

Development of a Regional Intelligent Transportation System Architecture

Stakeholder Meeting #2A

In cooperation with:

Wichita-Sedgwick County Metropolitan Area Planning Department

City of Wichita

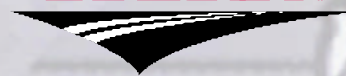
Sedgwick County

Kansas Department of Transportation

Federal Highway Administration

Presented by:

ITERISTM



In association with

RCC Consultants

April 26, 2005

Wichita-Sedgwick County Regional ITS Architecture Workshop

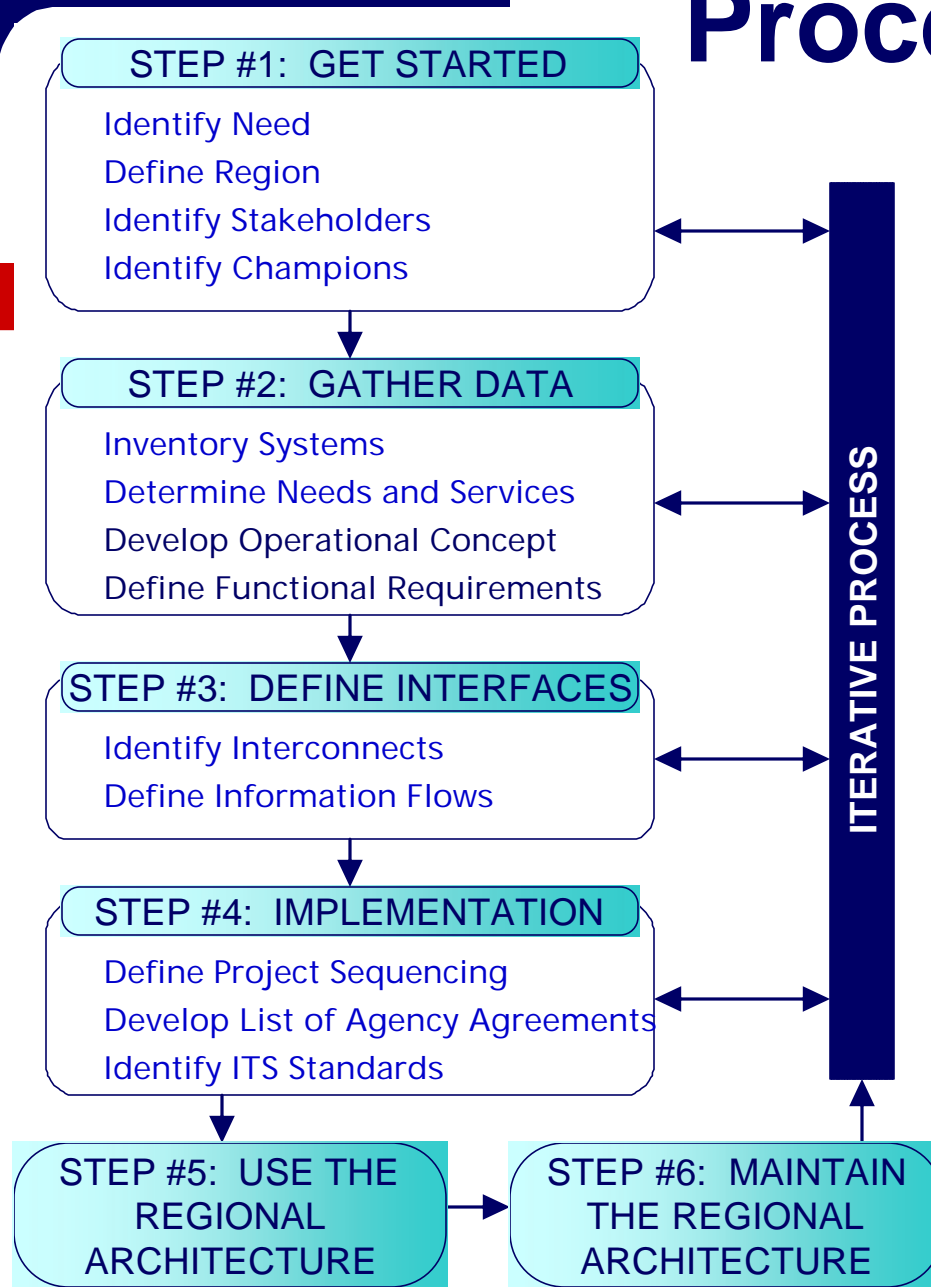
Introduction

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Agenda

- **Introduction**
- Implementation Plan – Projects Review
- Implementation Plan – Project Sequencing
- Implementation Plan – Other Stuff
- Lunch
- Communications Plan – Existing and Planned
- Communications Plan – Communications Needs
- Communications Plan – Network Architecture Options

