

**Mangere Bridge Residents
and Ratepayers Association**

Objections to Watercare's Notice of Requirement and Application for Resource Consent for the Proposed Central Interceptor

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NOTES

Abbreviations

ALTP	Auckland Council's Long Term Plan
ARC	Auckland Regional Council (now defunct)
CI	Proposed Central Interceptor
CI Application	Watercare's resource consent application for the proposed central interceptor
CLG	Community Liaison Group
MWWTP	Mangere Wastewater Treatment Plant
NOR	Notice Of Requirement
RMA	Resource Management Act
TBM	Tunnel boring machine
The Applicant:	Watercare Services Limited. Also referred to here as: Watercare
The Association:	Mangere Bridge Residents and Ratepayers Association
TLA	Territorial Local Authority
TWFSP	Three Waters Final 2008 Strategic Plan – December 2008

Disclaimer

In compiling this submission every effort has been made to present information accurately and fairly from various sources, including the CI Application, planning documents and community feedback. If any error has been made, it will be due to genuine oversight and not an intention to mislead the reader.

1.0 EXECUTIVE SUMMARY

1.1 Purpose

The purpose of this submission is to put forward objections and recommendations in response to the Notice of Requirement and the Application by Watercare Services Limited for resource consent for the proposed Central Interceptor.

1.2 Background to objections

Auckland's first wastewater treatment plant was relocated to Mangere in 1960. Throughout its life and despite many 'improvements', the plant caused extremes of nuisance. The nuisances particularly affected areas of Mangere Bridge and, at times, huge areas of Auckland. It also left a very high investment in reticulation and a treatment facility of negative value.

In 1992 Watercare Services Limited took control of water and wastewater services, and undertook a very thorough examination of the region's wastewater needs and possible solutions. The 'Wastewater 2000 Workshop' involved specialists of Watercare, ARC, TLAs, Auckland Health, tangata whenua, environmental, business, and resident and ratepayer groups, as well as experts and consultants in every relevant field. In 1995 an extensive public opinion survey was undertaken and generated several hundred replies.

The most significant outcomes of 'Wastewater 2000' were that Watercare would replace the original plant at Mangere with a new land-based plant (Project Manukau) and build a new satellite plant in West Auckland (Project West), followed by other satellite plants (Project South, etc.) to meet future requirements.

Between 1998 and 2003 Watercare did a good job, overall, in getting the new MWWTTP operational and it has generally performed well. Watercare did pursue the development of a satellite plant in West Auckland but for whatever reason this stalled.

In 2004 Watercare's Shareholders' Representative Group initiated 'The Three Waters Study' - water, stormwater and wastewater. Unlike the earlier workshop, this group worked without consultation or publicity. The Three Waters Final 2008 Strategic Plan – December 2008 represents a clear reversal of the previously endorsed strategies and appears to be the basis for the ALTP and the proposed CI.

1.3 The objector

Mangere Bridge Residents and Ratepayers Association is an incorporated society that has been in continual existence for 52 years. Established with the prime purpose of representing residents suffering nuisances from the then new treatment plant, the Association has been at the forefront in protecting the health and wellbeing of both residents and the Manukau Harbour ever since. Through negotiations with ARC, Manukau City Council and Watercare, attending every meeting of the Wastewater 2000 Workshop, pursuing matters with the Environment Court, and being represented at all meetings of the MWWTTP Community Liaison Group (CLG), the Association has acquired considerable knowledge and understanding of the issues.

1.4 The objections

1.4.1 Part one – procedural objection

Objection One: The Association submits that, given the breadth of its powers in respect of the issuance of resource consents, the conflicts with and compliance issues with existing consents, it would be inappropriate for Auckland Council to hear or to appoint Commissioners to hear the NOR or the Application.

1.4.2 Part two – substantive objections

Further, the Association objects to a resource consent or NOR being granted for the construction of the proposed Central Interceptor (CI) on the basis of substantive issues arising from the information (or lack thereof) and arguments used to support the CI Application. In particular:

- Objection Two:** The proposed CI is contrary to accepted best practice for the treatment of both wastewater and stormwater;
- Objection Three:** The proposed CI is not good ecological practice;
- Objection Four:** The proposed CI fails to address the fundamental problem of a combined system;
- Objection Five:** The proposed CI commits Auckland Council to major costs and exposure to significant risk not detailed in the CI Application;
- Objection Six:** The proposed CI fails to properly consider the question of global warming;
- Objection Seven:** The proposed CI poses a significant impact on residents at certain points along the proposed route and we are especially concerned for those living in Mangere Bridge.
- Objection Eight:** The proposed CI introduces very significant and unnecessary obstacles for migratory birds that roost on the Kiwi Esplanade (Mangere Bridge) reserve
- Objection Nine:** The proposed Application fails to provide for appropriate mitigation and compensation.

1.5 Main arguments

- 1.5.1** In making decisions of major importance, Auckland Council has an obligation to ensure it avoids conflicts of interest, upholds due process, is properly informed and has consulted widely. Until such time as a comprehensive plan that addresses all of the requirements of the region's wastewater and stormwater requirements – a plan that gives proper consideration to all of the requirements of the area, all of the risks and all of the costs - and until this is appropriately debated and adopted, the conditions of the existing resource consents for the treatment plant should be inviolate.
- 1.5.2** It is submitted that the NOR and the Application fail to provide sufficient evidence and information that the CI is necessary or desirable to the region's long term plans. Further, it is submitted that there is insufficient information on the risks, consequences and costs of the project, including in relation to cultural considerations (in particular Maori interests and community values), to enable it to be processed in accordance with the purpose of the RMA.

2.0 RECOMMENDATIONS

2.1 The Association recommends that Auckland Council either:

- **REQUEST** central government to appoint suitably qualified independent commissioners (including professionals with legal, engineering and ecological expertise as well as expertise in Maori knowledge and interests) to hear Watercare's NOR and Application for the proposed central interceptor; or alternatively,
- **DIRECT** the Applicant to take the NOR and CI Application direct to the Environment Court (under section 87D of the RMA).

2.2 The Association recommends that the hearer of the Application:

- **DECLINE** the Application for the proposed CI and **REQUEST** the Applicant to withdraw the NOR.
- **CALL FOR A PUBLIC INQUIRY** into the Three Waters Study and consequent strategies (the creation, constitution, compliance with requirements, consultation and the completeness of the study and strategies) and their relevance to the needs of Auckland as stated in the draft Unitary Plan. It is further recommended that this inquiry be undertaken in co-operation with central government, representatives from the Auditor General's Office and the Department for the Environment, affected iwi and community stakeholders.

3.0 BACKGROUND TO OBJECTIONS

The objections raised in this submission are best understood in the context of a brief history of wastewater treatment in the region.

- 3.1 After considerable controversy, the treatment plant at Mangere was planned in the 1950s and opened in 1960. Originally known as the Manukau Wastewater Treatment Plant, it was planned to be the only plant serving the region; an area within 40 kilometres of the plant.
- 3.2 With hindsight, the type of treatment chosen was unsuitable. The plant was the biggest of its type in the world and its size added to the difficulties of managing it. The size of the catchment area was also too large; sewage frequently arrived at the plant in a septic state. The fluctuations in flows caused by stormwater further added to management difficulties and on one occasion completely disabled the whole plant resulting in raw sewage discharge.
- 3.3 Throughout its life, and despite numerous ‘improvements’, the plant caused extremes of nuisance particularly for parts of Mangere Bridge and, at times, over huge areas of Auckland. In addition, the flawed strategies, poor decisions, maintenance and management left a gross and costly imbalance of reticulation and treatment facilities (a reticulation system stated by Watercare to be valued at \$2.4 billion and a treatment plant of negative value).
- 3.4 In 1992, the ARC set up a series of meetings with stakeholders to determine and plan required action to meet existing problems and consider future needs. With the transfer of responsibilities for water and wastewater to Watercare in 1992, these meetings were expanded into the ‘Wastewater 2000 Workshop’.
- 3.5 The ‘Wastewater 2000 Workshop’ undertook a thorough examination of all aspects of the region’s wastewater needs and possible solutions. Watercare co-ordinated this workshop and the following interest groups were engaged: the specialists of Watercare, ARC, TLAs, Auckland Health, environmental, business and ratepayer groups, mana whenua as well as experts and consultants in every relevant field.
- 3.6 It is illustrative of the attitude and priorities existing in some TLAs that, despite the desperately parlous state of the plant *and* the risks to the ecology and to neighbours of the plant, it took an injunction served on Watercare by Manukau City Council, under the mayoralty of Sir Barry Curtis, to get the company and its shareholders (local TLAs) to face up to the need to address the situation and to fund the rectification.
- 3.7 In 1995 extensive public consultation was undertaken to invite public opinion and identify a preferred option from those presented. Several hundred submissions were received. The most significant outcomes of the Wastewater 2000 Workshop were these: Watercare would replace the original plant at Mangere with an essentially new land-based activated sludge plant and also build a new satellite plant in West Auckland, followed by other satellite plants to meet future requirements.
- 3.8 Between 1998 and 2003 Watercare did, overall, a very good job in getting the new plant operational and, in general, it has performed well. It was also renamed the Mangere Wastewater Treatment Plant (MWWTP). Whilst Watercare did pursue the development of a satellite plant in the West, the project stalled, for whatever reason.
- 3.9 In 2004, Watercare’s Shareholders’ Representative Group initiated, what became known as, ‘The Three Waters Study’ embracing water, stormwater and wastewater. Watercare sponsored this study and included participants from: Manukau Water, Metrowater and United Water; then cities of Auckland, Manukau, North Shore and Waitakere; and then district councils of Franklin, Papakura and Rodney.

