Andersson Elffers Felix

Small area, big tasks

The financial task of the physical infrastructure in the Caribbean Netherlands

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Executive summary

The Ministry of the Interior and Kingdom Relations wanted insight into the financial task in the field of physical infrastructure in the Caribbean Netherlands

Part of the physical infrastructure on the Caribbean Dutch islands of Bonaire, St. Eustatius and Saba is not in good condition. In addition, the current funding system does not sufficiently enable the public entities on the islands to carry out the necessary maintenance and replace infrastructure in a timely manner. The Ministry of the Interior and Kingdom Relations has asked AEF to investigate the investment, maintenance and replacement task of the physical infrastructure in the Caribbean Netherlands and the extent to which there is not yet coverage for this. This insight can serve as input for a discussion about part of the funding of the islands.

The research focused on island physical infrastructure and plans for it

The study focused on the expenditure on physical infrastructure for which the public entities and participations of the public entities bear all or part of the investment and have financial responsibility. Infrastructure that is entirely in the hands of the government or private parties is out of scope, as is infrastructure that (in practice) is fully cost-effective. Device costs are also out of scope. Based on these principles, this study included *assets* within thirteen different types of infrastructure: waste processing, wastewater, cultural heritage, drinking water, energy, buildings, agriculture, airports, recreation, telecom, water management, roads and seaports.

AEF mapped out the infrastructure and plans and made cost estimates for each asset

AEF has mapped out the content of the investments in the physical infrastructure that the islands will have to make in the coming years, and what costs this will lead to[1]. This picture is based on several sources. The substantive picture is based on information from the public entities and ministries involved. The cost estimates have been drawn up on the basis of numerous sources, ranging from specific estimates for the infrastructure in question to comparisons with other *assets*, islands, neighbouring islands or the European Netherlands, to expert estimates. AEF asked for substantiation for all future plans included, but on the basis of this study cannot give a statement about which investments are necessary to a greater or lesser extent.

The cost estimates that we have drawn up on the basis of these sources have then been corrected for the three most important external developments that will affect costs: Demographic developments, climate adaptation, and sustainability. All amounts below are expressed in 2024 price level and expressed in US dollars.

The study was conducted between mid-September and the end of December 2024. The study was supervised by the Ministry of the Interior and Kingdom Relations and a steering group in which (in addition to the Ministry of the Interior) the three public entities were also represented. In addition, a supervisory committee has been set up with (in addition to these parties) also the ministries involved[2].

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[1] For participations of the public entities (such as the water and energy companies), only the investments for which additional funding from the government has been made available in the past or for which the participations indicated that it would be difficult to cover it from the tariffs have been mapped out. The entire task has therefore not been mapped out for the participations.

[2] The Ministries of the Interior and Kingdom Relations, Infrastructure and Water Management, KGG, LVVN, OCW, VWS, and FIN were represented in the supervisory committee.

The three public entities are facing a major task

The research shows that Bonaire, St. Eustatius and Saba will face major investments in the coming years. For the public entity of Bonaire, this is an average of approximately $41 million per year until 2050, for St. Eustatius an average of approximately $17 million per year and for Saba an average of approximately $10 million per year. This entails depreciation-3 and maintenance costs for the public entities on the islands:

- **the Public Entity of Bonaire** , we estimate that total expenses for depreciation and maintenance will increase from $33 million in 2025 to approximately $59 million in 2050.
- **the Public Entity of St. Eustatius,** we estimate that total expenses for depreciation and maintenance will increase from $7 million in 2025 to approximately $23 million in 2050.
- **the Public Entity of Saba** , we estimate that total expenses for depreciation and maintenance will increase from $6 million in 2025 to approximately $16 million in 2050.

The task is large due to contextual factors and overdue maintenance

As the above figures show, the islands are facing major investments, a substantial part of which is not yet covered. This is firstly due to the current system of financial coverage: at the moment it is customary for the government to cover large investments on the islands through separate, incidental payments. The coverage would therefore gradually emerge over the next few years, investment by investment. This study now shows them in one go.

In addition, there are also substantive reasons why the costs are high. The islands require robust infrastructure that can withstand tropical conditions. That costs money. In addition, construction costs are relatively high due to the small scale, high import costs for materials and in some cases also labor, and geographical and climate conditions.

Finally, the islands are currently dealing with overdue maintenance. A large part of the current 'assets' on the islands are currently past the depreciation period and are in poor condition. In the coming years, an acute catch-up will be needed to replace infrastructure and to build additional infrastructure. The estimated investment costs are therefore highest in the years 2025-2030. After that, the costs of (new) investments will fall to lower levels (in the aftermath of this, however, depreciation costs and maintenance costs will continue to rise until about 2040 before stabilizing.

The cost estimates are the best possible approximation, but remain uncertain

The cost estimates are based as much as possible on realistic cost estimates of the islands themselves. Where necessary, these figures have been supplemented or validated with reference figures from other areas, such as the European Netherlands, the other countries in the Kingdom or data from the Caribbean Development Bank. This has made it possible to draw up a detailed estimate of the costs that the islands will incur for investments and maintenance. Nevertheless, there is still uncertainty in the figures that is typical of cost estimates of future infrastructure projects: the price may change in practice due to, for example, changes in exchange rates, changing project implementation or fluctuations in price levels, construction costs or exchange rates. Moreover, some of the cost estimates are based on limited information. It is also conceivable

[3] These costs follow from an assumption about a future financing and funding structure, in which the public entities seek financing for investments on the capital market, capitalise and depreciate their assets, and the funding focuses on depreciation, (unestimated) interest costs and maintenance costs. Section 2.4 discusses this in more detail. This financial structure does not (yet) exist.

that the challenges surrounding implementation power among the parties involved have led to certain plans and ambitions for the future not being worked out and therefore not being included or only taken into account to a limited extent.

The challenge of implementation requires an alternative scenario

In addition, it is uncertain whether the estimated expenditure can be realised. During the investigation, various signals emerged that the capacity of the public entities and local contractors is limited. It is certainly conceivable that in practice they will not be able to carry out all the necessary investments. This can lead to underrealization. After all, this is already a known problem on the islands. We cannot estimate exactly how big the shortage of implementation capacity is based on this study. However, we have worked out a balanced scenario for investments by the public entities in which the starting point is that capacity is built up gradually. The average investment costs remain the same as in the original scenario, but they are more gradually distributed over time.
This creates a different cost picture every year. This can be seen in section 4.4. Because we have not looked at the actual implementation power, it is possible that this scenario is also not fully feasible by the public entities.

Part of the costs for public entities is covered, but a larger part is uncovered

Some of these expenses already have financial coverage, for example from the free payment of the BES fund, special payments or specific income. However, another part is (still) uncovered.

- **Bonaire** , we estimate that of the total expenses of the public entity for depreciation and maintenance in 2026 will still be approximately $8 - $21 million uncovered, and of the expenses in 2050 will still be approximately $21 million.
  $41 - $43 million.
- **St. Eustatius,** we estimate that total uncovered expenses for depreciation and maintenance will increase from $4 million in 2026 to approximately $16 million in 2050.
- **Saba,** we estimate that total expenses for depreciation and maintenance will increase from $3 - $4 million in 2026 to approximately $11 million in 2050.

Other parties on the islands also have a task that is difficult to cover

In addition to the public entities, the utility companies on the islands also have a task in the field of investments and maintenance in physical infrastructure. In principle, these investments are funded from the rates paid by users, but in the past this was not always the practice for large investments. One reason for this is that passing on large investments to a small number of users would lead to large rate increases. In the past, these investments have often been funded with incidental funds. For this reason, we investigated which investments the utility companies identify as challenging to pay for themselves. This involves the following task:

- **Bonaire**, we estimate a total of $402 million of these types of investments over the entire period that are not yet covered. This translates to $3 million in uncovered annual costs in 2026 and $11 million in 2050.
- **St. Eustatius**, we estimate a total of $98 million of this type of investment over the entire period that is not yet covered. This translates to $0 million in uncovered annual costs in 2026 and $3 million in 2050.
- **Saba**, we estimate a total of $84 million of these types of investments over the entire period that are not yet covered. This translates to $0 million in uncovered annual costs in 2026 and $3 million in 2050.

/ Contents

/ 1 Introduction

In this chapter, we provide a brief introduction to the research and the research questions. Finally, this chapter also includes a reading guide for the rest of the report.

1.1 Inducement

Since October 10, 2010, Bonaire, St. Eustatius and Saba have been special municipalities of the Netherlands. The three islands, collectively referred to as the 'Caribbean Netherlands', are governed by a public entity per island and the central government.

In the years after 2010, physical infrastructure has always been a point of attention. The Ministry of the Interior and Kingdom Relations (BZK), which is the coordinating department for the islands, has found that the islands are struggling with infrastructure backlogs. This is worrisome, because the island's physical infrastructure is a precondition for the quality of life, economic development and connectivity of the islands. The infrastructure is also linked to the taskings relating to nature and environmental management and climate adaptation and mitigation.

One of the causes of the problems surrounding the infrastructure is the system of funding. The islands cannot borrow money and are not allowed to capitalise and write off investments without further ado, for example if they are funded from a special benefit. In addition, in
The funding of the public entities has long taken limited account of the maintenance of physical infrastructure. As a result of a study by IdeeVersa into the tasks for which the islands are responsible and the financial resources they need to do so, €8.6 million was added to the islands' budget in the spring memorandum of 2024 , of which €2.4 million for the maintenance of capital goods, intended to make a start on the better maintenance of capital goods.[4] However, the investment and maintenance task in the islands is greater than that.

The Ministry of the Interior and Kingdom Relations would like to have insight into this investment and maintenance task in the field of physical infrastructure on the three Caribbean Dutch islands and which part of this task is currently uncovered. This insight can facilitate the discussion between the various departments and the islands about the funding of physical infrastructure. The ministry has therefore asked Andersson Elffers Felix (AEF) to inventory and quantify the investment, maintenance and replacement task of the physical infrastructure in the Caribbean Netherlands.

1.2 Question

The main goal of the research was to obtain the answer to the following question:

[4] Parliamentary Papers II 2023/24, 36550 IV, no. 3, p. 2

Wat is de opgave van de openbare lichamen met betrekking tot (wettelijk verplichte of essentiële) investeringen, onderhoud of vervanging van de eilandelijke infrastructuur, zover het gaat om infrastructuur in het bezit van de openbare lichamen of gelieerde overheids-NV's?

Underlying and supplementing this question, the following questions have also been formulated:

1. *What quality requirements must be set for the quality (standards) and layout of the infrastructure?*
2. *What is the impact of the expected population growth on the islands?*
3. *What is the impact of (future) laws and regulations and relevant policy developments such as climate adaptation and mitigation[5]?*
4. *What phasing of investments, maintenance and replacement over time is possible?*

The study was supervised by the Ministry of the Interior and Kingdom Relations as the client and a steering group in which (in addition to the Ministry of the Interior and Kingdom Relations) the three public entities were also represented. In addition, a supervisory committee was set up to supervise the methodology of the research. In addition to the parties from the steering group, the various ministries of the central government involved were also represented.[6]

The scope of the research focuses on spending on (and coverage of) the physical infrastructure itself. Costs incurred by the public entity for policy coordination, project management or business operations (insofar as they are not covered by the business case of specific projects) are outside scope. Section 2.1 goes into more detail about the scope of the study.

1.3 Background to the research

The infrastructural context in the Caribbean Netherlands differs greatly from the European Netherlands and provides background to the reason for this research and interpretation of the results of this research.

Parties involved

The public entities are responsible for most of the government tasks on the islands. They therefore take on a significant part of the investments and maintenance work for the island infrastructure. The government is also involved in some forms in infrastructure work on the island, for example through the Central Government Real Estate Agency. We do not include the infrastructure of the government in this study. In addition, other parties are also involved in the construction, management and expansionof infrastructure on the islands. For example, there are several NVs affiliated with the public entities that are responsible for certain tasks. Think of water and energy companies. There are also situations in which a public entity outsources an island task to a private party (such as waste processing on St. Eustatius). Within telecom and energy, there is often a combination of private and (quasi)-public parties active on the islands. All parties affiliated with the public entities are within scope of our investigation[7].

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5 In this study, we only included climate adaptation and mitigation and did not include other developments, such as future developments in the field of safety requirements or technological developments.

6 These included representatives from the Ministries of the Interior and Kingdom Relations (BZK), Infrastructure and Water Management (IenW), Climate and Green Growth (KGG), Agriculture, Fisheries, Food Security and Nature (LVVN), Education, Culture and Science (OCW), Social Affairs and Employment (SZW), Health, Welfare and Sport (VWS) and Housing and Spatial Planning (VRO). The Ministry of Economic Affairs (EZ) was not represented.

7 We include the costs for utility companies and other participations in a different way than the costs for the public entities. Chapter 2 discusses this in more detail.

State of the infrastructure

Since the constitutional changes in 2010, attention has been paid to the state of the infrastructure on the islands. There are many reports and news articles that discuss the poor condition of the roads or other (vital) infrastructure in the Caribbean Netherlands. Since 2010, large investments have been made with government resources on the Caribbean Dutch islands, for example in solar parks, water factories and school buildings. However, partly because the task was initially very large, a relatively large part of the infrastructure is still in poor condition. As a result, a large part of the infrastructure must be maintained or replaced in the short term.

Organisation of infrastructure funding

One of the reasons that the infrastructure has not been sufficiently maintained and replaced in a timely manner in recent years is the way in which infrastructure is funded. We will explain this briefly in this section.

Public entities receive financial resources in various ways. The most important source is the **Free Allowance (VU)** from the BES fund. This Free Allowance shows similarities with the General Allowance from the Municipal Fund for municipalities in the European Netherlands. The VU is intended to enable the public entities to perform certain tasks, but is free to be outsourced by the public entities. Certain tasks related to infrastructure are included. This concerns, for example, the management of public space, the maintenance of roads and the operation of the airport[8].

In addition to VU Amsterdam, there are also **special grants** for the Caribbean Netherlands. These resources are typically incidental in nature and focused on a specific task or cost item. This tool is regularly used to pay for a large investment or a set of investments. For example, the new seaport of Saba is funded by a special grant and solar parks on all three islands are funded by such a grant. Investments that are funded in this way may not be capitalized and are therefore not written off. In addition, the government can also **lend interest-free** to the public entities. This has been used in the past, for example, for the construction and renovation of school buildings. A final source of income that can be used for infrastructure of the public entities consists of own income.
This concerns, for example**, local taxes and levies**, such as the waste levy. A source of financial resources that cannot be tapped by public entities is borrowing on the capital market. Due to all these factors, public entities are not able to make large investments with their structural resources themselves.

This funding structure has a few snags. Firstly, the free allowance offers virtually no room for investment, because it is based on the lower limit of the reference framework for the Caribbean Netherlands 2012, which did not include any funds for investments[9]. That is why large investments in capital goods are often financed with an incidental payment. When the capital goods reach the end of their lifespan, this investment must be made again and a new special payment is required. As a result, the islands and ministries have to renegotiate for every investment and replacement and financial space has to be found again and again, while investing in and replacing infrastructure is related to structural government tasks. In addition, the funding of such a large investment is often

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8 For a complete overview of the tasks, see *Frame of reference for the Caribbean Netherlands* from IdeeVersa 2012
9 IdeeVersa, Final report on research into island tasks and resources for the Caribbean Netherlands, 2023, p. 9.

does not take into account the fact that a new asset also needs to be maintained and that this also entails costs. At the time of these investments, no funds were added to the free allowance based on these maintenance costs. As a result, there was not enough room in the free allowance to carry out maintenance in a timely manner.

This is a known problem. IdeeVersa concluded in 2023 that the current system for investments and maintenance is not sufficiently sustainable, as maintenance or replacement costs are not taken into account, and that this results in a lack of financial space. [10] As a result of that investigation, the free allowance was increased by €8.6 million from 2024, of which €2.4 was to be able to start maintaining capital goods.

However, the study did not provide a complete insight into the investment, replacement and maintenance task and it is known that the €2.4 million is not enough to fill the gap.

Local cost level

Investments in and maintenance of infrastructure on the islands are relatively expensive compared to the European Netherlands. This is because the public entities of the Caribbean Netherlands operate under conditions that lead to higher costs than for similar tasks in the European Netherlands. This is due to the small scale, high import costs for materials and in some cases also labour, and geographical and climate conditions.

The islands have a (very) small population, which means that certain expensive essential infrastructure, such as drinking water facilities, transport facilities or energy facilities, are available to a much smaller group of people than is usual in the European Netherlands.
As a result, the costs for infrastructure in relation to the number of inhabitants are logically many times higher than in the European Netherlands. Certain infrastructure that is often profitable in the European Netherlands (such as an airport) is not profitable in the Caribbean Netherlands, unless the rates become unacceptably high.

In addition, due to their remoteness and small scale, the islands are forced to import almost all raw materials, building materials, and equipment. These import costs are also high due to the need to import by sea and import duties from surrounding countries. The general price level on the islands is therefore higher than in the European Netherlands, which also has an effect on infrastructure costs.[A] [11]

Third, geographical and climatic conditions increase costs. All three islands have to deal with a lot of (salty) wind, sunlight, high humidity and erosion by sea and rainwater, which can lead to more frequent maintenance needs. The hard, stony surface means that laying cables in some locations is many times more expensive than in the European Netherlands. Saba and St. Eustatius are also located in a hurricane area. Hurricane Irma, which caused a lot of destruction on Sint Maarten, also caused damage on Saba and St. Eustatius. The airport on St. Eustatius was severely damaged, as was the port of Saba and the telecom network. On Saba, the drinking water factory is currently not hurricane-proof.
These terrain and climate conditions mean that initial investment costs are higher, because climate-proof construction is required. As a result, more frequent maintenance, or even

[10] IdeeVersa, Final report on research into island tasks and resources for the Caribbean Netherlands, 2023, p. 9.
[11] Statistics Netherlands, *Price Level Measurement Caribbean Netherlands 2023,* link

replacement, necessary. This also means that maintenance and replacement costs are higher than people are used to in the European Netherlands.

1.4 Reading guide and terminology

The rest of this research report is divided as follows

- **2** describes the research approach, including the scope, frameworks and preconditions that we have used in consultation with the supervisory committee and steering committee.
- **3** provides an overview of the physical infrastructure in the Caribbean Netherlands, and the substantive context that is important in this regard.
- **4** presents our cost estimates of the investment and maintenance tasks for the islands. Future autonomous developments are also taken into account.
- **5** discusses the extent to which there is currently financial coverage for the investment and maintenance tasks that we estimate and the tasks that are still uncovered.
- **6** presents our conclusions and reflection, with attention to the difference between the financial task of the islands on the one hand and the coverage on the other.

The report has **appendices** containing underlying results and information. In this report,

we use the following terminology:

- (Physical) infrastructure: the collective term for all capital goods in the physical domain
- an individual capital asset, such as a road, a school building or a water pump
- the construction, renewal, extension or replacement of an asset
- the costs for the above investment
- periodic and planned maintenance of assets
- maintenance: unperformed maintenance that results in an asset being in less condition than expected based on its age. Additional costs must be incurred to bring the asset back to the condition that can be expected based on its age.
- costs for periodic and planned maintenance and the costs of catching up on a maintenance backlog

/ 2 Design of the study

This chapter contains a description of the methodology that we used to answer the research questions.

Because a complete inventory has not yet been made of which infrastructure is present on the islands and what the task is around that infrastructure, we have built up the investment and maintenance task *bottom-up* . We have gone through the following steps:

2.1 Establish scope and frameworks

As a first step of the study, the supervisory committee determined what constitutes physical infrastructure and which infrastructure will be included in the study.

The starting point was that we focus on the physical infrastructure over which the public entities, or utility companies of which a public entity is a shareholder, bear all or part of the investment and have the (financial) responsibility.

This means, for example, that we do not consider the following physical infrastructure:

- owned physical infrastructure. Examples of this are (owner-occupied) homes, cisterns or private septic tanks.
- infrastructure of the State. This concerns infrastructure in which the public entity as a whole is not involved. Examples of this are buildings of healthcare institutions and submarine cables.
- infrastructure that is fully cost-effective. An example of this is the infrastructure for air traffic control or infrastructure for childcare (except on Saba[12]).

This resulted in a list of categories mentioned in section 3.1.

For each type of infrastructure, we investigated whether there are existing frameworks for the quality level. To do this, we first looked at the applicable laws. Where these were not present, we looked at established programmes or plans (such as the nature and environmental policy plan) or made a proposal for a directive used in the European Netherlands. In cases where no usable frameworks could be found, it was decided to make an inventory of all plans and to determine in the supervisory committee which of those plans should or should not be included.

[12] There, childcare and after-school care fall under the public body.

As part of this study, in many cases we did not investigate whether the infrastructure meets these frameworks. This would require technical expertise on a wide range of topics and would take much more time than available for this research. The frameworks were used as a starting point for those involved on the islands and the ministries to be able to propose the necessary investments in the infrastructure and to be able to discuss in the supervisory committee whether or not certain investments should be included. We have also often used existing studies that refer to these frameworks for the cost estimates. In some cases, we did make an estimate based on the frameworks, for example where surface standards were concerned. Because we have not investigated the necessity of the investments ourselves, we do not make any statements about the necessity or desirability of the individual investments.

For energy production, we have also assumed a certain future share of renewable energy. We based this on TNO's 2022 report *Options for climate-neutral energy supply in the Caribbean Netherlands*. For this study, we used the following scenarios for the islands:

- Bonaire: towards 70-80% renewable energy
- St. Eustatius towards 80% renewable energy
- Saba towards 85% renewable energy

We looked at the period up to and including 2050 because most assets need to be replaced at least once during that period, so a reasonable picture emerges of the structural task. Ideally, the period would continue until 2065, so that all assets eventually reach the end of their useful life, but this was not possible because certain information about future developments (see section 2.4) was not available for that later period.

2.2 Mapping infrastructure and plans

The second step of the research was to map out all the infrastructure present on the three islands and the plans in the field of infrastructure. The main research activity we undertook for this was to conduct interviews with stakeholders at the relevant ministries[13] and employees of the public entities and utility companies on the three islands. We spoke to 13 employees of ministries and 49 people working for public entities or utility companies on the islands. In addition, we analysed a few dozen documents.

This resulted in a list of approximately 400 assets or groups of assets that are included in the study. Sections 3.2 to 3.4 explain the situation and plans for each island per theme. Appendix B contains a comprehensive list of all assets by theme by island. In some cases, these are grouped.

[13] In the interview round, we spoke with the Ministries of Infrastructure and Water Management, the Chamber of Commerce, the Ministry of Education, Culture and Science, the Ministry of Housing, Nature and Food and Safety, the Ministry of the Interior and Kingdom Relations, the Ministry of the Interior and the Environment. Furthermore, the Ministry of Health, Welfare and Sport provided written input in this step.

2.3 Cost of windows

After mapping out which assets there are and what plans and ambitions there are for new assets and expansions of assets, we made a cost estimate for these individual assets and plans. This section explains how we did that.

We used a different approach for infrastructure owned by utility companies and other participations than for the public entities. In principle, this infrastructure is cost-effective, but in practice it has become apparent that additional financing was sometimes needed to cover large investments. We have not estimated the costs of the infrastructure that are in any case covered by the income of the utility companies and other participations, but only for the investments for which additional funding has been made available from the government in the past or for which the participations in question indicated that it was difficult to cover from their own income.

Estimates by asset

For each of the assets or groups of assets, we have estimated the following elements:

- replacement value (or realisation costs, for new assets)
- economic lifespan
- of construction
- amount required for regular maintenance per year
- current amount of maintenance overdue[14]

Basis for cost estimates

For all assets, we have tried to make an estimate that is based as much as possible on the estimates for the asset itself, for example by looking at the actual acquisition costs in the past, available studies regarding the asset from consultancy and engineering firms or budgets of the public entities or utility companies. For a large part of the assets, it was possible to at least base the replacement value on figures from the right context.

However, it was not possible to determine the exact costs for all assets based on current and reliable data from the islands themselves. In those cases, it was necessary to use indication figures. In advance, we have drawn up a preference order of methods to use. This 'ladder' is included below.

‘ adder’ van broninformatie voor kostenramingen

1. Beschikbare ramingen van de infrastructuur in kwestie
2. Beschikbare cijfers van een soortgelijke *asset* in het verleden op het betreffende eiland
3. Beschikbare cijfers van een soortgelijke investering elders in Caribisch Nederland
4. Beschikbare cijfers van andere eilanden in het Koninkrijk
5. Beschikbare cijfers van Caribische buureilanden
6. Beschikbare cijfers van Nederlandse gemeenten
7. Europese / internationale kengetallen

[14] Solving overdue maintenance is part of the infrastructure task and therefore part of this study. However, there is no unambiguous definition for it, which makes it difficult to estimate. In many cases, this has therefore been omitted and the replacement moment of the asset has been postponed as an alternative. Where we have estimated it, it is often based on a past investigation into the maintenance condition of the asset for which the estimated maintenance has not been carried out.

8. Expertramingen, op basis van interviews

To obtain these figures, contact was made with relevant experts in Curaçao and Sint Maarten and employees of development banks in the region. In addition, use was made of public budgets of Caribbean islands and European-Dutch municipalities and public information about completed projects of development banks.

Where we have used a *step* in the ladder higher than 1, we have made adjustments to align the estimate with the context of the Caribbean Dutch island in question, for example by making a price correction.

Use of European Dutch indication figures

In some cases, we had too little substantive information about exactly what infrastructure is present and what the plans are in that area, so that we based our estimates on the relationship between the number of inhabitants and the facility. This was especially the case for buildings on Bonaire and St Eustatius. There, among other things, we estimated the replacement value of the schools on the basis of standards on the number of square metres of floor space per pupil and information on the number of pupils. We have also used a similar method for playgrounds, libraries, office spaces and archives in some cases.

General principles and key figures used

Where we reached step 7 and had no other information, we applied the following principles:

- asset is replaced at the end of its economic life
- replacement value is equal to the cost of construction
- economic lifespan follows from the type of asset
  - 40 years
  - and cables: 40-45 years
  - 40-50 years
  - (top layer): 20 years
  - installations: 20-25 years
  - plant and machinery: 10-15 years
  - 7 years
- ratio between maintenance and replacement value is based on the type of asset:
  - pipelines and cables: annual maintenance 1.5% of the replacement value
  - installations, machines and vehicles: annual maintenance 3.5% of the replacement value
  - assets: annual maintenance 2.5% of the replacement value
- the year of construction was not known, we assumed that the assets within a category are on average at 75% of their lifespan, except for the topics on Saba where the interviews showed that the infrastructure is in sufficient condition. We assumed an average of 50%.
- the time of resolving overdue maintenance was not known, we have divided it over 2025 to 2028[15].

[15] In practice, due to limited implementation power, it may not be possible to carry out all overdue maintenance during this period, but we take this as a starting point because it is the most cost-effective deployment: postponing overdue maintenance for longer results in higher costs because more damage occurs in the meantime.

- principle, the moments of new investments were discussed with the stakeholders on the islands, but in the few cases that we had no indication, we divided them over 2025 to 2030.

Currency and price level

All amounts are expressed in dollars price level 2024. In some cases, we had to convert other currencies to dollars. We did this as follows:

- 2024, the central government used the exchange rate between the dollar and euro of $1.00 = €0.90 ($1.11 = €1.00). We have also used these.
- is a fixed exchange rate between the Antillean guilder and the dollar of $1.00 = ANG 1.81 (ANG 1.00 = $0.55.
- the rare occasions when we used in other currencies (such as the East Caribbean Dollar, the Aruban Florin), we used the one-year average indicated on Google Finance.

In many cases, we have had to adjust a forecast from the past to 2024 price levels. In those cases, we have indexed the amounts. We did this on the basis of customised indices that are based for 50% on the CPI of the relevant island, as published by CBS, and for 50% on the construction cost index material component of the European Netherlands, as published by CBS. Because construction costs have risen faster than other costs and there is no construction cost index for the Caribbean Netherlands or another country in the region, we have chosen this as the best approach.

Where we based ourselves on prices from other contexts, we corrected for the price level. We did this on the basis of the price level measurement within the Caribbean Netherlands by CBS or on the basis of a similar cost component that was known for both contexts. For example, we have applied the ratio of costs for the construction of a school per square meter to other types of buildings.

Test on the estimates

We went through all the estimates and compared similar estimates of the three islands. In some cases, we have also made a comparison with available information from the countries in our Kingdom and public information from the Caribbean Development Bank. Where possible, we also looked at whether the order of magnitude corresponded to expenditure in the European Netherlands (taking into account the significant differences) or consulted public sources on the internet.

In addition, a working session was held with each of the three islands to discuss the estimates that were not based on their own information. Based on that work session, corrections were proposed that were then tested on the basis of public sources or short conversations with employees of the central government. All members of the supervisory committee were also able to view all estimates at asset level in order to provide feedback and propose adjustments.

2.4 Modeling cost developments

After estimating the costs per asset and testing them, we modelled the effects of future developments. This concerned demographic developments and developments due to climate change and adaptation. Other possible future

We have not modelled cost-increasing developments, such as higher technological requirements. Finally, we modeled an alternative investment scenario.

Modelling the effect of population growth

The Caribbean Netherlands, and especially Bonaire, has experienced strong population growth since 10-10-10 and the population is expected to increase further in the future. This means that the number of users of the infrastructure is increasing. For some types of infrastructure, this makes little difference, but for many it is a relevant fact: more or larger assets are needed or the assets are used more often, which increases maintenance costs or reduces lifespan. For each asset, we made an assumption about the extent to which population growth affects costs and then applied the population growth per island. We have based this on the CBS calculation of the middle growthscenarios of the State Commission on Demographic Developments Caribbean Netherlands 2050[16]. In some cases, we also looked at growth in tourist numbers or a certain cut-out of the population (such as pupils in primary education).

Modelling the effect of climate change

In addition to population growth, we have included climate change and adaptation. The three islands are sensitive to climate change due to their location and geographical characteristics. This has an effect on the costs of physical infrastructure. Firstly, climate-adaptive construction must be carried out. This is included as much as possible in the cost estimates per infrastructure asset.
In addition, certain climate trends or events can cause damage to infrastructure, requiring certain infrastructure to be replaced sooner or maintained more often. For this, we have based ourselves on the most recent climate scenarios of the KNMI for the Caribbean Netherlands. In this study, we use two important themes that can have an effect on the infrastructure.

Decrease in the amount of precipitation and increase in (the intensity of) precipitation periods.
Because less precipitation is expected in the future, various forms of infrastructure will have to be adapted accordingly. It is expected that there will not only be less precipitation (on average), but that it will also occur more clustered. In other words, there will be (longer) dry periods and short intensive wet periods. We have made substantiated assumptions about the types of infrastructure this affects and what that effect is. This can be found in Appendix C.

Increase in hurricanes.
With the changing climate, hurricanes will become more common. For this, we looked at the predictions of repeat times from the KNMI. This distinguishes between different categories of hurricanes. For this research, we focus on hurricanes from the most severe category. Firstly, because the impact of this is many times greater, and secondly because it is precisely these hurricanes that will occur more often due to climate change. We made substantiated assumptions about which types of infrastructure per island are sensitive to hurricane damage (based on the specific context on the islands).

We have kept the costs of restoring infrastructure after a hurricane separate from the other estimates, because in our view it does not make sense to include these very incidental and very

[16] For Bonaire, the question is whether the middle scenario is the most realistic. The State Commission does not make any explicit statements about this, but does describe that migration is still increasing. However, we do not opt for a high scenario. The reason for this is that OLB and the government signed an administrative agreement in May 2024 stating that the island will temper population growth using the World Bank's "slow growth model". The high scenarios, which assume more than a doubling of the population in the next 26 years, do not fit in well with this.

Treating significant costs in the same way as the structural costs of replacing and maintaining assets. The costs for a hurricane can be found in Appendix A.

Initially, the plan was also to include the rise in seawater in the estimates. However, due to the great uncertainty about the increase itself and the consequences that it would have[17], this was ultimately not taken into account. Of course, there are also other factors that have an effect on the Caribbean Netherlands. For example, the rise in the temperature of the seawater causes bleaching and death of the coral. This means that the discharge of wastewater into the sea becomes even more harmful (for the coral). However, this type of security is (in a financial sense) relatively small or uncertain. In our research, we therefore limited ourselves to the two factors mentioned above.

Balanced scenario

Because there is a lot of overdue maintenance on the islands, many assets need to be replaced in the relatively short term and there are many plans to improve and expand infrastructure in the coming years, the investment task in earlier years is greater than in later years. In practice, fulfilling this task in this way is not realistic because it would mean that the planning and implementing parties on the islands would have to build up their capacity very quickly and later partly reduce it again. We have therefore also worked out a scenario in which investments are built up gradually. In this scenario, particularly large investments that most likely require expertise and implementation power from outside the island (such as the realisation of a new seaport) have not been taken into account. The costs in this scenario can be seen in section 4.4.

2.5 Examine coverage

Not all estimated costs are uncovered in the current situation or in the future. Budgets are already available for some of the investments and (overdue) maintenance. In order to make an accurate estimate of the resources required to cover the tasks for the public entities, it is necessary to deduct these resources from the total estimated costs.

Different forms of coverage and method of processing

The sources of coverage are described in section 1.2. Below we describe how we included them as coverage.

As described, the **free grant** from the BES fund is intended for the performance of the tasks of the public entities. The public entities also use this money for tasks for which we estimate costs. In some cases, they carry out maintenance and sometimes build up reserves from which they make investments. The free allowance may be spent freely and there is therefore no objective basis for determining which part of this allowance can (or should) be spent on physical infrastructure. We

[17] The rise in sea level is particularly relevant on Bonaire and St Eustatius. On St Eustatius, lower towns are particularly sensitive to sea level rise. The (financial) consequences of this can be considerable, because important infrastructure (port, drinking water factory) is located precisely there. However, the consequences for the quality of life on the island would also be significant and it is not possible to determine in the context of this study what that would mean for the use of the infrastructure. Certain infrastructure (port, airport, drinking water factory) is also relatively low on Bonaire and seawater rise can have a consequence. The sea level near Bonaire is rising relatively fast. However, it is not clear what consequences this would have and what measures would be taken to mitigate the risks (flood protection, or relocating infrastructure).

have included budgets for investment or maintenance costs for physical infrastructure from the free grant as cover. It is important to mention that the coverage is partly based on the administrative prioritisation of the public entities themselves. In addition, it is not always clear in the budget which part of a budget is intended for maintenance and which part for other activities, such as policy-making or coordination. We sometimes had to make assumptions about this. In the case of Bonaire (where the individual expenditure budget is less comprehensively broken down than on the other islands), we have based the existing coverage for maintenance on St. Eustatius' expenditure, indexed based on the ratio between the total amounts of free allowances on the two islands in 2023.

A total of €2.4 million[18] will also be added to the free allowance in 2024 to make a start on better infrastructure maintenance. We assume that the islands have also added their share of this €2.4 million to their maintenance budget. To check this, we compared the maintenance budgets from the free grant for 2025 with the budgets used for infrastructure maintenance in the last year before the addition (2023) (after indexation in accordance with the indexation of the BES fund). If an island's budget had increased less than the addition to the free allowance, we still increased the coverage to the relevant part of the €2.4 million.

We **have included the special grants** that cover certain investments by eliminating the investment, which also eliminates the resulting depreciation costs. The next time the new asset needs to be replaced, we will include the investment (and depreciation costs) again, because there is no coverage for that yet. We have included **semi-structural special grants and subsidies** as cover for the years for which they were definitively determined, because it is not certain that they will be extended.

A separate category of external financing is **investments from third parties**. This is rare and almost always concerns funds from the European Union. For example, funds are available for islands within the EU on sustainability and nature conservation. These funds are subject to the same restrictions as special grants. In the past, infrastructural investments have also been made with money from foundations or lotteries, especially in playgrounds and sports facilities. We take this into account in the same way as special benefits.

Finally, there are the various **revenues** of the public entities or related parties. This concerns, for example, tax revenues or levies. In our coverage overview, we have also linked income from public entities that are linked to a certain specific task to the expenditure for that task. After all, the basis for – for example – a waste levy is the costs incurred for waste processing. In practice, however, this income is not always fully used for the infrastructure with which it is earned. It is not necessarily the case that income from port dues is also used to maintain the port, for example. In addition, the operation of the infrastructure is often covered by this and we have had to make assumptions about the part that can be used for maintenance.

[18] The distribution across the islands was Saba: €0.3 million, St Eustatius: €0.7 million, and Bonaire: €1.5 million. See *Letter to Parliament Amendment of the budget statements of Kingdom Relations (IV) and the BES Fund (H) for the year 2024*, Ministry of the Interior and Kingdom Relations, 18 April 2024.

