

# town & country matters

Ngā Take a-taone, a-tuawhenua



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## From the Mayor, Meng Foon



*Nga mihi nui ki aku nui aku rahi o te Tairawhiti, e nga karangaranga maha, tena tata.*

With Christmas drawing near, we are busy consulting, reviewing policies, budgeting and prioritising.

Everything we do

needs to take into account the ratepayers' ability to pay. This is the case when deciding what to renew and what to build. Usually the capital cost of the project is the cheapest. It is the long-term operating cost of repayments, general operations and depreciation that cost the most, year in and year out.

You may have read the debate about the War Memorial Theatre upgrade. Initially the estimate was \$3m. Now, with estimates including earthquake strengthening from a professional theatre architect, it's nearly \$7m. I introduced a value in the September meeting – "getting it right the first time". Is the theatre's refurbishment best value for our community or is a theatre alongside Lawson Field better value for \$7m? We need to get the best answer for us all. Good to see the youth council identify the Waipaoa and Waiapu flood control schemes as top of the list.

May I have a big call-out to all adults – please look out for your children wherever they are. Our region is full of risk, especially in driveways, waterways and the road.

Thank you to Ngati Porou runanga for helping pay for helicopters to survey and lift bales of rubbish from the stricken Rena. The beaching of another boat near the Waiapu River mouth shows how vulnerable we are to ocean events. Our sister town Nonoichi kindly paid for me and Ying to travel there to celebrate its city status, having crossed the 50,000 mark. Congratulations Nonoichi – Arigato gozaimasu. Asia is now our largest trading partner. As their wealth and population grows, their desire to want safe food will increase. I am visited by many Chinese government and business delegations interested in our region's produce. They visit because I am Chinese and usually stay about two days in New Zealand, one in Gisborne. My economic development relationship with them opens doors for our business people.

I and others can see the potential of a flight training school in Gisborne. China needs about 70,000 pilots in the next 20 years.

We are having a great growing spring season. I hope all goes well for you hard-working people on the land. You are the backbone of our region. My door is always open. Thanks for your ideas. Merry Christmas and a happy, safe New Year from us all. Kia ora, Meng.



Before you set up anything on one of the district's nine freedom camping sites this summer, please get your permit first. And remember, absolutely no fires. The Freedom Camping Act allows Council to issue instant \$200 fines to anyone camping or even preparing to camp in a banned area, or for camping within an approved area without a permit. More serious breaches can incur a \$10,000 fine. Continued on page 2

## Projects earmarked for Ten Year Plan

Strong community support for major projects canvassed with the public since August will see all seven included in the Draft 2012-2022 Ten Year Plan, to be released for consultation in March. In August, Council released a special edition of *Town & Country Matters* outlining the essential and community infrastructure projects that could be included in the plan and urging people to have their say.

About 250 responded – well over twice the number who, combined, made submissions for the past two annual plan consultation rounds – half of them through the feedback form in *Town & Country Matters*, the rest through events including flea and farmers' markets, Te Unga Mai Voyaging Festival and the Gisborne A&P Show.

Group manager engineering and works Peter Higgs says the feedback received was notable for its positive support of proposed projects.

However, he adds, the most-supported projects – walk and cycleway extensions including the Wainui cycleway, flood protection schemes and the library – would not necessarily be tackled first.

"Some projects are more advanced than others. Most projects need full scoping, feasibility studies, design and consents before they are ready to proceed to

construction. We have to be realistic about what we can achieve with our resources."

Other projects to be included in the plan are the War Memorial Theatre upgrade; Cenotaph restoration; Tairawhiti Navigations and Inner Harbour development; and Olympic Pool redevelopment.

"Although Council is in a strong financial position to deliver these projects, we need to be mindful of the current economy. We propose delivering these projects with a maximum annual spend of \$10m over 10 years. We cannot deliver them without support from external funding providers."

