

# **T**TRANSPORTATION

## INTRODUCTION

Sustainable development pre-supposes economic growth, the latter being defined as quantitative increase in output. It also presumes development which implies an improvement in the social and psychological quality of life. Development may be said to be sustainable, when an economy shows the capacity to support a community at desirable levels of welfare over the longer terms, taking into account the economic, ecological and socio-cultural values of the community. All of these require a reliable and efficient economic infrastructure in which "transport" plays a key role. Transportation, in this respect, plays a major part in the realization of national objectives. One can summarize the importance of transportation in the following paragraphs:

1. Transportation supplies space and time utilities, it expands the market and is important in the functioning of economic market. The proper functioning of the economic market helps in regulating prices of commodities.
2. Improvements in transportation infrastructure lower the costs of transportation in terms of money and time. This translates into the lowering of production costs and hence introducing the likelihood of shifting production possibilities by altering relative costs.
3. Transportation makes possible large scale production and distribution in masse with the associated aspects of regional specialization and division of labour. Ultimately, this helps in the realization of preferred regional distribution of population, industrial and agricultural patterns and income.
4. Transportation opens up undeveloped and remote areas by releasing resources trapped in such areas, and enables new products to be brought into exchange. Supplementary investments have also to be considered on time. This helps to increase rural income by extending monetary exchange into agricultural rural sector, raising productivity and reducing the backwash of the urban sector.

The above importance of transportation is well recognised by the Government of the BVI. The Government considers transportation a major vehicle by which economic and social development can be achieved. This fact is true; since the BVI's economy is highly dependent on foreign trade, its relations and transport link with other countries are virtually important for economic growth and social development.

## **THE TRANSPORT AND ECONOMIC DEVELOPMENT OF BVI**

Generally, the BVI has an extremely open economy because of its small size, distance apart and multi-island status is dependent on import of goods and export of services. The country imports virtually all the goods it consumes and exports vast majority of services it produces.

BVI's export markets for tourism and financial services are North America, Europe and the rest of the developed world. All this is possible because of transportation and communication systems. Therefore, it is important to have a substantial amount of investment in physical infrastructure to handle the level of imports and exports. In this regard, the BVI has six seaports and three airports of entry to accommodate this wide mix of foods, consumer, durable and capital goods. See Table 1 below for import from 1990-1993 and percentage distribution of imports.

**Table 1: Imports value and percentage distribution 1990-1994**

	1990		1991		1992		1993		1994	
	US\$ ('000)	%	US\$ ('000)	%	US\$ ('000)	%	US\$ ('000)	%	US\$ ('000)	%
Food	19,845	18.1	18,063	17.2	21,538	20.1	22,247	18.1	23,185	18.1
Beverage & Tobacco	6,688	6.1	6,721	6.4	7,498	6.4	7,498	6.1	6,619	5.3
Crude material	1,974	1.8	3,466	3.3	3,000	2.8	2,212	1.8	1,684	1.3
Mineral fuels & lubricants	12,170	11.1	5,986	5.7	8,894	8.3	13,643	11.1	19,975	15.6
Animals and Vegetable oils	219	0.2	210	0.2	321	0.3	246	0.2	319	0.2
Chemicals	6,578	6.0	6,721	6.5	7,072	6.7	7,375	6.0	7,315	5.7
Manufactured goods	16,227	14.8	19,008	18.1	19,288	18.0	18,191	14.8	17,629	13.7
Machinery & Transport equipment	27,301	24.9	31,820	30.4	27,324	25.5	30,605	24.9	35,297	27.5
Miscellaneous manufactures	14,582	13.3	12,917	12.3	12,430	11.6	16,347	13.3	14,817	11.5
Miscellaneous transactions	4,057	3.7	105	0.1	429	0.4	4,548	3.7	1,504	1.2
<b>Total</b>	<b>109,641</b>	<b>100</b>	<b>105,018</b>	<b>100</b>	<b>107,153</b>	<b>100</b>	<b>122,911</b>	<b>100</b>	<b>128,344</b>	<b>100</b>

Source: DPU

Imports in 1993 amounted to \$122.91 million which is 14.7% above 1992 figures or 17% above the 1991 figures. This shows that there is a positive trend of imports since 1991. Without the transportation infrastructure, this would be impossible.

### Transportation Links

The BVI has a direct link with the USA mainland via sea at the major sea port of Port Purcell mainly by Tropical Shipping Company (the major shipping line in the Caribbean) of Miami-Florida. Previously, there was a direct sea link with Europe through the UK. With regard to direct air links with the continents of Europe and America, this is not possible because of the absence of a runway capable of handling the necessary long-range aircraft. However, these links are possible through regional carriers i.e. LIAT and American Eagle connecting in USVI, Puerto Rico, St. Maarten, Antigua and the rest of the regional airports capable of handling direct continental jet traffic.

