

# **Lake Powell Pipeline**

## **Draft Noise Work Plan**

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## **Section 1 Introduction**

The purpose of this work plan is to define the procedures for analyzing noise impacts from the Lake Powell Pipeline (LPP) project. This work plan presents the issues and concerns, defines the impact area and significance criteria, describes the analysis methodology, reviews existing data and identifies data needs, reference an outline for the noise Technical Report, and identifies dependency items and relationships to other resources.

## **Section 2 Issues**

Noise-related issues and concerns identified during the formal scoping process will be addressed in the analysis for the LPP alternatives. Related questions raised during the informal scoping process have been consolidated into the following issue(s).

- What would be the temporary noise impacts from blasting, sawing, and excavating rock along the pipeline and penstock alignment?
- What long-term noise impacts would occur at pump stations and hydro stations?
- What noise impacts would occur from Project transmission lines?

Noise issues may be identified during formal scoping meetings and will be considered in the noise impact analysis.

## **Section 3 Impact Topics**

The noise analysis is unique in the fact that there are no impacts on noise per-se. Therefore no impact topics have been identified. The results of the noise impact analysis will be used by several other resource disciplines in performing impact analyses.

## **Section 4 Impact Area and Significance Criteria**

### **4.1 Impact Area**

The impact area would include the following:

- Any area within the zone of noise influence during construction of the pipeline or related facilities.

- Any area within the zone of noise influence during operation or maintenance of the pump stations and power generation facilities.

## **4.2 Significance Criteria for Each Impact Topic**

The noise analysis is unique in the fact that there are no impacts on noise per-se. The task of the noise resource is to identify changes in noise levels. Other resource disciplines would determine if an impact from the change in noise levels would affect specific resources, and the significance of those impacts will be documented for each applicable resource. Therefore, no significance criteria are identified for noise.

# **Section 5 Methodology**

## **5.1 Introduction and Overall Approach**

The noise analysis will consider noise generated by construction activities, including noise from traffic generated by construction activities, and from operation of project features. It is difficult to predict reliable levels of construction noise. Heavy machinery, the source of most construction noise, is constantly moving in unpredictable patterns. Construction will typically occur during daylight hours when occasional loud noises may be more tolerable. No single area would be exposed to construction noise for a long duration. Therefore, extended disruption of normal activities is not anticipated. Abatement measures described in the SOPs will be followed to minimize construction noise.

A typical construction spread will be analyzed to estimate the noise level it will produce. The hourly equivalent noise level (Leq) for the typical construction spread will be calculated using noise emission levels from the available literature for the heavy equipment anticipated at the typical construction spread.

Peak construction Average Daily Traffic (ADT) will be used to determine noise level increases from construction traffic. The noise level increases will be calculated using noise-emission equations and graphs from the Federal Highway Administration's Traffic Noise Model (FHWA TNM). At this time it is not anticipated that construction traffic would noticeably increase traffic noise levels, except on minor roadways that currently have very low ADT. Doubling traffic volume (assuming similar speeds and vehicular make-up of the traffic flow) results in an approximate 3 dB(A) increase, which is barely perceivable to the human ear.

In addition, blasting operations may be occurring at tunneling or other areas which are too difficult for standard open trench excavation and ripping. These areas of probable blasting will be identified and noise impacts will be analyzed.

### **5.1.1 Definition of Baseline Conditions**

Noise baseline conditions will be determined by typical background noise in non-traffic areas and background noise in traffic areas as defined by OSHA, Department of Transportation, or State and local agencies.

### **5.1.2 Analysis of Alternatives**

Areas of noise generated by construction and operation activities above background levels will be analyzed along each alternative pipeline route and at project facility locations. The change in noise levels from baseline conditions will be documented as an impact, and the results will be provided to the resource disciplines for specific application to the resource impact analyses.

### **5.1.3. Analysis of Cumulative Impacts**

Cumulative noises from various sources will be analyzed to generate one maximum noise based upon reasonable expectations. The following areas are anticipated to be analyzed for cumulative impacts.

#### **Operations**

- Pumping Stations
- Power Generation Stations

#### **Construction**

- Excavation
- Tunneling/Blasting
- Materials Hauling
- Pipe Laying
- Pumping Station Construction
- Power Station Construction

## **Section 6 Data Needs and Analysis**

### **6.1 Data Needed**

The data needed to perform the analysis include:

#### **Operations**

- Background noise levels
- Tunneling and ventilation equipment noise levels
- Pump station noise levels
- Power generation station bypass noise
- Power generation station noise levels

#### **Construction**

- Excavator operating noise level
- Excavation / ripping operations noise level
- Blasting noise level
- Hauling equipment noise level
- Standard traffic noise level

## **6.2 Data Available and Adequacy**

The data required to complete the noise pollution analysis can be acquired from the following identified and existing sources:

### **Operations**

- Background noise levels are available from various data sources
- Tunneling and ventilation equipment noise levels, available from equipment manufacturers and tunneling experts, data is adequately available
- Pump station noise levels, available from design engineer, adequate data available upon design
- Power generation station noise levels, available from design engineer, adequate data available upon design
- Power generation station bypass noise, available from design engineer, adequate data available upon design

### **Construction**

- Excavator operating noise levels, available from equipment manufacturers, range of noise levels are readily available depending upon size of equipment required.
- Excavation and ripping noise levels are available from various sources
- Blasting noise levels, available from blasting experts, data is readily available
- Hauling equipment noise levels, available from equipment manufacturers and construction experts, data is readily available

## **6.3 Additional Data Needs**

### **6.3.1 Primary**

None.

### **6.3.2 Secondary**

None.

## **Section 7 Procedures For Developing Mitigation**

The analysis of impacts on noise will be based on the standard operating procedures and measures to avoid or reduce impacts, both of which will be included in the project description chapter of the Draft Technical Report. The significance criteria for noise will then be applied to determine if any impact would be significant. Mitigation measures would then be developed to offset significant impacts. The mitigation measures would be based on applicable state and Federal statutes and regulations, past experience and best professional judgment to either satisfy a legal requirement or to satisfy the public interest requirement. In some cases significant impacts may not be able to be mitigated. All reasonably foreseeable mitigation options will be evaluated by the Federal Energy Regulatory Commission, Bureau of Land Management, and other responsible federal agencies and factored into the respective decision documents.

## **Section 8**

### **Technical Report**

A technical report will be necessary to document in detail baseline conditions of and potential impacts on recreation resources. The technical report will follow the resource technical report outline common to all resource work plans (see Resource Technical Report Outline).

## **Section 9**

### **Dependency Items From Other Resources**

The following items are required from other MWH Team resource specialists:

- **Tunneling:** Need locations and areas of expected tunneling and shaft excavation activities.
- **Blasting:** Need locations of expected blasting. Need blasting typical maximum noise level.
- **Pump Station:** Need location and typical power station noise level (pumps, ventilation, traffic).
- **Hydro Station:** Need location and typical power station noise level (turbines, bypass flow).
- **Transportation:** Need baseline and projected peak construction ADT.