

50 Years of IDA Assistance to Transport

FY1961-2010

[DRAFT]

Peter O'Neill¹

Shinok Park

Hudayberdi Ahmedov

¹ Peter O'Neill (Lead Infrastructure Specialist, TWITR), Shinok Park (Consultant, CFPIR), Hudayberdi Ahmedov (Consultant, TWITR).

Table of Contents

1. Overview of Bank Support to port Portfolio and Projects	2
Transport and Development	3
Bank Transport Portfolio.....	4
Role of IDA.....	5
2. Major Areas of IDA Transport Projects	6
Portfolio Composition and Trends	6
Regional Distribution	10
3. Aggregate IDA Transport Results	11
Roads and Railways	11
Development Policy Lending and Other Support	13
Project Examples.....	13
4. Challenges and Moving Forward	15
Annex 1: IDA 50-Year Aggregate Results from Transport Projects	17
Annex 2: Road Output Estimation from IDA Road Projects with Missing Data	18

Tables & Charts:

- Table 1: IDA Transport Portfolio by Subsector
- Table 2: IDA Transport Lending by Region and Subsector
- Chart 1: Bank Total Lending to Transport by Decade
- Chart 2: IDA Lending to Transport by Decade
- Chart 3: IDA’s Share in the Bank Transport Lending by Decade
- Chart 4: IDA Transport Lending Trend by Subsector
- Chart 5: IDA Transport Portfolio Composition by Decade
- Chart 6: Roads Constructed, Rehabilitated, or Maintained by Location
- Chart 7: Share of 100 Percent Transport Projects by Decade
- Chart 8: IDA Transport Lending by Region, FY1961-2010

1. Overview of Bank Transport Portfolio and Projects

Transport and Development

Transport is crucial for economic growth and the welfare of populations. Virtually no production can take place unless inputs such as raw materials, labor, and fuel can be moved from different locations; neither can manufactured products be delivered to consumers. By the same token, no matter how good the schools and health services, they will be of no use unless people can access them through roads and safe transport systems.

Indeed, it is transport that ‘connects the dots’ for development. Improved transport makes five key contributions to sustainable development and poverty alleviation:²

- Facilitating economic growth and regional integration through international trade.
- Making cities work better for their citizens, for the environment, and for economic growth.
- Creating economic opportunity and growth in rural areas through better access to markets.
- Providing access to facilities that deliver health care and education.
- In all these functions, becoming safer and cleaner for users and the community.

Studies have shown that poverty reduction is more likely to be effective when communities have ready access - at all hours and in all weather - to essential services and markets. Impact evaluations³ have indicated that poor communities and the poor tend to benefit even more than others from rehabilitated or constructed roads. Yet, an estimated one billion people, or about 40 percent of the rural population in the developing world still lack direct access to an all-season road.⁴ In urban and inter-urban areas, more public transportation options are needed. The World Bank⁵ is facilitating effective strategies to address these challenges and to increase the sector’s contribution to poverty reduction.

In response to the recent global crisis, the Bank has substantially increased its lending to transport and other infrastructure areas. Financing for infrastructure is now seen as critical for job creation and future productivity. During FY2009, IBRD and IDA together allocated \$18 billion to infrastructure, over 38% of the total lending (\$47 billion). It is estimated that infrastructure lending, including that for transport, has further increased to \$22 billion during FY2010, 37% of all allocation (Press release No2011/001/EXT).

This renewed focus on transport and infrastructure development coincides with the 50th anniversary of the International Development Association (IDA), the World Bank’s concessional financing window for low-income countries. IDA has made a significant contribution to building highways, railways, ports and other areas of infrastructure across continents since its establishment in 1960. Over the past fifty years, IDA has funded, among others, close to 1 million kilometers of roads and highways, which is equivalent to circling the globe 25 times or one and a half trips to the Moon.

² From Transport Business Strategy 2008-2012, "2.1 Transport and the Millennium Development Goals".

³ The results from “Rural Roads and Poor Area Development in Vietnam (2009)” point to significant impacts of rural road rehabilitation on local market development. They also uncover evidence of impact heterogeneity, with a tendency for poorer communes to have higher impacts due to lower levels of initial market development.

⁴ The Rural Access Index that measures the proportion of rural dwellers who live within 2 kilometers of an all-weather road shows that only 37 percent of rural people live within 2 kilometers of an all-weather road in the poorest group of 15 Sub-Saharan African countries. In the richer IBRD countries, the comparative figure is 94 percent.

⁵ In this report, IDA and the International Bank for Reconstruction and Development (IBRD).

This report attempts to assess IDA’s contribution to the development of transport infrastructure in the developing world over the last five decades, through aggregation of major output results from IDA-funded transport projects. What follows are an overview of the Bank transport portfolio and the role of IDA; analysis on its evolution and operational trends; and detailed results from aggregation of major transport outputs – roads, bridges, and railways; and conclusion: challenges and moving forward.

Bank Transport Portfolio

In the past five decades, from the fiscal year 1961 through 2010, the World Bank as a whole (IBRD and IDA) has provided a total of about \$110 billion⁶ in current US dollars (or \$214 billion in 2010 US dollars) to support 2,238 transport projects in [180] low- and middle-income countries. Approximately 60 percent⁷ of these projects have been implemented under the Transport Sector Board while the rest are mapped to agriculture and other sectors which have increasingly embedded in their projects transport as a key component. Chart 1 and 2 below show the Bank's transport lending by decade, including that of IDA.

