

## Attachment 7 – Guidance Tables

The guidance tables (following) are provided to assist council officers to determine appropriate deterrence measures to install at dumping sites. The tables draw on findings from Stage 1 of the trial and discussions with council staff on their experiences with deterrence measures. It is intended that the guidance tables will be a ‘living resource’ that will continue to be updated to reflect regional knowledge around the selection of appropriate deterrence measures.

As illegal dumping situations are different, the guidance is presented in two different formats:

- Table A provides a mechanism to identify measures that may be appropriate and inappropriate from the perspective of the factors included in Section 5 of the Stage 1 report.
- Table B provides details of the situations where particular measures are most effective and least effective.

**Guidance Table A**

Consideration type	Description of situation/ limitation	Most suitable measures	Least suitable measures
Site Characteristics	Remote/ Low public use or profile	<ul style="list-style-type: none"> <li>• Heavy duty locked gate – able to withstand vandalism</li> <li>• Cement blocks – useful where aesthetics are less important</li> <li>• Revegetation and log barriers – remote areas may allow for less disturbance</li> <li>• Hidden surveillance cameras and signage – quieter areas will mean less chance of their discovery</li> </ul>	<ul style="list-style-type: none"> <li>• Educational signage and letters – unlikely to provide effects at low profile sites</li> <li>• Overt dummy cameras – unlikely to be convincing and high risk of theft/ vandalism in remote areas</li> <li>• Bollard and cable fencing – other measures or increased ‘sturdiness’ of design may be needed in order to deter vandalism in remote areas</li> </ul>
	Highly visible/ high public use or profile/ importance	<ul style="list-style-type: none"> <li>• Standard locked gate – vandalism risks lower due to public surveillance</li> <li>• Bollard and cable fencing - vandalism risks lower due to public surveillance</li> <li>• Mounds – provide a more natural looking barrier in highly visible areas</li> <li>• Revegetation and log barriers – provide a more natural looking barrier in highly visible areas</li> <li>• Educational signage and letters – more likely to be effective at high profile sites</li> </ul>	<ul style="list-style-type: none"> <li>• Blocks – may be considered ugly by community and may generate complaints</li> <li>• Hidden surveillance cameras and signage – may generate complaints relating to privacy issues unless appropriate community consultation occurs</li> </ul>
	Large open perimeters / areas beside access with low incidence of trees or other natural barriers	<ul style="list-style-type: none"> <li>• Hidden surveillance cameras and / or overt dummy cameras and signage – used alone or in conjunction with structural barriers are more likely to deter dumper access than barriers alone that can be driven around.</li> <li>• Bollards and cabling – cheaper to use on large open perimeters than other barriers</li> <li>• Blocks – Relatively cheap to use for large perimeters</li> </ul>	<ul style="list-style-type: none"> <li>• Mounds – these measures are very expensive to use as extensive perimeter barriers and will be driven around if opportunity exists</li> <li>• Revegetation and logs - will be driven around if opportunity exists which may damage revegetation efforts</li> <li>• Gates – will be driven around if not used in conjunction with other measures (e.g. bollards and cabling)</li> </ul>
