



Utah Transit Authority

Plan for the Before and After Study

Weber County to Salt Lake Commuter Rail Line

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BEFORE AND AFTER STUDY PLAN

For the Utah Transit Authority's
Weber County to Salt Lake Commuter Rail Project

1. PROJECT DESCRIPTION

1.1 Project Purpose - Goals and Objectives

Beginning April 2001, sponsors seeking a Full Funding Grant Agreement (FFGA) are required to conduct a "Before and After Study" due to a provision in the Federal Transit Administration's (FTA) *Final Rule on Major Capital Investment Projects*. Concisely, a Before and After Study collects and compares data on physical scope, transit service levels, capital costs, operation and maintenance costs, ridership and fare revenues in each of the following phases of a project: planning and project development predictions, the condition immediately before project implementation, and the condition two years after the opening of revenue operation.

The Utah Transit Authority (UTA) is interested in the development of a Before and After Study that:

- Is cost-effective, accurate and meaningful to the goal of the FTA's mandate;
- Establishes a model product as this is a new regulation and will be referred to by other transit authorities; and
- Is straightforward in presentation and understandable to a wide audience, including technical, governmental, and general readers.

1.2 Background

The Weber County to Salt Lake Commuter Rail Project's study area is bounded by the Great Salt Lake to the west, the Wasatch Mountains to the east, 700 South in Salt Lake City to the south, and the Weber/Box Elder County line to the north. The project study area has been the subject of numerous studies and plans concerning the need for transportation improvements and expanded capacity. Five regional plans, three corridor plans, and fourteen local plans support transportation improvements and demonstrate the need to make transportation investments. Various local governments have developed comprehensive plans that assume continued growth and improved transportation facilities. Many of these studies and plans have included specific references to and recommendations for transportation system improvements. Several of the proposed improvements have already been completed or are currently being completed. Still other studies have been initiated in the project study area but have not yet produced any formal findings. An extensive body of information has been developed since the 1980s that has intensively considered the region's growth and the demand on existing and future transportation systems. The studies include the Inter-Regional Corridor Alternatives Analysis (IRCAA), Wasatch Front Regional Council's (WFRC) Wasatch Front Urban Area Long Range Transportation Plan [LRP]: 2002-2030, I-15 North Corridor EIS (downtown Salt Lake City to Kaysville), Legacy Parkway, and local plans. All of these plans recognize the importance of commuter rail as part of a "shared solution" for meeting regional transportation and land use goals and objectives in the project study area. The purpose of the proposed project is to accommodate a portion of existing and projected travel demand in the year 2030 along this south-north corridor. The need is to minimize overall travel congestion while efficiently balancing projected local and regional travel demands. The specific purposes of the

proposed commuter rail project are to:

- Facilitate the safe and efficient movement of people and goods within the project corridor present and through year 2030 conditions;
- Provide efficient, high-capacity transit service in the project corridor;
- Enhance economic potential in the corridor by improving access to existing and planned employment and activity centers and by creating Transit-Oriented Development (TOD) opportunities;
- Support regional plans and policies that call for the provision of a balanced transportation system; and
- Support regional air quality goals.

IRCAA (concluded in January 2002) developed a comprehensive plan for the best mix of transportation solutions to meet long-term inter-regional mobility needs. The statement of purpose and need for the transportation projects identified by the IRCAA included six key elements:

- Wasatch Front (the urban area on the west side of the Wasatch Mountains from Brigham City to Payson) is growing rapidly in population and employment;
- Population and employment development patterns are increasingly dispersed with a greater number of activity centers and employment areas;
- Regional growth and an increase in inter-regional travel are creating additional travel demand for both roadways and transit;
- Travel demand exceeds the capacity of existing transportation infrastructure:
 - North-south roadway network is heavily congested;
 - Demand for express transit service exceeds supply;
 - Inter-regional trips are forecast to increase;
- Physical constraints in the corridor limit opportunities for physical expansion of existing infrastructure; and
- There is a need for an integrated, multimodal approach to regional transportation improvements.

The above goals and transportation elements create a framework by which federal agencies, policy-makers, engineers and planners can effectively gauge the effect that UTA's Weber County to Salt Lake Commuter Rail Project has on Utah's Wasatch Front relative to the project's intent.

1.3 Project Management Responsibilities

The Before and After Study will involve the efforts of multiple organizations and agencies. UTA will organize and lead the team. Other entities will provide supportive information and personnel as requested and outlined below.

