ECONOMIC AND FINANCIAL ANALYSIS

A. Introduction

1. The economic analysis assesses the economic viability of two representative subprojects under the additional financing for the Tonle Sap Poverty Reduction and Smallholder Development Project. The subprojects are a representative irrigation canal rehabilitation subproject in Lvea commune, Preah Sdach district of Prey Veng province, and a representative road rehabilitation subproject in Batheay and Chbar Ampov communes, Batheay district of Kampong Cham province. In both subproject sites, the additional financing will extend agricultural service and value chain development support to smallholder farmers.

2. The analysis is based on assessment of the difference in the without-project and with-project scenarios. Data were collected by a technical assistance consultant from interviews with informant farmers in March–April 2017. Following the assessment of these two scenarios in financial terms, economic costs and benefits were derived by applying standard conversion methodologies. Sensitivity tests were conducted to test the robustness of the analysis results.

B. Macroeconomic Context

3. Since 2012, the performance of the agriculture sector has been weak. Growth in the industry and service sectors has significantly outpaced that in the agriculture sector, which has seen the share of the agriculture sector fall from 33.5% of gross domestic product in 2012 to 28.6% in 2015 (Table 1). Especially after 2012, its growth has abruptly declined.

Table 1: Key Macro-Economic Indicators of Cambodia

Indicator	2012	2013	2014	2015	2016
GDP ($ million)	8,662	9,313	9,971	10,686	11,442
GDP per capita ($, current)	973	1,042	1,131	1,218	1,330
GDP growth (%)	7.3	7.4	7.1	7.0	6.9
Sector growth (%)					
Agriculture	4.3	1.6	0.3	0.2	1.4
Industry	9.3	10.7	10.1	11.7	10.4
Services	8.1	8.7	8.7	7.1	6.8
Sector share (%)					
Agriculture	33.5	31.6	28.9	28.6	…
Industry	23.0	24.1	25.6	29.7	…
Services	37.8	38.5	39.7	41.7	…

… = data not available, GDP = gross domestic product.
Note: At constant 2000 prices.
Sources: National Bank of Cambodia. 2016; Ministry of Economy and Finance. 2017; and Ministry of Agriculture, Forestry and Fisheries. 2017.[1]

4. Despite the sector's stagnant growth, agriculture remains the backbone of rural households, both for food security and as a significant source of livelihoods. The Cambodian Agricultural Census (2013) reports that 82% of the country's 2.6 million households are engaged in agricultural activities, including crop cultivation, and poultry and livestock raising.[2]

5. The additional financing will contribute to the government's Rectangular Strategy on

[1] Government of Cambodia. 2016. *Economic and Monetary Statistics*. Phnom Penh; Government of Cambodia, Secretary of State of Ministry of Economy and Finance. 2017. Cambodia: *Past, Present and Future*. Phnom Penh; and Government of Cambodia. 2017. *Annual Report of Ministry of Agriculture, Forestry and Fisheries.* Phnom Penh.
[2] Government of Cambodia. 2015. *Census of Agriculture of the Kingdom of Cambodia 2013*. Phnom Penh.

Growth, Employment, Equity and Efficiency 2014–2018 and the Agricultural Sector Strategic Development Plan 2014–2018. It is also aligned with the Asian Development Bank (ADB) Cambodia Country Partnership Strategy 2014–2018,[3] and included in the Country Operations Business Plan (2017–2019).[4]

C. Lesson Learned from the Tonle Sap Poverty Reduction and Smallholder Development Project

6. The current project's major outputs include rehabilitation of roads and irrigation schemes, and poverty-targeting livelihood improvement groups (LIGs) support. The poorest households were invited to participate in LIGs to receive training support on technology transfer, basic record management and business planning to access group revolving funds, agricultural extension service, and demonstration on livestock farming and vegetable cultivation. A rapid assessment of the current project indicates that it yields an economic internal rate of return (EIRR) above 26%.

7. Lessons from the current project include: (i) in the context of climate change, infrastructure needs to incorporate climate resilient and disaster risk reduction (DRR) measures; (ii) laterite roads are only appropriate in case of light traffic and in areas not prone to flood; (iii) investment in irrigation should be made only where there is sufficient water for at least two crops per year; (iv) stronger operation and maintenance (O&M) investment is needed; and (v) LIG is a very good vehicle for agriculture extension services and the group modality should be replicated.