The income of public limited companies affiliated with the public entity is a special category. Although the situation differs per island, this concerns categories such as drinking water, energy, and telecom. As a rule, these NVs have balanced budgets in which the costs are passed on to users. However, in the past, investments have also been covered by subsidies to prevent the costs from being passed on to the relatively small number of users and their rates from rising too fast. For all the maintenance of infrastructure of public limited companies, we assume that it is always covered by the tariffs. Often we have not estimated any costs for this and therefore we do not estimate an absolute number for the coverage. We simply consider this to *be cost-effective.* This also applies to replacement investments for a large part of the infrastructure.

For the large investments that are not simply covered by the rates, subsidies from the government or subsidies from the EU are sometimes used. Insofar as these cash flows are already known, we include them in the same way as special grants.

2.6 Calculate uncovered statement

The final step in the investigation is to calculate which part of the statement is uncovered. This is equal to the budget needed to maintain and replace all the assets that we include in the research in a timely manner and to realise all plans.

Assumption of financial structure of investments

In this study, we assume a financial structure that does not (yet) exist, namely a structure in which parties on the islands borrow for the initial investment, capitalise the asset and depreciate it on a linear basis. This structure is in line with the working method of European-Dutch municipalities that make use of an income and expenditure system. An investment in an asset itself is not seen as an expense, but the resulting depreciation. The funding of a municipality (e.g. by means of a specific grant[19]) focuses on the expenses in the operating budget and not on the investments on the balance sheet. The funding then focuses on the capital costs (depreciation and interest). We explain this in more detail below.

Current situation

If a major investment has to be made, for example the purchase of new metal baler for waste processing worth $200,000 in 2025. In the current system, this individual investment is often covered by a special distribution of (part of) the value of the investment after a process between the relevant ministry and the public entity in question. In this way, the public entity (or utility company) purchases the metal baler. However, such a machine lasts about ten years and then has to be replaced. Discussions will then have to be held again about the coverage of that investment and probably incidental funding again. The funding would then look like this:

2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
$200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$200	$0	$0	$0	$0	$0

Adoption structure

[19] This does not apply so much to the General Grant from the Municipal Fund, because there is no direct link between the costs and funding.

In this study, we assume, in accordance with the question asked to us by the Ministry of the Interior and Kingdom Relations, that this structure looks different. The above-mentioned investment in a new metal baler would now no longer be covered by a special grant, but the public entity would take out a loan to finance it. They would then activate the metal baler and depreciate it over its economic lifespan. They would pay off the metal baler evenly from the depreciations. At the end of its lifespan, the metal baler is paid off and the public entity takes out a new loan to finance the replacement of the metal baler. The funding of this would therefore not follow the investments but the depreciation costs that follow from those investments. The funding would then become much more even and look like this (excluding the interest charges):

2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
$0	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20

We have applied the above to all individual assets from the moment they are built or the moment they are replaced for the first time. Because some of the assets have been replaced in recent years, annual depreciation costs for these assets only arise in later years. Suppose the above-mentioned metal baler is purchased or replaced in 2020, then it will be replaced again in 2030 according to this structure and depreciation will only start in the following year. Because we do not show the costs per asset but per category in this report, the costs increase in the earlier years. Only once all assets have been replaced will a stable amount of costs be achieved. Because assets with a long lifespan have been replaced fairly recently (for example, a school building with a lifespan of 40 years), the stabilisation moment is after 2050 and is no longer included in our overview.

There are a number of important caveats to the above:

- have not examined to what extent it would be possible for the public entities to borrow these amounts (on the capital market) and whether, for example, they meet the conditions of banks.
- structure does not yet exist and borrowing on the capital market is unlikely to become possible for public entities until 2027. Although an interest-free loan from the central government could be an interim solution according to the Ministry of the Interior and Kingdom Relations, it is also conceivable that certain investments will still be covered by a special grant in the (near) future and therefore not capitalised and written off. If that happens, it will affect the estimated amounts over the life of that asset.
- also apply this structure to investments by the utilities. Currently, there is no structural annual funding towards utility companies to which this could theoretically be added and it has not been investigated whether it is realistic or desirable to do so.
  That is why we also show the investment amounts themselves.

Uncovered statement per organisation

We have split the uncovered task into the organizations that are responsible for the task. This concerns the following organizations:

-
  - Bonaire (OLB)
  - and Energy Company Bonaire (WEB)
  -
  -

- Telbo and Flamingo TV[20]
- Eustatius:
  - of St. Eustatius (OLE)
  - Utility Company (STUCO)
  -
-
  - Entity Saba (OLS)
  - Electric Company (SEC)
  -

The uncovered annual costs as an indication of the budget still needed

Based on the structure described above in which islands can borrow and capitalise and depreciate assets and a funding structure that shifts from incidental special payments to structural financing, the uncovered annual costs are an indication of the budget that is still needed to be able to maintain and replace all assets identified in step 2 in a timely manner and to implement the investment plans as included in the research. We call it an indication for two reasons. First, the estimates of the costs and coverage are a *best guess* based on the information currently available and some are still surrounded by uncertainties. Secondly, the starting point in this study was that all maintenance is done in a timely manner and all assets are replaced at the end of their lifespan. We have not investigated to what extent this is feasible in terms of implementation power. If certain investments are not made in the earlier years or maintenance is postponed, this will also affect the costs (and therefore the required budget) in later years.

2.7 Points of attention in the research

In this section, we discuss a number of important points of attention in the research that should be taken into account in the interpretation of the results of this research.

Planning and execution capacity

An important point of attention in the estimates we make has to do with implementation capacity. This is an issue within the public entities, but also on the islands in a broader sense. The public entities perform a large number of government tasks (more than municipalities in the European Netherlands), but due to the small number of inhabitants of the islands, they work with a relatively limited number of employees. It is also difficult to find enough staff on the islands with the desired level of education or specialist expertise. To illustrate: on St. Eustatius, almost a quarter of the FTEs of the public entity are currently unfilled.[21] Moreover, this problem also plays a role in the private sector on the islands. There are often only a handful of contractors present per island, not all of whom have the necessary specialist knowledge for all the work.
As a result, large investments can run into labor shortages, which can lead to delays and market disruption.

All this means that capacity in planning and implementation is often limited, so that investments cannot be put away in time when money has been made available. This plays a role

[20] Flamingo TV is a wholly private company, but it does receive parts of the subsidies for the construction of fibre optic networks. We therefore also include these specific investments.
[21] Public Entity St. Eustatius, Multi-annual budget 2025-2028, 2024, p. 79.

Right now. If large amounts of money were made available to clear backlogs and make the necessary new investments, this problem would become many times greater. We have not investigated the problems with implementation capacity and have in principle assumed that maintenance and replacements will be carried out in a timely manner. In the case of new investments, we have discussed with those involved when they can realistically be implemented. In addition, in chapter four we propose a scenario that brings the available and required capacity a little more into balance.

Furthermore, we can only point out that planning and implementation capacity is a major point of attention and must be expanded in order to be able to maintain and replace all existing and planned infrastructure in a timely manner.

Budgets outside the scope of this study sometimes affect infrastructural costs The estimates in our study are sometimes incomplete due to external circumstances that are outside the scope of the study. This is mainly due to shortages in the budgets for adjacent domains. For example, we do not estimate costs for the maintenance of schools, since the schools are in principle responsible for this themselves. In practice, however, it is known that the schools sometimes do not pay for maintenance from their own budget. In order to prevent undesirable situations for pupils and staff and to extend the lifespan of the school buildings, the public entities therefore incidentally provide additional funds to the schools for maintenance. We do not include these costs because it is not a task for the OL. However, if schools are not properly maintained, it probably means that they will have to be replaced sooner, an investment that is the responsibility of the OL.

We make no statements about the necessity of the investments
We know that the physical infrastructure on the islands is inadequate on many fronts and suffers from overdue maintenance. There are therefore investments that we can determine to be necessary on the basis of objective criteria such as legal requirements or other standards that were established at the beginning of this study as a starting point for the estimates. However, there are also many topics where it is not possible to draw a hard line between desirable and necessary investments. For example, there are investments that do not arise from a law or a standard, but where their necessity can be well argued. In those cases, we base ourselves as much as possible on investments for which there are concrete plans. This is not possible for some of the investments and the included cost items are based on the estimates and wishes of experts on the islands. In those cases, we have always asked for an explanation of why the investment is necessary. However, this study does not give an opinion on which part of the investments is necessary and which part is desirable. However, the supervisory committee was able to look at the list of investments on several occasions.

/ 3 Physical infrastructure Caribbean Netherlands

This chapter describes for each island what the physical infrastructure on the islands consists of (insofar as included in this study). First, we briefly outline the substantive context.

3.1 Infrastructure categories

Categorization

For this study, we have compiled the following list of categories of infrastructure (in consultation with the supervisory committee and steering committee).

#	Category	Physical infrastructure within scope
1	Waste management	(waste trucks, recycling centres and stations) and transport (storage buildings and
2	Wastewater	and/or alternatives
3	Cultural heritage	owned monuments
4	Drinking water	
5	Energy	
6	Buildings	of public entities and libraries buildings such as community centres buildings owned by the public sector body
7	Agriculture	owned by public sector bodies
8	Airport	: runway, runway lighting, apron, etc.
9	Recreation	and playgrounds
10	Telecom	network (telephony and internet) network (telephony and internet)
11	Water	
12	Roads, parking, public transport	(if concrete plans are already in
13	Seaport	such as piers, breakwaters and quays

For all these forms of physical infrastructure, the general principle mentioned above applies that we only include them if the public entity bears the investment or is financially responsible for it.

3.2 Infrastructure on Bonaire

Below we discuss the presence of infrastructure on Bonaire, its condition and the plans that we include in the research.

3.2.1 Waste management

Current situation

Waste processing on Bonaire has been carried out by Selibon for 30 years. The Bonaire Holding Company is the sole shareholder of Selibon and it is therefore a public limited company. Selibon is the only waste processor on the island. The waste policy must be determined annually by the Island Council in an environmental programme. This also includes the long-term choices to be made on how to deal with residual waste after the closure of the Lagun landfill. These choices are prepared by the Spatial Planning and Development Department of the OLB. The OLB has a care contract with Selibon.

On Bonaire, household waste is dumped at the landfill in Lagun and covered. Other waste streams are stored separately. Some of those flows (oil, cardboard) are shipped to Curaçao or other places. The other potential recyclables are now stored until there is a plan for processing. Biomedical waste is also currently being stored, because the incinerator is no longer used.

The interpretation of OLB's tasks in the field of waste processing is under a magnifying glass. Recently, there have been a number of large fires at the Lagun landfill. Because these fires are difficult to extinguish, new fires are constantly occurring that pose health risks and lead to nuisance in the area. The Human Environment and Transport Inspectorate (ILT) recently called the situation at the landfill "worrying, complex and urgent" and also mentioned the pollution of the seawater in the vicinity of the landfill. In addition, Selibon has also been in dire financial straits for some time. As a result, a lot of material is poorly maintained and not in good condition. For example, Selibon indicates that 60% of the fleet is defective or not safe for the road and therefore not operational. Because of these problems, a substitution took place on 15 November and a Kingdom Representative will take over part of the licensing, supervision and enforcement tasks over the tasks of the public entity with regard to waste processing at Selibon Lagun.

Ambitions

Major investments are needed to put waste processing on Bonaire in order and to close, control and control the Lagun landfill. The parties involved are currently working on the start of this improvement process. Selibon itself also has ambitions to take a different approach to waste processing and to landfill less. It is not yet clear exactly what waste processing on Bonaire will look like in the future and what investments need to be made, but an approach to this by the OLB has been included in this study

3.2.2 Wastewater

Current situation

A small proportion of households (less than 10%) and businesses (around 10%) on Bonaire are connected to the sewer system. This concerns a specific strip on the coast that was largely constructed in 2014. This wastewater is purified in a sewage treatment plant at the Kaminda Lagun and partly returned to companies on the coastal strip via irrigation pipes. Other houses have a septic tank or a cesspool. Septic tanks are emptied with a vacuum truck and taken to a second treatment plant at the Kaminda Lagun. It is estimated that only 15% of the wastewater on Bonaire is treated. In addition, according to discussion partners, some of the septic tanks on Bonaire are not in good condition and the wastewater still leaks into the soil.

The infrastructure for sewage and wastewater treatment is owned by the public entity, but the operation is done by utility company Water- en Energiebedrijf Bonaire (WEB). WEB is a public limited company and the shares are 100% owned by the public entity. WEB receives a subsidy for the operation of the infrastructure and is also responsible for its maintenance.

Ambitions

The sewage treatment plant at the Kaminda Lagun needs to be expanded to meet the increasing demand. In addition, there is the ambition to increase the degree of wastewater treatment on Bonaire. Pilots are planned with decentralized solutions for wastewater treatment (e.g. a small treatment plant for one apartment complex). It is not yet clear what the exact ambitions are for Bonaire in the long term. We have now assumed that the pilot with decentralized solutions will be expanded.

3.2.3 Cultural heritage

Current situation

In consultation with experts from the public entity and the Cultural Heritage Agency of the Netherlands, 19 buildings worthy of protection have been included in our estimates. These buildings are not always officially designated as monuments as described in the monument island ordinance. This is because the full implementation of the BES Monuments Act is still in full swing. Of the 19 buildings, 11 have also been officially designated as monuments on the island monument list. 17 of the 19 buildings are owned by the public entity. The other two are owned by the State.

Incidental repair work has recently been carried out on some of the buildings, but as a rule there is overdue maintenance. In addition, funds are needed for regular maintenance of these historic buildings – especially those that are close to the sea. In our overview, we have included substantiated estimates from the OLB.

Ambition

The government and the OLB intend to protect and maintain the buildings on the island that are worthy of protection, although there is no concrete plan yet. First of all, they will all be added to the monument list.

3.2.4 Drinking water

Current situation

On Bonaire, drinking water is extracted from seawater and desalinated and purified with reverse osmosis. It is then treated with, among other things, limescale filters. This is done at a water factory in Hato. There are also storage tanks from which the water is pumped to three distribution tanks spread across the island. Almost all homes and businesses on Bonaire are connected

on the drinking water network, except for houses in remote areas. They are supplied with water by water trucks. The entire drinking water network is underground and in good condition.

The production and distribution of drinking water is carried out by Water and Energy Company Bonaire (WEB). Users pay for the purchase of drinking water and WEB finances the operation of the drinking water network and maintenance from income from tariffs.

Ambitions

The population on Bonaire has been increasing strongly for years and continues to increase. In addition, tourism on the island is also growing. As a result, the demand for drinking water is increasing and a new water intake, new water tanks and an expansion of the drinking water factory are needed in the relatively short term. In addition, population growth is creating new residential areas, where pipes have to go. The latter is by definition covered by existing money flows and is therefore not the subject of this research.

3.2.5 Energy

Current situation

Power generation

The American company Contour Global provides Bonaire with electricity. They generate electricity through solar panels, wind turbines and diesel generators. In 2021, 29% of Bonaire's energy was renewable. In August 2023, a large solar park was commissioned with a connection capacity of 1 MW. The intention is to increase this step by step to 6 MW. 50% of this solar park has been invested by Bonaire Bon Transition BV (BBT), a company that is fully owned by the Ministry of Climate and Green Growth. BBT aims to contribute to the transition to sustainable energy and has invested in the solar park to reduce energy prices for the end user. Contour Global repays this loan, with no return on BBT. The infrastructure for the generation of energy is fully covered by the users and we have therefore not made any estimates in this study.

Power distribution

The distribution and supply of electricity is done by Water and Energy Company Bonaire. WEB purchases electricity from Contour Global and supplies it to households, businesses and organizations on the island. WEB main distribution network is completely underground. This is not the case for the low-voltage grid, where 30-40% is above ground. Not the entire island is connected to electricity. The island is divided into three zones: a zone with a lot of buildings where infrastructure is present, a zone without infrastructure adjacent to it and where connection is possible, but possibly not without additional costs for the consumer and a zone in the far outskirts where substantial additional contributions will be needed for a connection. In those cases, it is often more advantageous for the customer to generate electricity themselves. According to WEB the infrastructure for the distribution and supply of energy is fully covered by the users and we have therefore not made any estimates in this study.

Fuel storage

Five types of fuel are stored on Bonaire: petrol, diesel, fuel oil, kerosene and propane. A large part of the fuel is stored in a fuel terminal in the Hato district. The tanks there need to be replaced and the location is not desirable because of its location in a residential area, next to WEB's drinking water production facility. Rijkswaterstaat has issued a tolerance decision until April 1, 2026, after which new fuel tanks should be ready

be. After 1 April, the existing tanks must again meet the regular regulations or be empty. There are also now two tanks at the airport. These are owned by government NV Oil Trading Bonaire (OTB).

Previously, oil transhipment BOPEC also played a major role in the storage and distribution of fuel to Contour Global's power plant, but BOPEC was declared bankrupt in early 2021. The situation around BOPEC is currently still developing. In order to secure the fuel supply on Bonaire, the above-mentioned organization BBT was established in 2021 (then still under the name Bonaire Fuel Terminals) with the task of organizing safe fuel storage on Bonaire and guaranteeing security of supply. BAT is a government holding that is 100% owned by the Ministry of KGG.

Ambitions

The share of renewable energy will be expanded by expanding the solar park and replacing the existing wind turbines with larger wind turbines. These investments are incorporated into the electricity tariffs and are in principle profitable, because less diesel needs to be used for energy generation.

BBT is in the process of tendering for a new fuel terminal, south of the airport, which will replace the old one at Hato. After the completion of the terminals, they will be leased to CurOil from Curaçao. The Island Government's ambition is for OTB to take over and manage the terminal. The costs for the new fuel terminal will be fully covered by the income from the rental to CurOil and we have therefore not estimated the costs for this study.

3.2.6 Buildings

Current situation

Buildings public entity

The employees of the Public Entity Bonaire work at various locations that are partly owned by the Public Entity and partly rented. We are not familiar with the exact number of locations, their dimensions and their condition, so we have used office space standards to make the financial estimates (see next chapter).

Educational housing

Bonaire has eight schools for primary education (excluding non-funded schools), a comprehensive school for secondary education (including MBO) with a number of locations and a school for adult education (FORMA). Just under half of the schools have been renovated or have been given new construction in recent years. We are not familiar with the dimensions of the school buildings and therefore we have used the surface area standards from the Implementation Decree on Educational Housing for Primary and Secondary Education for further calculations.

Social buildings

The OLB manages various neighbourhood facilities, such as community centres or youth centres. We are not familiar with the exact number of locations, their dimensions and their condition, which is why we have used indications for community centres per resident from Stipo's Facilities Scan Knowledge Base.

Other buildings

Bonaire has a library that until recently was housed in an old cold store of a former supermarket, but has now moved to a temporary location. We also include the archive of Bonaire.

Ambitions

There are plans for a new government building that will replace some of the existing office spaces. There are also ambitions to renovate or replace schools that are in poor condition in the coming years. In addition, we have assumed that the library will eventually be housed in a permanent location, which will have to be built.

3.2.7 Agriculture

Current situation

Bonaire has an LVV site (Agriculture, Livestock and Fisheries) that is used for the development of the agricultural sector on the island. Experiments are being carried out with agricultural methods and plots are being made available to entrepreneurs. Bonaire also has a slaughterhouse, which has recently been renovated. In the field of LVV, there are also twenty public wells that can be used by farmers, these are in poor condition and must all be replaced in the next five years. Finally, Bonaire has some *Fish aggregating devices* that need to be replaced frequently.

Ambitions

The LVV site is under development. A total of 35 plots will be released and leased to farmers. These plots are equipped with a fence and in some cases a stable. In addition to the individual plots, the office spaces and storage facilities on the LVV site will also be renovated and the machinery will be supplemented with, for example, grinders, preserving facilities and dryers. In addition, the ambition is to create a park at the entrance of the site with walking and cycling opportunities, dining areas, bird watching points and the like.

3.2.8 Airport

Current situation

Bonaire International Airport (BIA) is operated by a N.V. dat is 100% owned by the OLB. Unlike the airports of the other islands, BIA is suitable for large aircraft. Several large (especially tourist) scheduled flights from the Netherlands and the US fly to Bonaire. Moreover, passenger numbers have risen sharply in recent years and are likely to continue to rise in the coming years to 600,000 passenger movements per year. As a result, revenues from levies on ticket prices are substantially higher than the airports of St. Eustatius and Saba. However, the revenues are still not fully cost-effective, so additional financing for necessary investments remains necessary. Further increasing costs through ticket prices would additionally reduce tourism revenue on the island and reduce the mobility of residents. In addition to its own income and special benefits, BIA borrows regionally to pay for investments. However, this is relatively unattractive due to high interest rates.

According to those involved, the airport on the island is in relatively poor condition. BIA has received subsidies and benefits in recent decades, but due to the lack of budget and expertise for maintenance, most assets have not been maintained or have been poorly maintained. In recent years, money has been reserved for maintenance for new investments and work is being done on

maintenance plans. The current terminal is also too small for the current and future number of passengers.

Ambitions

In the coming years, investments will have to be made in replacing and renovating a number of different parts of the airport, such as the runway lighting (already planned), the fencing and the top layer of the runway. The airport will also be expanded and made more suitable for the current and future number of passengers, such as an expansion of the terminal and the construction of an extra platform. In addition, there are ambitions to realize additional cargo storage, to enable jet parking and to realize infrastructure for electric flying between Curaçao and Bonaire.

3.2.9 Recreation

Current situation

Bonaire has various sports facilities for all kinds of sports, from softball to athletics. There is a detailed multi-year maintenance and investment plan for the sports facilities. Bonaire has 13 playgrounds, partly owned and managed by the public entity. The condition of playgrounds varies widely. For this study, we based ourselves on indications of the number of playgrounds per child in Stipo's Knowledge Base Facilities Scan. According to Open Street Maps, Bonaire currently has nine city parks with an average area of about 500 square meters.

Ambitions

The multi-year maintenance plan for sports facilities provides for several improvements and expansions of the sports facilities. In addition, there are plans to modernize Parke Tului Domacasse and Parke Misa di Rincon. The Public Entity Bonaire, the Jantje Beton Foundation and the Ministry of Health, Welfare and Sport have expressed the ambition to realize a playground for every bario with more than 50 children under the age of 12. We have assumed that we are working towards 35 playgrounds. The renovation of three playgrounds is planned for 2025 – 2027.

3.2.10 Telecom

Current situation

Submarine cable

Bonaire is connected to Curaçao by two sea cables. These submarine cables are in the hands of private parties (largely one party) and are almost at the end of their lifespan. Recently, the Ministry of Economic Affairs commissioned an exploratory[study 22] into various connection options for Bonaire (and the other two islands). It is not yet clear what the future of the submarine cable connection for Bonaire will look like. In principle, the costs for the submarine cables are covered by the purchase of bandwidth by providers on Bonaire. The costs for submarine cables were not estimated in the study.

Fixed and mobile telecom

There are various parties active on Bonaire that provide telecom services to end users. The largest telecom provider, which operates both a fixed and mobile network, is Telefonia Boneriano N.V. (Telbo) of which the OLB is 100% owner through the Bonaire Holding Company. Telbo offers both mobile services (telephony and internet) and fixed services (TV, telephony, and internet; largely via fiber). Other providers are the private parties Flamingo T.V., Flow, and Digicel.

[22] See https:// www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2024Z14105&did=2024D34673.

Flamingo T.V. is the only other provider that also operates a fixed network (based on fiber optics and coaxial) and offers fixed services (internet and TV). Flow and Digicel operate a mobile network and offer associated services (internet and voice). For mobile services, the parties use a main network in Aruba (Telbo) and Curaçao (Digicel and Flow).

Telbo and the other providers are largely financed from the rates they charge. In principle, they bear all investments, depreciation costs and maintenance costs from their own income. An exception to this is the further modernization of Telbo's fixed telecom network, whereby the copper network is gradually replaced by a fiber optic network. Additional financing is needed to get the remaining homes connected to fiber more quickly, because this cannot be covered by rates. This is partly due to the extra housing needed as a result of the enormous population growth on Bonaire. Telbo, like Flamingo TV (and Eutel and Satel on the other islands) has received a subsidy for this. In addition, Telbo and Flamingo TV, like other utility companies in the Caribbean Netherlands, receive a subsidy from the government to lower the rates for end users.

Ambitions

Telbo's ambition is to provide households on the entire island (except remote areas) with fiber optic connection. Currently, about 60-65% of households are connected to the fiber optic network.

Ambitions in the field of mobile connectivity have not been mapped out. At a late stage of the study, employees of the Ministry of Economic Affairs – Telecom pointed out that there are also important ambitions here. There was no time left to map them.

3.2.11 Weigh

Current situation

Weigh

Bonaire currently has approximately 227 km of paved road. Of these, 22 km have recently been modernized, 110 km in satisfactory condition and 95 km in poor condition. The roads now often have no space to walk/cycle alongside. There is only a limited administrative vision of the layout of the island's road network. To determine what kind of road should be built in a particular place, it must first be determined what the important access roads will be, and what will serve local traffic, for example. This will be worked on in the structural vision for Bonaire.

In addition to paved roads, there is approximately 73 km of unpaved road within residential areas, approximately 300 km of dirt roads outside built-up areas and another approximately 300 km of dirt roads in the Washington Slagbaai National Park.

Park

We currently do not have any information about parking spaces on Bonaire.

Public transport

There is currently no public transport on Bonaire, except for school transport.

Ambitions

Work is being done on a spatial structure vision for Bonaire, of which a plan for the road network is a part. In principle, the intention is that all paved roads in poor condition will be replaced and the unpaved roads in residential areas will be paved. The unpaved roads outside the built-up area will eventually be renewed by using crushed stones that occur naturally in the area. This has a lesser priority. There are no ambitions for the roads in the Washington Slagbaai NP. In addition to replacing and renewing existing roads, there are also plans for a new road. This is a new connecting road between Kralendijk (St. Barbara Crown) and Rincón, which will partly run along the route of an old dirt road. This would halve the distance between the villages and would prevent freight traffic to ContourGlobal's production facility from having to drive through the center of Rincón.

In the Administrative Agreement 2024-2027, Bonaire has agreed with the government to realize a public transport network. This is also included in a Regional Deal with the Ministry of the Interior. Construction will start in the second quarter of 2025. Bus stops and stands still have to be built for this.

3.2.12 Water

Current situation

Before the drinking water installation was built, Bonaire depended on a system of dams, basins and saliñas for water supply. This system is no longer used for drinking water supply, but it does play an important role in rainwater management. Bonaire is divided into four river basins, where such a system of saliñas, basins and dams manages the water .

Rainwater is an increasing problem for Bonaire, and periods of intensive rainfall are expected to increase. Deforestation also makes erosion a major problem for the drainage system, as more sediment ends up in it. The drainage system is not sufficient and during (heavy) rainfall, Bonaire has to deal with a lot of flooding and rainwater flows into the sea with sediment, which is bad for the coral.

Ambitions

Although steps have already been taken in the field of drainage, with the support of the nature and environmental policy plan, various drainage systems are in need of major maintenance in order to increase capacity again and thus reduce flooding. There are also ambitions to improve and expand the drainage in the south of the island.

3.2.13 Seaport

Current situation

Bonaire's port facilities consist of a number of piers. There is no central port area, where storage space or offices are available. As a result, there is limited insight into the type of cargo that comes in: containers are transported directly by truck. Furthermore, the current piers are not suitable for large cargo ships, so containers will first be transferred to smaller ships on Curaçao. This increases transportation time and costs for Bonaire.

Ambitions

Plans for a new port on Bonaire have been discussed for a long time. A few locations have been investigated for this, but the most suitable location is ultimately not for various reasons

approved. As a result, the implementation of the plans has come to a standstill. The plans for the new port are well advanced. This also includes a port site, storage capacity and supply roads to the new port. In this study, we assume that the new port will be realized and we have assumed that it concerns the jetty variant in Hato (location WEB). We do not make a statement about the final location – which is still the subject of discussion – but choose this variant to arrive at an average cost estimate.

3.3 Infrastructure on St Eustatius

Below we discuss the presence of infrastructure on St. Eustatius, its condition and the plans that we include in the study.

3.3.1 Waste management

Current situation

In 2014, St. Eustatius received a waste processing facility from the central government. It was not operational in the first years. Since 2017, waste processing has been outsourced to a private company called EJL Service. Before 2017, all waste was dumped in a landfill. Nowadays there is a waste processing system in which waste is sorted. Some waste streams are stored and shipped to other locations, while others are incinerated in an incinerator.

According to interlocutors, there is a large backlog of renovations and necessary investments, which has led to a series of improvised solutions implemented out of necessity.

Ambitions

St. Eustatius has strong ambitions in the field of waste processing. Firstly, they want to make the waste processing fit the current size of the island and the waste streams. This means that a new waste incinerator must be built that has sufficient capacity to burn all the waste in the season when the wind is favourable. An improvement of the office space (now a construction shed) and storage areas is also needed. In addition, St. Eustatius wants to modernize waste processing by, among other things, purchasing facilities for the recycling of plastic and glass. This would reduce the need for shipping, landfilling, and incineration. St. Eustatius also has the ambition to process additional waste streams. For example, the waste management plan writes about processing part of Saba's waste streams. Saba does not mention this shared ambition in documents, but indicates that it is open to it if waste processing develops sufficiently in the future. In addition to Saba, St. Eustatius also wants to process waste from ships on the island to generate additional income.

3.3.2 Wastewater

Current situation

There is currently no central wastewater treatment on St. Eustatius. Households and businesses use cesspools and septic tanks. Bottomless cesspools are most often used, the slow draining. These last a long time and in many cases take decades before they are full.

Ambitions

There are plans to start wastewater treatment on the island. This consists of two parts: there will be a wastewater treatment plant where wastewater from septic tanks can be purified. This wastewater is transported to the treatment plant by vacuum trucks. In addition, there are plans to build a sewer in Lower Town (the coastal strip with hotels/restaurants) and to connect it to the wastewater treatment plant.

3.3.3 Cultural heritage

Current situation

In consultation with experts from the public entity and the Cultural Heritage Agency of the Netherlands, 38 objects worthy of protection have been included in our estimates. These buildings, ruins and forts are not always officially designated as monuments as described in the monument island ordinance. This is because the full implementation of the BES Monuments Act is still in full swing. Of the 38 objects, 8 have also been officially designated as monuments on the island monument list. 29 of the 38 are owned by the OLE. Furthermore, 3 buildings are privately owned, and it is unclear who owns 6 forts.

14 of the objects are underdue for maintenance and some forts need urgent repairs to prevent collapse. There are also two buildings where collapse is imminent and one monumental building has recently burned down, requiring reconstruction. Two forts are part of the Regional Deal, and some buildings in government ownership are being refurbished by the government.

In our overview, we have estimated costs for regular maintenance by multiplying estimates of the surface area of the monumental buildings by the average maintenance costs for Bonaire, adjusted to the price level of St. Eustatius. For the forts, it is not clear what maintenance is needed. There we have included a provisional item per fort.
Overdue maintenance cannot be estimated at this time.

Ambition

The government and the OLE intend to protect and maintain the buildings on the island that are worthy of protection, although there is no concrete plan yet. First of all, they will all be added to the monument list.

3.3.4 Drinking water

Current situation

Statia Utility Company (STUCO) is responsible for the production and supply of drinking water on St. Eustatius. OLE is the sole shareholder of STUCO. Users pay rates for drinking water. Drinking water on Statia is produced via reverse osmosis, treated in various ways (e.g. with UV lights) and then stored and transported to households and businesses.

Not all households on St Eustatius are connected to the drinking water network. Some consciously choose this and use other water sources, such as their own rainwater reservoirs (cisterns) or bottled water. Other households are not connected because the water network does not reach their homes. In those cases, STUCO delivers water by truck, if desired.

The drinking water network of St. Eustatius was constructed in a way that turned out to be unsuitable for the height differences on the island, which caused too high water pressure at points. At the time,

used the wrong materials, which means that there are now many leaks in the network. A solution is being worked on for this.

Ambitions

STUCO indicates that it needs a fifth reverse osmosis installation to keep up with the growth in water consumption. In addition, there are ambitions to expand the pipeline network, including to Zeelandia. The high-pressure points on the grid are being restored and STUCO also has the ambition to tackle the points where the pressure is also too high but which have slightly less priority.

3.3.5 Energy

Current situation

Power generation

In addition to drinking water, STUCO is responsible for the generation and distribution of electricity. Consumers pay for the use of electricity. About 40% of the energy on St. Eustatius comes from renewable sources, generated entirely by solar energy. The remaining 60% is produced with diesel generators. The energy demand on the island has increased sharply. Since 1994, electricity consumption has quadrupled, according to STUCO, and they are seeing a continuous increase in demand.

Power distribution

St. Eustatius' main distribution network (medium voltage) is largely underground, but in some places on the island it is still above ground. Towards the east side of the island (Whitewall) this is the case because there is no redundancy (second cable to prevent failures) and an above-ground network can be repaired more quickly in the event of damage. Almost the entire low-voltage grid is above ground. Only some new construction projects have underground low-voltage cables. Cables above ground are vulnerable to damage from hurricanes and salt.

Ambitions

STUCO has plans to increase the share of renewable energy to 80-85% and recently presented these plans to the Ministry of KGG. Specifically, this plan consists of the construction of a phase 3 and a phase 4 of the solar park. STUCO's ultimate goal is to provide 100% renewable energy, but there are no concrete plans yet for the final 15-20%. However, St. Eustatius participates in the EU's "30 renewable islands for 2030" initiative and hopes to develop further plans in that program.

STUCO would like to place all electricity cables underground to reduce maintenance costs and make them more resistant to climate conditions. However, this is a very large investment for STUCO that, without additional subsidy, would lead to large rate increases.

3.3.6 Buildings

Current situation

Buildings public entity

The employees of the Public Entity of St. Eustatius work spread over about 25 buildings. Most of them are leased and a few are owned by the public entity, such as the Finance & Census Building. The buildings are often in poor to very poor condition.

Educational housing

St. Eustatius has four schools for primary education and one school for secondary education. The primary schools have all recently been renovated or replaced. A new building is currently under construction for the secondary school (Gwendoline van Puttenschool).

Other buildings

St. Eustatius has a library and a variety of other social and public buildings, such as a theater and a museum. The island currently has no archive.

Ambitions

There are plans for a new government building that would replace all existing office spaces. This plan was initially joint with the RCN, but now there is a plan for OLE only. We also assume that St. Eustatius will have an archive in the future.

3.3.7 Agriculture

Current situation

St. Eustatius has an LVV site (Agriculture, Livestock and Fisheries) that is currently not being used optimally. The island also has a slaughterhouse that is in poor condition.

Ambitions

In order to increase food security, the development of agriculture has been included as a main objective in the Nature and Environment Policy Plan Caribbean Netherlands 2020-2030. St. Eustatius therefore has all kinds of ambitions in the field of agriculture. For example, the slaughterhouse will soon be renovated and the LVV site will be revived. There are also plans for a model farm managed by the government, a hydroponics farm and space for developing sustainable agriculture.

3.3.8 Airport

Current situation

St. Eustatius' airport, Franklin Delano Roosevelt International Airport, is only suitable for small aircraft and serves about 30,000 passengers per year. The airport was severely damaged by Hurricane Irma in 2017 and was restored in a development program between 2018 and 2021. The airport is owned and managed by the public entity. The terminal was built during that development program and is therefore fairly new, but the climate system in the terminal turned out to be limited suitable for the tropical climate, which causes problems with mold. In addition, the room for check-in is on the outside and is prone to flooding in case of rainfall. Also, the central climate system is no longer fully working because the parts are difficult to get in the region and lack the expertise to maintain it.

The runway and the runway lighting are also in need of major maintenance or replacement.

Ambitions

In addition to renovating and maintaining the terminal and the runway, there is an ambition to build a jet parking facility so that owners of private jets can leave their jet on St. Eustatius for a fee and then travel on to a neighboring island (such as St. Barths, which is popular with wealthy people). This is an investment that is not necessary for safety at the airport, but could provide economic development.

3.3.9 Recreation

Current situation

Sint Eustatius has a sports complex *Cottage Ball* with a football field, a sports hall, a softball field and an outdoor swimming pool. There is also a clubhouse, but it is in poor condition and therefore not in use. St. Eustatius now has two playgrounds, one of which is not in use. There is also one park, the Wilhelminapark.

Ambitions

St. Eustatius has several plans and ambitions to improve and expand recreational facilities. For example, there are plans for a beach volleyball court, a BMX track, an expansion of the area around the swimming pool, grandstands and/or a padel court at the *Cottage Ball* complex. The Golden Rock playground will also be renovated and a new playground will be provided at Rosemary Lane or Whitewall. The public entity, the Jantje Beton foundation and the Ministry of Health, Welfare and Sport have expressed the ambition to renovate the existing playgrounds owned by the public entity. The ambition to build two additional parks in the future has also been mentioned in discussions.