UTA will engage in the following management and production responsibilities required to perform this Before and After Study:

- Follow the established program organization;
- Refine the program work plan, schedule, and budget;
- Develop needed procedures, mechanisms and processes to appropriately manage the program and provide coordination and oversight to the activities;
- Develop and implement the program to thoughtfully involve UTA internal staff and any other agencies as required to obtain source information and documentation;
- Perform data collection and analysis from the various source materials outlined herein or

- others as deemed necessary;
- Complete the Before and After Study documentation as outlined herein.

The Wasatch Regional Front Council, the Metropolitan Planning Organization for Salt Lake, Davis and Weber Counties, will provide the following information to perform this Before and After Study:

- Documentation of census, employment, and demographic data;
- Descriptions of methods used in travel demand modeling;
- Share any pertinent regional or community information that may add to the Before and After Study Analysis;
- Provide versions of the long range plan with explanations for any changes between them.

The Federal Transit Administration may be utilized for technical and advisory assistance during the preparation of the Before and After Study. FTA's Project Management Oversight Contractor will be available to provide additional information as requested. Additionally, the FTA shall review submittals proposed in this plan.

See Appendix 1 for the Organizational Chart.

2. BEFORE AND AFTER STUDY PROCESS

The Full Funding Grant Agreement for the Commuter Rail Project requires the Grantee to perform a Before and After Study. As the project sponsor UTA will take the lead role in delivering this Study.

UTA will closely follow the draft guidelines prepared by FTA to accomplish this Study - including, but not limited to, dividing the project into milestones relative to planning, construction and operation of the project and utilization of the five project characteristics defined in the guidelines.

The Before and After Study process can be divided into submission and approval of this plan, data collection with available documentation as defined below, new data collection when called for, and analysis of the data. A schedule for periodic submittals and an estimated budget are included in Section 2.4.

2.1 Data Collection

Below are the five project characteristics that every Before and After Study must include. UTA will collect, track and present the data to support the evolution of the project in these areas. Included are examples of the pertinent aspects that will be used for each characteristic.

2.1.1 Physical Scope

The project's physical scope will include at least the following:

- Length and alignment of track, proximity of built environment to original layouts
- Number and location of stations
- Rights-of-Way types and amounts
- Park and Ride Lots or other planned facilities
- Value Engineering
- Change Orders

2.1.2 Service Levels

Service levels shall be defined using the following data, as available:

- Hours of passenger service
- Miles of passenger service
- Amount or frequency of service
- Travel times
- Area covered
- Number and types of vehicles
- Other transit mode use
- Reporting methods

2.1.3 Capital Costs

Below are the project's capital costs that will be compared. The methods used to analyze the data will be explained in the Before and After Study after a more detailed look at the data reveals the appropriate direction to take to assure cost data are relative and comparable. Activity Line Item codes will be used whenever possible.

- Real estate costs
- Vehicle costs
- Engineering and design costs
- Construction costs – divided into project aspect such trackwork, signals, stations, etc.
- Change orders
- Start-up and testing costs
- FFGA amount
- Local financial commitment
- Financing costs

2.1.4 Operation and Maintenance Costs

Operation and Maintenance Costs will be analyzed using a minimum of the following measures and methods:

- Incremental increase in O/M costs
- O/M costs – estimated versus actual
- Miles of non-passenger vehicle operation
- Included/Excluded costs
- Cost of fuel
- Calculation methods used

2.1.5 Ridership and Revenue

UTA records ridership counts and revenue in a monthly report and the Wasatch Regional Front Council, the Metropolitan Planning Organization, is responsible for the travel model. Below are some of the data and methods that will be used to follow ridership and revenue through the stages of the project:

- Ridership on fixed guideways
- Ridership on buses
- Rail fare revenue
- Bus fare revenue
- Travel models used – including changes made to original model
- Passenger count method used

- On-board survey content and results

2.1.6 Other Factors

The status of the following aspects of community growth will be noted and followed as possible. Analysis of trends and whether they do or do not relate to the introduction of commuter rail will be explored.

- Transit Oriented Development
- Population
- Employment
- Housing prices
- Traffic volumes
- Interlocal agreements

2.2 Available Documentation

UTA's Capital Development Department uses an established document control system. Documents are given a file code related to subject, recipient or sender, stage of project and date. Additionally, document titles and relevant details are entered into a data base and can be located using Microsoft Access. For the first time, UTA is utilizing the internet to communicate information for this project so stakeholders, contractors, and those traveling for the project can access needed documentation. The site is access restricted to users registered and having a password. Many documents are available on the site.

