Evolving SIA to address extended construction impacts – Bonnie Cavanough

Abstract

Construction fatigue describes the impacts to receivers affected by multiple or prolonged construction projects where sustained impacts are experienced. It may result in poor health and social outcomes in communities due to prolonged amenity, access and connectivity impacts. The potential for construction fatigue greatly increases during periods of growth where multiple large scale construction projects may affect the same receivers over an extended period of time. Current social impact assessment practices in New South Wales arguably do not adequately address the impacts of prolonged construction.

This paper examines options to consider construction fatigue in the environmental impact assessment process. Impact assessment practices must evolve and innovative management practices must be adopted to mitigate the risk of construction fatigue in communities.

Introduction

'Construction fatigue' describes the response to sustained impacts experienced by communities affected by multiple or prolonged construction projects. Factors which may lead to construction fatigue in a community include:

- Prolonged construction associated with a single project in one geographic location which affects the same receivers over a longer period of time;
- Concurrent or consecutive construction of multiple projects within the same geographic region, which affect the same group of receivers. This is particularly the case where multiple proponents are involved due to the increased complexity in coordination between projects to minimise impacts; and
- Poor management of impacts to receivers, particularly ineffective management of amenity and access impacts.

Low intensity impacts over a longer duration or higher intensity impacts over a shorter duration may cause construction fatigue. It may occur as a result of the cumulative impacts of multiple projects (i.e. the same type of impacts from multiple projects affecting the same receptor), or due to in-combination impacts (i.e. different types of impacts from the same project affecting the same receptor).

Construction fatigue generally occurs as a result of prolonged amenity and access impacts and their associated social impacts. Aspects which have been identified as potentially causing construction fatigue, based on issues raised by the community in response to recent Sydney projects such as the Westconnex projects and the Sydney CBD and South East Light Rail project, include:

- Direct noise and vibration impacts, particularly where out of hours works are required;
- Traffic and connectivity impacts including longer travel times, loss of parking, reduced access to social infrastructure, goods and services, and community severance impacts;
- Direct visual impacts;

- Impacts to businesses due to amenity impacts and access constraints;
- Direct air quality impacts such as increased dust and pollutants in the air;
- Safety impacts arising from increased heavy vehicle traffic on roads; and
- Health and wellbeing impacts associated with the amenity impacts outlined above and with increased uncertainty due to proposed projects. These may include sleep disruption and disturbance, increased anxiety, health impacts due to loss of access to recreation and green spaces, mental health impacts due to loss of social connections due to barriers to access, and physical impacts to health.

Construction fatigue has been identified as a risk in New South Wales (NSW) in recent years due to an increase in major infrastructure development, including proposed construction of new metro lines, light rail lines and motorways. Regulators including the NSW Department of Planning and Environment have asked proponents to specifically address construction fatigue during the environmental assessment process for major projects including the F6 Extension Stage 1, and Western Harbour Tunnel projects.

This paper examines construction fatigue in the context of Sydney, NSW, Australia, a highly developed urban area with a high socio-economic status and a sophisticated planning system. However, issues relating to construction fatigue are broadly relevant to most communities and countries, regardless of their level of development.

Opportunities to improve the identification and management of construction fatigue have been examined in the context of strategic environmental assessment and the four stages of social impact assessment outlined in the IAIA SIA Guidelines as detailed below (Vanclay et al. 2015).

Discussion

Strategic assessment stage: during preliminary planning stages of the project

Addressing construction fatigue should begin with strategic environmental assessment (SEA), to identify at a high level what 'hotspot' areas are at risk of construction fatigue at the preliminary stages of project planning and allow for better coordination between projects. SEA is "*a process… for evaluating the effects of proposed policies, plans and programmes on natural resources, social, cultural and economic conditions*" (IAIA, 2019). SEA should consider the wider environmental, social and economic impacts of proposed major projects on an area, prior to the commencement of the planning approvals process for individual projects. It should consider the key objective of the project or programme, potential cumulative impacts, options and alternatives, and consider stakeholder and community participation to aid program development and decision making. It is noted that it can be difficult to fully understand the cumulative impacts of different projects at the SEA stage due to different stages of delivery and potentially limited availability of information.