Chart 1. Bank Total Lending to Transport
(in current dollars, billion)

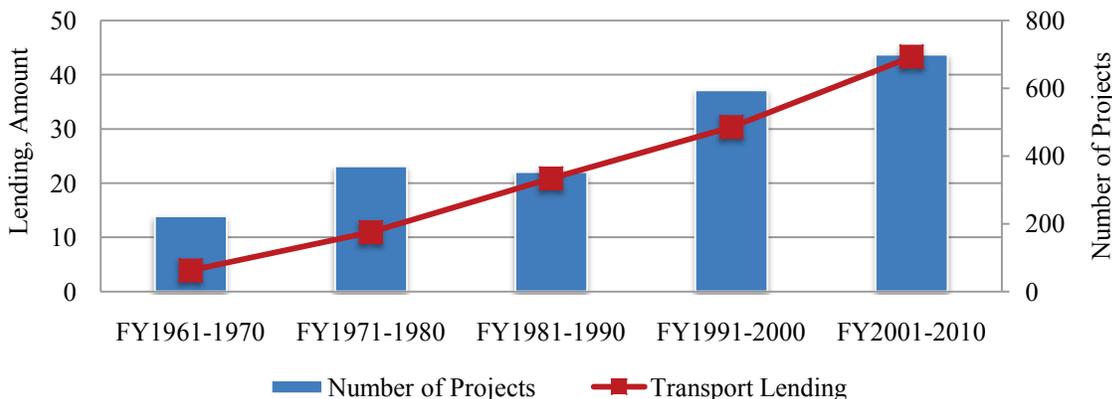
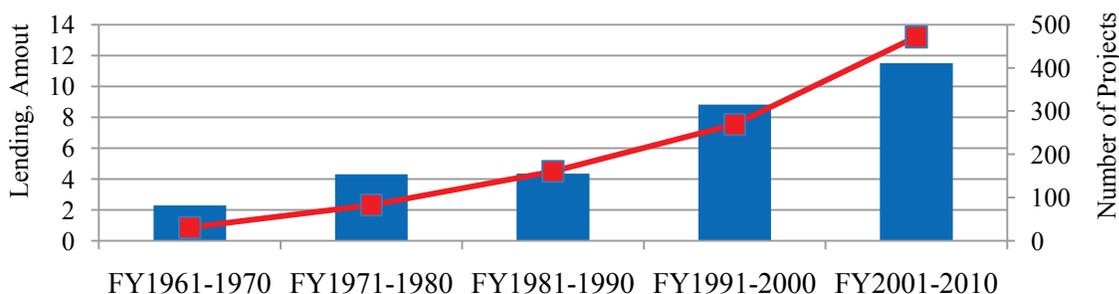


Chart 2. IDA Lending to Transport
(in current dollars, billion)



Transport has constituted a significant portion of the Bank's total portfolio over the decades. Particularly in the 1960s when the importance of infrastructure for development was heightened, almost one out of

⁶ Includes investment loans and development policy loans. The dollar amounts in this report are in current dollars on an approval/commitment basis (e.g. 1961 dollars when committed in 1961) unless otherwise indicated.

⁷ Among 1,113 IDA projects, 56 percent or 619 projects were implemented under the Transport Sector Board.

three⁸ Bank projects was for transport. By the 1970s, the focus was shifted to agriculture and later to health and other social sectors. New development paradigms and Bank strategies shifted the weight transport carried in the Bank's portfolio, with the relative share of transport often down to less than 10 percent of the annual Bank lending. The trend reversed in the 1990s as infrastructure gained a renewed attention.

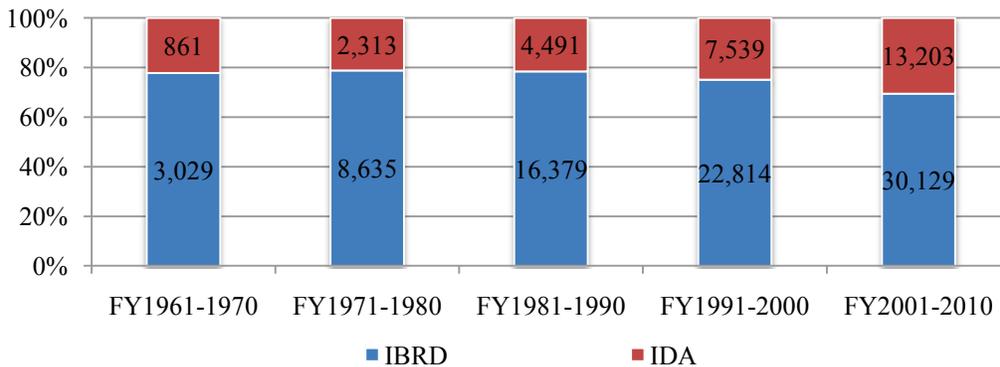
Despite ups and downs in the degree of emphasis placed on the importance of infrastructure, transport has remained an important area of the Bank assistance. In terms of the absolute volume and number of projects, the Bank's investment in transport has increased significantly over time, reaching its peak in the last ten years, FY2001-2010. It has concentrated heavily on construction of roads and highways which has absorbed more than three quarters of the Bank's lending to the sector during FY1961-2010.

Role of IDA

IDA, the World Bank's fund for the world's poorest countries, has provided concessional loans called 'credits' to support transport development in low-income countries since its inception. In the past fifty years, FY1961-2010, IDA has funded 1,113 projects, one half of the Bank's total transport projects (2,238 projects), with a total amount of \$28.3 billion.⁹ This accounts for over one quarter (26 percent) of the Bank's total lending to transport (\$110 billion) during the period.

It is important to note that IDA transport lending has increased significantly in the last couple of decades. IDA's share in total Bank lending to transport was just over one fifth (21 percent) during FY1961-1990. It has increased over the last two decades and reached almost one third (30 percent) during FY2001-2010, while IBRD has increasingly been focusing assistance on social sectors and emerging development areas. Chart 3 shows the increased share of IDA in the Bank's transport portfolio.

Chart 3. IDA's Share in the Bank Transport Lending



The early origins of the Bank's assistance were concentrated upon reconstructing the devastated countries from the Second World War, i.e. Japan and Europe, with railway and waterborne transport forming over two thirds of the portfolio. With the formation of IDA in 1960, there was a move toward placing priority on infrastructure for developing countries. During its first-year operations, FY1961, IDA approved four projects, all of which were infrastructure projects, including three on roads and highways. Transport continued taking the center stage through the 1960s, receiving the largest IDA allocation among sectors, averaging one third of all.

⁸ 193 out of 629 projects or 31 percent of the total Bank projects during FY1961-1970 were transport projects.

⁹ This amount in current US dollars is equivalent to \$52 billion in 2010 US dollars.

In the 1970s and 1980s roads became the majority of the transport portfolio with IDA broadening the programs to include support for institutional reform and an awareness of the importance of maintenance and asset management. By the early 1990s, the transport strategy was influenced by Agenda 21, the principal agreement that emerged from the 1992 Earth Summit in Rio. It described the integration of environment and development in order to fulfill basic needs, improve living standards for all, ensure greater sustainability and formed a context for the 1996 transport sector strategy, “Sustainable Transport” that focused upon sector adjustment with public sector reform and the role of the private sector being enhanced. IDA increased its support for development policy operations accordingly.¹⁰

IDA further developed its focus on rural poverty with the renewed emphasis on infrastructure in the World Development Report 1994, "Infrastructure for Development"¹¹, and the publication of the 1996 sector strategy. At that time, a significant portion of IDA transport activities focused on rural connectivity despite some lost momentum¹² of the Bank transport portfolio in the 1990s, due partly to the belief that the private sector would step in strongly enough to make the need for public intervention financing minimal, and partly due to a lack of economic stimulus activities in response to the economic downturn at the time, especially in East Asia due to the Asian financial crisis.