Remember the Process



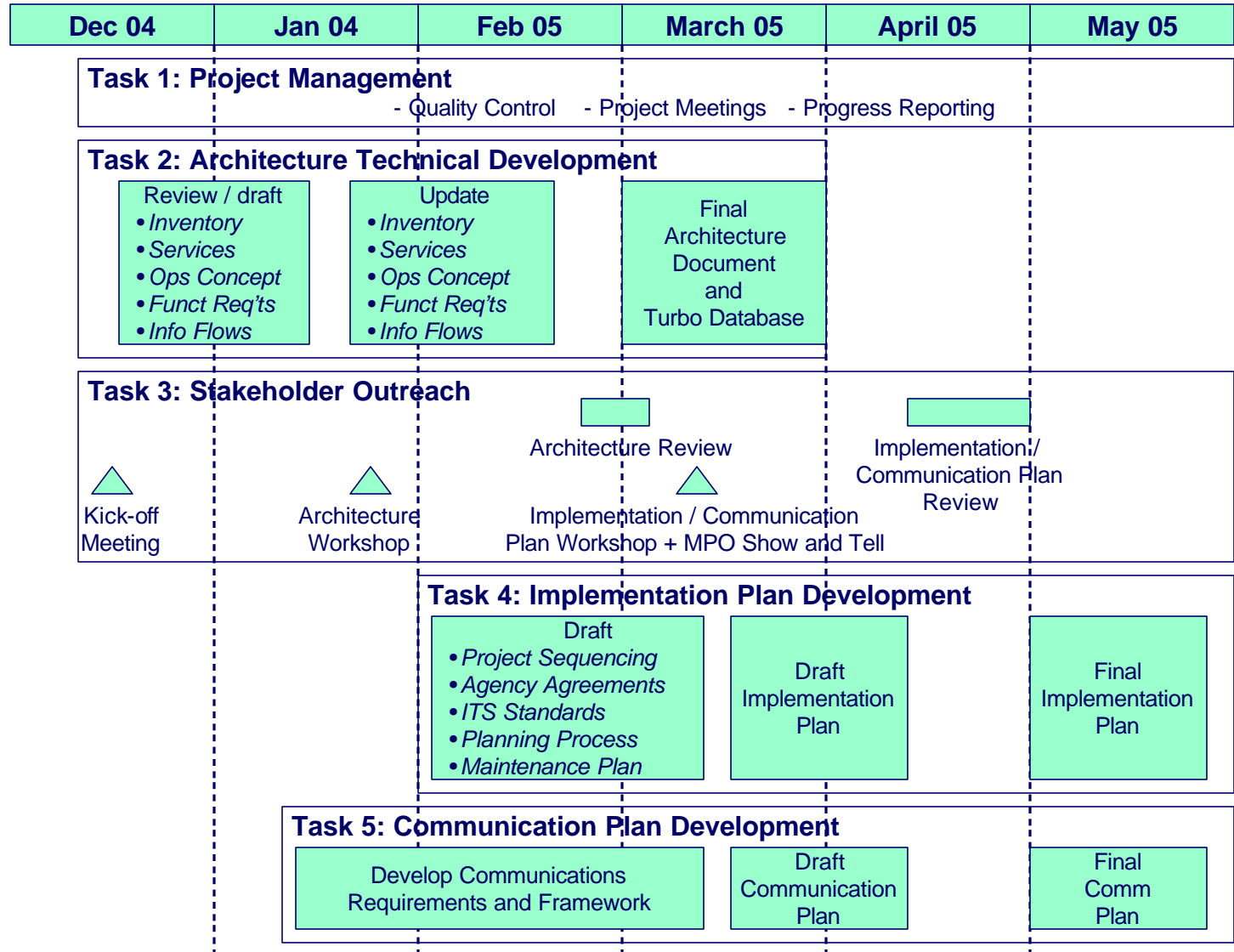
Architecture Development

- January 18th–20th – Review and Feedback
 - Stakeholders
 - Inventory and
 - Services
- February 1st – Finish KDOT MCO and EM Services
- February 15th - Updated Architecture including Operational Concepts and High-Level Requirements