Transportation links represent a significant portion of trade with the United States of America. Goods are transported from Puerto Rico and the USVI via a number of small barges and vessels. Normally vessels make daily trips bringing perishable, durable and other goods to the territory.

These frequently scheduled trips permit efficient inventory management and give local importers quick access to the variety of goods demanded by local people and tourists.

### **Transportation Contribution To The Gross Domestic Product And Sectoral Linkages**

According to 1992 National Accounts, the transportation sector contributed US\$7,249,674 to GDP at constant prices. This is equivalent to 2.1% of total GDP. Total GDP was US\$344,612,096. (See Table 2)

**Table 2: GDP Contribution by Industry in 1992**

<b>Industry</b>	<b>US\$</b>	<b>Percentage</b>
Not stated	47,878	0.02
Agriculture, hunting & forestry	2,047,543	0.59
Fishing	5,627,096	1.63
Mining and quarrying	766,478	0.22
Manufacturing	5,324,995	1.55
Electricity, gas & water supply	5,971,903	1.73
Construction	16,195,925	4.70
Wholesale & Retail Trade	113,494,717	32.93
Hotels and restaurants	40,664,743	11.80
<b>Transportation</b>	<b>7,249,674</b>	<b>2.10</b>
<b>Communications</b>	<b>15,865,423</b>	<b>4.61</b>
Financial intermediation	45,862,668	13.31
Real Estate, renting & business activities	51,331,630	14.90
Public Administration	17,595,143	5.11
Education	5,593,673	1.62
Health & Social Work	4,905,035	1.42
Other Community, social & personal services	6,605,011	1.92
Private households with employed persons	1,587,670	0.46
Unclassified	32,891	0.01
Import duties	10,862,000	3.15
Less imputed service	-13,019,000	-3.78
<b>Total</b>	<b>344,612,096</b>	<b>100</b>

Source: DPU

If you can compare with the past years, you will note that there is a drop in percentage contribution to the GDP. For example, in 1987, the transportation sector contributed 4.97%, and in 1989, it contributed 6.76% to the GDP. The drop in contribution in 1992 was attributed by better performance of other sectors like Wholesale/Retail trade which contributed 32.93% followed by Real Estate 14.90%, followed by Financial Intermediation 13.31% and Hotel and Restaurants 11.80%. (See Table 3)

If you look broadly at the contribution of 2.1% in 1992, you may think it is small, but it should be remembered that the transportation sector has more linkages with other sectors. In other words, the performance of other sectors depends very much on the transportation sector. In Section 1, we have seen that transportation opens up undeveloped and remote areas by releasing resources trapped in such areas, and enables new products to be brought into exchange, supplementing investments.

Transportation also helps rural income by extending monetary exchange into agricultural rural sector, raising productivity. Also, it makes possible large-scale production and distribution etc. For instance, if we take sub-sector of Wholesale/Retail which contributed 32.93%, this was attributed by the transportation sector in form of imports from abroad, the imports came by transport and handling the imports at the ports facilities and the customs duties and other taxes were paid; it also transport played a role in distribution to retail traders. Another example related to linkages with other sectors is tourism sector, which contributed 22.34% of GDP. Without proper transportation infrastructure and facilities, the revenue earned from tourism would not have been possible. Without proper transportation facilities, construction cannot take place because materials have to be transported from abroad to the sites. Even agricultural production will be affected negatively without good roads. Investment cannot take place without proper transportation facilities. Therefore, transportation is a vital element as far as linkages with other sectors of the economy is concerned.

**Table 3: Percentage Contribution to GDP at Constant Prices (1987-1989-1992)**

<b>Sector</b>	<b>1987</b>	<b>1989</b>	<b>1992</b>
Hotels and Restaurants	23.82 (1)	21.74 (1)	11.80 (4)
Real Estates & Housing	20.01 (2)	17.58 (2)	14.90 (2)
Government Services	12.01 (3)	12.05 (3)	10.07 (5)
Bank & Insurance	10.56 (4)	12.01 (4)	13.31 (3)
<b>Communications</b>	<b>5.21 (8)</b>	<b>7.76 (5)</b>	<b>4.61 (7)</b>
Construction	6.65 (7)	7.72 (6)	4.70 (6)
Other Services	7.21 (6)	7.23 (7)	3.62 (8)
<b>Transportation</b>	<b>4.97 (9)</b>	<b>6.76 (8)</b>	<b>2.10 (10)</b>
Wholesale & Retail Trade	7.62 (5)	6.71 (9)	32.93 (1)
Electricity & Water	4.36 (10)	4.07 (10)	1.73 (11)
Agriculture & Fisheries	4.35 (11)	4.04 (11)	2.22 (9)
Manufacturing	3.30 (12)	2.93 (12)	1.55 (12)
Mining & Quarrying	0.17 (13)	0.26 (13)	0.22 (13)
Less Imputed Services	10.26	10.86	3.78