Although not specifically mentioned, transport was implicitly core to the UN Millennium Development Goals of 2000. IDA increased the investment in transport as an enabler to facilitate achievement of the MDGs. The role of transport in meeting these goals, then becoming the primary objectives of the Bank, was recognized in 2001 with the two-pillar development strategy of Transport founded on social empowerment and growth echoed by the WTO Doha Development Round.

This emphasis was further solidified through the World Bank Infrastructure Action Plan (IAP) in 2003 recognizing the strategic importance of transport to growth, with IDA prioritizing poverty alleviation with rural roads, railways for greener alternatives, ports and logistics for greater trade efficiency, and associated capacity building for sustainability, leading to a strong increase in the transport portfolio.¹³ It also led to the 2007 Transport Strategy Update that firmly rooted the transport business plan as “safe, clean and affordable” interventions – the focus that remains today.

2. Major Areas of IDA Transport Projects

Portfolio Composition and Trends

Roads, railways, urban transport, ports and maritime transport, inland waterways, airports and aviation, and combinations of these diverse modes of transport serve particular parts of a wide spectrum of needs that arise in moving freights and passengers. In the Bank system, transport comprises the following subsectors: i) roads and highways; ii) railways; iii) ports, waterways and shipping; iv) aviation; v) general transport; and vi) other transportation.¹⁴

¹⁰ For DPLs in transport, see Section 3.

¹¹ The WDR 1994 examines the link between infrastructure and development and explores ways in which developing countries can improve both the provision and the quality of infrastructure services. It advocates privatization of infrastructure development, the point endorsed by the 1996 transport sector strategy, “Sustainable Transport”.

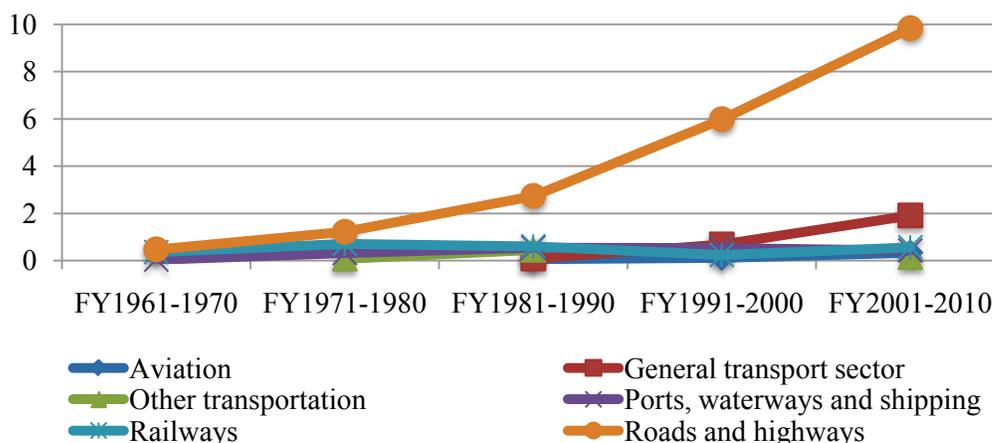
¹² During the mid 1990s, IDA substantially reduced allocations to transport up to 4.8 percent (FY1995) of the total.

¹³ Accordingly, transport has regained a substantial share in the Bank total portfolio, close to 20 percent in recent years. During FY2001-2010, IDA transport lending has increased to US\$13.2 billion as compared to US\$7.5 billion during FY1991-2000.

¹⁴ Includes transport adjustment and public administration.

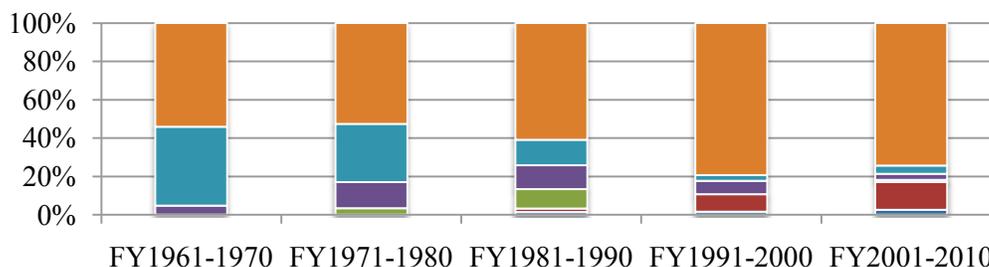
Among these, roads and highways have been the focus of IDA with over 70 percent of its transport lending allocated for construction, rehabilitation, and maintenance of rural and non-rural roads and highways. It was especially high over the last two decades receiving about 80 percent of the total. In dollar amount, it has increased from less than \$1 billion during FY1961-1970 to almost US\$10 billion during the FY2001-2010 as shown in Chart 4.

Chart 4. IDA Transport Lending Trend (\$ billions)



In addition to roads and highways, the railways subsector was a priority of IDA during FY1961-1980¹⁵, as evidenced by the 35-40 percent allocation of the IDA transport lending. Moving into the 1990s, engineering design, procurement, and equipment, grouped as 'general transport', emerged as the second largest subsector receiving substantial IDA funding. The focus of general transport assistance has changed over the decades: in the 1960s detailed engineering works and feasibility studies were a main area. In the latter decades, the strengthening of the road maintenance organizations, the provision of spare parts and equipments, and safety measures became dominant. Chart 5 shows the composition of the portfolio and its evolution over the decades.

Chart 5. IDA Transport Portfolio Composition



Road construction itself has changed over time, in terms of focus. In the earlier years, FY1961-1970, IDA mainly funded the construction of non-rural roads, predominantly highways and long distance trunk roads

¹⁵ The railways sector declined in importance since then as demands from countries changed for more roads and highways.

