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THE STATES OF DELIBERATION
of the
ISLAND OF GUERNSEY

STATES' TRADING SUPERVISORY BOARD

REMEDIATION OF PFAS CONTAMINATED SOIL AT GUERNSEY AIRPORT

The States are asked to decide: -

Whether, after consideration of the Policy Letter entitled 'Remediation of PFAS Contaminated Soil at Guernsey Airport' dated 24th April 2026, they are of the opinion:-

1. To direct the Policy & Resources Committee to increase the existing capital vote for the removal and disposal of PFAS contaminated soil at Guernsey Airport, funded from the Capital Reserve to a maximum of £16.54 million to fund the excavation, transportation and off-island treatment of PFAS contaminated soils at the airport in accordance with the remediation solution of soil washing including the professional fees and contingencies, as described in paragraphs 4.5, 4.10 - 4.14 and section 6 of the Policy Letter.

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The Presiding Officer
States of Guernsey
Royal Court House
St Peter Port

24th April 2026

Dear Sir

1 Executive summary

1.1 During the Guernsey Airport Pavement Rehabilitation Project ("GAPRP"), heavily polluted soils from across the airfield were temporarily stored in a bunded location under the terms of a Waste Management Licence ("WML") while remediation techniques were advanced. The bund linings have since deteriorated and a permanent solution is required.

1.2 Perfluorooctane Sulphonate ("PFOS") is a specific type of per- and polyfluoroalkyl substance ("PFAS") known for its widespread use and environmental persistence[1]. It is a chemical that was previously used in firefighting foams, and has been used across the airport grounds. A number of areas of intensely contaminated soil were identified across the airfield and at the Forest Road crash site, as part of the GAPRP.

1.3 The contaminated soil is contained in a geotextile wrap to prevent the chemicals contaminating Guernsey's ground, surface and drinking water. This containment, coupled with the Ground Water Improvement Scheme ("GWIS") that has been

[1] Exposure to PFOS can cause significant health problems in birds, mammals and humans – ranging from changes in organ and/or body weights, cancer, and developmental abnormalities to death (Public Health England, 2009; COT, 2006). PFOS is also toxic to aquatic organisms including fish, invertebrates and algae (KemI and the Swedish EPA, 2004; Environment Agency, 2004; EC, 2011; European Commission (impact assessment), 2011).

implemented, has been relatively effective at managing pollution. However, the geotextile has reached end-of-life and is failing.

1.4 The Regulator, the Office of Environmental Health and Pollution Regulation ("OEHPR"), has stated the soil must be removed and treated to comply with The Environmental Pollution (Guernsey) Law, 2004. They have approved the removal of the contaminated soil to an off-island facility for remediation or destruction. Furthermore, urgent progress is essential and the WML is only being extended in six monthly increments.

1.5 Soil Washing has been identified as the best option for remediation, based upon the results of a specialist feasibility study and considering both the regulatory and cost implications of available options. In brief, the process is to excavate the estimated 8500m^3 of heavily contaminated soil, bag, and ship to an off-island facility where the soil will be washed to remove the PFOS contaminants. All sand and gravel material will be sent for reuse having been cleaned of the pollutant, All residual fines resulting from the soil washing are further treated prior to reuse or disposal under relevant local legislation.

1.6 Due to the novel nature of the project, cost estimates were uncertain and could only be confirmed through a full tender process of the soil washing option. The Policy & Resources Committee ("P&RC") confirmed the project could move to delivery phase, noting the upper bound cost estimate remained within the capital vote originally agreed by the States of Guernsey for GAPRP.

1.7 Following the tender process, the confirmed cost for soil washing as described in paragraph 1.5 including project management, contingency and contractor costs is £16.54 million.

1.8 With the cost of the soil washing known, all long listed options were re-evaluated post-tender. The evaluation confirmed soil washing to be the most affordable solution to meet the criteria necessary for a successful project.

1.9 The STSB recommends that the PFOS contaminated soil stored at the airport is excavated, shipped off-island and soil washed. This is a solution which removes any present or future liability from the States, preserving public and environmental health from pollution and likely adverse effects. With the risk of pollution to water on the island, and to undertake the project as efficiently as possible, it is recommended the P&RC are given authority to increase the existing capital vote for the project funded from the Capital Reserve to a maximum of £16.54 million supported by the Full Business Case.