\* Brackets indicate the position

Source: DPU

## Employment

In 1994, the total number of employees in the Territory stood at 11,366. This is an increase of 1,384 employees compared with 9,982 employees in 1992. Out of 11,366 employees, transportation sector had 333 employees which represent 2.93% of the work-force in the territory. If you compare with 1992 figures, there is an increase of 37 employees. The total wage bills for the whole territory was US\$118,638,953 of which \$4,639,382 was contributed by transportation sector. Hotel and restaurant sector employed 2,539 employees or 22.34% of the labour force, followed by Public Administration with 2,318 or 20.39%, Wholesale and Retail trade 1,469 or 12.92%. The number of employees in this sector does not include indirect employees who are employed as taxi-drivers and other employees in tour operations and employees who are employed by Travel Agents employers. The number of employees are very small when compared to other sectors but its multiplier effects contribute a lot to other sectors by employing more employees because of well organised transport system and facilities. Table 4 below shows the number of employees in 1994 compared with 1992.

**Table 4: Number of employees by sector, 1994 compared with 1992 figures**

Sector	1992	1994	(1994)% Contribution	Total Wages US\$
Agriculture & Related Activities	8	6	1.35*	48,912
Fishing	47	27	3.32*	195,896
Mining and Quarrying	4	6	0.06	91,858
Manufacturing	328	314	2.76	3,060,253
Electricity & Water Supply	166	181	1.59	2,939,647
Construction	1,373	1,088	9.57	9,242,965
Wholesale & Retail Trade	2,362	1,469	12.92	12,056,102
Hotels & Restaurants	1,069	2,539	22.34	24,278,811
<b>Transportation</b>	<b>296</b>	<b>333</b>	<b>2.93</b>	<b>4,639,382</b>
<b>Communication</b>	<b>229</b>	<b>256</b>	<b>2.25</b>	<b>3,562,665</b>
Financial Intermediation	426	570	5.01	11,939,145
Real Estate, Business Services	812	939	8.26	10,241,274
Public Administration	2,002	2,318	20.39	30,793,469
Education	54	62	0.55	613,861
Health & Social Work	95	99	0.87	795,996
Other Community, Social & Personal Services	703	321	2.82	2,792,771
Private Households with employed persons	4	339	2.98	1,332,766
Unclassified	4	2	0.03	12,180
<b>Total</b>	<b>9,982</b>	<b>10,869</b>	<b>100</b>	<b>118,638,953</b>
Add self-employed full-time farmers		147		
Self-employed full-time fishermen		350		
<b>Grand Total</b>		<b>11,366</b>		

\* Includes self-employed full-time fishermen

Source: DPU

## Capital Investment In Transport Sector

The Government of the BVI considers transportation as a major vehicle by which economic and social development can be achieved. From the above fact, the government has been investing in a number of projects to develop this sector. The project areas include, highway construction, road system operations, sea transport facilities, sea transport operation and air transport facilities. From 1990 to 1994, the government has invested a total of US\$29,456,762, which represent 34.23% of national total investments. If you look at Table 5, you will note that this sector is leading in terms of investment followed by General Public Services, 24.08%, followed by Education Affairs and Services, 14.63%. On another hand, if you look at the figures, you will note that percentage-wise, the investment has been declining from 46.71% in 1990 to 15.28% in 1994. There is a need for the government to recheck this trend again, because by reducing investments in this sector, there will be negative multiplier effects in other sectors of the

economy, e.g. tourism, construction, wholesale and retail trade, agriculture, etc. Table 6 shows the amount of capital investment on individual project and their percentages. In general, water transport facilities and road construction had a big share of 51.14% and 41.52% respectively. There is a need again of looking at airport/air-transport facilities to cope with traffic increase.

**Table 5: Percentage Capital Investment 1990-1994**

	1990	1991	1992	1993	1994	Total
General Public Services	15.81	14.65	36.63	21.01	20.77	24.08
Public Order & Safety	3.50	0.95	1.92	2.07	7.70	3.27
Education Affairs & Services	8.64	16.74	7.32	13.89	27.30	14.63
Health Affairs & Services	2.36	0.55	0.80	1.49	0.91	1.12
Social Security & Welfare Affairs & Services	1.20	0.93	0.73	0.17	1.16	0.79
Housing & Community Amenity Affairs & Services	4.62	17.24	8.55	10.56	9.69	10.03
Recreational Cultural and Religious Affairs & Services	7.80	5.20	3.98	6.53	4.95	5.37
Fuel and Energy Affairs and Services	0.00	0.00	0.02	0.00	0.00	0.01
Agriculture, Forestry, Fishing and Hunting Affairs & Services	1.49	1.39	0.96	0.60	0.19	0.85
Mining & Mineral Resources Affairs & Services	0.00	0.38	0.64	0.33	0.05	0.33
	<b>46.71</b>	<b>39.11</b>	<b>37.49</b>	<b>38.66</b>	<b>15.28</b>	<b>34.23</b>
<b>Transportation &amp; Communication Affairs &amp; Services</b>	7.89	2.87	0.92	4.70	12.00	5.28
	0.00	0.00	0.00	0.00	0.00	0.00
Other Economic Affairs & Services						
Other Expenditure by major group						
Total capital investment %	100	100	100	100	100	100
<b>Total Capital investment US\$</b>	<b>10,514,739</b>	<b>12,784,487</b>	<b>25,909,515</b>	<b>17,978,056</b>	<b>18,857,580</b>	<b>86,044,377</b>