He says councillors support starting the walking and cycling extensions and the Navigations project if funding is available. Council would fund a third of walk/cycleways with NZ Transport Agency (NZTA) funding the rest, if

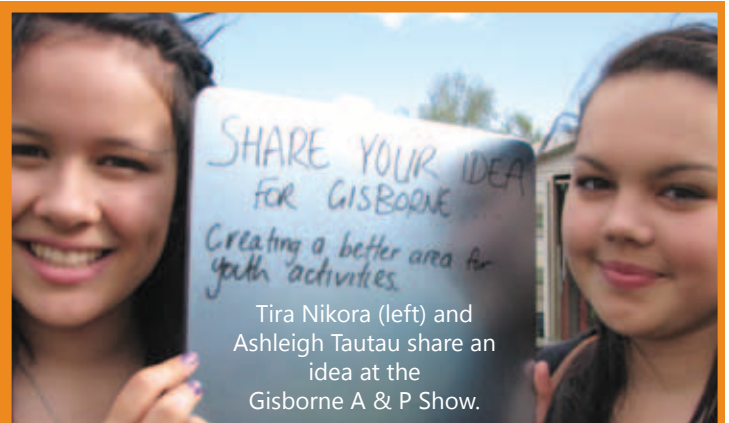
available, and 100 percent of the Wainui section. If funding were not available, Council's Financial Contributions Reserve, which stands at about \$2.25m, could be used for walk/cycleway projects on recreational reserves but not on road reserves such as the Wainui section.

Mr Higgs says using the reserve for this would show the government the Council was serious about investing in walking and cycleways in the city.

"We would also be in a better position to gain future government funding. With NZTA money often coming available later in the financial year, we need to be ready with the local share and able to proceed immediately with consents and designs sorted."

Formal consultation on the Draft Plan will run from 20 March to 20 April 2012 with hearings scheduled for the end of May. The plan will be finalised late June.

A community sport and recreation hub at Waikirikiri Park may be included in proposals for the 2012-2022 Draft Ten Year Plan. The proposal was one of several positive youth, tourism and recreation projects individuals and groups promoted during the pre-consultation process. Council will soon consider whether to include the hub proposal in the draft plan. Continued page 4



Tira Nikora (left) and Ashleigh Tautau share an idea at the Gisborne A & P Show.



## Sprucing up wharf carpark in time for Transit of Venus celebrations

By June next year, when international celebrations for the 2012 Transit of Venus get under way at Tolaga Bay, the much-photographed wharf will have an entranceway befitting its renovated status.

A new carpark, landscaping and plantings of native trees and shrubs will complement storyboards and a carved pou (a post).

Two pairs of rail wagon wheels dug up last month as part of preliminary earthworks will be incorporated into the landscaping.

The \$250,000 Council-funded carpark, being built by HEB, is expected to be ready by Christmas and will have room for about 20 cars and buses and include

mobility parks and easy wheelchair access to the wharf. The adjacent campground is upgrading its own entrance at the same time.

The Save The Tolaga Bay Wharf Trust will use its funds to pay for picnic tables and seating, and the formal entrance to the wharf comprising storyboards telling the history of the area, art deco columns and a carving by Tikitiki's Jack Brooking featuring Tolaga Bay's iwi forebears.

The trust's funding director Clive Bibby says the group has raised \$5m towards the project cost of \$5.5m and is confident of raising the balance by next June. By then, the remainder of the piles will

have been restored, a shelter built at the end of the wharf and existing handrails repaired. The wharf is believed to be the longest of concrete construction in the southern hemisphere, and was upgraded to a Category 1 historic place by New Zealand Historic Places Trust in 2009.

Much of the wharf has been restored since 1999 with fundraising from the trust and engineering support from the Council.

Various events are planned for Tolaga Bay next June including the Transit of Venus Forum organised by the Royal Society of New Zealand, and convened by Professor Sir Paul Callaghan.

## People and dogs keep him in ranger's job for 32 years

Born and raised as an Opunake townie, Pat "The Dog Man" Collins learned about farming at the feet of his grandfather. He left school at 15, in 1956, and was



Team leader animal control Pat Collins will soon retire from his role of 32 years, leaving more time for his family, including Queen (left) and Maunga, and dog and horse breeding.

soon being paid for what he loved – being a farm hand, butcher and Forest Service deer-shooter.

He shifted to the Gisborne district in the early 1970s, working on farms, breaking in horses and selling dogs before seeking a permanent job in town. While waiting for a butcher's position at the Kaiti works' butchery in 1979, he landed the job as city council dog ranger. He served the city and district councils for another 32 years, rising to chief animal control officer and until next February, when he retires, team leader of seven.

"I was a one-man-band working out of a blue Commer van. You worked 24/7. There was no one to take your place. We had a pound keeper at the Council's Carnarvon Street pound but once he retired, I took on his job too."

The job has not been without dangers – more from dog owners than the dogs themselves, he says. He has been the object of plenty of verbal and physical abuse – including one time when his shorts were lost to a wire fence leaving him, dressed in his underwear, backing away from a four-by-two wielding dog owner. His most frightening encounter was with three pit bull terriers, running loose, that baled him up in his vehicle before he shot them dead. Amazingly, he has never

been bitten on the job.

