

## **Appendix B Rural Alliance Model**

### **I. Description of the Rural Alliance Model (“RAM”)**

The Rural Alliance Model (“RAM” or “Model”) was developed for the Rural Alliance by Parrish, Blessing and Associates, an economic consulting firm headquartered just outside of Washington, DC. The Model was designed to capture the changes in the revenues of telecommunications providers resulting from modifications to intercarrier compensation. While the RAM was originally developed to calculate the residual resulting from the specific parameters of the Rural Alliance plan it has since been modified to estimate the financial impacts of other intercarrier compensation plans that incorporate changes in intercarrier compensation rates, subscriber line charges (“SLCs”), local end user rates or additional explicit funding mechanisms.

The Model uses primarily publicly available data as its core. This approach necessitates developing estimates and applying averages for certain types of data.<sup>1</sup> In addition it precludes the ability to produce meaningful output at a company specific level. To compensate for the deficiencies resulting from using mostly public data, the model has been designed as a sensitivity tool – if more accurate inputs are available this data can be readily input into the model.

The RAM is a comprehensive model in that it captures – albeit often as an estimate – all of the revenues for all categories of telecommunications providers including wireless and competitive wireline providers. The ICF model appears to only estimate access revenue “shifts” for two categories of carriers – Covered Rural Telephone Companies (“CRTC”) and non-Covered Rural Telephone Companies (“non-CRTC”). This designation corresponds to the manner in which the RAM distinguishes ILECs – those regulated under the FCC’s price cap rules and those regulated under the FCC’s rate-of-return regulations. The RAM identifies rate-of-return ILECs as Rural Local Exchange Carriers (“RLECs”).

The ICF indicates that CLECs are treated as a single entity and included as an add-on to the ICF model.<sup>2</sup> CLECs are treated within the context of the RAM. In addition the RAM estimates net revenues associated with local reciprocal compensation; it is unclear how this is reflected in the ICF analysis.

NECA has also produced an impact analysis of the various intercarrier compensation plans for companies participating in NECA’s common line and traffic sensitive pools. While the NECA analysis is comprised of only pool members – a subset of the RAM’s RLEC/rate-of-return category – it seems directionally consistent with the RAM. NECA concludes that the Rural Alliance plan minimizes end-user and universal service impacts.

The RAM produces estimates of revenue changes in SLC, end-user, intercarrier compensation and explicit funding by type of carrier and by state. More specific data will allow the Rural Alliance to produce more precise answers but even with the estimates in the current version of the RAM it is clear that without a meaningful intercarrier compensation rate for RLECs that is applied to both originating and terminating access traffic there are significant increases to end user rates and/or universal service-type funding mechanisms as they apply to rural carriers and their customers.

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<sup>1</sup> Estimates of intrastate revenues are difficult to obtain from public data, particularly for smaller carriers. A description of the assumptions employed in the modeling effort follows.

<sup>2</sup> ICF Comments, Appendix B, page B-3

## II. Input Assumptions

### Line Counts

ILEC - ROR	USAC data - Report HC20, HC08, HC11 - Reported Lines - High Cost Model 1st Quarter 2005 estimate which is provided a few days before the start of that quarter.
ILEC - Price Cap	ARMIS 43-01 2003 Line Count Data. The line counts from ARMIS are lower than the line counts found in the FCCs 2004 Monitoring Report; however, this may be due to line loss between 2003 to 2004.
CLECs	FCC Dec 2004 Monitoring Report - Table 6 (Jun 2004 data). This data shows total CLEC lines in each state but does not breakdown the line count to specific companies in order to protect the confidentiality of competitively sensitive data. Therefore, CLECs are reported only as a large group.
Cable TV Lines	FCC - Local Telephone Competition as of June 30, 2004 Report released Dec. 22, 2004; Table 5. June 2004 data showing that 10.4% of all CLEC lines are provisioned over coaxial cable. Changed 10.4% of all CLEC lines to Cable TV Lines in each state. Although Cable TV phone lines are probably not equally distributed with other CLEC lines in each state, it is the only way we have to distributing existing Cable TV phone lines absent state-specific line count data.
Wireless	1) USAC data -HC20 - CETC Reported Lines by Incumbent Study Area - High Cost Model 1Q05 (ETC Wireless only) and 2) the FCC's December 2004 Monitoring Report - Table 13 (June 2004 Data) reports all wireless phone lines by state.

