

Version No: 03 Issue Date: 28/05/2021 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: Page: 1 of 16
	Hydrology Operations Manual	

Didymo Monitoring Run Guide

Manawatū Didymo

DIDYMO SAMPLING
(Quarterly sampling)

Job Hazard & Task Analysis










Hazard Identification – tick all that apply, write additional hazards identified:

The yellow highlighted hazards are known hazards at the time of compiling this document. This **does not negate** the need to assess for and potentially eliminate or isolate any hazards at *each* sample location at *every* visit

Hazard	Yes	Hazard	Yes	Hazard	Yes
Confined space	<input type="checkbox"/>	Suspended loads	<input type="checkbox"/>	Noise – plant and equipment	<input type="checkbox"/>
Difficult entry/exit	<input checked="" type="checkbox"/>	Falling objects	<input type="checkbox"/>	Communication – means of	<input checked="" type="checkbox"/>
Oxygen deficiency/excess	<input type="checkbox"/>	Working near cranes and crane runways	<input type="checkbox"/>	Remote area	<input checked="" type="checkbox"/>
Poisonous fumes/gas	<input type="checkbox"/>	Live rails-gantry cranes	<input type="checkbox"/>	Temperature extremes	<input checked="" type="checkbox"/>
Explosive gas	<input type="checkbox"/>	Trip hazards	<input checked="" type="checkbox"/>	Reduced visibility	<input checked="" type="checkbox"/>
Flammable materials	<input type="checkbox"/>	Slippery surfaces	<input checked="" type="checkbox"/>	Unauthorized persons	<input type="checkbox"/>
Combustible materials	<input type="checkbox"/>	Manual handling	<input checked="" type="checkbox"/>	High pressure water	<input type="checkbox"/>
Hazardous substances	<input type="checkbox"/>	Sharp materials	<input type="checkbox"/>	Vacuum	<input type="checkbox"/>
Drowning	<input checked="" type="checkbox"/>	Line of fire	<input type="checkbox"/>	Air emissions – dust, fumes	<input type="checkbox"/>
Engulfment	<input checked="" type="checkbox"/>	Pressurized fluids	<input type="checkbox"/>	General waste	<input type="checkbox"/>
UV Radiation	<input checked="" type="checkbox"/>	Pressurized air/gas	<input type="checkbox"/>	Hazardous waste	<input type="checkbox"/>
Electrical – low /high voltage	<input checked="" type="checkbox"/>	Traffic / vehicle movements	<input checked="" type="checkbox"/>	Hydrocarbon / chemical spill	<input type="checkbox"/>
Multiple electrical feeds	<input type="checkbox"/>	Machinery – mobile plant	<input type="checkbox"/>	Soil disturbance/erosion	<input type="checkbox"/>
Working at height	<input type="checkbox"/>	Moving parts	<input type="checkbox"/>	Habitat disruption	<input type="checkbox"/>
Ladders	<input type="checkbox"/>	Chemical reaction (Pyrophoric iron)	<input type="checkbox"/>	Lighting	<input type="checkbox"/>
Elevated work platforms	<input type="checkbox"/>	Transport of hazardous substances	<input type="checkbox"/>	Weather extremes	<input checked="" type="checkbox"/>
Potential for difficult rescue	<input checked="" type="checkbox"/>	Stock/Farm Animals	<input checked="" type="checkbox"/>		

Required PPE & Safety Equipment– tick all that apply, write additional PPE required:

The yellow highlighted PPE are known required PPE at the time of compiling this document. This **does not negate** the need to assess for the appropriate required PPE measures at each sample location per visit.

SAMPLING GLOVES	EAR PROTECTION	HARD HAT	SAFETY GLASSES / GOGGLES	WORK BOOTS / WADERS	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HI VIZ	SAFETY HARNESS	SUN BLOCK & HAND SANITISER	VHF RADIO	THROW BAG	PERSONAL LOCATOR BEACON	
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
Drowning	✓			✓		✓	Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP 18]
UV Radiation	✓			✓	✓		Horizons provide sunscreen and hats. Staff are encouraged to make use of these. [HMP 17]
Engulfment	✓			✓		✓	Rivers/streams are prone to flash flooding creating the potential for engulfment. Staff must be alert and aware at all times of how the waterways are behaving around them, especially in areas where water is dammed or has structures such as intakes and aqueducts. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP18]
Difficult Entry/Exit	✓			✓	✓		Entry and exit into waterways poses many risks and should be treated with caution. Sampling must be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. [HMP18]
Electrical-Low/High Voltage	✓			✓	✓		Many of the rural sampling sites require traversing across farm paddocks equipped with electric fences that contain stock. If unknown, treat every farm fence as electric and avoid direct contact. Contact the landowner for advise on whether or not the fence is live and discuss alternative routes or options for avoiding the fence if possible.
Potential for Difficult Rescue	✓			✓		✓	Sampling must always be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP18]
Trip Hazards	✓			✓	✓		Prior to sampling, staff must check area is clear of items that pose a risk. Trip Hazards should only be moved if safe to do so. Sampling only to commence if the sampler is satisfied that any slip, trip or fall hazards are isolated.
Slippery Surfaces	✓			✓	✓		Sampling must be done from stable level. Vehicles must be driven a sensible distance from any river or pond edges. [HMP 18]. Staff driving four wheel drive vehicles must have adequate training [HMP 9]