- 3.10 In contrast to the Wastewater 2000 Workshops, this group worked without publicity or public consultation. Neither a draft document nor the final copy of the ‘Three Waters Final 2008 Strategic Plan – December 2008’ (TWFSP) was released for public consultation or information, nor was it made readily available to the public.
- 3.11 Although the TWFSP is full of inaccuracies and contradictions and represents a complete reversal of the strategies devised in the Wastewater 2000 Workshop process, it appears to be the basis for Auckland Council’s Long Term Plan (ALTP) and the justification for the proposed CI, which state that Auckland’s future wastewater requirements will be met by two main plants – Mangere and the North Shore.

We note here that whilst Watercare have some twenty wastewater treatment plants, Mangere is, at present, five times the size of the North Shore plant; these two plants combined are twenty times the size of the rest put together.

- 3.12 The strategies considered in the TWFSP and presented in the ALTP and the CI Application appear to be based on the premise that separation of the combined wastewater/stormwater system presently in certain parts of Auckland is not possible or not acceptable.
- 3.13 It is evident from information given in the TWFSP that regulations to prevent the illegal connection of stormwater to the wastewater reticulation system have not been enforced in a number of areas. This, and aged damaged pipes, is contributing to the ingress of large volumes of stormwater into the wastewater system.
- 3.14 Of major concern, the Manukau Harbour has been badly abused for many decades. Auckland Council’s Research and Monitoring Unit assesses the quality of water in parts of the Manukau as the worst in whole of the Auckland area. It is not suggested that MWWTP or Watercare are responsible for this; nor is it suggested that they have responsibility for correcting it. Nevertheless, the size of the MWWTP – stated to be the biggest freshwater river in Auckland - means that the harbour is heavily impacted by the quality, the volume and the method of discharge from MWWTP. ***They therefore ought to be managed with the utmost care and caution.***

4.0 THE OBJECTOR

- 4.1 Mangere Bridge Residents and Ratepayers Association is an incorporated society. It has been in continual existence for 52 years and represents the Mangere Bridge community.
- 4.2 Established in 1960, the Association's prime purpose was to represent residents suffering nuisances from the then new wastewater treatment plant at Mangere. The Association has been at the forefront in obtaining improvements and modifications to mitigate nuisances caused by the plant throughout its life.
- 4.3 In 1992, at the instigation of the Association, Sir Barry Curtis (then Mayor of Manukau City) persuaded ARC to hold meetings with all stakeholders to establish acceptable solutions to the problems at the plant. With the advent of Watercare, these stakeholder meetings were expanded into the 'Wastewater 2000 Workshop', which led to, amongst other things, the building of the existing plant. Association representatives attended every meeting of the ARC, of the Wastewater 2000 workshop, and of the Community Liaison Group called for in Watercare's resource consents for the MWWTP.
- 4.4 For over five decades the Association has exercised a watchful eye and consistent leadership in relation to developments associated with MWWTP. It has represented the Mangere Bridge Community and expressed concern for the health and wellbeing of residents of the area and of the Manukau Harbour. It has strongly supported thorough investigation of problems and possible solutions, due process including wide consultation, and properly informed and forward-looking decision-making. In doing so, the Association has built up considerable local knowledge and technical understanding of the issues.

5.0 PART ONE: PROCEDURAL OBJECTION

5.1 Objection One

The Association submits that, given the breadth of its powers in respect of the issuance of resource consents, the conflicts with and compliance issues with existing consents, it would be inappropriate for Auckland Council to hear the NOR or the Application or to appoint Commissioners for the Hearing.

- 5.1.1 Auckland Council's responsibilities and authorities in respect of the NOR and CI Application appear to be all embracing. The Council is:

- Responsible for planning;
- Responsible for consultation in respect of the plan;
- Hears, adjudicates on, and determines the final plan;
- Owner of Watercare;
- Provides "strategic direction" to Watercare;
- Accepts, notifies and has authority to hear, or appoint Commissioners to hear and adjudicate on resource consent applications;
- The regulator responsible for ensuring that consent holders comply with the conditions of their consents.

The Association contends that hearing or appointing Commissioners to hear the NOR and CI Application hearing will pose a conflict of interest - perceived and/or actual – for the Council.

- 5.1.2 The proposed CI contravenes existing resource consents (for which Council is the regulator) held for the plant, being contrary to the intent, the spirit and the letter of their conditions.

- 5.1.2.1 The cap on the throughput of the MWTP was specified in the existing resource consents for the plant, to protect the ecology of the Manukau Harbour. In its rationale for establishing the size of the plant,

Watercare stated: "A key issue in upgrading the plant at Mangere is how big it should be. The proposed plan puts a limit on the expansion of the plant and relies on satellite facilities to cope with increased flow beyond the limit."

Watercare also acknowledged: "that [increasing the size of the plant] would require expensive new interceptors (main sewers) to bring in the extra wastewater with associated high costs and neighbourhood disruptions. There would also have been a greater increase in the amount of effluent going into the Manukau Harbour."

The proposed CI therefore contravenes the intent of existing resource consents.

- 5.1.2.2 In the existing consents (eg. Auckland Regional Council, Resource Consent Permit No. 26635; consent 9610853) it is clearly stated:

"In exercising this resource consent, the Consent Holder shall have regard to the Wastewater 2000 outcomes..." and,

"That the Consent Holder shall not increase the existing hydraulic capacity of the incoming interceptor system to the plant."

The proposed CI therefore contravenes the spirit and the letter of existing resource consents.

- 5.1.3 To ignore the conditions of the consents and the protection that they offer to the ecology of the Manukau Harbour seriously affects the public's perception of the value of the Resource Management Act, the Local Body Act, and the NZ Coastal Policy Statement. More profoundly, it represents a misuse of power and disregard for the integrity of these institutions and Acts of Parliament.
- 5.1.4 The situation in respect of existing resource consents is also relevant. Available information suggests that between 2004 and 2008, the Consent Holder (Watercare) and its owners devised a strategy diametrically opposed to that on which the current consents were issued.

Furthermore, it appears from the abandonment of the Western satellite plant that the implementation of the new strategy (TWFSP) was undertaken without any consultation. The impression given is that the Consent Holder, its owners and the regulator have demonstrated a disregard for the conditions of the consents held, for the Resource Management Act and for the Local Body Act.

- 5.1.5 With regard to the consultation undertaken in preparation for the CI Application, basic precepts were not fulfilled. Put simply, Watercare failed to uphold the obligations incurred with good consultation, including its engagement with the Mangere Bridge community. In our view, this compromises some conclusions drawn in the Application and jeopardizes properly informed decision-making based on it. The obligations for good consultation are accepted in law and include:
- Acting reasonably and in good faith;
 - Conducting proceedings with an open mind;
 - Providing sufficient information to enable those consulted to make intelligent and useful responses;
 - Allowing sufficient time for meaningful engagement;
 - Taking care, especially where 'truly major issues' are concerned.

Taken together these obligations require a decision-maker to ensure decision-making that is fully informed.

- 5.1.6 Auckland Council should therefore avoid appointing commissioners to hear the NOR and CI Application. It should either request central government (through the Minister for the Environment) to appoint independent commissioners to hear the CI Application or, alternatively, direct the Applicant to take the application to the Environment Court (under section 87D of the RMA).

Doing so, will remove the risk of conflict of interest, promote transparency and enhance the Council's credibility. The Resource Management Act and the Local Body Act will also be better served through independent decision-making.

In order to remove the risk of conflict of interest, promote transparency and enhance the Council's credibility, Auckland Council should avoid appointing commissioners to hear the NOR or CI Application. It should either request central government (through the Minister for the Environment) to appoint independent commissioners to hear the CI Application or, alternatively, direct the Applicant to take the application to the Environment Court (under section 87D of the RMA).

The Resource Management Act and the Local Body Act will also be better served through independent decision-making.

6.0 PART TWO: SUBSTANTIVE OBJECTIONS

6.1 Overview

The Association objects to Auckland Council granting a resource consent for the proposed Central Interceptor (CI) or the NOR on the grounds that insufficient information is supplied to enable the application to be processed in accordance with the purpose of the RMA.