### Local Revenues

ILEC - ROR	499-A Report. Total ROR ILEC local revenues less high cost support funds divided by the number ROR ILEC lines.
ILEC - Price Cap	ARMIS 43-01 Line 1010 - Annual Basic Local Services Revenues provided the base number. From there we backed out SLC (also from ARMIS and backed out High Cost Support funds (from the HC-01 report). Total local revenues for each individual Price Cap ILEC were then divided by the number of that LEC's local lines. Local revenue includes vertical features and is a weighted average of 1R, 1B, multi-line B rates.
CLECs	Estimated local revenue by assuming that the CLECs price local service 5% below the price of average local service rates charged by all RBOCs as determined above.
Wireless	The CTIA website data provides publicly available data stating that the Average Revenue Per User (ARPU) is \$49.46 per month. The FCC uses this same data in its monitoring reports.)
Cable TV Lines	The FCC does not collect data showing basic local rates for phone service provided by Cable TV companies. We assumed that the bulk of phone lines provided over broadband facilities are provided by the Cable TV companies and that they charge a standard rate of \$39.95.

### SLC Revenues

ILEC - ROR	NECA Tariff Review Plan - 2004
ILEC - Price Cap	FCC ARMIS 43-04, Row 4010 Interstate End User Revenues. Provides revenue by ILEC by state.
CLECs	Mirrored average SLC for all RBOCs.
Wireless	not applicable
Cable TV Lines	No SLC explicitly stated. Local rate of \$39.95 could be said to implicitly contain a SLC. Also, most broadband phone companies appear to be offering unlimited long distance calling as part of their \$39.95 package.

### USF/High Cost Revenues - Interstate

ILEC - ROR	HC-01 Report - High Cost USF Support 1Q 2005. Data is submitted 60 days prior to the start of 1Q2005 and is an estimate of revenues. The report breaks out revenues by LEC and by state. Provides detail as to which High Cost category the dollars come from.
ILEC - Price	
Cap	HC-01 Report - High Cost USF Support 1Q 2005. See above.
CLECs	not applicable
Wireless	HC-01 Report - High Cost USF Support - 1Q 2005. Applicable to those wireless carriers that file for support.
Cable TV Lines	not applicable

**State USF Revenues:** State USF totals approximately \$987 million annually nationwide but will not be impacted by the RA proposal. Therefore, they are not included in the model's calculations.

### Intrastate Access Revenues

ILEC - ROR	NTCA October 2004 White paper contained average access rates for small carriers based on study area size. Compared this data to 1) the ROR companies filing FCC ARMIS Report 43-01 state access revenues and 2) to the FCC 499a other ILEC state access revenues in order to verify reasonableness.
ILEC - Price	FCC ARMIS 43-01 Access Report, line 1020 - Network Access Services Revenues which includes accounts 5081, 5082, and 5083 and provides specific amounts for each Price
Cap	Cap ILEC by state. Split between switched and special access developed from data from the FCC "Telecommunications Industry Report 2003" Table 5 + Table 6.
CLECs	CLEC mirrors the per line access revenue of the RBOC for each state.
Wireless	The assumption was made that the wireless carriers do not provide a significant amount of access services to the IXCs. Limited public data regarding wireless-provided intrastate access charges is available.
Cable TV Lines	CLEC mirrors the per line access revenue of the RBOC for each state.

### Interstate Access Revenues

ILEC - ROR	NECA Tariff Review Plan - 2004 & March 2004 NTCA ex parte with the FCC in Docket 01-92. Split between switched and special access developed from data from the FCC
ILEC - Price	"Telecommunications Industry Report 2003" Table 5 + Table 6.
Cap	FCC Report 43-01, the ARMIS Access Report.
CLECs	CLEC mirrors the per line access revenue of the RBOC for each state.
Wireless	not applicable
Cable TV Lines	CLEC mirrors the per line access revenue of the RBOC for each state.

### Access MOUs - Interstate & Intrastate

ILEC - ROR	ER - FCC Report 43-01, the ARMIS Annual Summary Report; Table II. Demand Analysis (Access MOU - Prem + Non Prem) 2003 - Average based on 7 ROR ILECs in data sample. Actual MOUs for ROR ILECs may vary significantly from this small data sample.
ILEC - Price	ER - FCC Report 43-01, the ARMIS Annual Summary Report; Table II. Demand Analysis (Access MOU - Prem + Non Prem) 2003 and provides specific amounts for each Price
Cap	Cap ILEC by state.
CLECs	CLEC mirrors RBOCs per line MOUs for access.
Wireless	The assumption was made that the wireless carriers do not provide a significant amount of access services to the IXCs. Limited public data regarding wireless-provided intrastate access charges is available.
Cable TV Lines	CLEC mirrors RBOCs per line MOUs for access.

## **Local MOUs**

There is limited publicly available data regarding local MOUs. The largest problem being that most local MOUs are likely not recorded or tracked because 1) a large Price Cap ILEC likely would not track and regularly report the number of local MOUs within its own network and 2) a number of carriers have adopted bill and keep agreements and do not record that traffic either. To the extent that this model has estimates for local MOU, these estimates came from FCC Report 43-01, the ARMIS Annual Summary Report; Table II. Demand Analysis which provides data on the number of local calls. Assumptions are made regarding the average length of a call to determine Local MOUs.

