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ПРОГРАМА ПОКРАЩЕННЯ МІСЬКОГО
ГРОМАДСЬКОГО ТРАНСПОРТУ

Urban Public Transportation
Improvements Project

USAID
United States Agency
for International
Development

Urban Public Transport Improvements Project

Final Quarterly Performance Report

Rec'd 2/79

Research Triangle Institute
USAID Contract # 121-0007-C-00-7204-00
Reporting period: October - December, 1998

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BACKGROUND

USAID contracted with RTI in September 1997 to implement the Ukraine Urban Public Transportation Improvement (BUS) Project. The BUS project helped to redress these deficiencies by providing (1) matching grants of US\$1 million for purchase of spare parts and buses and (2) technical assistance in planning, financing, and operating municipal transportation systems. The project ended 31 December 1998, when a total of 78 additional buses were targeted to be added to municipal fleets in nine cities. Development Group International (DGI), subcontractor to RTI, provided transportation consulting expertise. The BUS project had four main objectives:

- (1) achieve significant and visible restoration of bus capacity and service levels;
- (2) reduce operating costs;
- (3) increase revenue from fares;
- (4) develop plans for capital financing and create mixed motorized/electric systems.

EXPECTED RESULTS

The goal of this project is to improve the urban public transport system in targeted mid-sized cities in Ukraine.

- per Contract*
- Results:**
- ✓ 1) Achieve significant and visible restoration of bus capacity and service levels.
 - ✓ 2) Reduce public transportation operating costs.
 - ✓ 3) Increase revenue from fares.
 - ✓ 4) Develop plans for capital financing and create mixed motorized/electric systems.

The activities in this report for achieving these result are: project planning and management; procurement and repair; direct technical assistance to partner cities; and operational improvements. The activities described below were performed by RTI and RTI's subcontractor, Development Group International.

CURRENT ACTIVITIES

Activities as Outlined by the Work Plan:

The work plan for final three months of the BUS project outlined three main activities: 1) final implementation of operations and financial management systems for all project cities; 2) conduct of a workshop on lessons learned; and 3) project close down. At USAID's request RTI carried out an additional task, 4) preparation of and presentation of a workshop in Ternopil for transportation officials from Poland. The latter task required extension of the project from the original end date of December 15 to December 31.

Performance:

1. Final implementation of operations and financial management systems for all project cities

RTI carried out a strategy for implementation of operations and financial management systems that supported the development of model systems in the trolleybus enterprises in Ternopil and Kirovohrad. The computerized systems incorporated the accounting, inventory control, fleet management, and indicator reporting innovations. These innovations were developed over the course of the project and the principal concepts and practices conveyed to trolleybus managers in the May and June workshops, the Five-year Plans and/or Business Plans, and accounting and financial reporting consultancies carried out in winter '97-'98 and spring '98.

RTI held a study tour and workshop in Ternopil on Bus Enterprise Management Information System (MIS) on 24 November where enterprise directors, computer managers, and accountants saw firsthand the computerized systems in place and learned from the trolleybus companies of Ternopil and Kirovohrad how the systems were designed, developed, procured, and implemented. Participants from five cities attended.

Prior to the 24 November event, the conference held in Kyiv on 4 November presented a session on information system experience that was led by the trolleybus enterprise directors from Ternopil and Kirovohrad in order to present experience in information systems to a large audience of cities, donors, and lender institutions. See details in the section that follows.

2. Conduct of a workshop on lessons learned

The *Effective Local Government: Initial Results Conference* summarizing RTI's work and experience in Ukraine over last years was held in Kyiv on 4 November. The conference gave project counterparts from the various cities involved in the Urban Public Transportation Improvements and Effective Local Government projects the opportunity to demonstrate their achievements. Opening speeches were delivered by the US Ambassador to Ukraine, Mr. S. Pifer; USAID Acting Deputy Chief of Mission Mr. E. Gast, Mr. V. Oliynyk, AUC President, and Parliamentary Deputy Mr. Yu. Klyuchkovskiy. Mayors and municipal finance, transportation, and water supply officials from partner Ukrainian cities were at the event.