- February 15th to 28th - Stakeholder Review
- March 10th – MPO-sponsored Public Forum
- March 10th – 23rd – Public Comment Review Period
- March 24th – MPO Calendar Item
- April 4th – Baseline Version 1.0
- April 14th – MPO Adopted Architecture

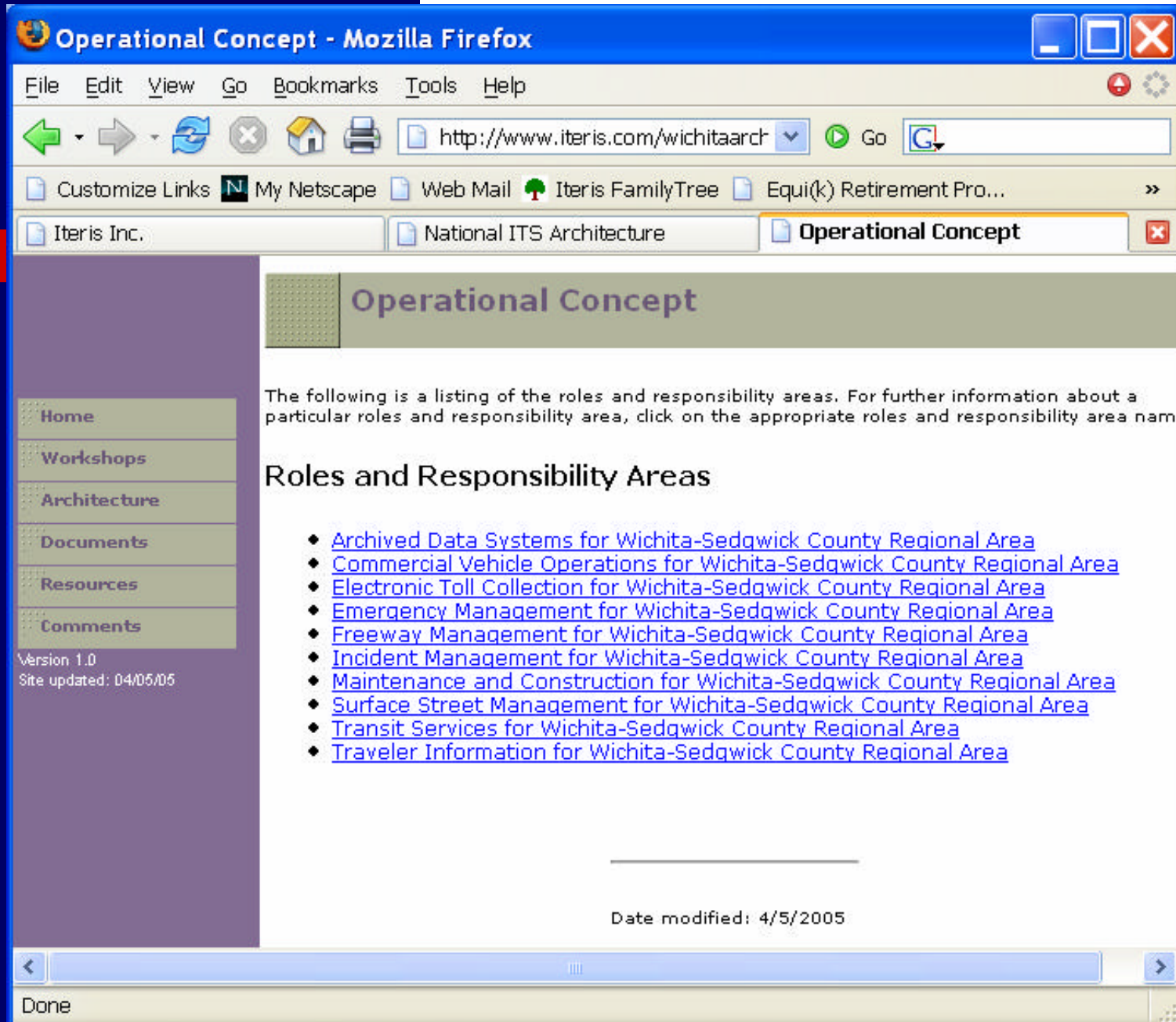
Development of Implementation and Communications Plans