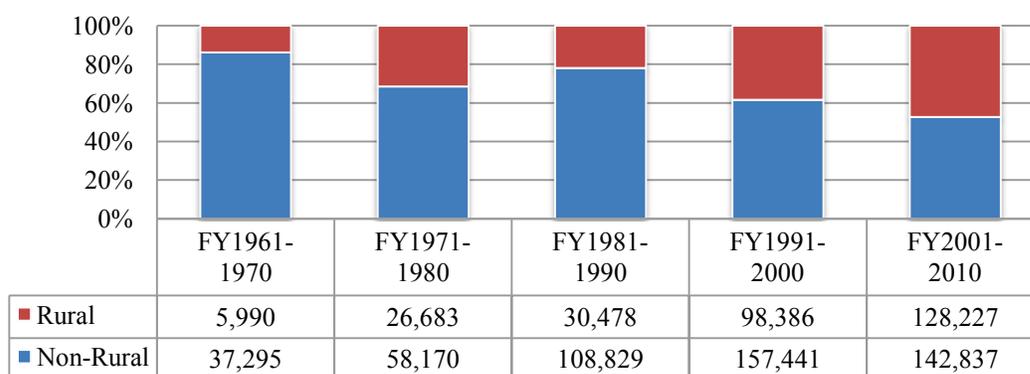
joining up regions and states. In the later years, IDA focused on the construction of rural roads¹⁶ linking up villages and communities in rural and remote areas where the poor mostly reside. This shift reflected a new emphasis on agriculture and rural development and poverty alleviation in the Bank.

Table 1. IDA Transport Portfolio by Subsector (\$ million)

Subsector	1960s	1970s	1980s	1990s	2000s	Total
Roads and highways	466	1,238	2,702	5,941	9,810	20,157
Railways	354	703	602	232	555	2,446
Ports, waterways,	41	313	553	527	427	1,861
Aviation			59	119	336	514
General transport			87	682	1,912	2,681
Other transportation		80	456		142	678
Total	861	2,334	4,458	7,501	13,182	28,336

The 1990s saw a tripling of rural roads that were constructed, rehabilitated, or maintained with IDA funding - roughly 100,000 kilometers in aggregate, compared to just over 30,000 kilometers during the 1980s. The share of rural roads versus non-rural roads funded by IDA increased from 17 percent during FY1961-1970 to almost 50 percent during FY-2001-2010 as shown in Chart 6.

Chart 6. Roads Constructed, Rehabilitated, or Maintained by Location (km)



Another trend was an increasing awareness of environmental impacts, which became thoroughly integrated into the transport sector strategy by the early 1990s. Reflecting efforts to reduce environmental footprints, IDA lending to the so-called Category A projects¹⁷ that are likely to have a significant adverse

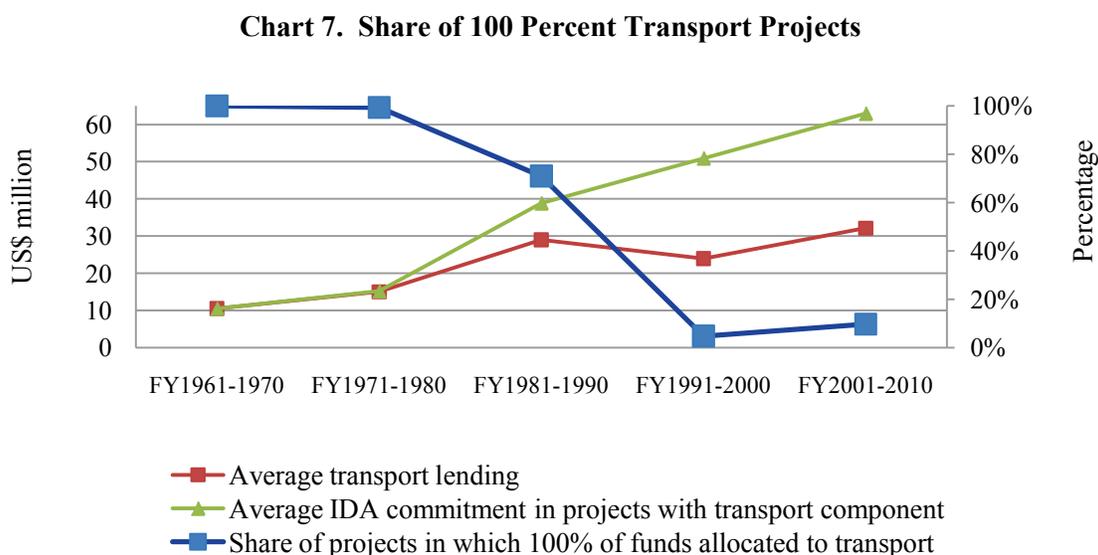
¹⁶ Rural roads are defined as small local roads or even paths and tracks in rural areas that have low or no motorized traffic volumes. Rural roads typically link up villages with other villages or with the road network and are expected to have local impacts. Highways tend to have macroeconomic effects and are not assigned to specific communities.

¹⁷ This dates back to 1991 when the Bank published a Forest Policy Paper, announcing that it will not, under any circumstances, finance commercial logging in primary tropical moist forests. In addition, infrastructure projects which may lead to the loss of primary forests would be subject to rigorous environmental assessments.

environmental impact decreased from 30 percent (FY2002) to 15 percent (FY2010) of the IDA transport lending in value.

The projects became larger and more complex, notably in the last two decades, including the range of components across sectors. Typical examples are seen in rural infrastructure and community development projects, which tend to have comprehensive approaches to improving the access and livelihoods of villagers from building roads, schools, and health centers, to training and promoting employment. Until the early 1980s, almost all of the transport projects implemented were projects in which 100 percent of project funds were allocated to transport. Since then, this share has declined to about 10 percent of all transport projects. Chart 7 shows the trend.

In contrast, the average size of the transport projects has increased from \$10.5 million in FY1961-1970 to \$29.4 million in FY1981-1990, and to \$39.5 million in FY2001-2010. Of course, this increase is related to inflation over the decades, especially increased wages given the labor intensive nature of road construction and maintenance, as well as to other factors that pushed up project costs. Building roads has increasingly become more expensive even in low income countries. A preliminary analysis shows that the average cost of road construction (per kilometer) funded by IDA has increased significantly across continents over the decades as in Annex 2.



