



Justice



Australian Government

Australian Institute of Criminology

# Improving lighting to prevent non-domestic violence related assault

## Handbook for local government

Commissioned by the NSW Department of Justice and  
prepared by the Australian Institute of Criminology



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## Purpose of the handbook

This handbook forms part of a series of guides to help local governments in New South Wales implement evidence-based crime prevention strategies funded by the Department of Justice (DJ) Crime Prevention Programs (CPP).

This handbook has been developed to help guide you through the various stages of planning, implementing and evaluating an improved lighting strategy to reduce non-domestic violence related assault (NDVRA) in your local government area.

## Using the handbook

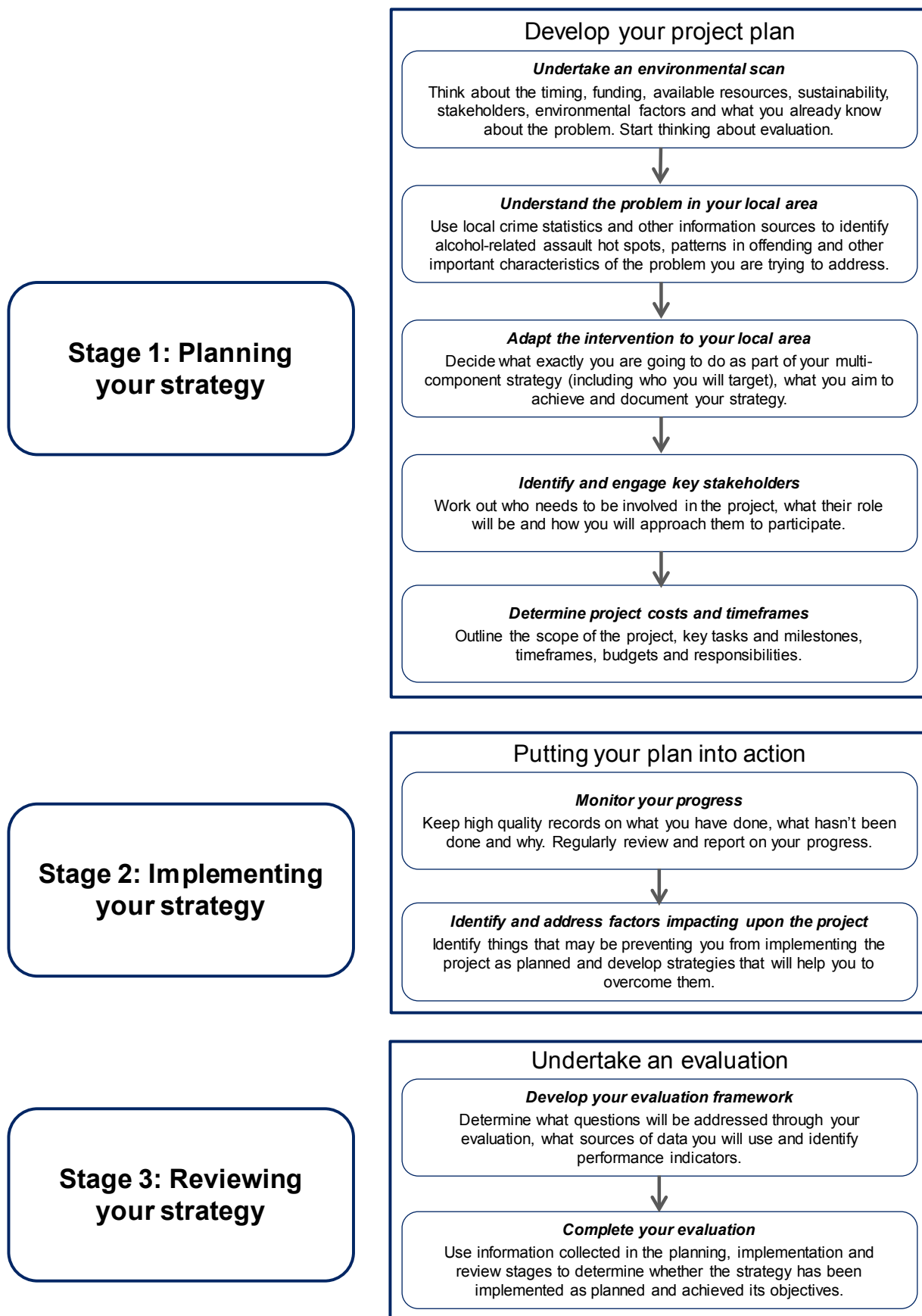
The handbook provides an overview of the key steps that are involved in delivering an improved lighting strategy to reduce NDVRA. These steps are classified under the following three stages:

- Stage 1: Planning
- Stage 2: Implementation; and
- Stage 3: Review.

These steps do not necessarily need to be undertaken in order. You may undertake some steps concurrently, or you may need to go back and revisit earlier steps. However, it is vital that some steps be undertaken early on in the project, such as consulting stakeholders and planning for evaluation.

The successful implementation of a strategy to prevent NDVRA will often be heavily influenced by the characteristics of the local community. This needs to be considered throughout the project.

## Key steps in planning, implementing and reviewing your strategy



## Stage 1: Planning your strategy

The best available evidence suggests that improved lighting can be used to prevent NDVRA. The evidence also suggests that strategies to improve lighting will be most effective in areas that experience high levels of non-domestic violence related offences, identified through local crime statistics or concerns raised by the community. You should only be considering this type of strategy if your local government area (or areas within your local government area) experiences high levels of NDVRA. This may be determined on the basis of recorded crime statistics available from the NSW Bureau of Crime Statistics and Research or on the basis of consultation with the local community. Recorded crime statistics should show that your local government area has a high number of incidents, a high rate of incidents per 100,000 population and a low ranking compared with other local government areas in the state. However, this is not the end of the planning process.

### Key findings from a review of lighting improvement strategies to prevent non-domestic violence related assault

- Improving lighting to prevent NDVRA involves the installation and/or upgrade of lighting on streets in central business districts, commercial areas and residential areas with high-density housing that have been identified as experiencing high rates of assault offences during night-time hours.
- Lighting improvements can include increasing the number of lights along pedestrian routes, relocating or redirecting lights to minimise dark spots and installing brighter or more appropriate lights.
- A number of studies have shown that the installation and/or improvement of lighting can contribute to a reduction in NDVRA.
- There are several possible explanations for why lighting improvements can contribute to a reduction in NDVRA. First, lighting helps to improve visibility, which makes it easier for people in and around problem areas to detect suspicious or criminal behaviour and to identify perpetrators. Second, lighting upgrades improve the general amenity of an area, promote feelings of safety among users (or potential users) and encourage pedestrian movement through an area that may have previously been avoided. Finally, lighting improvements can signal community investment and guardianship in an area. Notably, while increasing visibility may only have an impact on night-time crime, promoting community ownership of public spaces and engagement in crime prevention may also result in a reduction in crimes committed during the day.
- Given the focus is on improving visibility at night, this particular strategy needs to be targeted at areas with a high rate of offending during night-time hours. Generally speaking, lighting improvements are most effective when they are implemented in areas where the previous lighting conditions were poor and the resulting improvement in visibility is substantial.