Our objections are outlined in brief as follows and outlined in full in pages 12-34:

- ***Objection Two:*** The proposed CI is contrary to accepted best practice for the treatment of both wastewater and stormwater.
- ***Objection Three:*** The proposed CI goes against preferred ecological practice. In particular, it is not good ecological practice to transfer large amounts of water from its natural catchments to a shallow enclosed harbour with finite capacity to receive it.
- ***Objection Four:*** The proposed CI is a huge holding tank (210,000 cubic metres) that represents a 'fix' for the overflows from Auckland's combined sewage system without addressing the fundamental problem.
- ***Objection Five:*** The proposed CI is a key part of a radical, new strategy for handling the future wastewater/stormwater requirements of Auckland. If constructed, the CI would commit the city to a very costly and very risky strategy. These costs and risks are not detailed in the CI Application.
- ***Objection Six:*** The proposed CI fails to properly consider the question of global warming.
- ***Objection Seven:*** The proposed CI introduces very significant and unnecessary problems, particularly for residents at certain points along its route and we are especially concerned for those living in Mangere Bridge.
- ***Objection Eight:*** The proposed CI introduces very significant and unnecessary obstacles for migratory birds that roost on the Kiwi Esplanade reserve in Mangere Bridge.
- ***Objection Nine:*** The proposed CI Application fails to provide for appropriate mitigation and compensation.

6.2 Objection Two

The proposed CI is contrary to accepted best practice for the treatment of both wastewater and stormwater.

- 6.2.1 Best practice is based on generally accepted principles pertaining to sewage treatment, stormwater treatment and combined sewage/stormwater systems. These principles are discussed here:

Sewage treatment. Sewage can be effectively treated by a number of processes appropriate to the volume, location and conditions involved. To generalize, most medium-sized plants serving an urban population use a biological process. There are other systems which can also operate without causing nuisance and are capable of producing bio-solids useful to horticulture as well as water, depending on the level of treatment, up to potable standard. ***Importantly, flows and the ‘strength’ (dilution) of the sewage tend to be relatively constant.***

Stormwater treatment. In a pristine environment, treatment of stormwater should be unnecessary. However, it is probable that most urban areas have high levels of oil, smog residue and metal contaminants, and that rural areas could have fertiliser and/or insecticide contaminants. Because of these and other contaminants, action is required to protect the environment. Methods of extracting or trapping the contaminants require studied choices; treatment is often site specific. ***Importantly, stormwater flows fluctuate wildly according to rainfall, land contours, and so on.***

A further significant aspect, particularly of urban stormwater, is that the ‘first flush’ of rain carries, by far, the highest levels of pollution.

Combined sewage/stormwater systems. To minimise overflows in the system, it is necessary to have both reticulation systems and treatment plants of a size to cater for the maximum flow rates. It is not practical to cater for the most extreme events. Variations in ‘strength’ of the sewage detract from a treatment plant’s efficiency. ***A combined system should therefore be avoided.***

- 6.2.2 Separation of an existing combined system can be difficult but Auckland is lucky in having a relatively small number of properties served by a combined system. Having regard to the factors in Auckland’s situation, full or virtually full separation, is not only the best solution but is likely to be the cheapest in the long run. ***This option should certainly not be dismissed without very thorough investigation.***
- 6.2.3 A significant aspect of the proposed CI project is that it does not supply any benefit until the project and associated works are completed.
- 6.2.4 As Auckland introduces higher density living to cope with increasing population, the amount of stormwater generated will increase substantially, further adding to an already unsatisfactory situation. To cope with this requires the earliest introduction of a comprehensive plan using all available tools, including: the incorporation of soft designs (to reduce and treat stormwater at source) into building/development designs; undertaking a programme to progressively separate the combined system and create a full stormwater system, an improved programme to replace/maintain the existing wastewater system and strict control of the bylaws pertaining to illegal connections. ***In the long term this approach is likely to be more effective and less costly than ad-hoc fixes that leave critical segments of the plan undetermined.***

- 6.2.5 *Given the predicted consequences of global warming (or, to use the catch phrase, climate weirding) the advantages of separate sewer/stormwater systems are even greater (see Objection Six).*

In a nutshell, the Association argues that the proposed ‘fix’ for Auckland’s wastewater and stormwater problems – the central interceptor - is not quick, not economical and not ecologically sound.

6.3 Objection Three

The CI goes against preferred ecological practice. In particular it is not good ecological practice to transfer large amounts of water from its natural catchments to a shallow enclosed harbor with finite capacity to receive it.

- 6.3.1 This principle is accepted and, indeed, is the reason for the limits on the maximum volume to be treated by the MWWTP being incorporated into existing resource consents. The cap on the throughput of the MWWTP was specified in the existing resource consents for the plant to protect the ecology of the Manukau Harbour. In its rationale for establishing the size of the plant,

Watercare stated: “A key issue in upgrading the plant at Mangere is how big it should be. The proposed plan puts a limit on the expansion of the plant and relies on satellite facilities to cope with increased flow beyond the limit.”

Watercare also acknowledged: “that [increasing the size of the plant] would require expensive new interceptors (main sewers) to bring in the extra wastewater with associated high costs and neighbourhood disruptions. There would also have been a greater increase in the amount of effluent going into the Manukau Harbour.”

Similarly, the existing consents (eg. Auckland Regional Council, Resource Consent Permit No. 26635; Consent 9610853) clearly state:

“In exercising this resource consent, the Consent Holder shall have regard to the Wastewater 2000 outcomes...” and,

“That the Consent Holder shall not increase the existing hydraulic capacity of the incoming interceptor system to the plant.”

- 6.3.2 The CI Application and NOR fail to present evidence to show that increasing the volume of discharges from MWWTP will be ecologically safe for the Manukau Harbour.

The Three Waters Final 2008 Strategic Plan refers to some studies to justify larger discharges. These studies are based mainly on lower total nitrogen content but are not conclusive and other factors, for example, salinity, are not even considered. Given the discharge point, the mixing time of salt and fresh water, and wind direction, salinity could have a significant impact on the ecology of the harbour – particularly the north east arm of the harbour.

A long term solution has yet to be devised for the midge problem existing in the present discharge channel. Contrary to expert predictions, the present discharge channel proved to be an ideal breeding ground for midges. Watercare is managing the situation with a combination of chemical applications and salt water flushes but this is not a fool proof or a satisfactory long term solution. A system of continuous shoreline discharge has been proposed as a solution but needs to be researched and tested.

Whilst a continuous discharge might resolve the long term midge issue, it raises a potential problem, with approximately seven tonnes of non-filterable residue currently discharged into the harbour every day in the effluent. The present discharge system appears to carry this silt away to the channel but the proposed continuous discharge could well fail to do this, leading to silt building up in the bay as well as the problems associated with lowered salinity. The MWWTP is, in effect, Auckland’s biggest freshwater river. Increase or even alteration of its discharges requires thorough investigation of the physical, ecological and health/nuisance impacts on the Manukau Harbour.

Both in the CI Application and the Three Waters Final 2008 Strategic Plan emphasis is given to the improved quality of the water in the Manukau Harbour over the last few years and improvements made in some areas are acknowledged. However, the Auckland Council's Research and Monitoring Unit still rates areas of the Manukau Harbour as having the worst quality of water in the whole of Auckland's 'Super City' region. Thorough research of the problems facing the Manukau Harbour is needed and careful application of solutions to reliably ensure the restoration of its wellbeing and continuing ecological health.

- 6.3.3 In response to the Association's questions on the effect of bigger discharges on water quality in the harbour, Watercare supplied the following information on calculated salinity:

"6.10 Effects of Freshwater Discharges

"The Manukau Harbour has a surface area of around 350 square kilometres, a tidal range of 2 to 3.3 metres at Onehunga and a tidal prism on mean spring tide of around 900 million m³. The average wastewater discharge per tidal cycle in 2062 will be less than 250,000 m³, or less than 0.03% of the volume flushed out of the harbour. In the wider harbour context, the volume of freshwater resulting from the treated wastewater discharge is minor."

"The HWQTF advised, "The projected effluent flows are small in comparison with tidal volumes and it is considered that there is no need to limit the daily flow or instantaneous discharge rates for any of the discharge options."

"The presence of the freshwater and reduced salinity fields in the vicinity of the shoreline discharge area would not have any significant adverse effects on harbour aquatic life such as fish or plankton. Scientific advice obtained as part of the Three Waters Strategic Planning Programme investigations indicated average daily fresh water inflows of between 600,000 and 900,000 m³/d could be discharged without exceeding the assimilative capacity of the Manukau Harbour."

"Mean salinity in the north-east Manukau Harbour generally is higher than that at Weymouth in the southern Manukau Harbour and Shelley Beach in the Kaipara Harbour and mid-range for other receiving environments in Auckland, other than open coastal waters. Overall, salinity is broadly similar to most other harbour and estuarine receiving environments in Auckland and current and projected freshwater discharges are well within the assimilative capacity of the north-east Manukau Harbour, based on scientific advice."