D. Rationale

8. Development problems in the agriculture sector in Cambodia include low agricultural productivity, underdeveloped value chains, and deteriorating natural capital stock and high vulnerability to climate threats. ADB has invested in rural infrastructure, agricultural productivity, and natural resources management in the Tonle Sap Basin since 1998. While millions of people have been lifted out of poverty, the number of vulnerable people remains high; the loss of only $0.30 per day would increase the level of poverty in Cambodia to 40%.[5]

9. Disasters including extreme climate events such as floods and droughts have aggravated adverse impacts on agriculture and other sectors. Cambodia is consistently ranked among the top 10 countries most vulnerable to extreme climate events. With climate change, these impacts may worsen over time. Vulnerability of the poor and disasters triggered by natural hazards make it essential to continue to build on the successes of the original project.

10. Under the irrigation subproject, an existing tertiary canal will be rehabilitated and poor people and households headed by women will be supported to improve livelihoods. There are currently 1,828 rural households in 11 villages of the subproject commune. Their main source of income is derived from rice cultivation. The scheme will provide supplementary irrigation for the wet season crop and full irrigation for a second and a third non-photosensitive, short-maturity crop during the dry season. Under the road subproject, an existing intercommune road will be rehabilitated, which will benefit four of the 10 villages in two communes.

11. Besides infrastructure rehabilitation, both subprojects will extend support to agricultural and value chain development as well as the establishment of LIGs along with revolving funds,

[3] ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*. Manila.
[4] ADB. 2016. *Country Operations Business Plan: Cambodia, 2017–2019*. Manila.
[5] World Bank. 2015. *Cambodian Agriculture in Transition: Opportunities and Risks.* Washington, DC.

which will benefit farmers in another seven villages of the communes. Altogether, farmers in the whole commune own and work on 903.7 hectares (ha) of wet season rice.

E. Selection of Alternative Subprojects

12. All subprojects must meet the following primary criteria:[6] (i) no overlap with other projects by the government or development partners; (ii) community participation and support, which may include preparing a commune plan to contribute to infrastructure O&M; (iii) the infrastructure investment cost not exceeding $200,000; (iv) the EIRR exceeding 12% following the same requirement as under the original project; (v) construction to be completed within 2 years; (vi) no major resettlement or environmental issues; and (vii) at least 40% of beneficiaries will be female.

13. In addition, priority will be given to subprojects that, among others, (i) have high poverty ratios; (ii) reduce disaster risks; (iii) involve rehabilitation which is likely to be less costly; (iv) have soil or topographic conditions suitable for agriculture; and (v) improve production and market access. The two representative subprojects meet all the aforementioned criteria and were selected following consultations. They were selected also in part because they meet a least-cost per beneficiary household criterion, as recommended in the project technical audit report.[7]

F. Major Assumptions and Methodology

14. The economic analysis has been conducted using ADB Guidelines for the Economic Analysis of Projects,[8] and Key Areas of Economic Analysis of Investment Projects: An Overview.[9] The major assumptions include the following:

(i) The economic analysis is for 20 years, inclusive of a 5-year implementation period.
(ii) The economic analysis uses the world price (dollar) numeraire. Local currency is converted to dollars using the exchange rate of KR4,023 = $1.
(iii) Vehicle operating costs, time costs, and crop and livestock budgets were collected in riel during field works and converted to dollars using the stated exchange rate.
(iv) To convert the items into economic values, taxes and subsidies are first deducted from the gross financial values. Appropriate conversion factors were then applied on the nontradable and unskilled labor components of each item.
(v) When data is available for the main tradable agricultural inputs and outputs, their economic values are estimated based on the World Bank's Commodity Price Forecasts of January 2017 after adjusting border prices to farm gate prices.
(vi) The standard conversion factor (SCF) of 0.92 was applied to the local component and local labor (both skilled or unskilled). Local unskilled labor was further adjusted by a shadow wage rate factor (SWRF) of 0.90, and the EIRR threshold is 12% following the same methodology under the original project.