- Strategies appear to be most effective when they are based on accurate data relating to the characteristics of the problem. Sources of information can include recorded crime data and consultation with residents, local business owners and the wider community.
- Appropriate mechanisms are required to engage with key stakeholders (include local business owners, residents and the wider community) and ensure they are involved in and supportive of the intervention.
- The placement and type of lighting used is important. Lighting improvements should be designed and installed by professionals who understand lighting design, technology and alternatives, including issues relating to long-term maintenance and sustainability.

## 1.1 Complete an environmental scan

When planning any crime prevention strategy, you need to consider the capacity and resources available in your local community, as well as the circumstances in which the strategy will be delivered.

This requires that you undertake an environmental scan of your local area. Table 1 outlines some important considerations when planning a strategy for your local area, why they are important, and what you can do to address them.

**Table 1 Important considerations when planning a strategy prevent NDVRA**

Consideration	Questions to ask and why these are important	Possible ways to address this
Timing	<p>Are there deadlines to deliver on? What is feasible within this timeframe?</p> <p>Does it clash with any other crime prevention or community activities that could influence results?</p> <p>How long will it take to implement? This will depend on the size of the target area, how many streets or locations will be targeted, the type of lighting, how willing key stakeholders are to get involved, lighting ownership and existing contractual arrangements, the availability of qualified installers and key personnel.</p>	<p>Be clear on deadlines and commitments under grant funding, particularly if progress reports and other deliverables are required by CPP or other areas within council.</p> <p>Also, take note of what is being implemented in the community and timing of local events so that you can assess if this will have any effect on project delivery.</p> <p>Use other similar projects as a guide and ask professionals for their advice on how long things like the installation of security will take.</p> <p>Align your strategy with future plans for lighting upgrades, where possible.</p>
Funding	<p>Are the funds available under the grant? How much 'in kind' funding can you afford? Can you afford to do what you propose?</p> <p>If not, you might be left with a budget deficit and disappointed stakeholders.</p>	<p>Identify what you are planning to do and the resources involved and estimate costs.</p> <p>Refer to the costing framework for this intervention.</p>
Available staff	<p>Does the project require any particular expertise? For example, qualified professionals to review existing lighting, design and install the proposed upgrades.</p> <p>Are suitable people available to oversee the project?</p>	<p>Scan services in local council and find out what/who is available and/or what is required to get the appropriate workers or technicians.</p>

Consideration	Questions to ask and why these are important	Possible ways to address this
Sustainability	Do you have access to ongoing funds? Will you be able to sustain the level of staffing for the project? Does the project need only 'one off' resourcing (e.g. installing lighting), or continuous investment (e.g. maintenance of electronic lighting systems, etc.)?	Develop an exit strategy if necessary. Only choose an intervention that can be supported by local resources and available funding.
Stakeholders	Does the project require support of certain individuals or organisations? For example, energy providers, local business owners? Can they contribute any resources? How will you get them to participate?  If the project directly involves engaging the community to help develop or implement the strategy, how are you going to get them to participate?  If you do not have the stakeholders you need on board, you might not be able to implement the strategy properly.	When developing the project, consult identified stakeholders and find out if there is anyone else who should be involved in the planning. Find out whether they are supportive and if they have any concerns.  If the project requires community support, make sure they are aware of the commitment and what could realistically be achieved by adopting the measures.  It is important to have police involvement from the outset. They can provide information on local NDVRA offences and can help to determine where additional lighting may be required.
Environment	Is the environment compatible with your proposed strategy? For example, you may encounter difficulties if the majority of assaults occur in areas where it is not feasible to improve lighting.	Become familiar with any limitations locally, scope out where you are planning the intervention and see if you can identify any potential problems.
Type of offences being targeted	What do you actually know about the problem? Is the problem in one hot spot or is more broadly distributed? What are the key characteristics of offences, offenders and victims?  Is the problem only a temporary spike that may correct itself when circumstances change, or is it a more long term problem?	Review crime statistics for NDVRA over time. Ask police or other relevant local agencies to find out if an increase in NDVRA can be explained by any temporary factors.  Refer to the relevant section in this handbook for additional guidance on analysing the local problem.
Monitoring and evaluation	Can you measure results from your project? How will you measure success (e.g. decrease in the number of NDVRA, increased feelings of safety, etc.)? Can you access the data you need for each measure?	Review available data sources (e.g. crime statistics on NDVRA) and determine what information would be needed prior to the start of, during and after the project to measure an effect.  Make sure you can measure whether the improved lighting strategy actually made a difference to the assault problem.

While you will do most of the work of an evaluation towards the end of the project, it is **important to start planning your evaluation while you are developing your strategy**. Start thinking about documenting your project and what information you might need to determine whether the strategy has been implemented as planned and how effective the



project has been. The quality of your evaluation will depend on how well you are able to collect, analyse and report on the information outlined in this handbook. More information on monitoring and evaluating your strategy is documented in *Stage 3: Reviewing your strategy*.

## 1.2 Understanding the nature of the local NDVRA problem and its causes

It is important to understand the precise nature of the local problem so that you can effectively target your response. This requires a systematic analysis of your crime problem, the causes and risk factors. High-risk areas (based on local crime data and previous victimisation), factors that contribute to this high risk and characteristics of offences committed in these areas can then be identified to inform your response. The best way to do this is to gather as much information as you can on the problem from a variety of sources.