	Access points are hilly/ steep	<ul style="list-style-type: none"> <li>• Hidden surveillance cameras and/ or overt dummy cameras and signage – if positioned carefully are unlikely to be inhibited by hilly areas</li> <li>• Bollards and cabling – could be constructed to suit hilly areas</li> </ul>	<ul style="list-style-type: none"> <li>• Mounds – their construction requires a relatively flat surface</li> <li>• Blocks – runoff from slopes may erode around blocks making them unstable</li> </ul>
Individual track use	Track that can be permanently closed to all users (plus NO evidence of illegal 4WD use)	<ul style="list-style-type: none"> <li>• Blocks – provide a method of permanent obstruction to access</li> <li>• Mounds – provide a method of permanent obstruction to access</li> <li>• Revegetation and log barriers – aim to permanently close the access</li> <li>• Bollards and cabling – aim to permanently close the access</li> <li>• Surveillance cameras used in conjunction with above measures (e.g. to target dumping in front of closures)</li> </ul>	<ul style="list-style-type: none"> <li>• Educational signage and letters – are unlikely to provide a strong enough deterrent to all access</li> <li>• Gates – if there is an opportunity to permanently close an access then better environmental outcomes will be achieved with permanent obstruction</li> </ul>
	Track that can be permanently closed to all users (plus evidence of illegal 4WD use)	<ul style="list-style-type: none"> <li>• Blocks – provide a method of permanent obstruction to access that are likely to deter 4WD breaches (especially if bolted together)</li> <li>• Mounds – provide a method of permanent obstruction to access that are likely to deter 4WD breaches (especially if designed as per Appendix 1)</li> <li>• Surveillance cameras used in conjunction with above measures (e.g. to target dumping in front of closures)</li> </ul>	<ul style="list-style-type: none"> <li>• Educational signage and letters – are unlikely to provide a strong enough deterrent to all access</li> <li>• Gates – if there is an opportunity to permanently close an access then better environmental outcomes will be achieved with permanent obstruction</li> <li>• Revegetation and log barriers – may not be sufficient to deter illegal 4WD access</li> <li>• Bollard and cable fencing – other measures or increased ‘sturdiness’ of design may be needed in order to deter vandalism where illegal 4WD use is evident</li> </ul>
	Track which should be accessed by landowners	<ul style="list-style-type: none"> <li>• Locked gates – provide a mechanism to restrict access to a few legitimate users. A basic design may be adequate if illegal 4WD use is not apparent</li> </ul>	<ul style="list-style-type: none"> <li>• Blocks – provide a method of permanent obstruction to access</li> <li>• Mounds – provide a method of permanent obstruction to access</li> </ul>