G. Subproject Costs and Benefits

1. Subproject Costs

15. Major costs of the subproject investment were estimated by the project preparatory technical assistance engineers and financial and cost expert. The main cost components of the

[6] Project Administration Manual Appendix 3 (accessible from the list of linked documents in Appendix 2 of the RRP).
[7] The number of beneficiaries is defined by beneficiaries of the infrastructure. The least-cost per household criterion was adopted during consultation but was subsequently replaced by the economics criterion (EIRR to exceed 12%).
[8] ADB. 2017. *Guidelines for Economic Analysis of Projects*. Manila.
[9] ADB. 2014. *Key Areas of Economic Analysis of Investment Projects: An Overview.* Manila.

subprojects comprise the following:

(i) DRR irrigation scheme rehabilitation, system design, and supervision support.
(ii) Intercommunal DRR road rehabilitation and related road design support.
(iii) O&M in the initial years (years 3–5) which can be used for physical maintenance and capacity building. After project completion, the routine O&M funding will be provided by the government or beneficiaries.
(iv) Support to LIGs and agricultural value chain development.
(v) Other support including agriculture information and communication technology, DRR training, and multistakeholder value chain platforms. The costs of these activities are pro-rated and assigned to the subproject, but the benefits are not quantified; and
(vi) Project management.

16. The total estimated cost of the irrigation and road subprojects is $347,488 and $255,192, respectively (Table 2). For both subprojects investment in infrastructure is capped at $200,000.

Table 2: Irrigation and Road Subproject Financial Costs

		Composition				
Item	**Financial cost** ($)[a]	**Local** (%)	**Foreign** (%)	**Unskilled** (%)	**Skilled** (%)	**Economic Cost** ($)[b]
Irrigation subproject						
Civil works	197,200	50	20	20	10	182,528
Design	12,615	38	0	0	62	11,185
Civil works O&M[c]	11,832	50	20	20	10	10,951.70
Commune/community	100,822	8	2	6	35	91,962
Other support[d]	39,862	165	5	0	54	35,658
Project management	16,901	55	0	0	45	15,203
Total	**379,232**					**347,488**
Road subproject						
Civil works	162,086	50	20	20	10	150,027
Design	12,615	38	0	0	62	11,185
Civil works O&M[c]	9,725	50	20	20	10	9,002
Commune/community	37,948	22	6	17	94	34,118
Other support[d]	39,862	3	5	0	54	35,658
Project management	16,901	55	0	0	45	15,203
Total	**279,138**					**255,192**

O&M = operation and maintenance.
[a] Inclusive of taxes and physical contingency. Total values are not discounted.
[b] Derived from financial value by first netting out taxes, and applying the standard conversion factor of 0.92 on local component, and a conversion factor of 0.83 (0.92x0.90) on the unskilled labor component.
[c] 2% of construction costs per year during years 3–5.
[d] Includes agriculture information and communication technology, disaster risk reduction training, and multistakeholder value chain platforms. Benefits were not captured in the economic analysis.
Source: Project preparatory technical assistance consultant estimates.

2. Subproject Benefits

17. The design assumed that the subproject implementation will begin in 2018, taken as year 1 in the economic analysis. The implementation period will be 2018–2023 (years 1–5). Responsibilities for the subproject will be handed over to the beneficiary communities, the concerned commune councils, and the government by the project closing date in 2023.

a. Irrigation Subproject Benefits

18. The irrigation subproject will help farmers to (i) improve, to a certain extent, wet season rice yield because of application of new practices and availability of water for supplementary irrigation, specifically in the command area, during the monsoon season if and when a prolonged dry spell occurs; (ii) diversify dry season crops (including lotus, sugar cane, watermelon, etc.) with availability of water for irrigation; and (iii) diversify into high-value farm enterprises (including native-breed chicken keeping and fish, frog, and freshwater giant prawn farming). The irrigation system will benefit 320 households, but support to and development of agricultural extension, value chain, and LIGs will benefit other farming households in the entire commune.

19. Historically, beneficiary farming households rarely converted all their farmland to new practices. Their willingness to convert farmland to new practices is constrained by financial resources, risk aversion, lack of markets, weak value chains, and lack of a storage facility or processing center. For the without-project scenario, farmers are assumed to continue with existing practices. For the with-project scenario, farmers' adoption rates vary by crop and livestock. As an example, the gradual transition of wet season rice cultivation is shown in Table 3. In the case of wet season rice, only 28% (217.6 ha) of the existing wet season rice area will be cultivated using improved practices. This 217.6 ha is the basis for the computation of incremental benefits of wet season rice cultivation. The detailed economic analysis supplementary document provides detailed crop or livestock budgets for other agricultural produce, and presents the derivation of crop or livestock area for other agricultural produce.

