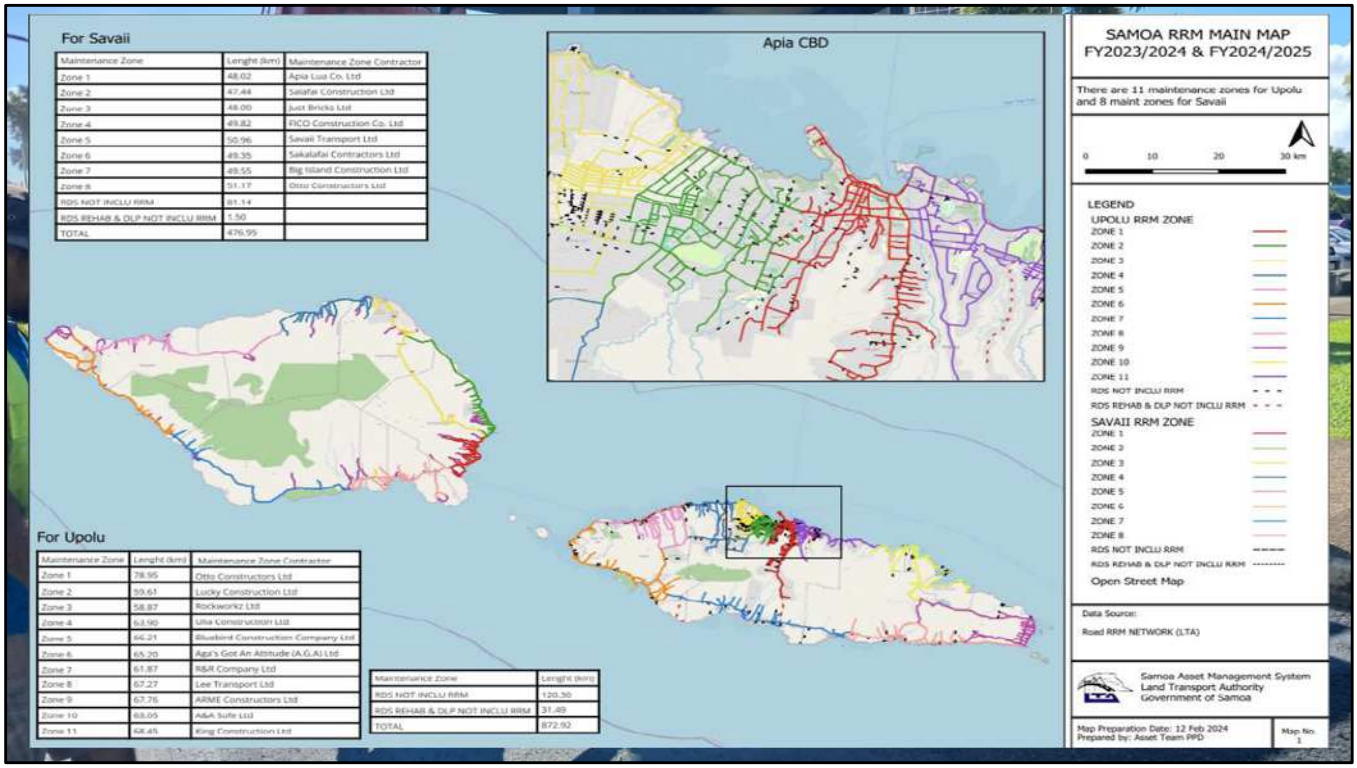

Lta.gov.ws
JICA
Summary Report &
Action Plan - Samoa
Tauveve Timothy Salale Moananu
Civil Engineer Contracts & Asset Management
Master of Disaster Risk & Resilience
LTA


OVERVIEW
01 Samoa Road Maintenance
02 Lessons from Okinawa
03 Future Opportunities
04 Application to Samoa
05 Conclusion
06 Acknowledgement
07 Reference
08 Q & A