- March 8th -10th – Second Stakeholder Meeting to Review Preliminary Implementation Plan and Communications Plan fact-finding
- March 11th – April 20th – Develop Final Draft Plans
- April 20th – May 4th – Stakeholder Review
- May 5th – May 19th – Public Comment Review Period
- May 12th – MPO Presentation/Public Forum
- May 20th – Final Implementation and Communications Plans
- May 26th – MPO Adopts Plans

Schedule



Operational Concepts



Roles and Responsibility Areas

Roles and Responsibility Area - Mozilla Firefox

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Iteris Inc. National ITS Architecture **Roles and Responsibility Area**

Home
Workshops
Architecture
Documents
Resources
Comments

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Maintenance and Construction for Wichita-Sedgwick County Regional Area

The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Wichita-Sedgwick County Regional area.

[Kansas Turnpike Authority \(KTA\)](#)

- ♦ Kansas Turnpike Authority (KTA) is responsible for using the environmental sensors to access roadway conditions and make determinations as to what corrective actions are warranted.

[KDOT](#)

- ♦ KDOT is responsible to posting work zone information on portable DMS and HAR to information motorist of work zone activity. These posting will allow motorist to drive with caution as they travel through work zones in the Wichita-Sedgwick county regional areas.
- ♦ KDOT is responsible for managing the routine maintenance activities (e.g., grass cutting, debris removing, field asset repairs) in the Wichita-Sedgwick county regional area.
- ♦ KDOT is responsible for coordinating work zone projects with adjacent jurisdictions. This coordination will help to ensure that motorist are not

Done

Functional Areas

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Iteris Inc. National ITS Architecture Functional Areas

Functional Areas

The following is a listing of the functional areas. For further information about a particular functional area, click on the appropriate functional area name.

Functional Areas

- [Basic Information Broadcast](#)
- [Citation and Accident Electronic Recording](#)
- [Collect Traffic Surveillance](#)
- [CV Information Exchange](#)
- [CV Safety Administration](#)
- [Emergency Call-Taking](#)
- [Emergency Dispatch](#)
- [Emergency Early Warning System](#)
- [Emergency Evacuation Support](#)
- [Emergency Response Management](#)
- [Emergency Routing](#)
- [Emissions Data Collection](#)
- [Emissions Data Management](#)
- [Fleet Administration](#)
- [Fleet HAZMAT Management](#)
- [Fleet Maintenance Management](#)

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Requirements

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Iteris Inc. National ITS Architecture **Functional Area**

Functional Area

Traffic Maintenance

Monitoring and remote diagnostics of field equipment - detect failures, issue problem reports, and track the repair or replacement of the failed equipment.

1. The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) operational status.
2. The center shall collect and store CCTV surveillance system (traffic, pedestrian) operational status.
3. The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.
4. The center shall collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.
5. The center shall collect environmental sensor operational status.
6. The center shall collect environmental sensor equipment fault data and send to the maintenance center for repair.
7. The center shall exchange data with maintenance centers concerning the reporting of faulty equipment and the schedule/status of their repair. Information exchanged includes details of new equipment faults, and clearances when the faults are cleared.