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
Manual Handling	✓			✓	✓		Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample treated effluent. Hepatitis B vaccinations are offered by HRC. [HMP 30] [HMP 35]
Traffic Vehicle Movements							The designated driver of a vehicle is responsible for ensuring the safety and operational requirements and recommendations are met. All staff working within the road reserve must wear high visibility clothing to AS/NZS 1906.4:2010. This clothing must be fluorescent red orange in colour unless the individual is the site STMS then the garment must be fluorescent lime yellow. [HMP 9] [HMP 16] [HMP 20].
Stock/Farm Animals	✓			✓	✓		Although generally docile, farm animals can still be hazardous. The risk should be isolated by finding alternative access routes to the sample location or contacting the owner for assistance. [HMP26]
Communications-Means of							Cell phone coverage is not available at all sites. Staff must be capable of communicating via VHF radio in an equipped vehicle. [HMP 24]
Remote Area	✓			✓		✓	Most council vehicles are fitted with the E-Road vehicle locator system. Many vehicles are also fitted with a radio operating on the Horizons digital radio network providing communication and tracking coverages across a majority of the region. [HMP 24]
Temperature/Weather Extremes	✓			✓		✓	During the duration of a sampling run varying types and degrees of weather may be experienced. All sampling staff are to have access within their HRC vehicle to additional and appropriate clothing. Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP 18]
Reduced Visibility	✓			✓		✓	If you find you are driving in limited visibility slow your driving speed and turn your fog lights on and watch out for vehicles that aren't using their lights. When working in limited visibility if you cease to be able to make out your surrounding environment stop work immediately. If working at night it is advisable to traverse the property in daylight first to map out an action plan outlining walking tracks, vehicle tracks, fence lines, stock positions, ponds, waterways, houses, and sheds as well as other significant items of interest. [HMP12]

Site Information

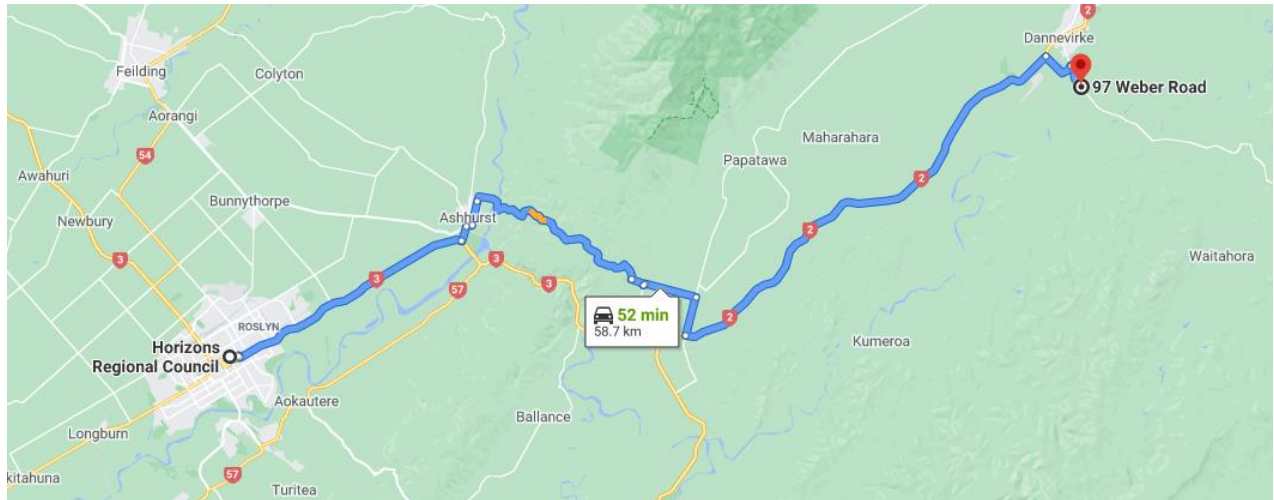
Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)
Manawatu River @ Weber Rd	5540903.7	1864903.4
Manawatu River @ Upper Gorge	5530942.5	1839288.7
Pohangina River @ Raumai	5545276.3	1837493.7
Manawatu River @ Teachers College	5527170.0	1824200.2
Ohau River @ SH1	5488685.9	1789483.5

[Contact details can be found here.](#)