Moving into the 1990s, IDA projects have been increasingly funded with other donors as well as with counterpart governments. Two-thirds or 214 of the total 314 IDA transport projects approved during the 1990s were implemented with contributions from other donors and/or recipient governments totaling about \$12 billion (41% of total project costs). The trend has continued during FY2001-2010, with 67% of all transport projects cofinanced¹⁸ and/or with government contributions. This dominant trend reflects the evolving role of IDA as well as its efforts to maximize development impacts by leveraging its financial and non-financial resources.

¹⁸ According to OP14-20, the Bank encourages cofinancing to: i) mobilize resources to fill a financing gap in a specific project/ program; ii) establish closer coordination with official donors on country programs, policies, and investment priorities; and iii) provide donors with a cost-effective way of extending assistance by using the Bank's country experience and capacity to manage projects and programs.

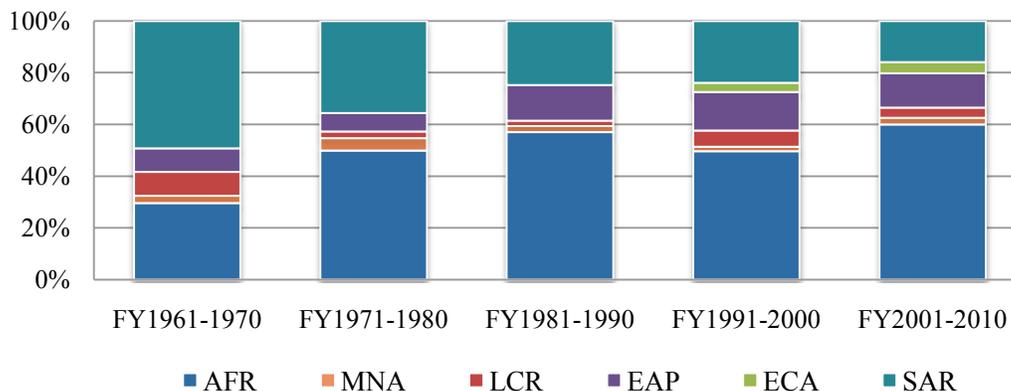
Regional Distribution

IDA's transport lending has grown significantly across regions since FY1961 with some shifts in the priority regions. For example, IDA support for transport in South Asia region has increased from \$424 million during FY1961-FY1970 to \$2.1 billion during FY2001-2010. However, its share in the total IDA transport lending declined from 50 percent to 16 percent during the same period. The Africa region became the highest priority region for IDA transport lending. IDA's investment in Africa increased from \$256 million during FY1961-FY1970 to \$7.9 billion during FY2001-2010. Its share in the total IDA transport commitments rose from 30 percent during FY1961-1970 to 60 percent during FY2001-2010.

Combined together, Africa and South Asia - where most IDA recipients reside - received about 80 percent of the total IDA transport lending during FY1961-1970 and 86 percent during FY1971-1980. This heavy concentration of IDA transport lending in these two regions declined to 74 percent by the 1990s due partly to an influx of former Soviet countries in Eastern Europe and Central Asia (ECA) becoming IDA recipients. Still, on average over three quarters of IDA transport lending has been directed to Africa and South Asia, including 76 percent during FY2000-2010. Chart 8 shows the regional distribution of IDA's transport lending by decade.

IDA's concentration in Africa and South Asia contrasts with that of IBRD that has focused on middle income countries in other regions. When combining the two as a Bank total, East Asia and Pacific (EAP) and Latin America and Caribbean Regions (LAC) received the largest shares of transport lending during FY1961-2010 in aggregate, accounting for 26 percent and 24 percent respectively, followed by Africa (17 percent), South Asia and ECA (14 percent each).

Chart 8. IDA Transport Lending by Region



Although investments in roads and highways have been the focus across regions, there are some differences in regional and sectoral priorities. IDA lending to aviation was heavily concentrated in Africa where many countries are land-locked, with about 75 percent of the total directed to the region. In the case of the East Asia and Pacific region, the ports, waterways and shipping subsector has been a major area receiving nearly 30 percent of the total IDA lending to that subsector, the second largest in the share and amount of lending, next to the Africa region.

Table 2. IDA Transport Lending by Region and Subsector

(in current dollars, million)

Region/Subsector	Roads Highways	Railways	Ports Waterways	Aviation	General Transport	Other Transport
Sub-Saharan Africa	10,861	1,022	1,011	388	1,927	413
South Asia	4,461	1,131	245	44	231	207
East Asia & Pacific	2,577	218	531	10	334	32
Latin America	995	18	27	39	137	7
Middle East & N.	590	39	25	22	21	12
Europe & Central Asia	744	19	21	11	30	7
Total	861	2,334	4,458	7,501	13,182	28,336

3. Aggregate IDA Transport Results

Roads and Railways

In order to gauge the contribution IDA has made to transport development in the developing world over the five decades since its establishment in 1960, research was carried out to aggregate major results from IDA-funded projects. Roads and highways and railways, two main subsectors, were reviewed for project-level results and accumulated into sector-level aggregate results. Selected results indicators include: i) kilometers of rural and non-rural roads that were constructed, rehabilitated, or maintained as a result of the IDA-funded project; ii) the number of bridges constructed, rehabilitated, or maintained; and iii) kilometers of railways that were constructed, rehabilitated, or maintained.

On the basis of the defined indicators, 867 roads and highways projects and 86 railways projects were examined for their delivered results, out of a total of 1,113 transport projects¹⁹ approved and implemented during FY1961-2010 (as of June 30, 2010), including both closed and active projects.²⁰ The research was primarily based on project documents, including Implementation Completion Reports (ICRs), Project Completion Reports (PCRs), and Project Performance Audit Reports (PPARs) for completed/closed projects and Implementation Status Reports (ISRs) for active projects. The document research was complemented by a survey of project teams when necessary for further search or inquiries.

Given the scope of covering the past fifty years, the research faced some challenges, particularly resulting from missing documents, or missed or insufficient documentation of projects and their results. Rather than leaving them out completely, which would seriously underestimate output results of IDA projects, a

¹⁹ Includes 619 projects under the Transport Sector Board and 496 projects mapped to other sector boards, which have a transport component. See details in Annex 1: IDA 50-Year Aggregate Results from Transport Projects.

²⁰ In the case of active projects which constituted a relatively small portion of the total reviewed, projects approved by FY2009 and filed at least one ISR were included in the review.

conservative estimation was made based on available basic project data and similar project outcomes.²¹ The purpose is to fill the gaps with a view to making a more complete picture of IDA's fifty-year contribution at the transport sector and project level.