The following sections list the data sources available for this Before and After Study for each milestone. Examples of the relevant information found in each document for each project characteristic are listed in the table. As analysis proceeds and more data or information is found to be needed, other resources outside UTA's document control can be utilized to research additional content.

2.2.1 Planning and Project Development

These resources describe the forecasts and predictions that planners and decision-makers used to envision, research, analyze and finally define the proposed Weber County to Salt Lake Commuter Rail Project. Included in the following table is the name of the document and at least some of the relevant information for each project characteristic that can be found in that document.

<i>Available Document</i>	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance Costs	Ridership and Revenue	Other
<i>Inter-Regional Corridor Analysis (2002)</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations • Size of parking lots • Assumed alignment 	<ul style="list-style-type: none"> • Initial headways • Analysis of commuter rail speeds • Operating plan 	<ul style="list-style-type: none"> • Capital costs estimate • Unit cost assumptions 	<ul style="list-style-type: none"> • O & M cost estimates • Methodology 	<ul style="list-style-type: none"> • Daily ridership • Potential special event ridership 	<ul style="list-style-type: none"> • Traffic volumes

Available Document	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance Costs	Ridership and Revenue	Other
<i>Long Range Transportation Plan (2004)</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations 	<ul style="list-style-type: none"> • Defined transit needs 			<ul style="list-style-type: none"> • Transit travel demand • Revenue assumptions 	<ul style="list-style-type: none"> • Regional plan • Vehicle mile traveled • Phasing of projects • Auto travel demand
<i>Weber County to Salt Lake City Commuter Rail Project Draft Environmental Impact Statement (April 2004)</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations • Size of parking lots • ROW acquisitions and displacements 	<ul style="list-style-type: none"> • Operating scenario • Travel times • Bus connections • Vehicle technology 	<ul style="list-style-type: none"> • Financial plan 	<ul style="list-style-type: none"> • Maintenance facility • Yearly estimate 	<ul style="list-style-type: none"> • Projected ridership • Cost effectiveness • Revenue sources 	<ul style="list-style-type: none"> • Traffic volumes • Employment • Environmental and community impacts • Air quality • Land use
<i>Weber County to Salt Lake City Commuter Rail Project Final Environmental Impact Statement (2005)</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations • Size of parking lots • ROW acquisitions and displacements 	<ul style="list-style-type: none"> • Operating scenario • Travel times • Bus connections • Vehicle technology 	<ul style="list-style-type: none"> • Financial Plan 	<ul style="list-style-type: none"> • Maintenance facility • Yearly estimate 	<ul style="list-style-type: none"> • Projected ridership • Cost effectiveness • Revenues sources 	<ul style="list-style-type: none"> • Traffic volumes • Employment • Environmental and Community Impacts • Air Quality • Land use • Public comment
<i>Weber County to Salt Lake City Commuter Rail Project Full Funding Grant Agreement</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations • Number of parking stalls 	<ul style="list-style-type: none"> • Number of vehicles 	<ul style="list-style-type: none"> • Baseline project costs estimate • Project budget 			<ul style="list-style-type: none"> • Environmental mitigation
<i>Section 5309 New Starts Criteria (</i>			<ul style="list-style-type: none"> • Cost effectiveness • Local financial commitment • Financial Plan 	<ul style="list-style-type: none"> • Operation cost per passenger mile 	<ul style="list-style-type: none"> • Local financial commitment • UTA financial plan 	<ul style="list-style-type: none"> • Land use • Environmental benefits • Mobility improvements
<i>Utah Transit Authority Bus Fleet Management Plan (2004)</i>		<ul style="list-style-type: none"> • Bus service and vehicle statistics • Bus service integration with commuter rail 			<ul style="list-style-type: none"> • Bus ridership trends 	
<i>Utah Transit Authority Commuter Rail Fleet Management Plan (2004)</i>	<ul style="list-style-type: none"> • Alignment assumptions used for fleet estimate 	<ul style="list-style-type: none"> • Number and types of vehicles • Operating scenario • Loading standard 		<ul style="list-style-type: none"> • Operating scenario • Spare percentage assumed 	<ul style="list-style-type: none"> • Ridership projections 	