Equipment Required

Equipment	<ul style="list-style-type: none"> • Sample preservative (70%) ethanol • Wash bottle with screw cap lid • Funnel • Plastic clip-lid box • Pen/pencil (sharpened) • Sharpie (fine tip) • Falcon tube stand (container with hole in lid) • Travel box to contain everything • Net handle (3 parts that screw together – one that has two hole along the pole) • Net and mesh cod end to screw to end of net • Bucket for decontamination between sites • Bleach for decontamination between sites • 2x wing nuts (plus 2x spares) • 2x screws (plus 2x spares) • Slikka pads and chilly bin • Waders • PFD, PLB, Throw bag, hand sanitiser, sunscreen <p>Consumables</p> <ul style="list-style-type: none"> • Falcon tubes • Parafilm strips • Rubber bands • Small zip lock bags • Paper towels • Rubbish bags • Gloves
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SITE LOCATION MAP – Manawatu River at Weber Road



POSSIBLE SITE HAZARDS

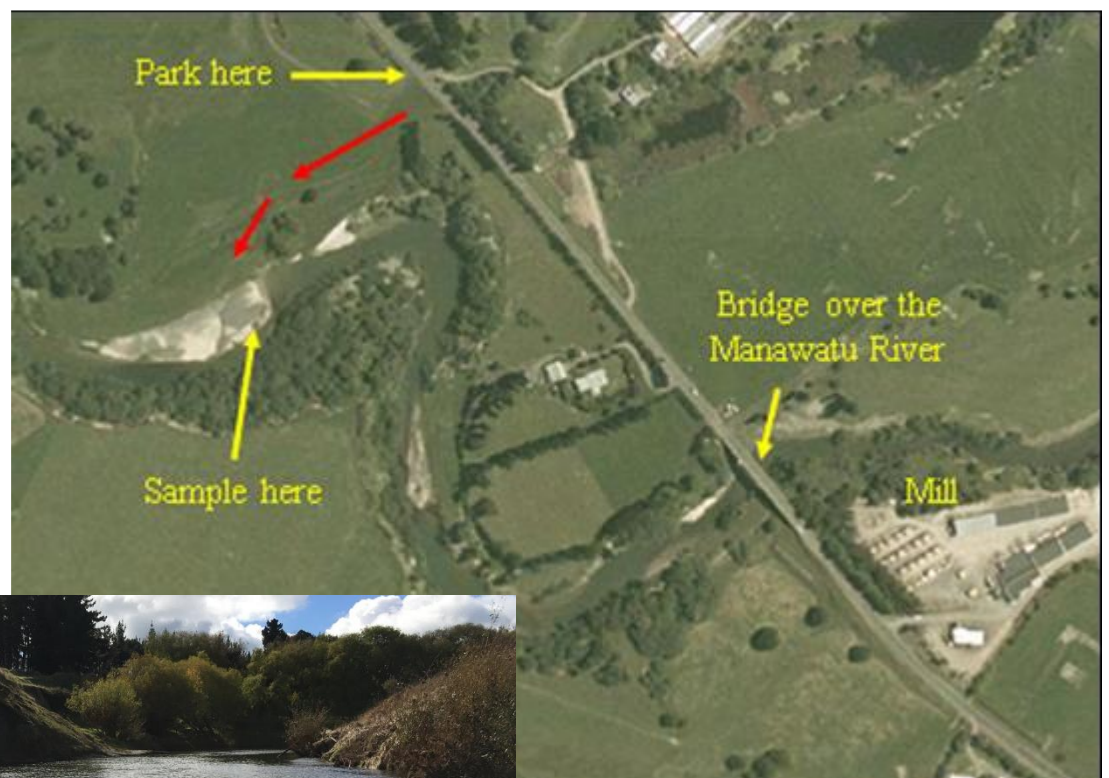
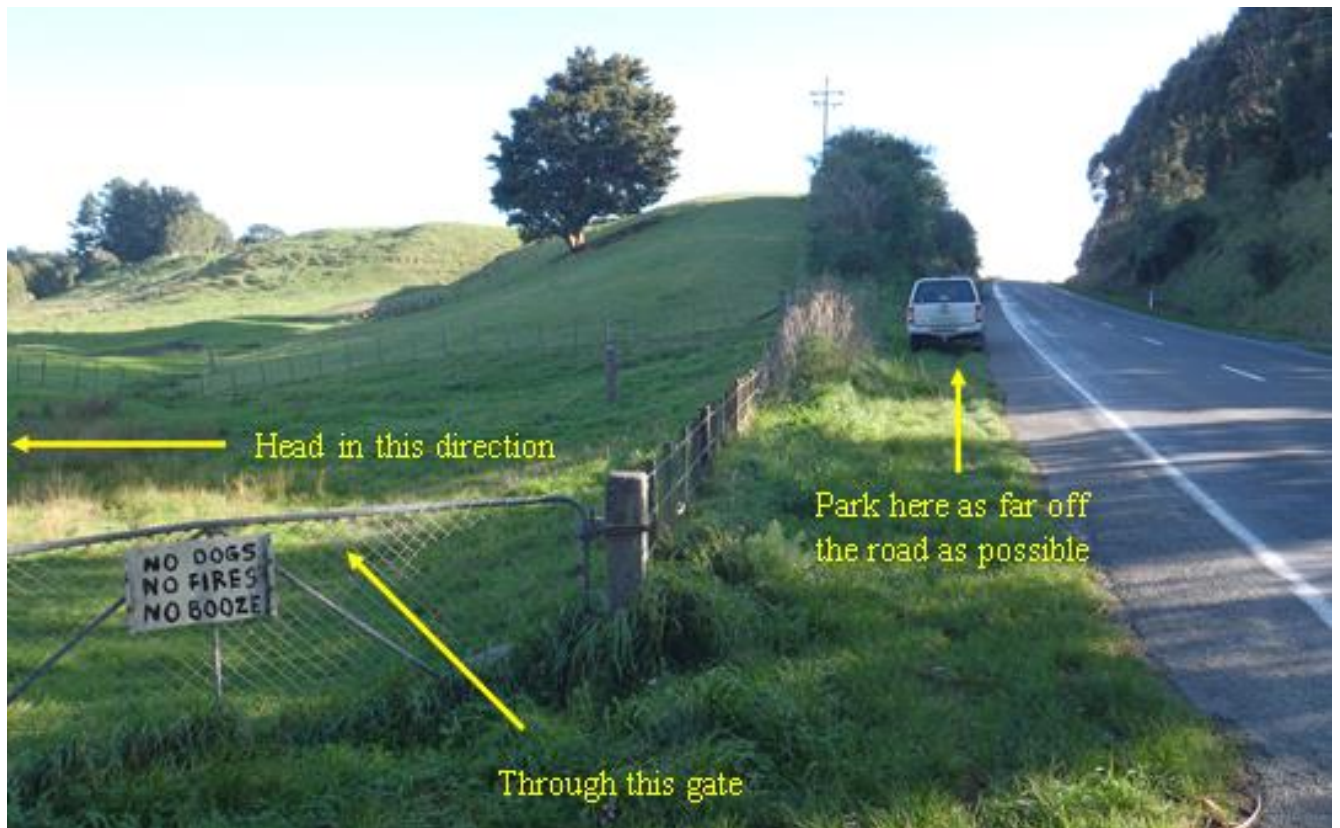
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

