



Transition
Administrator

The Official Reconfiguration Manager

Cost Metrics for Frequency Reconfiguration Agreements

On January 8, 2007, the Federal Communication Commission released an Order instructing the 800 MHz Transition Administrator, LLC (TA) to make available a set of cost metrics that identify statistical measures of licensee reconfiguration implementation costs and rates, based on system size. These metrics have been gathered from 275 approved Frequency Reconfiguration Agreements (FRAs) for Public Safety licensees and include:

- Aggregate implementation costs for reconfiguration of 800 MHz Public Safety Systems broken down by system size,
- Median reconfiguration costs and cost ranges by implementation cost category,
- Median incumbent licensee and vendor labor rates by implementation cost category, and
- Distributions of incumbent licensee and vendor costs across all implementation cost categories.

The TA expects that this information should prove beneficial to Public Safety licensees in the preparation of cost estimates for their FRAs and will expedite the negotiation of FRAs.

The FRA data is provided for informational purposes only. Licensee reconfiguration costs can and do vary based on a number of factors. The TA reviews all licensee cost estimates and will approve for reimbursement any reasonable and prudent expenses directly related to the reconfiguration of the licensee's 800 MHz system. Licensees must document all their costs and services and certify that their costs are the "minimum necessary" to provide facilities comparable to those presently in use.

To date, the majority of available data for Public Safety FRAs submitted to the TA for review and approval represent Stage 1 (Channels 1-120) systems and NPSPAC systems with fewer than 1,000 subscriber units. The number of FRAs for systems with greater than 1,000 subscriber units is limited, and does not allow the presentation of statistically significant information. As a result, the metrics provided in this report do not include data for systems with greater than 1,000 subscriber units. The TA will update this data as negotiations proceed for medium and large Public Safety systems and the volume of submitted FRAs for systems with greater than 1,000 subscriber units increases to a meaningful degree.

For additional information, visit the TA's website at www.800TA.org or contact the TA by phone at 1-888-800-8220 or via email at comments@800TA.org.

Section I: Median Costs for the Reconfiguration of 800 MHz Systems

Median licensee costs and percentiles for approved FRAs are provided in two tables below for the following key common reconfiguration cost elements: Subscriber Equipment Reconfiguration, Infrastructure Equipment Reconfiguration, Engineering, Project Management, Preparation/Planning/Negotiation, Legal, and Other. Information on typical tasks within each implementation cost category is provided in Guidelines for Preparing a Cost Estimate available on the TA's website at http://www.800TA.org/content/documents/cost_estimate.asp. Because of the relatively small system sizes, the values include both incumbent licensee and vendor costs.

Two ranges of system size are provided at this time: : 0-500 subscriber units and 501-1,000 subscriber units. For each system range, the median value is provided – that is, the value that is precisely in the middle of the set of costs reviewed and approved by the TA. The 25th percentile and the 75th percentile are also provided for each implementation cost category; these values identify a range around the median within which 50% of the licensees' costs fall.

NOTE: In some cases the median value is zero, meaning that more than half of the licensees in that range did not have estimated costs in that particular category.

These reconfiguration costs are extracted from the Cost Estimates presented in Schedule C of the FRA. As such, these figures do not include the cost of actual replacement equipment provided to incumbent licensees by Sprint Nextel in exchange for equipment that cannot be reconfigured.

Table 1a
Median Reconfiguration Costs and Cost Ranges by Number of Units Reconfigured

Number of Subscriber Units	Total Reconfiguration Costs		
	25th percentile	Median	75th percentile
0-500 *	\$3,862	\$9,315	\$22,992
501-1000	\$43,317	\$86,559	\$114,883

* Data includes FRAs with zero (0) Subscriber Units but with costs associated with other reconfiguration tasks.