SAMOA ROAD ROUTINE MAINTENANCE

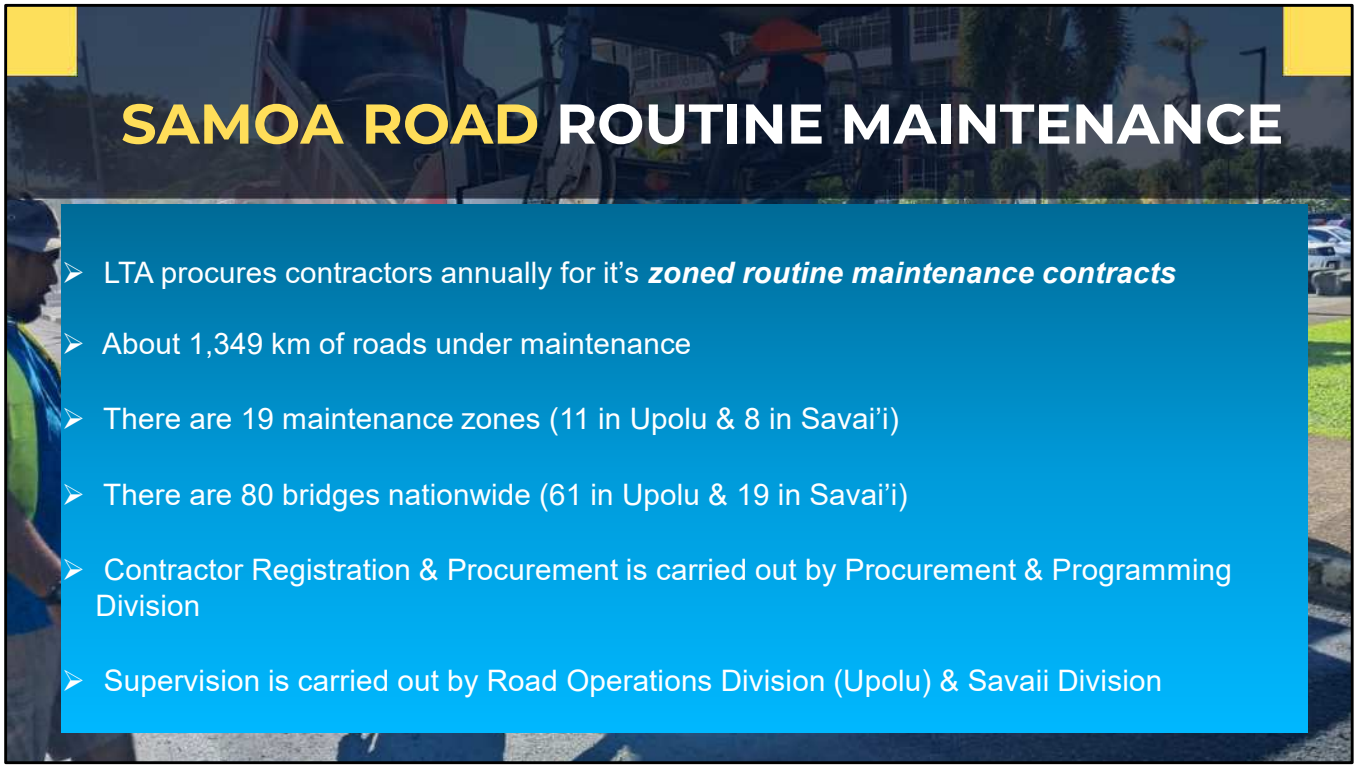


Samoa is a pacific island in the Southern Hemisphere located about 8000km South East of Okinawa

Samoa consist of two main islands (Savaii & Upolu). Majority of the population reside in Upolu where the capital Apia is situated.

Samoa's road maintenance is divided into zones as color-coded on this map

Each zone represents a single-contract between LTA and the Contractor responsible for the particular zone



SAMOA ROAD ROUTINE MAINTENANCE

- LTA procures contractors annually for it's ***zoned routine maintenance contracts***
- About 1,349 km of roads under maintenance
- There are 19 maintenance zones (11 in Upolu & 8 in Savai'i)
- There are 80 bridges nationwide (61 in Upolu & 19 in Savai'i)
- Contractor Registration & Procurement is carried out by Procurement & Programming Division
- Supervision is carried out by Road Operations Division (Upolu) & Savaii Division

Emergency works – Samoa has a cyclone season (November to April)

Schedules 1, 2, 3

1. Routine Maintenance (Preventative maintenance)
2. Corrective Maintenance – Rehabilitation
3. Emergency Works

SAMOA ROAD ROUTINE MAINTENANCE

NORMAL ROUTINE

RESEALING & REHABILITATION

EMERGENCY WORKS

The Government of Samoa through LTA intends to tackle key issues in road maintenance, including limited technical capacity, inefficient asset management systems, and the vulnerability of our road network to climate change and extreme weather events.