Consideration type	Description of situation/ limitation	Most suitable measures	Least suitable measures
	and emergency services only (plus NO evidence of illegal 4WD use)	<ul style="list-style-type: none"> <li>Surveillance cameras used in conjunction with above measure (e.g. to target dumping in front of closures)</li> </ul>	<ul style="list-style-type: none"> <li>Revegetation and log barriers – aim to permanently close the access</li> <li>Bollards and cabling – aim to permanently close the access</li> </ul>
	Track which should be accessed by landowners and emergency services only (plus evidence of illegal 4WD use)	<ul style="list-style-type: none"> <li>Locked Heavy Duty Gate – provides a mechanism to restrict access to a few legitimate users and heavy duty design is likely to resist vandalism</li> <li>Surveillance cameras used in conjunction with above measure (e.g. to target dumping in front of closures)</li> </ul>	<ul style="list-style-type: none"> <li>Blocks – provide a method of permanent obstruction to access</li> <li>Mounds – provide a method of permanent obstruction to access</li> <li>Revegetation and log barriers – aim to permanently close the access</li> <li>Bollards and cabling – aim to permanently close the access</li> </ul>
	Public track with legitimate vehicle use by many users	<ul style="list-style-type: none"> <li>Hidden surveillance cameras and/ or overt dummy cameras and signage – provide a method of allowing legitimate vehicles while deterring illegal behaviour</li> </ul>	<ul style="list-style-type: none"> <li>Locked gates – the number of users makes this method impractical</li> <li>Blocks – provide a method of permanent obstruction to access by all users</li> <li>Mounds – provide a method of permanent obstruction to access by all users</li> <li>Revegetation and log barriers – aim to permanently close the access to all users</li> <li>Bollards and cabling – aim to permanently close the access</li> </ul>
Nature of dumping	Predominantly household volumes (e.g. trailer loads) and/or domestic waste being dumped	<ul style="list-style-type: none"> <li>Locked gates – basic models may be adequate to deter domestic vehicles with trailers</li> <li>Blocks – obstruct access to domestic vehicles with trailers</li> <li>Mounds – lower mounds may be adequate to deter domestic vehicles with trailers</li> <li>Revegetation and log barriers – may adequately obstruct domestic vehicles with trailers</li> <li>Hidden surveillance cameras/ overt dummy cameras and signage - may provide a deterrent to domestic dumpers</li> <li>Bollards and cabling – may adequately deter domestic vehicles with trailers</li> </ul>	
	Predominantly small truck / tipper loads (often commercial/ building waste)	<ul style="list-style-type: none"> <li>Locked gates – heavy duty models may be required to deter small trucks/ tippers</li> <li>Blocks – obstruct access to small trucks/ tippers</li> <li>Mounds – obstruct access to small trucks/ tippers</li> <li>Hidden surveillance cameras/ overt dummy cameras and signage - may provide a deterrent to commercial dumpers</li> </ul>	<ul style="list-style-type: none"> <li>Revegetation and log barriers – may not adequately obstruct small trucks unless large rocks/ boulders are also used</li> <li>Bollard and cable fencing – other measures or increased 'sturdiness' of design may be needed in order to deter vandalism by small trucks</li> </ul>
	Predominantly very large loads from large trucks (commercial/ construction waste)	<ul style="list-style-type: none"> <li>Locked gates – heavy duty models may be required to deter large trucks</li> <li>Blocks – obstruct access to trucks</li> <li>Mounds – obstruct access to trucks</li> <li>Hidden surveillance cameras/ overt dummy cameras and signage - may provide a deterrent to commercial dumpers</li> </ul>	<ul style="list-style-type: none"> <li>Bollard and cable fencing – other measures or increased 'sturdiness' of design may be needed in order to deter vandalism from large trucks</li> </ul>
Available resources	Less than \$3000 available	<ul style="list-style-type: none"> <li>Locked gate – basic models are less than \$3000</li> <li>Blocks - \$3000 could purchase and install up to 12 blocks</li> <li>Educational signage and letters – signs are likely to cost under \$1000 each</li> <li>Hidden surveillance camera and signage – motion-sensor cameras can cost less than \$1500 and signs under \$1000 each</li> <li>Overt dummy cameras and signage – dummy cameras can cost \$50 each and signs under \$1000 each</li> <li>Bollard and cable fencing – can cost \$80 per meter</li> </ul>	<ul style="list-style-type: none"> <li>Mounds – A 7m long mound costs approximately \$10,000 built as per design</li> <li>Revegetation and log barriers – Revegetating the track head and sides of a 100m track with tube stock and mulch can cost \$4000</li> </ul>