3.3.10 Telecom

Current situation

Submarine cable

St. Eustatius, like Saba, is connected to the internet exchange in Puerto Rico and Miami via the sea cable of Statia Saba Cable System (SSCS) BV (shareholder BZK) via St. Maarten. The submarine cable is at the end of its lifespan. An exploration was recently carried out into various scenarios for the sea cable routes of St. Eustatius and Saba. We do not yet know what a likely scenario is. The costs for submarine cables were not estimated in the study.

Fixed and mobile telecom

The only operator of a fixed telecom network and provider of fixed services (internet and telephony) on St. Eustatius is Eutel N.V., of which the OLE is a 100% shareholder. Eutel buys bandwidth from SSCS. The majority of households and businesses are connected to Eutel's copper network via VDSL. A minority, about 20% of all households and businesses have access to a company's fiber optic connection. Some households in remote areas of the island are served by wireless packages. The investments that Eutel has to make to maintain and modernize its fixed network are paid for from the tariffs of end users. Like other utility companies in the Caribbean Netherlands, Eutel receives a subsidy from the government to lower the rates for end users. Mobile telephony is offered by two parties: Telem (100% owned by the government of St. Maarten, with concession from Eutel) and WICC/ Flow (located in Curaçao, a subsidiary of Liberty Latin America). WICC/Flow also offers fixed internet via fixed wireless access and thus competes partly with Eutel.

Ambitions

Eutel's ambition is to provide all households and businesses on the island (except in remote areas) with a fiber optic connection. This means that 80% of the network from the substations to homes must be replaced. To complete this, additional resources are needed in addition to the income from rates. This is due to the high investment costs of complete glazing of the fixed network in relation to the limited number of users to be able to pay for this investment and the already high rates they pay. Eutel has received a subsidy from the government for this, but this is not sufficient to help pay for the remaining task in its entirety.

3.3.11 Weigh

Current situation

Many roads on St. Eustatius are concrete roads. In addition, there are some asphalt roads and unpaved roads. Most roads are narrow and have no sidewalks. St. Eustatius lacks an asphalt machine for the maintenance of the asphalt roads.

The roads are generally in poor condition. A report on the road program on Statia from 2019 mentions that more than 80% of the roads are in a (very) bad condition.
Since then, a number of roads have been renovated: the Jeems Road project and the Cherry Road project were completed in 2021. The first phase of the Airport Boulevard was completed in 2023. Currently, the Orange Bay Road, an important part of the route between the port and the airport, is being rebuilt. The second phase of the Airport Boulevard will also be implemented soon.
In addition, minor repairs are carried out on existing roads, such as filling holes.

Nevertheless, the situation remains worrying: many roads need renovation and continue to deteriorate due to erosion due to heavy rainfall. Many roads still need to be rebuilt and renovated, and all roads require regular maintenance.

One obstacle to building and improving roads is the problem of fundamental rights. It is often unclear who claims a particular piece of land, and many plots are undivided, allowing multiple people to make a claim. The public entity fears that this could lead to legal problems.

One specific road that is mentioned as a high priority is the Road behind the Mountain. This road leads, among other things, to two luxury resorts, schools, a residential area, agricultural areas and the botanical garden behind the Quill. This road is currently in poor condition. There is a budget available for the renovation of this road. However, due to problems with fundamental rights, the construction of the road has been postponed.

Park
There are not many parking spaces on St. Eustatius. People mainly park on the side of the road.

Public transport
There is no public transport on St. Eustatius.

Ambitions

In addition to the second phase of the airport boulevard and the renovation of the Road behind the Mountain, a number of other projects are planned for the coming years. For example, the road from the hospital to the solar park will be renewed in 2026 and the roads in the Whitehook district in 2028. In addition to concrete plans, there are also a number of ambitions, such as the construction of a second road to Whitewall so that residents of that part of the island are no longer dependent on one narrow road. Investments in parking spaces are also planned.

The only ambitions that St. Eustatius currently has in the field of public transport is to facilitate healthcare-related transport. No infrastructure such as stops and bus shelters will be built for this.

3.3.12 Water

Current situation

There are periods of heavy rainfall and long drought on St Eustatius. If it rains a lot, it becomes clear that the drainage system is not sufficient, because many roads are flooded. This water then flows to the sea, causing sediment to end up in the sea and cause damage to the coral. In addition, a number of places on the island suffer from erosion. During periods of drought, the availability of drinking water for animals is a concern.

Ambitions

There are various programs to prevent and manage water and erosion problems. For example, a drainage system has been constructed around the airport (green circle), coastal protection measures are being taken (yellow circle), erosion projects are being carried out (grey circle), a drainage project in the *Lower Town* has been completed (blue circle) and cliff stabilisation work is underway. Some of the projects within these programmes have already been realised.

3.3.13 Seaport

Current situation

There are two seaports on St. Eustatius. The port at the GTI oil terminal is privately owned and is not taken into account in this study. In addition, there is the harbor in *Gallowsbay Lower Town*. This is a cargo port, but it is also used by other boats, such as fishing boats, tourist boats, and a ferry. The breakwater, quay and jetty are all in poor condition. According to those involved, the jetty is also not long enough and therefore the port cannot provide the necessary capacity.

Ambitions

There are plans to renovate and expand the existing port. The breakwater and the quay will be extended and the RoRo dock will be expanded. In the longer term, there are ambitions for a second port, which separates cargo and pleasure shipping, as is now the plan on Saba.

3.4 Infrastructure on Saba

Below we discuss the presence of infrastructure on Saba, its condition and the plans that we include in the study.

3.4.1 Waste management

Current situation

Waste processing on the island is – unlike Bonaire and Statia – managed directly by the OLS. Waste is picked up by trucks and delivered to the waste disposal site near the port in Fort Bay. There, most of the waste is sorted and stored until it is pressed and bundled and then shipped to Miami, where a company further processes it. Certain types of waste, such as wood and hospital waste, are burned on the island.
Green waste, construction waste (concrete), stones and sand are deposited in a landfill at Hell's Gate Gut. This is an undesirable situation, as heavy rainfall causes landslides that affect the

transporting materials downhill, towards the sea, with a negative impact on the landscape and seawater quality. To date, however, there is no better solution for the processing of these waste streams

Car wrecks are too big for the balers on the island. Periodically, an external company is hired to press and ship the wrecks.

Although the OLS receives compensation for the value of the exported waste, this only covers a small part of the transport costs, let alone the operational costs. Citizens of the island pay a small waste tax, which is added to their monthly electricity bill, but this is also insufficient to cover the costs.

Ambitions

There are different ambitions in the field of waste processing. For example, the public entity wants to purchase various machines to process and reduce waste streams in order to reduce export costs. There are also plans to replace the office space and storage space and plans to reduce the landfill at the Hell's Gate Gut, for example by means of compost bins and by reusing concrete.

3.4.2 Wastewater

Current situation

There is no sewer or central wastewater treatment on Saba. Most households and businesses use cesspools. Some households and businesses have individual septic tanks. On the island, one larger, central wastewater plant has been constructed by the public entity in a complex of 38 social rental homes. This is also a septic system, from which the sludge must be removed once in a while. The island does not yet have an installation or location for processing this sludge.

Ambitions

In the short/medium term, a solution must be found for the processing of the sludge from the septic tanks. To determine the long-term ambitions, research is currently being carried out into the quality of the groundwater on Saba. This should result in the need for additional measures in the area of wastewater.

3.4.3 Cultural heritage

Current situation

In consultation with experts from the public entity and the Cultural Heritage Agency of the Netherlands, 8 objects worthy of protection have been included in our estimates. This concerns buildings, but also two parks and the network of historic paths on the island. These objects are not always officially designated as monuments as described in the monument island ordinance. This is because the full implementation of the BES Monuments Act is still in full swing. The ownership of these objects is not always clear, although most of them belong to the OLS.

A number of the objects have a practical contemporary function. This concerns the Administration building and the parks. These objects are included in the categories 'buildings' and 'recreation'.

In our overview, we have estimated costs for regular maintenance by multiplying estimates of the surface area of the monumental buildings by the average

maintenance costs for Bonaire, adjusted to the price level of Saba. Costs for overdue maintenance cannot be estimated for a number of objects.

The historical trail network on the island is a separate category within the cultural heritage. These paths are still used and maintained. We have included the costs for this maintenance in our estimates.

Ambition

The government and the OLS intend to protect and maintain the buildings on the island that are worthy of protection, although there is no concrete plan yet. First of all, they will all be added to the monument list. In addition, one building will be purchased and refurbished by the OLS in the near future.

3.4.4 Drinking water

Current situation

All buildings on Saba are equipped with cisterns in which rainwater is stored. Most of the water use comes from this source. The water is used for shower, toilet, gardens, etc. The remaining water on the island is supplied via seawater that is desalinated using reverse osmosis (RO). The resulting RO water is not yet drinking water, but can be used for other household purposes, such as showering. The RO water is pumped up and pumped over the island by means of a pipe system along the road. The water is used for two purposes. First, private contractors collect the RO water from distribution cranes in various locations and sell it to households to fill their cisterns during times of drought. Second, the water is supplied to the Saba Splash water plant, where it is further desalinated, purified, and mineralized to produce drinking water. The drinking water is bottled in reusable 3-gallon and 5-gallon bottles and sold in various stores. The Saba Splash building is made of corrugated iron and is not resistant to hurricanes of category 4 or higher.

Saba Splash is 100% owned by the OLS and is funded by the proceeds of water sales and subsidies. The price of Saba Splash water has also been subsidized to reduce costs for consumers and make Saba Splash profitable. Although Saba Splash water is much cheaper, some residents of Saba still prefer imported water, which means that Saba Splash currently has too little turnover to be profitable without subsidies.

Ambitions

There is an ambition to build a building next to the current Saba Splash factory that is hurricane-resistant and where all expensive equipment can be stored. In addition, the RO network will be expanded.

3.4.5 Energy

Current situation

Power generation

Saba Electric Company (SEC) is responsible for generating electricity. There are two solar parks on the island, one in The Bottom and one at the airport. This provides approximately 34% renewable energy. The rest is generated with diesel generators, of which there are five. Three of them are relatively new.

In principle, the replacement and maintenance costs of SEC's infrastructure are covered by the cost-covering electricity tariffs (which are now temporarily subsidised by the Ministry of Infrastructure and Water Management). However, some of the required investments are so large and would increase the rates to such an extent that a subsidy is granted for them. This was the case with the solar parks.

Power distribution
Almost the entire electricity grid is underground, except for two remote areas. This is important because of the periodic hurricanes.

Fuel storage
There is a 300,000 liter diesel storage facility on Saba that was installed in 2016. This is in good condition.

Ambitions
SEC has plans to build a third and fourth phase of the solar park, which will bring the share of renewable energy to 65% and 89% respectively.

3.4.6 Buildings

Current situation
Buildings public entity
The public entity of Saba is housed in four larger and a number of smaller buildings in The Bottom. The administration building houses the council chamber and office spaces. The condition of the buildings is generally sufficient or reasonable, but there is no longer enough space to accommodate all OLS employees. There are no maintenance plans yet, and maintenance is done when a problem arises.

Educational housing
Saba has one school for primary education (Sacred Heart) and one school for secondary education (Saba Comprehensive). These schools are located next to each other in the village of St. Johns. Saba Comprehensive offers vocational and technical education at the Godfried Bontenbal Technical Center in Cove Bay. Most of the buildings are no longer in good condition and need to be replaced, except for one of the buildings of Sacred Heart, which has recently been replaced.

Other buildings
OLS owns a long list of other social and public buildings, such as community centres, a library, a tourist office and a shelter for victims of domestic violence.

Ambitions
There are also plans to expand workplaces on Saba. There is a plan to expand and renovate the administration building and thus also make room for a new archive. Another building (Hyacinth House) will also be converted into office space.

All school buildings will also be replaced in different phases. First, a new building will be built next to the other schools, where technical education will be moved from the Godfried Bontenbal Technical Center, followed by the renovation of the gymnasium, the other parts of the Saba Comprehensive School, and then the Sacred Heart School.

3.4.7 Agriculture

Current situation

Saba has a government farm and a hydroponics farm with a number of greenhouses. In addition, there is a garden that is managed by the Saba Reach Foundation for people with a distance to the labor market. Vegetables are grown here so that fresh vegetables are available on the island. Vegetables that arrive by boat are often no longer very fresh after the long journey. Saba also has a slaughterhouse, which is currently mainly used in the context of goat control. The slaughterhouse is now in a container.

Ambitions

The slaughterhouse on Saba must be replaced by an actual building. There are ambitions to further expand the government farm and start a market with supplies for farmers. In addition, in the context of food security and quality, there is the ambition to build a department store for the storage of imported products, including a refrigerated storage area.

3.4.8 Airport

Current situation

The Juancho E. Yrausquin airport on Saba served about 30,000 passengers per year before the Covid pandemic. After a dip of several years, the number of passenger movements is more or less at that level again. The projection is that this will increase in the coming years. It is a small airport with a terminal without separate areas for arrival and departure and a single runway. Due to the lack of separate areas for arrival and departure, the terminal does not meet international security requirements. The terminal is small and parts of the terminal are in a worrying state. Much of the *airside* infrastructure is not in good condition and needs major maintenance or replacement in the relatively short term. This applies, among other things, to the court lighting and fencing.

Ambitions

Major projects are coming up at the airport, such as replacing the shoulders, runway lighting and fencing. The public entity also indicates that a renovation and expansion of the terminal is needed, creating a separate arrival and departure area, in accordance with international security requirements. In addition, there are plans for a taxiway and helipad taxiway.

3.4.9 Recreation

Current situation

Saba has a number of sports facilities: the gymnasium at the school in St. Johns, the Cruyffcourt in The Bottom, the Princess Juliana Sports Field in The Bottom and a fitness park outside the library in The Bottom. There are five playgrounds in the different villages, most of which were renovated after Irma. Saba also has two parks: the Queen Wilhelminapark and the Museum Grounds in Windwardside. Saba has few natural beaches, but at Cove Bay a swimming spot has been created in the sea by the construction of a breakwater and an artificial beach.

Ambitions

One of the playgrounds and the fitness park will soon be renovated. The gymnasium in St. Johns will be completely renovated next year. In addition, Saba has the ambition to realize a public swimming pool, so that children can receive swimming lessons in a safe environment.

3.4.10 Telecom

Current situation

Submarine cable

Saba is connected to neighboring islands via a sea cable owned by Statia Saba Cable System (SSCS) of which the central government is a 100% shareholder. This connection is not redundant and it is therefore prone to failures. That is why there are wishes for a new cable route. An exploration was recently carried out into various scenarios for the sea cable routes of St. Eustatius and Saba. We do not yet know what a likely scenario is. The costs for submarine cables were not estimated in the study.

Fixed and mobile telecom

The only operator of a fixed telecom network and provider of fixed services (internet and telephony) on Saba is Satel N.V., of which OLS is a 100% shareholder. Satel buys bandwidth from providers Smithcoms or Flow via cable from SSCS. The main network is fully fiber optic and half of the households have a fiber optic connection. Almost all telecom cables are underground. It took Satel 22 years to spread the costs of moving the telecom cables and pipes underground. Satel has received a subsidy from the government to get the majority of the remaining homes connected. The investments that Satel has to make to maintain and modernize its fixed network are paid for from the tariffs of end users. Like other utility companies in the Caribbean Netherlands, Satel receives a subsidy from the government to lower the tariffs for end users. There are two mobile providers: Telem via the Satel concession and WICC/Flow

Ambitions

Satel's ambition is to provide all households and businesses on the island with a fiber optic connection. Satel expects to be able to achieve this in 2025. In addition, there are plans to replace the tower on Mt. Scenery by the Ministry of Defence for the installation of a radar system. Satel will then have to relocate or replace its mobile telecommunications equipment. This was not foreseen and Satel probably does not have a budget for this.

Ambitions in the field of mobile connectivity have not been mapped out. At a late stage of the study, employees of the Ministry of Economic Affairs – Telecom pointed out that there are also important ambitions here. There was no time left to map them.

3.4.11 Weigh

Current situation

Weigh

Saba has one main thoroughfare, The Road, which runs from the airport in Cove Bay through all four villages to Fort Bay Harbour. This road has a branch in The Bottom to Wells Bay and Troy Hill and in Windwardside branches to the start of the Mt. Scenery trail, Booby Hill and The Level. This road is very steep at some points, especially on the stretch from The Bottom to the harbour and to Wells Bay. Parts of the road are also prone to erosion and falling boulders. The road

to Fort Bay is not usable even in heavy rainfall. In addition, there are (narrower) roads in the villages.

All roads are made of concrete and in relatively good condition. Maintenance is carried out when it is necessary (for example, when holes appear in the road). Retaining walls and safety walls have been built along most roads. This is necessary because of its location along steep slopes that are prone to erosion. Nevertheless, there are regular landslides and rocks end up on the road, especially during and after rainfall.

In addition to a road network, Saba also has a network of hiking trails, which are included in the chapter 'Cultural Heritage'.

Park
Saba has 2 existing public parking spaces in Windwardside and several parking spaces at the public buildings and facilities in the other villages.

Public transport
Recently, a van has been driving between the villages of Saba. Every village will have a bus stop. Two of them will be built soon.

Ambitions
In several places, the road is too narrow for a good traffic flow. Saba has plans to widen the existing road in those places. In addition, there are locations where the retaining walls and safety walls need to be replaced or raised. Saba has few footpaths in the villages. To improve pedestrian safety and to encourage walking, Saba will build footpaths in more places.

A major project that will start in 2025 is the construction of a new road from the existing Fort Bay port to the new seaport (see seaport) and the new solar park. Saba's ambition is to further connect this new stretch of road with The Road at Giles Quarter in the future in order to improve traffic flow and become less dependent on the steep and sometimes unusable road from The Bottom to Fort Bay Haven (and later also the new port). In addition, new parking spaces will be built and the last two villages will also have a bus stop in the next two years.

3.4.12 Water

Current situation
Saba has wet and dry periods. Heavy rain showers and storms can occur in the wet periods. The rain is collected by residents in cisterns for later use and there are also about twenty larger and smaller public cisterns, which are partly used for rainwater collection (and partly for the storage of RO water). However, the capacity of the rainwater collection system is not large enough to collect all the rainwater, so heavy rainfall also causes nuisance. There is no sewerage system, so a lot of rainwater collects on the roads and is drained to the sea via these roads because of the steep slopes. During heavy rainfall, the road to the port is sometimes unusable and sand, stones, rocks, but also organic material and litter flow into the sea, where they affect vulnerable coral. Also, a lot of water flows through the natural gutters in the island's landscape, which is accompanied by the loss of earth and landslides. Saba is particularly susceptible to erosion due to the steep hills and

soil structure. This was further reinforced by vegetation being affected by free-roaming goats, but in recent years Saba has significantly reduced the population of free-roaming and nature is starting to recover. Currently, there is no extensive infrastructure for the collection and drainage of water, except for the roads.

Ambitions

Saba has various ambitions in the field of rainwater management and erosion prevention, of which goat control is an important pillar. In terms of infrastructure, the construction and expansion of stormwater drainage and stabilization of slopes is envisaged.

3.4.13 Seaport

Current situation

Saba currently has one port: Fort Bay Harbor. This is a cargo port that is also used by other boats, such as pleasure craft and the ferry to Sint Maarten and other neighboring islands. The port was damaged by hurricane Irma in 2017 and some renovations were carried out afterwards. A small renovation is also planned for next year.

Ambitions

Saba gets a second port: Black Rocks Harbor. The main goal is to realize a hurricane-proof port facility, so that the island remains accessible, even after a hurricane. This harbor will be located just east of the existing Fort Bay Harbor. Fort Bay Harbor remains the primary port for cargo and Black Rocks Harbor is there for all other port users, such as tourists. The separation between cargo ships and small port users should make the ports safer and make the new port more attractive for local users and tourists. In addition, the purpose of the new port is to serve as a backup in case Fort Bay is damaged during a hurricane. Then the food supply of Saba will not be endangered. Saba expects the new port to be an important stimulus for economic activities on the island.

The plans for the new port also include expansions of the existing port, such as widening the RoRo dock, which will allow larger cargo ships to be received. There are also ambitions to expand the container platform at Fort Bay.

/ 4 Investment and maintenance task

This chapter discusses the costs of investments in, replacements and maintenance of the various types of infrastructure in the Caribbean Netherlands. These are the estimates that we have made in the manner described in section 2.3. The future developments (demographic developments and precipitation developments) as described in section 2.4 are also included in these figures.

The estimates in sections 4.1 to 4.3 are the costs that we believe must be incurred in order to be able to maintain and replace the physical infrastructure for which the public entities are responsible in a timely manner and to implement the plans referred to in Chapter 3. This does not take into account implementation capacity on the islands and does not make any statement about the necessity of the investments.

Section 4.4 presents an alternative scenario in which investments are more distributed over the years and section 4.5 discusses the costs for utility companies.

Appendix B contains a list of included assets per island and a source and/or explanation used for the estimate for each asset.

4.1 Cost estimates Public Entity Bonaire

4.1.1 Investments and depreciation

This section discusses the investment costs for the Public Entity Bonaire and the resulting depreciation costs.

Estimated investments Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$8.052	$8.552	$3.000	$2.333	$1.333	$1.633	$333	$333	$603	$833	$833	$833	$833
Wastewater	$5.376	$-	$374	$-	$5.158	$-	$375	$-	$375	$-	$376	$1.585	$376
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$7.899	$8.036	$39.144	$28.895	$29.103	$8.271	$969	$971	$974	$1.869	$979	$981	$983
Agriculture	$1.750	$1.750	$1.750	$2.750	$1.500	$886	$86	$136	$136	$136	$136	$136	$136
Recreation	$3.914	$356	$246	$403	$740	$913	$751	$1.140	$2.648	$995	$1.737	$408	$270
Water	$1.872	$726	$726	$15.040	$727	$727	$727	$727	$728	$728	$728	$728	$729
Roads, parking and public	$28.678	$26.985	$27.244	$27.452	$27.659	$27.867	$28.074	$28.282	$28.489	$28.645	$19.117	$19.220	$19.323
Seaport	$2.379	$-	$-	$35.329	$34.829	$-	$-	$-	$-	$45.368	$-	$-	$-
Total	**$59.919**	**$46.405**	**$72.484**	**$112.202**	**$101.048**	**$40.297**	**$31.315**	**$31.590**	**$33.953**	**$78.574**	**$23.905**	**$23.890**	**$22.650**

Estimated Investments Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$833	$833	$1.833	$1.103	$833	$833	$833	$1.333	$5.833	$833	$833	$1.103	$5.833
Wastewater	$-	$5.178	$-	$376	$-	$2.979	$4.811	$5.794	$-	$755	$-	$755	$-
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$985	$987	$988	$989	$990	$991	$992	$993	$993	$993	$993	$994	$993
Agriculture	$86	$886	$1.586	$1.586	$1.586	$1.586	$1.586	$836	$136	$136	$136	$136	$136
Recreation	$609	$575	$725	$1.419	$1.621	$3.031	$1.623	$5.130	$559	$456	$522	$704	$793
Water	$729	$729	$730	$730	$730	$730	$731	$731	$731	$732	$732	$732	$732
Roads, parking and public	$19.426	$19.529	$19.598	$19.667	$19.701	$19.770	$22.191	$27.414	$27.461	$27.461	$27.461	$25.109	$25.066
Seaport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$22.668**	**$28.717**	**$25.459**	**$25.870**	**$25.462**	**$29.921**	**$32.766**	**$42.231**	**$35.714**	**$31.365**	**$30.677**	**$29.534**	**$33.554**

The tables above show the costs for the replacements and planned investments in the physical infrastructure on Bonaire. In the first five years, investments in waste processing, buildings, roads and seaports are particularly high. We briefly explained these categories:

- as described in section 3.2.1., waste processing on Bonaire is currently facing major challenges. Extensive investments are expected to be needed to get things back in order, including in new incinerators, new garbage trucks, better storage facilities and machines for processing waste.
- as described in paragraph 3.2.6, the item buildings includes, among other things, educational accommodation. About half of the schools on Bonaire have recently been renovated or replaced, but the other half has yet to be done. We assume that this will happen in the next six years. This results in relatively high investments in those years. In addition, Bonaire has ambitions to build a new multifunctional center with, among other things, a library and to replace the rented office spaces with its own building.
- **parking and public transport:** About half of the asphalt roads on Bonaire are in poor condition and need to be renewed. Because the lifespan of a road in Bonaire is estimated at twenty years, the bad roads must be replaced at a fairly high rate, because otherwise the rest of the road network will also reach a poor condition. In addition, approximately 75 km of dirt road within the built-up area must be paved. The construction or replacement of a road on Bonaire is expensive (approximately $1.3 million per linear kilometer). The task in the first ten years is therefore great.

In the years that followed, the major investments were mainly planned replacements. After all, when the lifespan of an asset expires, we estimate a replacement. Some assets, such as piers of a seaport or a large building, have a high replacement value and stand out in this overview.

In addition, the effects of future developments weigh relatively heavily on Bonaire, in the scenario of CBS that we take as a starting point, Bonaire will grow by 30% in the period up to and including 2050. This has increased the total investment costs over this period by 8%.

Niet alle ramingen zijn even zeker. Alle ramingen kennen natuurlijk een onzekerheidsmarge omdat kosten in de toekomst zich niet precies laten ramen. Echter, sommige ramingen zijn meer onzeker dan andere. Sommige plannen staan nog niet vast, sommige plannen zijn nog niet volledig uitgewerkt en andere ramingen waren ingewikkeld om te maken.

- **Afvalverwerking:** de benodigde investeringen in afvalverwerking zijn hoe dan ook groot, maar het is nog onzeker hoe groot. De situatie rondom de vuilstort op Bonaire is zeer actueel en de plannen zijn volop in ontwikkeling. Voor deze ramingen zijn enkele grove aannames gedaan en de kosten zouden lager maar ook hoger kunnen uitvallen.
- **Afvalwater:** Bonaire heeft een zeer duur riool dat maar een klein deel van het eiland bediend. Er zijn momenteel geen duidelijke ambities voor de uitrol van dat riool over de rest van het eiland. Wij hebben daarom ook geen raming gemaakt daarvoor. Als het riool wel verder uitgerold wordt brengt dit waarschijnlijk grote kosten met zich mee.

- **Gebouwen:** Bonaire's ambities om een multifunctioneel centrum en een centraal overheidsgebouw te bouwen zijn nog niet uitgewerkt in definitieve plannen. Het is goed mogelijk dat deze gebouwen er niet komen of in een andere vorm. Hierdoor zouden kosten wegvallen. Echter, een centraal overheidsgebouw komt ook met dekking in de vorm van bespaarde huurinkomsten, zie dekking.
- **Zeehaven:** op Bonaire zijn plannen om een nieuwe zeehaven te bouwen. Deze plannen staan nog niet vast en het is onduidelijk of de nieuwe zeehaven er gaat komen en in welke vorm. Als er een nieuwe zeehaven komt brengt dit grote investeringen met zich mee. In dit overzicht zijn wij er vanuit gegaan dat er een steigerhaven komt en hebben voor de kosten gebruik gemaakt van de schattingen voor de locatie Hato.

Wij ramen dat het deze specifieke investeringen een marge van **-12% tot +10%** op de totale investeringen tussen 2025 en 2050 vormen.

Depreciation

The tables below show the annual depreciations. These follow from the investments. In section 2.6, we describe the financial structure we adopt and how we apply it. Because we assume that most assets are not yet on the balance sheet (and therefore not depreciated), depreciation increases over the years. When an asset is replaced for the first time in our schedule, the depreciation starts to run after that. Once all assets have passed their life cycle and have been replaced, the amount of depreciation stabilizes, with the exception of depreciation resulting from new investments. Because the lifespan of some assets is 30 years or more and some have recently been replaced or built, this stabilization will not be fully achieved by 2050. In Bonaire, we also assume that the roads will be cheaper with the second replacement, which means that the depreciation in that category will decrease again at some point.

Estimated depreciation Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$-	$513	$1.031	$1.171	$1.308	$1.406	$1.515	$1.563	$1.611	$1.658	$1.658	$1.658	$1.658
Wastewater	$-	$269	$269	$288	$288	$626	$626	$645	$645	$664	$665	$684	$747
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$-	$262	$451	$1.170	$2.669	$2.879	$3.168	$3.197	$3.227	$3.249	$3.301	$3.400	$3.422
Agriculture	$-	$110	$220	$330	$490	$594	$663	$676	$688	$700	$712	$725	$737
Recreation	$99	$297	$446	$475	$498	$541	$610	$689	$771	$889	$1.060	$1.120	$1.160
Water	$-	$18	$36	$54	$431	$449	$467	$486	$504	$522	$541	$559	$578
Roads, parking and public	$-	$1.444	$2.820	$4.214	$5.629	$7.065	$8.521	$9.998	$11.496	$12.991	$14.528	$15.567	$16.617
Seaport	$-	$59	$59	$59	$72	$1.813	$1.813	$1.813	$1.813	$1.813	$2.948	$2.948	$2.948
Total	**$99**	**$2.973**	**$5.334**	**$7.762**	**$11.385**	**$15.373**	**$17.384**	**$19.068**	**$20.755**	**$22.487**	**$25.412**	**$26.660**	**$27.867**

Estimated depreciation Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658	$1.658
Wastewater	$766	$767	$978	$978	$998	$998	$1.147	$1.148	$1.167	$1.167	$1.187	$1.187	$1.207
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$3.444	$3.466	$3.481	$3.571	$3.579	$3.593	$3.600	$3.608	$3.691	$3.691	$3.691	$3.698	$3.691
Agriculture	$737	$737	$787	$787	$787	$787	$787	$787	$787	$787	$787	$554	$554
Recreation	$1.193	$1.217	$1.241	$1.249	$1.253	$1.280	$1.303	$1.337	$1.361	$1.372	$1.372	$1.376	$1.372
Water	$596	$615	$633	$652	$670	$689	$707	$726	$744	$763	$781	$800	$819
Roads, parking and public	$17.677	$18.747	$19.793	$20.845	$21.867	$22.932	$23.962	$25.115	$23.982	$23.568	$23.155	$22.781	$22.208
Seaport	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948
Total	**$29.018**	**$30.154**	**$31.519**	**$32.688**	**$33.759**	**$34.884**	**$36.112**	**$37.326**	**$36.337**	**$35.954**	**$35.579**	**$35.002**	**$34.456**

4.1.2 Maintenance costs

Below are two tables showing the maintenance costs per year over the period 2025 to 2050. Maintenance costs are higher in the first years and stabilize afterwards. This is because a lot of infrastructure is struggling with overdue maintenance, so we first estimated a major overhaul for various assets to eliminate the overdue maintenance. The elimination of overdue maintenance is spread over the years 2025 to 2028. We then divided the regular maintenance costs evenly over the years. In reality, maintenance costs for an asset vary from year to year, but we didn't look at the maintenance cycles for this study.

Estimated maintenance costs Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$2.706	$624	$761	$800	$878	$919	$961	$974	$988	$998	$1.011	$1.021	$1.031
Wastewater	$1.228	$1.368	$1.368	$1.382	$1.382	$1.396	$1.396	$1.410	$1.411	$1.424	$1.425	$1.439	$1.439
Cultural heritage	$8.920	$6.400	$1.840	$840	$797	$440	$440	$440	$440	$440	$440	$440	$440
Buildings	$611	$629	$634	$638	$642	$1.433	$1.443	$1.453	$1.463	$1.470	$1.480	$1.487	$1.495
Agriculture	$177	$200	$215	$230	$266	$288	$288	$288	$288	$288	$288	$288	$288
Recreation	$1.403	$1.440	$1.467	$1.488	$1.510	$1.531	$1.553	$1.574	$1.596	$1.612	$1.633	$1.649	$1.665
Water	$3.605	$4.506	$4.318	$3.908	$2.209	$2.210	$2.211	$2.212	$2.212	$2.213	$2.214	$2.215	$2.216
Roads, parking and public	$3.864	$4.617	$5.261	$5.904	$6.571	$7.263	$7.981	$8.725	$9.495	$10.239	$11.059	$11.233	$11.407
Seaport	$2.068	$10.070	$3.214	$13.599	$2.076	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917
Total	**$24.582**	**$29.854**	**$19.077**	**$28.788**	**$16.331**	**$18.398**	**$19.190**	**$19.993**	**$20.809**	**$21.601**	**$22.467**	**$22.689**	**$22.898**

Estimated maintenance costs Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$1.041	$1.051	$1.057	$1.064	$1.067	$1.074	$1.077	$1.080	$1.084	$1.084	$1.084	$1.087	$1.084
Wastewater	$1.453	$1.453	$1.467	$1.468	$1.481	$1.482	$1.496	$1.496	$1.510	$1.511	$1.524	$1.525	$1.539
Cultural heritage	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440
Buildings	$1.502	$1.510	$1.515	$1.520	$1.522	$1.527	$1.530	$1.532	$1.535	$1.535	$1.535	$1.537	$1.535
Agriculture	$288	$288	$288	$288	$288	$288	$288	$288	$288	$288	$288	$288	$288
Recreation	$1.681	$1.697	$1.708	$1.719	$1.724	$1.735	$1.740	$1.745	$1.751	$1.751	$1.751	$1.756	$1.751
Water	$2.217	$2.218	$2.218	$2.219	$2.220	$2.221	$2.222	$2.223	$2.224	$2.224	$2.225	$2.226	$2.227
Roads, parking and public	$11.583	$11.760	$11.880	$12.001	$12.064	$12.186	$12.250	$12.313	$12.377	$12.382	$12.387	$12.451	$12.396
Seaport	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917	$2.917
Total	**$23.122**	**$23.334**	**$23.491**	**$23.636**	**$23.724**	**$23.870**	**$23.959**	**$24.035**	**$24.125**	**$24.131**	**$24.151**	**$24.227**	**$24.176**

In the tables above, a number of items stand out:

- **heritage:** according to experts, the monuments and buildings worthy of protection owned by the public entity are almost all struggling with overdue maintenance. We estimate the amounts to restore the buildings to good condition in the years 2025-2029.
- as described in paragraph 3.2.12, the natural water management system on Bonaire is also struggling with overdue maintenance. The saliñas, dams and basins must be brought back into a good condition so that the capacity is increased again and less rainwater ends up on the streets and ultimately in the sea.

- **parking and public transport:** Bonaire has approximately 600 km of paved and unpaved roads (excluding the roads in Washington Slagbaai NP). Properly maintaining those roads costs between $3000 and $24,000 per kilometer per year, depending on the type of road. With the current number of kilometers of road, current use and current climate conditions, this quickly adds up to about $8 million per year. Demographic developments (more use) and climate developments (more damage due to rainfall and drought) are causing maintenance costs to rise even further.

4.2 Cost estimates Public Entity St. Eustatius

4.2.1 Investments and depreciation

This section discusses the investment costs for the Public Entity of St. Eustatius and the resulting depreciation costs.

Estimated investments on St. Eustatius up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$6.915	$300	$2.135	$-	$-	$-	$300	$52	$1.010	$-	$1.845	$-	$485
Wastewater	$-	$2.773	$-	$519	$172	$-	$-	$-	$157	$-	$-	$-	$-
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$2.300	$200	$13.247	$13.122	$25	$25	$25	$25	$25	$25	$25	$25	$25
Agriculture	$2.500	$1.540	$1.395	$1.321	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport	$534	$650	$127	$-	$4.750	$4.750	$-	$932	$-	$-	$7.190	$-	$-
Recreation	$202	$724	$850	$309	$3.518	$-	$-	$209	$-	$1.830	$-	$-	$-
Water	$6.035	$3.217	$9.228	$3.228	$2.925	$-	$-	$-	$-	$-	$-	$-	$-
Roads, parking and public	$5.558	$25.463	$9.734	$14.716	$3.663	$15.720	$6.084	$6.084	$6.084	$6.177	$6.177	$6.177	$6.177
Seaport	$-	$-	$-	$-	$39.412	$-	$-	$-	$-	$29.880	$57.262	$-	$-
Total	**$24.045**	**$34.867**	**$36.716**	**$33.215**	**$54.465**	**$20.495**	**$6.409**	**$7.302**	**$7.276**	**$37.913**	**$72.500**	**$6.202**	**$6.687**

Estimated Investments St. Eustatius 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$300	$-	$60	$1.010	$1.850	$1.650	$-	$495	$-	$537	$-	$1.010	$4.200
Wastewater	$-	$-	$169	$-	$-	$-	$-	$-	$2.955	$175	$-	$-	$-
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$25	$25	$25	$25	$25	$25	$705	$25	$25	$25	$25	$25	$25
Agriculture	$-	$-	$-	$340	$50	$-	$-	$-	$-	$-	$826	$-	$500
Airport	$534	$2.341	$-	$-	$2.500	$-	$-	$1.722	$-	$-	$-	$-	$-
Recreation	$-	$1.726	$221	$221	$-	$-	$-	$-	$-	$1.155	$-	$3.838	$-
Water	$313	$313	$314	$314	$-	$-	$-	$9.827	$-	$-	$-	$-	$6.244
Roads, parking and public	$6.177	$6.271	$4.006	$4.006	$4.006	$4.006	$4.006	$4.066	$4.066	$4.066	$4.066	$4.066	$7
Seaport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$7.349**	**$10.676**	**$4.795**	**$5.917**	**$8.431**	**$5.681**	**$4.711**	**$16.135**	**$7.046**	**$5.959**	**$4.917**	**$8.939**	**$10.975**

The tables above show the estimated costs for replacements of and planned investments in the physical infrastructure on St. Eustatius. This shows that the investment costs in the first years are higher than average. The reason for this is that certain infrastructure is in poor condition and needs to be replaced or renovated in the short term. This applies in particular to the following items:

- St. Eustatius has great ambitions in terms of modernizing waste processing and processing waste streams from other places, such as waste from Saba and waste from ships. This entails investment costs.
- there are a number of major water management projects underway on St. Eustatius. In this system, cliffs are stabilized, erosion measures are taken (such as hanging nets) and drainage systems are constructed.
- **parking and public transport:** As described in paragraph 3.3.11, many roads on St. Eustatius are in poor condition. In the road plan for the next five years, a number of important traffic arteries will be replaced, such as the *Road behind the mountain*, which provides access to an important part of the island for tourism, the airport boulevard, important for the connection between the seaport and the airport and the road between the hospital and the solar park. We assume that the other roads that are in poor condition will be replaced in the ten years after that and the roads that are (still) in good condition will be replaced in the ten years after that. Replacing a road on St. Eustatius is expensive, because concrete is used, but also because it is expensive to import the materials. The roads that will be replaced in the current road plan will cost between $2.1 and $4.7 million per kilometer.