There is currently no formal requirement for SEA within NSW or Australian commonwealth statutory planning frameworks (Kelly et al., 2012). Formalising the requirement for strategic environmental assessment prior to proceeding with major projects could inform early high-level detection of areas at risk of construction fatigue. It would allow for more informed decision making based on the total impact of projects and could be used to facilitate better coordination between proponents of separate projects, by creating a better understanding of the cumulative impacts and facilitating discussion around how best to jointly manage these impacts. For example a SEA could be completed to accompany strategic planning documents such as transport plans or growth plans for a region This

may provide proponents with a better understanding of potential construction fatigue 'hot spots', allowing proponents take a more proactive approach to managing these issues throughout project design, assessment and construction.

Phase 1: Understand the issues

Areas at risk of construction fatigue should be identified in phase one of the Social Impact Assessment (SIA) process, to identify risk early and put into place strategies to minimise impacts. During this phase initial consultation and research should be undertaken to identify any specific vulnerabilities or risk factors in potentially impacted communities which could lead to construction fatigue. This may include factors such as a large number of sensitive receivers or receivers with particular vulnerabilities (such as the elderly or disadvantaged groups) who may therefore be more susceptible to construction fatigue.

It is also necessary to consider the severity and duration of individual impacts of the proposed project. This includes consideration of proposed construction timeframes for the project and potential risks to these which may prolong impacts to receivers. This process should be used to identify receivers at risk of construction fatigue due to in combination impacts from a single project, rather than consecutive or cumulative impacts between multiple projects.

A preliminary and high-level prediction of potential cumulative impacts can be completed at this stage, to identify whether there is potential for construction fatigue to occur. This should include projects which are proposed, in addition to those which are confirmed and funded for an area. This assessment should identify any areas which may be affected by multiple projects and could be at risk of construction fatigue. Where other projects are identified which may create cumulative impacts, proponents should liaise with the proponents of these projects to understand the risks and potential interactions of the projects.

Phase 2: Predict analyse and assess the likely impact pathways

During the second phase of SIA, project specific impacts are assessed and analysed, to confirm the high level predictions made during phase 1. It is necessary during this phase to identify the extent and likely duration of social impacts to receivers, and confirm the receivers who may be impacted by in combination impacts of the project or by cumulative impacts of multiple projects over a prolonged period.

Within recent Environmental Impact Statements (EISs) for projects in NSW there has been observed a deferment of assessment of cumulative social impacts to the next project. This may occur due to the difficulties in accessing accurate information about other proposed projects due to a lack of certainty regarding a potential project where a project is unconfirmed or unfunded, limited certainty around project design, reluctance to share information between different proponents, and internal bureaucracies. This approach of deferring assessment of cumulative impacts to a later date may limit the ability of proponents to mitigate against construction fatigue.

To address construction fatigue where detailed information about potential interactions between projects is not available, proponents need to collaborate to understand the location of potential cumulative impacts at a high level. Where specific information about construction methodology and timing is not available for a project, proponents could consider the likelihood of construction fatigue

occurring in a reasonable worst case scenario. For example, proponents could assess the likelihood of construction fatigue occurring if the projects were constructed at the same time, or consecutively. The potential impacts of these projects would then be better understood and strategies could be developed to manage potential construction fatigue impacts, in the event that these are required.

Phase 3: Develop and implement strategies

While construction fatigue has been identified as a risk in the impact assessment phase of a number of projects in NSW (for example the Western Sydney Airport and Westconnex projects) community feedback (LBSJV, 2018) indicates that there is opportunity to improve current strategies to manage construction fatigue (RMS, 2014). This has been identified as an issue by the NSW Department of Planning and Environment who has requested construction fatigue be specifically addressed in some EISs. This raises the question, what strategies can proponents use to prevent or minimise construction fatigue during the construction of major projects?

In order to address construction fatigue, during the preliminary planning phases for certain major projects there would be benefits such as improved understanding of the risk of construction fatigue and better opportunity to coordinate between projects if SEA were implemented. This would bring together agencies so that areas at risk of construction fatigue could be identified at a high level prior to project-specific assessment.

