



# 9th International Conference on MANAGING PAVEMENT ASSETS (ICMPA9)

## From Nothing to Something... Creating a Road Maintenance Culture in Tonga

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# Kingdom of Tonga

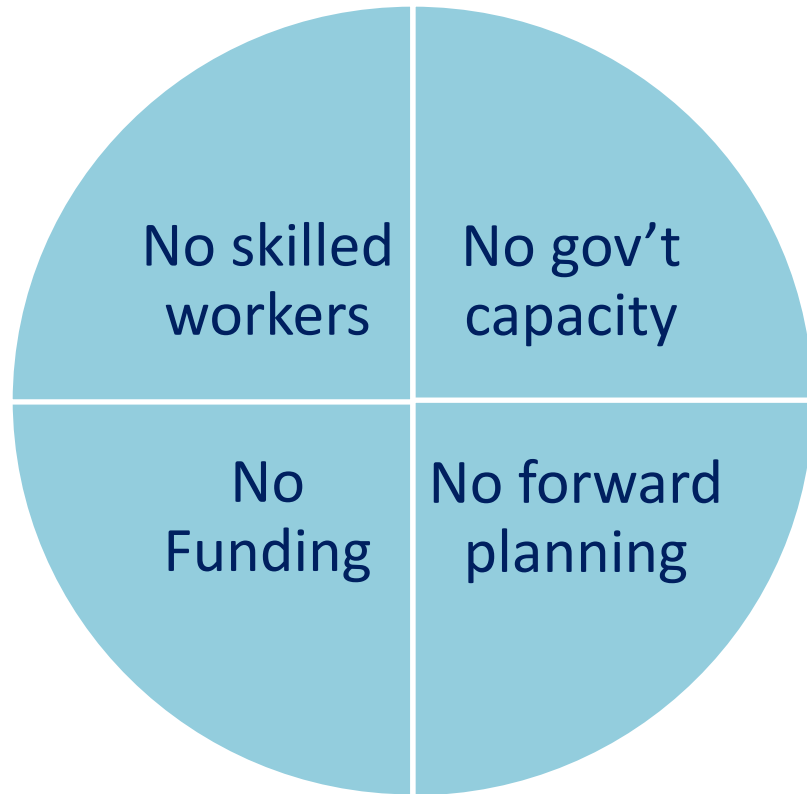
- Population 105,000
- 870 km road network
- > 90 % sealed
- Most < 1,000 vpd
- Coral construction with hard well-draining basecourse



# Tonga's Roads



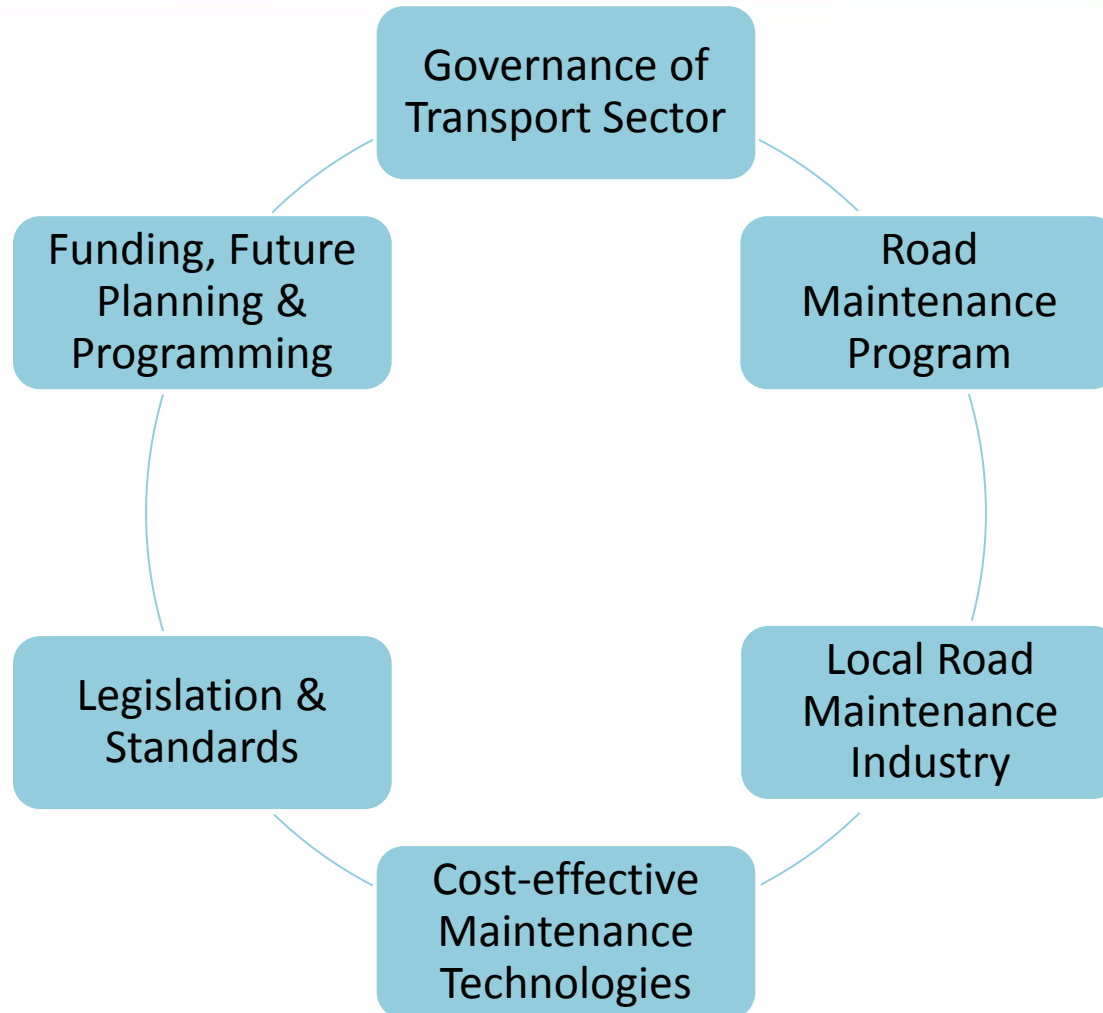
# What is the Problem...?