Home Workshops Architecture Documents Resources Comments

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Documents

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Iteris Inc. National ITS Architecture Documents

Documents

Date	Document
April 4, 2005	Turbo Architecture database (Turbo Architecture™ 3.0 software required)
April 4, 2005	Volume 1 Wichita Architecture
April 4, 2005	Volume 1 Wichita Architecture Executive Summary
April 20, 2005	Volume 2 Implementation Plan
April 20, 2005	Volume 3 Communications Plan

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http://www.iteris.com/wichitaarchitecture/assets/documents/Wichita_Arch_-_Volume_2_04-20-2005.pdf

Comments

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Iteris Inc. National ITS Architecture **Comments**

Comments

Name:

Email: Phone:

Organization: Architecture Version:

Comment:

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Done

What Changed between March meetings and April 4th?

- Town of Sedgwick → City of Sedgwick
- Removed references to “Wichita County”
- Added “(Wichita Metro) to KDOT TOC name
- Added Flood Monitoring System
- Added City of Andover 911 Call Dispatch and Roadside Equipment

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Review of Wichita – Sedgwick County Region's Projects

- Name
- Timeframe (Near-Term, Medium-Term, Long-Term, Not Planned)
- Duration
- Services
- Stakeholders
- Project Sequencing and/or Dependencies
- Agency Agreements
- Expected Benefits
- Market Packages to Consider

Six Categories of Projects

- Travel and Traffic Management
- Maintenance and Construction Management
- Public Transportation Management
- Commercial Vehicle Operations
- Emergency Management
- Information Management

Travel and Traffic Management

- City of Wichita Traffic Operations Center (N)
- City of Wichita ITS Signal System Upgrade Project Study (N)
- City of Wichita ITS Signal System Upgrade Project Design (N)
- City of Wichita ITS Signal System Upgrade Project Implementation (N-L)
- City of Wichita ITS Signal System Upgrade Project for Sedgwick County (M)
- Regional Traffic and Incident Management (N-M)

Travel and Traffic Management

- KDOT Ramp Metering Project (N)
- KDOT TOC (Wichita Metro) (N)
- KDOT TOC (Wichita Metro) (M)
- KDOT TOC (Wichita Metro) (L)
- Toll Collection System (M)
- Air Quality Alert System (L)
- Railroad Grade Crossing System (L)

Maintenance and Construction Management

- Sedgwick County Maintenance and Construction Vehicle and Equipment Tracking System (L)
- KDOT Maintenance and Construction Vehicle and Equipment Tracking System (M)
- City of Wichita Maintenance and Construction Vehicle and Equipment Tracking System (M)
- KDOT Winter Maintenance (M)
- Sedgwick County Winter Maintenance (M)
- City of Wichita Winter Maintenance (M)

Public Transportation Management

- Sedgwick County Department of Aging Transit Vehicle Tracking System (L)
- City of Wichita Transit Vehicle Tracking System (N)
- Sedgwick County Department of Aging Demand Response Transit System (M)
- City of Wichita Demand Response Transit System (N)
- City of Wichita Personalized Transit Services (N)
- Wichita Transit Passenger and Fare Management System (N)
- Wichita Transit Security System (N)
- Transit Traveler Information System (M)

Commercial Vehicle Operations

- No new projects identified

Emergency Management

- KTA AVL Project (M)
- KHP AVL Project (N)
- Public Safety AVL Project (N)
- Suburban Communities AVL Project (M)
- KHP Emergency Routing Project (M)
- Sedgwick County 911 Emergency Routing Project (N)
- Wichita Mid-Continent Airport Emergency Routing Project (M)
- Roadway Service Patrols AVL Project (N)

