

When constructing a cap, consideration should be given to controlling and mitigating, to the extent practicable, potential impacts to the quality of life (QoL) of the local community surrounding the project site. Not all of the specific considerations described below will be relevant to a given project. But at a minimum, these items should be evaluated prior to construction such that appropriate plans are developed to minimize or eliminate QoL impacts and are implemented prior to the start of construction activities. During construction, either the contractor or the supervising engineer may take responsibility for managing or addressing potential community impacts. The issues and potential actions that can be taken to help address QoL impacts that may arise are discussed below.

## A. Managing Community Impacts

QoL concerns are to some extent subjective, so it is unlikely that all community concerns can be eliminated, even with rigorous preconstruction planning. For this reason, a process for handling community concerns and inquiries that will inevitably arise during construction should be established. The robustness of this process should be tailored to the specific project. Factors such as the nature of the operations (e.g., daylight hours only or 24-hour operations), the proximity of the project to potential community receptors (both commercial and residential), and the geographic makeup of the surrounding community (e.g., urban versus rural) should be considered when developing a community engagement plan.

### Larger-Scale or High-Visibility Projects

For projects that may have a high potential for QoL impacts or significant community interest, steps should be taken to educate project personnel on the nature of the project and the steps that should be followed in the event a community member engages directly with them during construction activities. Aside from being able to direct the community member to sources of more information about the project (e.g., website, local field office, etc.), the project personnel should be prepared in case the community member voices their concerns about issues that they are observing. Ignoring such situations or overly engaging with the community member can both have negative impacts for the project. Instead, project personnel should be provided with clear direction on the process to follow. One useful item to consider is having pre-prepared “project hotline” cards that the project personnel can provide to community members. These cards can provide information on where to lodge concerns or ask questions from community engagement staff who are tasked with managing these project aspects, as well as information on project-related website(s).

### Smaller-Scale or Low-Visibility Projects

For projects with a lower potential for QoL impacts or minimal community interest, the need to develop and implement rigorous community engagement plans tailored to field project personnel is somewhat minimized. Nevertheless, supervisory field staff should still be aware of how to handle and direct concerns they receive in the field from community members. Again, ignoring such situations or overly engaging with the community members can have negative impacts for the project.

## B. Air Quality

During construction, air quality concerns can take many forms but are typically grouped into upland and in-water activities. Odors, which are a common concern for many sediment remediation projects, are not addressed here in detail since they are typically associated with sediment-disturbing activities (e.g., dredging and excavation). Instead, air quality concerns associated with cap construction focus on impacts due to dust-related activities (e.g., material handling and vehicle traffic). Particulate dust-related impacts will typically be evaluated according to the federal regulatory standards (40 CFR Part 50) established in the USEPA’s National Ambient Air Quality Standards. With respect to dust-related impacts, the relevant criteria air pollutants for particulate matter (PM) are  $PM_{10}$  and  $PM_{2.5}$ . These pollutants are defined and regulated according to USEPA’s “primary standards” and “secondary standards” that establish specific numerical standards that must be met. Real-time light-scattering instruments (direct read) can be used as indicators.

### Upland Activities and Mitigation

Due to the large quantity of capping materials brought to the project site, QoL impacts from vehicle traffic should be minimized. If construction activities demand a high number of material deliveries per day, gravel or dirt roadways within the project site should be wetted with water at a minimum frequency to minimize dust. This includes haul roads as well as parking lots and other areas that may see large numbers of vehicles. To minimize community inquiries regarding dust levels, supervisory field staff should diligently monitor dust plumes and, if needed, increase the frequency at which gravel or dirt surfaces within the project area are wetted.

In addition, handling and managing cap materials can generate large amounts of dust. To the extent practicable, handling of material stockpiles should be minimized. If large dust plumes are observed when handling materials, wetting material stockpiles can be performed to mitigate dust. If cap materials will be stockpiled and left in place for longer durations, covering the stockpiles with tarps or spraying surfaces with biodegradable foam can help mitigate dust caused by wind. Wind screens or other wind blocks can also be established around material handling areas to reduce dust.

### **In-water Activities and Mitigation**

Similar to dust-related impacts associated with upland activities, dust-related QoL impacts are also possible with in-water activities. Again, handling and managing cap material stockpiled on barges should be minimized to the extent needed to support material placement. If excessive dust is observed from materials stockpiled on barges, wetting the materials should be considered. If barges loaded with cap materials are to be moored or staged for long durations, temporary material covers can be considered. But potential health and safety considerations regarding placing and removing tarps on barges may mean that alternative means (such as wetting stockpiles or using covered barges) may prove more practicable and safer.

## **C. Noise**

During construction activities, noise-related QoL impacts can be caused by a variety of sources. Project-related noise levels will be regulated as either stationary sources (e.g., fixed equipment installed at an upland support facility to transport cap materials) or as mobile sources (e.g., vehicles delivering cap materials, equipment handling materials on site, material placement barges, etc.). Federal regulations have been established (24 CFR Part 51) for numerical noise levels for mobile or construction-related sources. In addition to federal regulations, state laws and local ordinances (city, county, etc.) should be evaluated, based on the project location, to determine whether additional regulations may apply.