Proponents should make a genuine attempt to consult with other relevant proponents and agencies to understand the cumulative impacts of projects and help coordinate and avoid cumulative and construction fatigue impacts during the early stages of Projects. In NSW, there would be potential benefit in regulators having greater oversight to ensure that proponents collaborate to address cumulative and in combination impacts to receivers to prevent construction fatigue. For example through the development of utilities management strategies for projects and better coordination with utilities providers to ensure utilities works are not occurring during project respite periods. Another example is the formation of coordination offices which coordinate delivery of major projects in central Sydney to minimise the impact of major project construction. A coordination office has recently been formed in Sydney CBD and this could be an important tool for the management of construction fatigue on projects going forward.

During the third phase of SIA, construction fatigue should continue to be addressed via collaboration between proponents to coordinate strategies across projects to manage impacts. This could include changes to the staging of projects, combined community consultation to reduce consultation fatigue in communities and collaboration to develop Social Impact Management Plans which adequately manage the residual cumulative impacts of projects.

It is also important to complete community consultation to identify strategies which are palatable to communities to address construction fatigue. Social impact management measures need to evolve to be more innovative and adaptable and based on the specific needs of the community. If proponents are to adequately address construction fatigue there needs to be adaptability within project mitigation measures, for example, staging of construction works to offer respite to receivers may not create the best outcome. In some cases, receivers may prefer six months of continuous construction impacts rather than two years of staged construction with respite periods. Construction staging must also balance project cost, particularly where projects are publicly funded.

In these cases there is also benefit in delivering projects as quickly as possible to minimise cost, and to deliver operational benefits, and this must be balanced with the impacts of out of hours works on receivers.

Another example is the offering of respite accommodation to address construction noise impacts. For some receivers, temporary hotel accommodation is not a viable option due to their personal circumstances (for example where families have small children and hotel accommodation presents a logistical challenge for their work and childcare arrangements). Where alternative respite accommodation is not appropriate for an impacted receiver, other options could be offered to mitigate these impacts, including the free movie tickets or products such as noise cancelling headphones. A more suitable mitigation may be at property treatments to address noise impacts. Proponents could consider installing noise treatments as early as possible in the construction process, and when assessing whether at property treatments are necessary, consider the total expected impact including cumulative impacts to receivers. Particularly where receivers will be affected for a longer duration of low level impact and as such are at risk of construction fatigue.

Phase 4: Design and implement monitoring programs

During Phase 4 a collaborative social impact monitoring program should be implemented including communication and collaboration between projects being constructed simultaneously or in series. This should include implementation of a Social Impact Management Plan (SIMP) to manage and monitor social impacts, and could also include a joint complaints management system, where community members can provide feedback to one entity. This would make it clearer to the community how to provide feedback, rather than having to contact multiple proponents to identify which projects are creating impacts. It would also allow for better and more complete tracking of impacts to communities and the effectiveness of mitigation measures between projects. Regular coordination meetings should take place between proponents to track when any changes to project SIMPs and to manage complaints and any unexpected construction fatigue impacts.

Conclusion

A number of actions are necessary prior to the commencement of an SIA to best place projects to minimise construction fatigue. A SEA should be prepared where appropriate to assess the potential areas at risk of construction fatigue at a high level prior to project-specific assessment. Proponents should make a genuine attempt to consult with other relevant proponents and agencies at this stage to understand the potential impacts of projects, and help coordinate and manage impacts throughout project development. Each project also needs to complete a genuine and thorough consultation process with the community to ensure that construction fatigue is managed.

Identification and management of construction fatigue impacts is an important component of SIA. Social and cumulative social impacts of projects need to be identified early on, and collaboration between proponents should occur to coordinate management approaches where necessary. Addressing construction fatigue will begin with managing social impacts for each project to reduce residual impacts and reduce the potential for construction fatigue. A key aspect is to manage information flows between separate proponents . Engagement of public authorities and proponents is essential including:

- a commitment to complete better strategic planning for projects;
- a commitment to better communication between public authorities and proponents; and
- A collaborative, thorough community consultation process throughout project planning and construction.

Social impact management plans will be the key tool for managing social impacts and social management measures will need to evolve and adapt to address construction fatigue. Proponents need to offer innovative and receptor specific management measures, developed based on community consultation.

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