Source: Ministry of Finance

**Table 6: Transportation & Communication Affairs & Services Capital Investment 1990-1994**

	1990		1991		1992		1993		1994		Total	
	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%
<b>Transportation</b>	3,565,509	72.59	2,117,114	42.35	2,914,081	30	1,822,205	26.22	1,811,626	62.87	12,230,535	41.52
<i>Highway Construction</i>												
<i>Affairs Services</i>												
<i>Road System</i>	-	-	-	-	133,731	1.37	42,870	0.62	91,900	0.34	185,501	0.63
<i>Operation Affairs and Services</i>												
<i>Water Transport</i>	1,164,699	23.71	2,705,802	54.12	6,662,035	68.58	3,868,625	55.66	663,095	23.01	15,064,256	51.14
<i>Facility Construction</i>												
<i>Affairs Services</i>												
<i>Water Transport</i>	-	-	1,600	0.03	-	-	-	-	-	-	1,600	0.01
<i>Operation Affairs and Services</i>												
<i>Air Transport Facility</i>	181,346	3.69	174,984	3.5	5,680	0.06	132,667	1.91	239,994	8.33	734,671	2.49
<i>Construction and Services</i>												
<b>Communication</b>	4,911,554		4,999,500		9,714,527		5,866,367		2,724,615		28,216,563	
<i>Communication</i>												
<i>Affairs and Services</i>												
	-	-	-	-	-	-	1,083,474	15.59	156,725	5.44	1,240,199	4.21
<b>Total</b>	<b>4,911,554</b>	<b>46.71</b>	<b>4,999,500</b>	<b>39.11</b>	<b>9,714,527</b>	<b>37.49</b>	<b>6,949,841</b>	<b>38.66</b>	<b>2,881,340</b>	<b>15.28</b>	<b>29,456,762</b>	<b>34.23</b>

Source: Ministry of Finance

### Revenue Collected By The Transportation Sector

The actual revenue collected has been rising, but percentage-wise, it has been declining. In 1988, the revenue collected from the transportation sector represented 11.98% of all total revenue collected. In 1989, it declined to 10.37%, in 1990, it declined again to 9.83% up to 1993 it reached 4.33%. This trend should be looked at, and a study should be made to establish the fall in revenue collection. All in all, this sector has linkage effects, as we have seen, and contributed to other sectors to perform better in revenue collections. (See Table 7)

**Table 7: Actual revenue collected by the Transportation Sector from 1988-1993 (\$'000)**

	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>
Ports & Harbours	815	1,007	1,092	35	55	163
Passengers tax - air	415	1,296	777	495	520	614
Passengers tax - sea	737	-	787	221	33	20
Drivers & Vehicles licences	586	677	671	716	773	750
Cruising Permits	1,020	1,001	1,018	873	995	1,129
Mooring & Berthing fees	58	76	113	75	38	63
Aircraft Landing	191	196	147	157	190	232
Bridge toll	36	40	33	26	37	29
Hire of vehicle & plants	14	6	11	7		
Beef Island Airport	37	34	50	29	34	46
<b>Total</b>	<b>3,909</b>	<b>4,333</b>	<b>4,699</b>	<b>2,634</b>	<b>2,675</b>	<b>3,046</b>
<b>Total National Revenue</b>	<b>32,629</b>	<b>41,780</b>	<b>47,786</b>	<b>51,175</b>	<b>60,538</b>	<b>70,374</b>
Percentage of Contribution	11.98	10.37	9.83	5.15	4.42	4.33

Source: Budget Books

## TYPES OF TRANSPORTATION SYSTEM

The transportation sector is divided into three (3) types of transport i.e. air transportation, sea transportation and road transportation.

### Air Transportation

Air transportation comprises of aircraft, passenger traffic at the BVI's three airports. This sub-sector is operating under the supervision of the department of Civil Aviation. The three airports are Beef Island Airport, Virgin Gorda Airport, and the Auguste George Airport (Anegada).