Whilst supply of the above information is appreciated, it is challenged on the grounds that:

- The geography of the harbour provides little chance of mixing between the North East (NE) arm and the rest of the harbour.
- The volume of 900 million m³, presumably relates to the whole of the harbour.
(Incidentally, the Officers Report gives tidal volume flow as 450 to 690 m³.)
- The volume moving into and out of the NE arm of the harbour is estimated to be no more than 10 % of that – 90 million m³.
- In estimating future salinity, it is necessary to include natural sources of freshwater feeding into the area.
- Salinity of the incoming tide could be further affected by wind and by backwash from the outgoing tide and freshwater in the channel.
- Freshwater contact within the NE arm would not be the 0.03 % quoted above but above 0.5 % and quite possibly more than 1 %.
- The potential exists to significantly affect the ecology – at least of the NE arm – of the harbour over a relatively few years.

It is not pretended that this simplistic calculation offers a basis for realistic forecast of effects. But, hopefully, it highlights the essential requirement for any development of the magnitude involved to be subject to rigorous, comprehensive research.

Before approval is given for implementation of any significant changes, ALL possible effects need to be thoroughly researched. And, quality computer modelling with ALL contributing factors used, to reliably calculate the effects on such matters as salinity, siltation and ALL contaminants.

The Manukau Harbour is too valuable an asset, it is too vulnerable and the consequences too great for it to be exposed to poorly researched and untested projects such as are proposed in the CI Application and the supporting strategy.

6.4 Objection Four

The proposed CI is a huge, elongated holding tank (210,000 cubic metres). It represents a ‘fix’ for the overflows from Auckland’s combined sewage system without addressing the fundamental problem. The proposed ‘fix’ is not quick, not economical and not ecologically sound.

- 6.4.1 Over and above the information in the CI Application (AEE A 7.2.5), Watercare was helpful in supplying the following information in respect of separation versus CI costs:

“The cost [of separation] was \$55,000 per property (2010 dollars) for the last area to be “separated” (Motions South). This [financial projection] gives a price tag in excess of \$1 billion for full separation across the whole of Auckland. However, experience has shown that: a) the separation is not fully effective due to issues such as lack of knowledge of illegal connections, incomplete plans for the decade’s old parts of the network and: b) the work is extremely disruptive since works must be undertaken in every street and to every property in the combined area. In areas which have been separated post assessment, inspections have found large quantities of stormwater remaining in foul sewer systems and evidence of sewage in some of the new stormwater systems.”¹

In response to these reasons the Association submits:

- That separation of a combined system can be achieved. It is possible to trace and rectify cross-connections and it is reasonable to expect that those undertaking the work will improve their performance with practice.
- That with separation, only a small area is disrupted at any one time and only for a relatively short time. Compared to the nuisance and disruption to residents adjacent to the 19 sites along the route of the CI, the disturbance of separation is small. With the proposed CI, affected residents will endure five years of living by a work site, followed by annual inspections that will create further disturbance. And, any maintenance required will see the work site re-established.

- 6.4.2 In respect of the area to be serviced by the proposed CI, Watercare has also advised:

“The systems that would need to be separated serve a minimum of 12,500 properties. At a cost of \$55,000 per property the cost of separation would be in excess of \$680m (2010 dollars). As stated above, separation works have proven to be highly disruptive, expensive and not completely effective at reducing pollution and stormwater intrusion into the wastewater system. Watercare has determined that the CI system can be used more effectively to address pollution from the overflows noting that:

- a. CI tunnel and surface works have to be built irrespective of overflow mitigation to achieve the primary key requirements of network capacity and security – cost \$620million;
- b. Full separation within CI zone is costed at \$680million;
- c. Total cost for CI and full separation is thus \$1.3 billion;
- d. Overflow mitigation works are costed at \$180 million;
- e. Total for CI and overflow mitigation works is thus \$800 million;
- f. Avoided cost is thus \$500 million.

¹ Email correspondence from Rob Fisher, General Counsel of Watercare, dated June 21, 2012..

6.4.3 The Association contends the above costing is flawed because it fails to consider all of the relevant factors in respect of the area to be serviced by the proposed CI. Other relevant factors are noted here:

- It has been stated that there is substantial ingress of groundwater into sewers from aged and damaged pipes in the central area; other references in the TWFSP state that many sewers are near capacity and cannot be serviced because they flow full for significant periods. These factors are germane to the problem, yet there is no reference to the cost of tackling (or of not tackling) them in the equation presented.
- Presumably, these areas will have an asset renewal program based on age. It would make sense to combine this work with separation.
- The Mayor of Auckland City has stated that the Auckland central business district's population is expected to double by 2036². This projection indicates that considerable work will be needed on sewage reticulation in the central area, and that, too, could and should be combined with separation.
- Certainly this work would be disruptive, but planning and completion of 80% of the work over fifteen years (the planned time and target for the CI and overflow mitigation works to be available for utilisation) is possible and should not create undue disruption.
- The matter of illegal connections to the sewage system (stressed as a problem by Watercare in other communications) is already covered in existing bylaws which have to be enforced. Failure to enforce such bylaws can only lead to them being ignored, in turn leading to ever increasing volumes of stormwater in the wastewater system and the call for ever larger reticulation and treatment facilities.
- If stormwater from the combined system is reduced, the cost of overflow mitigation works (noted above in (d) as \$180 million) is saved. The cost of a replacement interceptor (noted above in (a) as \$620 million) could be significantly reduced and possibly delayed
- It is highly likely that a comparison based on a realistic costing (including timing) of the essential works would show a cost advantage of the first option below. That is,
 - Separation and repairs/replacement to 80% of the combined waste/stormwater system, and repair/replacement of the sewers taking sewage to MWWTP

Versus

- Cost of the CI and overflow mitigation costs **plus** associated work at MWWTP **plus** repair/replacement of the aged and damaged pipes in the central area.

(The costs given above are those supplied through Watercare for the unsuccessful work undertaken by Metrowater. Other communities have successfully separated combined systems serving a similar number of properties for a fraction of this cost.)

- **Of much greater importance however**, separation and repair/replacement of both the central area sewers and the sewers to the plant offer a quicker, better and more reliable solution that does not require Auckland's ratepayers to commit to some of the longer term solutions (with still unresolved problems) outlined in the TWFSP.

² Comments made by the Mayor of Auckland City at the 2012 International Retailers' Conference.

- 6.4.4 The CI fails to address the fundamental problem with stormwater and, at great expense, will create other problems. The Association submits that to protect its waterways and both its harbours, Auckland needs to address the increasing stormwater problem holistically and to use every possible means – soft design (that treats and reduces stormwater on site), dedicated stormwater reticulation with carefully chosen techniques to reduce the pollution, as well as improved maintenance of the wastewater system with properly enforced bylaws relating to illegal connections.

The full size and predictable growth of Auckland's stormwater problem needs to be faced. The greater the number of buildings and the higher density planned, the greater will be the increase of stormwater requiring disposal. The requirements will be exacerbated by global warming.

Every means of countering the problem needs to be fully considered, including soft design that treats stormwater on site (green roofs, permeable paving, rain gardens & swales, first flush tanks, etc.), as well as effective and efficient reticulation and treatment possibilities.

Protection of the waterways and of all harbours is critical to Auckland's wellbeing.

Simply channelling stormwater into a sewage system is not a satisfactory solution.

6.5 Objection Five

The proposed CI is a key part of a radical, new strategy for handling the future wastewater/stormwater requirements of Auckland. If constructed, the CI would likely commit the city to a very costly and very risky strategy, the costs and risks of which are not detailed in the application.

- 6.5.1 Many of the figures quoted in the CI Application are questionable and reference is made to the Three Waters Final 2008 Strategic Plan. The Applicant has adopted Auckland Council's 'medium growth scenario'. Future volumes are calculated (A 3.6.2) on a population increase (on base year 2011) of 31.7% in 20 years and similarly on a 'connections' basis (on base year 2011) of 30.9% in 20 years. In other parts of the ALTP, for example, transport requirements, the population increase (on base year 2012) is given as 57% to 79% in 28 years. The huge difference in these growth rates demands that more reliable requirements need to be determined and catered for. More recently, other population forecasts have been made.
- 6.5.2 As evidenced by Watercare's submission on Auckland Council's draft Unitary Plan, the company's plans and strategies are disconnected from those of Council. It seems irrational to approve a project of this magnitude that is not in line with Council planning and makes no attempt to even consider opportunities for innovation or to better meet the City's needs.
- 6.5.3 The TWFSP fails to supply clear guidance for projected daily flows – the chart on page 27 is based on an allowance per person for projected population. On the same page, the maximum treatment plant capacities given have no substantiated validity. Subsequent charts (at p. 34 & p. 39) indicate the use of plant modifications that are not recommended in the text (see 6.5.6 below).
- 6.5.4 The additional sewage/stormwater collected by the 'overflow mitigation system' and transferred to MWWTP is stated as two million cubic metres (no details of the calculation are supplied). The CI Application also refers to anticipated increases in overflows.
- 6.5.5 Given that present operating loads at MWWTP are already more than 80% of the consented maximum for the plant, the statement that it can cope with predicted (increased) flows up to 2027 deserves close scrutiny.
- 6.5.6 The TWFSP referred to in the CI Application contains a multitude of statements that are patently flawed. For example, in support of MWWTP as the primary treatment facility for the region, it states at page 42:
 - It [MWWTP] was planned and designed for the purpose.
Association response: In fact, it was designed for its present capacity with additional requirements directed to satellite plants.
 - MWWTP has existing consents to allow treatment under average dry weather conditions for at least another 300,000 people using existing treatment methods.
Association response: This statement appears to conflict with that on page 43 TWFSP that 'MWWTP will reach its capacity by 2027 if no extension of the existing consent limits can be obtained.'
 - MWWTP has the existing ability to treat substantially greater volumes of wet weather flows than the waste treatment plant at Rosedale.
Association response: But this does not mean that MWWTP can discharge more effluent without potential damage to the ecology of the harbour.