The conference agenda included a general presentation of the results of RTI's work in Ukraine, group discussions, AUC presentation and RTI and city booths. Bohdan Radejko, RTI Chief of Party in Ukraine, and Irina Chaika, Project Coordinator, presented a slideshow about the cities' accomplishments. Following that, BUS project sessions were held on:

- Improving operations of public transportation;
- MIS implementation in the trolleybus companies.

3. Project close down

Project close down took place on the delayed schedule necessitated by the workshop for Polish officials and in accordance with the extension of the project until 31 December. Disposition of office machines, furniture and property used under the BUS project is proceeding post-project in consultation with the USAID/Ukraine mission.

4. Preparation of and presentation of a workshop for transportation officials from Poland

At the request of USAID in October 1998, RTI designed the *Teaming, Planning, Executing Seminar* as a concrete step to implement the Poland Ukraine Cooperation Initiative (PUCI), signed in Kyiv late

October 1998. The seminar was held in Ternopil on 14-15 December in order to disseminate to Polish counterparts selected by USAID/Poland the lessons learned over the course of the BUS project by Ukrainian trolleybus enterprise managers and municipal transportation decision makers. The seminar was organized around lessons learned in efforts to realize the BUS project's objectives: significant and visible restoration of bus capacity and service levels, reduction of public transportation operating costs, increase of revenues from fares, and development of plans for capital financing and creation of mixed motorized and electric systems.

The lessons learned have primarily been documented in the project's five case studies, which focused on: restructuring municipal transportation enterprises; increasing revenues from fares; reducing operating costs; introducing debt financing; and developing automated systems for accounting, parts inventory, and maintenance. The directors of trolleybus in Kirovohrad, Ivano-Frankivsk, Ternopil, L'viv and Rivne presented the case studies and led the discussions.

RESULTS

I. Improved Service Delivery: significant and visible restoration of bus capacity and service levels

The following performance indicators were established to measure this objective:

- 1. Trolleybuses restored – a minimum of 78 trolleybuses restored with joint project and city funds to the fleets in nine cities.
- 2. Increase in the number of operable buses and trolleybuses from 834 to 903.

Performance:

1. Trolleybuses restored

The cities restored or added to the fleet more than twice the number of trolleybuses called for in the project contract, with the final tally of 166. See Table 1. All cities achieved the targeted number of buses to be restored by the end of the September, with the exception of Chernivtsi. Chernivtsi's combined two trolleybus companies proposed the most ambitious target of all the cities and only missed the target of 42 vehicles by one. L'viv would have exceeded its target by six trolleybuses, except that three vehicles for the L'viv enterprise have been held up in customs for months because of an import regulation that went into effect after the City had contracted with Czech firms to buy refurbished buses as part of the City's matching funds agreement. City officials were unable to resolve this matter by project end, which would have made the number 16 for trolleybuses repaired or added to the fleet. RTI consultants have prepared and made available to USAID a detailed report on customs clearance procedures, laws and regulations, and recommendations for improving the import of humanitarian and technical assistance customs processing.

The cities met the targets set for trolleybus fleet improvements with parts or trolleybuses purchased according to the matching funds agreement under the BUS project. Only the City of Rivne failed to allocate the matching monies to the trolleybus enterprise. The change of administration in the elections of

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Table 1. Planned and Actual Number of Trolleybuses Repaired or Added to City Trolleybus Enterprises During the BUS Project

Period		End of September	End of Project
City	Planned	Actual	Actual
Lviv (W)	10	13	13
Rivne (W)	8	8	8
Chernivtsi (W)	42	38	41
I-Frankivsk(W)	8	8	8
Kirovohrad(E)	37	24	37
Sumy (E)	9	9	9
Mariupol (E)	19	5	19
Kryvyi Rih(E)	15	15	15
Zhytomyr (E)	16	16	16
Total	164	136	166

Source: Trolleybus company records and site verification by RTI.

spring 1998 brought in a new mayor who did not honor the commitment made by the previous administration. Despite this setback, the trolleybus enterprise managed to meet its commitment for refurbished buses and to improve its overall profitability.