Results from the research and aggregation show the following:

- In road transport, IDA has funded the construction, rehabilitation, and maintenance of about 1 million kilometers of roads in developing countries in the last five decades. This is equivalent to circling the globe 25 times or one and a half trips to the Moon.
- The aggregate 1 million km includes about 910,000 km from 667 road projects whose results are well documented. Results were estimated for about 80,000 km from about 70 road projects which have missing or inadequate documentation of results despite their completion or implementation progress.²²
- Out of the documented 910,000 km, rural roads constitute just over one third (about 330,000 km) and highways and other non-rural roads two thirds (about 580,000 km). One half (about 460,000 km) involved construction or rehabilitation while the other half were for maintenance.
- India has been the largest beneficiary with a total of 47,284 km roads and highways, including 35,959 km of rural roads, built, or maintained with IDA assistance. As a result, the percentage of connected habitations increased from 40 percent to 70 percent in Himachal Pradesh, from 35 percent to 67 percent in Jharkhand, from 40 percent to 78 percent in Rajasthan, and from 40 percent to 80 percent in Uttar Pradesh.
- In terms of dollar amount, Ethiopia has received the most over the last fifty years, with \$1.59 billion²³ or 7.1 percent of the total IDA road transport lending (\$22.2 billion) made to the country. Another noticeable outcome in Ethiopia was the growth of the IDA-backed road fund to six times its original size within ten years, with IDA providing technical assistance for road network management capacity.
- IDA has also funded the construction, rehabilitation, and maintenance of approximately 25,500 bridges, including 121 railway bridges.
- In railways transport, which was a focus of IDA until the early 1980s, IDA delivered a total of about 24,000 km of railways that were constructed, rehabilitated, or maintained with IDA funds. IDA also provided funding for the purchase, repair, and maintenance of equipment, including about 8,000 locomotives and close to 400,000 railcars, freight cars, and wagons.

²¹ Extrapolation was made based on a sample of similar projects and their unit costs per kilometer road construction. See details in Annex 2: Road Output Estimation for IDA Road Projects with Missing Data.

²² The remaining 201 projects of the total 865 road projects reviewed include DPLs and general transport projects, i.e., engineering design, which are apart from direct construction. Details in “DPL and Other Support” section.

²³ US\$1,587 million in current dollars provided for investment loans and DPLs, FY1961-2010.

Despite the scale of these aggregates, it is believed that the output results delivered by IDA-supported transport projects in the last fifty years are still underestimated, given the fact that some projects had to be left out from the aggregation and the average cost-based estimation, due to lack of information sources. Annex 1 describes further details of the aggregated results.

Development Policy Lending (DPL) and Other Support

In addition to investment lending for construction and maintenance of roads and transport networks, IDA provided development policy lending to support good transport policies and institutions and associated reform programs. DPLs with a transport component started from the early 1990s with the objective to increase efficient resource allocation and the quality of transport infrastructure.

IDA has committed around \$5.6 billion for 119 DPL programs²⁴ with a transport component. 112 of them amounting \$ 5.3 billion have already been completed as of the end of FY2010. Although their transport-specific lending or budget support has been a relatively small amount of \$829 million, compared to over \$27 billion investment lending, and their outcomes are harder to quantify, the positive impacts they have made on transport development cannot be overlooked. The major areas of reforms supported by these DPL transport programs include:

- Funding the development of new transport laws and regulations.
- Establishing road maintenance funds and implementing budget management reforms.
- Institutional strengthening to help meet transport sector targets and promote good governance.
- Improving the climate for private investment to increase a private sector participation in maintenance and construction of roads, railways, airports and ports.
- Increasing the spending on poverty related expenditures, including feeder roads and road safety.
- Reorganization and restructuring of large state owned transport enterprises to improve their operational efficiency.
- Liberalization of transportation sector and introducing competition to reduce transport costs and improve the quality of service.

In addition to the DPL transport programs, IDA has funded general transport projects which provide services and assistance to support road projects and transport network development. They range from the engineering design of roads and highways, to the procurement of maintenance equipment, and to training and building institutional capacity. During FY1961-2010, more than 36 projects with the amount of US\$ 234 million financed such complementary areas.²⁵

Project Examples

Soon after Indonesia came out of a years-long civil war, IDA launched the First Highway Project²⁶ to support the country's reconstruction. Implemented during FY1969-1975 with a development credit of US\$28 million at the time, the project was recorded as one of the largest-scaled interventions of IDA in the 1960s. The results were also substantial. Specifically, the project supported the emergency rehabilitation of 109 high priority road sections, totaling about 3,000 km in five selected provinces of Indonesia, and a four-year maintenance program in 20 provinces. The project also delivered technical

²⁴ These DPLs were concentrated in Africa region with 83 percent implemented there mostly during FY1994-2003.

²⁵ More examples include: topographic surveys, economic feasibility studies, preparation of bidding documents, locomotive and wagon maintenance workshops, detailed engineering for the construction of roads and highways, modernization of the urban transport such as purchase of buses, railways cars, and trains and their spare parts.

²⁶ Project ID: P003704. The IDA amount, US\$28 million, is in US current dollars on a commitment basis.

assistance and training, including road maintenance workshops which, along with the provision of maintenance equipment and inventories, increased the capability of local road maintenance organizations. The project played a significant role in improving the road system of the entire country. At its completion in 1974, 68 percent of Indonesia's road network was rated to be in good and fair condition against only 17 percent in 1968. Despite some difficulties, such as delay in execution and minor cost overruns, the actual economic rate of return was 58 percent, far surpassing the 40 percent forecast at appraisal.

In Ghana, IDA supported the Road Rehabilitation and Maintenance Project²⁷ for a ten-year period, FY1985-FY1995, with a total funding of \$40 million. It significantly improved both major trunk roads and feeder roads. The project funded the rehabilitation of the important roads between the country's two major cities, Accra and Kumasi (total length of 105 km). The project also rehabilitated 150 km of rural roads, improved additional 700 km of feeders, and reconstructed 14 bridges in rural areas. The feeder road rehabilitation used a labor-intensive method and was highly successful. The project was particularly successful in carrying out many institutional improvements in which earlier highway projects had had mixed results. The success of the project greatly supported Ghana's recovery program in the 1980s by removing road transport obstructions to external trade and domestic agricultural traffic.