Available Document	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance Costs	Ridership and Revenue	Other
<i>Utah Transit Authority Commuter Rail Operations and Maintenance Plan (2005)</i>		<ul style="list-style-type: none"> • Number and types of vehicles 		<ul style="list-style-type: none"> • Staffing needs • Maintenance schedule • Maintenance facility 		
<i>Utah Transit Authority Light Rail Fleet Management Plan (2005)</i>		<ul style="list-style-type: none"> • Light Rail service levels • Projected vehicle needs 			<ul style="list-style-type: none"> • Assumed Commuter Rail Ridership 	<ul style="list-style-type: none"> • System connectivity • Additional light rail lines
<i>3D papers</i>						<ul style="list-style-type: none"> • Track decision making
<i>Traffic on Utah Highways (Annual 2004 UDOT Report)</i>						<ul style="list-style-type: none"> • Traffic volumes
<i>Past On Board Surveys(2004)</i>					<ul style="list-style-type: none"> • System ridership • Payments used 	<ul style="list-style-type: none"> • Trip origins and destinations • Demographics • Transit market
<i>Monthly Ridership Reports (2004)</i>		<ul style="list-style-type: none"> • Bus and Light rail service levels 			<ul style="list-style-type: none"> • System ridership 	
<i>UTA Financial Plans/Budgets/ Reports (2004)</i>			<ul style="list-style-type: none"> • Financing schedule 	<ul style="list-style-type: none"> • Actual O & M costs for bus and LRT 		

2.2.2 Before Opening the Weber County to Salt Lake City Commuter Rail Project

These resources describe the status of the system as it will exist approximately six months before the opening of the Weber County to Salt Lake Commuter Rail Project. Included in the following table is a description of sets of documents or drawings and at least some of the relevant information for each project characteristic that can be found in those documents.

Available Documents	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance costs	Ridership and Revenue	Other
<i>Weber County to Salt Lake City Commuter Rail Project contract drawings and specifications</i>	<ul style="list-style-type: none"> • All aspects of physical scope 					<ul style="list-style-type: none"> • Utilities • Signaling

Available Documents	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance costs	Ridership and Revenue	Other
<i>Weber County to Salt Lake City Commuter Rail Project Full Funding Grant Agreement</i>	<ul style="list-style-type: none"> • Miles of track • Number of stations • Number of parking stalls 	<ul style="list-style-type: none"> • Number of vehicles 	<ul style="list-style-type: none"> • Baseline project costs estimate • Project budget 			<ul style="list-style-type: none"> • Environmental mitigation
<i>Monthly Reports (2007)</i>			<ul style="list-style-type: none"> • Capital costs to date 			
<i>Utah Transit Authority Bus Fleet Management Plan (2007)</i>		<ul style="list-style-type: none"> • Bus service and vehicle statistics • Bus service integration with commuter rail 			<ul style="list-style-type: none"> • Bus ridership trends 	
<i>Utah Transit Authority Commuter Rail Fleet Management Plan (2007)</i>	<ul style="list-style-type: none"> • Alignment assumptions used for fleet estimate 	<ul style="list-style-type: none"> • Number and types of vehicles • Operating scenario • Loading standard 		<ul style="list-style-type: none"> • Operating scenario • Spare percentage assumed 	<ul style="list-style-type: none"> • Ridership projections 	
<i>Utah Transit Authority Commuter Rail Operations and Maintenance Plan (2007)</i>		<ul style="list-style-type: none"> • Number and types of vehicles 		<ul style="list-style-type: none"> • Staffing needs • Maintenance schedule • Maintenance facility 		
<i>UTA revenue records (2007)</i>					<ul style="list-style-type: none"> • Current revenue stream 	
<i>UTA train timetables and records of special events (2007)</i>		<ul style="list-style-type: none"> • Current service levels including special events 				
<i>New On Board Survey (2007)</i>					<ul style="list-style-type: none"> • Current ridership • Payments used 	<ul style="list-style-type: none"> • Origins and destinations • Demographics • Transit market
<i>Traffic on Utah Highways (Annual 2007 UDOT Report)</i>						<ul style="list-style-type: none"> • Traffic volumes

2.2.3 After Two Years of Operation

These resources describe the status of the system as it will exist approximately two years after the opening of the Weber County to Salt Lake City Commuter Rail Project. Included in the following table is a description of sets of documents or drawings and at least some of the relevant information for each project characteristic that can be found in those documents.