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# Approach



# Improve Governance

## Ministry of Works

- Road maintenance
- Day works

## Ministry of Transport

- Legislation
- Enforcement
- Management of services

## Ministry of Infrastructure

- Regulatory function
- Legal and policy
- Asset management
- Safety and security

Divestment Program

# Domestic Road Maintenance

## Step 1: Contractor Capacity

### Funding

- Capacity Development vs
- Physical Investments

### Interest

- 32 local firms

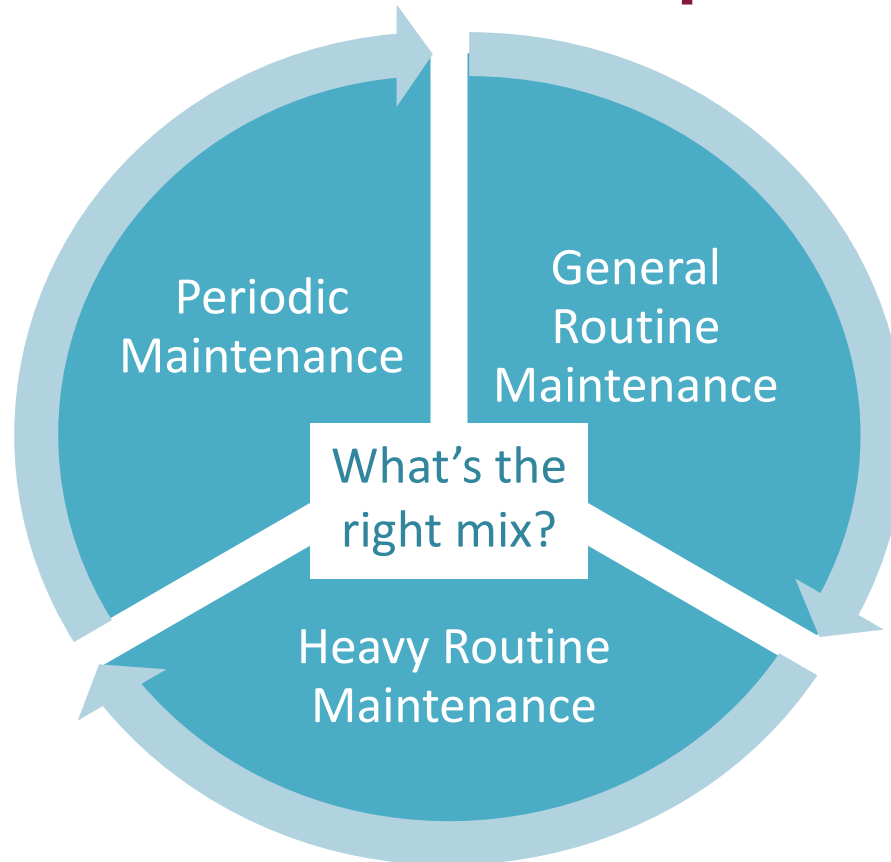