2 Introduction

2.1 Per- and poly-fluoroalkyl compounds (PFAS) are a large group of manmade synthetic chemicals that have been in widespread use since the 1940s. They have been used in various products, ranging from waterproof fabrics, non-stick

cookware, fire-fighting foams, food packaging and cosmetics. They are now known to be extremely persistent in the environment as they do not readily breakdown and are commonly referred to as 'forever chemicals'. They have been detected in ecosystems all around the world.

2.2 Concerns regarding the presence of these chemicals in water were initially raised following a major fire at the Buncefield Oil Depot in late 2005. A specific PFAS compound – perfluorooctane sulphonate (or PFOS) – used in fire-fighting foam was detected in a nearby groundwater borehole.

2.3 Guernsey Water subsequently began testing for PFOS in 2007, and it was detected in St Saviour's Reservoir and in groundwater sources around Guernsey Airport. Subsequent soil testing around the airfield identified a number of 'hotspots' of contaminated ground where fire-fighting foam had been deployed or spilled, and very high concentrations of PFOS were still present in the soil.

2.4 At that time, the potential impacts of PFAS on human health were not well understood. A Scientific and Technical Advisory Group (STAG) was formed, including representatives from Public Health, the Office of Environmental Health and Pollution Regulation, and Guernsey Water to advise on the appropriate response. A subsequent independent review by the UK's Health Protection Agency concluded "the best possible advice has been available to all those engaged in managing the situation, as well as providing guidance to the public and other relevant stakeholders."

2.5 In 2012, work began on the reconstruction of the Guernsey Airport runway and other paved surfaces, including the installation of new drainage. As part of that project, around 14,000 tonnes of soil was excavated from four contamination hotspots within the airfield. A containment cell was created in the raised bund at the entrance to the airport, lined with a non-permeable geotextile membrane to prevent the chemical from entering the water supply.

2.6 This containment was a temporary measure, because treatment solutions to remove PFAS from soil were not readily available in 2012. At the time of construction, it was anticipated the geotextile membrane would have a life of around 20 years, providing an opportunity for these solutions to develop. A sum was included in the airport project budget to cover the cost of the excavation and bund creation, and an allowance for a future permanent solution.

2.7 In 2014 soil was also excavated from a field on Forest Road, that was the site of a plane crash in 1999. That is stored in a second, adjacent containment cell.

2.8 A number of other measures have been taken to protect water supplies. They include the installation of a groundwater improvement system (GWIS) at Guernsey Airport, in 2011, which filters groundwater from within the airfield using Granular Activated Carbon (GAC), to reduce PFAS concentrations entering

water courses. A bypass was also created to allow water from streams within the airfield to be diverted away from St Saviour's Reservoir, and discharged to sea. Properties near to the airport with private boreholes were offered connection to the mains network.

2.9 There is now a greater body of evidence regarding the potential risks of PFAS exposure to human health. Studies have identified the chemicals can negatively impact cardiovascular health, mental health and wellbeing, reproductive health, the immune system and raise cancer risk[2].

2.10 The containment cells within the airport bunds are subject to a waste management licence issued by the OEHPR. That licence was extended in March 2021 for a limited number of years to enable the identification, design & implementation of a "best available technique" (BAT)[3] compliant solution. A permanent solution is now required for this contaminated soil.

2.11 Guernsey Ports undertakes monitoring, in accordance with the requirements of the waste management licence. There are two leachate tanks collecting water from the bunds, and six separate wells surrounding the bunds - three to the North and three to the South. Groundwater from these undergoes regular testing.

2.12 The Water Pollution Ordinance stipulates the maximum permitted limit for PFOS in surface and groundwater is one microgram per litre (1µg/l). That is equivalent to one gram per million litres (Beau Sejour swimming pool contains around ½million litres).

2.13 Samples taken in September 2025 were found to contain concentrations of up to 24µg/l in the monitoring wells, with concentrations as high as 39 µg/l previously recorded. Leachate from one of the bund tanks was found to contain 94 µg/l. This is a sample of the monitoring and by no means the highest values recorded. This is evidence that the impermeable membrane around the containment cells is now compromised and there is a risk of pollution.