- The quality of the Manukau Harbour has improved substantially as a result of investments made in MWWT in the last ten years.
Association response: But this does not mean that MWWT can be expanded without huge costs and unacceptable environmental risks. (Parts of the Manukau Harbour are classified as having the poorest quality water in the region.)
 - No other facility is available to accept reasonable flows.
Association response: This arose because Watercare and its 'shareholders' aborted the concept of satellite plants and progress on separation of the combined sewers faltered. It's not too late; in fact, it is probably still quicker, cheaper and more effective to address these problems directly.
 - Its continued use in the medium term optimises the benefits from historical investments and avoids the need for substantial expenditure on additional treatment capacity at an alternative site.
Association response: An example of treatment plant costs versus tunnelling costs is given in 6.5.12 below.
- 6.5.6 A notable feature of the proposal is that neither the application, the NOR, nor the strategy in the TWFSP offer an acceptable means of handling increased discharge from an expanded MWWT. The TWFSP (at p. 42) acknowledges that a different discharge would be required, explores the possibility of a discharge to the Papakura channel, a tunnel to the Tasman Sea and chooses the tunnel to the Tasman Sea. Both options are then dismissed (p.43) as having “unacceptably high risk of future problems”.
- 6.5.7 Costs quoted in the TWFSP are questionable. For example, the cost of the 40 kilometre long tunnel to the Tasman Sea is estimated as \$1 billion; given that the cost of a smaller 13 kilometre long tunnel in an easier construction environment is to cost \$620 million, this has to be extremely optimistic.
- 6.5.8 ***Importantly, the whole thrust of TWFSP is to utilise ever larger sewers/interceptors to feed only two plants.*** For example, p. 44 states that South Auckland treatment plant options (Project South) were excluded from the plan on the grounds that there is no certainty on future trends and population to be served. Nevertheless, TWFSP also states (P27) that the upper section of the Southern interceptor requires duplication by 2015, and the middle section by 2030 (which also conflicts with the current consents).
- 6.5.9 Despite what is stated in the Application and the TWFSP, recent studies by Watercare and others appear to acknowledge that a further treatment plant is required in the South. If the TWFSP is flawed in this respect, it is further reason to investigate the strategies behind the CI Application.
- 6.5.10 Several times it is stated that the proposed CI uses gravity to deliver sewage to the MWWT. On its arrival at the plant, however, it is 40 metres below ground level and has to be raised, by pumping, some 40 metres plus to the level at which it is treated. Watercare’s CI Project Manager estimated the pumping cost per year to be about \$2 million.
- 6.5.11 The TWFSP makes a number of references to the ‘flexibility’ of the proposed strategies. However, it is not explained – particularly in the ‘two plant plans’ proposed in the ALTP and the CI Application – how the construction of ever larger and more expensive interceptors converging on two sites increases flexibility.

- 6.5.12 In comparing the costs of treatment plants *versus* interceptors, it is worth looking at the present plant and the proposed interceptor. A large percentage of the cost of the MWWTP project involved site and restoration works – thousands of cubic metres of soil had to be moved; millions of cubic metres of toxic sludge had to be drained/dried and housed in engineered lined and capped landfills, and thousands of cubic metres of rock sea walls had to be removed. All of this was done and a plant several times the size of the envisaged satellite plants was built for very much less than the proposed CI.
- 6.5.13 The NOR and Application fail to comment on serious risks inherent in the CI project or indicate whether they have been properly considered. For example: The CI is, in fact, a huge elongated holding tank made of reinforced concrete. It is at the end of an already long sewage reticulation system. It is not unlikely that, at times, the sewage will become septic. Septic sewage in the presence of air creates sulphuric acid (which attacks concrete and steel) and hydrogen sulphide (a gas that is particularly noxious and a hazard to health). Nothing in the application indicates what, if any, anti-corrosion measures are proposed, their expected effectiveness or how foreseeable repairs would be implemented.
- 6.5.14 No evidence is given to show that the CI can efficiently handle the range of present flows. During the dry (but not drought) conditions in the early part of this year (2013), flows were low and on one occasion down to 12000 M³ for the day. In such a huge pipe, using the gravity of a low (1 in 1000) incline, the sewage flow would be shallow, have a large surface area and a huge volume of air (probably of low humidity) passing above it. What is the calculated rate of evaporation? High enough to effect or stop the flow? And, with what consequences? Would the consistency of the sewage create treatment problems?
- 6.5.15 In submission number 697, Mr Joel Cayford presents a compelling argument for, amongst other considerations, the use of holding tanks separate to the interceptors. This approach has the advantage, apart from cost, of offering earlier benefits, being more flexible, facilitative of maintenance. It could be used, too, on the Eastern interceptor, which has much greater flows.
- 6.5.16 It has been stated by Watercare that it does not have the infrastructure to meet the needs of the draft Unitary Plan for Auckland. Again, it is irrational to sanction a project of this magnitude without a clear understanding of its purpose and its place in the overall strategy.
- 6.5.17 If the proposed CI was approved, it would undoubtedly lead to pressure to expand the MWWTP and, without forward planning of alternatives, there will be little option but to sanction this. In effect, future decision-makers will be presented with a fait accompli. (The credibility of the protections offered by the conditions in resource consents is at a low ebb.)
- 6.5.18 Nowhere in the CI Application or the TWFSP are emergency risks or procedures considered or mentioned. Any damage or failure in the incoming interceptors to the plant, to the plant itself or to the larger discharge arrangements mooted is likely to have catastrophic impacts on the ecology of the Manukau Harbour and health hazards for a large population. Given that seismic and volcanic risks exist, it is not unreasonable to question the prudence of creating an ever larger facility in such a sensitive location.

The NOR and the Application are clearly disconnected from the requirements in Auckland's draft Unitary Plan, are supported by questionable statistics and statements, and fail to properly identify and deal with risks.

6.6 Objection Six

The proposed CI fails to properly consider the question of global warming or, to use a catchphrase, climate weirding. Auckland's strategy must recognise the likely effects on stormwater and wastewater.

- 6.6.1 Whilst some aspects of global warming are still being argued - the relative effects of solar activity patterns (with 11 year and 300 year cycles) and those of 'man-made' factors - warming of the planet, particularly the polar regions, is a generally accepted fact. And, it is happening more rapidly than first predicted (i.e. at the Rio Conference twenty years ago.)
- 6.6.2 The predicted effects are:
 - More ferocious and more frequent storm events;
 - For some areas, more extreme climates (including, ironically, some colder weather);
 - For some areas, 'weirder' weather (such as years of record rainfall and/or years of record drought).
- 6.6.3 Whilst most of the analyses have, to date, been made in the northern hemisphere (where longer and more thorough climatic records exist), there is no reason to doubt that such events will not be global.
- 6.6.4 Given the possibilities of such effects occurring in Auckland, it would be sensible for the Council to make every endeavor separate the wastewater system and to enforce the bylaws in respect of stormwater connections.

A separate wastewater system, with a target of, say, no more than 15% increase from storm events, could operate with much less influence from climatic conditions
- 6.6.5 A separate stormwater system that was able to trap and treat the 'first flush' of any storm events as well as convey larger quantities to discharge points could be very effective in reducing the total stormwater pollution.
- 6.6.6 Auckland is, in fact, very lucky to be in a position (with a low percentage of the city on a combined system) where this strategy can be implemented.
- 6.6.7 Not to properly consider this strategy represents an exercise in myopia.

The CI Application and supporting strategies must consider global warming and its effects on volumes of storm water.

6.7 Objection Seven

The proposed CI introduces very significant and unnecessary problems – particularly for residents at certain points along its route and we are especially concerned for those living in Mangere Bridge.

- 6.7.1 The Association recognises that aspects of the CI itself raise serious concerns for residents at various places along its route. We have no mandate to speak on behalf of other communities and therefore confine ourselves to the very significant and unnecessary problems and potential impacts on our local area generally, including local parks and the Manukau Harbour, and in particular the proposed maintenance access and emergency pressure release vent at the Mangere Bridge site on the Kiwi Esplanade reserve.
- 6.7.2 At one stage, a choice of two sites was offered for the proposed maintenance access and emergency pressure release vent but one was withdrawn – both on the Kiwi esplanade reserve. Following initial community feedback, Watercare relocated the site to the east by a few hundred metres near a stand of trees and adjacent to the yacht club where there is an existing toilet block. Watercare also made modifications to its plans to mitigate the visual impact of the structures.

