

Design Transition from Contractor to In-house Personnel

Design Group Plan

Prepared by: Frank Gates

1. Description

This plan outlines the 2002 growth of the Sacramento Network Implementation Engineering Group. The overall plan is to shift the group from a primary role of overseeing contract labor to a lead role of performing this work in-house. This plan is for a stand-alone design group operating independently from Bechtel and Aspen companies.

1.1. Current Activity

All of the going forward engineering and design activities must be maintained during this expansion of the Design Group;

- Site Acquisition (RT and Power Supply)
- Activation (General coordination)
- Joint Trench

1.2. Transition Activity

The migration strategy is to continue to work in parallel and as each element is successfully migrated to in-house resources, the directly related contract labor for that element will be discontinued.

2. Transition Step One: Inventory of WIP

The first step in this migration strategy is to inventory the work in progress. As all existing personnel are currently assigned to current activity, I must rely on Bechtel and Aspen to provide this inventory. I do have an inventory of Bechtel received design (both paper and digital media) and fiber matrix.

2.1. Scope

- Primary and Secondary Rings
- RT's
- MDU's
- HUB engineering and documentation
- Special projects

2.2. Tasks

- Complete Inventory of all completed and in-progress engineering, design and mapping work
- Quality review of in-progress work

2.3. Deliverables

- Completed inventory identifying each element as received or not, where it resides, missing, media, and so on.
- Quality Review production schedule indicating quantities, dates and personnel performing this review.
- Identify a "going forward" point for rework and new design

3. Transition Step Two: Facility Floor plan and Build out

As the current facility layout is designed to serve primarily administrative functions, it is necessary to finalize the Design Group's working space and facility requirements.

3.1. Scope

- Workspace for all WINFirst employees assigned to the Engineering group
- Additional workspace as demanded by the production of this group.

3.2. Tasks

- Floor plan with adequate detail for space requirements and cost
- Management review and approval

3.3. Deliverables

- Floor plan
- Complete inventory of fixtures and equipment broken down as either existing or not-existing
- Build out

4. Transition Step Three: Parallel Activity

We must begin activity in parallel with the ongoing contract labor activity. This is intended to avoid and production gaps and additionally to ensure that no pertinent elements are lost during the transition.

4.1. Scope

- All engineering and design for Hubs, Primary and Secondary Rings, RT's and MDU's
- Ongoing Fiber Matrixes continue uninterrupted
- Fiber starts undergoing the "Scrape" process through Bechtel's data expert.

4.2. Tasks

- Review and rework of fiber matrixes already issued to construction.
- Review and rework of fiber matrixes ready but not yet issued to construction

4.3. Deliverables

- Status schedule showing all fiber matrixes in construction have been reviewed, reworked (if required) and are now accepted for construction
- Scrape process is successful and is now preformed by WINFirst employees on WINFirst hard and software
- RF: Same as above but it is anticipated that little rework will be required. Unlike the fiber planning, the RF design is generally acceptable.

5. Transition Step Four: CAD file administration

CAD file administration really is the management of the network drawings. This is compounded by;

- Multiple users of the database
- Multiple revisions of each fiber and RT design
- Individual 1X100 grid maps are shared with 1, 2 3 or more RT's which are designed at different times. There may be as many a 9 versions of the same 1X100 grid map in progress at once.

5.1. Scope

- All CAD files, completed, in-progress for all Sacramento Network.
- All users, internal and external
- The plan is to leave the current process in place while we introduce a CAD file administration process, initially to manage the drawings only.
- The second step will manage the drawings and the data generated by these drawings.