Available Documents	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance Costs	Ridership and Revenue	Other
<i>Weber County to Salt Lake City Commuter Rail Project As-Built drawings</i>	<ul style="list-style-type: none"> Actual constructed scope 					
<i>3D paper</i>						<ul style="list-style-type: none"> Track decision making
<i>UTA monthly ridership reports (2010)</i>		<ul style="list-style-type: none"> Bus ridership LRT ridership 			<ul style="list-style-type: none"> Opening two years ridership 	
<i>Utah Transit Authority Bus Fleet Management Plan (2010)</i>		<ul style="list-style-type: none"> Bus service and vehicle statistics Bus service integration with commuter rail 			<ul style="list-style-type: none"> Bus ridership trends 	
<i>Utah Transit Authority Commuter Rail Fleet Management Plan (2010)</i>	<ul style="list-style-type: none"> Alignment assumptions used for fleet estimate 	<ul style="list-style-type: none"> Number and types of vehicles Operating scenario Loading standard 		<ul style="list-style-type: none"> Operating scenario Spare percentage assumed 	<ul style="list-style-type: none"> Ridership projections 	
<i>Utah Transit Authority Commuter Rail Operations and Maintenance Plan (2010)</i>		<ul style="list-style-type: none"> Number and types of vehicles 		<ul style="list-style-type: none"> Staffing needs Maintenance schedule Maintenance facility 		
<i>UTA rail services accounting records (2010)</i>				<ul style="list-style-type: none"> Actual O & M costs 		
<i>UTA financial plans/budget/reports (2010)</i>			<ul style="list-style-type: none"> Actual project costs 		<ul style="list-style-type: none"> Commuter Rail revenue 	
<i>UTA train timetables and records of special services for special events (2010)</i>		<ul style="list-style-type: none"> Actual operating service Special event service 				
<i>Traffic on Utah Highways (2010)</i>						<ul style="list-style-type: none"> Current traffic counts
<i>Census data (2010)</i>						<ul style="list-style-type: none"> Population and employment statistics

<i>Available Documents</i>	Physical Scope	Service Levels	Capital Costs	Operation and Maintenance Costs	Ridership and Revenue	Other
<i>Most recent on board survey (2010)</i>					<ul style="list-style-type: none"> • Origins and destinations • Ridership • Payments used 	<ul style="list-style-type: none"> • Public response to project • Origins and destinations • Demographics • Transit market

2.3 Report Presentation and Submittals

UTA proposes to provide three submittals after the acceptance of this Before and After Study Plan. Upon receiving a Full Funding Grant Agreement for the Weber County to Salt Lake City Commuter Rail Project, UTA will proceed with data collection and presentation for its Before And After Study.

UTA will present the data for each project characteristic as a matrix summarizing the status of the aspects used to define the measurable and comparable data that are pertinent to the characteristic for each project milestone or as defined by a particular document. Each cell in the matrix will contain cursory descriptions or end result numbers as the case may be and are further described or defined as needed with explanatory text or additional tables outside the matrix. The matrix will provide a quick and visual comparison of how the project’s characteristics may have changed between milestones. A sample of the matrix proposed to be used is attached as Appendix 2.

The planning and project development phase submittal will consist of forecasts and predictions made during the Alternatives Analysis, Environmental Impact Statement, Preliminary Engineering, and Full Funding Grant Agreement stages. This submittal can be expected approximately one year after UTA’s receipt of a Full Funding Grant Agreement.

The second submittal will attempt to take a snapshot of the project study area to note the status of the existing transportation system as close to the opening of the Commuter Rail System as possible. It is the intent of UTA to conduct an on board survey that will be usable for this submittal and repeatable for the period two years after opening the system. It is not anticipated that construction activities will significantly alter the “Before” stage of the Before and After Study. This submittal can be expected approximately nine months after the opening of the system.

The final submittal will document the characteristics of the system and communities as they exist two years after the opening of the Weber County to Salt Lake City Commuter Rail Project. The on board survey will be repeated. The survey will be similar if not exactly the same as the previous one to assure comparable data. Changes in the project that become evident after tabulating data will be noted and explained. These changes include but are not limited to any significant environmental, cultural, economic, or transit system aspects that may have occurred due to the implementation of the new rail service. The analysis, described in Section 3 of this plan, will be data, changes, and developments measured against the goals of the project. This submittal can be expected approximately three to three and a half years after opening the commuter rail system.