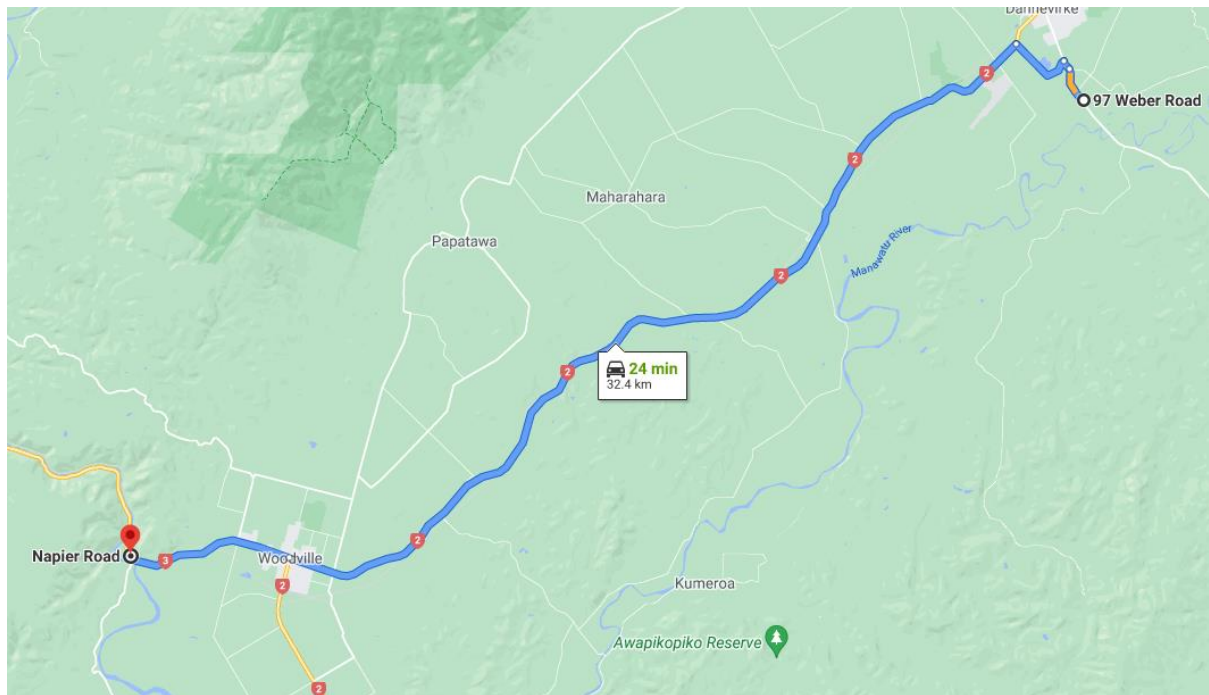
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
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DIRECTIONS:

