Truck Climbing Lane	51	2.89	4	0.5	10	0	9	14
56	14.58	1	525	SR 99 to SR 526 - Widening & HOV Lanes	43	3.62	1	4.0	17.0	150	10	11
57	14.46	3	304	Bremerton Ferry Terminal to Vic Gorst	65	2.19	5	0.5	19	30	5	14
58	14.42	1	520	NE 40th St I/C & C-D Lanes	90	0.48	0	0.5	0.0	1	8	14
59	14.26	3	20	Port Townsend TWLT Lane	53	2.78	4	0.5	1	0	9	10
60	14.04	1	527	132nd St SE to 112th St SE - Widening	60	2.53	3	2.0	11.5	125	7	11
61	13.94	1	5	NE 175th St to NE 205th St - Auxiliary Lane	49	3.01	7	0.5	10.0	3	8	14
62	13.90	3	105	Northbound Truck Climbing Lane	69	2.13	4	0.5	10	0	9	14
63	13.86	3	410	Hinkleman Ext. Road to Park Avenue	57	2.63	3	1	13	60	9	11
64	13.79	3	510	Bingo Hall Vicinity, TWLT Lane	64	2.23	5	0.5	4	0	9	14
65	13.59	1	9	SR 522 to Clearview (Stage 3): SR 524/212th to 176th-Widening	66	2.17	2	0.5	12.5	40	10	11

Table N.3 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
66	13.42	2	17	Pioneer Way to Stratford Road	85	0.70	2	2	24	20	6	13
67	13.25	2	2	Easy Street	91	0.38	4	0.5	1	0	4	9
68	13.23	5	2/82	Selah Connection	80	1.02	4	2	12.5	15	5	10
69	13.16	1	20	SPUR, Commercial Ave./ 12th to San Juan / Victoria Ferry Terminal - Widening	94	0.29	2	0.5	2.5	0	8	13
70	13.13	3	3	Gorst RR Bridge to SR 304	72	1.74	5	2	29	100	5	14
71	13.12	3	3	SR 3/SR 305 Interchange - Stage 2	100	0.21	0	0.5	6	0	9	11
72	13.10	1	5	41st Street SE to SR 2 - Northbound Auxilary Lane	82	0.79	4	0.5	0.5	1	8	14
73	13.08	6	290	Mission Ave. to Argonne Rd.	78	1.18	4	0.5	8	30	8	14
74	13.07	4	500	Ward Road to NE 162nd Avenue	76	1.38	6	0.5	2.5	1	6	11
75	13.05	1	9	Lake Stevens Park & Ride Lot	84	0.73	2	10.0	5.5	30	7	11
76	12.95	4	205	4th Plain Road Southbound on-ramp	75	1.41	2	0.5	1	3	9	6
77	12.90	3	510	93rd to SR 507, TWLT Lane	52	2.87	8	0.5	4	0	10	14
78	12.88	5	395	Hillsboro Street I/C	89	0.57	4	0.5	0	0	8	14
79	12.88	1	522	Paradise Lk Rd to Snohomish River (Stage 2) - New I/C & Widening	50	3.01	5	15.0	7.5	25	10	10
80	12.78	1	18	Weyerhouser Wy to SR 167 Truck Climbing Shld Lane	63	2.31	6	4.0	5.0	3	10	13
81	12.75	1	202	E Lk Sammamish Pkwy to Sahalee Wy (Stage 1 & 2) - Additional Lanes	48	3.14	6	4.0	21.0	175	7	11
82	12.75	1	90	Sunset I/C Modifications	54	2.75	5	20.0	21.0	6	10	14
83	12.75	3	101	Cloquallam Rd. Undercrossing I/C	99	0.22	3	0.5	11	0	7	13
84	12.74	1	5	172nd St I/C Modifications	68	2.14	7	0.5	0.0	20	8	11
85	12.49	4	5	Rush Road vicinity to Thurston County Line	61	2.52	4	40	29	10	8	13
86	12.45	2	20	MP 277.61 to Bigham Flats	95	0.27	3	0.5	11	0	8	13