#### *Beef Island Airport*

The airport is located on Beef Island which lies to the east of Tortola. The airport is considered to be inadequate to serve existing demand of passengers. Only ATR 42's and the Dash 8 can be accommodated on the existing runway which is 1098 feet in length. Large commuter aircraft such as the ATR72, ATP or SAAB100 cannot be accommodated. The future expansion of this airport has been studied; so far progress has been made in finalizing arrangements to construct a new terminal. Concerning the airport runway, there is indication that work on this will have to wait for completion of the new terminal. It is hoped, however, that government's policy on this issue would be revisited as the territory's tourist industry could be adversely affected if this

facility continues to be restricted to a few small commuter type aircraft. Because of the prohibitive cost of extending the runway beyond the proposed 5,000ft, it is unlikely that any further development of the facility would take place within the foreseeable future. It is possible, however, that more sophisticated navigational equipment will be installed at the airport over the next few years which will provide more precise guidance to aircraft operating at this airport. The airport runway expansion and new terminal construction is an integral part of tourism development in the BVI.

### *Virgin Gorda Airport*

The Virgin Gorda Airport is privately owned; however, the Civil Aviation provides advice on operations. The airstrip is 915 feet in length, and is suitable for small aircraft. Facilities at this airport need to be improved, in order to attract more tourists who prefer to visit the island by air.

### *Anegada (Auguste George) Airport*

Anegada Airport is located towards the northern part of the Anegada Settlement. This airstrip is 2500 feet in length and can accommodate small aircraft. Recently, the runway has been resurfaced and the Customs and Immigration facilities upgraded.

## ***Passenger Services***

No doubt, air transport is the quickest means of travel. The BVI's population and tourist alike depend much on air travel to connect them to major continents and other small islands in the Caribbean. A network of airlines operates at the Beef Island Airport. These include American Eagle, and Leeward Islands Air Transport (LIAT). These airlines provide regional communication links with adjacent international airports of San Juan in Puerto Rico and the USVI. Regular services are also offered to Antigua, St. Kitts-Nevis and St. Maarten, with connections to the other Caribbean islands. Table 8 shows the 1994 visitors by mode.

**Table 8: BVI Visitor Arrivals by Mode**

Source Market	Air Arrivals	Boat Arrivals	Cruise-ship Passengers	Total 1994 Arrivals
United States	69,662	95,102	47,241	212,005
Canada	4,286	3,093	2,358	9,737
Europe	12,983	10,440	11,606	35,029
Caribbean	8,652	2,390	145	11,187
P.Rico/USVI	7,613	42,055	863	50,531
Latin America	2,466	2,167	1,857	6,490
Others	822	1,742	678	3,242
Not stated	92	148	64	304
<b>Total</b>	<b>106,576</b>	<b>157,137</b>	<b>64,812</b>	<b>328,525</b>
% of Total	32.4%	47.8%	19.7%	100.0%

Source: BVI Tourist Statistics, 1995

From Table 8, it will be noted that air transport is the second largest segment of the visitor traffic, representing 106,576 arrivals in 1994, i.e. 32.4% of total arrivals traffic.

**Table 9 below reflects the passenger arrivals and departures by air in the BVI from 1981 to 1993**

Year	Arrivals		Departures	
	No. of Passengers	Percentage change	No. of Passengers	Percentage change
1981	85,336	6.1	N/A	-
1982	82,534	-3.3	N/A	-
1983	82,858	0.5	N/A	-
1984	80,867	-2.4	N/A	-
1985	83,454	3.2	79,284	13
1986	95,088	13.9	89,699	4
1987	97,523	2.6	91,165	1.6
1988	101,512	4.1	99,012	8.6
1989	109,823	8.2	106,949	8.0
1990	113,594	3.4	109,982	2.8
1991	123,068	8.31	120,220	9.3
1992	144,846	17.7	140,452	16.8
1993	146,781	1.34	140,208	-0.17

Source: DPU

From Table 9, it will be noted that there is a positive trend of passenger arrivals and departure to and from BVI. Furthermore, if you look at the tourist statistics, you will note that the tourist expenditure in 1994 was US\$188,000,000 from \$132,100,000 of 1990. (see Table 12) This figure,

on the other hand, was contributed by transport sector indirect. Therefore, there is a need to expand airport facilities to cope with the increase in passengers traffic in the BVI.

### ***Sea Transportation***

Sea transport is the major means of transport for the islanders because most of the consumers and capital goods come by sea from different parts of the world. Because the country has a high import tourist economy, this means that proper port facilities and better shipping services are vital to the development of the territory. The Port Authority has the responsibility for all ports in the BVI. Facilities which the Authority has responsibility are Port Purcell, Road Town harbour, West End harbour (Sopers Hole), Virgin Gorda harbour (The Valley), Jost Van Dyke and the Cruise-ship Dock on Wickham's Cay. There is a direct link with the USA via Port Purcell by Tropical Shipping, a major international shipping line in the Caribbean.

The cruise-ships normally bring a large number of tourists to the BVI. After completion of the cruise-ship pier, the number of ships and number of tourists have increased tremendously. Table 10 and Table 11 show the number of cruise-ship arrivals and number of passenger arrival by sea.