At the time this accommodation was appreciated although residents asked Watercare to continue to explore other sites and report back on other options. The Association was also aware of the absence of a considered overview and, with it, comprehensive understanding of all the available sites, factors taken into account for siting the vent and access hatch, and among other things a clear rationale for the order of priorities in making design decisions.

- 6.7.3 ***We want to make it very clear however, that any indication that might have been received by the Applicant for acceptance of the site on Kiwi Esplanade Reserve is nullified by the misinformation given to residents at presentations and open-days:***

- Residents were told that the work time for the site close to the yacht club would be four to five months. The CI Application (AEE A 6.2.2) reports it will take 12-18 months, intermittent over two to five years; followed by annual inspections and, reopening of the worksite to handle any maintenance required. This represents a very major nuisance for residents, for users of the reserve and the yacht club, and roosting birds (discussed in Objection 8).
- Residents were told that work adjacent to the bird roosts would be timed to minimise the effect on the birds; clearly that is not now likely. Further, the information given in the AEE and technical reports is incorrect (see Objection 8).
- Residents were told that the pressure release vents would discharge only infrequently; the estimate given was ‘a once in every two to five year occurrence’. The CI Application notes the infrequent occurrence but adds six to eight times a year during wet weather events (Refer: AEE.B. 9A.5.9). Also these estimates are based on theoretical modelling and no-one knows for certain how many times per year the vents may need to open. Given Auckland’s (and the world’s) changing weather patterns, it’s not unreasonable to conclude that more rather than less wet weather events are likely to occur annually in the future.
- Residents were further advised that the size of the access hatch would be 7 metres in diameter and 1.2 metres high. The CI Application gives the height as 1.5m to 3m high (Refer: AEE A 5.41). The latest version is 2 to 3m.high.

- 6.7.4 Of major concern to local residents are the potential effects of opening up the access hatch – and, presumably, the whole of the 210,000 m.3 of holding tank - from a viewpoint of both nuisance and health risk (air released from this access will be the stalest and most odorous in the CI). In the event of septic sewage occurring, the situation could be horrendous (see 6.5.12 above).
- 6.7.5 The proposed arrangements for handling odours (refer 5.5.4 Additional air treatment facilities-Central Interceptor Main Project Works AEE – August 2012) are unacceptable. The time proposed to:

- Verify the source of the odour;
- Determine the operating mode of the CI;
- Assess the frequency of complaints and conduct monitoring to determine the duration and frequency of problematic odours;
- And, if odour issues are significant in terms of frequency and duration, to implement a treatment system within a “likely time-frame of 1 to 12 months upon confirmation that action will be taken,

shows an arrogant disregard for the quality of life of the public the company is meant to serve, and gross abuse of the powers the company holds. Twenty years ago the Court made a ruling that effectively prevented a situation that had developed as a direct result of this attitude on the part of authorities. It was not accepted then and should not be accepted now.

Technology exists to monitor odour, its strength, duration and frequency chromatically. The target must be for NO odours and for any odours that do occur to be rectified as a matter of urgency.

It would be appropriate for Watercare to post a bond of, say, \$10 million, to be used to compensate people directly affected by untoward odour incidents or, where the general public is affected, to give compensation to a Trust with the specific aim of enhancing the Manukau Harbour and its environs (refer Objection 9).

- 6.7.6 Notwithstanding filters, which are obviously essential, the odour emitted when the vents are opened may also deter recreational users of the Esplanade and reinforce the negative labelling long attributed to Mangere Bridge because of its proximity to the MWWTP and its all-pervading ‘sewerage smells’. The upgrade of the plant has gone a long way to manage the odour problem but the possibility and prospect of its return is a source of huge concern in the local community. Given the misinformation provided at the Watercare presentations and the open day, the community has little faith in the modelling on which odour management is supposedly based.

- 6.7.7 To summarize the situation:

- 6.7.7.1 Watercare and Auckland Council Parks have grossly understated the value that the local community and other users place on this reserve. At the moment, this attractive location manages to happily combine the activities of a vibrant yacht club, fishermen, walkers, joggers, cyclists, bird watchers and bird roosts as well as a host of less regular activities. For our community the reserve is *like or akin to* a taonga, and could be considered as one of Auckland’s recreational gems.
- 6.7.7.2 In ‘selling’ the proposed location at its presentations and ‘open days’, Watercare seriously misrepresented the effects on the location (see 6.7.2 & 6.7.3 above).

6.7.7.3 Indications suggest that this misrepresentation is, again, and still, evident in the Application:

- Being the last and lowest section of the tunnel, it will require the most frequent inspection and clearing of detritus that collects in tunnels;
- The higher loading and storage use of this section (including corrosive, stormwater contaminants) will increase the inspection and maintenance requirements;
- The length of this segment - 2553m - must also increase the time requirements for open use of the access hatch.

6.7.7.4 With five years of construction time and the foreseeable, subsequent usage requirements, it is not difficult to see the location as a permanent or, at least, a semi-permanent work site.

6.7.7.5 There are other locations where the access hatch and relief vent could be sited. Attached is information supplied by Watercare on three sites studied by them and their assessment of the sites together with our Association's comment and suggestions below.

We refer now to Attachment A - Kiwi Esplanade Site (proposed location) and offer the Association's comments as follows:

- Construction site location:
 - Bullet point one implies that tunnelling and tunnels under the harbour bed are more hazardous.
 - Bullet point two: Other information received is that this is of limited value as the tunnel boring machine can be inspected and maintenance such as replacement of cutting heads carried out at any time.
- Operation and safety:
 - Bullet point one: We are not able, at this time, to challenge the calculation involved but offer alternative solutions below.
- Land use effects:
 - Bullet-point two. The separation (approx. 100M) is NOT considered reasonable for the projected work.
 - Bullet point three: The effect of the works on recreation values is NOT considered to be "limited".
- Further, not included in the rationale, but stated in discussions and responses, Watercare has stated:
 - "The maximum desirable distance between access hatches is 1500m. to 1600m."
 - That safety – both of tunnelling and service of the tunnel – is paramount in establishing the location of the access hatches.
- It would seem irrational, therefore, that the last segment of the tunnel (the segment with the greatest load, storage, inspection and maintenance requirement) should be 2553m long and have a significant part of its length below the harbour bed.

(As an aside, it is known that Watercare representatives held discussions with the unhappy owners of a property facing the proposed site and appeared to be amenable to moving the site to the other (Eastern) side of the road (from Kiwi Esplanade, to the yacht club). Whilst this move could have some advantages they are minor and not likely to influence the objections to the location.)

We refer now to **Attachment B – East Ambury Site** and offer the Association's comments as follows:

- It will be seen that this site offers slightly increased distance (50.m.) from neighbours.
- That it is marginally (200m.) further from the coast but closer to the terminal of the tunnel.
- The ground being higher than coastal sites enables the structures to be less visually intrusive.
- Other minor works in the vicinity have failed to impact on cultural values.
- A significant advantage to any site in Ambury Regional Farm Park is that it would facilitate providing a discharge point for the sewage holding tanks in most modern motor home/camping vehicles.

Regarding other sites in Ambury Regional Farm Park

- Within the vicinity of the East Ambury Site, are other sites which have already been 'modified' and in which the works could be easily hidden.
- All of these sites offer greater protection for neighbours without unduly stretching the length of the CI.

We refer now to **Attachment C – Watercare Land Site**, and offer the Association's comments as follows:

- This location offers far greater protection (300 m. distance) for the nearest property owners, does not raise any serious issues (apart, possibly, from venting requirements) and, hopefully, avoids disturbance of a much treasured reserve.
- Whilst it increases distance from the coast to the North, it reduces what seems an irrational distance to the terminal.
- It is noted that further hydraulic modelling is likely to be needed in order to establish whether other facilities, such as a vent shaft, is required.
- It should be noted that at least two other sites on Watercare land could be used (one approx. 300m., and one approx. 1000m. in a WNW direction from this which might offer some flexibility in choosing appropriate distances.

6.7.8 Residents are, also, very concerned by the threat to the harbour posed by the proposed EPR – emergency pressure relief pipeline (three pipes of two metre diameter at the terminal of the CI in the MWWTTP). To contemplate, even in an emergency, dumping raw sewage onto an area of beach and shallow sand/mud banks in a sheltered corner of an enclosed bay with no tidal scouring is completely confounding. **How is it envisaged in 14.2.2.3 that a discharge would be dealt with by 'tidal scouring'?**

(Such unconsidered answers to foreseeable problems only raise more scepticism as to the level of thought that has gone into the proposed CI - particularly as it affects the ecology and communities.)

Ms Floyd and Mr Galamidi in their reports, acknowledge that the proposal presented by the Applicant raises serious concerns.

