

FINAL REPORT

APPLICATION OF TELECONFERENCING IN THE  
VIRGINIA DEPARTMENT OF HIGHWAYS AND TRANSPORTATION

by

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Research Scientist

(The opinions, findings, and conclusions expressed in this  
report are those of the author and not necessarily those of  
the sponsoring agencies.)

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2402

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In light of the fact that a number of the initial teleconferences were held between district and residency offices, the Teleconferencing Task Group recommended that teleconferencing units be installed in the six residency offices in the Salem District to determine whether or not the Department's teleconferencing system should be extended beyond the district level and into the residency level.

Consequently, units were installed in the Salem, Christiansburg, Bedford, Hillsville, Martinsville, and Rocky Mount residency offices. The units, manufactured by Westell, Inc., are called "conference telephones." They are designed for use in individual offices or small conference rooms and feature hands-free, voice activated operation. The audio quality exceeds that of the traditional desktop "square box" but is inferior to the Darome units being used in the district offices. The cost of these units was about half that of the Darome units.

Interviews with the six resident engineers using the Westell units revealed mixed feelings about the utility of the units. Three of them reported using the units regularly, two said they were using them infrequently, and one reported little or no usage.

All six of the engineers found the Westell units to be quite useful for teleconferencing between the district and the residencies. Having a system which can interface with the district office, they said, was extremely beneficial in allowing all residencies to receive information simultaneously. For this reason, all resident engineers believed that the residency teleconferencing system was probably more important to the district engineer than to them individually. Several also stated that the hands-free feature of the units was most desirable. All agreed that using a microphone with such a unit would prove cumbersome.

During the recent flood in southwest Virginia, the residency teleconferencing system provided a much needed means of communication between the district and certain flood-torn residencies. Those who used the system during this period agree that for emergency situations the teleconferencing system is invaluable. The system allowed communication among groups of people during a four-or-five-day period and thus enabled the Department to react quickly to adverse conditions.

When asked what their reaction would be to the removal of the Westell units, only two of the six engineers thought it would have no effect on their operations. The other four have become increasingly

dependent upon the units as a communications tool and would not willingly give them up.

While some resident engineers use the residency teleconferencing system less than others, it is the author's opinion that the system can be of assistance to the residencies and should be left in place. Communications during emergency situations and meetings between the residency and district office staffs represent the primary uses for the system. In 1985 the system was used for meetings four times and in emergency situations numerous times. From a cost savings standpoint, the system has more than paid for itself through removing the need for travel by the resident engineers on these occasions. From the standpoint of use, it appears that the system is being used about as much as it is going to be. Occasionally, it is being used for conference calls and as a hands-free telephone.

For all of the aforementioned reasons, it is the author's opinion that the residency teleconferencing system in the Salem District is a useful communications tool. While it is not recommended that the residency system be expanded into all districts, it is recommended that the districts be looked at on a case-by-case basis to determine if a teleconferencing system is warranted. Where there is a great deal of communication between the district and residency offices--especially those separated by great distances--the installation of a teleconferencing system should be considered. In the Bristol District, for example, records show that several teleconferences between district and residency personnel have been held over the last two years. In these communications, however, the residency personnel have continued to use telephones, and it is believed that this situation could be improved if they were provided units such as those now in the Salem District residencies to allow group interactions in each office.

Finally, whether or not teleconferencing is to become a useful means of communication among field personnel depends a great deal on the personalities involved. This author found that some field managers, as a matter of style, simply do not prefer to communicate via an electronic medium. On the other hand, some do. Thus, any attempt on the part of the Department to expand teleconferencing to the residency level has to take into account, along with all of the aforementioned items, the style of the district engineer as well as the resident engineers who will potentially become the users of the system. The Department should make every effort to avoid force-feeding this technology to individuals who are going to resist using it. While no doubt difficult, this judgment must be made to avoid an unnecessary expenditure for equipment which likely will not be used.

2405

ATTACHMENT  
DATA ON VDH&T TELECONFERENCES  
1984 - 1985

1984 VDH&T TELECONFERENCING EXPENDITURES & SAVINGS

Originating Office	Number of Participants	Number of Locations	Meeting Length(min.)	Face-to-Face Cost	Cost of Teleconferences	Savings
1 RESEARCH	29	10	50	\$2,775.94	\$145.00	\$2,630.94
2 RESEARCH	17	2	34	\$83.44	\$5.44	\$78.00
3 RESEARCH	9	8	50	\$757.96	\$108.00	\$649.96
4 SALEM	7	7	30	\$272.76	\$60.90	\$211.86
5 SALEM	6	6	10	\$239.54	\$15.00	\$224.54
6 SALEM	7	6	30	\$862.40	\$45.00	\$817.40
7 SALEM	7	7	30	\$229.54	\$54.60	\$174.94
8 BRISTOL	18	4	40	\$1,538.46	\$52.80	\$1,485.66
9 BRISTOL	8	7	47	\$295.98	\$88.83	\$207.15
10 BRISTOL	9	7	16	\$329.20	\$30.24	\$298.96
11 BRISTOL	9	7	16	\$272.76	\$52.50	\$220.26
12 BRISTOL	7	7	25	\$272.76	\$43.75	\$229.01
13 BRISTOL	9	8	95	\$851.40	\$190.00	\$661.40
14 CULPEPER	5	2	20	\$316.98	\$5.20	\$311.78
15 CULPEPER	7	2	120	\$190.32	\$32.40	\$157.92
16 CULPEPER	8	2	30	\$327.20	\$7.80	\$319.40
17 CULPEPER	3	2	25	\$136.88	\$6.50	\$130.38
18 CULPEPER	6	2	15	\$243.76	\$3.45	\$240.31
19 CULPEPER	6	5	20	\$189.32	\$27.00	\$162.32
20 EDINBURG	3	3	68	\$210.10	\$55.08	\$155.02
21 CENTRAL	55	11	70	\$3,425.76	\$192.50	\$3,233.26
22 CENTRAL	29	8	50	\$2,479.84	\$104.00	\$2,375.84
23 CENTRAL	11	5	86	\$512.74	\$133.30	\$379.44
24 CENTRAL	28	10	28	\$1,583.68	\$89.60	\$1,494.08
25 CENTRAL	24	2	120	\$921.60	\$33.60	\$888.00
26 CENTRAL	4	2	75	\$630.00	\$37.50	\$592.50
TOTAL	331			\$19,950.32	\$1,619.99	\$18,330.33