Table 3: Wet Season Rice Cultivation Area Under New Practices

	Without Project	**With Project**		
	Existing Practice (ha)	**Adoption Rate** (%)	**Existing Practice** (ha)	**Improved Practice** (ha)
Year	(A)	(B)	(C=A*[1–B])	(D=A*B)
Year 1	777.0	0	777.0	0.0
Year 2	777.0	7	722.6	54.4
Year 3	777.0	14	668.2	108.8
Year 4	777.0	21	613.8	163.2
Year 5–20	777.0	28	559.4	217.6

ha = hectare.
Source: Project preparatory technical assistance consultant estimates, based on project experience and agro-ecosystem analyses of both communes by the Ministry of Agriculture, Forestry, and Fisheries.

20. Table 4 presents the per-hectare budgets for wet season rice, in the without- and with-project scenarios.

Table 4: Per Hectare Wet Season Rice Financial Budgets (Abridged)

Item	**Unit**	**With Project**	**Without Project**	**Difference**
Produce	kilogram	2,400.0	2,001.6	398.4
Total revenue	$	465.3	398.0	67.3
Planting material	$	74.6	74.6	0.0
Land preparation	$	54.7	65.6	(10.9)
Herbicide	$	10.4	11.4	(1.0)
Fertilizer	$	122.3	67.3	55.0
Watering	$	30.5	0.0	30.5
Hired labor	$	22.7	43.3	(20.5)
Harvesting (machine)	$	74.6	89.5	(14.9)
Produce transport	$	17.9	17.9	0.0
Total costs	**$**	**407.7**	**369.5**	**38.2**
Net income	**$**	**57.6**	**28.5**	**29.1**

Source: Project preparatory technical assistance consultant estimates.

21. As presented in the last line of Table 4, the per-hectare income in the with-project scenario is $57.60 and the without-project scenario $28.50. In the financial analysis, the total incremental farm income from wet season rice cultivation is computed by multiplying the incremental area under new practices (217.6 ha) by the per-hectare incremental net income of $29.1/ha, the difference between the without-project income and the with-project income. The total incremental income from wet season rice cultivation is thus $6,330. The incremental farm incomes for other crops and livestock are computed similarly, and are documented in the supplementary document. The sum of the incremental crop incomes represents the total incremental farm income brought about by the project. All line items in the crop or livestock budget are in financial terms. Each item is converted to economic values in the economic analysis.

b. Road Subproject Benefits

22. For analytical purposes, there can be three traffic categories: existing traffic, generated traffic, and diverted traffic. The subproject is not expected to induce diverted traffic since the existing intercommune road has only one single entrance and exit point. In addition, generated traffic was not considered, leaving only existing traffic to be considered in the economic analysis.

23. Existing traffic is sourced within the villages and occurs with or without the project. Since existing traffic is nonincremental, the benefits will come from cost savings in terms of vehicle operating costs, and time savings of passengers.[10] The costs savings were computed by taking the difference in costs between the with- and without-project scenarios. For vehicle operating costs, data was collected for fuel and lubricating oil consumption and parts replacement. This was done for different vehicle types including motorbikes, motor-tricycles, sedans, vans, and tractors and trucks of different sizes. Time savings depend on several factors: road length, travel speed, and the value of time for passengers. Travel speeds in the without-project scenario are based on interviewees' assessment and range from 15 kilometers per hour (km/h) to 35 km/h, depending on vehicle types. In the with-project scenario, speed is on average 5 km/h higher.

24. Data on road use and traffic flow on the existing subproject road were based on traffic observations carried out at different times of the day for 4 days in March–April, 2017, and discussions with stakeholders of the beneficiary communes. Data on existing vehicle operating costs, time cost, and expected cost savings were collected concurrently. However, since the cost savings estimates were deemed optimistic, the projections of the analysis of the with-project scenario are extrapolated from the economic analysis report of a recent ADB road project in Cambodia.[11] As an example, the derivation of fuel cost savings for motorbikes is presented in Table 5, and is estimated to be $613 per year. Cost savings for other vehicle operating cost components and the time cost savings were computed similarly, and are documented in the economic analysis supplementary document. The sum of vehicle operating cost and time cost savings represent the total cost savings for a motorcycle. Similar exercises were performed for other vehicles.