### ***Cruise-Ship***

Over the period 1990-1994, cruise-ship arrivals recorded a significant variation from 95,070 in 1990 to 64,912 in 1994. This fluctuation has been associated with the scheduling changes resulting from adverse weather conditions which have affected the region in the past five years. From Table 8, one will note the 64,912 arrivals in 1994 represent 19.7% of total visitor traffic to BVI. In future, it is expected this trend to change. There is a need for the government to provide basic support facilities at the cruise-ship pier. Right now, there is lack of adequate shopping facilities, rest-rooms, postal services. There is no terminal building and the immediate vicinity where passengers disembark is physically unattractive.

**Table 10. Total Cruise Ship Arrivals**

Year	Total	Actual Change	Percentage Change
1990	95,135	23,498	32.8
1991	94,295	840	(1.0)
1992	87,551	6,744	(7.2)
1993	113,245	25,694	29.3
1994	64,912	48,333	(42.7)

Source: Port Authority

**Table 11: Passenger arrivals and departure by sea from 1981-1993**

Year	Passenger Arrivals		Passenger Departures	
	Number	% Change	Number	% Change
1981	147,748	15.2		
1982	150,000	1.6		
1983	144,092	3.9		
1984	164,287	14.0		
1985	172,440	5.6	164,945	
1986	191,133	10.8	184,698	11.98
1987	225,981	18.2	215,642	16.75
1988	248,808	10.1	246,902	14.50
1989	276,282	11.0	199,058	-19.38
1990	281,326	1.8	203,011	1.99
1991	301,292	7.10	298,278	46.93
1992	223,703	-25.75	212,377	-28.80
1993	247,868	10.8	237,338	11.75

Source: DPU

### *The Ferry Services*

The ferry services play an important role in the transportation of residents, visitors and cargo in the territory. For example, in 1994, the ferry system transported more passengers to the BVI than any other means of transport. The ferry service has capacity to transport 960 passengers per day within the BVI and 450 per day to St. Thomas. (For more information, see Table 8.) Because ferry services transport more passengers including tourists, there is a need to provide basic facilities to cope with the increased traffic. For example, at present there is no terminal building in Virgin Gorda, facilities at West End are inadequate and parking facilities at various points of entry are inadequate.

Table 12 shows the visitors expenditure from 1985 to 1994. This, by implication, is a multiplier effect contributed by the transportation sector.

**Table 12: Visitors Expenditure**

Year	Total US\$(000)	% Change
1985	67,800	5.8
1986	88,800	30.0
1987	110,800	24.8
1988	120,500	8.7
1989	124,700	3.5
1990	132,100	5.9
1991	109,400	-17.2
1992	99,800	-8.8
1993	186,400	86.8
1994	188,000	1.0

Source: BVI Tourist Statistics

From the facts that there is an increase of sea passengers and cargo, there is a need for the government to make a study to determine the most cost effective ways of improving the present port facilities to cope with the traffic increase in the BVI.

### ***Road Transportation***

The road transportation is important for economic and social development of BVI. The government is committed to providing an extensive network of roads throughout the BVI. Better roads are essential to develop other sectors of the economy especially tourism, construction, industrial, agriculture, etc.

#### *Road Network*

There are approximately 157 roads in the network covering 109.73 miles or 176.6 km. Approximately 25% are unpaved and 75% are paved. About 80% of the unpaved roads are in Anegada and Jost Van Dyke. Tortola has a more developed network than other islands in BVI. The major system of roads in Tortola consists of southern coastal road extending from Beef Island to West End, the Ridge Road which extends across the central ridge from East End to Meyers, the Northern Coastal road which extends from Belmont to Cane Garden Bay where it links back to Ridge Road. Generally, the network of roads is fairly efficient as most of the major settlement centres are linked.

In Virgin Gorda, the road network is also fairly adequate, with most of the island being accessible. The main problem is the fact that most of the roads are unpaved, with a number of heavily used roads being narrow.

In Anegada, the existing network of roads covers the major of the island; however, many of these are unpaved, but due to small traffic, this is not an immediate problem.

In Tortola, the major problem facing the road network system is high level of motor vehicle ownership which increase the demand for bigger roads and parking space. (See Table 13 of motor vehicle licensed and registered by use)

**Table 13: Motor Vehicles Lincensed and Registered by Use 1990-1994**

<b>Vehicles Lincensed</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>
Transport	327	375	605	573	568	569	605
Private cars	3,142	3,513	4,695	4,843	5,241	6,219	6,256
Other vehicles	1,322	1,701	994	1,095	1,108	1,145	1,230
<b>Total</b>	<b>4,791</b>	<b>5,489</b>	<b>6,294</b>	<b>6,511</b>	<b>6,917</b>	<b>8,023</b>	<b>8,091</b>

Source: Traffic/Licensing Department

Another problem is the poor state of some sections of main roads, which needs immediate attention. Other problems are the steep nature of some roads, which restricts accessibility in other areas. Another problem is uncoordinated road layout caused by customary land tenure. This is where each individual wants to construct his own access to the parcel he owns.