Resource constraints often make it difficult to implement cost-effective and sustainable maintenance practices, leading to higher long-term repair costs and reduced service life of infrastructure. By participating in this program, LTA aims to strengthen its ability to plan, manage, and maintain roads more effectively, ensuring safer, more resilient, and sustainable transport infrastructure for Samoa.

Limited technical capacity – lack of human resources, engineers and expertise, internally in LTA and in Samoa

LTA is in the process of formulating it's 10 year plan from the asset management information collected (IRI survey, FWD) hope to incorporate HDM-4

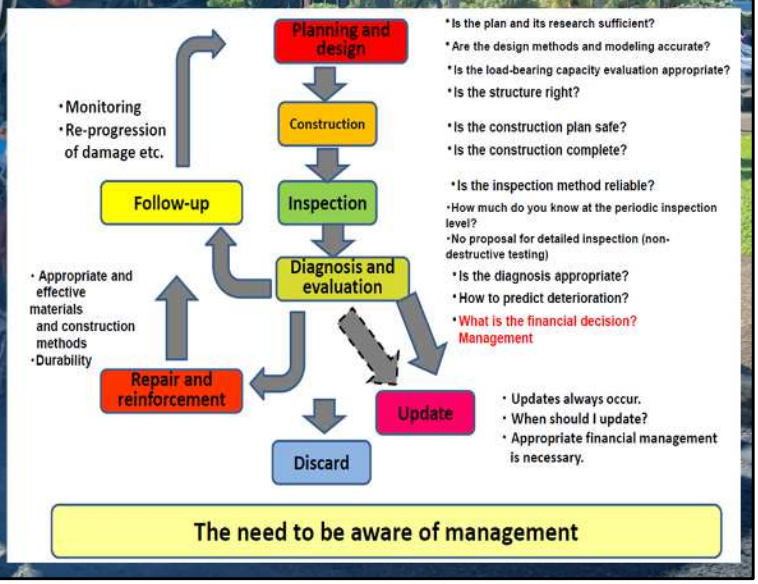

LESSONS FROM OKINAWA

- Samoa is facing a similar problem in aging bridges
- There is a great emphasis on a systematic approach to maintaining bridges
- One of the lectures presented a bridge management cycle, something that can be adapted for Samoa in the developing for the bridge maintenance manual
- Much of what has been discussed in this course is Preventative Maintenance vs Corrective Maintenance. Preventative Maintenance reduces maintenance cost relative to corrective maintenance. This also contributes to the safety and prolonging the life of the bridge