5.2. Tasks

- Create a file and directory structure accessible by LAN (restricted)
- Install and fully functional CAD file administrative software.
- Document process, roles and responsibilities

5.3. Deliverables

- Process is in place and the process documentation has been created (Actual document)
- Users have been trained on the process and all access issues have been resolved (Actual list of users and access codes)

Additional CAD file administrative tasks include;

- CX ability to reproduce maps
- Reproduction here at WINFirst
- LAN management of high data transfers

6. Transition Step Five: Transition Ends

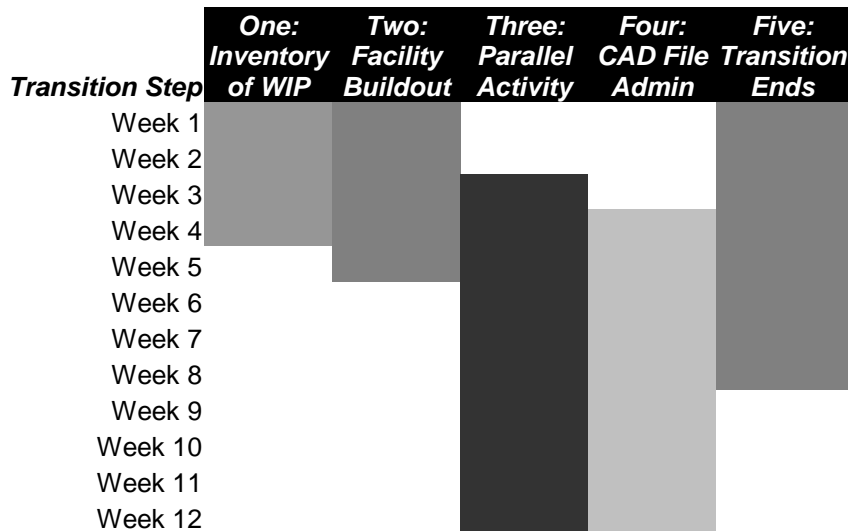
This is not a true step or milestone but a list of things, which must be properly planned and included to avoid future problems.

- Reporting
- Design Specifications both fiber and RF
- Spatial Scrape Process (New Tools)
- Make Ready
- Permit process
- Bechtel Roles and Responsibilities

6.1. Timeline

In general, this group will assume all of the planning and as-built activity at the end of a 12-week period. As the work in progress (WIP) quantity and quality are still unknown, this transition may exceed the 12 week period and continue in parallel until completed.

Here is the timeline:



6.2. Task Definitions

This defines the major activities, which are currently in progress and will be migrated in-house during the above timeline.

6.3. Primary and Secondary Rings

- Identify HUB and RT Locations
- Identify Routes on desktop \ field verification
- Counts, Architecture and Budgets
- Documentation CAD and Fiber Plan (Matrix)
- Permits, ROW, Make Ready, etc
- HUB and RT Planning and Engineering
- CWP (Construction Work Package)
- Schedule

6.4. Special Network Projects

- City requirements
- POP's, etc.
- Broadcast
- Point to point
- Commercial

6.5. RT Design

- Fiber planning (routes and counts)
- Fiber CAD Drafting and Fiber Plan (Matrix)
- RF Design including Power
- CAD Drafting and reproduction
- Permits, ROW, Make Ready, Identify and Secure PS Locations etc
- CWP (Construction Work Package)
- Schedule

6.6. MDU

- Site Survey, Cost Estimate for property and Network Extension (Marketing Tool)
- On Site Marketing Meetings
- Design: Network Extension and property design
- CWP
- Reports

6.7. As Builts

- Q/C Construction Accuracy
- Q/C RF Changes and Re-Design
- Q/C Fiber Changes and Re-Design
- HUB Documentation
- Final Fiber Matrix
- Final CAD Drafting

6.8. Data

- RT Turned over to Integration
- Data Scrape
- Interface with IT

6.9. CAD File Administration

- Manage Final CAD Archives
- LISP programming and implementation

6.10. Joint Trench

- Developer Interface and planning
- Fiber and RF Design
- Coordinate Network Construction and Post Network Construction
- Coordinate Marketing Sales areas (passings)
- Utility Coordination with all Metro Utilities and Developers

(See Schedule A: Production, attached)