*Road Classification*

Roads are classified according to types; however, the major and minor roads have been identified in collaboration with the PWD use in the inventory and for a road classification system for each island. There are four class of roads:

1. CLASS A: *These are primary roads or major roads e.g. Drakes and Blackburne.*
2. CLASS B: *Secondary roads which links between major roads and communities.*
3. CLASS C: *These are tertiary roads.*
4. CLASS D: *These are residential streets or routes.*

The above classifications are categorized into two (2) major groups as we have seen, i.e. paved which is comprised of surface dressed, asphalt overlay, concrete and asphalt overlay on concrete, and the second category is unpaved roads.

### *Road Improvement Programme*

The feasibility study carried out by the Caribbean Development Bank in 1992 revealed and concluded the following:

1. The main roads of the BVI are currently in a state of moderate to severe distress and are in need of improvement and maintenance.
2. There is increased traffic activities on the main roads with some 100% average increase since 1984.
3. The priorities of improvement and maintenance of the asphalt road network are restoration of two lanes, crack and seat and asphalt concrete overlay.

According to the observation made, maintenance is a problem due to the lack of proper equipment and due to the methods employed. In most cases, Public Works Department (PWD) does all the road maintenance works but lacks the proper equipment. New road construction is contracted out to local private firms and individual contractors. PWD only concentrates on design and supervision. From the above problems, the new road improvement programme should aim at alleviating these problems.

### *Public Transportation And Car Ownership*

In the BVI, there is no government-owned public transportation system. For example, in Tortola, there is a limited number of individuals who provide private bus service to the public, but these individuals cater mostly to visiting tourists. These initiatives by individuals need to be encouraged and a regulatory system for licensing, routing and safety standards need to be put in place for such services. Lack of reliable public transportation has resulted in importation of more private vehicles to the territory. From 1994 figures in Table 12, there was 8,091 vehicles in the BVI. More than 90% are based in Tortola. With this increase, there is a problem of traffic-jam, especially at the peak hours, a problem of car-parking, especially in Road Town and a problem of environmental pollution by toxic gases and noises. There is an urgent need for the

government to undertake the study of these problems and make recommendations on how to solve these problems.

### *Car Rental And Taxi Services*

In the BVI, there are 17 car rental agencies, i.e. Tortola 11, Virgin Gorda 4, and Anegada 2. Many of the renowned car rental companies are represented e.g. Avis, Budget and National. There are also several car rental which are owned by BVI Islanders e.g. Speedy's in Virgin Gorda.

Normal taxi operators work in conjunction with ferry operators to provide island tours for visitors from St. Thomas and elsewhere. For the findings, it has been observed that taxi operators are improperly organized at their respective locations, e.g. airport, ferry ports and cruise port. There is a need for the Authority concerned to reorganize the taxi operations.

## **TRANSPORTATION POLICIES AND STRATEGIES**

While there is no comprehensive government policy on transportation, the main objectives of the sector aim at the following:

- 1.To render efficient domestic and international services.
- 2.To minimize costs and maximize revenue generation in this sector;
- 3.To minimize transportation environmental hazards.

### ***Policies***

In order to achieve the above objectives, the following policies should be implemented.

1. Government should place emphasis on policy formulation, monitoring, regulation, and evaluation;
2. Streamlining and strengthening the sectoral institutional framework;
3. Rehabilitating and improving the condition of infrastructures and strengthening maintenance and fully funding of projects and programmes;
4. Improving intra-island and inter-island travel and transportation;
5. Enhancing revenue earnings;

6. Enhancing transportation safety and a sound environment.

### **Strategies**

A number of strategies have been identified to implement the above policies. These include the following:

1. In order to aid government's role in policy formulation, monitoring and evaluation
  - a. Activities which can be self-sustaining should be given more autonomy;
  - b. If existing legislation bar the individual/organization to enter into the transportation promotion then the legislation should be reviewed to allow every citizen to participate freely.
2. Furthermore, the envisaged streamlining and strengthening of sectoral institutional framework will be achieved by :
  - a. Ministry of Communications and Works taking steps to collect data.
  - b. Developing departmental capacity to plan and enhance intermodal coordination within the sector and integration with other sectors e.g. tourism, agriculture, etc.
3. Rehabilitating and improving the condition of infrastructure and strengthening of maintenance and fully funded projects and programmes should be achieved by:
  - a. Formulating and implementing infrastructure and equipment rehabilitation programmes
  - b. Creating in-place maintenance systems after a certain period of time;
  - c. Budgeting or establishing special funds for maintenance of infrastructure e.g. Road Maintenance Fund, etc.
4. To improve intra- island and inter-island travel and transport. The following strategies should be carried out by:
  - a. Improving the link of the mode of transportation;
  - b. Promotion of the most convenient and reliable means of transportation which serves the majority of the population;