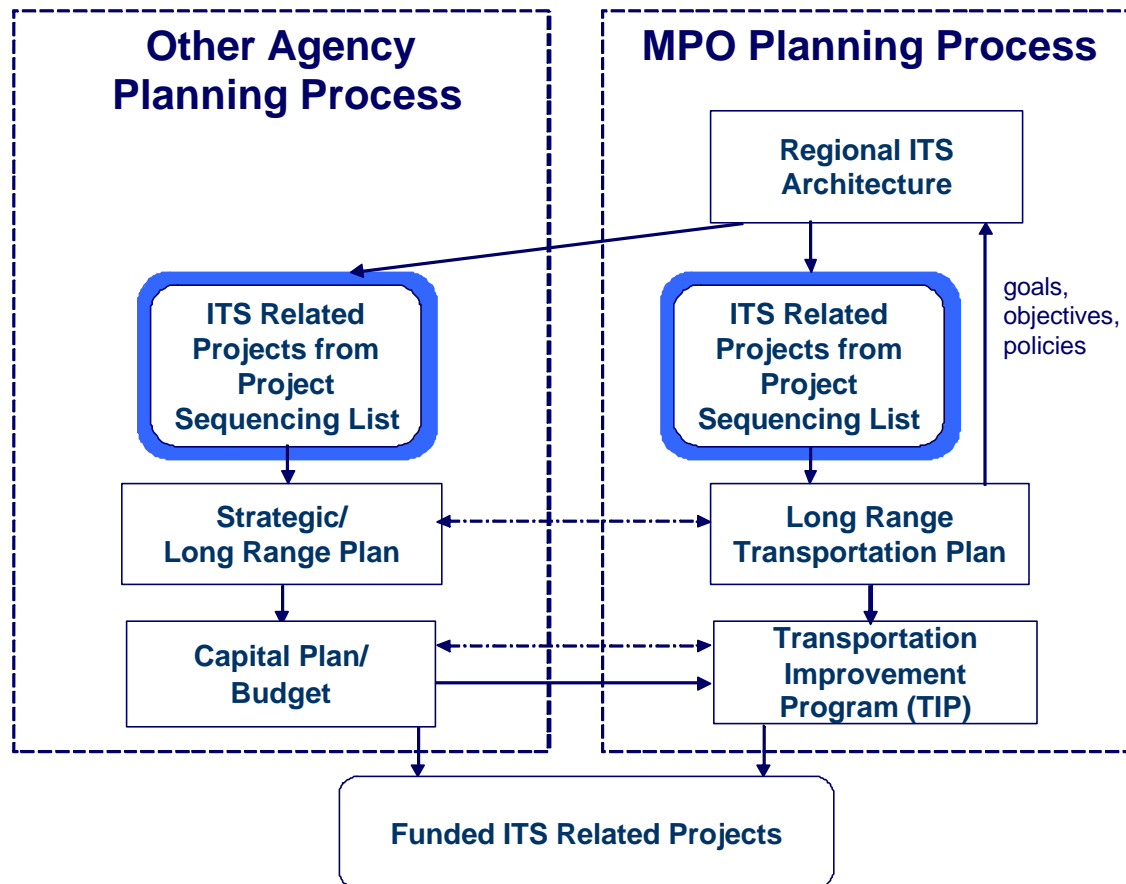
Information Management

- No new projects identified, archiving and general information management will be folded into other projects.

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Project Sequencing



Sequencing

Project Name		Year 1	Year 2	Year 3	Year 4	Year 5
NEAR-TERM PROJECTS(Projects developed in years 1 to 5)						
1	City of Wichita Traffic Operation Center					
2A	City of Wichita ITS Signal System Upgrade Study Project					
2B	City of Wichita ITS Signal System Upgrade project Design					
2C	City of Wichita ITS Signal System Upgrade Project Implementation					
4A	KDOT Ramp Metering Project					
4B	KDOT Traffic Operations Center (TOC) Wichita Metro – Near –Term					
15	City of Wichita Transit Vehicle Tracking System					
17	City of Wichita Transit Demand Response Transit System					
18	City of Wichita Personalized Transit Services					
19	Wichita Transit Passenger and Fare Management System					
20	Wichita Transit Security System					
23	KHP AVL Project					

Sequencing

Project Name		Year 1	Year 2	Year 3	Year 4	Year 5
NEAR-TERM PROJECTS(Projects developed in years 1 to 5)						
24	Public Safety AVL Project					
27	Sedgwick County 911 Emergency Routing Project					
29	Roadway Service Patrols AVL Project					