In the years that followed, the major investments were mainly planned replacements. After all, when the lifespan of an asset expires, we estimate a replacement. Some assets, such as piers of a seaport or an airport runway, have a high replacement value and stand out in this overview. The future developments included have a minimal impact on the total investment costs. It is also important to mention in this overview that

all schools on St. Eustatius have just been renovated or are currently being renovated. The next replacement/renovation will not take place until after 2050, which means that investments in school buildings are not included in this overview.

Some estimates are also uncertain on St Eustatius because plans are not fixed or certain costs were difficult to estimate.

- St. Eustatius is investing heavily in waste processing to improve its quality, but also to be able to process waste streams from Saba and ships in the future. If these waste streams are not processed, the investment costs may go down. However, OLE indicates that a large part of these investments must be made regardless of the size of the waste streams.
- St. Eustatius has plans to build a central government building that would replace all existing office space. This would increase the quality of work of the employees (the current office space is almost all in poor condition) and give residents one clear government counter. However, these plans are not yet fixed and a political decision has yet to be made. If this does not go ahead, investment costs will be eliminated, but maintenance and replacement costs will be added, because the existing office spaces will have to be refurbished. Another uncertainty within *buildings* is social rent. OLE owns a large part of the social housing on the island and the rental income and the landlord subsidy together do not cover the costs of these properties. There is a *letter of intent* in which it is agreed that a European Dutch housing corporation will deliver fifty new social rental homes. However, it is not clear what the ownership situation of these homes will be and it is possible that the ownership and associated costs will be borne by OLE.
- According to some stakeholders, St. Eustatius has ambitions to realize a new terminal. This ambition has not been included in this study. However, replacement costs for the current terminal have been included. If the terminal is replaced by a more modern or larger terminal, the costs are likely to be higher than the currently estimated costs.
- Like Saba, St. Eustatius has ambitions to build a second seaport in order to separate the various uses (cargo, fishing and tourism/pleasure craft) and to increase food security in the event of hurricane damage. However, the plans for this are not yet concrete and it is still very uncertain whether the port will be built and in what form.

We estimate that these specific investments represent a margin of **-21% to +8%** on total investments between 2025 and 2050.

Depreciation

The tables below show the annual depreciations. These follow from the investments. Because we assume that most assets are not yet on the balance sheet (and therefore not depreciated), depreciation increases over the years. When an asset is replaced for the first time in our schedule, the depreciation starts to run after that. Once all assets have passed their life cycle and have been replaced, the amount of depreciation stabilizes, with the exception of depreciation resulting from new investments. Because the lifespan of some assets is 30 years or more and some have recently been replaced or built, this stabilization will not be fully achieved by 2050.

Estimated depreciation of St. Eustatius up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$-	$354	$362	$616	$616	$616	$616	$659	$663	$663	$663	$663	$663
Wastewater	$-	$-	$153	$154	$165	$170	$170	$170	$170	$176	$176	$176	$177
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$-	$67	$68	$72	$727	$728	$728	$729	$730	$730	$731	$732	$732
Agriculture	$-	$70	$123	$160	$213	$213	$213	$213	$213	$213	$213	$213	$213
Airport	$-	$41	$74	$77	$196	$314	$314	$314	$386	$386	$386	$503	$503
Recreation	$-	$14	$48	$91	$106	$282	$282	$282	$296	$305	$366	$366	$366
Water	$-	$96	$193	$552	$649	$724	$725	$726	$727	$729	$730	$731	$732
Roads, parking and public	$-	$142	$779	$1.022	$1.390	$1.627	$2.020	$2.172	$2.325	$2.521	$2.676	$2.830	$2.984
Seaport	$-	$-	$-	$-	$-	$985	$985	$985	$985	$985	$2.718	$4.149	$4.149
Total	**$-**	**$785**	**$1.800**	**$2.743**	**$4.064**	**$5.660**	**$6.055**	**$6.252**	**$6.496**	**$6.708**	**$8.658**	**$10.364**	**$10.520**

Estimated depreciation of St. Eustatius 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$663	$663	$663	$663	$663	$737	$737	$737	$737	$737	$737	$737	$737
Wastewater	$177	$183	$183	$183	$184	$184	$184	$190	$190	$190	$191	$191	$191
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Buildings	$733	$733	$734	$735	$735	$736	$737	$754	$755	$755	$756	$757	$757
Agriculture	$213	$213	$213	$213	$213	$213	$213	$213	$213	$213	$213	$213	$213
Airport	$503	$503	$745	$745	$745	$854	$854	$854	$893	$893	$893	$893	$893
Recreation	$366	$377	$463	$463	$463	$463	$463	$477	$477	$477	$460	$460	$443
Water	$734	$735	$736	$737	$739	$740	$741	$742	$1.171	$1.173	$1.175	$1.177	$1.179
Roads, parking and public	$3.139	$3.350	$3.450	$3.550	$3.650	$3.750	$3.850	$4.016	$4.117	$4.219	$4.321	$4.422	$4.429
Seaport	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149	$4.149
Total	**$10.677**	**$10.906**	**$11.336**	**$11.439**	**$11.541**	**$11.826**	**$11.928**	**$12.131**	**$12.703**	**$12.807**	**$12.895**	**$12.999**	**$12.992**

4.2.2 Maintenance costs

Below are two tables showing the maintenance costs per year over the period 2025 to 2050. Maintenance costs are higher in the first years and stabilize afterwards. This is because a lot of infrastructure is struggling with overdue maintenance, so we first estimated a major overhaul for various assets to eliminate the overdue maintenance. The elimination of overdue maintenance is spread over the years 2025 to 2028. We then divided the regular maintenance costs evenly over the years. In reality, maintenance costs for an asset vary from year to year, but we didn't look at the maintenance cycles for this study.

Estimated maintenance costs of St. Eustatius up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$273	$257	$262	$321	$321	$321	$321	$321	$321	$331	$331	$331	$331
Wastewater	$-	$-	$110	$111	$119	$121	$122	$122	$122	$126	$126	$126	$126
Cultural heritage	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148
Buildings	$561	$569	$569	$861	$861	$861	$861	$861	$861	$861	$861	$861	$861
Agriculture	$-	$43	$76	$103	$131	$131	$131	$131	$131	$131	$131	$131	$131
Airport	$2.124	$1.471	$1.540	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137
Recreation	$418	$438	$633	$663	$844	$844	$844	$844	$844	$869	$869	$869	$869
Water	$435	$520	$563	$756	$799	$834	$836	$837	$839	$840	$841	$843	$844
Roads, parking and public	$1.552	$1.713	$2.107	$2.258	$2.487	$2.543	$2.698	$2.702	$2.706	$2.840	$2.844	$2.848	$2.853
Seaport	$2.190	$1.039	$1.039	$1.039	$1.039	$1.039	$1.039	$1.039	$1.039	$1.039	$1.039	$2.268	$2.268
Total	**$7.700**	**$6.198**	**$7.049**	**$7.397**	**$7.886**	**$7.981**	**$8.137**	**$8.143**	**$8.149**	**$8.323**	**$8.329**	**$9.563**	**$9.569**

Estimated maintenance costs St. Eustatius 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$331	$341	$341	$341	$341	$341	$341	$350	$350	$350	$350	$350	$350
Wastewater	$127	$131	$131	$131	$131	$132	$132	$136	$136	$136	$136	$137	$137
Cultural heritage	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148
Buildings	$861	$861	$861	$861	$861	$861	$861	$861	$861	$861	$861	$861	$861
Agriculture	$131	$131	$131	$131	$131	$131	$131	$131	$131	$131	$131	$131	$131
Airport	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137	$1.137
Recreation	$869	$895	$895	$895	$895	$895	$895	$920	$920	$920	$920	$920	$920
Water	$846	$847	$849	$850	$851	$853	$854	$856	$857	$859	$860	$861	$863
Roads, parking and public	$2.857	$2.994	$2.999	$3.003	$3.008	$3.013	$3.017	$3.159	$3.163	$3.168	$3.173	$3.178	$3.182
Seaport	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268	$2.268
Total	**$9.575**	**$9.753**	**$9.759**	**$9.765**	**$9.771**	**$9.778**	**$9.784**	**$9.966**	**$9.972**	**$9.979**	**$9.985**	**$9.992**	**$9.998**

In the tables above, a number of items stand out:

- One of the highest items of maintenance is the airport. There are two reasons for this: first, maintaining an airport is simply expensive, even if it is a small airport. There are many requirements to ensure air traffic and the safety of passengers. In addition, there is overdue maintenance on both the airside and landside infrastructure that we estimate in the years 2025-2028.
- **parking and public transport:** It is not only the construction of roads that requires large amounts of money. Maintaining roads also costs a lot of money. Concrete is a relatively maintenance-friendly material, so we estimate that road maintenance costs about 1.5% of the replacement value annually instead of the usual 2.5%. We also assume that roads that are replaced before 2030 will no longer be maintained until that point. Nevertheless, the roads are one of the largest items in terms of maintenance. For the entire road network of St. Eustatius, this amounts to $1.5 to $3 million per year.
- The third high post is the seaport. The same applies here as with the airport: the size of the seaport, and therefore the costs for the seaport, does not scale linearly with the number of inhabitants in a place. Despite the fact that St. Eustatius is a small island with only about 3000 inhabitants, it still needs a fully functioning port to be able to import food and goods and to generate income. As a result, the (maintenance) costs of that port are relatively high compared to the total expenditure. In addition, the port is struggling with (a lot of) overdue maintenance.

4.3 Cost estimates Public Entity Saba

4.3.1 Investments and depreciation

This section discusses the investment costs for the public entity of Saba and the resulting depreciation costs.

Estimated investments Saba up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$675	$729	$-	$310	$350	$-	$-	$200	$175	$135	$325	$300	$-
Wastewater	$-	$201	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cultural heritage	$470	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290
Drinking water	$762	$-	$-	$362	$-	$-	$84	$1.356	$-	$-	$379	$218	$-
Buildings	$4.431	$14.231	$8.029	$7.307	$-	$-	$-	$-	$-	$55	$-	$-	$-
Agriculture	$143	$1.151	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport	$1.429	$447	$5.054	$-	$-	$-	$3.072	$-	$-	$-	$3.220	$447	$-
Recreation	$4.443	$-	$-	$-	$3.853	$-	$-	$-	$-	$61	$302	$-	$-
Water	$264	$330	$1.327	$1.329	$1.331	$1.334	$-	$-	$-	$-	$-	$262	$-
Roads, parking and public	$6.772	$2.370	$2.566	$12.838	$2.192	$2.192	$2.192	$2.192	$2.192	$2.192	$2.243	$2.243	$2.243
Seaport	$26.901	$56.972	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$46.290**	**$76.720**	**$17.265**	**$22.436**	**$8.016**	**$3.816**	**$5.638**	**$4.038**	**$2.657**	**$2.734**	**$6.759**	**$3.760**	**$2.533**

Estimated Investments Saba 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$310	$200	$-	$629	$-	$775	$285	$325	$300	$-	$310	$800	$200
Wastewater	$-	$190	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cultural heritage	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290
Drinking water	$88	$-	$-	$-	$379	$-	$-	$88	$-	$1.286	$-	$379	$-
Buildings	$-	$-	$1.983	$-	$-	$-	$1.165	$-	$-	$58	$1.852	$-	$-
Agriculture	$-	$-	$164	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport	$-	$-	$-	$3.000	$1.054	$-	$2.072	$335	$447	$-	$4.365	$-	$-
Recreation	$-	$-	$-	$-	$132	$-	$219	$71	$2.256	$1.159	$-	$-	$-
Water	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$550	$-	$5.518
Roads, parking and public	$2.243	$2.243	$2.243	$2.243	$2.243	$2.243	$2.549	$2.243	$2.341	$2.243	$2.243	$2.243	$4.494
Seaport	$-	$-	$129	$-	$-	$-	$200	$-	$-	$-	$-	$-	$-
Total	**$2.931**	**$2.923**	**$4.809**	**$6.162**	**$4.098**	**$3.308**	**$6.780**	**$3.352**	**$5.634**	**$5.036**	**$9.610**	**$3.712**	**$10.501**

The tables above show the estimated costs for planned investments in the physical infrastructure on Saba. This shows that the investment costs in the first years are considerably higher than average. This can be seen in particular in three items, which we will briefly discuss.

- A number of major renovations are planned at Saba airport in the next few years, for example to the aprons, the terminal and the security equipment.
- the schools on Saba are in poor condition (with the exception of a recently replaced building of the Sacred Heart School) and therefore Saba has concrete plans to replace the schools in the coming years. In addition, there are plans for an extension to the administration building to increase the number of workplaces for OLS and to realize a modern archive. A number of other buildings are also in need of renovation or replacement in the short term and there are plans for an *enrichment center*. Many of these investments are likely to take place in 2026-2028, which means that the investment costs are higher there.
- As described in paragraph 3.4.13, Saba will have a seaport built in the next two years, which is a very substantial investment. Certain parts of the existing seaport will also be expanded or refurbished.

In the years that followed, the major investments were mainly planned replacements. After all, when the lifespan of an asset expires, we estimate a replacement. Some assets, such as piers of a seaport or an airport runway, have a high replacement value and stand out in this overview. The future developments included have a minimal impact on the total investment costs.

Ook op Saba zijn een aantal investeringen opgenomen die in mindere mate zeker zijn dan ander. Echter voor Saba geldt dat in veel mindere mate dan op de twee andere eilanden.

- **Recreatie:** We hebben een investering in een zwembad meegenomen op basis van een haalbaarheidsstudie. Echter, deze studie is nog niet vertaald in concrete plannen en tussen het Ministerie van VWS heeft een second opinion laten uitvoeren op de haalbaarheidsstudie en is op basis daarvan van mening dat de mogelijkheden voor exploitatie en beheer nog niet goed genoeg verkend zijn.
- **Waterbeheer**: op het gebied van regenwaterbeheer zijn additionele investeringen nodig. Het is nog niet bekend hoe die eruit gaan zien en wij hebben onze raming gebaseerd op een veelvoud van de al geplande investeringen. Echter, dit kan ook meer of minder worden.

Wij ramen dat het deze specifieke investeringen een marge van **-3% tot +2%** op de totale investeringen tussen 2025 en 2050 vormen.

4.3.2 Depreciation

The tables below show the annual depreciations. These follow from the investments. Because we assume that most assets are not yet on the balance sheet (and therefore not depreciated), depreciation increases over the years. When an asset is replaced for the first time in our schedule, the depreciation starts to run after that. Once all assets have passed their life cycle and have been replaced, the amount of depreciation stabilizes, with the exception of depreciation resulting from new investments. Because the lifespan of some assets is 30 years or more and some have recently been replaced or built, this stabilization will not be fully achieved by 2050.

Estimated depreciation Saba through 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$-	$60	$112	$112	$143	$181	$181	$181	$181	$199	$212	$217	$217
Wastewater	$-	$-	$7	$7	$7	$7	$7	$7	$7	$7	$7	$7	$7
Cultural heritage	$-	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5
Drinking water	$-	$22	$22	$23	$75	$75	$75	$87	$173	$173	$181	$181	$195
Buildings	$-	$99	$453	$664	$845	$842	$840	$837	$835	$832	$864	$861	$858
Agriculture	$-	$4	$33	$34	$34	$34	$34	$34	$34	$34	$36	$36	$36
Airport	$-	$70	$115	$306	$306	$306	$306	$498	$498	$498	$498	$595	$595
Recreation	$-	$122	$122	$128	$128	$257	$257	$257	$257	$257	$272	$290	$290
Water	$-	$12	$26	$84	$142	$200	$258	$259	$259	$260	$260	$261	$272
Roads, parking and public	$-	$140	$189	$248	$561	$605	$649	$692	$736	$780	$844	$888	$933
Seaport	$-	$-	$2.069	$2.094	$2.094	$2.094	$2.094	$2.094	$2.094	$2.094	$2.094	$2.094	$2.094
Total	**$-**	**$533**	**$3.151**	**$3.704**	**$4.337**	**$4.604**	**$4.704**	**$4.950**	**$5.079**	**$5.138**	**$5.272**	**$5.433**	**$5.502**

Estimated depreciation Saba 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$217	$217	$217	$217	$217	$217	$233	$233	$233	$233	$233	$233	$265
Wastewater	$7	$7	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
Cultural heritage	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5
Drinking water	$195	$195	$195	$195	$195	$195	$195	$195	$195	$195	$195	$195	$195
Buildings	$856	$853	$851	$898	$895	$893	$890	$917	$914	$911	$911	$954	$952
Agriculture	$36	$36	$36	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Airport	$595	$595	$595	$595	$670	$670	$670	$670	$670	$670	$670	$815	$815
Recreation	$290	$290	$290	$290	$290	$290	$290	$299	$299	$390	$429	$429	$428
Water	$273	$273	$274	$274	$275	$275	$276	$276	$277	$277	$278	$275	$276
Roads, parking and public	$978	$1.023	$1.068	$1.113	$1.158	$1.203	$1.247	$1.303	$1.347	$1.397	$1.442	$1.487	$1.531
Seaport	$2.094	$2.094	$2.094	$2.102	$2.102	$2.102	$2.102	$2.107	$2.107	$2.107	$2.107	$2.107	$2.107
Total	**$5.545**	**$5.588**	**$5.643**	**$5.748**	**$5.866**	**$5.909**	**$5.967**	**$6.064**	**$6.107**	**$6.244**	**$6.329**	**$6.561**	**$6.634**

4.3.3 Maintenance costs

Below are two tables showing the maintenance costs per year over the period 2025 to 2050. Despite the fact that costs for eliminating overdue maintenance have been estimated in the years 2025 to 2028, the maintenance costs for Saba will increase until they stabilize from 2030 onwards. This is mainly because a number of major investments are planned in the years up to 2030 that will entail structural maintenance costs, such as the seaport and the construction of a new stretch of road.

Estimated maintenance costs Saba up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste management	$74	$90	$110	$115	$115	$119	$119	$119	$119	$119	$124	$124	$124
Wastewater	$5	$5	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10
Cultural heritage	$305	$456	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313
Drinking water	$174	$191	$191	$200	$210	$210	$210	$210	$210	$210	$219	$219	$219
Buildings	$613	$944	$1.179	$874	$874	$874	$874	$874	$873	$873	$902	$902	$902
Agriculture	$52	$55	$66	$69	$69	$69	$69	$69	$69	$69	$72	$72	$72
Airport	$553	$350	$481	$405	$405	$405	$405	$405	$405	$405	$405	$449	$449
Recreation	$263	$253	$237	$248	$248	$383	$383	$383	$383	$383	$401	$401	$401
Water	$6	$47	$81	$114	$148	$148	$148	$148	$149	$149	$149	$149	$150
Roads, parking and public	$2.093	$2.379	$2.442	$2.694	$3.061	$3.124	$3.188	$3.251	$3.315	$3.379	$3.685	$3.691	$3.697
Seaport	$1.208	$1.131	$3.276	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301
Total	**$5.347**	**$5.902**	**$8.385**	**$8.343**	**$8.753**	**$8.955**	**$9.019**	**$9.082**	**$9.146**	**$9.210**	**$9.581**	**$9.631**	**$9.637**

Estimated maintenance costs Saba 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Waste management	$124	$124	$124	$124	$124	$124	$124	$124	$124	$124	$124	$124	$124
Wastewater	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10
Cultural heritage	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313	$313
Drinking water	$219	$219	$219	$219	$219	$219	$219	$219	$219	$219	$219	$219	$219
Buildings	$902	$902	$902	$902	$902	$902	$902	$902	$902	$902	$902	$902	$901
Agriculture	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72
Airport	$449	$449	$449	$449	$449	$449	$449	$449	$449	$449	$449	$449	$449
Recreation	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401
Water	$150	$150	$150	$151	$151	$151	$151	$152	$152	$152	$152	$153	$153
Roads, parking and public	$3.703	$3.709	$3.716	$3.722	$3.728	$3.734	$3.740	$3.746	$3.752	$3.758	$3.764	$3.771	$3.777
Seaport	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301	$3.301
Total	**$9.643**	**$9.650**	**$9.656**	**$9.662**	**$9.669**	**$9.675**	**$9.681**	**$9.688**	**$9.694**	**$9.700**	**$9.707**	**$9.713**	**$9.719**

In the tables above, a number of items stand out:

- Compared to the other two islands, Saba owns a relatively large number of buildings. These buildings all need to be maintained. Due to weather and climate conditions, this has to be done more frequently than in the European Netherlands and it is also more expensive because of the need to import materials. In addition, a number of buildings have overdue maintenance.
- **parking and public transport:** Saba has a small road network, but one that has significant challenges. Due to the height differences on Saba, it is difficult and therefore expensive to work on the road. In addition, the height differences in combination with the climate cause erosion problems and boulders regularly fall on the road or against the walls next to the road, which then have to be repaired. Heavy rainfall also sometimes causes damage to the roads. These costs also increase due to the modelled climate effects.
- just like on St Eustatius, maintaining a seaport is a relatively large (and expensive) task for an island of such size, which means that the costs are high relative to other items. After the completion of the second seaport, the maintenance costs will increase, because two ports of a similar size will have to be maintained.

4.4 Alternative scenario public entities: balanced planning

Explanation of the balanced scenario

As mentioned earlier, the islands are not only struggling with a financial task, but also with a task in terms of implementation capacity. In many cases, the above estimates assume that maintenance is carried out when it is necessary and replacements are made at the end of their life. The new investments and overdue maintenance have partly taken into account the possibilities on the islands. These are therefore spread over a number of years. Despite this, the amounts are high for islands the size of Bonaire, St. Eustatius and Saba. It is therefore plausible that it is not possible to put away these large amounts in the short term. Although it is desirable to make these investments and to carry out maintenance according to the schedules above (after all, not replacing or maintaining it in time can lead to even higher costs), we still see reason to present an alternative scenario. Firstly, it is unlikely that the islands will be able to increase capacity so much in the short term. Secondly, it is not desirable to greatly increase capacity in the coming years, where the amounts are highest due to current backlogs and clearer ambitions, and then to reduce it again. A gradual growth towards stable capacity is more desirable in terms of both employment contracts and sustainable maintenance capacity.

We therefore show a diagram below in which we distribute the investments slightly more evenly over the years. To arrive at this scheme, we have used the following principles compared to the previously presented schemes.

- investment costs in the first few years are higher because many assets are in poor condition and need to be renovated or replaced relatively quickly. In addition, a number of large projects are planned (such as a terminal or a seaport). It is unlikely that this type of project will be carried out by personnel on the islands themselves. In order to determine what growth in capacity is plausible, these very large investment costs have therefore not been taken into account.
  Of course, they will be included at the end, because the schedule ultimately describes all costs. We assume that all investments that are not related to such large projects are dependent on the implementation capacity on the islands.
- assume that the remaining investment costs are related to the implementation capacity on the islands. To arrive at a more realistic distribution, we have followed the following steps:
  - have assumed that capacity (and therefore costs) will increase to meet the increased demand. After all, if all infrastructure is properly maintained and replaced in a timely manner in the future, this means that more implementation capacity will be needed permanently. At some point, when the plans that are now known are completed and the islands enter a more stable cycle of investments, this will stabilize.
  - therefore assume a *linear increase* in costs between 2025 and 2040 and then a stabilisation of costs between 2040 and 2050. Of course, we will keep the total costs over this period the same.

- then add the investment costs for very large investments to this linear relationship. The final schedule therefore includes both 'structural' and 'incidental' investment costs. In addition, the total investment costs over the period 2025 to 2050 correspond exactly to those in the previously presented schemes.
- the depreciation costs, we have assumed an approximate average useful life that we have applied to all investments. The total depreciation costs over the entire period are lower than in the original scenario because investments are made later and therefore only result in depreciation later.
- do not apply this to periodic maintenance costs, because they are the same per asset per year and therefore already fairly spread over the period. However, for Bonaire, we have divided the overdue maintenance over ten instead of four years, because the peak in the first four years was very high there and the same argument can be made for this as for investments: it is not logical to first build up capacity and then reduce it again.

Although this scenario theoretically takes into account capacity and the structure of this is logical, the actual implementation capacity on the islands has not been examined. We can therefore not make any statements about whether there is enough capacity to implement this scenario.

Costs in balanced scenario Bonaire

Modeled investment costs Bonaire up to and including 2037 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Investment	$40.055	$40.540	$72.105	$97.044	$97.619	$32.111	$32.462	$32.812	$33.163	$33.513	$33.864	$34.214	$34.565

Modeled investment costs Bonaire 2038 to 2050 – x $1000

Investment	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Investment	$34.915	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266	$35.266

The large investments that were kept separate for Bonaire and added later are:

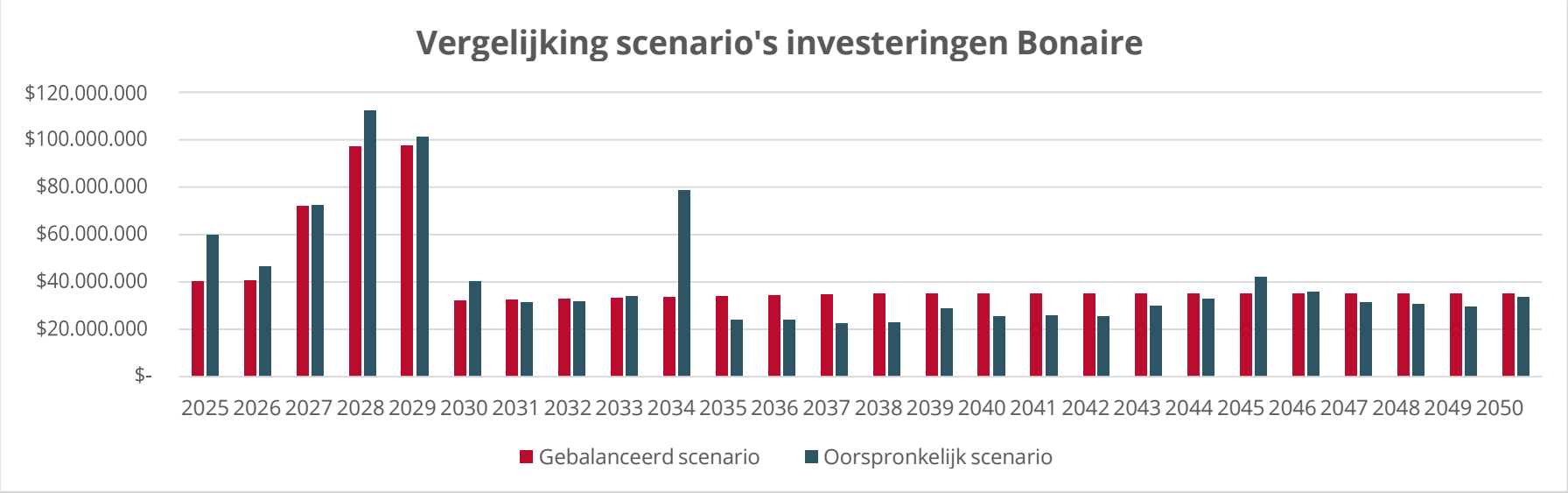
- dirt roads with paved roads within built-up areas, because this is actually planned for the coming years and there is partial funding for it
- plans for a central government building and the multifunctional centre, because these are major investments that 1) cannot be spread out, and 2) probably cannot be realised on the island itself with implementation power alone
- possible new seaport, also for the above reasons.

Modeled annual costs Bonaire up to and including 2037 – x $1000

Annual costs	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation	$-	$1.457	$2.931	$5.553	$9.082	$12.631	$13.799	$14.979	$16.173	$17.379	$18.597	$19.829	$21.073
Maintenance costs	$20.029	$20.029	$20.029	$20.029	$20.029	$22.096	$22.888	$23.691	$24.507	$25.299	$22.467	$22.689	$22.898
Total	**$20.029**	**$21.485**	**$22.960**	**$25.582**	**$29.110**	**$34.727**	**$36.687**	**$38.670**	**$40.680**	**$42.678**	**$41.065**	**$42.517**	**$43.971**

Modeled annual costs Bonaire 2038 to 2050 – x $1000

Annual costs	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Depreciation	$22.330	$23.599	$24.882	$26.164	$27.447	$28.729	$30.011	$31.294	$32.576	$33.858	$35.141	$36.423	$37.706
Maintenance costs	$23.122	$23.334	$23.491	$23.636	$23.724	$23.870	$23.959	$24.035	$24.125	$24.131	$24.151	$24.227	$24.176
Total	**$45.451**	**$46.933**	**$48.373**	**$49.800**	**$51.171**	**$52.599**	**$53.970**	**$55.329**	**$56.701**	**$57.990**	**$59.291**	**$60.650**	**$61.882**



Costs in balanced scenario for St Eustatius

Modelled investment costs of St. Eustatius up to and including 2037 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Investment	$8.555	$30.818	$22.645	$34.235	$49.955	$11.040	$11.537	$12.034	$12.531	$13.028	$13.525	$14.022	$14.520

Modelled investment costs of St Eustatius 2038 to 2050 – x $1000

Investment	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Investment	$15.017	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514	$15.514

The major investments that were kept separate for St. Eustatius and added again later are:

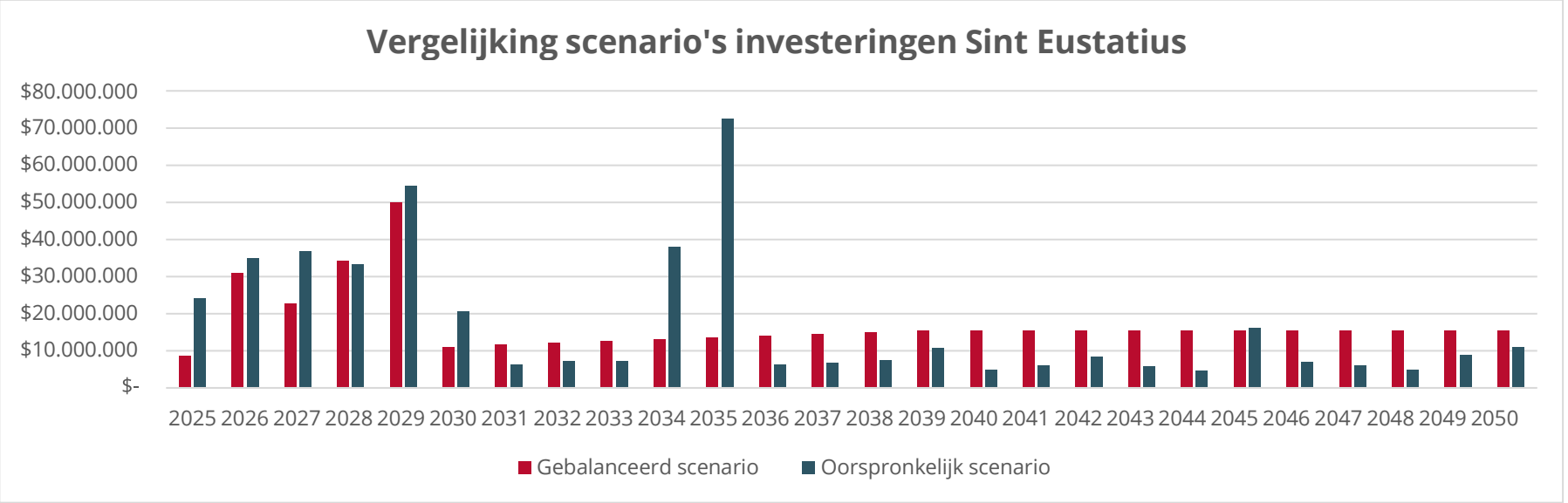
- plans from the current road plan that will be renovated in 2026-2028 as planned and for which there is already partial coverage
- plans for a central government building, because it is strongly linked to other costs (if this building is not built, all kinds of other necessary replacements and maintenance costs will appear).
- renovation of the current seaport, because there is already partial coverage for it in a given year.

Modeled annual costs of St. Eustatius up to and including 2037 – x $1000

Annual costs	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation	$-	$259	$1.193	$1.879	$2.917	$4.431	$4.765	$5.115	$5.479	$5.859	$6.254	$6.664	$7.089
Maintenance costs	$7.700	$6.198	$7.049	$7.397	$7.886	$7.981	$8.137	$8.143	$8.149	$8.323	$8.329	$9.563	$9.569
Total	**$7.700**	**$6.458**	**$8.242**	**$9.276**	**$10.803**	**$12.411**	**$12.902**	**$13.258**	**$13.628**	**$14.182**	**$14.583**	**$16.227**	**$16.658**

Modelled annual costs of St. Eustatius 2038 to 2050 – x $1000

Annual costs	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Depreciation	$7.529	$7.984	$8.454	$8.924	$9.394	$9.864	$10.334	$10.804	$11.274	$11.745	$12.215	$12.685	$13.155
Maintenance costs	$9.575	$9.753	$9.759	$9.765	$9.771	$9.778	$9.784	$9.966	$9.972	$9.979	$9.985	$9.992	$9.998
Total	**$17.104**	**$17.737**	**$18.213**	**$18.689**	**$19.165**	**$19.642**	**$20.118**	**$20.770**	**$21.247**	**$21.723**	**$22.200**	**$22.676**	**$23.153**



Costs in balanced scenario Saba

Modeled investment costs Saba up to and including 2037 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Investment	$42.085	$71.102	$14.385	$18.673	$4.544	$4.697	$4.851	$5.004	$5.157	$5.311	$5.464	$5.618	$5.771

Modeled investment costs Saba 2038 to 2050 – x $1000

Investment	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Investment	$5.924	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078	$6.078

A number of large investments have also been set aside for Saba and added again later:

- [illegible] investments in Black Rocks Harbor and the associated road. These investments are already fixed, there is a budget for them and they are largely carried out by a party from outside Saba, so it does not directly affect the implementation power (in terms of actual implementation).
- [illegible] in schools. If these had been included in the linear context, the investment could not be made in the years in which they are now planned.