Design Transition from Contractor to In-house Personnel

Design Group Plan
Prepared by: Frank Gates

PROCESS OWNERS

Process	RINGS: Primary, Secondary and Special Projects							
	HUB's	RT's	Routes and Counts	Fiber Engineering	Digitize + Matrix	Permits, MakeReady	Schedule	CWP
Current Owner	Bechtel	GF	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel
New Owner	Gates	Field Eng	Hall	Gates	Hall	OSP Cord	Bechtel	Bechtel
	Hall	Hall	Hall	Hall	Hall	Contract	Hall	Admin
	Fiber Dsn	Fiber Dsn	Fiber Dsn	Fiber Dsn	Fiber Dsn		Chan	

Process	RT's						
	Fiber Distribution	RF Design	Digitize + Matrix	Permits, MakeReady	Schedule	CWP	Reports
Current Owner	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel
New Owner	Hall	Hall	Hall	OSP Cord	Hall	Admin	Chan
	Fiber Dsn	RF Dsn	RF Dsn	Contract	RF Dsn		

Process	MDU							
	Site Survey Cost Est	On Site Meetings	Design Network	Design Property	Permits, MakeReady	Schedule	CWP	Reports
Current Owner	Bechtel	Ops	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel
New Owner	Hall	Hall	Hall	Hall	OSP Cord	Hall	Hall	Chan
	MDU Dsn	MDU Dsn	MDU Dsn	MDU Dsn	Contract	Chan	Admin	

Process	AS BUILTS (Network & MDU)							
	Q/C	RF Revisions	Fiber Revisions	Data Scrape	To IT	Changes	CAD File Archive	Reports
Current Owner	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel
New Owner	Hall	Hall	Hall	Hall	Hall	Hall	Hall	Chan
	Fiber Dsn	RF Dsn	Fiber Dsn	Fiber Dsn	Fiber Dsn	Fiber Dsn	Admin	
	RF Dsn					RF Dsn		

Process	ACTIVATION						
	HUB Jumpers	RT Power	RT Light	NODE Light	As BUILTS	To OPS	Reports
Current Owner	Ops	CX	CX	CX	CX	Bechtel	Bechtel
New Owner	Crabtree	Crabtree	Crabtree	Crabtree	Crabtree	Crabtree	Chan
	Field Eng	Field Eng	Field Eng	Field Eng	Field Eng	Field Eng	

Process	JOINT TRENCH						
	Site Survey Plan	Routes to Design	Contrat Labor	Developer Utilitys	Release to Marketing	Ongoing Activation	Reports
Current Owner	Hall	Hall	Hall	Hall	Hall	Hall	Hall
New Owner	Reyes	Reyes	Reyes	Reyes	Reyes	Reyes	Chan