Sequencing

Project Name		Year 6	Year 7	Year 8	Year 9	Year 10
MEDIUM-TERM PROJECTS(Projects developed in years 6 to 10)						
2C	City of Wichita ITS Signal System Upgrade Project Implementation					
2D	City of Wichita ITS Signal System Project for Sedgwick County					
3	Regional Traffic and Incident Management					
4C	KDOT Traffic Operations Center (TOC) Wichita Metro – Medium – Term					
5	Toll Collection System					
8	Sedgwick County Maintenance and Construction Vehicle and Equipment Tracking System					
9	KDOT Maintenance and Construction Vehicle and Equipment Tracking System					
10	City Of Wichita Maintenance and Construction Vehicle and Equipment					
11	KDOT Winter Maintenance System					
12	Sedgwick County Winter Maintenance System					
13	City of Wichita Winter Maintenance System					

Sequencing

Project Name		Year 6	Year 7	Year 8	Year 9	Year 10
MEDIUM-TERM PROJECTS(Projects developed in years 6 to 10)						
14	Sedgwick County Department on Aging Transit Vehicle Tracking Sys tem					
21	Transit Traveler Information System					
22	KTA AVL Project					
25	Suburban Communities AVL Project					
26	KHP Emergency Routing Project					
27	Sedgwick County 911 Emergency Routing Project					
28	Wichita Mid-Continent Airport Emergency Routing Project					

Sequencing

Project Name		Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
LONG-TERM PROJECTS(Projects developed in years 11 to 20)											
2C	City of Wichita ITS Signal System Upgrade Project Implementation										
4D	KDOT Traffic Operations Center (TOC) Wichita Metro – Long – Term										
6	Air Quality Alert System										
7	Railroad Grade Crossing System										
16	Sedgwick County Department on Aging Demand Response Transit System										

Costs (Capital)

Timeframe	Capital Costs
Year 1	\$3,060,000
Year 2	\$3,773,333
Year 3	\$4,173,333
Year 4	\$4,943,333
Year 5	\$4,460,000
Year 6	\$3,445,000
Year 7	\$3,591,667
Year 8	\$3,561,667
Year 9	\$2,941,667
Year 10	\$2,625,000
Year 11	\$2,615,000
Year 12	\$1,340,000
Year 13	\$1,240,000
Year 14	\$1,240,000
Year 15	\$1,240,000