2406

1985 VDH&T TELECONFERENCING EXPENDITURES & SAVINGS

Originating Office	Number of Participants	Number of Locations	Meeting Length(min.)	Face-to-Face Cost	Cost of Teleconferences	Savings
1 RESEARCH	6	6	30	\$216.25	\$50.40	\$165.85
2 RESEARCH	4	7	90	\$216.25	\$176.40	\$39.85
3 RESEARCH	4	4	30	\$434.98	\$36.00	\$398.98
4 SALEM	16	7	20	\$481.74	\$37.80	\$443.94
5 SALEM	19	7	17	\$611.84	\$30.94	\$580.90
6 SALEM	16	7	32	\$542.18	\$64.96	\$477.22
7 SALEM	13	7	30	\$442.30	\$65.10	\$377.20
8 SUFFOLK	4	2	60	\$190.32	\$17.40	\$172.92
9 SUFFOLK	4	2	60	\$190.32	\$18.60	\$171.72
10 SUFFOLK	4	2	60	\$190.32	\$16.80	\$173.52
11 RICHMOND	16	8	30	\$1,466.80	\$76.80	\$1,390.00
12 RICHMOND	16	8	30	\$1,466.80	\$72.00	\$1,394.80
13 RICHMOND	16	8	30	\$1,466.80	\$76.80	\$1,390.00
14 STAUNTON	8	6	56	\$336.20	\$94.08	\$242.12
15 BRISTOL	8	7	34	\$295.98	\$64.26	\$231.72
16 BRISTOL	21	9	90	\$3,521.26	\$234.90	\$3,286.36
17 BRISTOL	9	7	75	\$319.20	\$152.25	\$166.95
18 BRISTOL	7	7	25	\$272.76	\$49.00	\$223.76
19 BRISTOL	21	7	50	\$628.06	\$108.50	\$519.56
20 BRISTOL	4	3	45	\$529.20	\$41.85	\$487.35
21 BRISTOL	11	2	18	\$311.32	\$5.58	\$305.74
22 BRISTOL	5	5	25	\$156.10	\$35.00	\$121.10
23 CULPEPER	8	2	10	\$83.44	\$2.90	\$80.54
24 CULPEPER	4	3	35	\$193.32	\$28.35	\$164.97
25 CULPEPER	3	2	30	\$139.88	\$7.80	\$132.08
26 CULPEPER	9	2	60	\$319.42	\$17.40	\$302.02
27 CULPEPER	26	10	180	\$2,182.08	\$522.00	\$1,660.08
28 CULPEPER	14	10	90	\$1,141.83	\$288.00	\$853.83
29 CULPEPER	13	2	30	\$83.44	\$8.40	\$75.04
30 CENTRAL	10	10	60	\$995.06	\$174.00	\$821.06
31 CENTRAL	8	2	40	\$195.76	\$12.40	\$183.36
32 CENTRAL	8	2	40	\$195.76	\$12.40	\$183.36
33 CENTRAL	8	2	40	\$190.32	\$12.40	\$177.92
34 CENTRAL	8	2	40	\$190.32	\$12.40	\$177.92
35 CENTRAL	8	2	40	\$190.32	\$12.40	\$177.92
36 CENTRAL	8	2	40	\$190.32	\$6.40	\$183.92
37 CENTRAL	8	2	40	\$190.32	\$12.40	\$177.92
38 CENTRAL	8	2	40	\$190.32	\$12.40	\$177.92
39 CENTRAL	8	2	40	\$279.98	\$12.40	\$267.58
40 CENTRAL	9	2	90	\$218.98	\$28.80	\$190.18
41 CENTRAL	5	4	40	\$276.76	\$46.40	\$230.36
42 CENTRAL	12	5	47	\$399.08	\$72.85	\$326.23
43 CENTRAL	8	2	40	\$713.96	\$12.40	\$701.56
44 CENTRAL	11	5	52	\$519.52	\$65.00	\$454.52
45 CENTRAL	2	2	90	\$415.00	\$57.60	\$357.40
46 CENTRAL	2	2	30	\$415.00	\$18.00	\$397.00
47 CENTRAL	11	8	82	\$216.25	\$39.13	\$177.12
TOTAL	451			\$24,413.42	\$3,020.05	\$21,393.37

2407

VDH&T TELECONFERENCING EXPENDITURES & SAVINGS TO DATE

YEAR	Number of Participants	Face-to-face Cost	Cost of Teleconferences	Savings
1984	331	\$19,950.32	\$1,619.99	\$18,330.33
1985	451	\$24,413.42	\$3,020.05	\$21,393.37
TOTAL	782	\$44,363.74	\$4,640.04	\$39,723.70

-2408