2.14 The proposed permanent solution will remove the further pollution risk from the bund area and any future responsibility of the States of Guernsey in relation to these PFAS impacted soils. This will reduce the environmental and public health risks.

2.15 It will also alleviate the operational pressure on the ageing GWIS treatment plant,

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[2] Jersey's PFAS Scientific Advisory Panel - Report 2 Health impacts of PFAS

[3] The use of "Best Available Technique" (BAT) to eliminate or minimise pollution risks is a legal requirement in the Environmental Pollution (Guernsey) Law, 2004. Determining BAT involves comparing the options that prevent or reduce emissions, and identifying those that will have least impact on the environment.

which is used to process leachate from the bund to reduce the current contamination risks.

2.16 The project remains a key element of the original open capital vote for the Guernsey Airport project. It is included within the delivery stage of the Major Projects Portfolio for 2026 and is a priority for the island due the potential environmental and public health impact, and risk of contamination of Guernsey's surface, ground and drinking water.

2.17 Bids for the work were received in April 2025, and it is now known that the work will exceed the delegated authority levels for P&RC. Therefore, there is a requirement for the project to seek endorsement from the States of Deliberation.

3 Legal context

3.1 The Environmental Pollution (Guernsey) Law, 2004 ["The Law"], provides a legal framework for the monitoring and enforcement of measures to protect the environment, by limiting and reducing pollution. Its primary objective is to ensure that any activity that may cause pollution is only carried out if, and to the extent that, the island requires it, and uses the *'Best Available Technique'* for eliminating or reducing to a minimum any such risk. In other words, whatever method, technology, or treatment option(s) that are employed must minimise the potential release and/or impact of pollutants on the environment.

3.2 The Law also stipulates that where an activity has given rise to pollution, it must either be discontinued or, if continuation is in the interest of the island, must be done using the *'Best Available Technique'* for eliminating or reducing to the minimum any further pollution.

3.3 The Director of Environmental Health & Pollution Regulation ("The Director") is a statutory appointee, whose role is to carry out the functions and exercise the powers and duties under the Law. That includes the licensing of prescribed waste management operations[4], and applying relevant conditions on any such licence. Prescribed operations include the processing, treating, storage for disposal of waste in any circumstances, or the provision of any site for such activities.

3.4 Under the Law, the States, through P&RC, have a duty to ensure the Director has adequate resource to carry out their role.

3.5 Guernsey Ports is the licensed operator for the storage of contaminated soil within the existing bunds, and similarly will be the licensed operator for any subsequent operation to move and/or treat this material. It therefore has a legal duty, enforceable under the Law, to eliminate or reduce to a minimum, wherever

[4] The Environmental Pollution (Waste Control and Disposal) Ordinance, 2010

possible, the risk of pollution arising due to the current containment site and any further proposed storage or remediation. It also has a legal duty to comply with any conditions applied to any waste management licences for these operations.

4 Options appraisal

4.1 In 2008, following the discovery of PFOS contamination from historic use of fire-fighting foam, Guernsey Airport commissioned Arcadis to advise on measures to safeguard the island's water supply. The company was one of the earliest subject matter experts in the field of PFAS pollution, and remains one of the leading technical advisers.

4.2 In 2021, Arcadis was commissioned to identify and assess the viability of potential options for the safe removal, transportation, treatment and remediation of the contaminated soil currently stored at Guernsey Airport. This included "bench scale" trials of certain potential technologies that were yet to be established at full scale, and providing high level costings for all options.

4.3 The subsequent report identified a number of potential solutions, including both on-island and off-island treatment, or long-term stabilisation and containment. High temperature incineration, for some time considered a possible treatment option, was found to be most likely not viable due to severely limited capacity in the sector. It was also expected to one of the most expensive options.

4.4 The remaining shortlisted options comprised exporting the contaminated soil to the UK for 'washing' to remove PFAS; building a facility to do this on-island, or continued, long-term storage in a newly constructed containment cell, with or without prior 'stabilisation'.