"I'm a pretty good talker. I try to talk my way out of most situations. The most important thing is to know when to walk away. The public today is far less tolerant of aggressive, roaming and barking dogs, as shown by the nearly 4000 complaints received a year and the 1100 dogs impounded.

"Barking dogs will always be the worst problem yet there are many aids to prevent it. It's my bone of contention."

Rangers and the public benefited from the 1996 changes to the infringement system, enabling dog rangers to issue instant fines, and from the 2006 legislation requiring all menacing and dangerous dogs to be microchipped, neutered and muzzled in public, and all dogs (except farm dogs) to be microchipped within two months of registering for the first time. Big breeds Rottweiler, Doberman and German Shepherds had lost favour to Argentinian Dogo and American pitbull.

"Microchipping works really well as we get to be one-to-one with dog owners and give advice to owners in person. Dogs will always be part of the human family. We are not in the business of winning or losing, we are here to do our best – firstly by education and, if that fails, the process of the law. The best part of the job has been dealing with people."

He's looking forward to spending more time dealing in sheepdogs, breeding and racing horses and with his many grandchildren. He and his wife have six dogs, three of them sheepdogs.

## Please get freedom camping permit before setting up on site

From page 1: Freedom camping (with a permit) gives great value for money. Where else could up to six people stay next to one of the region's best beaches or river for \$10 for two nights, \$25 for 10 nights and \$60 for 28 nights? If you're going camping, please:

- get your permit before setting up camp – from Council, online at [www.gdc.govt.nz](http://www.gdc.govt.nz) or through the post; from an I Site in Gisborne, Wairoa, Whakatane and Opotiki; the Uawa Foodmarket; and (as a last resort) the rubbish contractor
- make your permit visible to inspectors – in a caravan

window, or plastic bag attached to your tent

- put only 5kg of rubbish in each blue bag and keep it beside your campsite for collection
- recycle as much as possible and take it home to put in your kerbside recycling bin or take it to All Brites. Pouawa's Porta Potti tanks will be located at the beginning, middle and northern end of the beach to make them more easily accessible for all campers. If the tank nearest your camp is full, please use another one along the beach.
- take care of yourself and each other... by the water,

- around food, near fire, in the sun and on the roads
- when the holiday is over, take away all rubbish from the site that can't go in bags such as broken chairs, barbecues, buckets and batteries.

Have a wonderful holiday. Pick up a brochure from Council or go to [www.gdc.govt.nz/freedom-camping](http://www.gdc.govt.nz/freedom-camping) Next summer, there may be a few more campsites to choose from. Affected residents will be consulted on the possibility of developing freedom camping sites in the Rere Falls, Lottin Point, Rangitukia and Tuparoa areas.

# In short

## It's summertime – please take extra special care

...on the roads, when driving and cycling, by the water, around food, near fire and in the sun. Take extra care of each other and the environment and show respect wherever you are, whatever you're doing.

## Keep many eyes on our children

They are our future. And a special plea from Olympic Pool staff – please stay with your children and keep your eyes on them. A new PoolAlone policy requires under eight year olds to be accompanied by someone 16 years or older at all times. To prevent PoolAlone situations, remember Lifeguards are not babysitters – keep your eyes on your children!

## Be a good ambassador

Summer is an opportunity for Gisborne to showcase itself and for its people to act as good ambassadors for the region. See what you can do to welcome visitors to our region and to act with kindness and consideration for fellow Gisborne residents.

## Prepare yourself for any event ...

Are you prepared for tsunami, earthquakes? Find out if your house or campsite is in a tsunami evacuation zone. Go to [www.gdc.govt.nz](http://www.gdc.govt.nz) or ring Council 867 2049. Pre-plan your escape route and where you can stay for eight to 12 hours. Read the inside back page of the phone book. Follow directions from Gisborne Civil Defence or Gisborne Police. DO NOT go sightseeing after a significant event.

## ... including fires

**On beaches and freedom camping areas** – A total fire ban is in place all year on all beaches. See [www.gdc.govt.nz](http://www.gdc.govt.nz) for fire information.  
**In towns** – A restricted fire season is in place all year around. A permit is required for any fire lit in the open air. Gas cookers are allowed.  
**In rural areas** – Before you light a fire, ring Council to find out what fire season is in place and whether a permit is required.

