

## CVISN Guide to Program and Project Planning

### Table of Contents

1.	Introduction .....	1–1
1.1	“Program” versus “Project”.....	1–1
1.2	Purpose of the Guide.....	1–3
1.3	What is a Program Plan?.....	1–4
1.4	What is a Project Plan? .....	1–4
1.5	How are the Program Plan and Project Plans Related? .....	1–4
1.6	Planning Prerequisites .....	1–5
2.	CVISN Project Context and Organizational Environment .....	2–1
2.1	CVISN Project Management Processes.....	2–1
2.2	CVISN May Introduce Matrix Management for the First Time.....	2–2
2.2.1	“Functional” or “Line” Organizational Structure.....	2–3
2.2.2	“Projectized” or Product-Specific Organizational Structure.....	2–4
2.2.3	“Matrixed” Organizational Structure .....	2–5
3.	CVISN System Development Overview.....	3–1
3.1	Top-Level Design Leads Into Program Plan .....	3–1
3.2	Take a Flexible Risk-Reducing Phased Approach .....	3–2
3.3	The Program Planning Phase .....	3–3
3.3.1	Factors to be Considered in the Program Planning Phase.....	3–4
3.3.2	Key Decisions.....	3–4
3.4	The Funding and Contracts Phase .....	3–5
3.4.1	Factors to be Considered in the Funding and Contracts Phase .....	3–5
3.4.2	Key Decisions.....	3–6
3.5	Development Phase “n” .....	3–6
3.5.1	Outcomes from Each Development Phase “n” .....	3–7
3.5.2	Factors to be Considered in Development Phase “n” .....	3–7
4.	CVISN Planning Principles & Concepts.....	4–1
4.1	Planning Principles .....	4–1
4.1.1	<u>Program</u> Planning Guiding Principles.....	4–2
4.1.2	<u>Project</u> Planning Guiding Principles .....	4–3
4.2	Planning Operational Concepts .....	4–4
4.2.1	<u>Program</u> Planning Operational Concepts .....	4–5
4.2.2	<u>Project</u> Planning Operational Concepts.....	4–9

5.	CVISN State Program and Project Planning Process Steps.....	5-1
5.1	Why Do We Need a Planning Process? .....	5-1
5.2	Define the Objectives (Step 1).....	5-3
5.3	Create the Work Breakdown Structure (Step 2) .....	5-4
5.3.1	Product-Oriented Hierarchical Decomposition .....	5-4
5.3.2	Indented List Adds Detail.....	5-6
5.3.3	How Do You Know if You Have a “Good” WBS? .....	5-9
5.4	Define the Program and Project Organization (Step 3).....	5-10
5.4.1	Developing Organization Charts .....	5-10
5.4.2	Name Lead Individuals Whenever Possible.....	5-12
5.4.3	When Lead Individuals Cannot Be Named Yet .....	5-13
5.4.4	Harness Team Power.....	5-13
5.4.5	Provide Staff Training .....	5-14
5.5	Define the Processes (Step 4) .....	5-14
5.6	Assign the Work to Organizations (Entities) and People (Step 5) .....	5-15
5.6.1	Assign Responsibility to Entities and Execution to Individuals .....	5-15
5.6.2	Build or Buy? .....	5-17
5.6.3	Procurement Strategy .....	5-18
5.7	Define Milestones and Schedules (Step 6) .....	5-21
5.7.1	Begin with High-Level Objectives.....	5-21
5.7.2	Bottom-Up Sanity Check .....	5-23
5.7.3	Establish Milestones.....	5-23
5.8	Estimate Costs and Resources (Step 7).....	5-24
5.8.1	Top-Down Cost Estimates.....	5-24
5.8.2	Bottom-Up Cost Estimates .....	5-25
5.8.3	Funding Allocation.....	5-26
5.9	Maintaining the Plans .....	5-27
5.9.1	Iteration All Over Again.....	5-27
5.9.2	Publicizing Plans .....	5-27
6	CVISN Funding & Contracting Process .....	6-1
6.1	Look for Opportunities to be Flexible and Innovative .....	6-1
6.2	Determine Potential Funding Sources (Step 1) .....	6-2
6.3	Prepare Funding Request Documents (Step 2) .....	6-2
6.4	Obtain Funding Commitments (Step 3).....	6-3
6.5	Prepare Technical Specifications (Step 4) .....	6-4
6.6	Issue the RFP (Step 5) .....	6-5
6.7	Evaluate the Proposals (Step 6) .....	6-5
6.8	Award Contracts (Step 7) .....	6-6
6.9	Take Advantage of Lessons Learned.....	6-6