4.5 Of these options, only soil washing involved the removal and elimination and/or disposal of PFAS. It involves the abrasive rinsing of soil to remove PFAS. The chemicals are not initially destroyed, but transferred into water and fine particulate material ('fines'), to undergo further treatment. The contaminated water undergoes Granular Activated Carbon (GAC) filtration, which adsorbs the chemicals, and the GAC is then subjected to high temperature incineration to finally destroy the PFAS and leave the carbon available for reuse. The treated water is discharged to sewer, and fines that may still contain some contaminants are stabilised and disposed of in a licensed off-island hazardous waste landfill site, arranged by the treatment contractor. Once washed, the sands and gravels can be reused, but will remain the property of the contractor.

4.6 Of all the shortlisted options, this is the only solution to fully and permanently deal with the existing pollution and therefore remove any future liability on the part of Guernsey Ports and the States of Guernsey. The high-level cost estimate was also within the anticipated cost range for continued on-island containment, but without the future risks. The Director confirmed that in their view this option met

the legal requirement of BAT. It was therefore confirmed as the preferred option.

4.7 Potential contractors who could provide a soil washing solution were invited to complete a pre-qualification questionnaire in 2023, which identified a shortlist of five. Following approval of an outline business case, and consideration of the high-level costs estimates, P&RC confirmed the project remained in the delivery category of the States Capital Portfolio. In January 2025, the shortlisted companies were invited to submit tenders.

4.8 Two bids were subsequently received in April 2025. Both included a tendered price significantly in excess of the original high-level estimates. The overall project costs, including project management and allowances for risks and other contingencies, exceeded both the remaining funds within the existing capital vote and P&RC's delegated authority for approval of a Full Business Case ("FBC").

4.9 Arcadis was therefore commissioned to revisit the previous options appraisal, to re-evaluate the other shortlisted technologies and assess any new or emerging solutions. It also considered a further option of continued containment for the short to medium term, followed by future permanent remediation. This would involve the construction a new containment cell, most likely in a new location.

4.10 Following this reassessment, options that remain novel or unproven at full scale, are thought unlikely to meet the BAT criteria, or are estimated to cost more than £20 million total project cost were all discounted. This left four potential solutions, which are summarised in Table 1.

4.11 It should be noted that of these remaining shortlisted options, only off-island soil washing has been tendered. This cost is shown and includes a contingency for risk cost. All other options therefore remain with only high-level estimates with a standard optimism bias allowance and are subject to final design and tender.

4.12 Having reconsidered all available options, exporting the contaminated material for soil washing in the UK remains the only solution to fully and permanently deal with the existing pollution and therefore remove any future liability on the part of Guernsey Ports and the States of Guernsey. It is considered the most cost-effective option, has high efficacy, and has been approved by the waste license regulator as meeting the legal requirement of BAT. It was therefore reconfirmed as the preferred option.

4.13 It will involve the safe excavation and transport of contaminated soil from the airport bund to St Peter Port Harbour, for onward export to the UK. Regular shipments will ensure material is stored at the harbour for the shortest time possible. Consideration has been given to the proposed area required and how to manage the storage of soil before being loaded onto vessels for transport.

4.14 Measures will also be in place to ensure safety and prevent further pollution during excavation and on-island transport.

5 Summary of project business case

5.1 The FBC, following tendering of the preferred solution, has been reviewed and approved by the Ports Board, the STSB, and the P&RC, and has undergone an independent Project Assurance Review.

5.2 The review confirmed an overall Amber status. This status supports the preferred option and the evaluation of the Preferred Bidder. The report recognised that the biggest risks relate to the heightened urgency of delivery with the failing bunds and the risk to public and environmental health.

5.3 The Investment Objective setting the overarching goal of the project is:-

> *To establish and deliver a compliant, permanent remediation solution, by 2026, that successfully mitigates the risk and future liability of the States of Guernsey in relation to PFAS impacted soils contained at Guernsey Airport.*

5.4 This covers a wide variety of risks, including but not limited to, risks of legal action, risks of drinking water contamination and the health risks associated with this, environmental pollution, as well as risks of soil spillage and further contamination.

5.5 While the delivery date of '2026' has been missed, the Office of Environment Health & Pollution Regulation confirms the soil washing meets the legal requirement for Best Available Technique. The methodology also meets the relevant UK environmental health legislation.