## Predicted river levels now on website

The public can now access online data about predicted as well as actual levels of the district's five main rivers during a flood event. Council's flood-warning team comprising Greg Hall (the brains behind the models), Warren Marshall, Jurgen Komp and Rob Budd with help from emergency manager Richard Steele and online communications adviser Karen Hadfield have set up a website link enabling people to find out about forecast river levels. Mr Budd said the public previously had access to actual but not predicted levels, unless they were covered by Council's flood-warning system or Civil Defence had been activated. "This new facility should reduce public requests for information and reduce pressure on staff during a flood event. Predictions are generated for Waipaoa, Waimata, Hikuwai, Waiapu and Te Arai rivers." See [www.gdc.govt.nz/environmental-monitoring/](http://www.gdc.govt.nz/environmental-monitoring/)

## Rates reduction for community, sports groups

Did you know that community and sporting groups can get up to a 50 percent reduction in rates, excluding the supply of water, sewerage and refuse disposal services? Groups can make an application any time of the year. Special criteria apply. The aim of the reduction is to help provide community and recreational opportunities for district residents, help organisations to survive and make membership more accessible. Visit [www.gdc.govt.nz/rate-remissions/](http://www.gdc.govt.nz/rate-remissions/)

## Rubbish sticker system likely not closure

Residents near rural transfer stations earlier earmarked for closure are expected to gain a rubbish sticker system instead. The Draft 2012-2022 Ten Year Plan will include the proposal NOT to close several rural transfer stations. All properties within 15km of a transfer station will be rated about \$110 a year, entitling them to 52 stickers to stick on rubbish bags that can be taken to transfer stations. Rural residents will also be provided with recycling bins and compost bins, provided they attend a composting workshop. In time, compost bins will be available for everyone and funded by Council's share of the government waste levy, used for waste minimisation initiatives.

## Key findings on environment released

The state of our environment reports for 2009 and 2010 have been released with information on waste, recycling and air; land and soil; fresh water resources; coastal environment; and biosecurity. They find:

- more than 16,000 poplar poles planted from private nurseries
- continuing decline in beef cattle and sheep numbers
- favourable reductions in solid waste, better than most cities
- Gisborne's air quality remains good
- use of surface and groundwater appears sustainable
- river water quality is generally acceptable
- Gisborne surf breaks enshrined in revised Coastal Policy statement
- pest animal numbers increase after two hot, dry summers
- rooks, Argentine ants and possums cause problems
- 42,000 possums, 5600 rabbits and 5000 hares killed in 2009/2010.

For full reports, visit [www.gdc.govt.nz/state-of-our-environment/](http://www.gdc.govt.nz/state-of-our-environment/)

## More Like Council

Council's Facebook presence is slowly being "Liked". That's a way to give positive feedback or to connect with things you care about on Facebook. Launched in September to provide regular updates on Council happenings, the Facebook presence welcomes comments and feedback. Online communications adviser Karen Hadfield says this is another way for people to engage with Council. "A lot of people will not ring or email Council about something that concerns them but will happily chat on Facebook and we can give quick feedback." Information posted every few days ranges from weather warnings to reserve closures and job

vacancies ... and there's a growing album of photographs of district people and places. The Facebook page, 'Gisborne – our future' was set up to ask people to 'share an idea' about what they thought Council should focus on in the 2012-2022 Ten Year Plan. "Most councils have a Facebook presence. It's another channel for us to communicate with the public as best we can. That's why we use new social media like Facebook and Twitter to complement use of our website, *Town & Country Matters* and other publications, newspaper and radio. Road conditions and job vacancies go out on Twitter too."

## Legendary time for reading

From Greek mythology to demi-gods of the Percy Jackson variety, reading is taking on legendary proportions at HBWilliams Memorial Library this summer with Be a Legend – Read!/ Kia Māia – Kōrerotia he pukapuka.

Now in its 15th year, the E.C.READ'N Summer Reading Programme encourages and promotes the fun of reading to children over the holidays. It aims to involve caregivers in their children's reading at home, and develop a positive relationship between children, libraries and library staff. Children's librarian Te Rangi Tangohau says this year's theme will particularly appeal to children whose imaginations have been captured by Percy Jackson adventures.

"We know this year's programme will create



Nursing student Suzie Bennett not only painted the Parthenon facade for the Be a Legend – Read! summer reading programme, she will also be on deck over the summer again to help out in the children's section.