### *Review research into the causes of NDVRA*

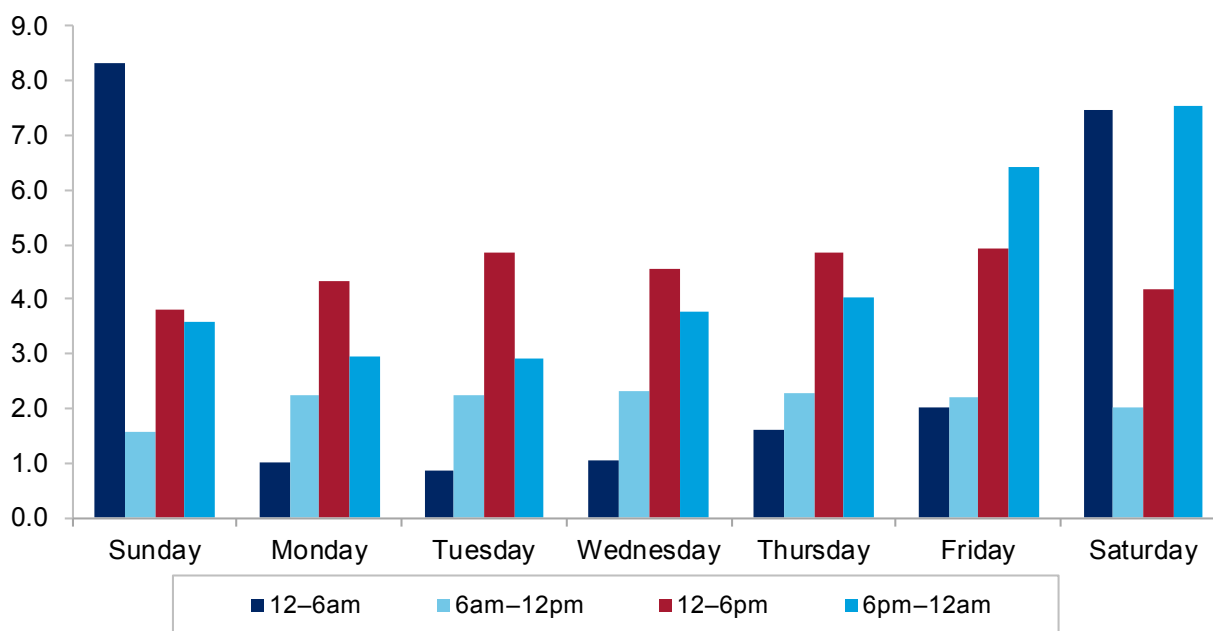
The fact sheet highlighted the importance of understanding risk factors for NDVRA. Along with the information contained within the fact sheet, you may want to read further about the possible causes of and risk factors for NDVRA. This will help you when it comes to adapting the intervention to your local problem. Use Table 2 to help prompt your thinking on the types of information you should think about documenting.

If you would like to conduct further reading on the prevention of this crime type, refer to the references at the end of this handbook. You can also refer to the BOCSAR website [www.lawlink.nsw.gov.au/bocsar](http://www.lawlink.nsw.gov.au/bocsar) and the AIC website [www.aic.gov.au](http://www.aic.gov.au). They have a range of resources on violence that can be downloaded for free, as well as links to other useful websites.

### *Gather local statistics and knowledge to analyse the local problem*

Collect information from a range of sources to develop a better understanding of your local area's NDVRA problem. Consider both qualitative and quantitative data sources of information. Quantitative data (e.g. recorded crime and arrest data) provide useful information about the nature and extent of a particular problem or phenomenon. However, qualitative information (such as interviews, reports and consultations with relevant local stakeholders) can be a valuable source for understanding the problem and what local factors may influence the delivery of your project. A combination of both sources of data will provide a more complete picture of the local problem.

**Figure 1 Non-domestic violence related assault by time of day and day of week, 2011 (%)**



**Source:** NSW Bureau of Crime Statistics and Research

There is a range of data that might be available or could be collected to help you better understand your local problem and develop a targeted response:

- BOCSAR have a large amount of recorded crime data on their website for all NSW local government areas and is a valuable source of information about NDVRA trends and temporal patterns (i.e. by location, month, day of week and time of day). Additional data may also be available upon request. Figure 1 is an example of the type of information that is available from BOCSAR. It shows that the peak times for NDVRA is between 6 pm and 6 am on Friday and Saturday nights.
- BOCSAR also provides a range of hot spot maps online, which provide a visual representation of the locations within each local government area with the highest concentration of recorded offences.
- Recorded crime data might also be available direct from your local police on the locations of and circumstances surrounding recent offences. Data may also be available on offenders apprehended by police, although this data may be difficult to obtain, as many offenders are not known to the victims. You may need to complete an official data request to access this information.
- Surveys or interviews with victims of NDVRA, while potentially difficult to undertake, can provide useful information about their experiences, risk factors for victimisation and the types of prevention measures that these victims take to minimise their risk of victimisation (e.g. avoiding certain streets because they are poorly lit, etc.).

- Surveys of the wider community will enable you to assess the degree of concern among residents about the prevalence of NDVRA in their neighbourhood, perceptions of safety and the level of support for different types of prevention strategies.
- Surveys or interviews with offenders, while potentially difficult to undertake, have been used to develop a better understanding of the motivation of offenders and the reasons they target specific people.
- Consultation with relevant local stakeholders can provide useful information about their experience and understanding of the local NDVRA problem. For example, police may be able to give additional insights into NDVRA that are not available through recorded crime data. Local licensed establishment management and staff might be able to tell you about the number of and type of NDVRA occurring in the area surrounding their premises and the measures they have in place to prevent assault (e.g. premise design banning aggressive patrons from the premises, etc.). Further, Neighbourhood Watch groups and other community groups may be able to provide information on local initiatives trialled in the past.

Use Table 2 to help you identify and understand the characteristics of NDVRA in your local area.

**Table 2 Understanding the local NDVRA problem**

	What is known?	Data source(s)
How many offences?		
Have there been any notable trends over time?		
Are there certain times of the day that offences are more common (e.g. during night time hours or day time hours)?		
Is there a particular day of the week that most offences occur		
Is there a seasonal pattern or certain peak times of the year? (e.g. summer months)		
Are there identifiable hotspots (e.g. suburbs, streets, pedestrian thoroughfares, etc.)?		
What other crimes are being reported in the areas with high rates of NDVRA?		
Do offences typically occur in areas that are poorly lit?		
What are the main characteristics of people who have been targeted?		
What is known about the offenders?		

	What is known?	Data source(s)
What other factors besides poor lighting might be contributing to the high crime rate in identified hot spots (e.g. alcohol, limited pedestrian traffic)?		
Any other factors?		

**Source:** Adapted from Anderson 2010.

You need to be aware of the limitations of the data sources you use. Police crime statistics, for example, only include those offences that are reported to police. Many assaults are not reported to police. Table 3 outlines a number of things to consider when using different datasets. It can be useful to talk to people who are familiar with the data or the local area to help you interpret any patterns and understand the data in the wider context.

**Table 3 Considerations when using different data sources/statistics**

Consideration	What this can affect
Time periods	If different datasets cover different time periods, comparability can be difficult. In addition, you need to ensure that the data you are using is relevant and covers the time periods you require to analyse the problem.
Missing data	Missing data within a dataset can influence results. This may happen when not all the information needed is entered into the system, or it could be that the information is not known. For example, many offenders are not detected and so data on offenders is often missing.
How frequently the data is entered into the dataset	Agencies may enter data into a spreadsheet every day, weekly, monthly, annually, biannually, or sporadically. Findings or reports from this data may also only be made available at certain times, so if you are relying on this information being made available publicly, find out if it is compatible with any reporting or analysis that you might be conducting. BOCSAR generally doesn't release annual crime statistics until the following April.
What area the statistics cover	Different agencies and sections may have different parameters for collecting information or statistics. For example, police local area commands are different from local government boundaries and the Australian Bureau of Statistics' statistical areas. Therefore, the information will not be directly comparable.