### Training

- Bidding
- Civil Works
- Environmental H&S
- Business Operations



# Domestic Road Maintenance

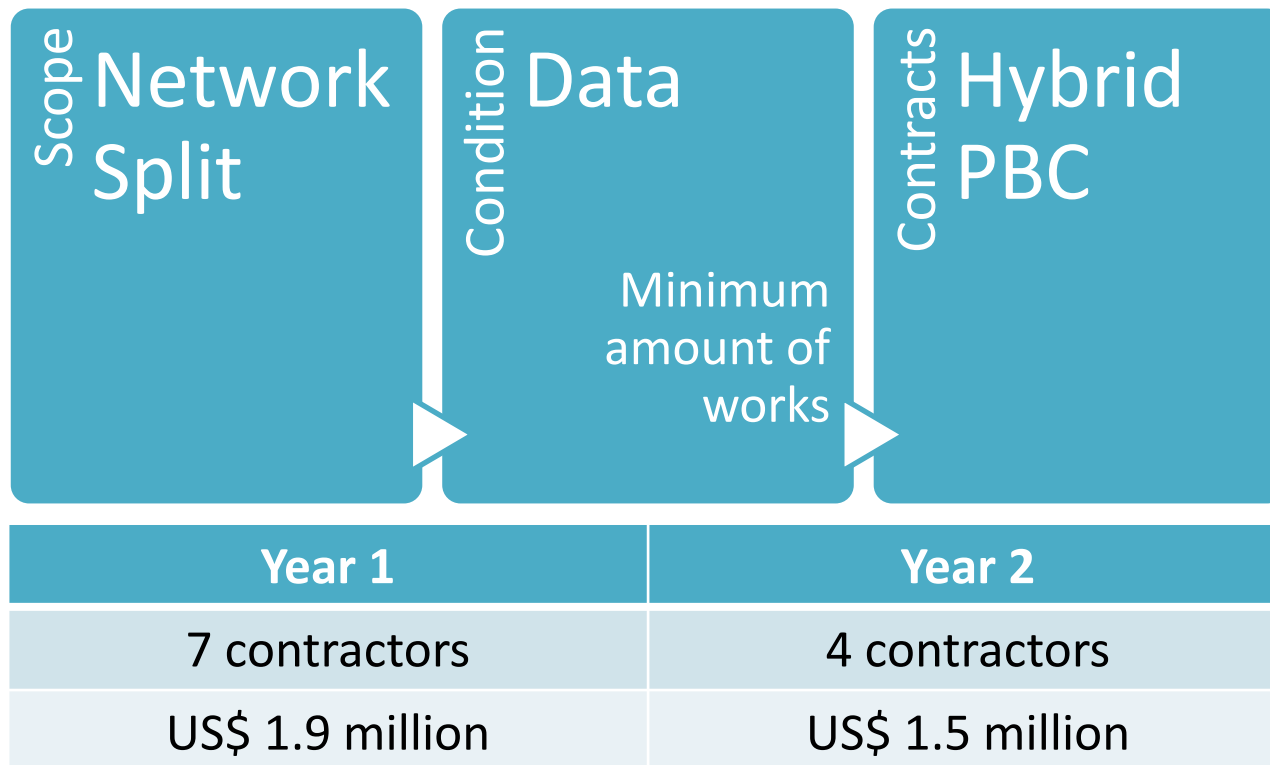
## Step 2: Road Maintenance Requirements





# Routine Maintenance

## Step 3: Routine Maintenance Contracts



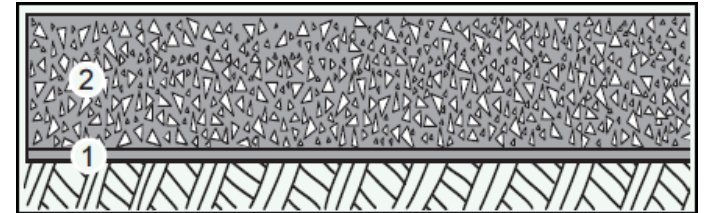
- Less variation amongst contract prices, more interest from bidders

# Periodic Maintenance: What to Do?

Quarry	Aggregate Dry Strength (kN)
Ahononou	133
Nishi	101
Malapo	95
Royco	87
Vete	85
Chinese	83
Tafolo	60