## E-books available from library this summer

Some time this summer, library members will be able to borrow e-books and e-audio books for reading from i-pads and other devices, anywhere. The borrowed e-book will mysteriously disappear off the device after the loan period. There will be no more late returns to the library and no fines for being late. Library geek girl Anna Williamson – principal librarian, lending services – says e-books will be borrowed just like hard copy books through the Overdrive service. "They can be downloaded from home through our website or at the library. Just as with hard-copy books, the e-book will not be available for others during that loan period but titles can be reserved. A free event in February will help people become familiar with different e-readers and decide which is best for them." Library manager Pene Walsh says the library needs to

reading legends in our community. But be in quick, registrations have started for the 220 places available." Two activities are scheduled before Christmas for all children – not just those registered for the summer programme – and storytellers Tanya Batt, Niall De Burca and Levity Beet will visit the library in January.

be prepared for what the community wants. "We might not yet have the critical mass of people wanting to read these devices but in a year's time, I guarantee we will. Despite the world of e-books and reading devices increasing, we have had more hard-copy books than ever being loaned from the library." The library is Council's most-used service, according to the annual Key Research survey, with about 5000 visitors a week. Yet the library cannot always accommodate all of them.

### Flush water before drinking

The Ministry of Health reminds residents to flush a mugful of water from drinking-water taps (including those with filters) each morning before use to remove any metals that may have dissolved from plumbing fittings. This is recommended for all households, including those on public and private water supplies.

## Few more months before Motu cycle track opens

An exciting downhill cycle ride from near Motu to Opotiki is expected to open in February. The Pakihi Track, part of the Motu Trails cycle project, starts about 17km north of Motu township and runs through indigenous forest alongside the raging Pakihi River.

Group manager environment and policy Hans van Kregten says building crews at Pakihi had progressed well over the past few months with all bridges now in place and approaches being worked on. A 3.5km section, downstream of the new 35m swing bridge, is being widened.

Delays in constructing the bridge across the Otago River in Opotiki have pushed the official opening of

the \$2.2m Motu Trails out to March next year. "The aim is to provide recreational and tourism opportunities for Gisborne and Opotiki residents. The work is part of a national New Zealand Cycle Trail initiative that will see 15 cycle routes developed across the country."

Track interpretation panels destined for Matawai and Motu will outline each area's history. Motu Trails has been mainly funded by government with smaller amounts coming from the Opotiki and Gisborne district councils. The Eastland Community Trust will also contribute. The Motu Trails Cycle Trust is promoting the trails and business opportunities. See [www.themotutrails.co.nz](http://www.themotutrails.co.nz) for trail maps and news.

# Earthquake policy change aimed at saving people

Certain concrete buildings in the inner city will have to be strengthened within 10 years rather than 25 years as set out in an earlier policy. This will see all earthquake-prone buildings, as defined by the Building Act, strengthened by the end of 2022.

Council has changed the policy in light of the Christchurch earthquakes which saw some buildings of a concrete column and beam construction – similar to some in Gisborne – suffer damage and collapse, and causing the death of 42 people.

Building services manager Ian Petty says the policy change also results from the 18-year average frequency of magnitude 6 or greater earthquakes in the city.

“Previously owners of earthquake-prone buildings in need of reinforcing built before 1976 had 25 years to strengthen. Given the frequency of earthquakes that could cause significant damage in the city, this was considered too long and would have given building owners until 2036 to effect strengthening, show strengthening was not required or demolish.

“We recommended the timeframe be reduced, and the Environment and Policy Committee elected to apply the 10 year option.”

Seven written submissions were received about the policy change, four of them from building owners objecting to shortened timeframes.

Meanwhile, Mr Petty was thrilled to have been invited to attend the Royal Commission’s hearing into unreinforced masonry buildings and earthquake-prone policies in November.

“Our policy is viewed nationally as one of the more active. There was significant discussion on our requirement to strengthen to 67 percent of the building standard. While no other city, or maybe very few, has that at the moment, they have suggested this be encapsulated in law. I gave the history of quake-strengthening in Gisborne and how we’d been active in putting timeframes on buildings since the proactive work of Gary Lodge in 1988.”

Other general comments to the commission were to leave local authorities alone to have quake-prone

policies and remove the passive option (where earthquake strengthening is triggered by an application to do substantial building work).

“The commission has released an interim decision that all councils in high seismicity zones should get parapets on at-risk buildings tied back, which we have already done.”

He told the commission policies were easier to enforce in Gisborne because everyone could remember two good earthquakes and knew there would be another.

“I have always said that strengthening to 67 percent will future-proof against any legislative changes. Unlike some cities that have strengthened to 33 percent of the code, we won’t have to go back and do it again. It’s not about saving buildings, it’s all about saving people.