Consideration	What this can affect
Data accessibility	Not all relevant information is publicly available (e.g. some police statistics, including victim and offender information). Some datasets you might not be able to access or have permission to use, so find out in advance if you can obtain the information you want.
Number of counts	Be wary of making broad assumptions on information from only a small sample of cases in a dataset, as they may not be representative of the broader population you are targeting.

**Note:** These considerations are also important when it comes to evaluating your chosen strategy.

! Make sure you keep a record of the information you have collected while planning the project. This information will provide the baseline against which you can assess the impact of the strategy on NDVRA committed in target locations.

### 1.3 Adapting the chosen intervention(s) to the local area

Once you have a good understanding of your local problem you can then develop an appropriate response. Consider the time of day NDVRA typically occurs in your area. If it is during the evening, then a lighting strategy may be effective. Where are the assaults occurring? If they are occurring in an entertainment precinct, then an alcohol-related strategy might be more appropriate. If the assaults are occurring on streets in residential or commercial areas, then a lighting strategy may be effective. Are these areas well lit? Lighting will only be effective in areas that are poorly lit and where lighting can be substantially improved. Are the areas frequently used pedestrian routes? Are there people around to provide natural surveillance? Are the areas' pedestrian routes used to access cafés and shops? What other factors may be at play? Are there any local factors that you will need to take into account? Once you start to answer these kinds of questions you can start to tailor your strategy to your local area.

It is important that you also **understand the causal mechanisms that underpin the intervention** you have selected. These are described in the accompanying fact sheet. This will help you to ensure that in adapting the chosen strategy to your local circumstances, you do not inadvertently undermine the 'active ingredient' that is needed for it to work.

#### *Deciding what exactly you are going to do*

You will need to decide what it is exactly that you propose to do as part of your strategy. Use Table 4 to guide your decision-making process.

**Table 4 Key components of a lighting improvement strategy to prevent NDVRA**

Strategy component	Considerations	Factors to guide decision-making
Will lighting help reduce your local problem?	<p>When are the assaults typically occurring?</p> <p>What is the existing lighting in these areas?</p> <p>Can the existing lighting be improved?</p> <p>Are other factors such as alcohol more important?</p>	<p>Lighting will only help if offences typically occur in night-time hours in poorly lit areas.</p> <p>The environment will need to support the strategy.</p>
Type of lighting required	<p>What types of lighting will you need to install in poorly lit areas?</p> <p>Do you need to install new lighting or can you adapt or upgrade existing lighting systems? What alternatives are available? Will lighting meet Australian standards?</p> <p>How will you determine the placement of lighting?</p> <p>Are there potential barriers that will interfere with the lighting design?</p> <p>What type and level of maintenance will be required?</p>	<p>This should be informed by your detailed analysis of the local problem.</p> <p>Lighting needs to provide sufficient illumination to enable pedestrians to see one another. Avoid inadvertently creating dark spots or glare.</p> <p>Experience has shown that if the lighting is not maintained the benefits will be reduced over time.</p>
Design and installation of improved lighting	<p>Who will be responsible for designing the lighting system and the installation of lighting?</p>	<p>Professionals with relevant expertise will be best placed to determine the type and placement of lighting.</p>
Improving natural surveillance	<p>If the standard of lighting is improved, who will provide natural surveillance?</p> <p>How will you encourage people to use streets once lighting has been improved?</p>	<p>Lighting helps to improve visibility, which makes it easier for people on and around streets in areas experiencing high rates of NDVRA to detect suspicious behaviour and deter potential offenders. This requires people (pedestrians in surrounding areas or residents) to provide natural surveillance.</p>
Other interventions	<p>Will you deliver any other interventions alongside the lighting improvement strategy?</p> <p>What are police doing to address NDVRA (e.g. targeting known offenders)?</p> <p>What other initiatives are being delivered to address the problem in the local area?</p>	<p>All of the strategies reviewed as part of this handbook involved lighting improvements delivered in isolation.</p>

*Set clear objectives for the project*

It is important that you have a clear sense of what you are trying to achieve, so you will need to develop some clear objectives to guide the project. Some examples of possible objectives for a lighting improvement strategy to reduce NDVRA are presented in Box 1.

**Box 1: Project objectives**

A local government-led working group identified the following objectives for their improved lighting strategy that was introduced in a residential area experiencing high rates of NDVRA. These objectives helped to guide decision making with regards to the development of the strategy. It was against these objectives that the overall effectiveness of the strategy was to be assessed.

- Reduce the overall incidence of NDVRA in the areas targeted by the prevention strategy.
- Reduce the level of concern among residents and local business owners about NDVRA.
- Increase the number of people using previously under-utilised pedestrian routes during night-time hours.
- Improve the amount of lighting within the areas targeted by the prevention strategy.
- Increase the level of satisfaction among local residents and business owners with the response to NDVRA from local government, police and other key stakeholders involved in the project.
- Increase the capacity of local government, police and other key stakeholders to develop, implement and evaluate local crime prevention initiatives.

*Document your strategy*

Now that you have made these decisions, it is important that you document what you are doing, why you are doing it and how you expect this to deliver the desired outcome. This way, you will be able to refer back to the document throughout the project and see if you are on track and doing what you proposed. This information is also useful when it comes time to review and evaluate your strategy.

Table 5 gives an overview of the type of information that you should be outlining as part of your strategy. This document can be shared with stakeholders so everyone is clear on the purpose of the project from the outset, reducing the potential for confusion at later stages. This has the additional benefit of justifying decisions made in relation to the implementation of the project should there be disagreement among key stakeholders at some stage in the future.