2.4 Estimated Before and After Study Work Effort

The work effort required to perform a Before and After Study is largely unknown at this time. The estimate below utilizes the document tables already presented in this plan. Conceivably, each piece of information that needs to be extracted from a document would take time to find, research, enter, and assimilate into the study. As a starting point, UTA proposes to assign two hours to each of the identified pieces of information. A magnifying factor has been added to Capital Costs and Ridership in an attempt to capture the complexity and probable additional effort those categories will require. Additional time has been included for analysis, reviews, rewrites and document preparation.

Also given is an estimate of the work effort to create and conduct an on board survey. UTA intends to conduct on board surveys for the “Before” and “After” periods which may or may not include questions that other UTA departments will use for their purposes. UTA understands that on board surveys are an important and integral part of the Before and After analysis and will work to create a statistically viable and comparable survey. Past UTA on board surveys have taken as much as six person-years to develop, conduct and analyze. These surveys have been comprehensive with a large number of records. It is expected that an on board survey more specific to the needs of a Before and After Study would not require that amount of time, yet some effort for the on board surveys must be included.

According to tables of documents and bulleted information					
	Submittal	Forecasts	Before	After	Totals
Bulleted Pieces of Data to be Obtained for:					
	Physical Scope	18	4	1	23
	Service Levels	22	2	4	28
	Capital Costs*	50	15	5	70
	O&M Costs	13	0	1	14
	Ridership & Revenue**	180	30	50	260
	Other	27	7	7	41
Totals		310	58	68	436
Work Effort (in person-hours)					
Document Search	Collect, record, organize***	620	60	70	750
	Write	310	60	70	440
	Analyze, Review	310	30	35	375
	Drafts, Rewrites	310	30	35	375
	Document Preparation	207	20	24	251
Sub total		1757	200	234	2191
On Board Survey	Survey Creation and Admin	n/a	480	0	480
	Data Collection	n/a	1600	1600	3200
	Data Entry	n/a	80	80	160
	Analysis	n/a	40	40	80
Subtotal		0	2200	1720	3920

* Capital Costs data have been increased by a factor of 5 to account for the greater complexity and amount of raw data associated with the documents for this characteristic.

** Ridership data have been increased by a factor of 10 to account for the greater complexity and amount of raw data associated with the documents for this characteristic.

*** Assumes two hours per data piece for Forecasts and one hour for Before and After - rounded up.

3. ANALYSIS

3.1 The Project as Built versus as Planned

The Before and After Study team will compare all tabulated data. Care shall be taken to assure that only identifiably similar line items will be compared directly. Logical, legitimate and defined adjustments may be made in order to directly compare otherwise closely similar data. Data that is dissimilar will not be compared or will be discussed subjectively.

The analysis team will look for patterns or connections between project characteristics. Additionally, the team will track the predictions made in the forecasts stage of the project to determine which were more accurately represented. Should a significant variation from forecasts be discovered, in-depth research will be performed to determine possible indicators for the variation. Documentation, sequence of events and team experience will be used to offer reasons for discovered changes.