5.6 The preferred option also best meets the critical success factors, which were used to assess all the potential solutions, which were:-

1. The solution must be permanent
2. The solution must be to the satisfaction of the local waste regulator
3. The solution implementation must mitigate contamination of the ground water during the excavation works
4. The solution must utilise a fully licensed treatment plant

The options were evaluated using technical feasibility, regulatory compliance, critical success factors and cost estimates to establish the preferred option. Table 1 shows the short-list of options.

Table 1 - Summary of established soil remediation options with cost estimate below £20m and their feasibility

Remediation Approach	Status	Estimated Cost*	Feasibility
On-island options			
Engineered Containment: with Stabilisation/ Solidification	Established	100 yrs: £10.6m-£15.4m	This option would create a landfill site on-island requiring licencing and leachate monitoring. Costs for this are not included. Technically feasible but unlikely to gain regulatory approval. The option does not remove risk to the environment and public health, and does not meet CSF2. *Discounted.*
Engineered Containment: at Guernsey Airport without Stabilisation/Solidification	Established	20 yrs: £6.8m-£16.4m	Theoretically technically feasible, however this is the existing system; it has not lasted the design life and is failing, it is unlikely to gain regulatory approval. Costs do not include ongoing monitoring, leachate management (GWIS), licensing and the costs of another solution after 20 years. The option does not remove risk to the environment and public health, and does not meet CSF1, CSF2. *Discounted*.
Soil Washing	Established	£11.8-£18.4m	Theoretically this option is technically feasible, however the challenges to building and operating a facility on-island are enormous including specialist plant and expertise to design, build and run; furthermore, disposal of resulting fines could be challenging to agree acceptance at on-island landfill and decommissioning of the plant would be a specialist and costly undertaking. Costs for this are not included. Licensing would only be granted once built. The option removes environmental and public health risk but does not meet CSF4. *Discounted.*
Off-island options			
Soil Washing	Established	£12.3m**	The option is technically suitable, and the approach is accepted by the Regulator. This solution has been tendered so costs are known. It is a permanent solution with no maintenance costs. The option removes environmental and public health risk and meets all the CSF. *Preferred Option.*

*Costs are 2025 estimates provided by the technical advisor plus optimism bias contingency allowance. Range does not allow for inflation, or maintenance costs for non-permanent options ** Option tendered 2025; cost and design are known plus calculated risk cost contingency

Note: Issue costs would apply to all options and have not been included

Project dependencies

5.7 For the project to be undertaken successfully, the following is relied upon:

The OEHPR: The solution must be approved by the regulator and successful implementation of the solution evidenced

The Development and Planning Authority (DPA): An Environmental Impact Assessment (EIA) must be undertaken prior to submission of a Planning Application. Planning permission is required before works can begin on-site

Transfrontier Shipment Regulations (TFS): The contaminated soil must be shipped under TFS regulations, TFS agreements must be applied for

Temporary waste licence: The contaminated soil will be shipped off-island to the processing plant. This requires space at St Peter Port Harbour to be made available for short-term storage of the waste to be shipped, and is dependent on obtaining a temporary waste licence to cover port-side storage and loading areas

Traffic & Highways: All vehicles accessing the site and to/from the harbour will comply with all Guernsey Traffic regulations. However, the additional road movements will be a dependency that needs to be managed, and the Traffic Management Plan will be agreed with Traffic and Highways

Project benefits

5.8 Aside from the main benefit of the removal of the risk of the contaminants entering the island's ground, surface and drinking water, the release of the commercial value of the land currently utilised for the bunds will provide a benefit to Guernsey Ports in the future. It is envisaged that this would be realised as part of a separate project funded through Guernsey Ports' capital process at a later date[5]. Of further significant benefit will be the reduction of operational pressure on the aging GWIS plant, which continues to process leachate from the bund.

[5] The current bund area will be reinstated in such a way that it will not impede or impact on future development. The area may be developed to include additional car parking or other potential revenue generating uses for Guernsey Airport in the future. However this use does not form part of this scope or cost.

Table 2 – Project benefits

Description	Type	Benefit
Reduced leachate management costs	Cash releasing	£100k/year monitoring costs saved
	Cash releasing	£100k/year cost of destruction of highly contaminated carbon saved
	Non-cash releasing	Ports staff time saved
Meet OEPHR compliance	Cash releasing	£2,400/year waste licence costs saved
	Qualitative	Compliance with licence term
No risk of further pollution related to leachate management	Quantitative	Further pollution risk reduced to nil
Reduction in ongoing pollution by removal of containment cells	Qualitative	Number of pollution standards met
Release of land for alternative use	Quantitative	Revenue growth £100k/annum

Preferred bidder

5.9 Upon evaluation, the Preferred Bidder's submission was superior in the following assessment areas:

Programme: The Preferred Bidder submitted a well described programme covering all required elements.