Table N.3 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
87	12.44	1	509	South Access Rd Extension	67	2.16	8	8.0	21.0	200	3	14
88	12.42	1	509	SR 518 I/C Modification	74	1.44	5	0.5	5.0	1	9	11
89	12.28	1	542	Orleans to Britton (Stage 2): Hannegan Rd to Britton Rd	88	0.63	1	4.0	9.5	150	8	11
90	12.04	6	395	Hastings Road to MP 172, -Stage 2	81	0.82	5	0.5	15.5	6	8	13
91	11.97	3	101	Aberdeen/Hoquiam Stage 1	98	0.22	5	0.5	25	1	6	14
92	11.62	1	20	Goldie Rd to Ault Field Rd - TWLT Lane & Access Control	101	0.16	3	0.5	2.0	3	9	9
93	11.39	4	14	Brady Road Interchange (SE 192nd)	79	1.07	3	10	30	1	9	9
94	11.12	4	14	SR 14/SR 500 Interchange	83	0.74	4	4	17	1	8	6
95	10.90	1	99	Aurora Br (Geo.Wash Mem Br 99/560) Widening	103	0.01	7	0.5	15.0	0	7	14
96	10.79	1	5	SR 161 to SR 18 Interchange Modification	92	0.36	5	0.5	23.0	1	10	14
97	10.78	4	502	Dollars Corner to Battle Ground	86	0.70	5	4	21	30	9	11
98	10.68	1	169	SR 516 to 196th Ave (Stage 1): 225th SE vic to 220th Pl/Witte Rd - Widening	71	1.95	8	4.0	25.0	150	7	11
99	10.11	3	16	Tacoma Narrows Bridge	97	0.24	8	0.5	26	40	7	14
100	9.68	5	397	Finley Road to East 10th Avenue	87	0.69	7	0.5	0	1	9	3
101	9.26	3	167	SR 5 to SR 161 (Stage 2 construction of new SR 161 alnmt.)	96	0.24	8	10	23	30	9	14
102	8.49	1	516	Wax Rd to SR 169 (Stages 1 & 2) - Widening	77	1.19	8	10.0	18.0	200	10	11
103	8.27	3	167	SR 509 to SR 5 - Stage 1	102	0.03	8	10	27	125	9	14

Table N.3 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Urban List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
1	70.77	3	101	Chicken Coop Road EB Passing / Truck Climbing Lane	1	55.54	4	0.5	15	0	10	11
2	48.57	3	101	Dawley Rd. to Blyn Hwy., Truck Climbing Lane	2	34.96	4	2	21	1	9	11
3	43.82	3	101	Gardiner Cemetery Road to MP 277.6	3	30.36	4	1	10	1	9	10
4	39.13	5	90	Elk Heights Vic WBND TCL	4	25.23	4	2	2	0	9	14
5	35.08	5	970	Teanaway River to Virden	6	21.91	5	0.5	0	0	9	13
6	34.90	3	101	Blyn Eastbound Passing Lane	5	22.69	5	0.5	11	0	10	11
7	30.01	3	5	Maytown I/C to 93rd I/C	7	15.89	1	0.5	6	0	9	13
8	25.92	5	90	Highline Canal vicinity to Elk Heights I/C vic.	8	13.04	4	2	2	0	9	14
9	20.59	5	90	Rygrass Summit to Columbia River Bridges	9	8.77	4	0.5	1	0	9	9
10	19.31	1	20	Fredonia to SR 5 - Widening	10	6.87	2	0.5	9.0	15	9	11
11	17.33	6	90	Harvard Road I/C	14	3.72	2	0.5	4	1	7	14
12	17.33	5	12	Airport Rd Interchange Modification	20	3.05	1	0.5	1	3	5	11
13	16.17	5	90	Ryegrass Summit Vic EBND TCL	11	4.69	4	0.5	1	0	9	9
14	15.90	3	104	Kingston Traffic Circulation Imp.	18	3.19	4	0.5	26	3	5	14
15	15.47	1	539	Lynden Park & Ride Lot	47	0.55	0	0.5	1.5	6	5	14
16	15.44	5	24	Vernita Hill Vicinity	17	3.49	3	0.5	1	0	9	10
17	14.80	1	539	Horton Rd to Laurel Rd (Stage 1) - Widening	13	3.73	4	2.0	8.5	125	9	14
18	14.74	3	101	Mt. Walker N.B. Passing / Truck Climbing Ln	16	3.49	4	0.5	10	0	9	10
19	14.45	3	109	NB Truck Climbing Lane, MP 4.5	21	2.76	4	0.5	10	0	8	11
20	14.39	3	3	Belfair Vicinity	22	2.70	6	0.5	10	0	7	14
21	14.34	1	539	Laurel Rd to Tenmile Rd (Stage 2) - Widening	25	1.98	2	1.0	10.0	30	9	14