7.	Published State Lessons Learned, Tips, and Pitfalls .....	7-1
7.1	Address High-Level Policy, Organizational Structure, Laws and Regulations.....	7-1
7.2	Cooperate To Take Advantage of Relative Strengths of All Partners and Interested Parties.....	7-2
7.3	Recognize The Need For Proper Communications .....	7-3
7.4	Plan Training For Both State CVO Staff And Motor Carrier Employees.....	7-4
7.5	Manage the Expectations of All Partners .....	7-4
7.6	Lessons Learned from Lessons Learned – Nine Successful Approaches to Deploying a Metropolitan Intelligent Transportation System .....	7-5
APPENDIX A. References .....		A-1
APPENDIX B. Sample CVISN State <u>Program</u> Plan Outline .....		B-1
APPENDIX C. Sample CVISN State <u>Project</u> Plan Outline .....		C-1
APPENDIX D. Sample Job Descriptions .....		D-1
D.1	State CVISN Program Manager .....	D-1
D.2	State CVISN System Architect.....	D-4
D.3	State CVISN Program Facilitator/Administrator.....	D-7
APPENDIX E. Procurement Principles & Strategy .....		E-1
E.1	Three Excellent References .....	E-1
E.2	“Software is Different” .....	E-1
E.3	Why do Software Acquisitions So Often Fail?.....	E-2
E.4	CVISN Development Contracts Need Flexibility .....	E-2
E.5	Utilize Existing Commercial Software .....	E-3
E.6	Software Acquisition Process .....	E-3
E.6.1	Acquisition Team .....	E-4
E.6.2	Requirements Management.....	E-4
E.6.3	Intellectual Property Rights.....	E-4
E.6.4	Software Scheduling.....	E-5
E.6.5	The After-Thought of Acceptance Testing .....	E-5
E.6.6	On-Going Management Activities .....	E-5
E.6.7	Risk Management.....	E-5
E.6.8	Keeping the Customer-Contractor Relationship Win-Win .....	E-6
E.7	Software Acquisition Best Practices.....	E-6
E.8	Utilize Indefinite Delivery / Indefinite Quantity (ID/IQ) Task Order Contract Vehicles for Information Systems .....	E-7
E.9	Omnibus Contracting Vehicles .....	E-7
E.10	Innovative Contracting Practices – Major Findings .....	E-8
E.10.1	“How a Procurement is Characterized is Critical.” .....	E-8
E.10.2	“Flexible Procurement Practices Work Best if Initiated Early.” .....	E-8

E.10.3 “ITS Solutions Can Be Implemented at Various Institutional Levels and Project Phases.”.....	E-8
E.10.4 “ITS Procurements Present Opportunities for Experienced Procurement Professionals to Innovate Within Existing Legal Framework.” .....	E-9
APPENDIX F. Process Maturity.....	F-1
F.1 What is a Process? .....	F-1
F.2 What is Process Maturity? .....	F-1
F.3 Process Maturity Framework.....	F-2
APPENDIX G. CVISN Survey Lessons Learned.....	G-1
G.1 Lessons Learned – California .....	G-1
G.2 Lessons Learned – Colorado.....	G-2
G.3 Lessons Learned – Kentucky.....	G-3
G.4 Lessons Learned – Maryland.....	G-3
G.5 Lessons Learned – Michigan.....	G-3
G.6 Lessons Learned – Virginia.....	G-4
G.7 Lessons Learned – Washington .....	G-5
G.8 Lessons Learned – Miscellaneous Sources.....	G-6