**Table 1b
Median Reconfiguration Costs and Cost Ranges by Implementation Cost Category**

Number of Subscriber Units	Subscriber Equipment Reconfiguration			Infrastructure Equipment Reconfiguration			Engineering		
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile
1-500 *	\$2,021	\$6,270	\$12,485	\$456	\$910	\$2,137	\$0	\$0	\$95
501-1000	\$22,526	\$37,348	\$54,035	\$1,350	\$3,584	\$10,759	\$0	\$250	\$5,859
Number of Subscriber Units	Project Management			Preparation/Planning/Negotiation			Legal		
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile
1-500 *	\$0	\$450	\$2,885	\$0	\$0	\$1,241	\$0	\$0	\$1,075
501-1000	\$188	\$6,205	\$21,074	\$0	\$2,589	\$9,030	\$0	\$525	\$8,000
Number of Subscriber Units	Other								
	25th percentile	Median	75th percentile						
1-500 *	\$0	\$200	\$1,420						
501-1000	\$0	\$1,488	\$11,444						

* Data does not include FRAs with zero (0) Subscriber Units.

Section II: Median Incumbent Licensee and Vendor Rates (hourly)

In Table 2 below, median incumbent licensee and vendor labor rates are provided for four implementation cost categories. The data does not include FRAs with greater than 1,000 subscriber units. The median value – that is, the value that is in the middle of the set of costs reviewed and approved by the TA – is provided for incumbent licensee and vendor rates associated with each implementation cost category listed.

**Table 2
Median Incumbent Licensee and Vendor Rates (hourly) by Implementation Cost Category**

	Engineering	Project Management	Preparation/Planning/Negotiation	Legal
Median Incumbent rate	\$64.46	\$44.75	\$41.02	\$125.00
Median Vendor rate	\$125.00	\$150.00	\$132.50	\$335.00

Section III: Distribution of Costs by Category for Incumbent Licensee and Vendor

In Table 3 below, the distribution of incumbent licensee and vendor costs across implementation cost categories is provided, both as a percentage of the total implementation costs in an FRA and as a percentage of the incumbent licensee's or vendor's total costs.

NOTE: On average, vendors account for roughly 71% of total reconfiguration costs, and incumbent licensees account for approximately 29%. Overall, approximately 42% of reconfiguration costs are associated with retuning/reprogramming/replacing subscriber units.

Table 3
Incumbent Licensee and Vendor Cost Distribution by Implementation Cost Category

Implementation Cost Category	Cost distribution as a % of Total Implementation Costs in an FRA		Cost distribution for Incumbents and Vendors**	
	Incumbent Costs as % of Total Costs	Vendor costs as % of Total Costs	Incumbent Costs as % of Total Incumbent Costs	Vendor Costs as % of Total Vendor Costs
Subscriber Equipment Reconfiguration	11.0%	30.6%	37.5%	43.3%
Infrastructure Equipment Reconfiguration	2.5%	7.2%	8.6%	10.2%
Engineering	1.3%	3.7%	4.3%	5.2%
Project Management	5.4%	10.8%	18.4%	15.3%
Preparation/Planning/Negotiation	3.9%	5.9%	13.3%	8.4%
Legal	2.2%	8.0%	7.5%	11.3%
Other	3.1%	4.4%	10.5%	6.2%
Total	29.4%	70.6%	100.0%	100.0%

** Cost distribution for Incumbent Licensee and Vendors is derived as a % of Incumbent Licensee total or Vendor total

Section IV: Per Unit Costs for Subscriber Equipment Reconfiguration

For each type of subscriber unit identified in Table 4 below, estimated per unit reconfiguration costs are available. For the two ranges of system sizes for each type of subscriber unit, the median value, the 25th percentile, and the 75th percentile are provided. (See Section I for further explanation of medians and percentiles.) Data regarding the following four types of subscriber units are analyzed:

- **Mobiles:** Costs estimated for the reconfiguration of mobile radios (may include estimates for retune and reprogram tasks, installation and de-installation where identified and local travel costs as applicable).
- **Portables:** Costs estimated for the reconfiguration of portable radios (may include estimates for retune, reprogram tasks, and local travel as applicable).