Since Vietnam became a member country²⁸ in the late 1970s, IDA supported several projects to assist its reconstruction and transition to a market economy. Transport was a main area of investment, with a series of projects²⁹ implemented during the 1990s. The Second Rural Transport Project, approved in 1999, was the largest, both in terms of IDA funding (\$103.9 million³⁰) and project outcomes. Following its predecessor, the Rural Transport Project, the project aimed at connecting most rural areas around major cities. 1,820 road links, with a total length of 7,599 km, and 1,029 bridges, with a total length of 26 km, were constructed in five years. Over 14,000 staff were trained in rural road maintenance.

The project improved accessibility to all-weather roads for about 16 million people and helped lift more than 200,000 people out of poverty. Evidence suggests that the project also led to increased health facility visits, improved school attendance, and reduced rural-urban price differences.

The outcomes from this large-scaled road construction project have been impressive. It improved mobility for over 16 million people in the project areas, roughly one fifth of Vietnam's total population, and helped lift more than 200,000 people out of poverty. The project directly improved all-year access to over 1,000 communes and around six million people. Evidence suggests that the project also led to increased health facility visits, improved school attendance, and reduced rural-urban price differences. The project also helped develop the private sector by allowing small private contractors to construct and rehabilitate roads. Participation of small private contractors increased from 35 percent of contracts awarded in the first year to 100 percent in the final year.

In Côte d'Ivoire, the IDA-funded Railway Rehabilitation Project³¹ made a significant contribution to revitalize railway transport service and promote regional integration through the rehabilitation of railway infrastructure and equipment. The five-year project, FY1996-2001, with IDA financing of US\$20 million, was part of a program that also involved the connecting railway in Burkina Faso. Selective track renewal of 75 km, replacement of 41 km of sleepers and 66 km of rail, ballasting and bridge and culvert repairs,

²⁷ Project ID: P000869.

²⁸ The Bank's economic survey mission to Vietnam was conducted in January 1977, followed by the first IDA-funded project (Dau Tieng Irrigation Project) in August 1978.

²⁹ The first was Highway Rehabilitation Project approved in FY1994.

³⁰ The Second Rural Transport Project (P059864) alone received IDA US\$103.9 million, US\$99.74 million of which was spent to road sector during FY2000-2006.

³¹ Project ID: P040115.

overhaul/rehabilitation of 14 mainline locomotives and 12 shunting locomotives, 247 freight wagons, and 20 passenger coaches were carried out under the project.

The project helped dramatically improve railway operations. Freight levels rose from 293,000 tons in 1994 to 875,000 tons in 2000 against forecasts of 717,000 tons; gross receipts of SITARAIL, a private railway company established by Cote d'Ivoire and Burkina Faso, increased by 36 percent from CFAF 14 billion in 1994 to CFAF 19 billion in 2000. Despite the high level of economic, political and civil instability during that period and three changes of Government, the performance of the railway company was successful.

IDA in partnership with the Government of Senegal supported the National Rural Infrastructure Project³² during FY2000-2006 with funding of US\$28.5 million. The project, specifically its road component, improved a total of 982 km of roads in 92 rural communities. In addition, the project helped strengthen decentralization and financed micro-projects covering water, schools, and livestock, among other things. Beneficiary households in the 110 participating rural communities reported a 25 percent increase in incomes. Fiscal revenues for rural communities in the project area almost tripled. Markets, schools, and health facilities are now more accessible. Children now typically spend 10 minutes going to school instead of 30 minutes, and the weight and height of children under three years of age have improved.

4. Challenges and Moving Forward

Roads are the arteries that are the lifeblood for healthy economic development leading the way for improvements in the standard of living for the poor. Rural communities especially have little opportunity to lift themselves out of poverty without connections to get their goods and produce to market, their children to schools, and access to health services. It is therefore not surprising that the poor people in rural areas see isolation as a main reason for their poverty. Likewise, safe urban transport encourages economic growth and connects the urban poor with economic opportunity.

Over the last five decades, IDA has made contributions to the development of rural roads, highways, and urban transport systems in low-income countries which otherwise would have been unable to support such large-scaled development projects. The contribution has been substantial, with over US\$28 billion of funding resulting in close to 1 million kilometers of aggregate roads/highways and nearly half a million rail wagons, freight cars, and locomotives.

IDA not only has provided funding for transport projects, but also supported through policy discussions and analytic and advisory activities the strengthening of governance to deliver and maintain appropriate and sustainable transport infrastructure and services. IDA has also leveraged its resources and influence in the development community to bring together other donors and partners for greater support of transport development in the world's poorest countries. Since the 1990s, roughly one of two IDA transport projects have been funded with other donors and governments, helping better respond to countries' demands and needs.

The trends of trade globalization, increasing urbanization, increasing motorization, and now the challenge of climate change, have continued to create higher and more complex demands on freight and passenger transport systems. Although there are regional differences, some common challenges are emerging: the need for improved transport and logistics to strengthen trade competitiveness, the challenge of urban road

³² Project ID: P057996. The total cost of the project amounted to US\$42.9 million including cofinancing from AfDB and OPEC.

congestion and other urban transport problems, the widespread incidence of premature death and injury through road accidents, and the needs of isolated rural communities for basic connectivity to transport systems.

In the poorest countries like those supported by IDA, the main challenge in the transport sector remains how IDA/the Bank and other donors can together concentrate effort, advice, and lending resources to meet the basic transport needs of the poor and help create or improve access to markets for their products. With limited borrowing capacity, these countries need blended financial support (combining loans and grants) and help to mobilize private finance alongside public resources.

The Bank Transport Business Strategy (2008-2012) was developed to ensure that transport projects provide safe, clean and affordable solutions. Looking at the country's transport needs as a whole, it widens the scope of Bank interventions beyond single mode solutions to a balanced, multi-modal approach. Low-income countries, whose transport sector is not yet matured, can "leapfrog" developed countries by building transport systems that are more environmentally-friendly and sustainable³³.

Alongside the green initiative which has emerged as global agenda, more needs to be done to strengthen institutions and develop capacity development. However, commitment towards rural access and fighting against poverty remains the continued focus of IDA and the Bank. Improvements in transport are essential to meeting the Millennium Development Goals³⁴.

³³ It is well-known that transport systems have high inertia and it is in the best interest of developing countries to avoid future prohibitive economic and social costs of transfer by embracing in the first place the transport system that is environmentally, economically, and socially sustainable.