- From the Palmerston North office travel north-east over Saddle Road to Dannevirke. As you enter the 70 km/hr area just before Dannevirke there is a bright green Farm Source building on the right. Immediately after this turn right on to Makirikiri Road.
- Follow this road around, past the sewage treatment ponds until it reaches the intersection with Weber road. Turn right onto Weber road.
- Continue along this road for about 2 minutes (you will actually drive past the point at which you will park but the safest way to get to the sample point is to turn around and come back to this spot). You will cross a bridge over the Manawatu River. This is quite large and is a very obvious bridge. On your right hand side before you cross the bridge you will see a green hydrology shed.
- When you cross the bridge the next driveway on your left will be into a Mill. This is very obviously sign posted. Turn around in their driveway and head back the way you came across the bridge.
- You will pass a driveway on the left hand side and start up the hill. On the left side of the road there is a line of trees planted. Approximately halfway up the hill the trees come to a stop and there is a gate on the left hand side of the road. You can pull over here on the side of the road next to the gate. Make sure you pull over as far as possible (without getting stuck) as this is a busy road. At this site you should have your high visibility vest and flashing lights on as you are close to the road edge.
- Climb the fence next to the gate and start walking along the fence line. The fence drops away to the left towards the river but stay on the track for approximately 200 meters. The track will lead down towards the river at a point where there is a small curve in the river.
- Sample just upstream of the riffle found in the small curve of the river.



SITE LOCATION MAP – Manawatu River at Upper Gorge



POSSIBLE SITE HAZARDS

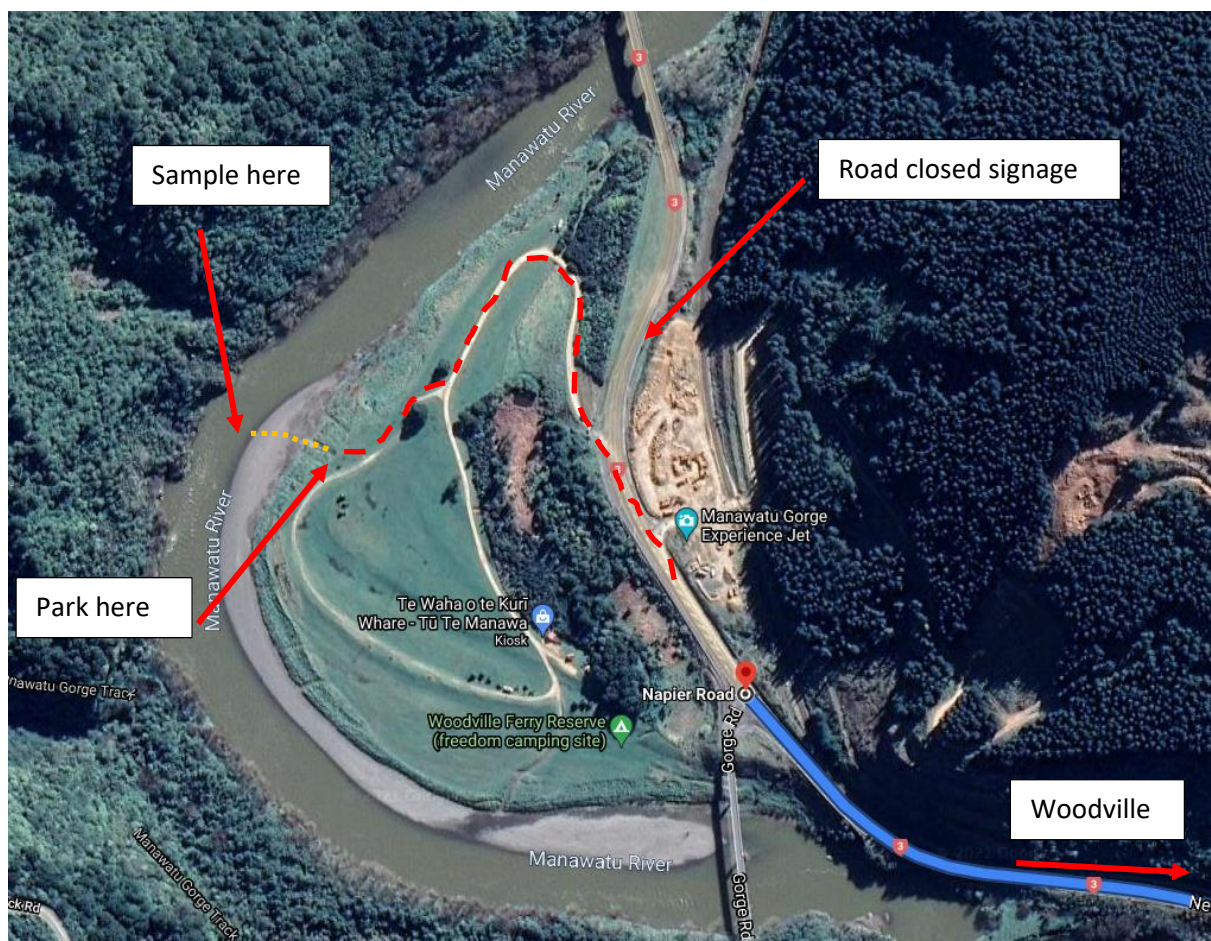
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