Guidance Table B

Measure	Most suitable situations for use of measure	Least suitable situations for use of measure	Recommendations for use (to maximise effectiveness)	Further information
<b>Locked gate</b>	<p>Heavy duty locked gate:</p> <ul style="list-style-type: none"> <li>Remote/ low public use or profile sites;</li> <li>Tracks which should be accessed by a small number of people only e.g. utility access (in areas subject to illegal 4WD use);</li> <li>Areas mainly subject to dumping by small or large trucks (commercial and building waste);</li> <li>When \$4000- \$6000 is available.</li> </ul> <p>Basic model locked gate:</p> <ul style="list-style-type: none"> <li>Highly visible/ high public use sites;</li> <li>Tracks which should be accessed by a small number of people only e.g. utility access (in areas not subject to illegal 4WD use);</li> <li>Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>When less than \$3000 may be available.</li> </ul>	<ul style="list-style-type: none"> <li>Large open perimeters – unless other measures are used in combination to prevent ‘drive-arounds’;</li> <li>Tracks that could be closed with a more permanent measure for better environmental outcomes;</li> <li>Tracks that provide legitimate access to many users i.e. public tracks</li> <li>Areas with low passive surveillance (e.g. from the public)- unless gates are designed appropriately to be vandalism resistant;</li> </ul>	<ul style="list-style-type: none"> <li>Choose a suitable level of ‘sturdiness’ for gate design depending on known use (legal and illegal) of your site i.e. particularly heavy duty gates may only be required in areas with evidence of a lot of illegal 4WD use and/ or vandalism (this may require a custom design and consideration of design to prevent vandalism/ destruction previously encountered at similar sites). Cheaper options (basic gates) may be more cost effective in other situations;</li> <li>Ensure a key register is set up for all locked gates and that keys are only issued to officers that absolutely need them (frequent users and emergency services). If locks are unique to Council (or labeled as such) all other legitimate users can be asked to phone Council to arrange for the gate to be unlocked. It is best if a procedure exists within Council so that it is clear who is responsible for gate re-locking etc;</li> <li>If trees or other impediments are not present on either side of the area to be gated ensure that an additional measure such as bollards/ cable fencing is used to prevent access by vehicles;</li> <li>Regular monitoring and surveillance will assist with deterring offenders and quick detection and rectification of breaches. It may be worth considering the use of surveillance cameras (hidden or overt dummy cameras) in conjunction with this measure;</li> <li>Consider providing room for pedestrian and bicycle access beside gate (between gate and solid bollard). This may facilitate continued access by legal users of the site and also reduce vandalism attempts that may result if all users feel excluded;</li> <li>Supervise contractors installing gates as they may not always be mindful of the purpose of works (e.g. critically analyse works from the point of view of a potential dumper).</li> <li>Where numerous access points to a site are being closed with both permanent measures and some gates, consider installing gates but not closing them until tracks permanently closed have become unusable (e.g. through natural regeneration). This staged approach will allow progressive closure of tracks (by forcing users into a reduced area that will be easier to manage). Maintaining some access will reduce the likelihood of breaches to barriers of other access points. This approach also sends a message to users that full closure will eventually occur .</li> <li>As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)</li> </ul>	Section 4.1
<b>Bollards and cable fencing</b>	<ul style="list-style-type: none"> <li>Highly visible/ high public use sites;</li> <li>Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>When less than \$3000 may be available;</li> <li>Large open perimeters (hilly or flat);</li> <li>Tracks that can be permanently closed (with no evidence of illegal 4WD use).</li> </ul>	<ul style="list-style-type: none"> <li>Tracks that require access by landholders and/ or the public;</li> <li>Tracks with evidence of illegal 4WD use that can be permanently closed – unless other measures are used in combination or ‘sturdiness’ of fencing is improved;</li> <li>Areas mainly subject to dumping by small or large trucks (commercial and building waste) – unless other measures are used in combination or ‘sturdiness’ of fencing is improved.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure bollards are installed at intervals no greater than 1.5m, even if cabling is also used, as this will deter vandalism of the cable with the intent of driving between bollards;</li> <li>Regular monitoring and surveillance will assist with deterring offenders and quick detection and rectification of breaches. It may be worth considering the use of surveillance cameras (hidden or overt dummy cameras) in conjunction with this measure;</li> <li>Consider providing room for pedestrian and bicycle access beside or between an area of bollards. This may facilitate continued access by legal users of the site and also reduce vandalism attempts that may result if all users feel excluded;</li> <li>Supervise contractors installing bollards and cabling as they may not always be mindful of the purpose of works (e.g. critically analyse works from the point of view of a potential dumper);</li> <li>Consider the need for making bollards ‘sturdier’ by requesting thicker posts, cabling and/ or joins and cementing posts deeper into the ground – this may be necessary if vandalism attempts have been made or are likely to be made (due to high prevalence of illegal activity).</li> <li>Consider the ability to revegetate behind bollards and fencing to increase environmental value, aesthetics and the strength of the barrier (against access);</li> <li>Ensure cabling used is thick enough to avoid being easily cut (to deter theft of wire);</li> <li>At sites with low likelihood of vandalism, recycled plastic bollards of a dark colour could be used to improve aesthetics and environmental outcomes.</li> <li>As with all deterrence measures, community education about the reasons why measures have been</li> </ul>	Section 4.1