It is submitted that no consent should be granted before a thorough examination of:

- The reasons and need for the discharge
- All possibilities for obviating the need have been fully considered
- The calculation for the predicted frequency has been thoroughly examined, does it allow for future volumes and climatic factors?
- The likely situations in which the discharges might occur (tidal state; co-incident with other overflows into the harbour?)
- The likely extent and volumes of discharged material
- The likely length of the discharge
- The time envisaged for the matter to disperse and become inert
- The effects on the receiving environment
- Appropriate and adequate remedial actions are determined and specified.
- Any arrangements should recognise the intent of existing consents which, (outside of the mixing zone) ensure that the harbour is safe for swimming and surface recreation; free breeding and safe human consumption of fin fish and shellfish.

It is requested that, should the CI application be granted, it is subject to further hydraulic modelling to achieve necessary safety levels, eliminate or minimise ecological risks, and to locate the access shaft away from neighbours and the Kiwi Esplanade reserve. (If a figure of \$5–10 million dollars – a figure that has been quoted - were incurred in achieving this, it would be fully justifiable.)

6.8 Objection Eight

The proposed CI introduces very significant and unnecessary obstacles – particularly for migratory birds that roost on the Kiwi Esplanade (Mangere Bridge) reserve.

- 6.8.1 The Manukau Harbour is recognised as the most important site for shore birds in the country¹. The Manuaku Harbour supports over 20% of the total of all New Zealand shorebirds and it is estimated that more than 60% of all shorebirds utilise this harbour either before or after migration, or seasonally as a feeding habitat.¹ Internationally New Zealand, and Auckland in particular is recognised as an important destination for migratory birds. The predominant migratory species: Bar-tailed godwits (*Limosa lapponica baueri*) and the red knot (*Calidris canutus*) have recognised international status through the East Asian-Australasian Flyway, (EAAF). New Zealand is a signatory along with 21 other countries, thereby giving commitments to maintaining global diversity targets and maintaining habitat availability.² These migratory birds fly over 11,000 km in just over a week and some have been tracked flying over 12,000km, a non-stop migration from Alaska.¹

To survive and thrive however, these birds depend on their habitat – the New Zealand winter (Northern Hemisphere) feeding grounds and roosts must be preserved. This preservation needs to be done in a liberal manner. Sites that are known to be used by the birds should, wherever possible, be preserved.

When the birds return back to NZ, they are incredibly skinny, need to re-grow their feathers, this can take between 100 and 120 days to complete and is a critical process³. As Godwits need to be able to fly all the time, in order to avoid predators this process takes place in succession. It is critical that this process is completed before the northern migration. In order to grow birds need quality foraging opportunity with little disruption.

Bar-tailed godwits (*Limosa lapponica baueri*) show high site fidelity, throughout their annual cycle. This could limit the birds knowledge of and ability to move to alternative sites³. Additional sites, such as that currently available on Watercare's property, are needed to counter the increasing restrictions from such developments as the airport development and the growing use of all open space. The philosophy of casually debasing the use of bird roosts on the basis that the birds can possibly find an alternative site is a recipe for their ecological destruction (see 6.8.3 and 6.8.4 below).

- 6.8.2 As noted already in 6.7.3, Mangere Bridge residents were advised that “work would be timed to minimise disturbance to roosting birds”. The duration of the work period (referred to in 5.6.3 above) makes that unlikely. Further, the information given in the CI Application (in AEE.A 12.4; in AEE B 9A5.4; and in technical reports C 3.2.1, 4.1.5, and 5.3) – like the Officers Report, ignores Godwit and Knot, the flocks of birds that migrate here from the Northern hemisphere and arrive in October (sometimes in late September) and stay until March. (April)
- 6.8.3 ‘Wader’ birds - Including South Island Pied Oystercatchers, (*Haematopus finschi*) Variable Oystercatchers, (*Haematopus unicolor*) Royal Spoonbill (*Platalea regia*) Red Knots and Bar tailed Godwit utilise the intertidal zone for feeding and use and the immediate area as roosts.

Of particular importance are– Red Knots and Bar tailed Godwits - that fly thousands of kilometres to get here; they arrive around October and stay until March/early April. The aim and need of these birds is to spend as much time as possible feeding on the tidally exposed mud/sand banks; to rest as much as possible on a nearby site with clear view of any approaching predator, and to get as fat as possible. Fat is their fuel. Fat is to a Godwit what jet fuel is to an airliner. Without enough fuel, they don't get to their destination. Non-stop flights of migrants are exceptional for a variety of reasons; such as the flight lasting for longer than 100 hours, there is no intake of water or food and they are accomplished at a metabolic rate well above the

maximum sustainable rate of exercising mammals. (small) The Basal metabolic rate is multiplied 8-10 fold when in flight and the minimum cost of flight is estimated as twice the aerobic limit of similarly sized running animals.⁴ In order to gain sufficient fat, an average of 55% to 58% fat, more than half of their body mass is needed to supply the energy for flight.³ Birds need to take in more energy than they expend, this is impossible if there is continued effects of disturbance. In response to a perceived threat the flock of birds take off, circles for a time and then lands and settles again, continued disturbances can have a cumulative effect on the birds and serious effects on the energy budgets resulting in reduced reproductive success.¹

There is not an abundance of habitat for them nearby. Concern would be if that displaced birds move towards the Airport, as an alternative roost, this would become an further aviation hazard and a risk of death to the birds.¹ Also there are concerns for birds if their energy budgets are forced into deficit as a result of commutes between feeding grounds and roosts. Knots and Godwit are very particular about where they roost. They will, on occasions, use a paddock but only if there is no ‘cover’ and the grass too short to hide predators – few paddocks meet these requirements consistently.

Again it is important to reiterate comments above (6.8.1), with increasing pressure from such developments as the airport and the growing use of all open space, the philosophy of casually degrading the use of bird roosts on basis that the birds can possibly find an alternative site is a recipe for their ecological destruction.

6.8.4 ***The situation has international as well as local ecological considerations.*** In the 1990s, Sir Les Mills, then Mayor of Auckland, led delegations to Japan, Korea and China, countries in which these birds pause to rest and feed on their annual northbound journey, to plead for the protection of the sites used by the birds. The New Zealand Wader Study Group has for many years maintained close contact (including reciprocal visits) and cooperation with similar groups in Alaska and those East Asian countries on the ‘flyways’ of the birds; their work is internationally known and respected. International interest in the birds is evidenced by the sites and references to them on the web.

It is surprising that the Applicant and its advisors seem to be unaware of these birds. Also, that the value of the migrating birds, their roosts or their feeding grounds is not recognised by today’s Council and its officers. In fact, the Manukau Harbour meets the criteria for recognition by RAMSAR³ as a site of ‘International Importance’ and interest is building for this recognition to be applied for and gained. Such recognition would have value as an attraction for eco-tourism – a not insignificant sector of the tourism market – and require less expensive promotion than many other tourism ventures.

³ See: <http://www.ramsar.org>

6.9 Objection Nine

The proposed Application fails to provide for appropriate mitigation and compensation. In the event that the CI was approved, the approving body should make provision for compensation and, in particular, order:

6.9.1 That the conditions for the consent include:

- The existing discharge limits on the plant be extended beyond 2032, to perpetuity;
- Restrictions on the quality of the discharge be modified to include all known contaminants that are potentially hazardous to the ecology or health of the Harbour (items such as phosphorous, metals and persistent organic compounds);
- The establishment of Community Liaison Groups along the CI comprised of local residents, representatives of the Trust referred to below, and representatives of Watercare, to have input to the final design, location and aesthetics of access structures for the CI and, subsequently, to investigate and adjudicate on nuisance incidents.

6.9.2 That the Applicant and Auckland Council jointly undertake a ten year program to ‘clean-up’ the Manukau Harbour, its foreshore and environs. This would include but not be limited to:

- ‘Fixing’ wastewater outflows and overflows into the Harbour;
- Enhancing tributaries to the Harbour and stopping pollution and silt from them entering the harbor;
- Comprehensive monitoring of the Harbour to establish and eliminate sources of pollution and to preserve salinity levels. The aim being to make the whole of the Harbour safe for contact recreation, fishing and shellfish gathering;
- Remove mangroves to ensure that the Harbour is useful for birdlife, fish and humans; and,
- Develop and enhance the foreshore and environs with beaches and recreational areas for the growing population.

6.9.3 Undertake a programme to specifically preserve and enhance bird habitat, such as feeding grounds and roosts, and to seek RAMSAR recognition for the Manukau Harbour as a site of ‘International Importance.’

6.9.4 Establish a Trust (akin to that related to noise issues from Auckland Airport) to assist in investigations into nuisances, handle compensation for nuisances in respect of the CI, and to co-ordinate work associated with the ten year clean-up program above.