As of project end, all parts purchased with USAID funds were delivered to the cities in full. Ukrainian vendors supplied parts as specified and on time. Czech vendors conscientiously worked to meet deadlines, but customs procedures on the Ukrainian side proved a time-consuming challenge throughout and delivery delays occurred as the result. The City of L'viv (see above) failed to resolve customs blockage of a shipment of three refurbished Czech trolleybuses bought with municipal funds. The purchase of all parts using USAID funds complied with competitive procurement procedures and involved the trolleybus enterprises' management teams as active partners. ✓

2. Increase in the number of operable buses and trolleybuses from 834 to 903.

The project cities increased the number of operable buses and trolleybuses by 69 units to 912 total by the end of the project. Only Zhytomyr and Kryvyi Rih showed a reduction in the number of vehicles in their fleets. (See Table 2.)

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Table 2. Number of Busses in Service in Trolleybus Enterprises

N	City	Time Period	Baseline:			Current	% change	
		Mar-97	Mar-97	Mar-98	Mar-98	Jun-98		Jun-98
1	Chernivtsi1		101.0		101.0	101.0	101	0%
2	Chernivtsi2		32.0		42.0	41.0	39.3	23%
3	Ivano-Frankivsk		41.0		69.0	66.0	69	68%
4	Kirovohrad		101.0		101.0	101.0	101	0%
5	Kryvyj Rih		108.5		96.0	98.0	105	-3%
6	L'viv		78.0		81.4	83.7	88.2	13%
7	Mariupol		100.0		100.0	100.0	107	7%
8	Rivne		52.2		61.7	62.5	62.5	20%
9	Sumy		64.0		86.0	86.0	86	34%
10	Zhytomyr		156.8		156.0	170.0	153	-2%
	Total		834.5				912	

Source: Trolleybus Enterprises

✓ **II. Improved Management: reduce operational costs and increase revenue from fares**

Performance:

The following performance indicators were established to measure this objective:

- 1. fifty percent increase in transportation revenue
- 2. decrease in subsidy from the cities to the trolleybus enterprises
- 3. reduction in the number of employees per vehicle from 10.9 to 8
- 4. increase in the availability ratio from 65.9% to 75%.

exceeded
in W-yes
not met
not met

In addition, the contract called for:

- 5. approximately 158 people to be trained in improved management techniques and implementation of those techniques over the course of the project.

- 1. Fifty percent increase in transportation revenue

All trolleybus enterprises demonstrated dramatic increases in fare revenue by the end of the project. The fare revenue increases are the most dramatic outcome of the project, far surpassing the estimated 50%. Even in Mariupol, which lacked support by city leaders of the new mayor's administration, fare revenue increased dramatically by 571,000 Hr. for the first 8 months of 1998 compared to the same period in 1997, allowing the enterprise to cancel all its wage arrears and to start a reserve fund for parts and equipment. See Table 3.

RTI proposed in the work plan to measure the change in revenue at both the trolleybus enterprise and on a city-wide basis for transportation sector revenues—parking, franchise fees, vehicle permits, and so forth. Gathering data from the cities did not prove to be feasible because of the inability to agree with and among the cities on what types of revenues would be counted and on the cities' general failure or refusal to report to RTI project staff.

Table 3. Change in Revenue for Trolleybus Enterprises from 1996 to 1998

N	Time Period	Baseline: 1996	Mar-98	Jun-98	Sep-98	Dec-98 (Projected)	1998	Change
							Total (Projected)	from 1996 to 1998
							Inflation Adjusted	%
c	Chernivtsi1	699	900	820	750	673	2,358	237%
2	Chernivtsi2	163	311	325	301	303	930	470%
3	Ivano-Frankivsk	378	616	744	794	896	2,287	505%
4	Kirovohrad	644	719	1,460	617	830	2,719	322%
5	Kryvyi Rih	114	963	1,426	1,900	2,367	4,991	4271%
6	L'viv	840	832	844	808	804	2,465	194%
7	Mariupol	928	1,075	1,089	2,116	2,468	5,060	446%
8	Rivne	466	622	702	696	747	2,076	345%
9	Sumy	732	1,020	1,936	3,000	3,965	7,441	917%
10	Zhytomyr	826	759	801	1,719	2,053	3,998	384%

Source: Trolleybus enterprises

Note: Inflation adjustment for 1997 and through September 1998 calculated at 25%

3. Decrease in subsidy from the cities to the trolleybus enterprises

As all trolleybus enterprises demonstrated overall cost reductions and fare revenues, the operating subsidy from the cities has correspondingly been reduced. See Table 4. The subsidy was reduced in all Western cities in the table showing the differences from 1996 to 1997. The Eastern cities had not participated in the BUS project yet in 1997. As of this report, the figures for 1998 were not available. Because subsidies do not occur evenly throughout the year, it is not possible to extrapolate the final year-end subsidy level from monthly or quarterly trends.