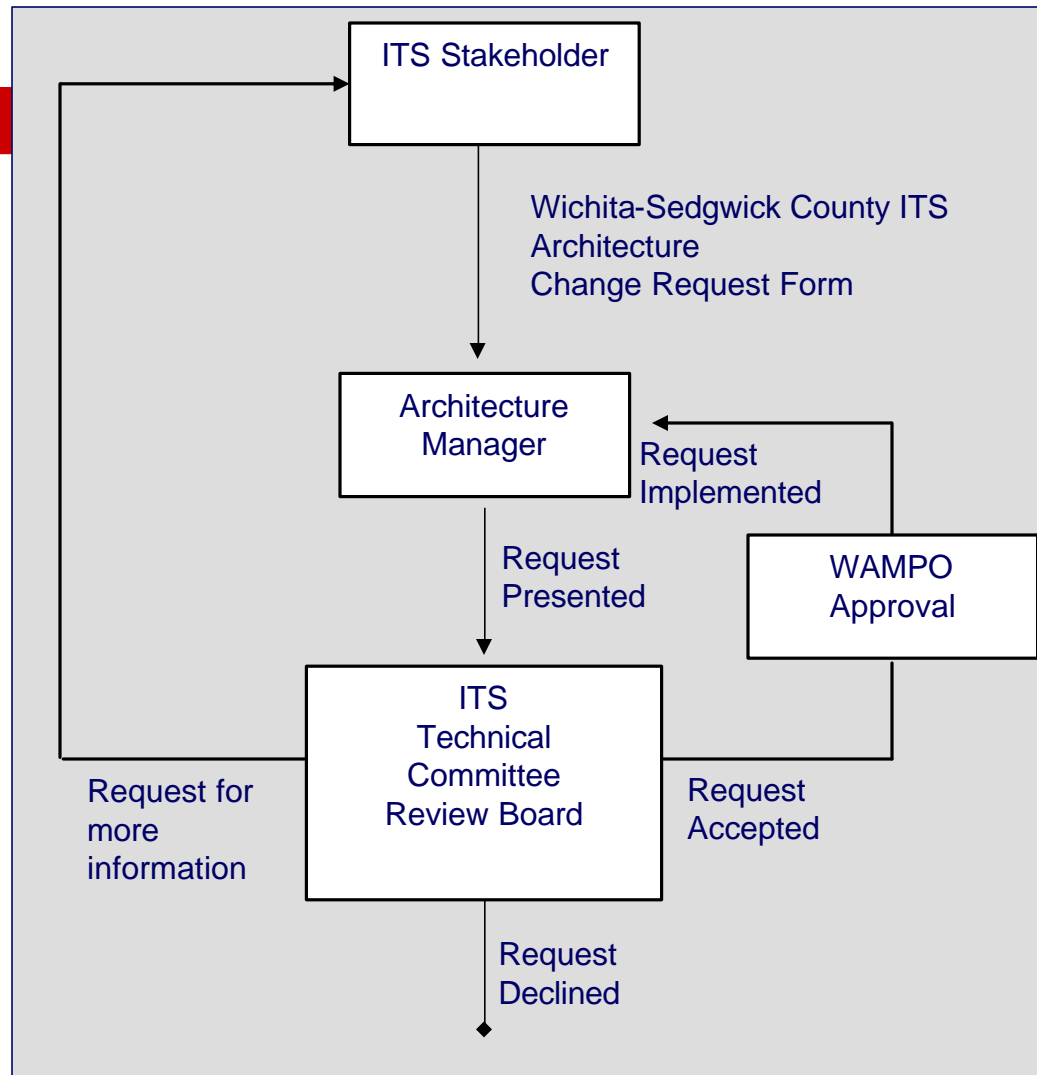
Costs (Capital plus O&M)

Timeframe	Capital Costs
Year 1	\$3,060,000
Year 2	\$4,029,333
Year 3	\$4,756,667
Year 4	\$5,827,333
Year 5	\$5,771,666
Year 6	\$5,324,000
Year 7	\$5,935,167
Year 8	\$6,264,333
Year 9	\$6,000,500
Year 10	\$5,978,000
Year 11	\$6,510,500
Year 12	\$5,621,000
Year 13	\$5,655,000
Year 14	\$5,779,000
Year 15	\$5,903,000
Year 16	\$5,243,000
Year 17	\$5,243,000
Year 18	\$5,243,000
Year 19	\$5,243,000
Year 20	\$5,243,000

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Architecture Change Process



Files to Configuration Control

Architecture Component	File
Wichita-Sedgwick County ITS Architecture Executive Summary	Wichita-Sedgwick County ITS Architecture Executive Summary
Wichita-Sedgwick County ITS Architecture Document	Wichita-Sedgwick County ITS Architecture Document (Volume 1)
Wichita-Sedgwick County ITS Architecture Implementation Plan	Wichita-Sedgwick County ITS Architecture Implementation (Volume 2)
Wichita-Sedgwick County ITS Architecture Maintenance Plan	Wichita-Sedgwick County ITS Architecture Maintenance Plan (Volume 2)
Wichita-Sedgwick County ITS Architecture Communications Plan	Wichita-Sedgwick County ITS Architecture Communications Plan (Volume 3)
Wichita-Sedgwick County ITS Architecture Database	Wichita-Sedgwick County ITS Architecture V1.0 (04-04-2005).tbo
Wichita-Sedgwick County Regional ITS Architecture Website	Wichita-Sedgwick County ITS Architecture V1.0 (04-21-2005) - Various

Standards

- Section 5

Agency Agreements

- Section 6

Next Steps

- Incorporate Changes
- Finalize Volume 2 by May 5th

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