**Table 5 Information that should be recorded about your lighting improvement strategy to prevent NDVRA**

Information to be recorded	
What is the context in which the project is being delivered?	<p>Provide a description of your understanding of the NDVRA problem in the location targeted by your strategy, based on the information you have collected so far. This does not have to be long, but provide a reasonable overview of the local context.</p> <p>Highlight any characteristics specific to your local area, summarising the information in Table 2 (e.g. the level of concern among local residents, pedestrians and/or local business owners, scope of the problem, whether targeted streets are in residential, commercial or CBD areas, whether they are poorly lit and whether there are pedestrians who can provide natural surveillance, etc.).</p>
What do we want to achieve?	<p>Write down clear objectives for the project that describe the desired outcomes. Outcomes can be long, medium and short term. What you measure depends on the intervention chosen. You can have a mix of long, medium and short-term outcomes in your strategy (e.g. are you looking to reduce NDVRA rates over time or just in the project timeframe? In the short term, do you want to encourage people to use certain pedestrian routes at night time? Is the long-term aim to make pedestrians, local business owners and residents feel safer?)</p> <p>Be specific – this allows you to have a measurable outcome (e.g. are you trying to reduce NDVRA offences in general, in specific neighbourhoods or in specific streets?).</p> <p>Be realistic – a decline in the target problem by 100 per cent is unlikely.</p> <p>Use local knowledge and available evidence on similar projects to help guide you in determining what will be appropriate. Some examples of objectives for lighting improvement strategies are presented in Box 1.</p>
What activities are we going to implement to achieve our objectives	<p>Identify and describe the range of activities that you propose to implement as part of your lighting improvement strategy.</p> <p>Outline how each activity is meant to address the problem (e.g. lighting improvements can signal community investment and guardianship in an area which can, in turn, encourage community pride and ownership of public spaces, encouraging resident engagement in crime prevention activity and informal social control).</p> <p>For each activity that you plan to implement, identify and document the resources (financial, human and infrastructure) required, the individual or agency responsible for each component, and the anticipated timeframe for implementing and/or completing each activity.</p>
How are we going to monitor progress and evaluate the impact of our strategy?	<p>What information will be collected on a regular basis to monitor the progress of implementing the strategy?</p> <p>How will you know if the strategy has addressed the problem and delivered the desired results (e.g. reduction in NDVRA offences in the target area/s as determined from crime statistics, increase in residents' perceptions of safety as measured using pre and post surveys, etc.)?</p> <p>Refer to the section on reviewing your strategy for further guidance.</p>



## 1.4 Getting stakeholders involved

Stakeholder involvement is an essential part of successfully implementing most interventions. There is a range of stakeholders who could be involved in a strategy to reduce NDVRA. Use Table 6 to help prompt your thinking on who you might be able to engage with for your project.

**Table 6 Stakeholders involved in lighting improvement strategies to prevent NDVRA**

Stakeholder	Types of activities and roles that they could be involved in	Contact details
Local council	Planning, project oversight, coordination of stakeholders, management of grant, tenders for lighting design installation and evaluation.	
Police	Providing access to recorded crime data, responding to reported NDVRA, insight into local problem.	
Housing authority	Facilitate consultations with residents in public housing, access to housing estates to install improved lighting.	
Neighbourhood Watch and similar groups (may also include volunteers)	Promoting the improved lighting system and providing information on past initiatives.	
Residents and local business owners and staff	Providing input into the development of improved lighting systems, providing natural surveillance in and around hot spots.	
Lighting providers	Provide support for strategy, additional resourcing, details of any contractual arrangements and future upgrade plans.	
Lighting engineers	Design and installation of lighting systems and providing expert assistance in conducting assessments of lighting on streets and open spaces.	
Local media	Public awareness campaigns, advertising community meetings.	
Others?		

**Source:** Adapted from Anderson 2010.

Depending on the size of the project, it could be ideal to set up a local stakeholder group or committee that meets on a regular basis, comprising representatives from each stakeholder involved in the project.

If you need to engage certain stakeholders but are not sure how to approach them, consider the following steps:

- **List the groups or individuals who can be approached for the intervention** based on the needs you identified in the scanning stage.
- **Be specific on what they can contribute and whether there are costs (financial or otherwise) in getting them involved.** This may include providing data, delivering services, providing financial assistance, etc. Engaging with stakeholders early in the planning process will help to work this out. Determining their capacity, interest and willingness to contribute to the intervention is also important.

- **When engaging potential stakeholders, be prepared.** Think from the outset about how you can get them involved. This could be done by conducting some research beforehand (if necessary) on the potential stakeholder to find out their needs, any concerns they might have and any benefits they might receive from being part of the project. Benefits for stakeholders can include information sharing and the contribution of the project to their agency goals (particularly if it is their core business), or the problem may directly impact their business (e.g. businesses may lose customers at night due to people not wanting to be out on the streets during night time hours). Do not forget that community members and not just organisations can be key stakeholders, particularly for interventions that require residents to take an active role in the implementation phase (e.g. encouraging residents to use and provide natural surveillance of well-lit pedestrian routes).
- **Be collaborative.** Even if you have a fair idea of what needs to be done, involve stakeholders in the strategy development and do not dictate what needs to be done. There may be something you have missed or they may bring specialist expertise and it will help to ensure their support for, and ownership of, the project.
- **Have clear and formally agreed roles.** Each stakeholder should be clear about the role they will play in the strategy and have formally agreed to the role. Consider whether you need to establish a Memorandum of Understanding or some other form of agreement.

Use Table 7 as a template for keeping track of stakeholder roles and responsibilities.

**Table 7 Stakeholder engagement template**

List the groups or individuals who should be involved in the activities delivered as part of the strategy	What they can offer/do (e.g. provide data, services, financial support, etc.)?	Are there costs (financial or otherwise) in obtaining their services? What are they?	How can we get them involved (e.g. data sharing, activities align with goals, play key role in delivery of activity, etc.)?	Are there any concerns that should be addressed? What (if any) are they?

Source: Anderson 2010: 33.

## 1.5 Estimating the cost and duration of a lighting improvement strategy

It is important that in planning a crime prevention project the full range of cost items is considered and reliable estimates of the cost associated with each item are calculated.

### *Purpose of the costing framework*

Table 8 provides a framework for calculating the cost associated with planning, implementing and evaluating a strategy to improve lighting to prevent NDVRA. This framework is based upon the description of the intervention and how it can be adapted to different local government areas, as outlined in the fact sheet and handbook for this intervention.

### *Factors influencing project cost*

Costs associated with a project may be fixed or variable. Fixed costs are costs that will not change with each additional unit of output. Variable costs are those costs that are impacted by factors such as the size of the target area, the number, type and size of the intervention sites targeted by a project, or the length of time over which the project will be implemented.

A number of broad factors will influence the total cost associated with a strategy involving improved lighting to prevent NDVRA. These include:

- The scope of your strategy (e.g. the size of the area you will target and the number of interventions or activities).
- How much work can be done with available staff and what needs to be fulfilled by contractors and other specialists.
- How much needs to be implemented from scratch, and what can be done in conjunction with other work being conducted by the council or stakeholders.
- Evaluation costs (generally around 10% of the project cost).
- Cost of ongoing maintenance for infrastructure.

A number of other decisions will also influence the total cost associated with the strategy. This includes:

- Whether new lighting will be installed or existing lighting upgraded.
- Who will undertake lighting audits (e.g. police, council staff, volunteers).
- Who will undertake the design and/or installation of lighting (e.g. lighting engineers and electricians).
- The type of lighting that will be installed, and whether there is ongoing costs (e.g. maintenance).
- Whether the intervention site requires redevelopment, landscaping or other enhancements to improve visibility, pedestrian movement and natural surveillance.
- Other interventions delivered alongside improved lighting.

### *How to use the framework*

To use the framework, identify the cost per unit for each of the items within the framework that are relevant to your project. Determine the total number of units of each item that will be required. It will then be possible to determine the total cost for each item and the overall cost of your project.

The examples presented in the framework are provided as cost estimates only and exclude GST. You will need to adapt these estimates to suit your own local circumstances and source quotes that are specifically tailored to your council's selected strategies. Not all the items will be relevant to your particular project.