Table 4. Subsidy as a percentage of operating costs

N	City	Time Period		
		Subsidy % 1996	Subsidy % 1997	Subsidy % 1998
1	Chernivtsi1	50.8%	30.5%	n/a
2	Chernivtsi2	51.1%	37.3%	n/a
3	Ivano-Frankivsk	26.6%	23.1%	n/a
4	Kirovohrad	102.8%	17.8%	n/a
5	Kryvyi Rih	30.4%	35.1%	n/a
6	L'viv	41.1%	33.9%	n/a
7	Mariupol	40.0%	45.9%	n/a
8	Rivne	42.2%	14.8%	n/a
9	Sumy	39.6%	36.3%	n/a
10	Zhytomyr	77.2%	77.7%	n/a

Source: Trolleybus enterprises

3. Reduction in the number of employees per vehicle from 10.9 to 8

The overall trend in the number of employees per vehicle at the trolleybus enterprises is downward in September '98, compared to the baseline average established in March '97 at 10.9. See Table 5. All Western Ukraine companies, where the project started work earlier and where Ternopil's experience was disseminated from 1995 onward, exhibited reductions in personnel. Sumy, Mariupol, and Kirovohrad showed upward trends in the number of employees per vehicle. L'viv and Kirovohrad enterprises approached the target of 8 employees per vehicle.

why?
see corrected
table in main revision

Table 5. Employees per vehicle

N	Time Period	Baseline: Mar-97	Mar-98	Jun-98	Sept-98
1	Chernivtsi1	11.2	10.1	8.8	n/a
2	Chernivtsi2	9.2	9.0	8.9	9.3
3	Ivano-Frankivsk	14.3	12.8	12.8	12.3
4	Kirovohrad	8.0	8.2	8.3	8.3
5	Kryvyi Rih	16.0	16.0	16.0	n/a
6	L'viv	12.5	11.0	10.8	8.5
7	Mariupol	8.6	7.9	9.8	9.8
8	Rivne	12.9	12.1	10.5	10.1
9	Sumy	7.3	11.0	n/a	n/a
10	Zhytomyr	9.0	9.0	6.7	10.0
AVERAGE:		10.9	10.7	10.3	9.8

Source: Trolleybus enterprises

4. Increase in the availability ratio from an average of 67.8% to 75%

The availability ratio, defined as the total number of operable trolleybuses divided by the total number of trolleybuses in the fleet, did not show the dramatic increase predicted in the work plan. See Table 6. The L'viv bus depot systematically and thoroughly reduced the large inventory of inoperable trolleybus carcasses and removed them from the premises, sold them as scrap, and erased them off the books. Chernivtsi 2 enterprise dramatically increased the availability of its small fleet with the help of USAID-provided parts. Contrary to the contractor's expectations before travelling to and selecting them, the East Ukrainian cities maintained fewer inoperable vehicles than expected in inventory, so little appreciable change occurred in these cities.

Table 6. Availability Ratio

N	City	Time Period	Baseline:				% change
		Mar-97	Mar-98	Jun-98	Sept-98	Baseline to-Sept-98	
1	Chernivtsi1		76.9%	84.4%	84.6%	84.6%	10.0%
2	Chernivtsi2		57.0%	72.3%	70.8%	70.6%	23.9%
3	Ivano-Frankivsk		65.3%	68.3%	67.5%	67.6%	3.5%
4	Kirovohrad		73.3%	74.1%	73.6%	70.0%	-4.5%
5	Kryvyi Rih		56.9%	55.8%	55.8%	55.8%	-1.9%
6	L'viv		58.4%	60.0%	66.4%	69.8%	19.5%
7	Mariupol		75.3%	77.2%	79.0%	76.0%	0.9%
8	Rivne		80.1%	80.8%	81.6%	82.3%	2.8%
9	Sumy		59.8%	61.0%	59.3%	59.3%	-0.8%
10	Zhytomyr		75.0%	76.1%	72.2%	72.8%	-2.9%
	AVERAGE:		67.8%	71.0%	71.1%	70.9%	5.0%