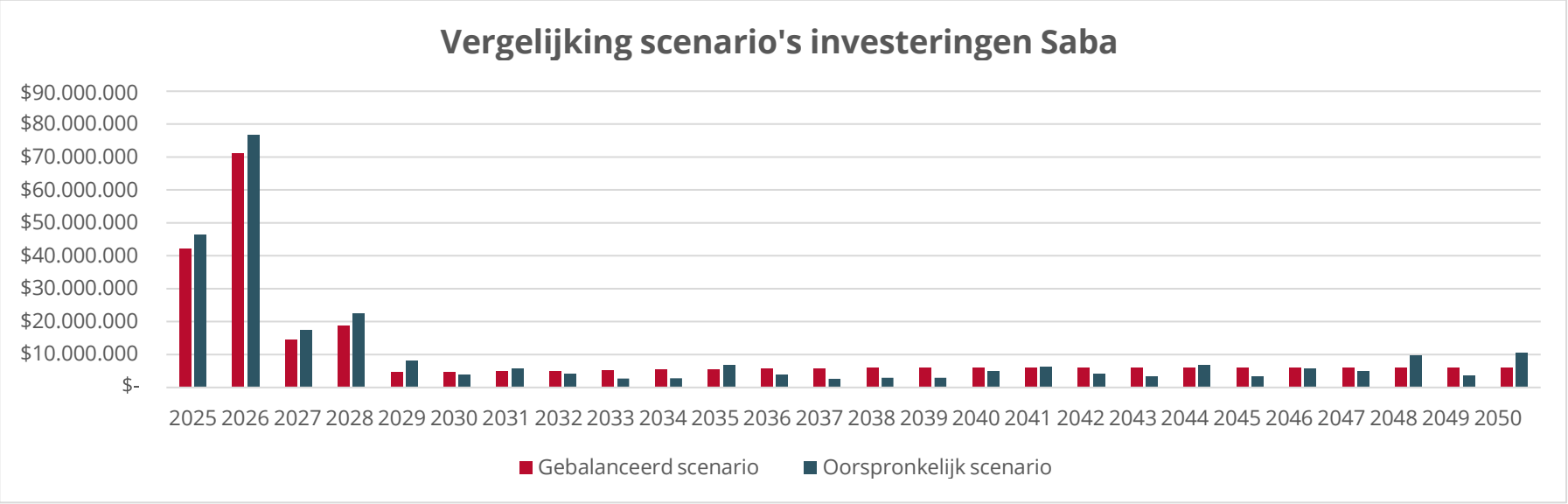
- largest investments in the airport. We also consider it plausible that not a local contractor, but a specialized contractor from outside the island will carry out the work.

Modeled annual costs Saba through 2037 – x $1000

Annual costs	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation	$-	$1.052	$2.830	$3.189	$3.656	$3.770	$3.887	$4.008	$4.134	$4.262	$4.395	$4.532	$4.672
Maintenance costs	$5.347	$5.902	$8.385	$8.343	$8.753	$8.955	$9.019	$9.082	$9.146	$9.210	$9.581	$9.631	$9.637
Total	**$5.347**	**$6.954**	**$11.215**	**$11.533**	**$12.409**	**$12.725**	**$12.906**	**$13.091**	**$13.280**	**$13.473**	**$13.976**	**$14.162**	**$14.309**

Modeled annual costs Saba 2038 to 2050 – x $1000

Annual costs	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Depreciation	$4.817	$4.965	$5.117	$5.269	$5.420	$5.572	$5.724	$5.876	$6.028	$6.180	$6.332	$6.484	$6.636
Maintenance costs	$9.643	$9.650	$9.656	$9.662	$9.669	$9.675	$9.681	$9.688	$9.694	$9.700	$9.707	$9.713	$9.719
Total	**$14.460**	**$14.614**	**$14.773**	**$14.931**	**$15.089**	**$15.247**	**$15.406**	**$15.564**	**$15.722**	**$15.880**	**$16.039**	**$16.197**	**$16.355**



4.5 Cost estimates of associates

The public entities have various participations that function as utility companies. They incur costs for the operation, maintenance, and investments required for physical infrastructure. They are financed on the basis of the rates they charge to the users and are therefore in principle cost-effective. However, the small scale of the islands ensures that capital-intensive companies such as water or energy would only be profitable with very high rates. For this reason, the various utility companies have been regularly supported with a subsidy to cover a large investment. This has happened in the past, for example, at solar parks or a drinking water factory. Without these subsidies, the utility companies would have to levy high rates that would reduce the purchasing power of residents and to which the Authority for Consumers and Markets (ACM) would potentially object.

Another means that is used to lower the rates is a rate subsidy. Currently, several structural and temporary tariff subsidies are granted to keep the consumer price affordable. Some of the temporary subsidies will expire in 2026.

According to our starting point for the scope of this study, we do not include cost-covering infrastructure. Legally, the infrastructure of the utility companies is. However, in practice, it has been seen that additional funding has been used in various ways to pay for large investments. The infrastructure funded in this way is not depreciated and it is likely that at the end of the life of this infrastructure it will again be challenging for the utility company to pay for the replacement. In addition, it is also plausible that similar large investments will require additional financing in the future.

The boundary between investments that are simply funded from the tariffs and those for which it is challenging is ambiguous and difficult to draw. It would require a ruling on which rates are acceptable for the islands and a calculation of those rates based on business-sensitive information. This was not possible and desirable within the scope of this study. We have therefore made the practical choice of asking the utility companies to make their own estimate of which investments cannot be covered in practice from the tariffs. We only mapped out the costs of these investments. These are often investments for which a subsidy has also been provided in the past. In some cases, this is already (partially) covered by subsidies or other funding streams that have already been promised. This is explained in paragraph 5.5. Highlighted.

According to some utility companies, the expiration of tariff subsidies is likely to have consequences on where the line between being able to bear and not being able to bear it yourself lies. Utility companies expect that the end of these subsidies and the resulting cost increase for consumers will cause more people to be unable to pay their bills and income to decline. This makes it more difficult for them to bear investments. We have not investigated which investments are involved and what the costs are.

Participations Bonaire

The largest utility company operating on Bonaire is Water and Energy Company Bonaire, which produces and distributes drinking water and distributes electricity. The electricity is purchased from private party Contour Global. There are several companies involved in telecom, including the government NV Telbo and private party Flamingo TV.

We also include Bonaire International Airport in this category, even though it is not actually a utility company. It is a government NV that is mainly funded by its own income from rates. Unlike the other utility companies, BIA does not stipulate that it must be cost-effective. That is why the maintenance costs for BIA are also included in this overview below.

Investments other parties Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Drinkwater (WEB)	$2.750	$-	$8.613	$4.307	$2.300	$-	$-	$-	$-	$-	$-	$-	$-
Energy (WEB and CG)	$-	$88.000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport (BIA)	$8.056	$31.528	$19.778	$64.269	$-	$1.686	$-	$12.000	$-	$49.141	$-	$-	$-
Telecom (Telbo and Fl. TV)	$2.223	$2.223	$2.223	$2.223	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$13.028**	**$121.750**	**$30.614**	**$70.799**	**$2.300**	**$1.686**	**$-**	**$12.000**	**$-**	**$49.141**	**$-**	**$-**	**$-**

Investments other parties Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Drinkwater (WEB)	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500
Energy (WEB and CG)	$-	$-	$-	$-	$-	$-	$-	$-	$88.000	$-	$-	$-	$-
Airport (BIA)	$-	$-	$-	$-	$49.370	$22.762	$-	$-	$28.907	$30.000	$-	$-	$-
Telecom (Telbo and Fl. TV)	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$-**	**$-**	**$-**	**$-**	**$49.370**	**$22.762**	**$-**	**$-**	**$116.907**	**$30.000**	**$-**	**$-**	**$500**

The table above shows the costs that have been designated by the utility companies as major investments that are difficult to fully cover from the tariffs. This concerns the following investments:

- this mainly concerns the investment in the expansion of the drinking water factory and a number of investments in post-treatment infrastructure.

- the investment included here is an investment in the generation of renewable energy (largely solar). This investment must be made by Contour Global to achieve the renewable energy goal. In the past, the central government has co-invested in similar infrastructure through participation BBT in order to keep the costs for the user lower.
- the first major investments (between 2025 and 2028) are investments in the replacement of runway lighting, an additional platform, widebody stands and the expansion of the terminal. In 2032, renewal of the top layer of the track will be included. In the following years, we assume that BIA will be able to fully bear the replacements after the end of the lifespan of less than 10 million, but not the replacements of more than 10 million. This applies to replacements of the runway, platforms and terminal.
- in the field of telecom, we are including the roll-out of the fiber optic network for all three islands. This is because these are investments that come on top of the regular replacement of the grid and the connections and it is known that they are partly paid for by a subsidy. For Bonaire, we have assumed that fiber optics will be installed everywhere except in remote areas. Uncertain future developments around digital security, 5G networks and other innovations have not been taken into account.

Depreciation costs other parties Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Drinking water	$-	$76	$76	$76	$593	$685	$685	$685	$685	$685	$685	$685	$685
Energy	$-	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400
Airport	$-	$585	$2.198	$2.376	$5.207	$5.207	$5.337	$5.337	$5.737	$5.737	$6.965	$6.965	$6.965
Telecom	$-	$49	$99	$148	$198	$198	$198	$198	$198	$198	$198	$198	$198
Total	**$-**	**$5.111**	**$6.773**	**$7.000**	**$10.398**	**$10.490**	**$10.619**	**$10.619**	**$11.019**	**$11.019**	**$12.248**	**$12.248**	**$12.248**

Depreciation costs other parties Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Drinking water	$685	$685	$685	$685	$685	$685	$685	$685	$685	$685	$685	$685	$685
Energy	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400	$4.400
Airport	$6.965	$6.417	$6.007	$6.007	$6.007	$7.653	$8.791	$8.791	$8.791	$8.791	$8.791	$8.791	$8.791
Telecom	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198
Total	**$12.248**	**$11.700**	**$11.290**	**$11.290**	**$11.290**	**$12.935**	**$14.074**	**$14.074**	**$14.074**	**$14.074**	**$14.074**	**$14.074**	**$14.074**

The above-mentioned investments result in depreciation costs which can be seen in the green tables above.

Maintenance costs other parties Bonaire up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Drinking water	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Energy	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport	$3.416	$3.635	$4.069	$4.069	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808
Telecom	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$3.416**	**$3.635**	**$4.069**	**$4.069**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**

Maintenance costs other parties Bonaire 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Drinking water	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Energy	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808	$4.808
Telecom	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**	**$4.808**

Because BIA also experiences financial challenges in carrying out all maintenance on time, we have also estimated the maintenance costs for BIA. This has been done by applying fixed ratios between replacement value and maintenance costs to all existing and planned infrastructure.

Participations St. Eustatius

On St. Eustatius, we included the utility companies STUCO and Eutel in this study. STUCO produces and distributes water and energy and Eutel is the only party on the island that offers fixed telephony and internet.

Investments other parties on St. Eustatius up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Drinkwater (STUCO)	$3.645	$2.763	$2.763	$538	$-	$-	$-	$-	$-	$-	$-	$-	$-
Energy (STUCO)	$12.500	$5.364	$8.134	$28.520	$5.020	$5.020	$5.020	$-	$-	$-	$-	$-	$-
Telecom (Eutel)	$900	$900	$900	$900	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$17.045**	**$9.027**	**$11.797**	**$29.958**	**$5.020**	**$5.020**	**$5.020**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**

Investments other parties St. Eustatius 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Drinkwater (STUCO)	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$550
Energy (STUCO)	$-	$-	$-	$-	$18.000	$-	$-	$-	$-	$-	$-	$-	$12.500
Telecom (Eutel)	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$-**	**$-**	**$-**	**$-**	**$18.000**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$13.050**

The tables above show the costs that have been designated by the utility companies as major investments that are difficult to fully cover from the tariffs. This concerns the following investments:

- **[23]:** STUCU has increased a number of investments in this category. This is firstly about the replacement of parts of the drinking water network.

  The current pipeline system is not suitable for the height differences on the island at a number of points, which creates high pressure at those points. We estimate the replacement of the pipes at high pressure points above 3 bar between 2025 and 2027. Because pipes are usually replaced evenly and this requires a large investment in one go, STUCO indicates that it cannot (fully) support it. In addition, a fifth reverse osmosis installation has been included that is necessary for the production security of drinking water according to STUCO, the replacement of pipes in Oranjebaai as a result of the renewal project there and the roll-out of pipes to parts of the island that currently have no connection.
- this includes two investments in solar parks (phase 3 and phase 4). These investments should bring St. Eustatius to the target percentage of renewable energy. Secondly, it is included that the entire low-voltage grid will be laid underground. As paragraph B.2.5. is now largely above ground. This makes it very susceptible to damage from hurricanes. However, the investment in this is large (estimated at approximately 25 million[24]). In addition, the replacement of the fuel storage facility and the expansion of the medium-voltage grid to the same areas as the water grid are included. Future end-of-life replacements have also been included for infrastructure that was previously funded or donated through a subsidy, such as the existing solar park (phases 1 and 2).
- we also include the roll-out of the fibre optic network for St Eustatius in this overview. We assume that fiber will be installed everywhere, except in remote areas where no fixed connection is currently possible.

[23] For drinking water on St Eustatius, we do not have a good idea of the value of assets that have been financed in the past in an alternative way (such as the drinking water factory) and when they would reach the end of their lifespan. They are therefore not included.

[24] This estimate was made on the basis of information about the number of transformer substations and connections, but assumptions about the average distance between a transformer substation and a connection and a substantiated estimate of the price. So this is a fairly uncertain estimate.

Depreciation costs other parties St. Eustatius up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Drinkwater (STUCO)	$-	$99	$168	$237	$250	$250	$250	$250	$250	$250	$250	$250	$250
Energy (STUCO)	$-	$500	$668	$871	$1.937	$2.062	$2.188	$2.313	$2.313	$2.313	$2.313	$2.313	$2.313
Telecom (Eutel)	$-	$20	$40	$60	$80	$80	$80	$80	$80	$80	$80	$80	$80
Total	**$-**	**$619**	**$876**	**$1.168**	**$2.267**	**$2.392**	**$2.518**	**$2.643**	**$2.643**	**$2.643**	**$2.643**	**$2.643**	**$2.643**

Depreciation costs other parties St. Eustatius 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Drinkwater (STUCO)	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Energy (STUCO)	$2.313	$2.313	$2.313	$2.313	$2.313	$3.033	$3.033	$3.033	$3.033	$3.033	$3.033	$3.033	$3.033
Telecom (Eutel)	$80	$80	$80	$80	$80	$80	$80	$80	$80	$80	$80	$80	$80
Total	**$2.643**	**$2.643**	**$2.643**	**$2.643**	**$2.643**	**$3.363**	**$3.363**	**$3.363**	**$3.363**	**$3.363**	**$3.363**	**$3.363**	**$3.363**

The above-mentioned investments result in depreciation costs which can be seen in the green tables above. There were no maintenance costs that may not be covered by the rates.

Participations Saba

On Saba, there are two utility companies that we included in this study: electricity company Saba Electric Company (SEC) and telecom provider Satel.

Investments other parties Saba up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Energy (SEC)	$18.400	$667	$20.667	$667	$1.000	$-	$-	$-	$-	$-	$-	$-	$-
Telecom (Sattel)	$704	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$19.104**	**$667**	**$20.667**	**$667**	**$1.000**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**

Investments other parties Saba 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Energy (SEC)	$-	$18.000	$-	$1.500	$-	$-	$-	$19.200	$-	$20.000	$-	$1.700	$400
Telecom (Sattel)	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$-**	**$18.000**	**$-**	**$1.500**	**$-**	**$-**	**$-**	**$19.200**	**$-**	**$20.000**	**$-**	**$1.700**	**$400**

- two investments in solar parks have also been included on Saba (again phase 3 and phase 4). These investments should bring Saba to the target percentage of renewable energy. In addition, future replacements at the end of their lifespan have been included for infrastructure that was previously funded by a subsidy or donated, such as the existing solar parks, diesel generators and fuel storage.
- on Saba, we have also included the further roll-out of the fiber optic network, except to remote homes.

Depreciation of other parties Saba up to and including 2037 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Energy	$28	$944	$1.011	$2.077	$2.144	$2.244	$2.244	$2.244	$2.244	$2.244	$2.244	$2.244	$2.244
Telecom	$-	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16
Total	**$28**	**$960**	**$1.026**	**$2.093**	**$2.160**	**$2.260**	**$2.260**	**$2.260**	**$2.260**	**$2.260**	**$2.260**	**$2.260**	**$2.260**

Depreciation of other parties Saba 2038 to 2050 – x $1000

Type of infrastructure	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Energy	$2.244	$2.244	$3.094	$3.094	$3.154	$3.154	$3.154	$3.154	$3.184	$3.184	$3.184	$3.184	$3.184
Telecom	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16
Total	**$2.260**	**$2.260**	**$3.110**	**$3.110**	**$3.170**	**$3.170**	**$3.170**	**$3.170**	**$3.200**	**$3.200**	**$3.200**	**$3.200**	**$3.200**

The above-mentioned investments result in depreciation costs which can be seen in the green tables above. There were no maintenance costs that may not be covered by the rates.

/ 5 Coverage and uncovered statement

This chapter provides a brief overview of the existing coverage of the previously presented costs and the resulting uncovered task, per public entity. A more complete overview of the coverage per type of infrastructure per island can be found in Appendix B. Section 5.4 then discusses the uncovered costs in the balanced scenario and section 5.5 discusses the coverage for the utility task described in Chapter 4.

In our overviews, we show both the absolute and relative coverage per category

In the overviews below per island, we consider the coverage for overdue maintenance, regular maintenance, depreciation, and new investments for each cost category. In the cell, we display the total amount of existing coverage. Where necessary, we explain certain details about the coverage with a footnote. In addition, we indicate for each colour which part of the estimated costs is covered. The legend for the colors is in the table below. In tables below we show the absolute coverage in total.

No fees	Not covered	<50% depicted	50-99% covered	Fully covered
N/a	Not covered	$...	$...	$.../covering costs

In the first years, relatively more coverage is

In the first years, a higher share of the estimated investments was covered than in later years. This is logical in view of the current method of financing in which agreements are made about the funding for individual large investments. For example, there is already coverage for Saba's Black Rock Harbor and there is also coverage for the solar parks on Saba and St. Eustatius. These are major investments that are not included in the overviews below. There is also more coverage in terms of maintenance costs in the beginning. This is because there are a number of temporary cash flows that can be used for maintenance.

The uncovered costs cannot be estimated very precisely, especially in later years

As described in Chapter 5, we had to make many assumptions for the coverage, especially about what part of the free benefit or income can be used for maintenance and investments. As a result, these estimates are only an indication.
In later years, uncertainty increases. For example, it is expected that various investments will generate income, such as the investments in waste on St. Eustatius and the investments in the airport on Bonaire. We have not estimated this income and therefore did not include it. In this chapter, we therefore show the years up to and including 2035 and 2050 for a glimpse into the future, but not the years in between.

5.1 Public Entity Bonaire

Coverage

	Overdue maintenanc	Regular maintenance	Investments (total)
Waste management	Not covered	$700,000	$1,400,000
Wastewater	N/a	$179,830[25]	$2,390,000
Cultural heritage	Not covered	Not covered	N/a
Buildings	Not covered	Possibly covered	Not covered
Agriculture	N/a	$11,250	$21,700,000
Recreation	N/a	$853,000	$2,259,000
Water	Not covered	Not covered	$1,145,800
Roads, parking, public	N/A	> $4.500.000	$67.640.000[27]
Seaport	Not covered	$750.000	$18.450.000

Furthermore, we charge **an additional €1,959,467 coverage per year for maintenance costs** based on comparison with maintenance expenses on Bonaire and the addition to the free allowance for maintenance in 2024.[A 28]

[25] A proposed waste water levy has not been realised, so the maintenance costs are not fully covered. This levy is also not included. Until 2026, the costs are covered by a BU of $1.605 million. of IenW.

[26] Since 2018, the Ministry of Infrastructure and Water Management has reserved €5 million annually for the operation and maintenance of physical infrastructure in the Caribbean Netherlands. This stems from the coalition agreement of the Rutte III cabinet. This is not paid annually to the public entities, but for several years at the same time and has specific purposes. €2.75 million has been reserved for Bonaire, which is mainly used for roads. The budget for 2024 and 2025 has recently been disbursed, The future reserved budget has not yet been allocated, but we do include it. We have made the assumption that it will still be used to invest in the construction of new roads until 2028 and from then on will be used to cover depreciation.

[27] The OLB collects approximately $5.9 million per year in road taxes. This amount covers the full estimated maintenance costs. We now assume that the remainder will be spent on depreciation that follows from investments. This money is not necessarily spent on this purpose.

[28] See chapter 2.5 for an explanation of this methodology.

Coverage for investments Bonaire up to and including 2035 and 2050 – x $1000

Investment coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Investment coverage	$34.875	$10.415	$6.000	$15.850	$11.698	$1.934	$1.283	$1.184	$1.333	$1.184	$1.333		$2.584

Coverage for annual costs Bonaire up to and including 2037 – x $1000

Annual coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Depreciation coverage	$-	$2.706	$3.201	$3.482	$6.858	$7.430	$7.510	$7.541	$7.564	$7.594	$7.617		$5.512
Coverage maintenance	$12.865	$10.959	$9.489	$9.598	$12.206	$12.316	$12.423	$12.533	$12.640	$12.723	$12.831		$13.439
Total	**$12.865**	**$13.665**	**$12.689**	**$13.080**	**$19.064**	**$19.745**	**$19.933**	**$20.073**	**$20.204**	**$20.317**	**$20.448**		**$18.951**

Uncovered task

The tables below show the uncovered statement for the Public Entity of Bonaire. This is especially large in the areas of roads, buildings, water management and cultural heritage. As explained earlier, the task in the field of roads is simply very large and can only be covered to a very small extent from the free allowance. In the first years, part of the investment costs were covered by a special grant from the Ministry of Infrastructure and Water Management and a designated reserve from the OLB. The OLB currently does not budget for investments in and maintenance of buildings owned by OLB. This is under development, but currently the budget for this type of infrastructure is zero, so almost all costs are uncovered. The task in the field of maintenance of the drainage facilities on Bonaire is also great and there is very little coverage. The maintenance of cultural heritage is still in its infancy on all three islands, so there is a lot of overdue maintenance to catch up. There is currently no coverage for this either.

Bonaire's unsecured investments up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	**2050**
Waste management	$7.352	$7.852	$3.000	$2.333	$1.333	$1.633	$333	$333	$603	$833	$833		$4.433
Wastewater	$5.226	$-	$225	$-	$5.008	$-	$225	$-	$226	$-	$226		$-
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Buildings	$7.899	$8.036	$39.144	$28.895	$29.103	$8.271	$969	$971	$974	$1.869	$979		$993
Agriculture	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Recreation	$1.655	$356	$246	$403	$740	$913	$751	$1.140	$2.648	$995	$1.737		$793
Water	$726	$726	$726	$15.040	$727	$727	$727	$727	$728	$728	$728		$732
Roads, parking and public	$257	$19.020	$23.144	$23.351	$26.611	$26.819	$27.026	$27.234	$27.442	$27.597	$18.069		$24.018
Seaport	$1.929	$-	$-	$26.329	$25.829	$-	$-	$-	$-	$45.368	$-		$-
Total	**$25.044**	**$35.990**	**$66.484**	**$96.352**	**$89.351**	**$38.363**	**$30.031**	**$30.406**	**$32.620**	**$77.390**	**$22.572**		**$30.970**

Uncovered annual costs (depreciation and maintenance) Bonaire through 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	**2050**
Waste management	$1.976	$359	$972	$1.139	$1.344	$1.472	$1.612	$1.661	$1.711	$1.760	$1.763		$1.774
Wastewater	$-554	$-156	$1.450	$1.473	$1.473	$1.815	$1.816	$1.839	$1.840	$1.863	$1.864		$2.443
Cultural heritage	$6.820	$6.400	$1.840	$840	$797	$440	$440	$440	$440	$440	$440		$440
Buildings	$456	$736	$931	$1.653	$656	$1.657	$1.955	$1.995	$2.035	$2.064	$2.126		$2.571
Agriculture	$170	$188	$203	$218	$255	$277	$277	$277	$277	$277	$277		$277
Recreation	$649	$772	$948	$998	$1.042	$1.107	$1.197	$1.298	$1.401	$1.535	$1.727		$2.270
Water	$3.605	$4.496	$4.325	$3.934	$2.611	$2.630	$2.649	$2.669	$2.688	$2.707	$2.726		$3.017
Roads, parking and public	$-631	$-989	$580	$2.380	$1.172	$3.216	$5.305	$7.442	$9.625	$11.801	$14.073		$24.628
Seaport	$1.285	$9.315	$2.433	$12.796	$1.261	$3.372	$3.349	$3.326	$3.303	$3.283	$4.395		$4.220
Other coverage VU	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*	*$-1.959*		*$-1.959*
Total	**$11.816**	**$21.121**	**$13.682**	**$25.430**	**$10.612**	**$15.985**	**$18.600**	**$20.947**	**$23.320**	**$25.731**	**$29.391**		**$41.641**

5.2 Public Entity of St. Eustatius

Coverage

		Overdue maintenanc	Regular maintenance	Investments (total)
	Waste management	Not covered	$300.000	$1.820.000
	Wastewater	N/A	Not covered	Not covered
	Cultural heritage	Not covered	Not covered	N/A
	Buildings	Not covered	$560,000[29]	$351,000[30]
	Agriculture	N/a	$22,500	$1,500,000
	Airport	Not covered	$215,000[31]	$661,000
	Recreation	N/a	Not covered	$512,000
	Water	N/a	Not covered	$18.197.000
	Roads, parking, public	N/A	$1.800.000	$10.123.000
	Seaport	$911.000	$928.000	$12.520.000

Furthermore, we charge **an additional €209,838 of coverage annually for maintenance costs** based on comparison with the expenditure on maintenance on St. Eustatius and the addition to the free allowance for maintenance in 2024.[A 33]

Coverage for investments Sint Eustatius up to and including 2035 and 2050 – x $1000

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[29] School maintenance costs are not a task for the public entity and are in principle covered by the schools themselves. No costs are included for this and therefore no amount that covers these maintenance costs.

[30] The costs for the restoration of Madame's Theatre are part of the culture sheet, but we have not been able to estimate any costs for this. The coverage for this is therefore not part of this.

[31] In 2025, a one-off $205,000 will be made available for maintenance through a special grant.

[32] Since 2018, the Ministry of Infrastructure and Water Management has reserved €5 million annually for the operation and maintenance of physical infrastructure in the Caribbean Netherlands. This stems from the coalition agreement of the Rutte III cabinet. This is not paid annually to the public entities, but for several years at the same time and has specific purposes. €1.25 million has been reserved for St. Eustatius, which is mainly used for roads. The future reserved budget has not yet been allocated, but we do include it. It is likely that the budget for the period 2024-2027 will be used for the construction and renovation of roads, which is why we count this as cover for the investments. We have included the budget for the period after that as cover for maintenance costs.

[33] See chapter 2.5 for an explanation of this methodology.

Investment coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Investment coverage	$8.674	$10.802	$8.983	$2.505	$14.720	$-	$-	$-	$-	$-	$-		$-

Coverage for annual costs of St. Eustatius up to and including 2037 – x $1000

Annual coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Depreciation coverage	$-	$303	$446	$806	$885	$1.253	$1.253	$1.253	$1.253	$1.253	$1.253		$1.090
Coverage maintenance	$4.288	$2.648	$2.648	$5.215	$5.215	$5.215	$5.215	$5.215	$5.215	$5.256	$5.256		$6.237
Total	**$4.288**	**$2.951**	**$3.094**	**$6.022**	**$6.100**	**$6.468**	**$6.468**	**$6.468**	**$6.468**	**$6.509**	**$6.509**		**$7.327**

Uncovered task

The uncovered part of the statement for the Public Entity of St. Eustatius is shown below. This task is particularly large in the field of roads and the airport. Roads require large investments to get the road network in good condition, resulting in substantial depreciation on an annual basis. Also, the current maintenance budget for roads is far from sufficient. The latter is especially true for the airport: the current maintenance budget is not sufficient to properly maintain all assets. There is also some overdue maintenance that needs to be eliminated for which there is no coverage.

Unsecured investments on St. Eustatius up to and including 2037 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Waste management	$5.095	$300	$2.135	$-	$-	$-	$300	$52	$1.010	$-	$1.845		$4.200
Wastewater	$-	$2.773	$-	$519	$172	$-	$-	$-	$157	$-	$-		$-
Cultural heritage	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Buildings	$2.125	$25	$13.247	$13.122	$25	$25	$25	$25	$25	$25	$25		$25
Agriculture	$1.000	$1.540	$1.395	$1.321	$-	$-	$-	$-	$-	$-	$-		$500
Airport	$-	$650	$-	$-	$4.750	$4.750	$-	$932	$-	$-	$7.190		$-
Recreation	$65	$724	$475	$309	$3.518	$-	$-	$209	$-	$1.830	$-		$-
Water	$3.530	$711	$748	$722	$725	$-	$-	$-	$-	$-	$-		$6.244
Roads, parking and public	$3.556	$17.342	$9.734	$14.716	$3.663	$15.720	$6.084	$6.084	$6.084	$6.177	$6.177		$7
Seaport	$-	$-	$-	$-	$26.893	$-	$-	$-	$-	$29.880	$57.262		$-
Total	**$15.371**	**$24.065**	**$27.733**	**$30.710**	**$39.745**	**$20.495**	**$6.409**	**$7.302**	**$7.276**	**$37.913**	**$72.500**		**$10.975**

Uncovered annual costs (depreciation and maintenance) St. Eustatius through 2037 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Waste management	$-27	$238	$250	$565	$565	$565	$565	$608	$611	$621	$621		$714
Wastewater	$-	$-	$264	$264	$284	$291	$291	$292	$292	$302	$302		$328
Cultural heritage	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148	$148		$148
Buildings	$1	$62	$63	$-822	$-166	$-165	$-165	$-164	$-164	$-163	$-162		$-136
Agriculture	$-23	$53	$139	$203	$285	$285	$285	$285	$285	$285	$285		$285
Airport	$1.704	$1.256	$1.358	$955	$1.073	$1.192	$1.192	$1.192	$1.264	$1.264	$1.264		$1.813
Recreation	$418	$443	$673	$726	$922	$1.098	$1.098	$1.098	$1.112	$1.146	$1.207		$1.363
Water	$435	$538	$599	$812	$874	$929	$932	$935	$937	$940	$943		$1.507
Roads, parking and public	$588	$1.393	$2.360	$1.366	$1.963	$2.256	$2.804	$2.960	$3.117	$3.434	$3.593		$5.659
Seaport	$379	$111	$111	$111	$111	$784	$784	$784	$784	$755	$2.488		$4.191
Other coverage VU	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*	*$-210*		*$-210*
Total	**$3.413**	**$4.032**	**$5.754**	**$4.118**	**$5.849**	**$7.172**	**$7.724**	**$7.927**	**$8.176**	**$8.522**	**$10.478**		**$15.663**

5.3 Public Entity Saba

Coverage

		Overdue maintenanc	Regular maintenance	Investments (total)
	Waste management	N/A	$109.000	$1.104.000
	Wastewater	N/A	Not covered	Not covered
	Cultural heritage	Not covered	$203.000	Not covered
	Drinking water	N/A	$95,000	$500,000
	Buildings	Not covered	$664,000[34]	$13,016,000
	Agriculture	N/a	$17,000	Not covered
	Airport	Not covered	$159,000	$923,000
	Recreation	Not covered	$152.000	$3.000.000
	Water	Not covered	Not covered	Not covered
	Roads, parking, public	N/A	$1.056.000	$4.594.000
	Seaport	Not covered	$488.700[35]	$82.744.000

Unlike Bonaire and St. Eustatius, we **do not charge additional coverage** for maintenance costs on Saba. This is because spending on maintenance from VU Amsterdam has risen faster than the addition to VU Amsterdam in 2024 and because Saba spends more on maintenance than St. Eustatius.[A 36]

Coverage for investments Saba up to and including 2035 and 2050 – x $1000

Investment coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Investment coverage	$40.101	$65.755	$24	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

[34] School maintenance costs are not a task for the public entity and are in principle covered by the schools themselves. No costs are included for this and therefore no amount that covers these maintenance costs.

[35] In 2025, a one-off $75,000 will be available from a special grant.

[36] See chapter 2.5 for an explanation of this methodology.

Coverage for annual costs Saba up to and including 2037 – x $1000

Annual coverage	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Depreciation coverage	$-	$365	$2.725	$2.725	$2.725	$2.725	$2.725	$2.725	$2.725	$2.697	$2.697		$2.597
Coverage maintenance	$2.608	$2.943	$2.943	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.948	$2.953		$2.953
Total	**$2.608**	**$3.308**	**$5.668**	**$5.674**	**$5.674**	**$5.674**	**$5.674**	**$5.674**	**$5.674**	**$5.645**	**$5.650**		**$5.551**

Uncovered task

The tables below show the uncovered task for the Public Entity of Saba. This is largest at the seaports, the airport and the roads. The new seaport will entail maintenance costs. Revenues from the seaport will also follow, but the revenues estimated in a cost and benefit analysis in 2021 are far from sufficient to cover maintenance costs. In addition, there are ambitions to combat invasive species that enter through the port, for which there is also no coverage yet. The maintenance budget for the existing port is also insufficient. At the airport on Saba, there are also assets that need to be replaced or renovated. In many cases, this is not yet covered. For roads, the second part of the road from the port (which reconnects the road to the main road) is not yet covered and that entails depreciation. The current maintenance budget for the roads is also insufficient.

Unsecured investments Saba up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Waste management	$475	$-175	$-	$310	$350	$-	$-	$200	$175	$135	$325		$200
Wastewater	$-	$201	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Cultural heritage	$470	$290	$290	$290	$290	$290	$290	$290	$290	$290	$290		$290
Drinking water	$262	$-	$-	$362	$-	$-	$84	$1.356	$-	$-	$379		$-
Buildings	$65	$5.581	$8.029	$7.307	$-	$-	$-	$-	$-	$55	$-		$-
Agriculture	$143	$1.151	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Airport	$506	$447	$5.054	$-	$-	$-	$3.072	$-	$-	$-	$3.220		$-
Recreation	$1.443	$-	$-	$-	$3.853	$-	$-	$-	$-	$61	$302		$-
Water	$264	$330	$1.327	$1.329	$1.331	$1.334	$-	$-	$-	$-	$-		$5.518
Roads, parking and public	$2.432	$2.141	$2.541	$12.838	$2.192	$2.192	$2.192	$2.192	$2.192	$2.192	$2.243		$4.494
Seaport	$129	$1.000	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Total	**$6.189**	**$10.966**	**$17.240**	**$22.436**	**$8.016**	**$3.816**	**$5.638**	**$4.038**	**$2.657**	**$2.734**	**$6.759**		**$10.501**

Uncovered annual costs Saba up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Waste management	$-29	$13	$15	$15	$46	$88	$88	$88	$88	$134	$148		$270
Wastewater	$5	$5	$16	$16	$16	$16	$16	$17	$17	$17	$17		$30
Cultural heritage	$102	$257	$115	$115	$115	$115	$115	$115	$115	$115	$115		$115
Drinking water	$79	$104	$104	$114	$175	$175	$175	$187	$273	$273	$291		$305
Buildings	$-51	$270	$643	$549	$729	$726	$724	$721	$719	$716	$777		$864
Agriculture	$35	$42	$81	$86	$86	$86	$86	$86	$86	$86	$91		$95
Airport	$394	$210	$386	$501	$501	$501	$501	$694	$694	$694	$694		$1.084
Recreation	$111	$149	$132	$150	$150	$413	$413	$413	$413	$413	$446		$601
Water	$6	$59	$107	$198	$289	$348	$407	$407	$408	$409	$409		$428
Roads, parking and public	$1.367	$1.376	$1.482	$1.793	$2.473	$2.580	$2.687	$2.794	$2.902	$3.010	$3.379		$4.159
Seaport	$719	$643	$2.787	$2.837	$2.837	$2.837	$2.837	$2.837	$2.837	$2.837	$2.837		$2.850
Total	**$2.739**	**$3.127**	**$5.868**	**$6.373**	**$7.417**	**$7.886**	**$8.049**	**$8.359**	**$8.551**	**$8.704**	**$9.202**		**$10.802**

5.4 Balanced scenario

This section describes which costs remain uncovered in the balanced scenario. We assume that the coverage will not change compared to the original scenarios due to deferred investments.

Unmet task balanced scenario Bonaire

Bonaire's unsecured investments up to and including 2035 and 2050 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Unsecured investments	$5.180	$30.125	$66.105	$81.193	$85.922	$30.178	$31.179	$31.629	$31.830	$32.330	$32.531		$32.682

Uncovered annual costs Bonaire up to and including 2035 and 2050 – x $1000

Yearly	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Uncovered annual costs	$7.164	$7.820	$10.270	$12.502	$10.047	$14.982	$16.754	$18.597	$20.476	$22.360	$20.616		$42.931

Unmet task balanced scenario for St. Eustatius

Unsecured investments on St. Eustatius up to and including 2035 and 2050 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Unsecured investments	$-120[37]	$20.016	$13.663	$31.729	$35.236	$11.040	$11.537	$12.034	$12.531	$13.028	$13.525		$15.514

Uncovered annual costs of St. Eustatius up to and including 2035 and 2050 – x $1000

Yearly	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Uncovered annual costs	$3.413	$3.506	$5.148	$3.255	$4.702	$5.943	$6.434	$6.789	$7.160	$7.673	$8.074		$15.826

Uncovered task balanced scenario Saba

Unsecured investments Saba up to and including 2035 and 2050 – x $1000

Investment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Unsecured investments	$1.984	$5.347	$14.360	$18.673	$4.544	$4.697	$4.851	$5.004	$5.157	$5.311	$5.464		$6.078

Uncovered annual costs Saba up to and including 2035 and 2050 – x $1000

Yearly	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Uncovered annual costs	$2.739	$3.646	$5.547	$5.859	$6.735	$7.051	$7.232	$7.417	$7.606	$7.828	$8.326		$10.804

5.5 Participating interests

As also described in paragraph 4.5, the utility companies are in principle cost-effective, but in practice not always. The investments that the utility companies themselves have indicated are difficult to bear themselves are included in section 4.5. These investments are already partly covered, which is shown in this section. We then show what part of the investments will remain.