## Typical Specifications

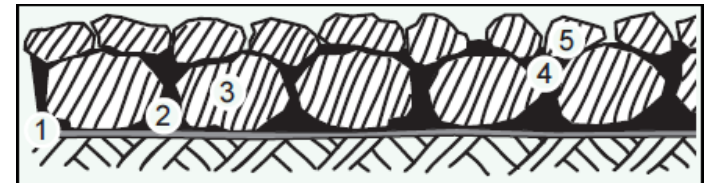
Asphaltic Concrete  
>160 kN



Chip Seal  
> 150 kN



Otta Seal  
90-110 kN



# Otta Seal Programme



## PRESS RELEASE

### Investing in New Technologies for Road Maintenance



The Ministry of Infrastructure's Land Transport Division has started rolling out a new road maintenance technique after learning lessons on recently completed trail sections. A local contractor, Vava'u Construction, is now resealing Holoipepe Road with an Otta Sealing surface. The process uses a layer of small aggregate and builds an asphalt style road (similar to the road to the airport) that results in a strong surface treatment that will withstand large volume of traffic, vehicle turning stress and the high impact of solar radiation.

The acting Director of Land Transport Division, Tevita Lavemai has said that, "this style of road maintenance has the ability to minimize the cost to correct badly deteriorated pavements and give an even wearing surface in one application, saving costs, time and inconvenience to the travelling public".

Further to this the acting Director believes that with the lesson learnt in Tonga by using Otta Seals in this Tongan style of road maintenance may well be adopted by other counties in the Pacific region.

The works are funded by the World Bank and Australian Aid, as part of their commitment under the Transport Sector Consolidation Project. This project is assisting the Government to achieve its strategic objectives of providing 'appropriate, well planned and maintained infrastructure that improves the everyday lives of the people and lowers the cost of business, by the adequate funding and implementation of the National Infrastructure Investment Plan.'

The Ministry is now looking forward to implementing a larger scale road maintenance program next year with roads resealed and routine maintenance tasks such as pothole patching and cutting grass. So the travelling public will start to see a noticeable improvement in road conditions.



# Road Safety



# Legislation & Technical Standards

## Legislation

- Roads Act
- Traffic Act

## Road Maintenance Fund

- Funding Mechanisms

## Technical Standards

- Otta Seals
- Contract Management

# Lessons Learned

- Takes a lot of time and effort
- Contractor competition
- Training
- Experience
- Review and Update



## PRESS RELEASE

Men and Women Hard at Work



Drivers would have noticed that the Ministry of infrastructure has started work between Nuku'alofa and the airport, with these hard-working men and women, cutting grass to improve the safety and drainage on this road. The public will also notice shortly the installation of new road signs and pedestrian crossings.

According to the acting Director for Land Transport, Tevita Lavemai "this is the first of 12 significant contracts being undertaken under the Transport Sector Consolidation Project, to repair roads and make them safer".

The Ministry has recently awarded another three contracts to local contractors to start repairing bitumen roads around Tongatapu. The Ministry is also about to award another seven contracts employing many more men and women to cut grass alongside the roads, clear drains and patch potholes in the road.

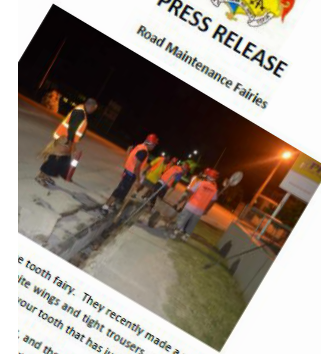
According to Mr Lavemai "proper tendering out of road maintenance of roads around the country has just started, the first time the government has done anything like this for a long time, representing a huge step towards improving the roads around the country".

The Ministry has asked that drivers be aware of workers on the road. If you come across one of these group of hard-working men and women, please slow down and give them space.



## PRESS RELEASE

Road Maintenance Fairies



the tooth fairy. They recently made a movie by the same name like wings and tight trousers. The tooth fairy places money in your tooth that has just fallen out. and these fairies fix roads. These are big strong men in shiny jackets and shovels to fix the roads so that drains along Vuna Road. Although fairies prefer therefore, we were lucky to catch a glimpse of

as part of a rolling 12 month routine to Tongatapu, 'Eua, 'Ha'apa and Vavau. to reduce pothole and clean drains. we carrying out the works. A local spu districts.

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# Acknowledgements

- Government of Tonga
- Australian Government
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- World Bank Group



**Ministry of Infrastructure**

Kingdom of Tonga



**Australian Government**

**Department of Foreign Affairs and Trade**



**WORLD BANK GROUP**