Table N.4
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Rural List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
22	14.22	3	101	Blyn Westbound Passing Lane	15	3.60	5	0.5	11	0	10	11
23	14.18	3	109	SB Truck Climbing Lane (EB), MP 4.5	23	2.54	4	0.5	11	0	8	11
24	13.95	3	104	SR 19 - West WB Passing/Truck Climbing Ln	19	3.08	4	1	14	0	10	11
25	13.66	5	12	SR 124 Interchange	63	0.21	4	10	8	0	3	14
26	13.51	5	12	SR 124 to Boise Cascade	50	0.49	4	20	9.5	10	3	14
27	13.13	2	215	Omak vicinity	56	0.33	4	0.5	1	0	6	13
28	12.88	3	101	Northbound Passing Lane	24	2.10	4	0.5	15	0	10	11
29	12.71	5	12	Waitsburg By-pass	32	1.20	3	10	24	1	8	13
30	12.67	1	2	SR 2 to SR 522 Monroe Bypass	34	1.11	4	2.0	12.0	35	7	11
31	12.48	3	101	Shore Road to Joslin Road	12	3.90	8	15	16	150	9	14
32	12.35	2	26	SR 243 I/C TO MP 5.5 VIC	29	1.35	3	0.5	14	0	10	10
33	12.35	3	101	Southbound Passing Lane	28	1.61	4	0.5	15	0	10	11
34	12.32	1	2	Sultan City Limits - TWLTL Lane	33	1.16	2	0.5	0.5	6	10	6
35	12.29	1	2	Index vicinity	42	0.83	3	2	27	1	9	14
36	12.23	5	12	Old Naches Road Interchange	38	0.94	4	2	5.5	0	9	11
37	12.22	6	904	Cheney to SR 90	30	1.27	3	8	19	25	8	9
38	12.11	3	109	SB Passing Lane, MP 14.5 to 15.0	40	0.89	4	0.5	9	0	9	11
39	12.09	3	109	NB Passing Lane, MP 14.5 to 15.0	41	0.87	4	0.5	9	0	9	11
40	12.06	6	195	Plaza to Spangle	54	0.36	3	2	0	1	8	8
41	11.94	3	109	SB Passing Lane, MP 14.0 to 15.0	39	0.90	4	1	14	0	9	11
42	11.91	1	539	Tenmile Rd to Int'l Boundary: Fishtrap Creek to W Main St (Stage 1) - Widening	26	1.87	5	2.0	12.5	175	9	14
43	11.74	3	109	NB Passing Lane, MP14.0 to 15.0	45	0.71	4	1	14	0	9	11
44	11.53	3	101	Carlsborg/Hooker Roads I/C	27	1.73	10	0.5	15	0	7	14
45	11.48	6	395	Hamilton Road to Montgomery Road	35	1.10	4	2	25	25	8	8
46	11.36	1	5	SR 5, 9, 539 and 543 SC&DI	31	1.25	6	0.5	0.5	0	8	5

Table N.4 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Rural List

Additive Model Ranking	Priority Index	REG	SR	Project Description	b/c order	B/C 0.65 1	Comm Suppt 0.14 0	Wetlands 0.0267 0	Water Qual 0.0267 0	Noise 0.0266 0	Mode Int. 0.07 0	L/U 0.06 1
47	11.34	1	5	Blaine - NB Pace Lane Extension	43	0.78	3	0.5	0.5	6	10	5
48	11.16	5	12	SR 410 to Naches	53	0.38	4	25	15.5	3	8	13
49	11.07	6	270	Johnson Rd. to Idaho State Line	46	0.71	5	10	24	1	7	9
50	11.07	6	395	MP 172 to Hamilton Road	37	0.98	5	2	24	10	8	8
51	10.95	6	195	Rosalia to Plaza	59	0.27	3	8	25	1	8	8
52	10.70	5	22	I-82 to SR 97	60	0.26	5	8	30	30	8	14
53	10.67	3	12	Passing lanes MP 32.00 to MP 33.83	52	0.39	6	0.5	15	0	10	14
54	10.48	4	6	Pluvius Vicinity Realignment	57	0.30	4	1	7	0	7	0
55	10.08	3	101	SR 101/SR 107 I/C	58	0.27	7	0.5	14	0	8	9
56	9.81	1	530	SR 5 to Old SR 99 Wye Connection - Widening	51	0.43	5	1.0	11.0	1	10	5
57	9.80	1	522	Snohomish Riv Br to SR 2 (Stage 3) - Widening	62	0.23	5	1.0	13.0	80	10	10
58	9.73	4	6	Rock Creek Bridge Replacement & Realignment	64	0.12	4	2	23	0	7	0
59	9.60	4	101	Smith Creek Road vicinity Climbing Lane	49	0.51	5	8	24	0	9	5
60	9.44	4	503	Lewisville Park vicinity Climbing Lanes	36	1.03	5	2	22	1	10	1
61	9.41	1	96	Seattle Hill Rd to SR 9 - Widening & Realignment	61	0.25	6	4.0	11.5	200	8	11
62	8.82	5	90	Hyak to Stampede Road I/C	44	0.76	7	20	13.5	1	9	4
63	8.80	4	4	Svensons Curve Realignment	55	0.34	4	4	24	3	10	0
64	8.34	4	97	Brooks Park to Summit Climbing Lane	48	0.52	8	0.5	8.5	1	9	0

Table N.4 (continued)
Simple Additive Weighted (SAW) Model Results
1995-1997 Constrained Rural List