BRIDGE MAINTENANCE

BRIDGE MANAGEMENT CYCLE

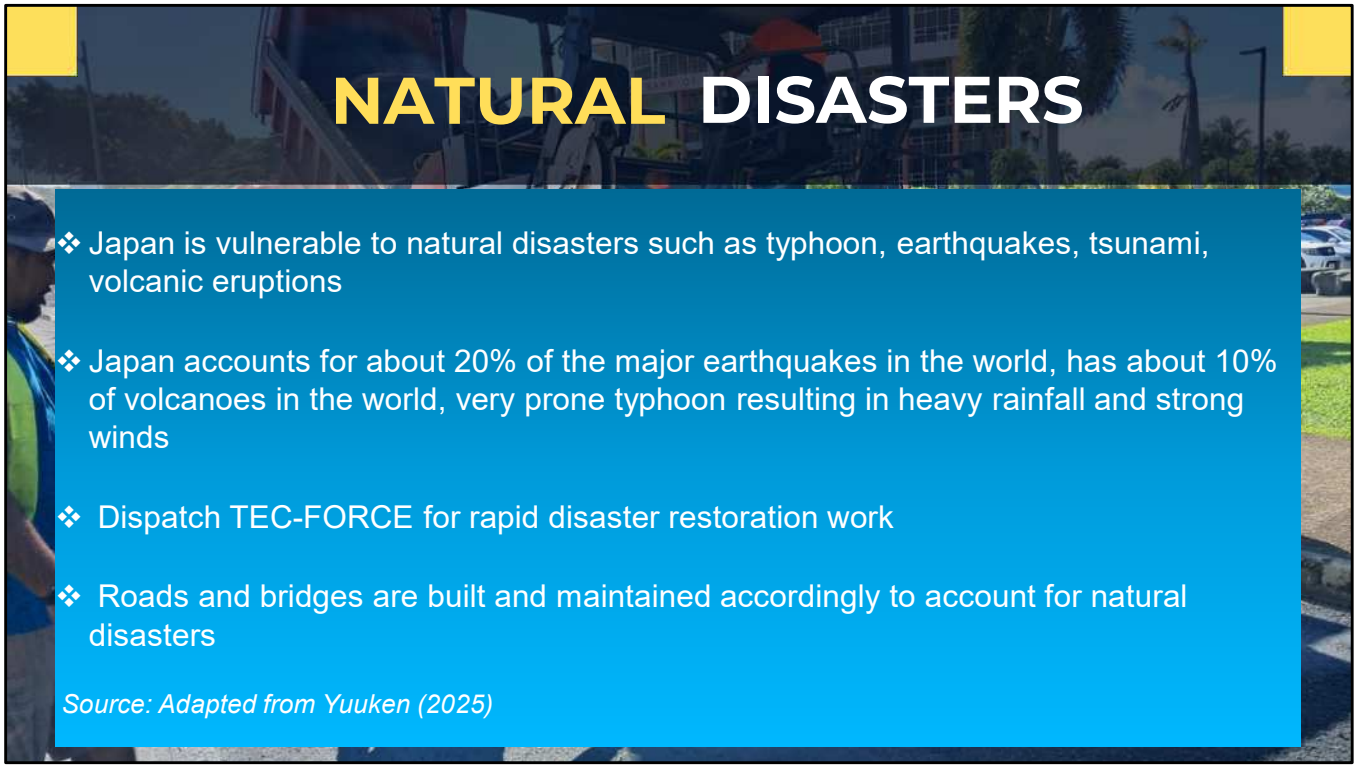
- Yoshihiko (2025) presented a bridge management cycle
- A clear systematic approach to bridge management



Samoa is currently developing its bridge maintenance program. This chart adapted from Mr. Yoshihiko Ueno's lecture is one of my key learning outcomes. Understanding this chart will enable me to provide relevant feedback to development of our bridge maintenance program

There is a great emphasis on a systematic approach to maintaining bridges

NATURAL DISASTERS



- Japan is vulnerable to natural disasters such as typhoon, earthquakes, tsunami, volcanic eruptions
- Japan accounts for about 20% of the major earthquakes in the world, has about 10% of volcanoes in the world, very prone typhoon resulting in heavy rainfall and strong winds
- Dispatch TEC-FORCE for rapid disaster restoration work
- Roads and bridges are built and maintained accordingly to account for natural disasters

Source: Adapted from Yuuken (2025)