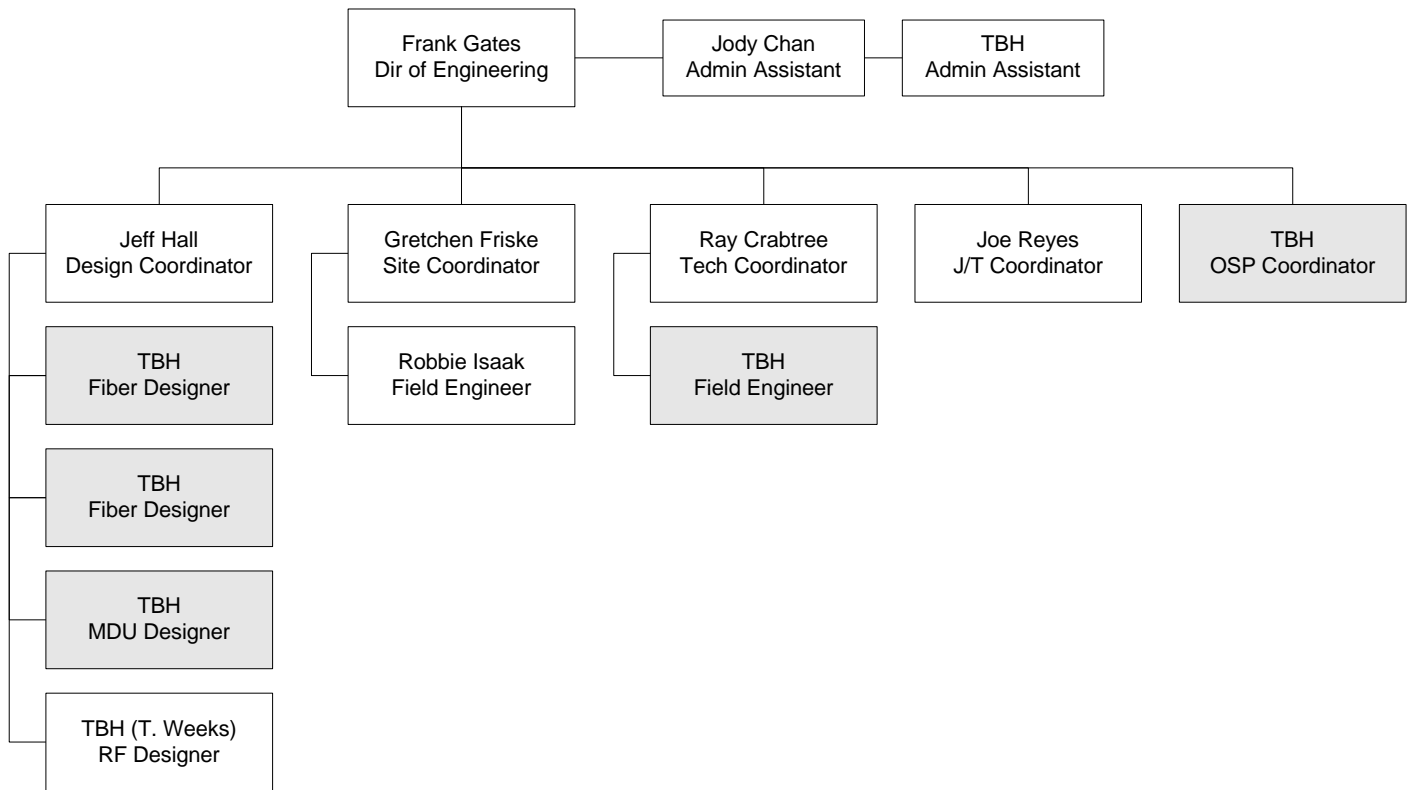
LEGEND				
Gates				
Hall	Fiber Dsn	Fiber Dsn	RF Dsn	MDU Dsn
Crabtree	Field Eng			
Friske	Field Eng			
Reyes				
OSP Cord				
Chan	Admin			

LEGEND
Bechtel
Contract
Ops
CX

6.11. Organization

6.11.1.Key Elements

- This Engineering Group will be the primary provider of in-house Network Design.
- Contract services are to be used on an occasional basis for overload.
- MDU Design to be preformed in-house
- TBH (To Be Hired) include
 - 2 Fiber Designers
 - 1 MDU Designer
 - Field Engineer
 - 1 OSP Coordinator (permits and Make-Ready)



- RF Designer (current part time position will be replaced with a full time position)

6.11.2.Functional Descriptions

QTY	Job Title	Description
1	Administrative Assistant	Performs reporting, permits and make-ready tracking (with Design Cord and Dir Eng involvement).
1	Administrative Assistant	Performs CWP preparation, reproduction and routine administrative duties.
1	Fiber Designer	Performs all fiber related planning and engineering in conjunction with the Design Coordinator and the Director.
1	Fiber Designer	Performs all fiber related Matrix and Data Scrape activity.
1	Design Coordinator	Coordinates all Network Design and CAD from Base Maps to Marketing and supervises the Design Team
1	Dir of Engineering	Oversees all production, staffing and budget responsibilities