[37] In the present case, the estimated coverage is higher than the modelled costs. It is likely that if an investment is deferred, the coverage will also be deferred, but because we have kept the coverage the same as in the original scenario, a negative amount of uncovered costs will arise here.

Coverage and possible uncovered statement of utility companies Bonaire

Bonaire	Overdue maintenanc	Regular maintenan	Investments (total)
Drinking water	N/A	Cost-effective	$5.391.000
Energy	N/A	Cost-effective	$44.000.000
Airport	N/A	$4.808.000[38]	$68.545.000[39]
Telecom	N/A	Cost-effective	$500.000

On Bonaire, we assume that the WEB, Contour Global and BIA can bear part of the large investments themselves from their income. We based this part on their assumption (in the case of WEB), historical examples (in the case of WEB and Contour Global) and documents (in the case of BIA). In addition, we have assumed that BIA will be able to bear all maintenance costs at a certain point (assumption: from 2035).

Unsecured investments other parties Bonaire up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Drinkwater (WEB)	$1.925	$-	$6.029	$3.015	$1.610	$-	$-	$-	$-	$-	$-		$-
Energy (WEB)	$-	$44.000	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Airport (BIA)	$1.778	$2.021	$19.778	$31.508	$-	$1.686	$-	$12.000	$-	$49.141	$-		$-
Telecom (Telbo and Fl. TV)	$2.098	$2.098	$2.098	$2.098	$-	$-	$-	$-	$-	$-	$-		$-
Total	$5.801	$48.119	$27.905	$36.621	$1.610	$1.686	$-	$12.000	$-	$49.141	$-		$-

Uncovered annual costs other parties Bonaire up to and including 2037 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Drinking water	$-	$53	$53	$53	$415	$480	$480	$480	$480	$480	$480		$480
Energy	$-	$2.200	$2.200	$2.200	$2.200	$2.200	$2.200	$2.200	$2.200	$2.200	$2.200		$4.400
Airport	$854	$911	$1.041	$1.119	$3.216	$3.116	$3.145	$3.045	$3.345	$3.245	$3.172		$5.972
Telecom	$-	$47	$93	$140	$186	$186	$186	$186	$186	$186	$186		$186
Total	$854	$3.211	$3.388	$3.512	$6.017	$5.982	$6.011	$5.911	$6.211	$6.111	$6.038		$11.038

[38] BIA can currently cover 75% of the maintenance itself and 100% from 2035. The amount mentioned is the final 100%.
[39] BIA indicates that after the upcoming replacement investments required, all assets can be depreciated on the basis of its own income. Until that moment, this is not yet the case.

Coverage and possible uncovered statement of utility companies on St. Eustatius

Sint Eustatius	Overdue maintenanc	Regular maintenan	Investments (total)
Drinking water	N/A	Cost-effective	$2.268.000
Energy	N/A	Cost-effective	$12.500.000
Telecom	N/A	Cost-effective	$1.400.000

On St Eustatius, some investments by utility companies are already covered. For example, Eutel will receive a subsidy for part of the investments in the fiber optic network and STUCO will receive a subsidy for replacing part of the pipes at high pressure points (>5 bar) and solar park phase 3.

Unsecured investments other parties on St. Eustatius up to and including 2037 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Drinkwater (STUCO)	$1.377	$2.763	$2.763	$538	$-	$-	$-	$-	$-	$-	$-		$550
Energy (STUCO)	$-	$5.364	$8.134	$28.520	$5.020	$5.020	$5.020	$-	$-	$-	$-		$12.500
Telecom (Eutel)	$550	$550	$550	$550	$-	$-	$-	$-	$-	$-	$-		$-
Total	$1.927	$8.677	$11.447	$29.608	$5.020	$5.020	$5.020	$-	$-	$-	$-		$13.050

Uncovered annual costs of other parties on St. Eustatius up to and including 2037 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Drinkwater (STUCO)	$-	$42	$111	$180	$193	$193	$193	$193	$193	$193	$193		$193
Energy (STUCO)	$-	$-	$168	$371	$1.437	$1.562	$1.688	$1.813	$1.813	$1.813	$1.813		$2.533
Telecom (Eutel)	$-	$12	$24	$37	$49	$49	$49	$49	$49	$49	$49		$49
Total	**$-**	**$54**	**$303**	**$588**	**$1.679**	**$1.805**	**$1.930**	**$2.056**	**$2.056**	**$2.056**	**$2.056**		**$2.776**

Coverage and possible uncovered statement

Saba **Saba**	Achterstallig onderhoud	Regulier onderhoud	Investeringen (totaal)

	Energy	N/A	Cost-effective	$18.000.000
	Telecom	N/A	Cost-effective	$704.000

On Saba, there is already coverage for phase 3 of the solar park and the full roll-out of the fiber optic grid. This results in the following potentially uncovered investments and annual costs.

Unsecured investments other parties Saba up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Energy	$-	$667	$20.667	$667	$1.000	$-	$-	$-	$-	$-	$-		$400
Telecom[40]	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Total	$-	$667	$20.667	$667	$1.000	$-	$-	$-	$-	$-	$-		$400

Uncovered annual costs other parties Saba up to and including 2035 and 2050 – x $1000

Type of infrastructure	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	...	2050
Energy	$-	$-	$67	$1.133	$1.200	$1.300	$1.300	$1.300	$1.300	$1.300	$1.300		$3.140
Telecom	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-		$-
Total	$-	$-	$67	$1.133	$1.200	$1.300	$1.300	$1.300	$1.300	$1.300	$1.300		$3.140

5.6 Total uncovered annual costs

Below are three tables showing the total annual uncovered costs for four years: 2025, 2026, 2035 and 2050. This is the sum of the uncovered depreciation (resulting from the investments, see explanation section 2.6) and the uncovered maintenance costs.

We have chosen 2026 because that is the first year in which a large number of depreciations will run and 2035 and 2050 because we have also shown them in the tables above. The uncovered costs for the public entity always show the range between the balanced scenario and the original scenario, in which the original scenario is in bold. All numbers are rounded to $100,000

Total uncovered annual costs 2025 in $1,000,000

[40] employees of the Ministry of Economic Affairs indicated that investments in the field of mobile connectivity may be missing from these estimates.

Island	*Uncovered costs of public entity*	*Other parties not covered expenses*[41]	*Total*
Bonaire	$7,2 - **$11,8**	$0,9	$8,0 - **$12,7**
Sint Eustatius	$3,4 - **$3,4**	$-	$3,4 - **$3,4**
Saba	$2,7 - **$2,7**	$-	$2,7 - **$2,7**
Total	*$13,3 - **$18,0***	*$0,9*	*$14,4 - **$18,8***

Total Uncovered Annual Cost 2026 in $1000

Island	*Uncovered costs of public entity*	*Uncovered costs of other parties*	*Total*
Bonaire	$7,8 - **$21,1**	$3,2	$11,0 - **$24,3**
Sint Eustatius	$3,5 - **$4,0**	$0,1	$3,6 - **$4,0**
Saba	**$3,1** - $3,6	$-	**$3,1** - $3,6
Total	*$15,0 - **$28,3***	*$,3*	*$18,2 - **$31,5***

Total Uncovered Annual Cost 2035 in $1000

Island	*Uncovered costs of public entity*	*Uncovered costs of other parties*	*Total*
Bonaire	$20,6 - **$29,4**	$6,0	$26,7 - **$35,4**
Sint Eustatius	$8,1 - **$10,5**	$2,1	$10,1 - **$12,5**
Saba	$8,3 - **$9,2**	$1,3	$9,6 - **$10,5**
Total	*$37,0 - **$49,1***	*$9,4*	*$46,4 - **$58,5***

Total Uncovered Annual Cost 2050 in $1000

Island	*Uncovered costs of public entity*	*Uncovered costs of other parties*	*Total*
Bonaire	**$41,6** - $42,9	$11,0	**$52,7** - $54,0
Sint Eustatius	**$15.7** - $15.8	$2.8	**$18.4** - $18.6
Saba	**$10.8** - $10.8	$3.1	**$13.9** - $13.9
Total	***$68.1*** *- $69.6*	*$17.0*	***$85.1*** *- $86.5*

[41] In theory, these costs are covered by the tariffs, but in the past this has not been possible for large investments. For more information, see section 2.3 or section 4.5

/ 6 Conclusions and reflection

6.1 Conclusions

This report shows what the investment, replacement and maintenance task will be in the physical infrastructure of the islands of the Caribbean Netherlands in the coming years, and what costs this will lead to. It concerns thirteen different types of infrastructure: waste processing, waste water, cultural heritage, drinking water, energy, buildings, agriculture, airports, recreation, telecom, water management, roads (including parking and public transport) and seaports. This also includes cost developments due to population growth, climate adaptation and sustainability.

All the figures below are in US dollars and expressed in the price level of 2024.

The three public entities are facing a major task

The research shows that Bonaire, St. Eustatius and Saba will face major investments in the coming years. For the Public Entity of Bonaire, this is an average of approximately $41 million per year until 2050, for St. Eustatius an average of approximately $17 million per year and for Saba an average of approximately $10 million per year. This entails depreciation and maintenance costs for the public entities on the islands:

- **the Public Entity of Bonaire** , we estimate that total expenses for depreciation and maintenance will increase from $33 million in 2025 to approximately $59 million in 2050
- **the Public Entity of St. Eustatius,** we estimate that the total expenses for depreciation and maintenance will increase from $7 million in 2025 to approximately $23 million in 2050
- **the Public Entity of Saba,** we estimate that total expenses for depreciation and maintenance will increase from $6 million in 2025 to approximately $16 million in 2050.

The task is large due to contextual factors and overdue maintenance

As the above figures show, the islands are facing major investments, a substantial part of which is not yet covered. This is firstly due to the system of financial coverage: at the moment it is customary for the government to cover large investments on the islands through separate, incidental payments. The coverage should therefore be created gradually over the next few years, investment by investment. This study now shows them in one go.

In addition, there are also substantive reasons why the costs are high. Under the principle of 'comply or explain' , all policy intensifications and the resulting legislation and/or financial consequences apply to the Caribbean Netherlands, unless there are reasons not to do so. In that case, tailor-made measures can be taken, which will still achieve the desired result in the Caribbean Netherlands. These measures must be assessed for their effect on the inhabitants of the Caribbean Netherlands.[42] However, in order not to allow the facilities in the Caribbean Netherlands to be too out of step with the European Netherlands, higher costs are needed. The islands require robust infrastructure that can withstand tropical conditions. That costs money. In addition, construction costs are high due to the small scale, high import costs for materials and in some cases also labor, and geographical and climate conditions.

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[42] *Parliamentary Papers II* 2022/23, 37 292, Letter to Parliament regarding the application of the comply or explain principle 23 June 2023

Finally, the islands are currently dealing with overdue maintenance. A large part of the current 'assets' on the islands are currently past the depreciation period and are in poor condition. In the coming years, an acute catch-up will be needed to replace infrastructure and to build additional infrastructure. The estimated investment costs are therefore highest in the years 2025-2030. After that, the costs of (new) investments will fall to lower levels (in the aftermath of this, however, depreciation costs and maintenance costs will continue to rise until about 2040 before stabilizing).

The cost estimates are the best possible approximation, but remain uncertain
The cost estimates are based as much as possible on realistic cost estimates of the islands themselves. Where necessary, these figures have been supplemented or validated with reference figures from other areas, such as the European Netherlands, the other countries in the Kingdom or data from the Caribbean Development Bank. This has made it possible to draw up a detailed estimate of the costs that the islands will incur for investments and maintenance. Nevertheless, there is still uncertainty in the figures that is typical of cost estimates of future infrastructure projects: the price may change in practice due to, for example, changes in exchange rates, changing project implementation or fluctuations in price levels, construction costs or exchange rates. Moreover, some of the cost estimates are based on limited information.

The challenge of implementation requires an alternative scenario
In addition, it is uncertain whether the estimated expenditure can be realised. During the investigation, various signals emerged that the capacity of the public entities and local contractors is limited. It is certainly conceivable that in practice they will not be able to carry out all the necessary investments. This can lead to underrealization. We cannot estimate exactly how big the shortage of implementation capacity is based on this study. However, we have worked out a balanced scenario for investments by the public entities in which the starting point is that capacity is built up gradually. The average investment costs remain the same as in the original scenario, but they are more gradually distributed over time. This creates a different cost picture every year. This can be seen in section 4.4.

Part of the costs for public entities is covered, but a larger part is uncovered Some of these expenses already have financial coverage, for example from the free payment of the BES fund, special payments or specific income. However, another part is (still) uncovered.

- **Bonaire** , we estimate that of the total expenses of the public entity for depreciation and maintenance in 2026 will still be approximately $8 - $21 million uncovered, and of the expenses in 2050 will still be approximately $21 million.
  $42 - $43 million.
- **St. Eustatius,** we estimate that total uncovered expenses for depreciation and maintenance will increase from $4 million in 2026 to approximately $16 million in 2050.
- **Saba,** we estimate that total expenses for depreciation and maintenance will increase from $3 - $4 million in 2026 to approximately $11 million in 2050.

Other parties on the islands may also have a task that is difficult to cover
In addition to the public entities, the utility companies on the islands also have a task in the field of investments in physical infrastructure. In principle, these investments are financed from the tariffs paid by the users, supported by subsidies to lower the tariffs for end users. In the past, however, this was not always the practice for large

Investment. One reason for this is that passing on large investments to a small number of users would lead to large rate increases. For this reason, we investigated which investments the utility companies identify as challenging to pay for themselves.[43] This concerns the following statement:

- **Bonaire**, we estimate a total of $402 million of these types of investments over the entire period that are not yet covered. This translates to $3 million in uncovered annual costs in 2026 and $11 million in 2050
- **St. Eustatius**, we estimate a total of $98 million of this type of investment over the entire period that is not yet covered. This translates to $0 million of uncovered annual costs in 2026 and $3 million in 2050
- **Saba**, we estimate a total of $84 million of these types of investments over the entire period that are not yet covered. This translates to $0 million of uncovered annual costs in 2026 and $3 million in 2050

6.2 Reflections AEF

Uncertain, but large and urgent task

In this report, a large number of estimates have been made of future costs. These estimates all have a certain degree of uncertainty, some more than others. Costs for materials can fluctuate and the context can change. In addition, not all information was always available and some plans had not yet been fully worked out at the time of these estimates.

At the same time, the estimates are based on a robust basis. For this report, individual estimates were carefully made for approximately 390 different *assets*. Some costs will be lower in reality and others higher. The totals are therefore probably more reliable than the individual estimates; Although some uncertainty always remains.

In this light, it is important not to see this report as an end point, but as a starting point. In the coming years, the overview from this report can be expanded, improved and renewed. In this way, the picture of the task can always be sharpened. To this end, discussions about the infrastructural task in the Caribbean Netherlands must continue between the public entities of Bonaire, St. Eustatius and Saba and the central government.

Although the task is uncertain, it is certain that it is large and urgent. Much of the infrastructure on the islands needs to be replaced, needs maintenance or needs to be expanded or modernized. Good physical infrastructure is important for the quality of life on the islands, resilience to climate change and weather conditions, and for economic development and self-reliance. This large and urgent task requires attention and action.

Execution power

Implementation power on the islands is a challenge that was mentioned by many stakeholders during this study. Both in terms of planning and project management at the public entities, as well as in the area of actual implementation during construction or improvement of assets, there is probably currently too little capacity to carry out all the investments and maintenance estimated in this study.

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[43] In the table on page 89, these costs are listed under 'challenging costs of other parties'.

It is therefore conceivable that part of the above estimated expenditure will not be realised in practice. However, the question of what the task is is separate from the question of whether the task can be carried out. In addition, the implementation capacity is not a given. If it turns out that the task is too great for the available implementation power, various (political) choices are conceivable. Is there investment in strengthening the implementation power in order to be able to tackle the full task? Will additional resources be used to possibly hire foreign workers? Or will a lower level of facilities be agreed to and on what points? This research provides reason and input for making those choices, but does not prescribe them.

We emphasise that if pragmatic choices are made in the follow-up process of this study about taking implementation power into account, it is important to look at the specific situation of the three islands. The various facets of shortage of implementation capacity (in the public entities, in the field of contractors, etc.) do not play out to the same extent on all three islands and within the islands not to the same extent for all different types of infrastructure. This challenge will therefore have to be considered on an island-by-island basis.

Funding structure

This research is based on a financing and funding structure in which the public entities finance investments by means of a loan and then capitalise and write off the investment. Such a structure does not yet exist. The funding would then focus on the annual maintenance costs, the annual depreciation costs and the interest charges[44]. At the moment, the public entities cannot borrow yet.

As long as it is not possible to borrow, the estimates of depreciation costs are not yet relevant and the investment costs plus maintenance costs plus interest costs must be considered. This changes the financing requirement. Even if borrowing is made possible for the islands, the question is whether they can borrow the full investment costs. We have not investigated whether the islands are sufficiently creditworthy to be able to borrow these amounts; it is uncertain whether banks with a public character (such as BNG Bank or Waterschapsbank) will be willing to lend to the public entities. It is also uncertain what investments of this size will do to the financial health of the public entities. If, for whatever reason, it turns out that the adopted structure is (partially) not workable, the figures should be viewed in that light.

Even if it is realistic that the public entities can borrow everything, we question the desirability of financing very large investments in this way. Investments such as the replacement of piers of a seaport or an airport runway are very decisive in the amounts that the islands need for, in particular, depreciation. These estimates, like all other estimates, have a degree of uncertainty. If, for example, the replacement of large elements of a seaport is 10% more expensive, this has major consequences for the public entity in question in this financing structure, which can hamper the performance of other tasks. In addition, if the funding of these large investments comes in the form of unearmarked funds (for example as an addition to the free allowance), their spending becomes the subject of local political decision-making. As a result, there is a risk that resources will be used for other (political) purposes with a greater perceived urgency in the short term than the replacement of infrastructural works. This is just as

[44] These interest charges were not identified in this study.

This is the case with funds for investments in infrastructure in municipalities, provinces and water boards in the European Netherlands, but for the public entities of Bonaire, St. Eustatius and Saba, these amounts are relatively much higher.

It is therefore worth considering whether certain large investments in the future should not also be made jointly with the relevant ministry and should not be included in advance in this structure.

In addition, we have now also processed the costs for utility companies in the same way. Financing these investments in this way would require a structural flow of money to the participations. That does not exist at the moment, all funding from ministries to the participations of the islands is in the form of incidental funds. When it comes to these incidental large investments for which utility companies indicate that they cannot pay for it from the tariffs, the question is whether a structural funding scheme is the appropriate solution. If this is not chosen, the estimates of the investment costs and not the estimates of the annual costs provide the necessary information.

/A Costs due to a hurricane

All three islands sometimes have to deal with a severe hurricane, which can cause a lot of damage. This is more common on Saba and St Eustatius than on Bonaire. This has been taken into account in many cost estimates, for example by estimating costs for the hurricane-proof construction of a building or the laying of cables and pipes underground. However, not everything can be built hurricane-proof and especially with hurricanes of the highest category, category 5, even reasonably hurricane-proof infrastructure is still susceptible to damage. We have estimated the costs of this by making assumptions about what proportion of assets would need to be replaced or largely renovated after a category 5 hurricane within a 250 km radius of the island.

Because damage from a hurricane is unpredictable, it does not make sense to add these costs to the islands' infrastructure task every year. If a proportional part of the costs is saved every year, but a hurricane is coming in a few years, there is not nearly enough budget together. That is why we present it separately here.

Results

	Bonaire	Sint Eustatius	Saba
Cost per hurricane	$267,351,682	$130,897,144	$91,077,275
Number of cat. 5 hurricanes	0,18	0,93	0,93
Costs until 2050	$48,609,397	$121,201,059	$84,330,810
Average cost per year	$1,944,376	$4,848,042	$3,373,232

The table above shows the estimated costs of a category 5 hurricane, how many of those hurricanes are expected up to and including 2050, what the costs are times that probability, and how much it costs on average annually.

The **costs are an underestimate**. This is because we have not estimated the replacement value of much of the cost-covering infrastructure, but this infrastructure can also be damaged by a hurricane. In reality, the costs are therefore even higher in the event of a hurricane.

Assumptions

This table shows for each category of infrastructure which part of the assets (weighted by replacement value) we consider realistic to need to be replaced.

Categorie	Hoofdcategorie	Bonaire	St. Eustatius	Saba
Luchthaven	Luchthaven	25%	25%	25%
Zeehaven	Zeehaven	25%	25%	25%
Wegen	Wegen, parkeren en openbaar vervoer	12,5%	12,5%	12,5%
Parkeerplaatsen	Wegen, parkeren en openbaar vervoer	12,5%	12,5%	12,5%
Openbaar vervoer	Wegen, parkeren en openbaar vervoer	25%	25%	25%
Waterbeheer	Waterbeheer	25%	25%	25%
Drinkwater	Drinkwater	25%	25%	50%
Afvalwater	Afvalwater	25%	25%	25%
Afvalverwerking	Afvalverwerking	25%	25%	25%
Vaste verbinding	Telecom	25%	25%	0%
Zeekabel	Telecom	25%	25%	25%
Brandstofopslag	Energie	50%	50%	50%
Energieopwekking	Energie	25%	25%	25%
Energienet	Energie	0%	50%	0%
Onderwijshuisvesting	Gebouwen	25%	25%	25%
Gebouwen OL	Gebouwen	12,5%	25%	25%
Maatschappelijke gebouwen	Gebouwen	12,5%	25%	25%
Andere gebouwen	Gebouwen	12,5%	25%	25%
Recreatie	Recreatie	25%	25%	25%
Landbouw	Landbouw	25%	25%	25%
Cultureel erfgoed	Cultureel erfgoed	25%	25%	25%

/ B Appendix: assets, estimates and coverage

In this appendix, we further break down the aggregated data mentioned above. For each island, we name the useful life used for each asset and the sources we used to arrive at our estimates. We also provide an overview of the sources for the existing coverage for each island that we have calculated. We always refer to the numbers from the source list per island. When no source is listed for the coverage of a particular asset, it means that we have not found coverage for it.

In this appendix, we do not provide estimates of the costs of individual assets. This is because this information is (business) sensitive for some assets. For this reason, we only present the costs in aggregate in the previous chapters.

Belangrijke kanttekeningen bij het lezen van deze bijlage:
- Tenzij anders aangegeven is de levensduur gebaseerd op de algemene aannames rondom levensduur op pagina 15.
- Tenzij anders aangegeven zijn de onderhoudskosten gebaseerd op de algemene aannames rondom onderhoudskosten op pagina 15.

B.1 Bonaire

B.1.1 Waste management

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Garbage trucks	7	60% not operational. Replace them first in 2025 and 2026, then every year over 5 years. Then continuous replacement; investment costs estimate Selibon
Containers	8	Assuming that this is part of the additional investments; Investment costs estimate OLB
Environmental center Playa	25	Replacement needed in 2026; Investment costs estimate OLB
Recycling center Rincon	25	adopted 75% service life; Investment costs estimate OLB
Waste center Lagun - landfill	40	Investments in finishing and water management from 2025, spread over 3 years; Investment costs and overdue maintenance estimate OLB
Incinerator	20	New, existing ones are no longer replaced; Investment costs estimate OLB
Machines separate waste	20	Replacement 2025 (year of construction adopted); Investment costs estimate OLB

Baler	15	Replacement 2025 (year of construction adopted); Investment costs estimate OLB
Shredder	15	Replacement 2025 (year of construction adopted); Investment costs estimate OLB
Shipping containers	8	Investment costs estimate OLB
Halls	40	Replacement 2025 (year of construction adopted); Investment costs and overdue maintenance estimate OLB
Incinerators	25	Two new incinerators, investment spread over 2 years; Investment costs estimate Selibon
Remediation of landfill	25	Investment costs estimate OLB
Refrigerated container for hospital waste	8	From 2026 in 2 years; Investment costs estimate Selibon
Additional investments	20	From 2026 in 5 years; Investment costs estimate OLB

Resources for existing coverage

Coverage	Source
Incinerators	Investment costs and depreciation from reserves OLB Reiniging (source[35] p. 89)
Structural coverage for maintenance	Assumption that half of the waste levy (source [35] p. 39) can be used for maintenance.

B.1.2 Wastewater

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Vacuum sewer coastline initially	45	Adopted 80% of initial investment; Investment costs source [1], indexed, share of total assumed on the basis of said depreciation costs in report; Source life [1]; Maintenance cost source [7] – average maintenance plan cost.
Sewage treatment engineering	25	Assumed 10% of initial investment; Investment costs and resource life [1], indexed, share of total assumed based on said depreciation expense in report
Sewage treatment electromechanical	15	Assumed 10% of initial investment; Investment costs and resource life [1], indexed, share of total assumed based on said depreciation expense in report
Irrigation pipes	40	Calculation based on source [2]
Sewer expansion 2023	45	Investment costs source[3]; Lifetime source [1]
Expansion WWTP 2023	20	Investment costs source[4]; Lifetime source [1]
WWTP	25	Source[5]
Expansion of WWTP	20	Investment costs source[6]; Source lifespan[1]

Small-scale water treatment plants (and extensions)	20	Assuming that the pilot is successful and that 3 more locations are realized every two years thereafter (42 small-scale treatment plants in 2040); Investment costs, lifespan and maintenance source[34]
Expansion of wastewater treatment in the future	Na.	So no concrete plans estimated.

Resources for existing coverage

Coverage	Source
Structural coverage for maintenance	Revenues from water treatment levies (source [4]) Assumption that a quarter can be used for maintenance; Supplementary until 2026 special allowance.
Coverage, maintenance and investment of small-scale water	Cover 40% of own costs for depreciation and maintenance (source[34])

B.1.3 Cultural heritage

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Passangrahan	Na.	Costs of maintenance and overdue maintenance estimated on the basis of experience figures, estimates and surface area of monuments by the RO department of OLB.
BC Office	Na.	See above.
Orange school (Cuba)	Na.	See above.
Protestantse kerk	Na.	See above.
Plaza machi mimi	Na.	See above.
HOF (Fort en OM)	Na.	See above.
LTS school	Na.	See above.
Slave huts white	Na.	See above.
Slave huts yellow	Na.	See above.
Slave Hospital (SKAL)	Na.	See above.
The Magic of Burning	Na.	See above.
Magasina Rincon	Na.	See above.
Karpata	Na.	See above.
BC Rincon	Na.	See above.
Country House Washington	Na.	See above.
Fountain water bowls	Na.	See above.
Fountain tenant house	Na.	See above.
Doune office	Na.	See above.
Cash in Regatta	Na.	See above.

Resources for existing coverage

Dekking	Bron
Not applicable	

B.1.4 Drinking water

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Aquatic plant	Na.	Not estimated, because covered by tariffs
Water tanks	Na.	Not estimated, because covered by tariffs
Main pipes	Na.	Not estimated, because covered by tariffs
Other piping network	Na.	Not estimated, because covered by tariffs
Other components of drinking water	Na.	Not estimated, because covered by tariffs
Post treatment	25	Only partly covered by rates. Source[37]
Seawater intake & brine outlet	25	Only partly covered by rates. Source[37]
Huisvesting Hato 2e Stage	40	Only partly covered by rates. Source[37]
Uitbreiding drinkwater treatment plant & post treatment	25	Only partly covered by rates. Source[37]
5e Tank Fun Song	25	Only partly covered by rates. Source[37]

Resources for existing coverage

Coverage	Source
New investments (bottom 5 rows)	Investment costs and depreciation: 30% covered by tariffs. Source: WEB.

B.1.5 Energy

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Solar park	Na.	Not estimated, because covered by tariffs
Diesel generators	Na.	Not estimated, because covered by tariffs
Main distribution network (high and medium voltage)	Na.	Not estimated, because covered by tariffs
Low voltage underground	Na.	Not estimated, because covered by tariffs
Low voltage above ground	Na.	Not estimated, because covered by tariffs
Transformer houses	Na.	Not estimated, because covered by tariffs
Storage	Na.	Not estimated, because covered by tariffs
New fuel storage	Na.	Not estimated, because covered by tariffs
New sustainable energy generation	20	Spread over 3 years. Investment costs: source

Resources for existing coverage

Coverage	Source
New sustainable energy generation	Capital costs and depreciation: at least 50% covered by Contour Global source: conversation WEB.
Other investment and maintenance costs	Not estimated, because covered by tariffs

B.1.6 Buildings

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
All existing buildings OL	40	Estimate based on the number of OLE employees and office space standards (Arbonorm NEN). Replacement value estimate OLB, adjusted from source [15]
All school buildings	40	Based on standards of educational housing, just under half of schools have recently been renovated. Assumption that the other half will be renovated in the next 6 years; Estimate based on number of school children Bonaire - source [10] and standards school buildings - source [11], Replacement value based on recent tenders for schools.
All social buildings	40	Based on standards, assuming that it is replaced continuously; Estimate based on standards for community centres - source [14]. Replacement value estimate OLB, adjusted from source [15].
Library	40	Existing, but going to temporary building. New building 2028, incl. enrichment center etc.; Estimate based on the number of inhabitants Bonaire - source [9] and standard library area (60m2 per 1000 inhabitants) - source [12]. Replacement value estimate OLB, adjusted from source [15]
Archive	40	Based on Curaçao's estimate, assumption at 75% lifespan; Estimate based on source [13] adjusted to price level and size Bonaire.
Other existing buildings	40	Estimate of floor area based on source [39], construction price based on costs of school buildings and construction price of other buildings on Saba, scaled to price level.
Central government building	40	Schatting OLB

Resources for existing coverage

Coverage	Source
Maintenance of schools	School maintenance costs are not a task for the public entity and are in principle covered by the schools themselves. No costs are included for this and therefore no amount that covers these maintenance costs.
Maintenance of all existing buildings OL (after construction of new government building)	This cover is due to the disappearance of the OLB's rental expenses after the construction of a new central government building. This is estimated for 2029. The actual maintenance costs are lower than the amount. The remainder is deducted from other maintenance costs.

	Source [40]
Maintenance of other buildings (until construction of new government building)	Assumption that the OLB carries out maintenance with rental income. Source[35]

B.1.7 Agriculture

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Slaughterhouse	40	Estimate OLB
LVV site infrastructure plots	15	Users pay 0.37 m2 for land * 15 years rental. The rest from the OLB investment budget (Source: OLB)
LVV site, offices and warehouse	40	Complete renovation required, spread over 4 years Investment costs and lifespan: OLB directorate RNO.
LVV off-road machines existing	7	uniform replacement over service life from 2030 Investment costs and lifespan: OLB directorate RNO.
LVV site - machines new	7	Investment spread over the next 6 years. Investment costs and lifespan: OLB directorate RNO.
LVV site - park at entrance	20	No replacement, only maintenance after initial investment Investment costs and lifespan: OLB directorate RNO.
Public wells with mills/pumps	15	20 wells, replaced over the next 5 years, year of construction adopted Investment costs and lifespan: OLB directorate RNO.

Resources for existing coverage

Coverage	Source
LVV site infrastructure plots	From the OLB investment budget (according to OLB's email)
LVV site, offices and warehouse	From the OLB investment budget (according to OLB's email)
LVV off-road machines existing	From the OLB investment budget (according to OLB's email)
LVV site - machines new	From the OLB investment budget (according to OLB's email)
LVV site - park at entrance	From the OLB investment budget (according to OLB's email)
Public wells with mills/pumps	From the OLB investment budget (according to OLB's email)
Fish attraction devices	From the OLB investment budget (according to OLB's email)
Maintenance LVV terrain machines	Users pay 50% (source: OLB RNO)

B.1.8 Airport

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Runway lighting	12,5	Year of construction changed to year of replacement; Investment costs calculated on the basis of source [16], [17] and [18]; Previous replacement was 2012, so assuming that major maintenance is needed every 10 years. Assuming that you do major maintenance once and then replace everything, so replacement period 20 years. Replacement value equal to costs of overdue maintenance of today; Maintenance costs 2.5% of replacement value per year.
Platforms	20	Investment costs source[18]. Assume that the lifespan is 40 years and that the replacement costs are equal to the current overdue maintenance costs. Assumption that maintenance is required every 10 years for 2.5% of the replacement
Terminal	40	Assumption 75% service life; Investment costs: source [18] for what BIA wants to borrow for the expansion. The expansion is to grow to accommodate 600,000 passengers. So about a quarter more. So the prices here are assumed to be 4 times the prices before the expansion. Assuming that the lifespan is 40 years and that the replacement costs are equal to the current new investment costs. Assumption that maintenance is required every 10 years for 2.5% of the replacement
Job	30	Year of construction changed to year of replacement. In 2032 top layer (assuming extended lifespan by 10 years), then replacement for replacement value; The last major maintenance was in 2011, so completed about 15 years for major maintenance. Costs 2011 (source[19]) via index to 2024 costs
Air traffic control tower	40	Current tower was built in 2015 and put into use in 2017 (source[21]), previous tower served for 42 years, so completed replacement period of 40 years. Investment costs source[21]. Assuming that half of these were for the control tower. Price from 2017 converted to current replacement value.
Fencing	12,5	Replacement spread over 3 years; Newly posted in 2012 source[22]. Investment costs: From sources [17], [18] and [19] of Saba, costs for the construction of fencing (divided into easy, medium and hard).

		that on Bonaire everything is medium. The number of flight movements in 2023 was 14,230, and on Saba it was 3,640, about a factor of 4 more. Assuming that this also requires 4 times as much surface area, so twice as much circumference. Replacement costs by means of a rule of thumb from annual maintenance costs.
Security equipment	13	Assumption 75% service life; Investment costs: costs of equipment acquired from Saba. Assumption that 2 times as much is needed on Bonaire (as a new price). For the new investment, we assume that half of this will be needed (once).
Widebody stands	20	Investment costs estimated by BIA.
Extra platform	20	Investment costs: source [23]
Terminal expansion	40	Investment costs: source [23]
Jet parking facility	Na.	Plans are missing, so not estimated.
Electric flying	Na.	Plans are missing, so not estimated.

Resources for existing coverage

Coverage	Source
Runway lighting	First replacement: I&W and financing BIA (Interview BIA), assumption of next replacement cannot cover BIA itself, then it can (Interview BIA)
Fencing	Assumption: can cover BIA itself from 2035
Security equipment	J&V (Interview BIA)
Extra platform	I&W & OLB (Bron [23])
Terminal expansion	2/3rd of this covered. Airport improvement fee + financing BIA (Source [23])
Maintenance	Assumption based on BIA interview: BIA can cover 75% maintenance itself and 100% from
Depreciation	Item depreciation from annual accounts (source[16]), partly covers replacements that we also estimate. Added in ascending order

B.1.9 Recreation

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
All sports facilities	15	Investment costs and maintenance based on multi-year maintenance plan (source[24]); average per year
Swimming pool	20	Investment costs and lifespan based on special grant swimming pool (source[35] p. 83)
All playgrounds	18	Based on standards, leeway, investments spread over lifespan; Investment costs: standards based on source [14], prices adjusted based on source [24];

		Maintenance costs: based on European NL, adjusted to price level.
All the park	Na.	Area based on Open Street Maps, costs based on the European Netherlands * 1.5.

Resources for existing coverage

Coverage	Source
Construction and depreciation of	Special allowance (source [35] p. 83)
Maintenance	Budget of the Ministry of Health, Welfare and

B.1.10 Telecom

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Fiber optic network (existing)	Na.	Not estimated, because covered by tariffs
Copernet	Na.	Not estimated, because covered by tariffs
Airmax	Na.	Not estimated, because covered by tariffs
Central	Na.	Not estimated, because covered by tariffs
Towers	Na.	Not estimated, because covered by tariffs
Cable area	Na.	Not estimated, because covered by tariffs
Mobile infrastructure	Na.	Not estimated, because covered by tariffs
Fiber optic network (new)	45	Approx. 35% of households. Spread over 4 years from 2025; Investment costs estimated based on informal Telbo estimates.

Resources for existing coverage

Coverage	Source
Fiber optic network (new)	Partly covered by BES fiber optic deal, source: interview Telbon.
Other costs not estimated, because covered by tariffs	

B.1.11 Water

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Kadewand Malekon	Na.	No estimate due to missing information.
Saliñas in pools	Na.	Source [6] p. 11 indicates that overdue maintenance must be eliminated: dredging to the solid bottom. Regular maintenance and supervision required. Estimation of the costs of eliminating the overdue maintenance of Saliña di Vlijt. The other three are smaller.