Measure	Most suitable situations for use of measure	Least suitable situations for use of measure	Recommendations for use (to maximise effectiveness)	Further information
			installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.	
<b>Blocks</b>	<ul style="list-style-type: none"> <li>• Remote/ low public use or profile sites, where visual aesthetics are less important;</li> <li>• Sites with natural barriers (well vegetated) and also sites with large open perimeters (if many blocks or other measures are used in combination);</li> <li>• Tracks that can be permanently closed (including those with illegal 4WD use);</li> <li>• Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>• Areas mainly subject to dumping by small or large trucks (commercial and building waste);</li> <li>• When less than \$3000 may be available.</li> </ul>	<ul style="list-style-type: none"> <li>• Highly visible/ high public use sites;</li> <li>• Hilly sites (where flat stable areas are not present);</li> <li>• Tracks that require access by landholders and/ or the public;</li> </ul>	<ul style="list-style-type: none"> <li>• It is suggested blocks are used at sites where aesthetic issues are less important. In scenic and highly visual areas some people may find cement blocks just as much an eyesore as dumped waste, especially if the blocks attract graffiti. Balance the costs of complaint management against the use of more expensive, natural-looking structures such as earth-mounds, sandstone blocks and log barriers. However, sandstone is reportedly less robust and easier to break apart and these and log barriers may not be high enough to deter access by 4WDs;</li> <li>• If problems occur or are likely to occur with vehicles (e.g. 4WDs) winching blocks out of the way commission the joining of blocks with cabling;</li> <li>• Ensure blocks are less than 1.5m apart, even if they are joined by cabling (as this can be cut and wound back to allow vehicle access between);</li> <li>• Place blocks in areas where natural barriers exist (e.g. large, dense trees) to prevent vehicles driving around blocks (i.e. creating new accesses). If natural barriers are limited at the site additional structural measures or regular monitoring will be necessary to ensure further breaches are not created;</li> <li>• Regular monitoring and surveillance will assist with deterring offenders and quick detection and rectification of breaches. It may be worth considering the use of surveillance cameras (hidden or overt dummy cameras) in conjunction with this measure;</li> <li>• Supervise contractors installing blocks as they may not always be mindful of the purpose of works (e.g. critically analyse works from the point of view of a potential dumper);</li> <li>• Consider using plantings or natural coloured paint to increase the aesthetics of blocks, or the use of large sandstone boulders if aesthetics are important.</li> <li>• As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.</li> </ul>	Section 4.2
<b>Mounds</b>	<ul style="list-style-type: none"> <li>• Highly visible/ high public use sites;</li> <li>• Tracks that can be permanently closed (including those with illegal 4WD use);</li> <li>• Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>• Areas mainly subject to dumping by small or large trucks (commercial and building waste);</li> <li>• When more than \$10,000 is available;</li> <li>• Tracks that have only one access point;</li> <li>• Areas where aesthetics are important;</li> <li>• Areas with well established vegetation beside areas to be mounded;</li> </ul>	<ul style="list-style-type: none"> <li>• Large open perimeters or where multiple access points may exist;</li> <li>• Hilly sites;</li> <li>• Tracks that require access by landholders, multiple agencies and/ or the public;</li> <li>• When less than \$3000 is available;</li> </ul>	<ul style="list-style-type: none"> <li>• For increased stability and endurance, build earth mounds according to guidance in Appendix 1. Mounds should be built greater than 2m in height with a steep face and solid structure to effectively deter 4WD access in the long term. For sites where cars with trailers only need to be excluded smaller mounds, logs or poles may be used;</li> <li>• Appropriate drainage should be incorporated into mound design to limit any diversion of natural flows (especially where neighbouring landholders could be affected)</li> <li>• Place mounds in areas where natural barriers exist (e.g. large, dense trees) to prevent vehicles driving around mounds (i.e. creating new accesses). If natural barriers are limited at the site additional structural measures may be necessary;</li> <li>• Regular monitoring and surveillance will assist with deterring offenders and quick detection and rectification of breaches. It may be worth considering the use of surveillance cameras (hidden or overt dummy cameras) in conjunction with this measure;</li> <li>• Supervise contractors installing mounds as they may not always be mindful of the purpose of works (e.g. critically analyse works from the point of view of a potential dumper).</li> <li>• As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.</li> </ul>	Section 4.3