## **Reciprocal Compensation Revenues**

Reciprocal Compensation revenues were calculated by estimating 1) the amount of local traffic, 2) the traffic flow between different types of carriers and the % of terminating traffic in each instance, 3) the likelihood of an interconnection agreement, and 4) the possible rate in effect in that agreement. Given the small amount of local traffic that is actually billed reciprocal compensation, these rates must change significantly to recover any sizeable portion of revenue.

## **III. Analysis of Certain Inter-carrier Compensation Proposals**

The RAM was used to analyze proposals from the following parties: ICF, BellSouth, NASUCA, NARUC Version 7 and CBICC. In addition, an analysis of the Rural Alliance plan at varying inter-carrier compensation rates is provided. The CTIA and Western Wireless plans were not modeled, as they are essentially “bill-and-keep” plans with all existing inter-carrier revenues being absorbed by the end user. An analysis of the Qwest plan was not included because the plan’s parameters did not fit within the capabilities of the RAM. Those commenters that advocated broad principles, but provided no numeric data, were not modeled. The following section describes assumptions made relative to each modeled plan:

**ICF**—The ICF plan does not provide for an originating inter-carrier compensation rate. At Step 5 of the transition, the terminating inter-carrier compensation rate is zero for non-CRTCs and \$0.0095 for CRTCs. The RAM analysis includes estimates of local reciprocal compensation revenues that appear to be omitted from the ICF analysis.<sup>3</sup> Under the ICF plan, an additional \$549 million of USF is required to remove the cap from the existing high cost mechanism and increase Lifeline funding. These plan components were not included in the RAM’s estimate of USF.

**BellSouth**—Target end office and tandem rates for originating and terminating traffic are specified in BellSouth’s plan. The Rural Alliance analysis assumes that all of the price cap inter-carrier compensation

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<sup>3</sup> Rural Alliance, ICF and NECA were the only parties that have attempted to estimate revenues currently associated with inter-carrier compensation. The RAM is the most comprehensive model in that it estimates inter-carrier compensation for all classes of telecommunications providers. Although there is not sufficient detail to determine the cause of the difference in estimates it is likely that the most significant differences are in the estimate of intrastate access revenues. The Rural Alliance has relied on high level data from the FCC, as discussed above. Company level detail from the 499-A forms provided to the FCC by USAC, while not publicly available, and would provide for an improved estimate of access revenues.

minutes will be priced at the tandem rate and all RLEC minutes will be priced at the end office rate. Rather than providing additional universal service funding, the BellSouth plan allows RLECs' SLC rates to increase to whatever level is necessary to cover revenue shortfalls.

**NASUCA**—The NASUCA plan provides for both an originating and terminating intercarrier rate. In pricing out its plan, NASUCA used ICF's base period demand and then forecast demand reductions for the larger carriers. In order to compare the various plans on the record, the RAM analysis did not include demand changes. NASUCA's plan does not increase the SLC cap, but it does assume LECs will increase residential end-user rates to a benchmark. For purposes of this analysis, the Rural Alliance calculated a residential rate increase of \$0.12 per month per line for the price cap LECs and \$2.24 per month per line for RLECs. While NASUCA does allow additional universal service to recover part of the shortfall, the increase in both state and federal universal service funding is constrained to \$850 million annually. The proposed changes to the local switching support mechanism were not modeled.

**NARUC Version 7**—The RAM models the NARUC plan with an originating compensation rate of \$0.002 per minute and without an originating rate. In either alternative, terminating rates were calculated on a "blended" basis. The Rural Alliance estimated terminating rates to be \$0.0010 per minute for price cap LECs and \$0.0047 per minute for RLECs. The NARUC plan provides an increase to a composite benchmark rate that includes both local and SLC charges. Price cap LECs were assumed to already be at the benchmark, while RLEC end user rates were assumed to require a \$2.67 per month per line increase to reach the benchmark. NARUC's plan allows for additional USF support, but does not compute the magnitude of the increase.

**CBICC**—CBICC establishes a terminating intercarrier rate of \$0.00212 per minute but does not provide for an originating intercarrier compensation rate. LECs are able to increase SLCs by \$0.50 per line each year until an unspecified cap is reached. Additional USF is available to RLECs, although an amount is not calculated by CBICC.

**Rural Alliance**—An analysis of the Rural Alliance "base case" was performed for the price cap LECs and RLECs. Both originating and terminating intercarrier compensation rates apply. While the current SLC caps remain unchanged, the analysis incorporates an increase of \$2.67 per month per line for the RLECs to account for increases in local rates. The Rural Alliance plan provides additional universal service or support mechanism funding, as required.