“We weren’t as prepared as we could have been in 2007. But with the work we are doing now, we won’t have the same level of damage, and even if it is bigger, hopefully there will be no loss of life.”

# Time well spent on cleaning up waste

Team leader environmental protection Louise Bennett has not been wasting her time over the past few months. After five weeks as waste coordinator for the *Rena* clean-up in Tauranga, she went straight into overseeing the response to the grounding of the fishing vessel *Philip V* near the Waiapu River mouth.

Louise’s experience with waste during the oil spill response to the *Jody F Millennium* grounding off Gisborne in 2002 and as Regional On Scene Commander preceded her call-up to Tauranga.

“My main role there was to ensure waste was disposed of correctly under the Resource Management Act. Solid waste went to a Hamilton landfill and liquid waste was treated before going through the wastewater treatment plant.”

Working under the operations manager and leading a team of six, she worked between 12 and 15-hour days setting up various operating bases with decontamination units for people and vehicles involved in the clean-up, portable toilets, and containers and other equipment.

“To minimise the impact on the environment, we used sealed carparks near the beaches rather than on the beach or sand dunes.”

As systems were put in place, her role became more than just waste.

“There were new challenges and learnings every day. I worked alongside oil spill response teams from the UK, Bahrain and Australia with surf-wash and rock-wash trials, tried all sorts of sieves and learned a lot about recognising oil in its different guises such as when it’s squashed into sand.”



Gisborne Regional On-Scene Commander Louise Bennett in action in Tauranga during the Maritime New Zealand’s oil spill response to the *Rena* grounding.

One of five Council staff and three Gisborne contractors to help, she found her work even more real after joining an oil-spotting flight over *Rena*.

“You are working with professionals and community groups you haven’t met before. You have to be tolerant, patient and explicit in your communication while keeping health and safety as the number one objective. It can be stressful but I thrive on challenges.”

## Horouta calls for multi-purpose building for Kaiti

From page 1: Horouta Sports Club is asking for Council support to investigate the feasibility of such a hub for Kaiti based on the current lack of community or rental space for meetings, youth events and kaumatua gatherings. It says a multi-purpose sport and recreation hub will fill Kaiti’s critical need.

In addition to the Horouta proposal, Tairāwhiti Youth Voice submitted the need for “a centre where youth can be equipped, challenged, upskilled and inspired”. This was supported by Tairāwhiti Positive Ageing Trust and individual submissions.

Other projects proposed during pre-consultation included a ten pin



Some of the waste removed to the Te Araroa Transfer Station.

## Smelly *Rena* mix removed

A smelly mix of deer hides, big blocks of butter and milk sachets – much of it oil-coated – has been cleaned up from beaches between Lottin Point and East Island after the October grounding of the *Rena* off Tauranga.

Civil Defence Emergency Manager Richard Steele says a large truckload and five big ute-loads of waste have been removed to transfer stations. Lottin Point, Matakaoa, Horoera and East Island received the bulk of waste emanating from broken up containers. Hicks Bay and Te Araroa beaches were minimally affected. “About 20 plus volunteers did a great job with the initial clean-up which also included insulation from refrigerated containers, half tonne blocks of recyclable plastic waste, timber and car door panels. As long as no more containers come off, we are not expecting much more waste to come ashore.”

# Wastewater treatment plant, water quality enhancement projects going well

Nearly a year after its commissioning, the Gisborne Wastewater Treatment Plant is operating to plan with a greater-than-expected reduction in enterococci levels.

Projects and development manager Peter McConnell says this will assist in the treatment performance of the proposed UV disinfection plant. Various modifications have been made to the milliscreens to improve performance.

Visible signs of improvement include clearer water

at the end of the 1.8km outfall pipe and a reduced incidence of plumes in the bay.

Meanwhile, several projects are under way as part of the Turanganui a Kiwa Water Quality Enhancement Project, a resource consent requirement of the wastewater upgrade. These include a comparison of farmland water catchments to quantify water quality improvements from conservation planting and catchment management; and a comparison of the health of tidal areas associated with river and

stream catchments for which shellfish type, quality and numbers are being recorded.

The Wastewater Technical Advisory Group’s shellfish study is progressing with juvenile green-lipped mussels attached at several locations within and outside Gisborne harbour to help monitor water quality in the bay, and quantify any improvement in bay water quality post-commissioning of the treatment plant and subsequent ultra violet disinfection installation.