- **Mobile Data Devices:** Costs estimated for the reconfiguration of mobile data devices including Vehicle Radio Modems, Mobile Data Terminals, and Mobile Data Workstations (may include estimates for retune and reprogram tasks, installation and de-installation where identified, and local travel costs as applicable).
- **Control Stations:** Costs estimated for the reconfiguration of control station radios (may include estimates for retune and reprogram tasks, installation and de-installation where identified and local travel costs as applicable).

Table 4
Subscriber Units - Median Reconfiguration Costs and Cost Ranges by Subscriber Unit Type

Number of Subscriber Units	Mobiles			Portables		
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile
1-500 *	\$38	\$50	\$58	\$33	\$41	\$51
501-1000	\$38	\$50	\$75	\$39	\$45	\$54
Number of Subscriber Units	Mobile Data Devices			Control Stations		
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile
1-500 *	\$40	\$50	\$62	\$49	\$60	\$105
501-1000	\$25	\$52	\$52	\$56	\$89	\$148

* Data does not include FRAs with zero (0) Subscriber Units.

Section V: Costs for Reconfiguration of 800 MHz Infrastructure

Costs for reconfiguring 800 MHz infrastructure are provided in Table 5. The data is presented in subsets based on the size of the fixed infrastructure. Systems with 1-5, 6-10, and greater than 10 repeaters being retuned are analyzed separately. (FRAs with greater than 1,000 subscriber units are not included in this data.)

For each cost category, the median value, the 25th percentile, and the 75th percentile are provided *per system*, with the exception of Repeater Per Unit Costs, which are listed *per repeater base station*. (See Section I for further explanation of medians and percentiles.)

NOTE: In some cases the median value is zero, meaning that more than half of the licensees in that range either did not estimate costs in that particular category or may have included such estimated costs in another category without clearly identifying them.

The following five infrastructure reconfiguration cost categories are analyzed:

- **Repeater Per Unit Costs:** Reconfiguration costs estimated per repeater base station (may include estimates for retune and reprogram tasks along with local travel costs as applicable).

- **Infrastructure Equipment Reconfiguration:** The total cost estimated for the reconfiguration of repeaters and all other fixed infrastructure equipment (may include estimates for retune and reprogram tasks as well as installation and de-installation where required). Includes “touch labor” costs and material expense. Excludes planning and management tasks.
- **Temporary Equipment / Facilities:** The total reconfiguration cost estimated for the delivery, installation, verification, and removal of temporary infrastructure equipment as well as temporary facilities required to carry out the licensee’s infrastructure reconfiguration plan. Includes “touch labor” costs and material expense. Excludes planning and management tasks.
- **System Test / Performance Verification:** The total reconfiguration cost estimated for pre- and post-reconfiguration baseline performance verification testing. Includes “touch labor” costs and material expense. Excludes planning and management tasks.
- **Infrastructure Retune Travel:** The value of travel costs that can be directly attributed to the retuning of the licensee’s infrastructure equipment. (NOTE: In some cases local travel costs are not broken out separately and are rolled into the equipment reconfiguration costs.)

**Table 5
Infrastructure - Median Costs and Cost Ranges by Cost Category**

Number Of Repeaters Reconfigured	Repeater Per Unit Costs			Infrastructure Equipment Reconfiguration			Temporary Equipment/Facilities		
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile
1-5	\$205	\$375	\$600	\$475	\$898	\$2,240	\$0	\$0	\$0
6-10	\$214	\$325	\$575	\$2,676	\$4,600	\$7,962	\$0	\$0	\$0
>10	\$164	\$425	\$1,042	\$4,205	\$5,968	\$10,915	\$0	\$0	\$0
Number Of Repeaters Reconfigured	System Test / Performance Verification			Infrastructure Retune Travel					
	25th percentile	Median	75th percentile	25th percentile	Median	75th percentile			
1-5	\$0	\$0	\$0	\$0	\$0	\$0			
6-10	\$0	\$0	\$570	\$0	\$0	\$0			
>10	\$0	\$0	\$555	\$0	\$0	\$0			