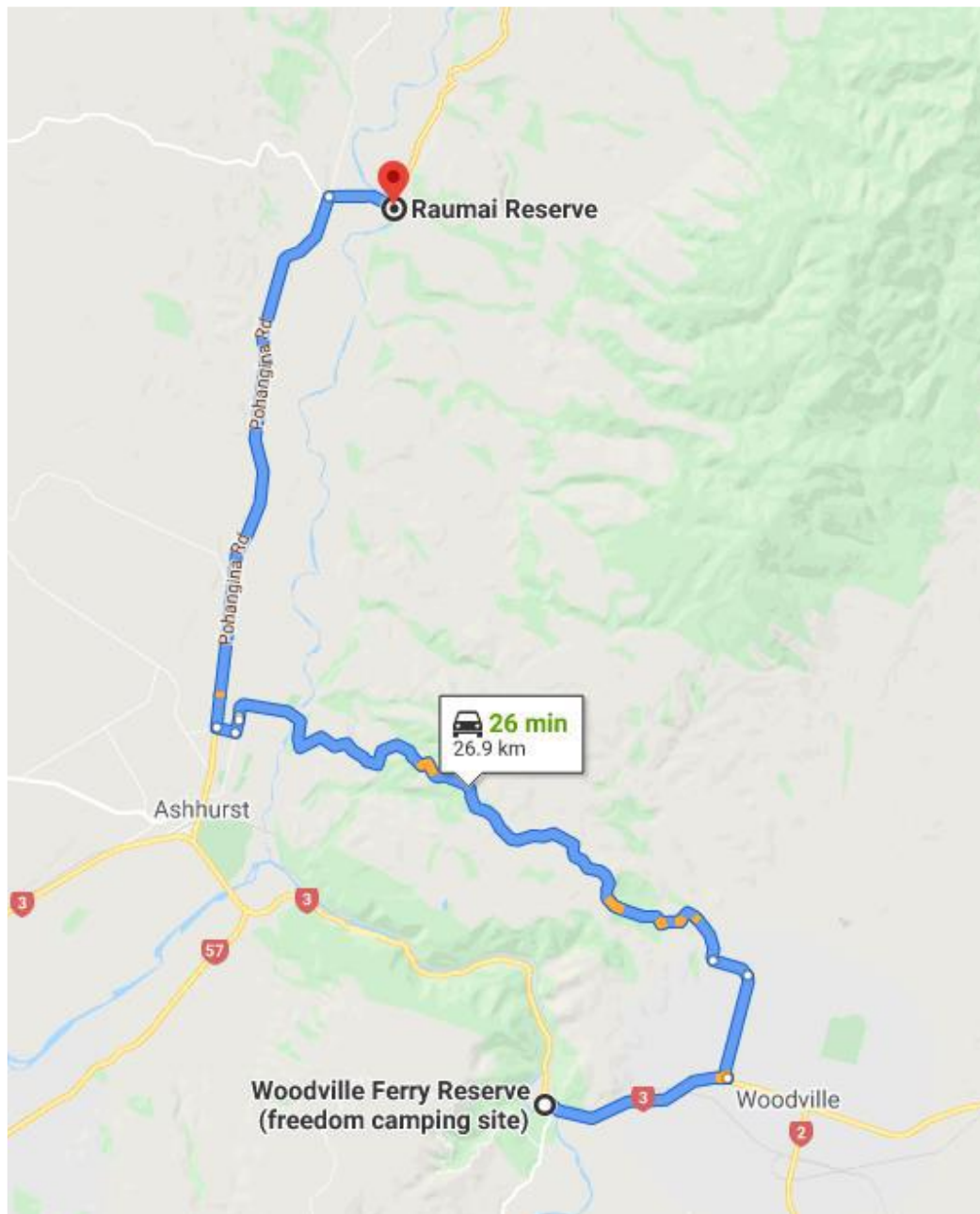
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
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DIRECTIONS:

- Travel back the way you came towards Woodville.
- Drive through Woodville and just as the road sweeps to the right take the left hand “off-ramp” towards the Gorge.
- Drive to the end of this road. You will pass a bridge on your left that leads into Balance Gorge Road and reach road closed signs and a sign that says Ferry Reserve.
- Turn left into Ferry Reserve following the track. This forks, take the right fork which runs parallel to the river.
- Continue driving approximately 100m and you will see a vehicle track to the river. Park on the grass and walk to the river from here.
- Sample in flowing water.