³⁴ Five of the eight MDGs seek health or education improvements. Basic mobility plays a critical role in delivering and providing access to health care and education.

References

IEG. 2007. *A Decade of Action in Transport: An Evaluation of World Bank Assistance to the Transport Sector, 1995-2005*. World Bank, Washington, D.C.

IEG. 2007. *The Nexus between Infrastructure and Environment*. Evaluation Brief 5. World Bank, Washington, D.C.

IEG. 1996. *Seven Findings for the Nexus of Infrastructure, Agriculture and the Environment*. Evaluation Brief 1. World Bank, Washington, D.C.

International Development Association. (2009). *IDA at Work: Transport: Improving Services for the Poor*. World Bank, Washington, D.C.

International Development Association. 1961. *First Annual Report 1961-1962*. International Development Association, Washington, D.C.

Leipziger, Danny, Marianne Fay, Quentin Wodon, and Tito Yepes. 2003. *Achieving the Millennium Development Goals: The Role of Infrastructure*. World Bank Policy Research Working Paper 3163. World Bank, Washington, D.C.

Riverson, John, Juan Gaviria, and Sydney Thriscutt. 1991. *Rural Roads in Sub-Saharan Africa: Lessons from World Bank Experience*. World Bank Technical Paper No. 141. World Bank, Washington, D.C.

Transport Sector Board. 2008. *The World Bank Group's Transport Business Strategy 2008-2012: Safe, Clean, and Affordable...Transport for Development*. World Bank, Washington, D.C.

World Bank. 1996. *Sustainable Transport: Priorities for Policy Reform*. (Transport sector strategy paper). World Bank, Washington, D.C.

World Bank. 1994. *World Development Report 1994: Infrastructure for Development*. Oxford University Press. New York.

Annex 1: IDA 50-Year Aggregate Results from Transport Projects

	Completed Closed Projects	Ongoing Active Projects	Total
Road Transport			
Number of projects reviewed ³⁵	654	213	867
Of which, projects with output results documented & aggregated ³⁶	509	164 ³⁷	673
Aggregate kilometers of roads ³⁸	704,457	201,192	905,649
Rural Roads	245,691	82,642	328,333
. Constructed	64,176	28,033	92,209
. Rehabilitated	137,660	42,789	180,449
. Maintained	47,855	11,820	59,675
Non-Rural Roads	458,766	118,550	577,316
. Constructed	24,771	1,339	26,110
. Rehabilitated	115,492	35,049	150,541
. Maintained	318,503	82,162	400,665
Aggregate number of bridges	22,873	6,204	29,077
. Constructed	13,673	4,826	18,499
. Rehabilitated	9,200	1,378	10,578
Railway Transport			
Number of Projects reviewed	74	12	86
Of which, projects with output results documented & aggregated	70	[to be filled]	[to be filled]
Aggregate kilometers of railways	23,341	[to be filled]	[to be filled]
. Constructed	8,803	[to be filled]	[to be filled]
. Rehabilitated	9,177	675	9,852
. Maintained	5,361	[to be filled]	[to be filled]
Aggregate number of bridges built, rehabilitated, maintained	121	[to be filled]	121
Aggregate number of locomotives, railcars, sleepers, freight cars, etc. provided, rehabilitated, maintained	484,518	[to be filled]	484,518

Note: The road data as of April 12, 2011 and the railway data as of October 2010.

³⁵ Represents the number of road projects reviewed out of 1,113 IDA-funded transport projects approved during FY1961-2010. Projects were reviewed for aggregation of quantifiable major results.

³⁶ Out of the 867 road projects reviewed, 673 projects were found with road outputs documented or reported which were aggregated and presented in this Results Table. The rest projects have missing data and/or documents, including many of Development Policy Lending (DPL) projects which are not required to report on output results.

³⁷ Excludes 30 out of 34 ongoing active projects approved during FY2010 which have no implementation status reports (ISRs) available.

³⁸ The kilometers of delivered roads and other transport project outputs in the Results Table have been aggregated mostly through research on project documents as of September 2010, complemented by a survey of project teams when necessary for further search.

Annex 2: Road Output Estimation for IDA Road Projects with Missing Data

(USD, kilometer)

Type of Work	Region	Time Period FY	Projects sampled similar to projects with missing data			Average Cost Per km	Estimation for projects with missing data		
			# of Projects	IDA Funding \$million	Output kilometer		# of Projects	IDA Funding \$million	Estimated Output km
Rural road construction rehabilitation	AFR	1991-2000	9	47.84	8,257	5,794	7	27.97	4,827
	AFR	2001-2010	11	166.49	16,701	9,969	3	19.6	1,966
	EAP	1991-2000	6	140.21	28,315	4,952	1	0.4	81
	ECA	1991-2000	4	22.96	1,362	16,858	2	5	297
	LCR	1991-2000	2	18.26	2,377	7,682	3	19.4	2,525
	LCR	2001-2010	1	8.40	277	30,325	1	15	495
	MNA	1991-2000	2	20.04	1,057	18,959	1	11.5	607
	MNA	2001-2010	1	43.68	397	110,025	1	3.49	32
	SAR	1991-2000	10	314.79	11,095	28,372	3	12.24	431
	SAR	2001-2010	1	25.00	173	144,509	5	62.06	429
Non-rural road construction rehabilitation	AFR	1971-1980	34	477.80	12,921	36,979	1	20	541
	AFR	1981-1990	26	788.87	12,025	65,602	1	13.8	210
	AFR	1991-2000	37	928.83	11,055	84,019	7	41.8	498
	AFR	2001-2010	14	333.62	1,781	187,322	3	22.49	120
	EAP	1981-1990	7	301.04	933	322,658	1	17.8	55
	ECA	2001-2010	4	51.63	206	250,631	1	2.03	8
	LCR	1981-1990	4	55.27	662	83,489	1	2.4	29
	LCR	1991-2000	6	250.99	2,486	100,961	4	52.8	523
	MNA	1961-1970	1	17.80	454	39,207	1	8.5	217
	MNA	1991-2000	4	74.69	942	79,289	1	2.24	28
	MNA	2001-2010	1	2.03	5	406,000	2	3.84	9
	SAR	1991-2000	16	855.90	7,737	110,624	2	7.98	72
Non-rural road maintenance	LCR	1961-1970					1	0.4	[To be filled]
	MNA	1991-2000	1	1.18	115	10,261	1	2.5	244
Estimated Total							54	375.24	14,245