The NSW Department of Justice will generally, upon successful application, provide funds for many cost items. However, local councils and/or project partners (e.g. police) will be expected to provide some in-kind contributions for some cost items, particularly those relating to personnel and ongoing maintenance costs.

### *How much time should I allow to implement this project?*

There is no clear formula for determining how long it should take to implement your intervention as local context and resources vary, even in seemingly similar locations. A good way to estimate is to review similar interventions and note their implementation schedule, paying careful attention to any factors that may have influenced its delivery.

As most projects are based on short-term funding it is also essential to consider developing an 'exit strategy' for your intervention. This would involve mapping out in the planning stage how the intervention will be sustained or phased out once the initial funding ends.

**! Relying on applying for more funding is not a realistic exit strategy option**

**Table 8 Project budget for a strategy involving improved lighting to prevent non-domestic violence related assault**

		Enter the following information for your project (examples provided):				
Project stage	Cost component	Cost item	Brief description of cost item	Number of units	Cost per unit	Total cost (specify in kind)
Project planning	Personnel	Personnel responsible for project planning, including consultation with key stakeholders, consultation with car park users and residents, regular and ongoing collection and analysis of data and sourcing quotes from relevant service providers	Project officer (local council)	105	\$36/hour (+22% on-costs)	In kind (\$4,625)
	Other (specify)				\$	\$
Project implementation	Equipment	Upgrades to existing lighting in pedestrian thoroughfares and/or open spaces	High pressure sodium lamps to replace existing lighting along pathway through park joining residential area and late night shopping and entertainment precinct	Six upgrades to existing lighting system	New lights at \$865 per light installed on existing pole	\$5,190 (6 x \$865)
	Equipment	New lighting equipment (lights and/or light poles) to be installed in pedestrian thoroughfares and/or open spaces. Cost will depend upon: <ul style="list-style-type: none"> <li>• distribution/capacity of padmount substation;</li> <li>• supply in linear metres;</li> <li>• number of lighting points to be added; and</li> <li>• access and construction costs for excavation and installation of light pole</li> </ul>	High pressure sodium lamps and lamp post	Two new lights and lampposts	New Lamp post + street light at \$10,000 (minimum) each	\$20,000 (minimum cost)

Enter the following information for your project (examples provided):						
Project stage	Cost component	Cost item	Brief description of cost item	Number of units	Cost per unit	Total cost (specify in kind)
	Equipment	Building and landscaping materials that may be required as part of the redevelopment of the intervention site and surrounding areas, landscaping or other enhancements to the site to improve visibility and avoid dark spots	Council maintenance trims trees between pathway and late night shopping and entertainment precinct	20 hours	\$36/hour (+22% on-costs)	In kind (\$881)
	Experts/contractors	Professionals engaged to undertake an audit of existing lighting and determine whether poor lighting is a factor in non-domestic violence related assault	Energy provider, police representative and council representative	10 hours	\$36/hour (+22% on-costs)	In kind (\$440)
	Experts/contractors	Professionals (e.g. lighting engineer) required to design a new lighting system or system upgrade	Energy provider	One	\$	In kind
	Experts/contractors	Professionals responsible for building or landscaping changes required to support the design or redevelopment of the lighting system	Council operations	40	\$36/hour (+22% on-costs)	In kind (\$1,762)
	Personnel	Personnel responsible for project management, including records management, progress reports to funding providers, stakeholder liaison and administrative support for project working group	Project officer (local council)	Five hours per week for 52 weeks	\$36/hour (+22% on-costs)	In kind (\$11,453)

Enter the following information for your project (examples provided):						
Project stage	Cost component	Cost item	Brief description of cost item	Number of units	Cost per unit	Total cost (specify in kind)
	Administrative	Regular project committee meetings to oversee project implementation	Project officer (local council)	30	\$36/hour (+22% on-costs)	In kind (\$1,321)
	Other (specify)					
Project review	Personnel	Personnel responsible for monitoring and evaluation (data collection, analysis and reporting)	Project officer (local council)	40	\$36/hour (+22% on-costs)	In kind (\$1,762)
	Administrative	Expenses associated with interview, survey or other data collection and analysis	Administration of surveys of local businesses and residents			\$5,000
	Other (specify)					
					Total personnel cost	\$22,244 (all in kind)
					Total equipment cost	\$25,190
					Total experts/contractors cost	\$0 (all in kind)
					Total administrative cost	\$5,000
					Total other cost	\$0
					Total project cost (excluding in-kind contributions)	\$30,190
					Total in-kind contribution	\$22,244



## Stage 2: Implementing your strategy

As outlined earlier, mapping out a clear strategy of what you intend to do, how you are going to do it, who will do it, and when it will be done by, will help you to implement the project and its various components. Use the information you have gathered in the planning stage as a checklist on how to proceed and to guide you through the implementation stage.

A project coordinator will need to oversee the project, coordinate the actions of the stakeholders and make sure that activities remain on track.

It's important to be flexible throughout the process. This does not mean abandoning any planning, but realise that no strategy will always go exactly to plan. You can mitigate the risk to your project by thinking ahead about any potential obstacles or problems that might occur (e.g. what to do if there is resistance to improving lighting in residential areas among local residents) and how you might overcome them.

Related to this point is the need to carefully manage the budget for your project. Keep track of what is being spent and where. Going over budget may require trade-offs in other areas of project delivery.

You will need to meet regularly with the local stakeholder group to review progress. Maintaining progress reports will help with this process. See Table 9 for a progress report template. Revisit any of the previous steps (e.g. consulting with stakeholders or the community, updating the environmental scan, analysing crime data, etc.) as required, particularly if any changes occur that may impact upon the delivery of the strategy.

**! Continuously monitor progress throughout the life of the project. This will enable you to celebrate success or identify problems when they occur and develop appropriate and timely responses.**

### 2.1 The importance of maintaining high quality records

*What should be recorded?*

Keep records of what was undertaken (by you and the other stakeholders), when and where (e.g. when and where lights were installed or upgraded). Record details of what went well, what didn't and any difficulties that you encountered along the way, and anything that might have interfered or aided in the delivery of the project or individual activities. These do not need to be too detailed unless you think it warrants comprehensive explanation. Some examples include:

- how a successful information sharing or partnership was fostered between two stakeholders
- problems related to collecting data

- significant events (e.g. significant weather events, withdrawal of key stakeholders, changes in legislation, etc.) that might appear to influence delivery (either positively or negatively), and
- other reasons for delays in implementing activities, or for not implementing some aspect of the strategy (e.g. unavailability of key staff or contractors).

You might ask other stakeholders involved in implementing aspects of the strategy to also record what they did and anything that might be significant in the strategy's success or failure.

This information can help you to see what worked, how and in what circumstances. As such throughout this handbook there have been suggestions on what should be documented, so use these as a guide.