[10] Improved road conditions will also curb depreciation of vehicles. However, interviews during field study suggest the difference is not significant.

[11] ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Additional Financing Kingdom of Cambodia: Provincial Roads Improvement Project*. Manila. In the spreadsheet model, the original set of data is juxtaposed with the set used in this economic analysis.

Table 5: Derivation of Fuel Consumption Cost Saving for Motorbikes

Item	Unit	Without Project	With Project	Difference
Fuel price	$/liter	0.945	0.945	0.000
Fuel consumption	liter/kilometer	0.027	0.030	0.003
Fuel cost (A)	$/km	0.026	0.028	0.000
Travel distance per trip (B)	kilometer/trip	2.74	2.74	0.00
Number of vehicle in villages[a]	vehicle	674	674	0
Number of trips per vehicle per year	trips/vehicle	135	135	0
Number of trips per year (C)	trip	90,990	90,990	0
Total distance travel per annum (D=B*C)	kilometer	249,677	249,677	0
Fuel consumption cost per year (E=A*D)	$	6,427	7,040	613

[a] 674 is the vehicle count for year 3. Vehicle counts are adjusted annually.
Source: Project preparatory technical assistance consultant.

25. Similar to the irrigation subproject, the road subproject includes activities aimed at improving farm productivity and diversification of the two communes with 5,152 households. There are about 11 LIGs with 264 members in the 10 villages of the two communes. The computation of farm benefits is identical to the method discussed in paras. 18-21.

E. Economic and Financial Analysis Results

26. The EIRR for the two subprojects are 19.1% for the irrigation subproject and 16.7% for the road subproject (Table 6). The benefit streams are computed in methods discussed in paras. 18–21 (for irrigation) and paras. 22–25 (for road). Results for the distribution analysis are presented in the supplementary documents. The poverty impact ratios are 27.8% and 34.8%, respectively.

Table 6: Economic Analysis for Irrigation and Road Subprojects
($'000)

Project Year	Capital Cost	O&M	LIGs Support	Other Support Cost	Project Management	Total Costs	Road Benefit	Farm Benefits	Total Benefits	Net Benefit
Irrigation subproject										
1	(102.4)	0.0	(12.0)	(9.0)	(2.4)	(125.8)	0.0	0.0	0.0	(125.8)
2	(91.3)	0.0	(28.2)	(7.0)	(3.1)	(129.6)	0.0	10.5	10.5	(119.1)
3	0.0	(2.7)	(28.5)	(6.6)	(3.4)	(42.2)	0.0	31.6	31.6	(9.6)
4	0.0	(2.7)	(16.8)	(6.4)	(3.0)	(28.9)	0.0	51.5	51.5	22.6
5	0.0	(2.7)	(6.3)	(6.1)	(3.0)	(18.1)	0.0	71.5	71.5	53.4
6	0.0	(2.7)	(0.2)	(0.7)	(0.4)	(3.9)	0.0	82.9	82.9	79.0
7–20	0.0	(2.7)	0.0	0.0	0.0	(3.5)	0.0	83.1	83.1	80.3
ENPV =	(164.2)	(15.8)	(67.8)	(26.1)	(10.8)	(284.7)	0.0	425.0	425.0	140.3
EIRR =										**19.1%**
Road subproject										
1	(86.2)	0.0	(4.4)	(9.0)	(2.4)	(102.0)	0.0	0.0	0.0	(102.0)
2	(75.0)	0.0	(7.7)	(7.0)	(3.1)	(92.8)	4.6	14.1	18.8	(74.0)
3	0.0	(2.3)	(8.0)	(6.6)	(3.4)	(20.2)	9.4	22.5	31.9	11.7
4	0.0	(2.3)	(7.5)	(6.4)	(3.0)	(19.2)	9.5	30.8	40.3	21.1
5	0.0	(2.3)	(6.3)	(6.1)	(3.0)	(17.6)	9.7	36.2	45.9	28.3
6	0.0	(2.3)	(0.2)	(0.7)	(0.4)	(3.4)	9.8	36.2	46.0	42.6
7–20	0.0	(2.3)	0.0	0.0	0.0	(2.3)	12.0	36.2	48.2	45.9
ENPV =	(159.1)	(36.6)	(33.2)	(34.8)	(14.8)	(278.4)	178.0	583.1	761.1	482.7
EIRR =										**16.7%**

( ) = negative, LIG = livelihood improvement group, O&M = operation and maintenance, EIRR = economic internal rate of return, ENPV = economic net present value.
Source: Project preparatory technical assistance consultant.