7.0 CONCLUSION

- 7.1 In relation to the NOR and CI application, Auckland Council should act in a manner that gives no appearance of conflict of interest. Acting reasonably, honourably and in good faith in this instance requires Auckland Council to either ask the government to appoint independent commissioners who can ensure a transparent and fair hearing, or alternatively instruct the Applicant to take the application direct to the Environment Court. The Resource Management Act and the Local Body Act will also be better served through independent decision-making.
- 7.2 The real problems of Auckland's stormwater will not be properly addressed by the proposed CI. The size and foreseeable increase of stormwater demands that the problem and solutions be thoroughly reviewed, as well as the requirements created by the City's Unitary Plan. (The likely effects of global warming – or climate weirding – need to be seriously considered and an appropriate strategy adopted.)
- 7.3 Neither the NOR, the CI Application, nor the TWFSP referred to, provide sufficient and verified facts to permit proper assessment of the value of the proposal and associated risks. On this ground alone, the NOR and CI Application should be declined.
- 7.4 To permit proper assessment in accord with the purpose of the RMA, the proposed CI should be considered in conjunction with the strategies of which it is a part – strategies which have never been properly debated or justified, and which contain potentially serious ecological and health risks (among others) as well as major cost and efficiency implications.
- 7.5 The strategy behind the CI application and the basis for relying on two sizeable plants for the region represents a clear return to the policies pursued prior to Watercare's review in the 1990s which found that those policies to be seriously flawed. Those failed policies are certainly not an appropriate strategy to cope with the growth envisaged for Auckland and likely future challenges.
- 7.6 The CI Application represents acceptance of a much larger strategy by stealth. If the CI were approved and \$1 billion spent on the overall project, and if no other more rational plans were developed, acceptance of other segments of the strategy would become unavoidable, resulting in increasing the capacity of the MWWTP beyond its consented limits – and, possibly, its ecologically sustainable limits.
- 7.7 It is irrational to be undertaking a long term project justified by the requirements of a combined wastewater/stormwater system without a clear and agreed strategy for stormwater
- 7.8 It is, also, irrational to be determining the specifics of long term infrastructure project which is not synchronised with the Unitary Plan and the future pattern of development of the region is not established.
- 7.9 Until such time as a comprehensive plan that addresses all of the requirements of the region's wastewater and stormwater requirements – a plan that gives proper consideration to all of the risks involved as well as costs - and until this is appropriately debated and adopted, the conditions of the existing resource consents should be inviolate.
- 7.10 The facts in Part 1 of this submission; the very liberal requirements on the Applicant to justify its position and the limitations on what the Commissioners may determine (as stated in the Officer's Report) create a very strong impression that both the purpose of the RMA and common sense have been circumvented. It is submitted that this situation demands greater scrutiny; hence, the request for an inquiry.

7.11 Finally, in making this submission, we put forward the following recommendations.

That those charged with the responsibility of hearing this submission:

- **DECLINE** the Application for the proposed CI and **REQUEST** the Applicant to withdraw the NOR; and,
- **CALL FOR A PUBLIC INQUIRY** into the Three Waters Study and consequent strategies (the creation, constitution, compliance with requirements, consultation and the completeness of the study and strategies) and their relevance to the needs of Auckland as established in the new Unitary Plan. It is further recommended that this inquiry be undertaken in co-operation with central government, representatives from the Auditor General's Office and the Department for the Environment, affected iwi and community stakeholders.

ATTACHMENT: A

AECOM

Kiwi Esplanade Site (proposed location)

<p><u>Tunnel alignment and connections</u></p> <ul style="list-style-type: none">• Main tunnel length PS 23 – WWTP: 4,153 m;• Link Sewer 4 connection to Witla Court: 534m <p><u>Construction site location</u></p> <ul style="list-style-type: none">• Proposed shaft location:<ul style="list-style-type: none">◦ minimises distance between tunnel access shafts on either side of the Manukau Harbour◦ allows inspection of TBM before crossing the harbour to ensure it is in good working order• Construction access via an existing formed road. <p><u>Operation and safety</u></p> <ul style="list-style-type: none">• Pressure relief air vent optimally located to avoid tunnel pressurisation and damage during tunnel filling.• Access shaft location minimises distances for maintenance workers in section under harbour. <p><u>Land use effects</u></p> <ul style="list-style-type: none">• Landscape - Open space setting on coastal edge, existing trees provide some screening of permanent works, but construction site fencing and works will be visible to houses on western end of Kiwi Esplanade Reserve• Neighbours - Reasonable separation from residential neighbours (approx. 100m)• Recreation - Limited effect on recreation values. Adjacent public walkway. Temporary closure of toilet block. <p><u>Cultural & heritage effects</u></p> <ul style="list-style-type: none">• Cultural heritage - Site in modified area with no archaeological evidence. Site supported by AC Parks• Geological heritage - No geological heritage sites <p><u>Environmental effects</u></p> <ul style="list-style-type: none">• Air discharge - Reasonable separation from residential neighbours (approx. 100 m). Air treatment for discharge which may occur during tunnel filling in wet weather events.• Replacement of existing toilet / changing building provides opportunity to incorporate pressure relief air vent• Traffic - Low level of traffic generation during construction will be well within capacity of local roads• Trees - Loss of some existing trees, but will be retained where possible. Replanting & landscaping proposed• Ecology - Site in proximity to high tide roost used by wading birds. Potential for some limited disturbance during construction. Trenching for Link 4 connection timed to avoid high wader numbers.	
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ATTACHMENT: B

AECOM

East Ambury Site

<p><u>Tunnel alignment and connections</u></p> <ul style="list-style-type: none">• Main tunnel length PS 23 – WWTP: 4,313 m• Link Sewer 4 connection to Witla Court: 715 m <p><u>Construction site location</u></p> <ul style="list-style-type: none">• Proposed shaft location:<ul style="list-style-type: none">◦ approx. 200 m from coast making less suitable location for checking TBM before harbour crossing◦ increased distance between shafts on either side of Manukau Harbour• Construction access required through part of Ambury Farm Park.	
<p><u>Operation and safety</u></p> <ul style="list-style-type: none">• Site closer to WWTP so less suitable location for air venting to avoid tunnel pressurisation and damage during tunnel filling.• Access shaft location increases distances for maintenance workers in section under harbour.	
<p><u>Land use effects</u></p> <ul style="list-style-type: none">• Landscape - Greenfields, rural setting on edge of Ambury Farm Park, but largely screened from residential views.• Neighbours - Reasonable separation from residential neighbours (approx. 150m)• Recreation - Area used for overnight campervan parking. Conflicts with adjacent public walkway and local diversion required during construction. AC Parks not in favour of this site.	
<p><u>Cultural & heritage effects</u></p> <ul style="list-style-type: none">• Cultural heritage - Site identified in Manukau District Plan as Archaeological site & waahi tapu. Iwi in opposition to sites in Ambury Park. AC Parks identified potential impact on cultural values.• Geological heritage - Site in part of Ambury lava flow, with several lava caves / tubes identified in the vicinity. Cave not evident at construction site but possible that excavations could encounter one. <p><u>Environmental effects</u></p> <ul style="list-style-type: none">• Air discharge - Reasonable separation from residential neighbours (approx. 150 m). Air treatment for discharge which may occur during tunnel filling in wet weather events• Traffic - Low level of traffic generation during construction will be well within capacity of local roads, but with access through part of Ambury Farm Park• Trees – No effects• Ecology – No ecological values of note	

ATTACHMENT: C

AECOM

Watercare Land Site

Tunnel alignment and connections

- Main tunnel length PS 23 – WWTP: 4,173 m;
 - Link Sewer 4 connection to Witla Court: 830 m
- Construction site location
- Proposed shaft location:
 - approx. 1 km from coast making unsuitable location for checking TBM before harbour crossing
 - increased risk profile
 - increased distance between shafts on either side of Manukau Harbour
 - Link sewer 4 would cross Refinery pipeline
 - Construction access utilising Watercare access roads from WWTP.



Operation and safety

- Site closer to WWTP so less suitable location for air venting to avoid tunnel pressurisation and damage during tunnel filling. Further hydraulic modelling is needed to confirm whether an additional vent shaft is required.
- Access shaft location increases distances for maintenance workers in section under harbour.

Land use effects

- Landscape - Rural setting on land to west of Ambury Farm Park, well screened from residential views, with existing restoration plantings.
- Neighbours - Well separated from residential neighbours (approx. 300m)
- Recreation – limited effect

Cultural & heritage effects

- Cultural heritage – Land adjacent Ambury Park but has been subject to previous modification and unlikely to have cultural sites remaining. Trenching through Ambury Farm Park for Link Sewer 4 connection likely to encounter archaeological sites. Iwi in opposition to construction works in Ambury Park.
- Geological heritage - Site adjacent to / in filled explosion crater.

Environmental effects

- Air discharge - Well separated from residential neighbours (approx. 300 m). Air treatment for discharge which may occur during tunnel filling in wet weather events
- Traffic - Low level of traffic generation during construction will be well within capacity of local roads, but with access through Ambury Farm Park which will require traffic controls to manage public safety
- Trees – possible removal of restoration plantings
- Ecology – Recent restoration plantings and some high tide roost by wading birds – potential for some limited disturbance during construction