Measure	Most suitable situations for use of measure	Least suitable situations for use of measure	Recommendations for use (to maximise effectiveness)	Further information
<b>Revegetation and log barriers</b>	<ul style="list-style-type: none"> <li>Highly visible/ high public use sites;</li> <li>Remote/ low public use or profile sites;</li> <li>Tracks that can be permanently closed (that do not suffer from illegal 4WD use);</li> <li>Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>When more than \$4000 is available.</li> </ul>	<ul style="list-style-type: none"> <li>Large open perimeters;</li> <li>Tracks that are impacted by illegal 4WD use (unless other measures are used in combination);</li> <li>Tracks that require access by landholders and/ or the public;</li> <li>Areas mainly subject to dumping by small trucks (commercial and building waste) – unless other measures are used in combination;</li> <li>When less than \$3000 is available.</li> </ul>	<ul style="list-style-type: none"> <li>Protect newly vegetated areas with complementary deterrence measures such as sandstone boulders and horizontal telegraph poles or logs. These measures used in combination will help deter dumpers using cars and trailers and can easily be removed or utilised at another site once vegetation has grown over tracks;</li> <li>Use locally native (indigenous) species when revegetating and thick mulch around new plantings to increase survival rates. Advice from regeneration experts is recommended as some sites may require ripping of the ground prior to planting if the soil is heavily compacted or road base materials are present. Bush regenerators can also advise on suitable plant species or determine if natural regeneration (from existing seed stocks) could occur with or without assistance;</li> <li>Monitor and maintain new plants at weekly intervals for the first three months. It is desirable to have resources set aside for extra mulching, watering, planting and follow-up weeding to assist the regeneration process;</li> <li>Ensure natural barriers (e.g. dense trees) exist on either side of the revegetated and barricaded area in order to avoid 'drive arounds'. If natural barriers are limited at the site additional structural measures may be necessary to ensure further breaches are not created;</li> <li>Regular monitoring and surveillance will assist with deterring offenders and quick detection and rectification of breaches. It may be worth considering the use of surveillance cameras (hidden or overt dummy cameras) in conjunction with this measure;</li> <li>Supervise contractors installing barriers associated with revegetation as they may not always be mindful of the purpose of works (e.g. critically analyse works from the point of view of a potential dumper);</li> <li>Consider progressive revegetation – slowly narrowing tracks used by dumpers but allowing for continued use by bikes and walkers where this is required.</li> <li>As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.</li> </ul>	Section 4.4
<b>Hidden Motion-sensor camera and signage</b>	<ul style="list-style-type: none"> <li>Remote/ low public use or profile sites;</li> <li>Although sites with single access routes will be more effective, sites with large open perimeters can utilise this measure as people will not know where the camera is hidden but (because of the sign warning) it could be anywhere;</li> <li>Hilly or flat sites – if positioned appropriately;</li> <li>Public tracks with multiple users;</li> <li>Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>Areas mainly subject to dumping by small or large trucks (commercial and building waste);</li> <li>Less than \$3000 available – or used in conjunction with other methods if more funds available;</li> <li>Sites that allow for multiple cameras to be set up (e.g. adequate 'hiding places' for cameras to capture cross-footage).</li> <li>Sites that have suitable areas for cameras to be installed close to tracks/roads (to maximize the potential to capture number plates).</li> </ul>	<ul style="list-style-type: none"> <li>Highly visible/ high public use sites – unless appropriate public consultation occurs.</li> <li>Sites with a large number of possible entry and exit points</li> <li>Busy sites where legal users are regularly accessing sites</li> <li>Not as effective in areas where a lot of 'natural triggers' (e.g. tree movement in winds, high wildlife volumes).</li> </ul>	<ul style="list-style-type: none"> <li>Ensure enough time resources (at least 1-2 hours a week) are available prior to selecting motion-sensor cameras as all models take time to learn and use (tasks include effectively locating unit, adjusting and testing photo settings, changing and charging batteries, swapping memory cards and monitoring photos for evidence). Refer to Appendix 5 for a comparison of three models;</li> <li>Choose sites carefully- hidden cameras work best at large sites with single access points /roads through the site. Larger sites provide more 'hiding spots' for the camera (less risk of theft) while a single access point or road provides the most useful focus point for collecting evidence. Smaller sites will require careful or secure hiding of cameras (e.g. inside a locked and secure bollard or, if there is a lot of dumped materials, in an undesirable piece of waste);</li> <li>Position motion-sensor cameras carefully - all of the models tested give better results when they are aimed down a long road in the direction cars are travelling (so that the camera detects motion as the car passes and the car will still be in the frame when the photo takes). Areas where a vehicle has to slow below 15km/hr are ideal (where cattle grates, speed humps or gates may be present);</li> <li>The use of multiple motion-sensor cameras at the one site is recommended to increase the chance of obtaining useful evidence and reduce theft risk (if the cameras' surveillance areas include each other so that thefts can be witnessed). It is also a good idea to combine the use of dummy and real cameras where appropriate. A visual dummy camera may attract attention and possibly vandalism but at least real (hidden) cameras may capture evidence of this and dummy cameras are cheap to replace;</li> <li>Use signage in conjunction with cameras to warn of illegal dumping surveillance. This provides a deterrent effect for hidden cameras (otherwise no one will know they are in use – unless word-of-mouth or media avenues are well utilised). Warning signage advertising fines and the illegal nature of dumping also assists with ethical and due diligence practices and removes excuses by dumpers. Be aware that the use of signage may increase the chance of the camera being vandalised or stolen.</li> <li>Consider the need for specific training in the camera model and its use for staff responsible before using the camera</li> <li>As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will</li> </ul>	Section 4.5