27. **Sensitivity analysis.** Sensitivity analysis was performed on several adverse scenarios, including (i) 10% capital cost overrun, (ii) 20% reduction in incremental benefits, and (iii) a 1-year

delay in the realization of benefits. The subprojects' economic viability is robust against downside risks. The minimum EIRR for the irrigation subproject is 15.0% and for the road subproject 12.4%.

28. **Sustainability analysis**. With DRR design and the use of DRR-resilient materials, rural infrastructure under the additional financing is likely to have a longer economic life.[12] To further extend the economic life, the additional financing will finance O&M in the initial years, equivalent to 10% of the costs on civil works. Under the additional financing, 175 km of rural roads and irrigation schemes will be constructed, covering 6,000 ha of command area. Management of rural roads is the responsibility of the Ministry of Rural Development (MRD), while management of the tertiary canals is the responsibility of beneficiary communes.

29. **Irrigation scheme maintenance.** The O&M requirement for the representative irrigation subproject is about $2,958 per year, equivalent to 11.5% of the incremental financial income of $25,700 from crop cultivation. Currently, the commune collects from households a seasonal fee of $25/ha to pay for water pumping costs, and the fee collection rate is high.[13] As long as beneficiary households continue to reap benefits from a reliable irrigation water supply, they should have sufficient financial incentives to maintain the subproject tertiary canal.

30. For the overall project, however, there are several risks that may dampen beneficiary households' financial incentives. First, the irrigation subprojects are likely to be tertiary canals. The delivery of services ultimately depends on the conditions of the primary and secondary canals, which are the responsibility of the Ministry of Water Resources and Meteorology. Secondly, uneven distribution of water and ensuing conflicts will reduce the willingness of farmers to contribute to O&M. To mitigate these risks, the project team secured the government's commitment to provide adequate and timely funding for irrigation scheme O&M.[14] On the second risk, the initial O&M provisions during years 3–5 can be allocated to enhance the capacity of communes in farmer water user communities management and canal management. In addition, candidate communes which demonstrate stronger commitment to O&M are prioritized.

31. **Rural road maintenance.** Annual maintenance requirements for the rural roads vary by the type of pavement, from $1,000/km for paved roads with double bituminous surface treatment to $1,300/km for laterite roads.[15] Assuming an average O&M requirement of $1,250/km, the additional financing calls for an incremental O&M budget of $219,000 per year (in real terms) at project completion. Providing adequate and timely funding for rural infrastructure O&M is a chronic problem in many countries, including Cambodia. The MRD's budget for rural road maintenance has increased steadily, from $8.2 million in 2010 to $11.4 million in 2014; for 2017, the budget is expected to be around $12.0 million. If this trend continues, by project completion the MRD should have sufficient budget to provide for incremental O&M of road infrastructure constructed under the additional financing. Similar to the irrigation schemes, the road infrastructure will be registered in the national asset inventory. Once the infrastructure is registered, under the project loan agreement, the MRD will provide adequate counterpart funds for O&M. More details are provided in the supplementary documents. Overall, both project components are considered sustainable.

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[12] In the engineer consultant's opinion, provided the DRR-resilient infrastructure is properly built and, specifically for road subprojects, the cargo vehicles are not overloaded, the infrastructure can have an economic life of over 10 years with limited maintenance.

[13] The water pump is operated and maintained by the Ministry of Water Resources and Meteorology. The community only pays for water pumping costs.

[14] Project Loan Agreement, Schedule 5, Paras. 2-3 (accessible from the list of linked documents in Appendix 2 of the RRP). There was no government funding of irrigation scheme O&M until 2015, when the government provided $7.5 million. In 2016, the O&M budget was $10.0 million.

[15] Concrete road is considered maintenance free and thus no O&M budget is allocated.