- c. Traffic management;
  - d. Improve urban-road design such that they cater for further expansion and pedestrian paths.
5. To enhance revenue earnings, the following strategies should be enforced:
- a. Improve and expand transport services by encouraging mode interchange operation (i.e. sea, road and air transportation) taking capacity management into consideration without overloading the transport infrastructure.
  - b. Encourage joint venture with investors in some institutions dealing with transportation or transport-related activities e.g. tourism, communication, etc.
6. In order to enhance transportation safety and sound environment, the following will be undertaken:
- a. Reviewing and updating national legislation transportation operational and safety requirements in line with international conventions and agreements;
  - b. Strengthening survey and inspection of local transportation operation equipment which are not regulated by international agencies;
  - c. Ensuring conformity of infrastructure design standards to environment protection and safety requirements;

## **SECTOR PROJECTS PROPOSALS**

In order to improve the services in this sector, a number of projects and programmes are proposed under the Public Sector Investment Programme, and private investments will be encouraged to take part under Private Sector Investment Programmes. (The costs of these programmes/projects will be worked out after agreements with parties concerned.)

### ***Capacity Building To The Ministry Transportation And Communication And Works***

This programme will involve the training of personnel in the field of statistics and data processing. The ministry should appoint a statistician who will be responsible for data collection and analysis in this sector. This unit will be able to advise the ministry, and

institutions falling under this ministry, according to the prevailing conditions. This programme should include the purchases of necessary tools like computers, printers, and photocopier.

### ***Road Improvement Programme***

A considerable investment should be made in road improvement programme especially in Tortola, Virgin Gorda and Anegada. The conditions of most of the roads are unsatisfactory. Many roads lack proper surfacing and drainage system. Road improvement is essential to tourism, industrial, agricultural and general development in the BVI. A number of roads on the priority list includes:

1. Road from airport (East End) to West End via Road Town
2. Road Town network
3. Virgin Gorda roads
4. Jost Van Dyke roads
5. Anegada roads

Maintenance is proving to be a problem, due to lack of proper equipment. Public Works Department should work out the lists and costs of equipment required for this programme.

Training of personnel within PWD is essential. The department needs to be strengthened in the fields of civil and mechanical engineering as well as architecture.

### ***Port Improvement Facilities***

Proper port facilities and shipping are vital to the development of the BVI. Since the economy depends much on tourism, development of ports is essential. Import of consumption goods, intermediate goods and tourism flow are constantly increasing. The Port improvement programme should include the following projects:

1. Expansion of port facilities including berthing and storage at Port Purcell.
2. Construction of passenger facilities and separate cargo facilities in Virgin Gorda.
3. Development of cruise ship facilities which includes construction of additional pier to accommodate larger ships, construction of terminal building.
4. Improvement and expansion of port and passenger facilities at West End.

5. Improvement and expansion of port and passenger facilities in Jost Van Dyke.

### ***Development Of Airports***

The tourism development requires adequate airport facilities and better services. This requires facilities to be well designed, constructed, maintained, and operated. The BVI government has recognized this, and there are already project proposals which I have already indicated in Section 1:32 to expand the Beef Island Airport runway and to construct the modern terminal building. Apart from this programme, the airport has purchased modern equipment to control and direct planes approach. This is a positive step in promoting tourism. Much should be done to the other two remaining airports of Virgin Gorda and Anegada. These airports need to be improved to cope with the increasing traffic.

1. Improvement of Virgin Gorda Airport
2. Improvement of Anegada Airport

## **SUMMARY AND CONCLUSION**

The existence of the BVI will continue to depend on its transportation system within and outside the territory. Because of its size and distance apart from other countries, transportation has enabled the territory to be closer with the rest of the world in terms of trade (import of goods and export of services) and economic and social integration. The country imports virtually all the goods it consumes, and it exports market for tourism and financial services. This has been contributed by the transportation network around the territory. Tourism and financial services are the major sectors which produce over 50% of GDP of the BVI. The impact of the Transportation Sector in terms of economic development has been recorded in a sub-sector of wholesale/retail trade, construction, and real estate business activities.

The future economic and social development of the territory will depend on the performance of the transportation sector. This will depend on how much the government is committed to solving the problems, which we have seen, facing the sector. In addition, the performance of the sector will depend on the government's transportation policies and strategies to implement

the policies. The transportation policies and strategies should act as a guide for future development of the territory. From now onwards, the government should provide enough funding to the sector, and it should create a conducive atmosphere to allow the private sector to join in hand with the government to promote better services. The private sector should be encouraged to invest in areas where the government has left out, for example, car hire and rental, taxis, charter boats, air charter, hotels and restaurants, etc.

The maintenance of existing facilities should be taken as a priority. We have seen, for instance, the state of poor roads, which needs immediate repair or rehabilitation.

In conclusion, the transportation sector will continue to be the major vehicle by which economic and social development can be achieved, provided that the government plays its part by solving the current problems facing the sector. The transportation policies should act as a guide for future development of the sector and country as a whole.