**Table 9 Monthly progress report template (with examples)**

For each action required as part of your project assess the status of the action against each of the following criteria

Activity delivered as part of project	Action underway and on schedule	Resources available to deliver activity	Key stakeholders involved in delivery	Action completed to date	Strategies to address problems identified
Assessment of lighting systems on streets in a residential area with a high concentration of houses and NDVRA	Yes – slight delay in engaging lighting engineer to work with council to conduct assessments	Yes	Local council and lighting engineers	Six residential streets have been assessed and brief recommendation report submitted as at dd/mm/yy	Not required

Source: Adapted from Morgan & Homel (2011).

## 2.2 Factors impacting upon implementation

Table 10 highlights some of the key issues that face crime prevention projects and some possible strategies to overcome them.

Table 10 Implementation considerations

Consideration	Why this is important	Possible ways to address this
Lack of community participation	In order for activities to work, they frequently need to be accepted and supported by the wider community.	<p>Propose good practice strategies that the community will want to get involved in.</p> <p>Make sure that community members have an opportunity to have a say on what is to be done.</p> <p>Make sure that no one group or individual dominates the proceedings or dictates to the community what is to be done.</p> <p>Have open conversations or consultations about what is to be done; don't have one-off consultations with the community. Instead, consult regularly about the project (these consultations can be a useful source of information on whether the strategies are successful in the eyes of the community).</p> <p>Alert the community to the strategy through the local media (e.g. local television guide or paper, local radio, community meetings, etc.).</p>
Lack of stakeholder support	Stakeholders need to undertake activities and/or provide resources to ensure that the strategy is put in place.	<p>Make more targeted or formal requests to the stakeholder(s) for assistance.</p> <p>Put in place formal agreements around roles and responsibilities.</p> <p>Highlight benefits stakeholder can gain from involvement, address any concerns.</p> <p>Using media coverage (positive or negative) to foster stakeholder support.</p> <p>Look for alternative organisations or industry bodies to provide assistance, if possible.</p> <p>Try to build ongoing relationships and find some common ground.</p>
Attracting skilled workers	Attracting experienced staff to short-term projects can be difficult, especially in rural and remote areas.	Think of who is willing to participate in the project, and build a plan around the available skills base in the area, or build in training and mentoring.
Staff turnover	If staff leave during the project, it takes time to replace them. New staff may take time to become familiar with the project. This can impact on the implementation of activities and makes it harder to determine how the project is progressing.	<p>Look at ways of encouraging staff to stay with the project.</p> <p>Keep good records of the project's activities so that a new person can pick things up quickly.</p> <p>Provide ongoing support and mentoring to new staff.</p>

Consideration	Why this is important	Possible ways to address this
Managing the budget	<p>Parts of the project can sometimes cost more than expected.</p> <p>The length of time required to deliver a reduction in NDVRA may require more money than the budget available to the project.</p>	<p>Always try to include in the budget all the resources likely to be required for the project.</p> <p>Try to identify multiple sources of funding.</p> <p>Have a plan for continuing your project work once external funding has ended.</p> <p>Remember that some of the best project activities are simple and only require limited resources.</p>
Sustainability	<p>Attracting local or additional funding and support can be difficult, especially if the local area is not wealthy or the project is seen as important to only one part of the community.</p>	<p>Additional local funding is also a great way for the community to take ownership of the strategy.</p> <p>Highlight to key people in the local area how they will benefit from the project, and provide opportunities for them to support the project through financial and in-kind contributions.</p>
Unexpected events	<p>Events such as droughts, economic factors and out of the ordinary happenings can impact on the project.</p>	<p>You cannot predict 'unexpected' events. However you can try to make the impact of these events minimal by making the project plan flexible.</p> <p>Don't let the success of the project hinge on one or two factors.</p> <p>Think of how the project could be altered if there was a change in circumstances.</p>
Finding you need to change project activities once it has started	<p>It can be difficult to work out in advance just what might be required to achieve your main objective(s).</p> <p>Sometimes projects need to change if you find a planned strategy is not achieving what it was supposed to.</p>	<p>Keep funding bodies informed about your progress and discuss the need for changes in the project's activities.</p> <p>Continue to consult the community ahead of making any project changes.</p> <p>Review the objective(s) carefully and how the activities were originally linked to the objective.</p> <p>Find out about other crime prevention activities and what they have achieved.</p>

Source: AIC 2006.

## Stage 3: Reviewing your strategy

The purpose of implementing a lighting improvement strategy is to reduce NDVRA in your local community. It is important to know whether or not the strategy has had the desired impact. If it has worked, why did it work and what factors made it a success? If it didn't work it is also important to know why and to avoid repeating past mistakes.

You should consider how to evaluate your project at the start of your project and not just at its completion. Evaluation is important for a number of reasons, including:

- to work out whether the project has achieved the stated objectives
- for accountability purposes, particularly where a project receives funding from an external source
- to help you to assess what parts of your strategy are working well and what could be improved
- to contribute to the evidence base around effective crime prevention and characteristics of effective interventions, and
- to identify and share important lessons with other communities confronted with similar problems, providing guidance on good practice and highlighting potential challenges associated with implementing certain interventions.

**! The Department of Justice has formal reporting requirements that you are expected to adhere to. This involves the completion of both a six-month progress report and a final evaluation report.**

### 3.1 Evaluation questions

The most common forms of evaluation are process and outcome evaluations. Many evaluations involve some combination of the two.

A process evaluation will aim to improve understanding of the activities that are delivered as part of a project. It is also focused on the implementation, operation and management of these activities; assessing whether they were (or are being) delivered as planned and in accordance with the design of the program, determining how well they were delivered (i.e. to an acceptable standard and the satisfaction of various parties involved) and identifying any factors that may have impacted upon the delivery of these activities.

Process evaluations can be conducted at some point during, or at the completion of, a strategy and are often used to track progress and to see if anything needs to be changed to make sure you are on track for delivering the strategy as intended. They can be good for reporting on your progress to funding bodies and other stakeholders, and to alter the way you deliver a strategy to adjust to any different circumstances that may have arisen since you started the strategy.

Outcome evaluation is concerned with the overall effectiveness of a project, examining whether the stated objectives have been achieved and determining what outcomes (intended or unintended) have been delivered as a result (including the impact of the program on participants, stakeholders and the broader community). This takes place once the project has been completed. This should involve measuring the number of offences in the target area in the period before, during and after your project and, where possible, comparing this with adjacent areas (to measure displacement or diffusion of benefits) and other areas that share similar characteristics but were not subject to the intervention (comparison areas). You should aim to measure the number of offences over as long a period as possible, both before and after the strategy (ideally up to 12 months or longer) if this is possible within the funding timeframe. This way you will be able to address any seasonal variations.