For both upland and in-water activities, similar mitigation measures apply to help reduce noise-related QoL impacts, including the following:

- Installing shrouds or noise-dampening devices on project vehicles and equipment or placing sound-dampening barriers around stationary equipment (e.g., generators). In addition, equipment can be installed with quieter backup alarms that minimize noise propagation while maintaining worksite safety.
- Making operational adjustments to minimize impacts to the local community, to the extent practicable. This could include altering operational hours (e.g., 12-hour vs. 24-hour operations) or minimizing/eliminating certain activities during nighttime hours (e.g., place cap materials during daylight hours only). In addition, activities can be modified to minimize noise impacts, such as requiring the use of specific haul routes for delivering cap materials or locating material handling areas away from potential community receptors.
- Evaluating the use of physical barriers such as earthen berms for upland activities for large-scale or long-duration projects. These barriers not only help mitigate noise-related QoL impacts, but they also help to minimize other QoL impacts (such as light).
- Using equipment tailored to placing cap materials or using alternative equipment. For example, instead of placing cap materials with a barge-mounted excavator, cap materials may be placed hydraulically, which requires smaller support equipment to manage material stockpiles.
- Maintaining equipment through frequent inspections. If faulty or noisy equipment is encountered, it should be repaired or replaced as soon as practicable.

## **D. Lighting**

The potential for light-related QoL impacts will depend on the nature of the operations and, in particular, it will depend on whether construction activities will occur at night or during dawn or dusk. Federal regulatory lighting requirements at construction sites focus on ensuring that a minimum amount of lighting is available to ensure a safe working environment (29 CFR Part 1926.56). For this reason, state laws and local ordinances (city, county, etc.) should be evaluated, based on the project location, to determine whether site-specific regulations may apply.

When evaluating and mitigating light-related QoL impacts, it is important to be aware that impacts can occur from glare (when the intensity of light, or luminance, is significantly greater than the intensity that the receptor's eyes are used to), light trespass (light is directed away from its intended purpose), and sky glow (brightening of the night sky that occurs from reflected light). In general, the following actions can be taken to minimize and mitigate each of these factors:

- Equip lighting sources with shrouds that direct illumination down and toward the work site. If in-water activities are occurring at night, these shrouds are particularly important since physical barriers between the in-water operations and shoreline are likely nonexistent.
- Direct project personnel to be diligent in managing focused light beams on project activities. For example, tugboat captains may “spot” the shoreline at night for navigational purposes or to identify moving vessels entering their worksite. When not in use, spotlights should be turned off or directed in such a way as to minimize light trespass onto shoreline properties.
- Position equipment (light plants) or operations (e.g., barge loading areas, material handling areas, etc.) to minimize light trespass to community receptors adjacent to the project site. For large-scale or longer-duration projects, physical barriers such as earthen berms should be evaluated for upland activities. These barriers not only help mitigate some light-related QoL impacts, but they also help to minimize other QoL impacts (such as noise).
- To the extent practicable, make operational adjustments to minimize impacts to the local community. This could include altering operational hours (e.g., 12-hour vs. 24-hour operations) or minimizing or eliminating certain activities during nighttime hours (e.g., placing cap materials during daylight hours only).

## E. Navigation and Road Traffic

Equipment and vehicle-related QoL impacts should be carefully considered during project planning and design. With regard to project-related road traffic, the potential for QoL impacts can be minimized prior to the start of construction activities by requiring vehicles delivering cap materials to use designated haul roads or major highways, to the extent practicable. In addition, depending on the scale of the project, it is possible that large numbers of personal vehicles will enter and exit the project site during crew changes. To minimize these impacts, potential QoL concerns should be identified and considered during site layout and planning. For example, access roads to the project site could be routed away from residential areas to minimize impacts to the local community or away from highly congested roads to prevent vehicular accidents. To avoid tracking mud onto the street outside the upland staging area, wheel-well washing stations be located at the exit from the site to the street.

Regarding in-water equipment, third-party vessel traffic in the project site should be evaluated during planning and design to minimize impacts to third-party vessels and to ensure that navigation access is maintained. For example, mooring locations where loaded cap material barges are to be staged prior to placement activities should be sited in locations outside of recreational channels or highly trafficked areas. This would be in addition to regulations preventing the mooring of vessels within federal navigational channels. In addition, aids to navigation should be inspected, maintained, and replaced, as needed, such that third-party vessels receive clear directions on how to traverse the project site safely. Beyond meeting specific federal navigational requirements (33 CFR Chapters 9 and 33 CFR Chapter 34), using aids to navigation and carefully considering the sequencing of in-water activities is paramount to ensure the safety of project vessels and other vessels.