FUTURE OPPORTUNITIES

Carbon fibre for Bridge Maintenance

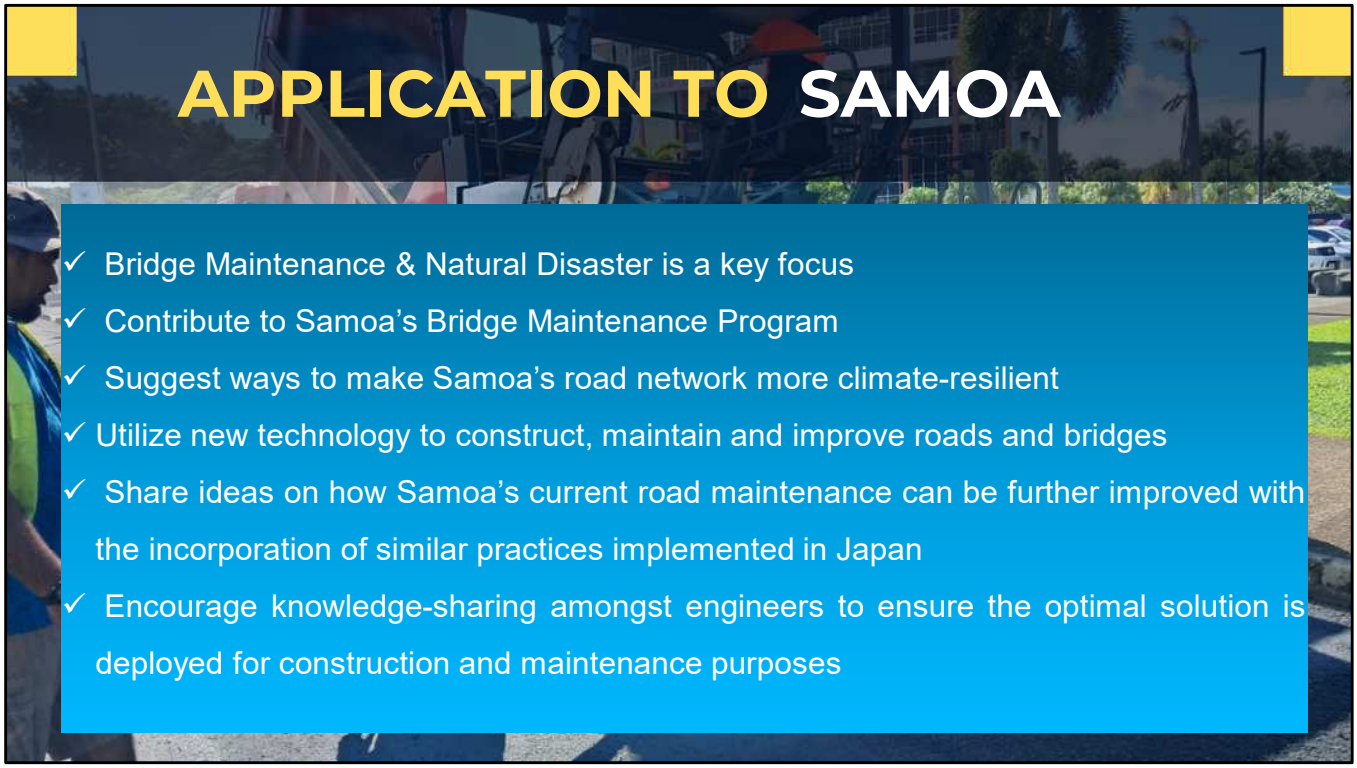
Cold-Mix for Asphalt Maintenance

Bolt cap to counter corrosion

Utilizing UAV for road/bridge inspection

Looking ahead, these are some of the technologies I have learned in this course which I would like to learn more in the future for the benefit of my country, Samoa

i. Using carbon fibre for bridge maintenance is an advance technology that I would like to understand more
ii. Cold-mix asphalt is not a method widely use in Samoa but would be greatly beneficial
iii. The capped bolt as a way to counter erosion (especially for steel bridges) is a new idea that is very relevant to Samoa
iv. UAV is the future of road and bridge inspection and given the advancement in technology, Samoa can benefit from considering such technology for our roads and bridges



Regarding the application of the learnings from this course to Samoa, I have identified Bridge Maintenance and Natural Disasters as key focuses. Consequently, my goal over the coming months is to contribute to our Bridge Maintenance Program. Furthermore, I would like to suggest ways in which Samoa's road network can be made more climate resilient.

Samoa must consider the advancement in technology and utilize it to construct, maintain, and improve our roads and bridges

As required, I will have to prepare a summary report and present the key findings from this training to our CEO and engineers at LTA. This will be a prime opportunity to share what I have learned suggest ways to further improve Samoa's road maintenance. However, this will not be rushed, as I will diligently do my due diligence by studying and understanding the current methods employed locally to ensure any change is received well.

Samoa can learn a lot from Japan by encouraging knowledge-sharing. This will benefit the construction and maintenance of the road network