At a minimum, you should probably aim to answer the following questions about your project:

- What did you actually do as part of the project?
- How does this project activity attempt to prevent or reduce the NDVRA problem in your local area?
- How did you adapt your project to suit the local NDVRA problem and context?
- How were the actions planned, managed, organised and steered?
- What was the nature and extent of stakeholder (including residents) involvement in all stages of the project?
- What impact did your project have on the number of NDVRA in the target area?
- What worked and how; what didn't work and why not?
- Were there any unintended consequences as a result of the project?
- What factors may have contributed to the change in NDVRA rates besides the intervention (e.g. increased police patrols of commercial areas during high risk periods)?
- What could be done differently or improved in the future?
- What were the main lessons learned from the project that could help inform similar initiatives in other areas?

If you can answer most of these questions, it is a good sign that you will have a useful evaluation. During the planning and implementation stages of the strategy you might find it helpful to review these questions to identify whether you think you will be able to answer them.

### 3.2 Performance indicators

Performance indicators describe what is measured to assess various aspects of an organisation or project's performance. Table 11 highlights some important things to consider when selecting performance indicators for your evaluation.

**Table 11 Important considerations in selecting performance indicators**

Consideration	Questions to guide your thinking
Available data	Does the data source exist?
	Will the information need to be obtained through methods such as surveys and consultations?
	Is the data retrievable and accessible, and is it expensive to access? Do we have to pay for getting the information?
	Where does the data come from? (For example, will it come from local government, police, BOCSAR, another government agency such as Housing, business owners or other non-government organisations.)
	Does the data cover the relevant time periods?
	Does the information source link to the performance indicator/measure?
Staff resources	Does your organisation have the relevant access to expertise (either internally or from a project partner) to be able to collect, analyse and interpret the data?
Relevance to the project	Is there a logical link between the indicator chosen and the input, activity, output or outcome it is supposed to measure? Or is it just measuring for the sake of measuring?

### 3.3 Sources of information

You should have been thinking about the data you will require for the evaluation when you were identifying performance indicators. Potential sources of data include (but are not limited to) the following:

- Police-recorded crime data for NDVRA occurring in the target area for the period prior to the project, during the project, and after the project is completed. This can be compared with adjacent areas to assess whether there has been any displacement or diffusion of benefits. The data can also be compared with other areas that share similar characteristics to the location in which the project was implemented to assess whether any changes in the rate of NDVRA can be attributed to the project. You can also compare the data with overall trends for the rest of the local government area or statewide. Make sure you look at crime data over a sufficient period of time to take into account any pre-existing NDVRA trends or seasonal factors (e.g. assaults are generally more frequent in the warmer months). Ideally you should look at crime trends for 12 months or longer prior to the strategy and after the strategy, but you will need to fit into funding timeframes.
- A survey of the community could be administered prior to and at the end of the project to measure rates of self-reported victimisation, perceptions of safety, concern about NDVRA, the use of specific pedestrian routes, awareness of the project and satisfaction with the services delivered as part of the project. As with recorded crime data, this could be administered in a second location not targeted by the project.
- A review of administrative data collected over the course of the project relating to the various activities that were delivered, such as the number of lights installed (and where), number of streets and open spaces with improved lighting, the number of lighting assessments completed, the number of information leaflets distributed to local residents and business owners advising them of the lighting improvements.



- In-depth interviews with residents who have been involved in the project in some way can be used to gauge their satisfaction with the services delivered as part of the project and views regarding the effectiveness of the project in reducing NDVRA rates.
- In-depth interviews (or, if numbers permit, a survey) with key stakeholders involved in the management and/or delivery of the project to seek their views regarding the project and its effectiveness in reducing NDVRA rates and their satisfaction with the services that were delivered.
- An example of one approach to evaluating a strategy that included lighting improvements is provided in Box 2.

***Box 2: Evaluation of a lighting improvement strategy implemented in Stoke-on-Trent***

This strategy was implemented in a former council estate located in Stoke-on-Trent (United Kingdom) that was experiencing high rates of NDVRA, particularly at night. Over a two-month period, 110 tungsten street lamps were replaced with brighter, high-pressure sodium street lights along one kilometre of roadway. New street lights were also installed along a series of detached footpaths that were previously unlit.

To determine whether the lighting improvements had any impact on assault rates, a crime victimisation survey was distributed to residents in the weeks leading up to and a year after the implementation of the strategy. The evaluators also conducted a series of face-to-face interviews with a sample of residents.

The evaluation found that self-reported night-time assaults decreased by 68 per cent at the intervention site. The number of people who self-reported feeling unsafe when walking around the estate at night also decreased. Further, community pride in the area appeared to increase with the number of residents who described the estate as friendly and 'well-kept' increasing significantly. Notably, the incidence of self-reported day-time assaults also decreased during the post-intervention period. The evaluators explain this finding by suggesting that it was the increase in residential community pride in the area that led to the decrease in self-reported victimisation, rather than increased visibility.

### 3.4 Bringing it all together in an evaluation framework

Once you have identified your key evaluation questions, performance indicators and data collection methods, it is possible to develop a framework that can help guide your evaluation. An evaluation framework outlines the key evaluation questions, performance indicators and sources of data, and links them together in a structured way. It forms the basis for your evaluation. A template (with some examples) is provided in Table 12.

### 3.5 Reporting on key findings

What and how you report depends on whether you are preparing a brief report on the progress of the project or whether it is a final evaluation report. Having a well conducted and written evaluation will help you to demonstrate the impact of what you have been doing, enables you to share your lessons from the project with other practitioners and adds to the evidence base.

Table 12 Evaluation framework template (with examples)

Evaluation question	Performance indicators	Likely data source	Comments regarding data collection, availability or timing
<b>Was the project implemented as intended?</b>			
Was lighting substantially improved in the areas where NDVRA was a problem?	Improvement in lighting levels in target areas	Assessments/audits of lighting levels in target areas before and after the strategy	Requires follow up assessments/audits to be undertaken
<b>Did the project achieve its intended outcomes?</b>			
Did the number NDVRA decrease within the target area?	Number of people that reported being assaulted in the targeted area (during day and night-time hours) to police in the previous 12 months	Recorded crime data from BOCSAR or NSW Police	Requires reliable data for the specific area targeted by the project and surrounding areas (as opposed to wider local government area) for periods before and after the strategy was implemented  Need to consider whether other factors may have contributed to any changes (e.g. crime was already decreasing in the area)
Did stakeholders involved in the management and delivery of the project perceive that it contributed to a reduction in NDVRA?	Number/proportion of stakeholders involved in the project who are satisfied with project outcomes	Interviews with stakeholders involved in the project	Interviews should be held toward the end of the project to give it time to be implemented and have an impact

## Endnotes

Case study: Painter KA & Farrington DP 1997. The crime reducing effect of improved street lighting: The Dudley project, in RK Clarke (ed), *Situational crime prevention: Successful case studies*, 2nd ed. Guilderland, NY: Harrow and Heston.

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