Measure	Most suitable situations for use of measure	Least suitable situations for use of measure	Recommendations for use (to maximise effectiveness)	Further information
			encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.	
<b>Dummy camera (overt) and signage</b>	<ul style="list-style-type: none"> <li>• Large open perimeters;</li> <li>• Hilly or flat sites – if positioned appropriately;</li> <li>• Public tracks with multiple users;</li> <li>• Areas mainly subject to dumping by domestic vehicles and trailers;</li> <li>• Areas mainly subject to dumping by small or large trucks (commercial and building waste);</li> <li>• Less than \$3000 available – or used in conjunction with other methods if more funds available;</li> <li>• Situations where the camera will be highly visual (noticeable);</li> <li>• Situations where signage can be close to point of offence (to increase likelihood of signage being noticed);</li> </ul>	<ul style="list-style-type: none"> <li>• Remote/ low public use or profile sites.</li> <li>• Areas where cameras are not secured and can be vandalised;</li> <li>• Sites where previous dumping exists (and clean up cannot occur) as this will reduce the credibility of the surveillance;</li> <li>• Areas where too many other signs create 'sign pollution';</li> </ul>	<ul style="list-style-type: none"> <li>• Choose sites carefully- An overt camera is more suitable at busy sites where facilities/ structures are present to affix the camera to in a believable way. Trying a 'dummy' overt camera is likely to be more cost effective in the short term and may provide a strong enough deterrent effect;</li> <li>• It is a good idea to combine the use of dummy and real cameras where appropriate. A visual dummy camera may attract attention and possibly vandalism but at least real (hidden) cameras may capture evidence of this and dummy cameras are cheap to replace;</li> <li>• Use signage in conjunction with cameras to warn of illegal dumping surveillance. This provides a stronger (more noticeable) deterrence effect for overt/ dummy cameras;</li> <li>• Regular monitoring of the condition of the camera and signage is recommended to maximise deterrence effects;</li> <li>• Use in conjunction with media and education campaigns promoting the risk of being caught;</li> <li>• Include measures to protect against vandalism e.g. installed at height, protective fencing, surveillance by other (real cameras);</li> <li>• Clean up dumping that occurs in the vicinity of the camera to increase credibility of the surveillance;</li> <li>• Use clear and simple messages on signage to increase chance of being noticed.</li> <li>• As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.</li> </ul>	Section 4.5
<b>Educational signage and letter-drop</b>	<ul style="list-style-type: none"> <li>• Highly visible/ high public use sites;</li> <li>• When less than \$3000 is available.</li> </ul>	<ul style="list-style-type: none"> <li>• Remote/ low public use or profile sites;</li> <li>• Tracks that can be permanently closed – unless used in combination with another measure;</li> <li>• Where resources to do not exist to allow for an involved education campaign.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid using signage alone as a method of deterring dumping. Combine signage with other strategies such as mail outs, local community engagement (e.g. of local groups), lighting and dummy cameras (which give a perception of increased security), or beautification and defining of site boundaries and use areas. Ensure complementary strategies occur at the same time and in a coordinated way;</li> <li>• Before ordering signage review intended sign design (actual size printout) from the intended distance away to ensure it is eye-catching;</li> <li>• Use lanolin spray (available from hardware stores) on new signs or have your sign maker provide (and guarantee) an anti-graffiti coating;</li> <li>• Place signs above 2m from the ground or on thick metal frames to deter other vandalism such as bending and removal. However, ensure Australian Standards and/or signage guidelines of Council are followed and signs are installed safely;</li> <li>• Regularly monitor the condition of signage to maximise its deterrence effect and quickly repair vandalised signage to convey a sense of 'order' and surveillance;</li> <li>• Clean up sites and encourage local residents to provide information on any new dumping.</li> <li>• As with all deterrence measures, community education about the reasons why measures have been installed, combined with positive actions such as clean up of dumping or other site improvement works will encourage ownership and respect of natural areas (which may lead to increased passive surveillance of deterrence measures)*.</li> </ul>	Section 4.6

\* This was a key finding from Lake Macquarie City Council's illegal dumping management program