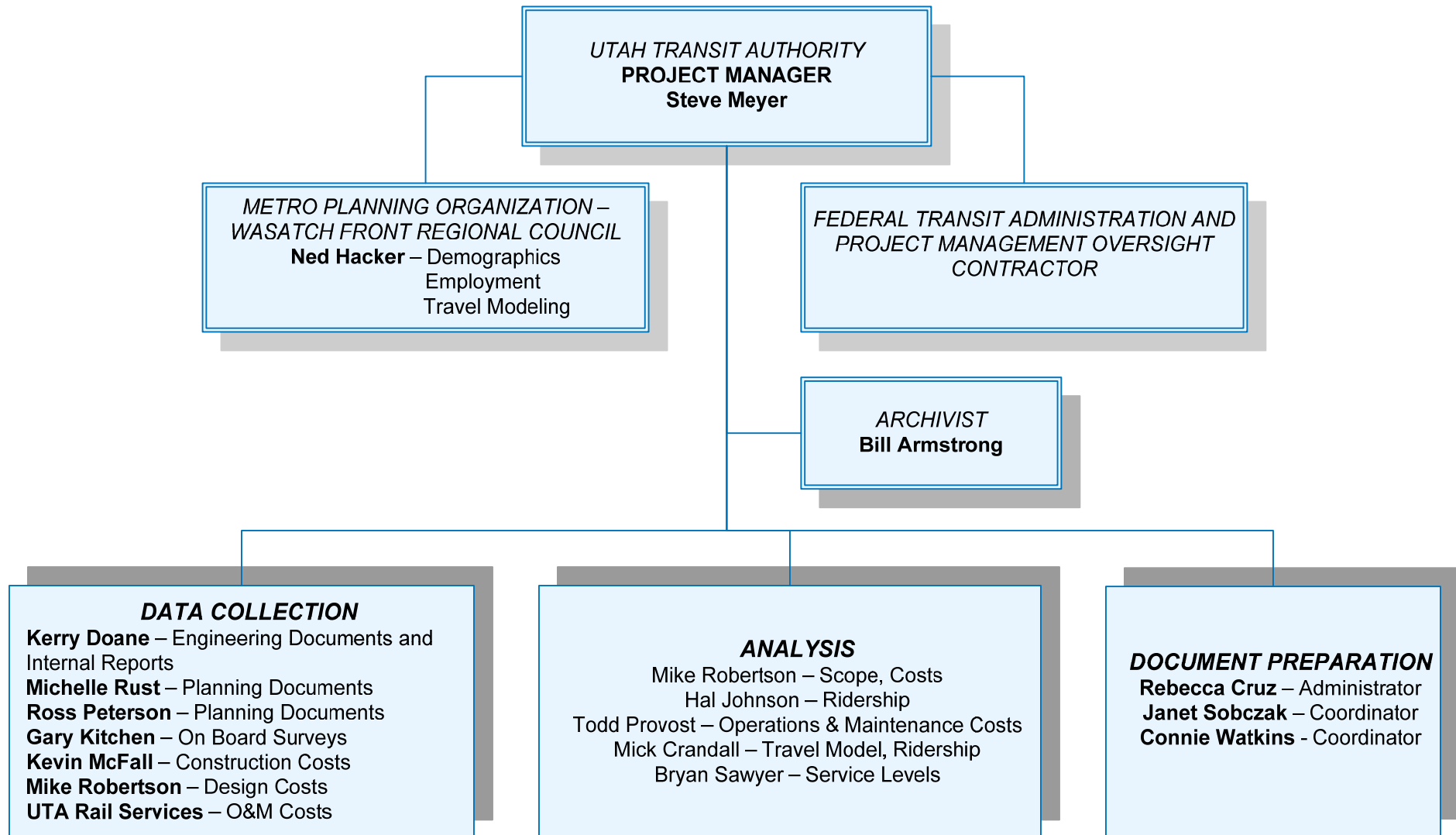
3.2 Systemwide Changes in the Before and After Conditions

The Before and After Study team will draw conclusions regarding the Wasatch Front's transit system as a whole. In seeking to understand and document system and community impacts resulting from the implementation of commuter rail, UTA will communicate with those communities and agencies involved in the project.

To fulfill the FTA's stated purposes for Before and After Studies, UTA will formulate the lessons learned by answering the following questions:

- Were project goals met?
- What worked well?
- What could have been improved?
- Were there any unseen benefits or negatives?
- How have relationships between agencies, governments, and the public changed?
- What can UTA recommend to other project sponsors?

Appendix 1



Appendix 2

SAMPLE OF PHYSICAL SCOPE

	Length of Track	Alignment	# of Stations	Station Features	Locations of Stations	Acreage of ROW Acquisitions	Total number of Parking Stalls
AA Inter-regional Corridor Analysis	80 miles	UP- Brigham to SLC Ex-D&RGW – SLC to Payson	13	Not determined	Ogden, Roy, Clearfield, Layton, Farmington, West Bountiful, Salt Lake City, Murray, South Jordan, Lehi, American Fork, Orem and Provo (addresses provided in text)	Not determined	Not determined
DEIS	44 miles	UP Pleasant View to SLC	9	Accommodate 2030 operations, 1000-foot x 25-foot center platforms, canopies, lighting, trash receptacles, fare vending machines and information kiosks of undetermined numbers	Pleasant View, Ogden, Roy, Clearfield, Layton, Farmington, Woods Cross, North Temple, Salt Lake City. (addresses provided in text)	93.3 acres for stations 39.6 acres for track alignment	5000 – 5700
FEIS							
PE							
FFGA							
BEFORE							
TWO YEARS AFTER							