SITE LOCATION MAP – Pohangina River at Raumai

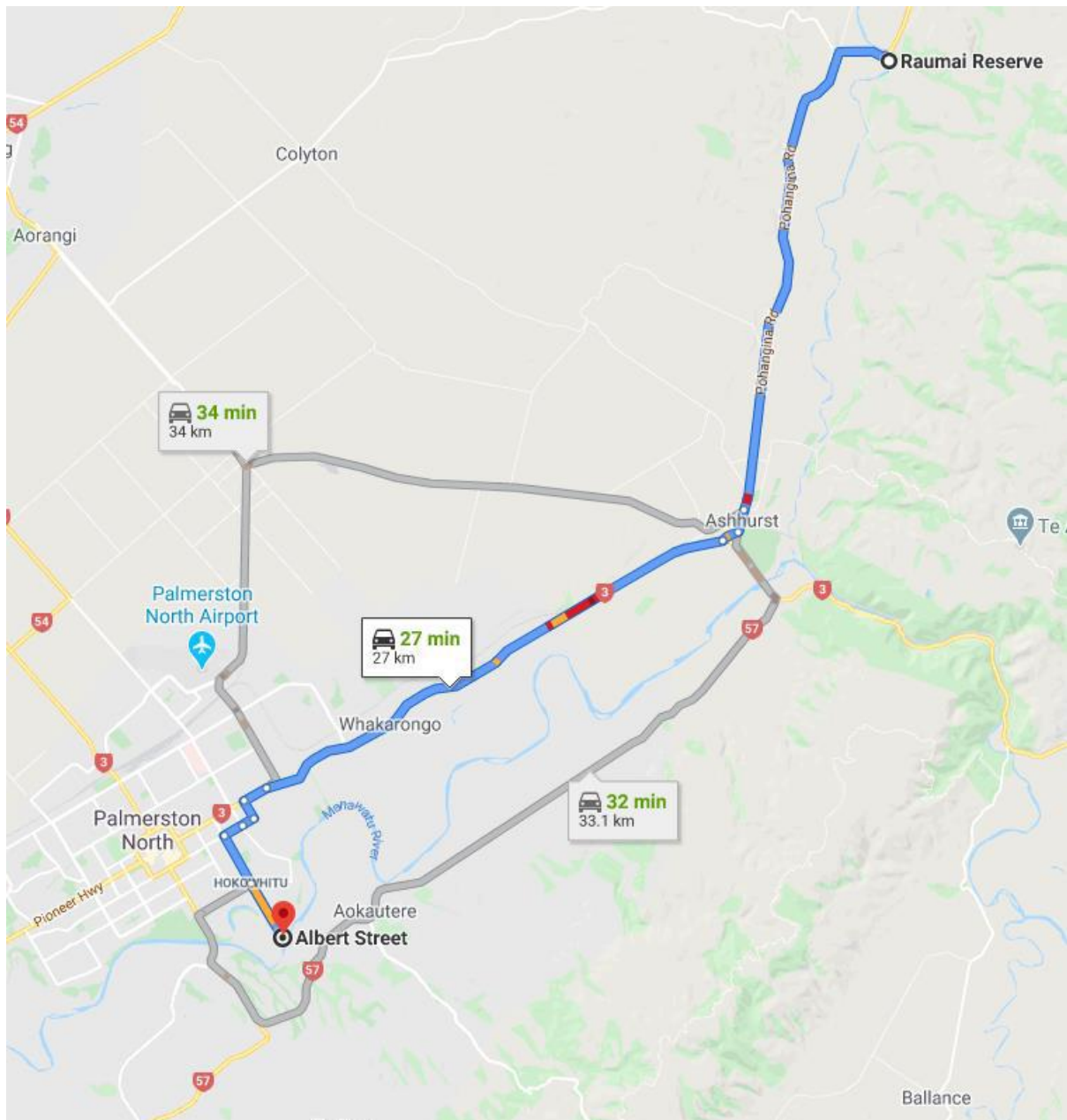


POSSIBLE SITE HAZARDS							
Drowning		UV Radiation		Slippery surfaces		Trip hazards	
Difficult entry/exit		Potential for difficult rescue		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):							
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
DIRECTIONS:							
• Head back towards the main road. Turn left onto the main road to head over the Saddle.							

- Once in Ashhurst, take the 2nd right onto Wyndham St and then right again onto Cambridge Ave/Pohangina Road.
- Follow this for approximately 10mins and then turn right at Pohangina Valley Easy Rd.
- Travel along Pohangina Valley East Rd for approx. 5minutes. You will reach a left hand curve leading over a bridge that crosses the Pohangina. Just before this on the right hand side is a track that leads into a camp site. Turn in here.
- Drive through the camp site area and you will be able to follow one of the tracks down onto the gravel on the side of the river. Sample a few hundred metres downstream of the bridge.