Methodology: The Preferred Bidder's methodology is in line with the scope requirements with all points considered. They have guaranteed that they can achieve the soil washing criteria set out in the scope as a minimum and have committed to further optimise their process. The Preferred Bidder are providing several staff to manage on-island activities which, given the technical nature of the site works, heavily reduces the risk of contamination or a pollution event.

Legal: The Preferred Bidder had minor amendments and accepted the contract as provided in the ITT.

Price: Following revised pricing the Preferred Bidder price was least expensive.

6 Funding

6.1 This project is included within the delivery stage of the Major Projects Portfolio for 2026. It was understood to be covered by the remainder of the contingency from the GAPRP which was in the region of £8 million. However, there was a high level of uncertainty over what the actual cost would be until the works were tendered. Following tendering it is clear that the preferred approach is substantially more than the funds understood to be allocated to this project and as such approval of the States is required to increase the budget to £16.54 million.

6.2 This budget covers the total costs over the expected lifespan of the project, inclusive of contract costs, internal and external project management costs, technical adviser fees, and risk and contingency allocations. A breakdown can be made available to members prior to debate.

7 Timescale and implementation plan for the preferred option

7.1 It is anticipated that the project will be started onsite before the end of 2026, following an Environmental Impact Assessment, subsequent planning application and the required transportation and shipping documentation for waste.

8 Project delivery

8.1 The Contractor is required to provide a Construction Phase Plan, Construction Environmental Management Plan, Traffic Management Plan and Waste Disposal Plan. Details of the various licences required for storage and shipping were in the invitation to tender, ensuring tenderers know they are responsible for obtaining and managing these. The methodology of excavation, transport and treatment was assessed at tender stage and will be supervised on site by the Technical Advisor.

8.2 Key Performance Indicators (KPI) will be in place to manage the contractor's performance in a quantifiable manner over the contract period. The core activities subject to KPI are Time, Health and Safety, Quality and Cost, and Communication.

8.3 The programme will centre around ensuring compliance with the relevant legislation and regulations is attained in the shortest practical timeframe.

9 Consultation

9.1 Both internal and external stakeholders were identified at an early stage of the project. The OEPHR has been liaised with throughout the duration of the project. There is a developed communications strategy to support the successful delivery of the project, demonstrating that Guernsey Ports is acting responsibly to protect the environment and meet regulatory obligations.

9.2 The FBC has been considered and approved by the Ports Board, the STSB, and the P&RC.

10 Compliance with Rule 4

10.1 In accordance with Rule 4(1):

a) The remediation of PFAS contaminated soil at Guernsey Airport will:

- Enable the States' Trading Supervisory Board to meet its legal requirement, through Guernsey Ports, to limit pollutant waste as detailed in section 3.1;
- Complete the final project of the Guernsey Airport Pavement Rehabilitation Project;
- Deliver a project included in the Major Projects Portfolio for 2026;

b) The Office for Environmental Health & Pollution Regulation has been consulted as a relevant stakeholder. The Policy & Resources Committee have been consulted in the preparation of the proposition.

c) The proposition has been submitted to His Majesty's Procureur for advice on any legal or constitutional implications.

d) The financial implications of the proposition are included in paras 6.1-6.2.

10.2 In accordance with Rule 4(2):

a) The proposition relates to the mandate of the States' Trading Supervisory Board in respect of ensuring the efficient management, operation and maintenance of Guernsey Ports, in accordance with the requirements of the Environmental Pollution (Guernsey) Law, 2004.

b) Deputy Kay Mouat has an interest in a company that will provide a service for the Preferred Bidder's proposed solution, therefore has not participated in the States' Trading Supervisory Board's deliberations on the project. The Proposition has the unanimous support of the four remaining members of Board.

Yours faithfully

M Helyar
President

A Niles
Vice-President

B Kay-Mouat
Member

S Thornton
M Thompson
Non-States Members