		Assuming that the other three cost half of Saliña di Vlijt. So a total of 2.5 times these costs. Assumption that periodic maintenance is 1/5th of this overdue maintenance annually, so that all Saliñas can be maintained periodically. No replacement costs because it will not be replaced.
Checkers system	40	Source [28]: Overdue maintenance because almost all dams have now dried out. Normally everything is maintained every 2 years, so these costs once every 2 years.
Rainwater drainage system Kralendijk	40	Will be invested in in 2025, then assumed as new. Assumption that major maintenance is as expensive as upstream parts of Saliña di Vlijt, once every 10 years, lifespan of 20 years. Assumption that annual maintenance costs are 2.5% of replacement costs
Drainage south of island	40	Investment costs: assumption based on 1/4 of the maintenance costs of other Saliñas times 40 (starting point ratio of maintenance costs and replacement value).

Resources for existing coverage

Coverage	Source
Rainwater drainage system Kralendijk	Investment costs and depreciation: Covered by OLB source[35] p.76

B.1.12 Weigh

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Asphalt roads	20	204 km, of which 50% are in poor condition. Assumption uniform replacement over 20 years. Second replacement half of the cost; Source [27] gives 204 km in total. Investment 2025: verges + street furniture. Maintenance costs: Source [27] From conversations: construction costs in general. From conversation: second replacement half so cheap. Longevity from
Recently asphalted roads	20	approx. 16 km. Replace it again in 20 years for half the cost of construction, spread over 5 years.
Dirt roads in built-up areas	20	Assumption hardened in the next 10 years; OLB mentions 80 km, of which 7 have already been paved in recent years. Source [27] gives

		Replacement costs from calls. Lower limit adopted Longevity from interview OLB.
Dirt roads outside built-up areas	20	Assumption improved by 50% in the long term (crushing and scattering) from 2035; Source [27] gives 320 km, term of 3-4 years for maintenance and maintenance costs. Replacement costs from interviews: lower limit adopted. Longevity from interview OLB.
Expansion of road network	20	Assumption spread over the next 10 years; Source [27] gives costs for 2025 and that every year for five years. Assuming that this is about asphalt roads. Calculating the number of km via costs per km mentioned by OLB gives 25.39 km. Maintenance costs equal to existing roads. Longevity from interview OLB.
Stops, hubs and pitches	40	204 km, of which 50% are in poor condition. Assumption uniform replacement over 20 years. Second replacement half of the cost; [26] includes costs for "management and staff, planning, marketing/communication/website, infrastructure (mobility hub, bus stops, stands, etc.), unforeseen". Costs for 2024 are higher than later years. Assuming that these later costs are for personnel. So only the difference taken as an investment for the infrastructure.

Resources for existing coverage

Coverage	Source
Roads investment	One-off special allowance for roads in 2024-2025 (source[36] p. 12); Investment from OLB up to and including 2028 (source[35] p. 76); Existing reserve for OLB
Construction of stops, hubs and public transport stations	Covered from the OLB budget.
Road maintenance	Road tax income minus budget for personnel costs (source[35]); Assumption that this fully covers the maintenance costs and the surplus for depreciation is used.
Depreciation of roads	See above.

B.1.13 Seaport

Lifespan and resources by asset

Asset	Levensduur (jaren)	Opmerkingen en bron

North pier	40	Assumption 75% lifespan, pier must be paved. Investment paving from source [29]. Assumption that overdue maintenance is equal to costs from renovation 2016 [30]. Regular maintenance based on the assumption that overdue maintenance costs must be incurred once every 10 years. Replacement costs calculated back from annual maintenance and replacement period.
Center pier	40	Assumption that overdue maintenance is equal to costs from renovation 2016 [30]. Regular maintenance based on the assumption that overdue maintenance costs must be incurred once every 10 years. Replacement costs calculated back from annual maintenance and replacement period.
South Pier	40	Renovation in 2018, accepted as new; For sources, see above.
Quay wall	40	Assumption 75% service life; Source [29] includes the costs for the new port (p. 71). The costs for quay wall are estimated in it. This is also counted as replacement costs for the old port.
New port	40	Construction spread over 2 years; The investment costs and maintenance costs based on sources [32], [33], scenario Hato – scaffolding variant.
Depot for containers	40	Assumption same costs as depot at airport.

Resources for existing coverage

Coverage	Source
North pier	Budget OLB (bron [35] p. 77)
New port	Budget OLB (bron [35] p. 77)
Depreciation	Budget OLB (bron [18] p. 126)
Maintenance	Assumption 75% port dues for maintenance (same assumption as on St. Eustatius). Income from port dues from source[35] p. 43).

B.1.14 Sources Bonaire

#	Author	Definition	Link
1	ABC Advice	Het Bonaire Sewerage and Sanitation Project	ABC-Rapport-156.pdf
2	KPMG	Report Technical Evaluation BSSS Bonaire	Intern document
3	European Commission	Water and Sanitation for Bonaire - Report EC on implementation of the financial assistance provided to the Overseas Countries and Teritories	https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52024DC0437

4	WEB	Begroting Business Unit Waste Water	Intern document
5	Bonaire Reporter	Newspaper of February 27, 2009	https://bonairereporter.com/back_issues/2009/200905.pdf
6	Rijn & IJssel Water	Integrated Water Management on Bonaire	Public Entity Bonaire: Integrated Water Management
7	KPMG	Operating budget for the Wastewater Business Unit	721443.pdf
8	Experts of the Cultural Heritage Agency of the Netherlands, Restorative	Monument repair and maintenance Bonaire - estimates costs	Intern document
9	Central Bureau of Statistics	Residents of the Caribbean Netherlands 1 January 2024	
10	Central Bureau of Statistics	Caribbean NL; pupils and students in primary, secondary and vocational education	https://www.cbs.nl/nl-nl/cijfers/detail/84732NED
11	Reich Governmen	Implementation Decree on Facilities in Housing for Primary	https://wetten.overheid.nl/BWBR0008562/2022-08-01
12	APE	Costs of basic libraries according to the Directive	https://vng.nl/sites/default/files/publicatie_bijlagen/2014/20140115-BiblBasis-Eindrapport-Kosten-ape2007.pdf
13	Archief Curaçao	Costs archive Curaçao	Intern document
14	STIPO	Facilities Scan Knowledge Base - from people to meters	Microsoft Word - 2012-05 Stipo Knowledge base
15	Republic and Tias	Benchmark Social Real Estate	https://bouwstenen.nl/sites/default/files/uploads/Market-Reporting-Benchmark-Municipal-Real Estate-2024.pdf
16	BEER	BIA Annual Report	https://bonaireinternationalairport.com/wp-content/uploads/Annual Report-en-Jaarrekening-BIA-2023-online.pdf
17	Reich Governmen t	Environmental forecast 2025	https://www.rijksfinancien.nl/memorie explanatory note/2025/OWB/XII/part/3162726
18	IdeeVersa	Appendices for research on island tasks and resources	https:// www.rijksoverheid.nl/documeNTEN/Reports/2023/09/29/Appendix NB oek-research-island-tasks-and-resources-caribbean-netherlands
19	Aviation	Article refurbishing landing track	https://www.luchtvaartnieuws.nl/nieuws/category/3/airports/atsma-opens-

			refurbished-runway-flamingo-airport
20	Wikinews	Article commissioning control tower	https://nl.wikinews.org/wiki/Nieuwe_verkeerstoren_in_gebruik_genomen_op_Flamingo_Airport_Bonaire
21	Bonaire.nu	Article demolition of old tower	https://bonaire.nu/2017/08/30/sloop-old-tower-flamingo-airport-from-start
22	Wikipedia	Bonaire International Airport	https://nl.wikipedia.org/wiki/Bonaire_International_Airport
23	BEER	Plan for expansion of the airport	Intern document
24	OLB/VWS	MJOP sports facilities Bonaire	Intern document
25	Friend	Costs of playground equipment	
26	Public Entity Bonaire	Appendix to the public transport starting memorandum	Intern document
27	Public Entity Bonaire	Policy note on the 2025-2028 budget of the R&D Directorate	Intern document
28	Public Entity Bonaire	Damplan Bonaire	Intern document
29	MTBS	Research seaports Bonaire	Intern document
30	Arcadis	Technical survey piers 2016	Intern document
31	Public Entity Bonaire	Quay and pier maintenance plan 2017	Intern document
32	Ecorys	SCBA Cargo Port Bonaire	Intern document
33	CBP	Second opinion MKBA	Intern document
34	Witteveen & Bosch	Summary of costs and intended subsidies Water Circles	Intern document
35	Public Entity Bonaire	OLB Begroting 2025	Intern document
36	Reich Government	Overview of special benefits Caribbean Netherlands 2024	https:// www.rijksoverheid.nl/documeNTen/publications/2024/05/15/overzich t-special-benefits-caribbean-netherlands-2024

B.2 Sint Eustatius

B.2.1 Waste management

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Garbage trucks	7	Year of construction adopted; Investment costs: Estimate OLE-ENI - source [1]

Waste storage cells	40	Built 2014, commissioning 2017, new roof 2025; Investment costs: Estimate OLE-ENI - source [1]
Containers	8	Built 2014, commissioned 2017
Recycling center	40	Built 2014, commissioned 2017
Generator	15	Built 2014, commissioned in 2017; Investment costs derived from new generator from OLE estimate
Waste incineration plant	25	Built 2014, commissioning 2017, overdue maintenance; Investment costs: Estimate OLE-ENI - source [1]
Building waste incineration	10	Built 2014, commissioning 2017, overdue maintenance; Investment costs: derived from costs of new building from OLE estimate
Industrial Wood Chipper	8	Built 2014, commissioned in 2017; Investment costs: Estimate OLE-ENI - source [1]
Glass painter	8	Built 2014, commissioned in 2017; Investment costs: estimate OLE-ENI - source [1]
Miniloader	10	Built 2014, commissioned in 2017; Capital costs: derived from OLE-ENI estimate
Storage containers	15	Built 2014, commissioned in 2017; Investment costs: Estimate OLE-ENI - source [1]
Pilot	40	Built 2014, commissioned in 2017; Investment costs: estimate OLE-ENI and waste management plan source
Other existing infrastructure	25	Built 2014, commissioned in 2017; Investment costs: Waste management plan
New building	40	Investment costs: Estimate OLE-ENI - source [1]
New incineration plant	25	Investment costs: Estimate OLE-ENI - source [1]
Electricity generator	15	Investment costs: Estimate OLE-ENI - source [1]
Building for new incineration plant	40	Investment costs: Estimate OLE-ENI - source [1]
Glass processing plant	8	Investment costs: Waste management plan St. Eustatius
Plastic processing plant	8	Investment costs: Waste management plan St. Eustatius
Industrial metal presser for end-of-life vehicles	8	Investment costs: Estimate OLE-ENI - source [1]
Excavator	10	Investment costs: Estimate OLE-ENI - source [1]
Miniloader Excavator	10	Investment costs: Estimate OLE-ENI - source [1]
Water collection	25	Investment costs: Estimate OLE-ENI - source [1]
Cementing substrate	40	Investment costs: Estimate OLE-ENI - source [1]
New extra warehouse	40	Investment costs: Waste management plan St. Eustatius

Resources for existing coverage

Coverage	Source
New incineration plant	Special Allowance 'waste incineration plant' (source[30] p. 88)

Structurele dekking voor onderhoud	Kosten voor onderhoud vanuit OLE Bron[30] p. 46

B.2.2 Wastewater

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Sewer Oranjebaai	45	Investment costs based on source [3]; Life span assumed based on Bonaire.
Sewer connection buildings	45	Investment costs based on source [3]; Life span assumed based on Bonaire.
Sewage treatment plant	20	Investment costs based on source [3], scenario choice based on source [4]; Life span assumed based on Bonaire and adjusted based on input OLE; Maintenance adjusted due to location (a lot of salt problems).
Rioolwatertrucks	7	Investment costs based on source [3], scenario choice based on source [4]

Resources for existing coverage

Dekking	Bron
Not applicable	

B.2.3 Cultural heritage

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Dutch Reformed Church	Na.	Owned by OLE; ruin (no roof); List supplied including area estimates by experts from the Cultural Heritage Agency of the Netherlands, the Restoration Fund and OLE - source [5]; Maintenance and overdue maintenance costs: for ruins and forts estimate of $500 per year for incidental maintenance of all ruins and forts; estimate experts of the Cultural Heritage Agency of the Netherlands. Other buildings: estimated on the basis of Bonaire's costs per m2 adjusted to the St. Eustatius price level.
Synagogue Honen Dalim	Na.	Owned by OLE; ruin (no roof); maintenance costs: see above
Old School	Na.	Owned by OLE; maintenance costs: see above
King's Well	Na.	Owned by OLE; maintenance costs: see above
Lower Town, on either side of the northern end of the Bay	Na.	Owned by OLE; Ruin 'accompanied decay'; maintenance costs: see above

Road between Smoke Alley and Sampson's Well		
Lower Town, on the sea side of Bay Road between Sampson's Well and warehouse	Na.	Owned by OLE; Ruin 'accompanied decay'; maintenance costs: see above
Lower Town, on the cliff side of Bay Road between Sampson's Well and the Bay Path	Na.	Owned by OLE; Ruin 'accompanied decay'; maintenance costs: see above
Lower Town, on the cliff side of Bay Road between Bay Path and the Old Gin House Hotel	Na.	Private owners; Ruin 'accompanied decay'; maintenance costs: see above
Lower Town, on either side of the Bay Road between the Old Gin House Hotel/Golden Era Hotel and the drainage gutter just north of the Blue Bead Restaurant	Na.	Private owners; Ruin 'accompanied decay'; maintenance costs: see above
Lower Town, on the sea side of the Bay Road between the drainage gutter just north of the Blue Bead Restaurant and the small pier	Na.	Owned by OLE; Ruin 'accompanied decay'; maintenance costs: see above
Custom's House / Guard House	Na.	Owned by OLE; registered monument; maintenance costs: see above
Lower Town, on the Bay Road between the double warehouse (L12) and the seaside terrace of the Old Gin House Hotel	Na.	Private owners; Ruin 'accompanied decay'; maintenance costs: see above
Doncker's House Museum	Na.	Owned by historical foundation; maintenance costs: see above
the monuments office	Na.	Owned by OLE; maintenance costs: see above
Paper Corner Building	Na.	Owned by OLE; maintenance costs: see above
old Wilman's house	Na.	Owned by OLE; maintenance costs: see above
labour office / culture office	Na.	Owned by OLE; three buildings in total; maintenance costs: see above
ruïne The China house	Na.	Owned by OLE; maintenance costs: see above
ruins of Lutheran church and cemetery	Na.	Owned by OLE; maintenance costs: see above
Ruins of the old Anglican church	Na.	Owned by OLE; maintenance costs: see above
ruin care and tranquility	Na.	Owned by OLE; maintenance costs: see above

Four Gun Battery (built as Bourbon Battery; also: Battery Vaughan)	Na.	Owned by OLE; maintenance costs: see above
Waterfort (also: Nieuwe Fort (?), Hollandia (?), Fort/Battery Amsterdam, St. Anna Battery, Fort Waterloo)	Na.	Property unknown; part of Regiodeal; maintenance costs: see above
Rotterdam Battery, New Fort	Na.	Property unknown; part of Regiodeal; maintenance costs: see above
Battery Royal (ook: Fort Nassau)	Na.	Property unknown; maintenance costs: see above
Fort Panga (Islands: Signal Hil, Seinpost, La Vigie)	Na.	Property unknown; maintenance costs: see above
Fort Jussac	Na.	Property unknown; maintenance costs: see above
Tumble Down Dick Battery (ook: Tommelendijk, Battery Charlotte)	Na.	Property unknown; maintenance costs: see above
Battery Concordia	Na.	Owned by OLE; maintenance costs: see above
St. Louis Battery (also: Lucie)	Na.	Owned by OLE; maintenance costs: see above
Corre Corre Battery	Na.	Owned by OLE; maintenance costs: see above
the Windt Battery	Na.	Owned by OLE; maintenance costs: see above
Battery Frederick	Na.	Owned by OLE; maintenance costs: see above
Nassau Battery (also: Fort Nassau)	Na.	Owned by OLE; maintenance costs: see above
Dolijn Battery (also: Batterie La Haye)	Na.	Owned by OLE; maintenance costs: see above
Battery La Haye	Na.	Owned by OLE; maintenance costs: see above
Bouillé Battery (ook: Battery Citern)	Na.	Owned by OLE; maintenance costs: see above

Resources for existing coverage

Dekking	Bron
Not applicable	

B.2.4 Drinking water

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Aquatic plant	Na.	Not estimated, because covered by tariffs
Water tanks	Na.	Not estimated, because covered by tariffs

Well	Na.	Not estimated, because covered by tariffs
Main pipeline	Na.	Not estimated, because covered by tariffs
Underground pipes	Na.	Not estimated, because covered by rates; Overdue maintenance based on external research - source [7]:
Replacement of high-pressure points in the pipe network (>5 bar)	40	Pipeline network is unsuitable for the height differences on St. Eustatius. Therefore, replacement is needed on certain points. Investment costs: estimates based on external research agency (source[7])
Replacement of high-pressure points in the pipe network (2-5 bar)	40	Pipeline network is unsuitable for the height differences on St. Eustatius. Therefore, replacement is needed on certain points. Investment costs: estimates based on external research agency (source[7])
New RO Installation	25	Necessary for growth in water consumption; Investment costs: estimate STUCO –
Expansion of pipeline network	40	o.a. richting Zeelandia; Investment costs: calculated on the basis of figures STUCO – source[6]
Relocation of pipelines in Oranjebaai	45	Needed because of lower town projects; Estimate based on external research (source[8]) average between two alternatives.

Resources for existing coverage

Coverage	Source
Replacement of high-pressure points in the pipe network (>5 bar)	Investment costs and depreciation: Subsidy I&W (source: interview STUCO)
Depreciation and regular maintenance	Not estimated, because covered by tariffs

B.2.5 Energy

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
Solar park (existing)	25	Investment costs: assumption average between phase 3 and phase 4
Diesel generators	Na.	Not estimated, because covered by tariffs
Medium voltage underground	Na.	Not estimated, because covered by tariffs
Medium voltage above ground	Na.	Not estimated, because covered by tariffs
Low voltage above ground	Na.	Not estimated, because covered by tariffs
Transformer houses	Na.	Not estimated, because covered by tariffs
Fuel storage	Na.	Not estimated, because covered by tariffs
Solar park phase 3	25	Already planned; Investment costs: Estimate STUCO - source [6]
Solar park phase 4	25	Still in the planning phase; Investment costs: assumption same costs as phase 3.
Medium voltage extension	40	Adopted year of construction 2026; Investment costs: calculated on the basis of STUCO estimate – source[6]
Low voltage underground	40	Spread over 5 years, from 2027;

	Investment costs: calculated on the basis of estimate STUCO - source [6], information on number of inhabitants Statia - source [9] and number of dwellings per electricity house and average distance to electricity house in European NL - source [10]

Resources for existing coverage

Coverage	Source
Zone park phase 3	EU and KGG funds (source: interview STUCO)
Depreciation and regular maintenance of all	Not estimated, because covered by tariffs

B.2.6 Buildings

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
All existing buildings OL	40	Based on standards of office space, no more replacement is done (so no depreciation costs and maintenance only until the construction of a new building); Investment costs: estimate based on the number of OLE employees and office space standards (Arbonorm NEN)
All school buildings	40	Based on standards of educational housing, all schools built/renovated between 2015 and 2025; Investment costs: Information OCW; Maintenance of educational accommodation not a task OLE
Library	40	Based on average libraries, assumed halfway through the lifespan because still in good condition; Investment costs: estimate based on the number of inhabitants of St. Eustatius - source [9] and standard library area (60m2 per 1000 inhabitants) - Source [18]
Connecting houses	40	13, of which 8 still have to be built, spread over 2 years. Investment costs: Special grant (source [28] p. 143)
Other existing public buildings	40	Investment costs: no good estimate available; indicative amount taken and evenly distributed over service life.
Social housing	40	To be renovated with budget VRO, so replacement not included. Maintenance costs property OLE included. Bron: interview expert BMC.
New social rental homes	40	Only making construction and housing ready included, not yet clear what happens next. Maintenance not included, because ownership situation unclear. Bron: interview expert BMC.
Central OL building	40	Spread over 2 years;

		Investment costs: based on average estimate of the Central Government Real Estate Agency in 2018 (mentioned in discussions) and OLE in
Archive	40	Based on standards for office space, there is no longer any replacement; Investment costs: estimate based on costs of building the Curaçao archive scaled to the number of inhabitants and the price level of St. Eustatius (source: estimate of the Curaçao

Resources for existing coverage

Coverage	Source
Sheltered housing	Investment costs: Special grant (source [28] p. 143)
Maintenance of schools	School maintenance costs are not a task for the public entity and are in principle covered by the schools themselves. No costs are included for this and therefore no amount that covers these maintenance costs.
Maintenance of other buildings	Expenditure OLE (overdue and regular) maintenance of government buildings + income from rent (source[30] p. 14)

B.2.7 Agriculture

Lifespan and resources by asset

Asset	Lifespan (years)	Notes and source
LVV building	40	Investment costs: Estimate OLE-ENI - source [1]
Agro-processing plant - building	40	Investment costs: Estimate OLE-ENI - source [1]
Crop storage and cooling	40	Investment costs: Estimate OLE-ENI - source [1]
Storage of agricultural	40	Investment costs: Estimate OLE-ENI - source [1]
Slaughterhouse	40	Investment costs: Waste management plan St. Eustatius
Fishing building	40	Investment costs: Waste management plan St. Eustatius
Greenhouses (4)	40	Divide over two years from 2027; Investment costs: Estimate OLE-ENI - source [1]
Hydroponics Farm	40	Investment costs: Estimate OLE-ENI - source [1]
Irrigation system	25	Investment costs: Estimate OLE-ENI - source [1]
Draw	40	Investment costs: Estimate OLE-ENI - source [1]
Rainwater storage	40	Investment costs: Estimate OLE-ENI - source [1]
Watertruck	7	Investment costs: Estimate OLE-ENI - source [1]
Verwerkingsinstallatie	15	Investeringskosten: Raming OLE-ENI - bron [1]
Klein materieel zoals ploegen, grastrimmers, etc.	15	Investeringskosten: Raming OLE-ENI - bron [1]
Modelboerderij: veekralen (3)	20	Investeringskosten: Raming OLE-ENI - bron [1]
Modelboerderij: eierboerderij	20	Investeringskosten: Afvalbeheerplan Sint Eustatius - bron [2]

Bronnen voor bestaande dekking

Dekking	Bron
Investeringskosten slachthuis	Volledig gedekt door bijzondere uitkering (bron: interview)
Onderhoud slachthuis	OLE betaalt jaarlijks 'property management' aan het slachthuis. Aanname gedaan dat onze volledige onderhoudskosten voor het slachthuis daarmee gedekt worden (bron[30] p. 45)

B.2.8 Luchthaven

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Landingsbaan	40	Investeringskosten, afschrijving en onderhoud: bron [11], pagina 13-15. Kosten 2024 en 2025 als incidenteel aangehouden. Overige jaarlijkse kosten gemiddeld genomen. Maintenance term aan de hand van de pieken in de kosten genomen.
Baanverlichting	12,5	Zie hierboven.
Baanmarkering	20	Zie hierboven.
Regenwaterafvoer	40	Zie hierboven.
Aprons	20	Zie hierboven.
Hekwerk	22,5	Zie hierboven.
Security apparatuur	12,5	Zie hierboven.
Gebouwen	40	Investeringskosten, afschrijving en onderhoud: bron [12], pagina 13. Jaarlijks gemiddelde genomen, kosten t/m 2025 als incidenteel genomen. Als vervangingskosten de vervangingskosten van de terminal van Bonaire geschaald naar verhouding passagiers
Jet parking faciliteit	40	Investeringskosten: bron [13], pagina 6. Aanname: levensduur 40 jaar en elk jaar 2,5% aan onderhoud
Klimaatbeheersingssysteem	12,5	Investeringskosten, afschrijving en onderhoud: bron [14]

Bronnen voor bestaande dekking

Dekking	Bron
Jet parking faciliteit	Bijzondere uitkering BZK (bron [13])
Klimaatbeheersingssysteem	Investering OLE en RWS (bron[14])
Afschrijvingen	Uitgaven OLE bron[28] p. 120
Onderhoud	Uitgaven OLE bron[30] p. 25; Bijzondere uitkering onderhoud in 2025 (bron[30] p. 52)

B.2.9 Recreatie

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron

Sport park/speeltuin van Tonningenweg	15	Investeringskosten: Aangenomen hetzelfde als Golden Rock Speeltuin
Speeltuin golden rock	15	Investeringskosten: Bron [19], geïndexeerd
Cottage Ball Park voetbalveld (Cruyff Court)	20	Investeringskosten: Bron [20], investeringskosten teruggerekend van gemiddelde onderhoudskosten per jaar, geïndexeerd; Onderhoudskosten: bron [20], gemiddelde per jaar genomen
Cottage Ball Park zwembad	30	Investeringskosten: Bron [20], investeringskosten teruggerekend van gemiddelde onderhoudskosten per jaar, geïndexeerd; Onderhoudskosten: bron [20], gemiddelde per jaar genomen
Cottage Ball Park sporthall	20	Investeringskosten: Bron [20], investeringskosten teruggerekend van gemiddelde onderhoudskosten per jaar, geïndexeerd; Onderhoudskosten: bron [20], gemiddelde per jaar genomen
Cottage Ball Park fitness	20	Investeringskosten: Bron [20], investeringskosten teruggerekend van gemiddelde onderhoudskosten per jaar, geïndexeerd; Onderhoudskosten: bron [20], gemiddelde per jaar genomen
Cottage Ball Park club house	40	Investeringskosten: Bron [21], geïndexeerd
Cottage Ball Park softball field	20	Investeringskosten: Aangenomen hetzelfde als voetbalveld
Wilhelminapark	Nvt.	Aangenomen geen vervanging, alleen onderhoud; Onderhoudskosten: oppervlakte Wilhelminapark van Open Street Maps, kosten gebaseerd op Europees Nederland * 1,5
Nieuw park 1	20	Investeringskosten: Aangenomen zelfde oppervlakte als Wilhelminapark, kosten gebaseerd op kosten in VS; Onderhoud: oppervlakte Wilhelminapark van Open Street Maps, kosten gebaseerd op Europees Nederland * 1,5
Nieuw park 2	20	Zie bovenstaande.
Beach Volleybalveld	20	Investeringskosten: Bron [21], geïndexeerd
BMX-baan	20	Investeringskosten: Bron [21], geïndexeerd
Padelbaan	20	Investeringskosten: Bron [21], geïndexeerd
Tribunes	20	Investeringskosten: Bron [21], geïndexeerd
Uitbreiding zwembadgebied	20	Investeringskosten: Bron [21], geïndexeerd
Sport park/speeltuin Rosemary Lane of Whitewall area	15	Investeringskosten: Aangenomen hetzelfde als Golden Rock Speeltuin

Bronnen voor bestaande dekking

Dekking	Bron
Speeltuin Golden Rock	Bijzondere uitkering VWS (bron[30] p. 89)
Investeringen in sportfaciliteiten	Bijzondere uitkering wegwerken achterstanden VWS (bron[30] p. 89)
Onderhoud sportfaciliteiten	Dekking vanuit Rijk voor sport (bron[28] p. 65)

B.2.10 Telecom

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Onderstations	Nvt.	Niet geraamd, want gedekt uit tarieven
VDSL-net; glasvezel naar stations	Nvt.	Niet geraamd, want gedekt uit tarieven
VDSL-net; koper naar klanten	Nvt.	Niet geraamd, want gedekt uit tarieven
Glasvezelnet (bestaand)	Nvt.	Niet geraamd, want gedekt uit tarieven
Draadloos netwerk voor afgelegen gebieden	Nvt.	Niet geraamd, want gedekt uit tarieven
Mobiele telefonietorens	Nvt.	Niet geraamd, want gedekt uit tarieven
Apparatuur	Nvt.	Niet geraamd, want gedekt uit tarieven
Nieuwe mobiele telefonietorens	Nvt.	Niet geraamd, want gedekt uit tarieven
Glasvezelnet (nieuw)	45	Verdeeld over 4 jaar vanaf 2025; Investeringskosten: raming Eutel

Bronnen voor bestaande dekking

Dekking	Bron
Glasvezelnet (nieuw)	BES-deal glasvezel, bron: interview Eutel.
Overige kosten niet geraamd, want gedekt uit tarieven	

B.2.11 Waterbeheer

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Klifstabilisatiewerkzaamheden	40	Deels bestaand, 8.000.000 uitgevoerd, overige bedrag over 5 jaar verdeeld Investeringskosten: bron[25]
Afvoersloten rondom vliegveld	42,5	Green circle; Investeringskosten: bron [24]
Kustbescherming	23	Yellow circle, deels bestaand Investeringskosten: bron [24]
Golfbreker	23	Investeringskosten: bron [24]
Oranjebaaiweg (blue circle)	40	Blue circle; Investeringskosten: bron [24]
Aanvullende maatregelen	23	Investeringskosten: bron [24]
Wegerosiebescherming (bestaand)	23	Grey Circle Projects, aangenomen 75% bestaand; Investeringskosten: bron [24]
Wegerosiebescherming (nieuw)	13	Grey Circle Projects, aangenomen 25% nieuw, uitvoering verdeeld over 4 jaar; Investeringskosten: bron [24]

Bronnen voor bestaande dekking

Dekking	Bron
Klifstabilisatiewerkzaamheden	BU erosiebestrijding (bron[30] p.88)
Golfbreker	BU erosiebestrijding (bron[24])
Aanvullende maatregelen	BU erosiebestrijding (bron[24])
Wegerosiebescherming (nieuw)	BU erosiebestrijding (bron[24])

B.2.12 Wegen

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Weg naar Lynch incl. Weg naar de SDA school en parkeerplaats GDG school, Road to English Quarter, Behind the Mountain Road (Weg naar de GR resort)	40	3928 meter beton, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
James H. Hooker Road (airport boulevard phase 2)	40	422 meter beton, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
Road hospital to solar park (Queen Beatrix rd. Oost, Mansionweg, Paramiraweg Oost, Dr. H.A. Korthalsweg, Dr. B.W. Biesheuvelweg inclusief trotoirs Sandy rd.)	40	1702 meter beton, 1452 m2 bricks, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
Wegen Oranjestad-Zuid (woonwijk Oranjestad zuid Breedeweg, Binckesweg Methodist school, Christine Flanders Road, Alvin Patrick Road, Rosemary Lane west)	40	996 meter beton, 4980 m2 bricks, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
Wegen Bay Brow: Laura Rouse Road, James S. Rhoda Road, Hugh Lopes Road, Cornelis van Zanten Road, Leonard Saddler road, Catherine Lespier road	40	1033 meter beton, 7747 m2 bricks, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
Wegen Whitehook: Yellow bird road, Sandpiper road, Red tail hawk road, Bridalquail road, Trigette bird road	40	853 meter beton, 5971 m2 bricks, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: Bron [22]
Andere verharde wegen (slechte staat)	40	26.790 meter, 65% bad state. Assumed every year equal amount of road replaced between 2030 and 2040; Investeringskosten: bron [23] voor de afstanden, bron [22] voor de prijs

Andere verharde wegen (redelijke staat)	40	Aanname elk jaar gelijk deel vervangen tussen 2040-2050; Investeringskosten: bron [23] voor de afstanden, bron [22] voor de prijs
Onverharde wegen	40	20.571 meter, aanname dat de gehele lengte gelijk verdeeld over de levensduur wordt vervangen. Investeringskosten: bron [23] voor de afstanden, prijs gebaseerd op raming Bonaire.
Governor the Graaf school en optioneel reconstructie weg naar de SDA school inclusief additionele parkeerplaatsen	40	530 meter beton, 1732 m2 bricks, bouwjaar aangepast naar jaar van renovatie; Investeringskosten: bron [22]
Tweede weg naar Whitewall	40	Investeringskosten: interview OLE - ENI
Cul du sac Oranjebaai	40	Investeringskosten: interview OLE - ENI
Aanvullende weg naar haven	40	Investeringskosten: interview OLE - ENI
Parkeerterrein sportcomplex	40	Investeringskosten: bron [21]
Overige nieuwe parkeergelegenheid	40	Bouw verdeeld over 4 jaar vanaf 2026; Investeringskosten: bron[23] voor locaties, bron [22] voor de prijs

Bronnen voor bestaande dekking

Dekking	Bron
Weg naar Lynch incl. Weg naar de SDA school en parkeerplaats GDG school, Road to English Quarter, Behind the Mountain Road (Weg naar de GR resort)	Bijzondere uitkering project "road behind the mountain" bron [30]. p.88
James H. Hooker Road (airport boulevard phase 2)	Budget OLE; bron: interview OLE.
Onderhoud wegen	Aanname dat het OLE de inkomsten van wegenbelasting (min de personeelskosten) gebruikt voor onderhoud (bron[30] p. 22); Aanvullend in 2025 bijzondere uitkering onderhoud wegen (bron [30] p. 88)

B.2.13 Zeehaven

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Bestaande haven	40	Benodigd: uitbreiding golfbreker en kade, bouw van jachthaven en uitbreiding van roll-on-roll-off helling; Aanname haven op 75% levensduur; Aanname dat slechts een deel hoeft te worden vervangen vanwege aankomende nieuwe investeringen; Investeringskosten en (achterstallig) onderhoud: op basis van bron [26] percentages per object. Op basis van bron [27] totale kosten gespreid over achterstallig onderhoud en investering.

Nieuwe haven	40	Investeringskosten en onderhoud: bedrag uit 2022 exclusief gebouwen bron [29]. Aanname dat daar nog 50% bijkomt voor de gebouwen, onderhoud zelfde verhouding als huidige toename onderhoud.

Bronnen voor bestaande dekking

Dekking	Bron
Achterstallig onderhoud zeehaven	In 2025 bijzondere uitkering havenonderhoud (bron[30] p. 88)
Nieuwe zeehaven	Bijzondere uitkering wederopbouw haven (bron[30] p. 88)
Regulier onderhoud zeehavens	Aanname dat inkomsten havengelden (exclusief de inkomsten van het olieterminal) voor 75% gebruikt worden voor havenonderhoud (bron[30] p. 24); in 2025 eenmalige bijzondere uitkering voor havenonderhoud (bron[30] p. 88).