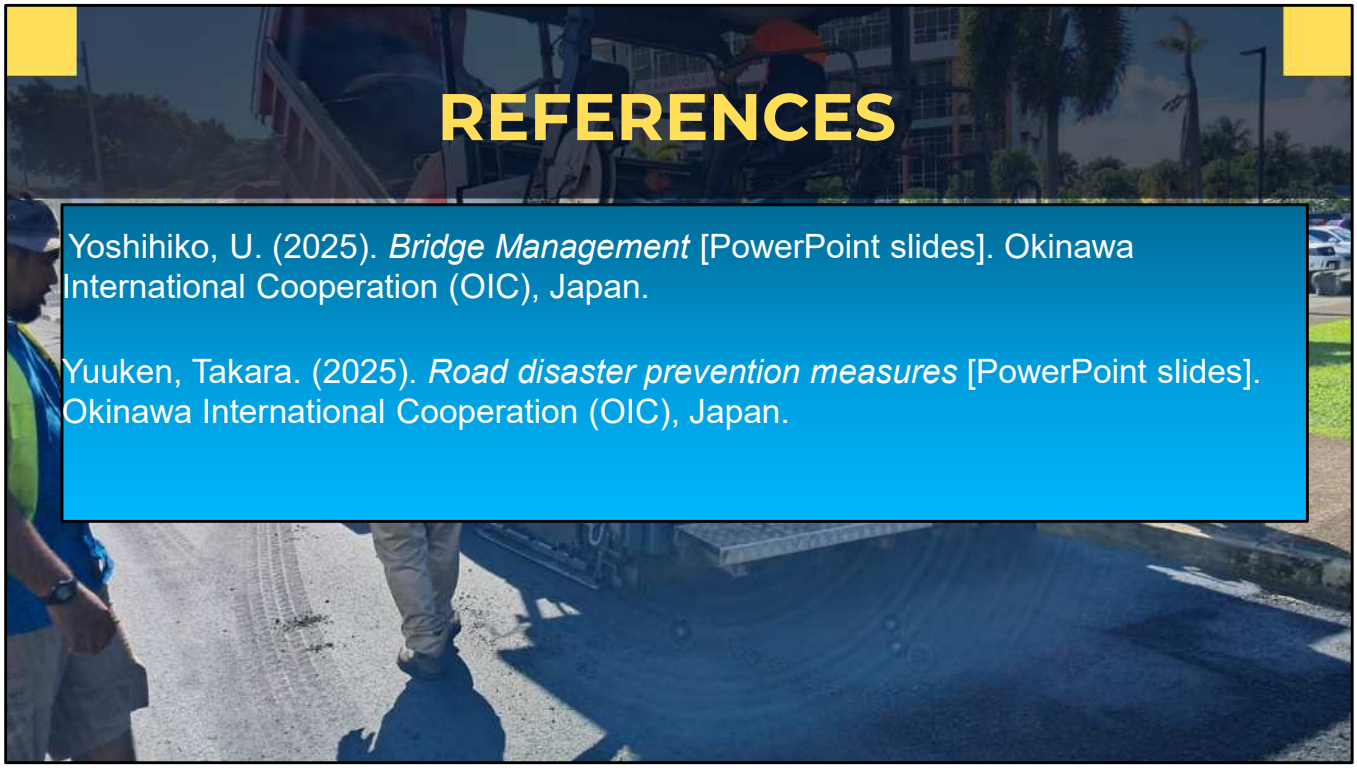
CONCLUSION

- This course has offered valuable insight into how systematic planning, advanced technology, and coordinated response mechanisms strengthen resilience of road infrastructure in disaster prone-regions

- Furthermore, it has provided the tools and knowledge relevant to improve and enhance the road maintenance and management program in Samoa

- Applicable to Samoa, this experience highlights the importance of;
  - ✓ Strengthening institutional preparedness
  - ✓ Investing in preventative maintenance
  - ✓ Enhancing technical capacity
  - ✓ Adapting to new technology


ACKNOWLEDGEMENTS
I would like to express my sincere gratitude and appreciation to:
❖ The Government of Samoa & LTA – for the opportunity and support to attend this training
❖ The Government of Japan & JICA – for funding, organizing, and continued partnership
❖ Our Coordinators & Facilitators – for guidance and smooth delivery of the course
❖ The People of Okinawa – for your hospitality, culture, and generosity
❖ Fellow Participants & Colleagues – for shared learning and collaboration
JICA



REFERENCES

Yoshihiko, U. (2025). *Bridge Management* [PowerPoint slides]. Okinawa International Cooperation (OIC), Japan.

Yuuken, Takara. (2025). *Road disaster prevention measures* [PowerPoint slides]. Okinawa International Cooperation (OIC), Japan.


FA'AFETAI
TELE LAVA