SITE LOCATION MAP – Manawatu River at Teachers College



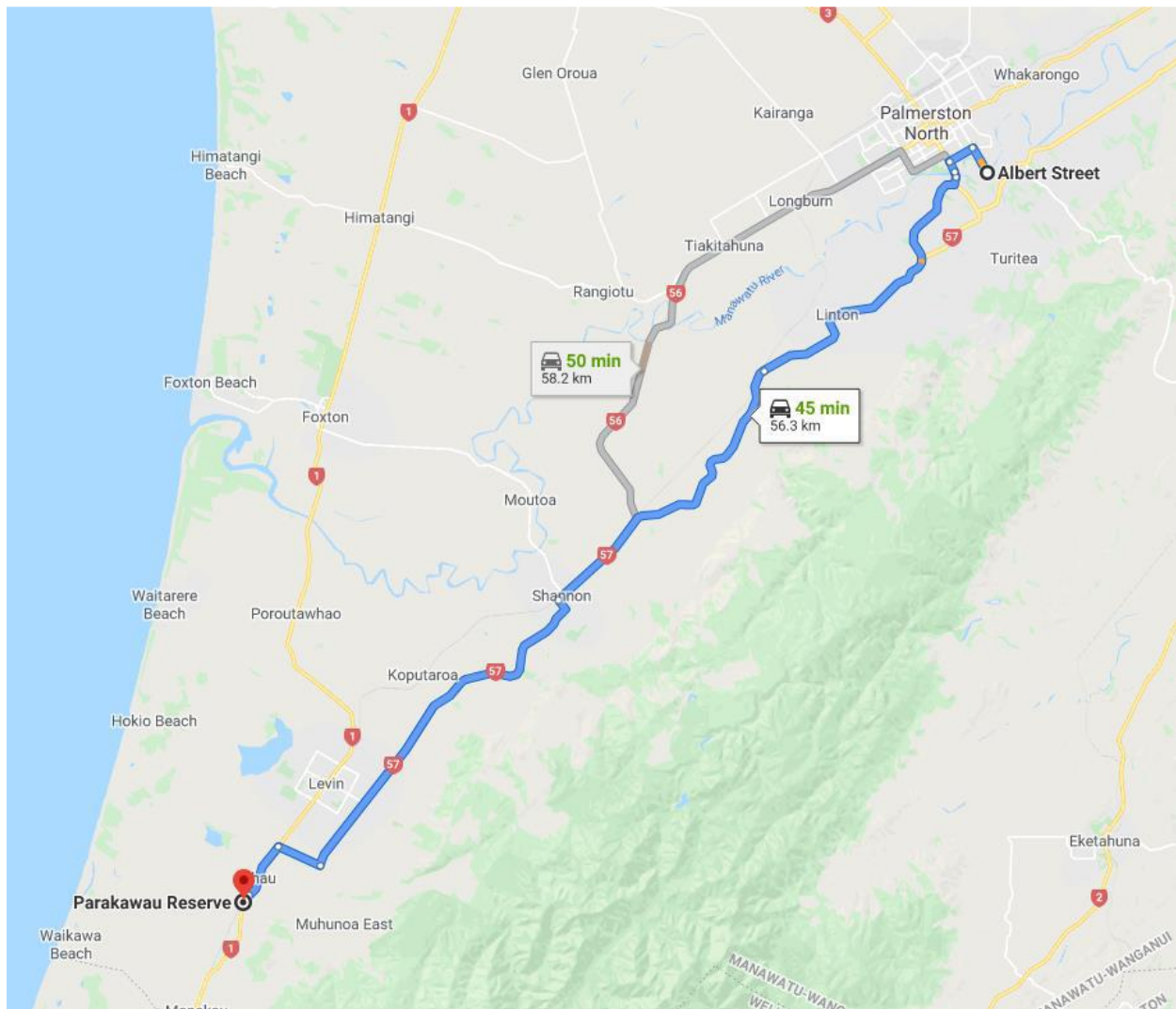
POSSIBLE SITE HAZARDS							
Drowning		UV Radiation		Slippery surfaces		Trip hazards	
Difficult entry/exit		Potential for difficult rescue		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):							
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

- Travel back to Palmerston North and turn left at the second set of traffic lights down Albert Street.
- Follow this all the way to the end and park at the parking area.
- Continue on foot and down the track to the left. You will overlook the Manawatu from the rise and see some cliffs. Head in this direction.
- After some tyre swings which will be on your left there is a make-shift walking track down to the river. Go down here and sample in a suitable location.



SITE LOCATION MAP – Oahu River at SH1



POSSIBLE SITE HAZARDS

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
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DIRECTIONS:

- Travel from Palmerston North south to Levin. Head out towards Massey and continue on past it. Stay on this road heading through Linton, Tokomaru and Shannon.
- When you meet with SH1 turn left and follow through the Ohau township.
- After Ohau you will go around a gentle turn to your right onto a straight. At the far end there is a bridge. Before you get to the bridge turn left onto Parakawau Rd. there is a large Professionals sign at the corner.

- Then curves to the left to go over a railway crossing. To the right is a track leading down to Parakawau reserve. This turn off is marked with a sign.
- Follow this track to the end and turn into the picnic area. Park near the river.
- Walk down to the river and begin sampling between the road bridge and the railway bridge.
- Note this site does not have to be sampled between these two bridges but it is convenient to know that you're in the correct location.