B.2.14 Bronnenlijst St. Eustatius

#	Auteur	Omschrijving	Link
1	openbaar lichaam Sint Eustatius - Economy, Nature, Infrastructure	Estimates provided for this research	Intern document
2	openbaar lichaam Sint Eustatius - Economy, Nature, Infrastructure	Afvalbeheerplan 2023-2030 Sint Eustatius final draft	Intern document
3	Royal Haskoning DHV	Project Plans Wastewater Statia Final	Intern document
4	openbaar lichaam Sint Eustatius - Economy, Nature, Infrastructure	Waste Management Project Proposal	Intern document
5	Experts van Rijksdienst voor het Cultureel Erfgoed, het Restauratiefonds en OLE	Beschermenswaardige panden St. Eustatius	Intern document
6	STUCO (Statia Utility Company)	Estimates provided for this research	Intern document
7	Aqualectra	Assessment report "Hydraulic Model"	Intern document
8	Heroes Corp International B.V.	Risk Assessment - the potential implications of the lower town project to STUCO's critrical infrastructure	Intern document
9	Centraal Bureau voor Statistiek	Bevolking Caribisch Nederland op 1 januari 2024	Bevolking Caribisch Nederland in 2023 met bijna duizend toegenomen | CBS

10	Liander	Hoe kiezen we de plek voor een elektriciteitshuisje	Hoe kiezen we de plek voor een elektriciteitshuisje | Liander
11	NACO (Royal HaskoningDHV)	F.D. Roosevelt Airport - Statia Long-term maintenance budget	Intern document
12	Royal Haskoning DHV	Meerjarenonderhoudsplan EUX Passenger Terminal Building - F.D. Roosevelt airport	Intern document
13	openbaar lichaam Sint Eustatius - PPMO	Memo DG Mobiliteit	Intern document
14	Rijkswaterstaat Grote Projecten en Onderhoud	Vertrouwelijk document	Intern document
15	Openbaar lichaam Sint Eustatius	Berekening kosten COS-gebouw	Intern document
16	Centraal Bureau voor Statistiek	Caribisch NL; leerlingen en studenten in po, vo en mbo	https://www.cbs.nl/nl-nl/cijfers/detail/84732NED
17	Rijksoverheid	Uitvoeringsbesluit voorzieningen in de huisvesting PO/VO	https://wetten.overheid.nl/BWBR0008562/2022-08-01
18	APE	Kosten van basisbibliotheken volgens de Richtlijn	https://vng.nl/sites/default/files/publicatie_bijlagen/2014/20140115-biblbasis-eindrapport-kosten-ape2007.pdf
19	Openbaar lichaam Sint Eustatius	Statia Play Provisional Budget	Intern document
20	OLE or MinVWS?	Multi-year maintenance plan sport facilities Sint Eustatius	Intern document
21	Openbaar lichaam Sint Eustatius - PPMO	Memo: Masterplan Sportcomplex	Intern document
22	openbaar lichaam Sint Eustatius - ENI	Wegen 2024-2031	Intern document
23	Royal Haskoning DHV	Masterplan Infrastructuur Sint Eustatius 2013	Intern document
24	Rijkswaterstaat	Plan van aanpak Sint Eustatius Erosiebestrijding	Intern document
25	openbaar lichaam Sint Eustatius - PPMO	Klifstabilisatieplan	Intern document
26	Witteveen en Bos	Renovatie Haven Sint Eustatius	Intern document
27	openbaar lichaam Sint Eustatius - Directie Transport	Harbor Development Progress Report Statia 2023	Intern document
28	IdeeVersa	Bijlagenboek onderzoek eilandelijke taken en middelen	https://www.rijksoverheid.nl/documenten/rapporten/2023/09/29/bijlagenboek-onderzoek-eilandelijke-taken-en-middelen-caribisch-nederland

29	Mike van Achteren	Thesis on new harbor on Statia	Intern document
30	openbaar lichaam St. Eustatius	Multi-annual budget 2025-2028	https://www.statiagovernment.com/documents/budgets/2024/10/03/multi-annual-budget-2025---2028

B.3 Saba

B.3.1 Afvalverwerking

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Vuilniswagens	7	4 trucks, 2 vervangen in 2025, 2 in 2029; Investeringskosten: bron [2]
Dumpplek boven Spring Bay	Nvt.	
Reguliere afvalpers 1	10	Aanname op 75% levensduur; Investeringskosten: bron [1] voor de prijs van de nieuwe pers; aanname dat de oudere even duur is.
Reguliere afvalpers 2	10	Zie bovenstaande.
Metaalpers	10	Investeringskosten: bron [1] + bron [2] for price
Grote afvalverbrandingsinstallatie	25	Momenteel gerepareerd, aanname als nieuw; Investeringskosten: gebaseerd op schattingen St. Eustatius.
Kleine afvalverbrandingsinstallatie	25	Aanname op 75% levensduur; Investeringskosten: gebaseerd op schattingen St. Eustatius.
Kantoor milieustraat	40	Gebouw is bestaand, maar moet volledig vervangen worden; Investeringskosten: bron [2]
Plasticverwerkingsinstallatie	10	Momenteel niet in gebruik.
Hardplastic shredder	10	Aanname 75% levensduur; Investeringskosten: aanname even duur als houtversnipperaar
Houtversnipperaar	10	Investeringskosten: bron [2]
Afvalopslagcontainers	10	Containers zijn bestaand, maar moeten volledig vervangen worden; Investeringskosten: bron [2]
Groenafvalverwerking Hell's Gate Gut (shredder en compostbakken)	15	Investeringskosten: bron [2]
Vastafvalverwerking Hell's Gate Gut (shredder en lekvrije opslagplek)	15	Investeringskosten: bron [2]
Sterilisatiematerieel medisch afval	10	Investeringskosten: bron [2]

Bronnen voor bestaande dekking

Dekking	Bron

Vuilniswagens	Bron[35]
Metaalpers	Bijzondere uitkering; bron: OLS
Houtversnipperaar	Bijzondere uitkering; bron: OLS
Vastafvalverwerking Hell's Gate Gut (shredder en lekvrije opslagplek)	Bijzondere uitkering (bron[59])
Afschrijvingen	Volgens bron[57] p. 163 geld vanuit OLS voor instandhouding afvalverwerking. Aanname helft voor afschrijving
Regulier onderhoud	Volgens bron[57] p. 163 geld vanuit OLS voor instandhouding afvalverwerking. Aanname helft voor onderhoud.

B.3.2 Afvalwater

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Afvalwaterzuiveringsinstallatie Under the Hill	15	Investeringskosten: bron [47] geïndexeerd.
Oplossing voor de behandeling van slib uit septic tanks	30	Schatting OLS

Bronnen voor bestaande dekking

Dekking	Bron
Niet van toepassing	

B.3.3 Cultureel erfgoed

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Hyacinth's Cottage	Nvt.	Eigendom OLS; Locatie aangewezen in bron [4]; Onderhoudskosten gebaseerd op Bonaire aangepast aan prijspeil Saba (zelfde verhouding als schoolgebouwen).
Guard House	Nvt.	Eigendom OLS; Locatie aangewezen in bron [4]; Onderhoudskosten gebaseerd op Bonaire aangepast aan prijspeil Saba (zelfde verhouding als schoolgebouwen); Achterstallig onderhoud aangenomen 20x jaarlijks onderhoud
Harry L. Johnson Museum	Nvt.	Eigendom OLS; Locatie aangewezen in bron [4]; Onderhoudskosten gebaseerd op Bonaire aangepast aan prijspeil Saba (zelfde verhouding als schoolgebouwen).
Viola Cottage next to Museum Grounds	40	Wordt aangekocht door OLS en daarna opgeknapt; Locatie aangewezen in bron [4];

		Onderhoudskosten gebaseerd op Bonaire aangepast aan prijspeil Saba (zelfde verhouding als schoolgebouwen).
Administration Building	Nvt.	Monument met huidige functie. Zie onderdeel 'gebouwen'.
Museum Grounds Playground	Nvt.	Monument met huidige functie. Zie onderdeel 'gebouwen'.
Queen Wilhelmina Park	Nvt.	Monument met huidige functie. Zie onderdeel 'gebouwen'.
Historic trail network	Nvt.	Onbekende hoeveelheid historische paden op het eiland; onderhoudskosten gebaseerd op schatting OLS.

Bronnen voor bestaande dekking

Dekking	Bron
Dekking (achterstallig) onderhoud historic trail network	Uit budget OLS (bron[35] p. 120); aanname dat geld in eerste instantie achterstallig onderhoud wegwerkt.

B.3.4 Drinkwater

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Water intake	28	Investeringskosten: bron [5]; Levensduur: bron [7]. 30% verminderd vanwege weersomstandigheden Saba.
Pompstations (6)	40	Investeringskosten: bron [8] Onderhoudskosten: bron [9]
Pompen (11 in gebruik, 4 reserve)	7	Investeringskosten: interview Saba Splash + installatiekosten bron [8]
Overig materieel RO-water	15	Onderhoud: bron [9] Investeringskosten: gebaseerd op onderhoudskosten en aanname 2,5% onderhoudskosten per jaar.
RO-water pijpen	35	Onderhoud: bron [9] Investeringskosten: gebaseerd op onderhoudskosten en aanname 2,5% onderhoudskosten per jaar. Levensduur: bron[36] lage schatting gekozen.
Saba Splash Bottling Plant gebouw	40	Onderhoud: bron [9] Investeringskosten: gebaseerd op onderhoudskosten en aanname 2,5% onderhoudskosten per jaar.
Saba Splash Bottling Plant materieel	15	Investeringskosten: bron [5] geïndexeerd naar 2024.
Saba Splash Bottling Plant uitbreiding gebouw	40	Investeringskosten: schatting Saba Splash
Uitbreiding RO-water netwerk naar Black Rocks	35	Schatting OLS
Desalinatie-installatie Saba Splash	7	Investeringskosten en levensduur gebaseerd op schattingen OLS.

Bronnen voor bestaande dekking

Dekking	Bron
Onderhoudskosten	Onderhoudsbudget OLS (bron[35] p. 102)

B.3.5 Energie

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Diesel generatoren – nieuw (2)	40	Voorheen bekostigd middels subsidie, wordt niet afgeschreven, onduidelijk hoe vervanging kan worden bekostigd;' Investeringskosten: interview Saba Electric Company.
Diesel generatoren – oud (3)	40	Krijgen in 2025 groot onderhoud. Aanname daarna nog 20 jaar levensduur. Investeringskosten: aanname even hoog als nieuwe generatoren.
Zonnepanelen fase 1 en 2	20	Voorheen bekostigd middels subsidie, wordt niet afgeschreven, onduidelijk hoe vervanging kan worden bekostigd. Investeringskosten: aanname even hoog als fase 3.
Zonnebatterijen fase 1 en 2	10	Voorheen bekostigd middels subsidie, wordt niet afgeschreven, onduidelijk hoe vervanging kan worden bekostigd. Bron: interview SEC.
Elektriciteitsnet (ondergronds)	Nvt.	Niet geraamd, want gedekt uit tarieven
Elektriciteitsnet (bovengronds)	Nvt.	Niet geraamd, want gedekt uit tarieven
Transformatorhuisjes (~30)	Nvt.	Niet geraamd, want gedekt uit tarieven
Brandstofopslag	25	Voorheen bekostigd middels subsidie, wordt niet afgeschreven, onduidelijk hoe vervanging kan worden bekostigd. Investeringskosten: gebaseerd op schattingen STUCO (St. Eustatius), aangepast naar omstandigheden Saba.
Elektriciteitsnet Wells Bay ondergronds	25	Aanleg al gepland; Investeringskosten: ramingen SEC
Elektriciteitsnet Mountain Road ondergronds	25	Aanleg al gepland; Investeringskosten: ramingen SEC
Zonnepark fase 3	20	Na fase 3 is het aandeel hernieuwbare energie 65%; Investeringskosten: ramingen SEC
Zonnepark fase 4	20	Na fase 4 is het aandeel hernieuwbare energie 89%; Investeringskosten: ramingen SEC
Slimme energiemeters	10	Voor alle huishoudens, verspreid over 3 jaren; Investeringskosten: ramingen SEC

Bronnen voor bestaande dekking

Dekking	Bron
Elektriciteitsnet Wells Bay ondergronds	SEC dekt dit uit eigen budget (Bron: SEC)
Elektriciteitsnet Mountain Road ondergronds	SEC dekt dit uit eigen budget (Bron: SEC)

Zonnepark fase 3	Fondsen uit EU en EZ (bron: interview SEC)
Afschrijving en regulier onderhoud alle assets	Niet geraamd, want gedekt uit tarieven

B.3.6 Gebouwen

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Sacred heart school en Saba comprehensive school	40	Vervanging gepland, bouw verdeeld over 3 jaar vanaf 2026 op basis van aanname; Investeringskosten: bron[10]
Godfried Bontenbal Technical Center	40	Na bouw nieuw 'technical center' krijgt dit gebouw een nieuwe functie. Investeringskosten: bron[10]
Public works gebouw	40	Aanname op 60% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Administration gebouw	40	Renovatie voltooid in 2027; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Public Health and Community Development gebouw	40	Gerenoveerd in 2023; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Department of Agriculture gebouw English Quarter	40	Aanname op 60% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Hyacinth House Windwardside	40	Zie cultureel erfgoed. In deze categorie alleen transformatie kantoorruimte meegenomen; Investeringskosten: gebaseerd op aannames.
Archief	40	Wordt volledig vervangen als onderdeel van 'uitbreiding administration gebouw'; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Tourist office	40	Gerenoveerd in 2021. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Red cross building	40	Aanname 30% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Archealogical center	40	Aanname 40% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Eugenius Johnson community center	40	Aanname 50% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Sunny Valley Youth Center	40	Gerenoveerd in 2021. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Artisan foundation building	40	Gerenoveerd in 2023. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Domestic violence shelter	40	Gerenoveerd in 2024. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.

Governor's Residence - Absolute Childcare	40	Gedeeltelijk gehuurd gebouw, gedeeltelijk prefab bijgebouwen. Aanname op 90% levensduur, maar vervanging alleen van prefabgebouwen en 50% bijdrage aan renovatiekosten hoofdgebouw. Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Library Carmen Simmons Cultural Complex	40	Investeringskosten: gebaseerd op daadwerkelijke kosten 2011 geïndexeerd bron[9]
Cove Bay building	40	Gerenoveerd in 2024. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Community Center Zion's Hill	40	Aanname 60% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
OYOHF Office building	40	Gerenoveerd in 2019, aanname als nieuw. Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
E&H Home Center	40	Aanname 40% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Child Focus building (hurricane shelter)	40	Gerenoveerd in 2012. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Bennet's Garage	40	Gerenoveerd in 2019. Aanname als nieuw; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Guard House	40	Zie cultureel erfgoed
Harry L. Johnson Museum	40	Zie cultureel erfgoed
Cottage next to museum grounds	40	Zie cultureel erfgoed
Satel Building	40	Aanname 60% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Sociale huurwoningen in bezit van OLS	40	16 in bezit van OLS, 10 in bezit OYOHF; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt. Onderhoudskosten: meegenomen conform St. Eustatius.
Public cemetery Zion's Hill	30	Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Public cemetery The Bottom	30	Aanname 75% levensduur; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Godfried Bontenbal Technical Center - St. Johns	40	Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Uitbreiding administration building	40	Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Old Satel Building	50	Gerenoveerd in 2001, wordt in 2025 nogmaals gerenoveerd; aanname dat dit de levensduur met 10 jaar verlengt; Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.
Nieuwe huisvesting childcare	40	Investeringskosten: oppervlakte gebaseerd op bron[9], bouwprijs $3800 per m2 gebruikt.

Enrichment center	40	Investeringskosten: gebaseerd op daadwerkelijke kosten 2017 geïndexeerd; bron [9]
Nieuw multifunctional center slavery past	40	Investeringskosten: aanname zelfde als enrichtment center.

Bronnen voor bestaande dekking

Dekking	Bron
Hyacinth House Windwardside	Transformatiekosten gedekt uit budget OLS.
Godfried Bontenbal Technical Center - St. Johns	OCW Convenant bron[11]
Uitbreiding administration building	BZK Regiodeal bron[11]
Enrichtment center	Gedekt uit Regiodeal BZK bron[11]
Nieuwe huisvesting childcare	Gedekt uit bijzondere uitkering Best4Kids SZW
Onderhoud	Onderhoudsbudget OLS + huurinkomsten.
Onderhoud scholen	Onderhoudskosten voor scholen zijn geen taak voor het openbaar lichaam en worden in principe gedekt door de scholen zelf. Hiervoor zijn geen kosten opgenomen en dus ook geen bedrag dat deze onderhoudskosten dekt.

B.3.7 Landbouw

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Gebouw OL-boerderij	40	Gehuurd. Aanname geen vervangingskosten; Investeringskosten: bron[2]
Tuin 'The Level' (Saba Reach)	40	Bron: OLS
Hydroponicsboerderij	40	Recent gebouw; uitbreidingen 2023 en 2024; Investeringskosten: bron[2]
Visserijgebouw	40	Investeringskosten: bron[2]
Slachthuis	40	Momenteel in containers die aan vervanging toe zijn; Investeringskosten: bron[2]
Uitbreiding OL-boerderij	40	Investeringskosten: OLS
Markt voor landbouwproducten	40	Investeringskosten: OLS
Loods in Fort Bay	40	Investeringskosten: bron[2]

Bronnen voor bestaande dekking

Dekking	Bron
Onderhoud visserijgebouw	Gedekt uit huurinkomsten.

B.3.8 Luchthaven

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Aprons	30	Investeringskosten: Bron [14], pagina 84, table 7-1 en pagina 86 table 7-6. Vooral beton, wat weinig

		onderhoud vraagt. Geïndexeerd, gecheckt en aangepast door OLS. Afschrijving: berekend door de aanname dat elke 10 jaar 5% van deze kosten worden gemaakt voor onderhoud.
FISO toren	30	Investeringskosten: Bron [14], pagina 84, table 7-1. Geïndexeerd, gecheckt en aangepast door OLS.
Veiligheidshekwerk	10	Investeringskosten: Bron [14], pagina 84, table 7-2. Geïndexeerd, gecheckt en aangepast door OLS.
Parkeerplaatsen	30	Investeringskosten: Bron [14], pagina 84, table 7-2. Berekend door de aanname dat elke 10 jaar 5% van deze kosten worden gemaakt voor onderhoud. Geïndexeerd, gecheckt en aangepast door OLS.
Terminalgebouw	40	Investeringskosten: Bron [14], pagina 85, table 7-3. Kosten van Bonaire genomen en geschaald naar rato passagiers voor replacement cost [21]. Geïndexeerd, gecheckt en aangepast door OLS.
Nieuwe security apparatuur	15	Investeringskosten: Bron [14], pagina 85, table 7-5. Geïndexeerd, gecheckt en aangepast door OLS.
Landingsbaan	30	Gerenoveerd in 2018; Investeringskosten: Bron [14], pagina 86, table 7-6, aanname dat groot onderhoud 10 jaarlijks is. Geïndexeerd, gecheckt en aangepast door OLS.
Helipad	30	Investeringskosten: Bron [14], pagina 86, table 7-6. Geïndexeerd, gecheckt en aangepast door OLS.
Brandweerweg	40	Investeringskosten: Bron [14], pagina 86, table 7-6. Geïndexeerd, gecheckt en aangepast door OLS.
Overige	13	Aanname 50% levensduur; Investeringskosten: Bron [14], pagina 86, table 7-6. Geïndexeerd, gecheckt en aangepast door OLS.
Bermen	30	Ongeveer 4700m^2; worden in 2025 vervangen. Investeringskosten: Bron [15], cel F64. Geïndexeerd, gecheckt en aangepast door OLS.
Baanverlichting	10	Investeringskosten: Bron [22], pagina 4 voor achterstallig onderhoud. Bron [20] voor onderhoudstermijn, onderhoudskosten, levensduur en vervangingskosten. Geïndexeerd, gecheckt en aangepast door OLS.
Taxiway en helipad taxiway	30	Investeringskosten: Bron [16], cel F92 en bron [14], pagina 86, table 7-6, aanname dat levensduur 40 jaar is. Geïndexeerd, gecheckt en aangepast door OLS.
Asfalt hekwerk	30	Momenteel geen plannen voor vervanging; Investeringskosten: Bron [20]. Geïndexeerd, gecheckt en aangepast door OLS.
Vertrekhal	40	Investeringskosten: Bron [20]. Geïndexeerd, gecheckt en aangepast door OLS.

Bronnen voor bestaande dekking

Dekking	Bron
Bermen	Vervanging 2025: dekking I&W
Baanverlichting	Vervanging 2025: reserves OLS

Onderhoud	Inkomsten van airport fees en bijzondere uitkering voor onderhoud in 2025 (bron [35] p. 60).

B.3.9 Recreatie

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Cove Bay speeltuin	17	Wordt gerenoveerd in 2025. Daarna als nieuw; Investeringskosten: bron [49] geïndexeerd.
Child Focus speeltuin	17	Nieuw gebouwd na orkaan Irma; Investeringskosten: gebaseerd op normen voor speeltoestellen per speeltuin (bron[23]) en Amerikaanse prijzen voor speeltoestellen (bron[24]) x 1,5.
Museum speeltuin	17	Investeringskosten: gebaseerd op normen voor speeltoestellen per speeltuin (bron[23]) en Amerikaanse prijzen voor speeltoestellen (bron[24]) x 1,5.
St. John's speeltuin	17	Bouwjaar gebaseerd op schatting OLS; Investeringskosten: gebaseerd op normen voor speeltoestellen per speeltuin (bron[23]) en Amerikaanse prijzen voor speeltoestellen (bron[24]) x 1,5; Achterstallig onderhoud: aanname 5 keer jaarlijks onderhoud als achterstallig onderhoud.
Under the Hill speeltuin	17	Investeringskosten: bron[48], geïndexeerd.
Johan Cruyff Sportsfield	25	Gerenoveerd in 2022. Aanname als nieuw. Investeringskosten: berekend obv onderhoudskosten uit bron[25]. Onderhoudskosten: bron [25] gemiddeld per jaar.
Princess Juliana Sportsfield	25	Gerenoveerd in 2021. Aanname als nieuw. Investeringskosten: berekend obv onderhoudskosten uit bron[25]; Onderhoudskosten: bron[25] gemiddeld per jaar.
Fit Park	20	Klein park met openbare sporttoestellen. Wordt gerenoveerd in 2025. Aanname als nieuw; Investeringskosten: bron[25].
School gymgebouw	40	Wordt volledig vervangen in 2025; Investeringskosten: bron[11].
Cove Bay strandgebied	20	Gerenoveerd in 2024. Aanname als nieuw; Investeringskosten: bron[10]. Onderhoudskosten: gebaseerd op ramingen parkonderhoud in Europees Nederland.
Queen Wilhelmina Park	20	Gerenoveerd in 2024. Aanname als nieuw; Investeringskosten: geen bron. Onderhoudskosten: gebaseerd op ramingen parkonderhoud in Europees Nederland.
Well's Bay Road prieel	40	Aanname 50% levensduur; Investeringskosten: grove schatting.
Zwembad	30	Investeringskosten: gemiddelde uit twee schattingen bron[26].

Bronnen voor bestaande dekking

Dekking	Bron
School gymgebouw	Investering: bijzondere uitkering VWS (bron[11] p.5); Onderhoud: verantwoordelijkheid van de school.
Onderhoud Johan Cruyff Sportsfield	Gedekt door subsidies VWS (bron: interview OLS)
Overig onderhoud recreatie	Gedeeltelijk uit budget OLS; ramingen IdeeVersa geïndexeerd (bron[57] p.67)

B.3.10 Telecom

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Glasvezelnetwerk		Niet geraamd, want gedekt uit tarieven
Kopernetwerk		Niet geraamd, want gedekt uit tarieven
Mobiele infrastructuur		Niet geraamd, want gedekt uit tarieven
Glasvezelnetwerk (nieuw)		Investeringskosten: budgetplannen Satel
Nieuw materieel op nieuwe toren Mt. Scenery.		Eenmalige herinvestering omdat Mt. Scenery-toren wordt vervangen door Defensie; Investeringskosten: gebaseerd op materieel torens St. Eustatius.

Bronnen voor bestaande dekking

Dekking	Bron
Glasvezelnetwerk (nieuw)	BES-deal glasvezel en inkomsten Satel, bron: budgetplannen Satel.
Nieuw materieel op nieuwe toren Mt. Scenery.	Gedekt door Satel uit eigen budget. Bron: interview Satel.
Overige kosten niet geraamd, want gedekt uit tarieven	

B.3.11 Waterbeheer

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Regenwaterafvoer	23	Project loopt 2024-2026. Investeringen meegenomen in 2025 en 2026. Investeringskosten: Bron [27]. Kosten voor nieuwe investering alles van project, kosten voor vervanging hetzelfde, maar zonder de kosten voor onderzoek
Openbare cisternen	23	Aanname 50% levensduur. Investeringskosten: Bron [28]. Het gaat om 12 cisternen. De kosten zijn ingeschat via bron [29] en [30]. Volgens [30] is het gemiddelde voor een huishouden 2000 gallons. Saba heeft zo'n 800 huishoudens aanname dat de public cisterns voor

		de helft zijn (en de rest via eigen cisterns onder huizen), dus cisterns voor 0,8 miljoen gallons nodig, verdeeld over 12 grote cisterns geeft 66.667 gallons per cistern. Volgens [29] zijn cisterns boven de 5.000 gallons gemiddeld $14.000. Dat zou dus 13 * $14.000 geven. Met indexatie van x1,37
Keerwanden	Nvt.	Zie 'wegen'.
Overige afvoer	23	Investeringen verdeel over 5 jaar vanaf 2025. Investeringskosten: aanname 10x bedrag huidige afvoerprojecten.

Bronnen voor bestaande dekking

Dekking	Bron
Niet van toepassing.	

B.3.12 Wegen

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Bestaande wegen	50	Aanname: gelijkmatige vervanging verdeeld over levensduur; Investeringskosten: Afstand geschat op basis van Google Maps. Prijs gebaseerd op kosten aanleg wegen St. Eustatius. Levensduur: gebaseerd op afschrijftermijnen Saba.
Bestaande paden	40	Aanname: gelijkmatige vervanging verdeel over levensduur; Investeringskosten: Bron [50] voor paden met tijd per pad. Bron [51] voor gemiddelde afstand per tijd. Bron [52] voor gemiddelde kosten per jaar per afstand.
Rotsnetten Fort Bay Road (148 m)	22	Investeringskosten: Bron [37], pagina 1
Aanvullende rotsnetten Fort Bary Road	22	Mogelijk oplossingen opgesteld op basis van risk assessment. Nog geen concrete plannen/budget.
Rotsnetten The Road tussen The Bottom en de haven	22	Investeringskosten: Bron [39], pagina's 9-12. Gemiddelde van de vier opties. En bron [40] voor jaarlijkse kosten (pagina's 30, 38, 46, 57)
Verbreden The Road en Saba wall bij Pump House (77 m)	50	Investeringskosten: Bron [38], pagina 1. Levensduur: gebaseerd op afschrijftermijnen Saba.
Veiligheidsmuur tussen St. John's en Windwardside	40	Eén sectie voltooid, twee secties volgen; Investeringskosten: Bron [41], pagina 2.
Parkeerplaats The Range (1200 m2)	40	Investeringskosten: Bron [10]

Grote parkeerplaats Windwardside (2500 m2)	40	Gerenoveerd in 2016. Investeringskosten: Bron [35]
Kleine parkeerplaats Windwardside (600 m2)	40	Investeringskosten: Gebaseerd op grote parkeerplaats Windwardside, naar rato oppervlakte.
Parkeerplaats St. John's (1000 m2)	40	Aanname 50% levensduur. Investeringskosten: Gebaseerd op grote parkeerplaats Windwardside, naar rato oppervlakte.
Bushalte St. John's	40	Investeringskosten: Bron [42], pagina 16
Bushalte Hell's Gate	40	Investeringskosten: Bron [42], pagina 16
Aanleg weg Black Rocks – Giles Quarter (eerste deel)	50	Investeringskosten: Bron [43], afgerond. Levensduur: gebaseerd op afschrijftermijnen Saba.
Aanleg weg Black Rocks – Giles Quarter (tweede deel)	50	Investeringskosten: Aanname 2,5x zo duur als eerste deel op basis van gesprekken OLS Levensduur: gebaseerd op afschrijftermijnen Saba.
Aanleg weg bestaand tankstation – Black Rocks	50	Investeringskosten: bron[43]
Aanleg parkeerplaats Church Street	40	Investeringskosten: Gebaseerd op parkeerplaats St. Johns, naar rato oppervlakte, aanname oppervlakte 1000m2
Nieuwe parkeerplaats school	40	Investeringskosten: Gebaseerd op parkeerplaats St. Johns, naar rato oppervlakte, aanname oppervlakte 1000m2. Kosten gehalveerd vanwege dekking uit plan nieuw schoolgebouw.
Overige investeringen parkeerplaatsen	40	Investeringskosten: Gebaseerd op parkeerplaats St. Johns, naar rato oppervlakte, aanname oppervlakte 1000m2
Bushalte Windwardside (2026)	40	Investeringskosten: Bron [17], pagina 19, aanname: 40 jaar levensduur, Onderhoud elke 10 jaar tegen 25% van kosten
Bushalte The Bottom (2027)	40	Investeringskosten: Bron [17], pagina 21, aanname: 40 jaar levensduur, Onderhoud elke 10 jaar tegen 25% van kosten

Bronnen voor bestaande dekking

Dekking	Bron
Aanleg weg Black Rocks – Giles Quarter (eerste deel)	Gedekt door bijzondere uitkering Black Rocks Harbor. Bron: interview OLS.
Aanleg tankstation	Gedekt door bijzondere uitkering Black Rocks Harbor. Bron: interview OLS.
Bushalte St. Johns	Gedekt uit budget OLS voor openbaar vervoer.
Bushalte Hells Gate	Gedekt uit budget OLS voor openbaar vervoer.
Nieuwe parkeerplaats school	Gedekt uit bijzondere uitkeringen voor enrichment center en OCW convenant.
Onderhoud door afdeling public works	Betaling van onderhoudskosten uit VU (naast BU I&W) genomen als structurele dekking.

	Geïndexeerd (bron[60] p.18); in 2025 bijzondere uitkering wegenonderhoud (bron[35] p. 60).

B.3.13 Zeehaven

Levensduur en bronnen per asset

Asset	Levensduur (jaren)	Opmerkingen en bron
Fort Bay Harbor – Harbor office I (renovatie)	40	Renovatie gepland Q1 2025; aanname 50% levensduur; Investeringskosten en onderhoud: Bron [45], cel B5. Aanname dat achterstallig onderhoud gelijk is aan tienjarig onderhoud.
Fort Bay Harbor – Harbor office II (upgrade elektra)	15	Recent gerenoveerd; aanname als nieuw; Investeringskosten: Bron [44], pagina 2.
Fort Bay Harbor – haven infra (golfbreker, kades, etc.)	40	Gedeeltelijk gerenoveerd in 2023. Reparatie nodig in 2025 wegens storm. Investeringskosten: Bron [45], cel B6, B7; voor kostn multipurpose pier gemiddelde genomen van renovatie Grey Jetty en Big Pier. Ten slotte in 2023 kosten gemaakt voor renovatie outside waiting area. Aanname dat dit eens in de 10 jaar moet. Schattingen gecontroleerd en aangepast door OLS. Vervangingskosten onbekend, dus gelijk gehouden aan die van St. Eustatius (deze zijn vrijwel gelijk aan die van Black Rocks en de nieuwe haven voor Bonaire).
Black Rocks Harbor – haven infra (golfbrekers, kades, etc.)	40	Investering verdeeld over 2025 en 2026; Investeringskosten: bron [46] p. 22; kosten aangepast aan de hand van meest recente budgetplannen gebaseerd op prijzen van aannemers (bron: OLS).
Black Rocks Harbor – kantoor	40	Investeringskosten: schattingen van aannemers (bron: OLS)
Bescherming invasieve diersoorten	Nvt.	Investeringskosten: aanname 1% extra jaarlijkse kosten op budget haven.
Fort Bay Harbor – uitbreiding containeropslagplaats en oeverbekleding	40	Investeringskosten: schattingen van aannemers (bron: OLS)

Bronnen voor bestaande dekking

Dekking	Bron
Black Rocks Harbor – haven infra (golfbrekers, kades, etc.)	Bijzondere uitkering Black Rocks Harbor + eigen financiering OLS (bron [58])
Fort Bay Harbor – uitbreiding containeropslagplaats en oeverbekleding	Bijzondere uitkering Black Rocks Harbor + eigen financiering OLS (bron [58])
Afschrijving haven	Ramingen IdeeVersa geïndexeerd (bron[57] p. 126)

Onderhoud haven	Ramingen IdeeVersa geïndexeerd (bron[57] p. 126); in 2025 bijzondere uitkering onderhoud (bron[35] p.61)

B.3.14 Bronnenlijst Saba

#	Auteur	Omschrijving	Link
1	openbaar lichaam Saba	Budgetten afvalbeheer 2023	Intern document
2	openbaar lichaam Saba	Project Proposal Waste Management - Improvements 2024	Intern document
3	Witteveen & Bos	Samenvatting kosten en beoogde subsidies Water Circles Bonaire	Intern document
4	Experts Rijksdienst voor Cultureel Erfgoed, Restauratiefonds en OLS	Raming onderhoudskosten cultureel erfgoed	Intern document
5	openbaar lichaam Saba	Confidential document	Intern document
6	openbaar lichaam Saba	Getekende purchase agreement Saba Bottling Plant 2020	Intern document
7	Waterboards - Gov. California	Typical equipment life expectancy water infrastructure	https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/tmfplanningandreports/Typical_life.pdf
8	openbaar lichaam Saba	Investments into Water Management System financial breakdown (Public Entity)	Intern document
9	openbaar lichaam Saba	2025 Cost price calculation water - OLS	Intern document
10	openbaar lichaam Saba	Overview assets PES	Intern document
11	openbaar lichaam Saba	Project Plan School Campus	Intern document
12	openbaar lichaam Saba	Overheidsgebouwen openbaar lichaam saba	Intern document
13	openbaar lichaam Saba	Multiyear maintenance plan Sacred Heart School	Intern document
14	NACO - Royal Haskoning DHV	Saba Airport Master Plan	Intern document
15	openbaar lichaam Saba	Confidential document	Intern document
16	openbaar lichaam Saba	Confidential document	Intern document

17	openbaar lichaam Saba	Confidential document	Intern document
18	openbaar lichaam Saba	Confidential document	Intern document
19	openbaar lichaam Saba	Confidential document	Intern document
20	openbaar lichaam Saba	Kosten beheer en onderhoud vliegveld	Intern document
21	openbaar lichaam Saba	Confidential document	Intern document
22	openbaar lichaam Saba	Confidential document	Intern document
23	Stipo	Kennisbank voorzieningenscan	
24	Kompan	Prices for example playgrounds	
25	openbaar lichaam Saba	Multiyear maintenance plan Sport facilities Saba	Intern document
26	openbaar lichaam Saba	Saba Pool Budget	Intern document
27	openbaar lichaam Saba	Project Proposal Rainwater Management and Erosion Control	Intern document
28	openbaar lichaam Saba	Confidential document	Intern document
29	ANGI	What's the cost of a cistern	Rainwater Collection Systems: What's the Cost of a Cistern? | Angi
30	Tanks-a-lot	5 Things to consider when sizing cistern holding tanks	Cistern Holding Tanks Alberta | 5 Things to Consider When Sizing Cistern Holding Tanks | Tanks-A-Lot Ltd.
31	CBC News	Storm drainage Edmonton	'New normal' for Edmonton storm drainage would cost $2.6B, city report says | CBC News
32	Carson City	Storm drainage Carson	Storm drainage cost: from $9 million to $30 million | Serving Carson City for over 150 years
33	San Juan County	Storm drainage Spanish Valley	spanish_valley_storm_water_mp_final_1.pdf
34	City of Sheridan	Storm drainage Sherigan	Cover.indd
35	openbaar lichaam Saba	Multiannual budget Saba	Intern document (draft version)
36	Centraal Bureau voor Statistiek	Caribisch NL; leerlingen en studenten in po, vo en mbo	https://www.cbs.nl/nl-nl/cijfers/detail/84732NED
37	openbaar lichaam Saba	Confidential document	Intern document
38	openbaar lichaam Saba	Confidential document	Intern document

39	openbaar lichaam Saba	IC Update Fort Bay Road below S-Curve	Intern document
40	Alite BV	Hillside Risk Assesment	Intern document
41	openbaar lichaam Saba	Confidential document	Intern document
42	openbaar lichaam Saba	Public Transport Plan	Intern document
43	openbaar lichaam Saba	Confidential document	Intern document
44	openbaar lichaam Saba	Confidential document	Intern document
45	openbaar lichaam Saba	Fort Bay projects overview	Intern document
46	openbaar lichaam Saba	Confidential document	Intern document
47	openbaar lichaam Saba	Costs sewage Under the Hill	Intern document
48	openbaar lichaam Saba	Cost estimate Under the Hill playground	Intern document
49	openbaar lichaam Saba	Cost estimate Cove Bay Playground	Intern document
50	Sabapark	Overview hiking on Saba	https://sabapark.org/mount-scenery-national-park/plan-your-hike/
51	Swedish tourist association	Overview hiking speeds	https://www.swedishtouristassociation.com/guides/mountains/hiking-speed/
52	Weconservepa	Trail conservation costs	https://weconservepa.org/wp-content/uploads/2021/06/TrailMaint2021_TableText-1.pdf
53	Centraal Bureau voor Statistiek	Caribisch NL; leerlingen en studenten in po, vo en mbo	https://www.cbs.nl/nl-nl/cijfers/detail/84732NED
54	Rijksoverheid	Uitvoeringsbesluit voorzieningen in de huisvesting PO/VO	https://wetten.overheid.nl/BWBR0008562/2022-08-01
55	APE	Kosten van basisbibliotheken volgens de Richtlijn	https://vng.nl/sites/default/files/publicatie_bijlagen/2014/20140115-biblbasis-eindrapport-kosten-ape2007.pdf
56	Centraal Bureau voor Statistiek	Bevolking Caribisch Nederland op 1 januari 2024	Bevolking Caribisch Nederland in 2023 met bijna duizend toegenomen | CBS
57	IdeeVersa	Bijlagenboek onderzoek eilandelijke taken en middelen	https://www.rijksoverheid.nl/documenten/rapporten/2023/09/29/bijlagenboek-onderzoek-eilandelijke-taken-en-middelen-caribisch-nederland
58	openbaar lichaam Saba	Havenproject Saba	Intern document
59	Ministerie van IenW	Bijzondere uitkering urgent waste management issues	Internal document

60	openbaar lichaam Saba	Multi-Annual Budget 2023-2026	https://www.sabagov.nl/management-organization/about-public-entity-saba/finance/multi-annual-budget