Design Transition from Contractor to In-house Personnel

Design Group Plan
Prepared by: Frank Gates

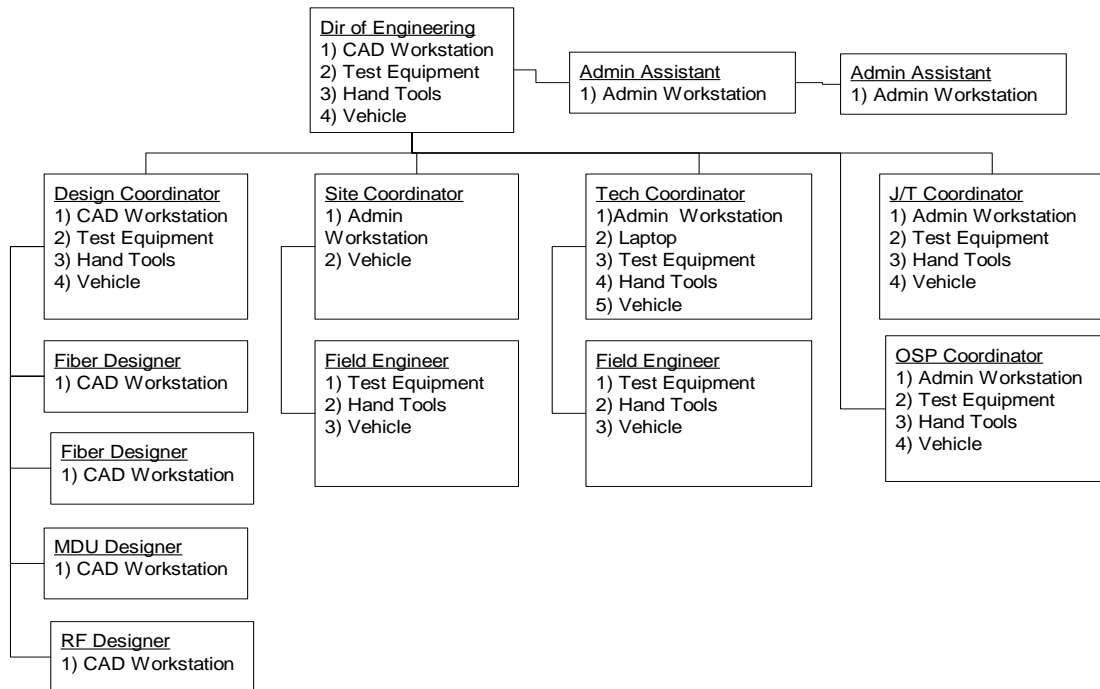
QTY	Job Title	Description
1	Field Engineer	Performs site surveys, citizen contacts and other tasks related to site acquisition
1	Field Engineer	Performs field surveys, construction and activation as assigned by the Technical Coordinator
1	Joint Trench Coord	Oversees all Joint Trench activities.
1	MDU Designer	Performs all MDU related engineering, design, as-builts and assists Marketing with surveys and meetings
1	OSP Coordinator	Heads up Make Ready and Permits
1	RF Designer	Performs all RF related engineering, design, as-builts and documentation
1	Site Coordinator	Coordinates all Site Acquisition activity and supervises the acquisition team
1	Technical Coordinator	Oversees all filed planning and activation of primary and secondary rings including the NODE activation.

6.12. Contract Labor

6.12.1. The areas of anticipated need for contract labor;

- During the transition phase to ensure ongoing construction is not impacted.
- Peaks and valleys in the production schedule (May 2002 for example)
- Last Quarter of 2002 will require 2003 preparation work, which exceeds 2002 headcount.
- Activation will need assistance from Contract Labor, again on a peak to valley basis.

6.13. Equipment



6.14. Facility

Design Transition from Contractor to In-house Personnel

Design Group Plan
Prepared by: Frank Gates



6.14.1. SACRAMENTO ENGINEERING GROUP FACILITY REQUIREMENTS:

- 1) Use existing floor space and fixtures
- 2) Every work position requires telephone and 110 VAC
- 3) Plotters and copiers require 110 VAC (4 ea)
- 4) Directors office/Meeting Room uses existing glass walls
- 5) Some existing LAN and phone cabling must be moved (see red X, vertical)
- 6) Scale is approximate

(See Schedule B: Budget, attached)

7. Conclusion

There are some variables involved in this plan, primarily;

- 1) Cooperation and commitment from other groups who are losing their work as a result of this plan (i.e. Aspen, Bechtel)
- 2) Unknown elements of the not-yet-seen data tools, which are being developed by Spatial.
- 3) Cost Summary (See Schedule B: Budget, attached)

The key to a smoother transition is flexibility.