Source: Trolleybus enterprises

added **5. Number to be trained in improved management techniques: 158**

The contractor team of RTI and DGI trained 169 participants in five formal training events that occurred over the course of the BUS project. In addition, management staff of the trolleybus companies worked with the consultants, participating in tenders and evaluation of bids for parts procurement in hands-on training in competitive procurement.

III. Improved Financial Planning: Develop plans for capital financing and create mixed motorized/electric systems.

The following performance indicators were established to measure this objective:

- net ✓* 1. Development of five-year public transportation plans for project cities
- not mostly ✓* 2. Adoption of leasing and contracting out approaches involving the private sector
- or ✓* 3. Adoption of debt financing of equipment and facilities.

Performance:

1. Development of Five-year Plans for the project cities

DGI prepared Five-year Plans for all the project cities. In all cities, the plans presented the rationale for the creation of mixed motorized and electric fleets at the trolleybus enterprises and documented how the introduction of minibuses to the fleets would save on operating costs and allow the firms to borrow the needed money base on projected revenues. In the cases of Kirovohrad and Ivano-Frankivsk, the documents were expanded to provide the enterprises with business plans on the rationale that in these two cities the interest and expertise were the greatest. Consultants traveled to the cities to present these plans to mayors, to transportation and finance officials at the city-level, and to the trolleybus enterprise management team. The principal points discussed and resolved during the meetings were:

- Financing of a mixed fleet, including analysis of operating efficiencies

- Privatization and restructuring, including contracting out of maintenance and other operations
- Regulatory environment, including establishment of an association of public transport operators
- Concessions to private operators, including the use of municipal tender committees
- Route redesign for service improvement and cost savings

2. Adoption of leasing and contracting out approaches involving the private sector

Cities reviewed and discussed the plans with the consultants and concluded, in all cases except Mariupol, by adopting the principal recommendations of the reports. Mariupol's newly elected communist party mayor and his team rejected recommendations to privatize the trolleybus company or add minibuses to the fleet. Former Mayor Pozhivanov, by contrast, previously openly supported the full-scale elimination of trolleybuses and their replacement by private motor buses. With the notable exception of Mariupol post spring 1998 elections, mayors support the move to privatize trolleybus enterprises.

3. Adoption of debt financing of equipment and facilities

Cities reviewed and discussed the plans with the consultants and concluded, in all cases except Mariupol, by adopting the principal recommendations of the reports, including debt financing of equipment and facilities. Ivano-Frankivsk's trolleybus company implemented the recommendations of the consultants by securing financing from a local bank to buy minibuses in April 1998 and arrangements with the City for ownership of minibuses by the enterprise, a necessary step toward privatization. Kirovohrad implemented the business plan's recommendations by concluding a contract with a international firm for lease-purchase of minibuses in November 1998. Ternopil's trolleybus manager was actively negotiating private financing of minibuses to add to his fleet as of December 1998.

LESSONS LEARNED

Urban Public Transportation Sector Reform: The private sector is now the big player in providing urban transport, representing an investment of more than \$10 million in project cities, up from zero in 1995. Competition by the private sector has proved the major engine of change for trolleybus enterprises. Trolleybus directors have rapidly had to become financial managers and business plans are common parlance. This represents a major change from trolleybus enterprise managers' previous responsibilities consisting mainly of dispatching and maintenance.. With changed management practices, even without new technology, trolleybus enterprises can operate without operating losses. With new technology – minibuses added to complement the trolley-buses – enterprises can operate with a profit.

Project Design: The BUS project demonstrates that assistance projects that allow for choice and competition among cities can create positive dynamics for sustainable change. Pilot projects, such as the Municipal Finance and Management project's experiment with the trolleybus enterprise in the city of Ternopil, provide an excellent base for extension projects.