

*“Noiseless” & Locatable Sound – Safer by design*



# **Safer by Design – Loose Plant**

## **“Noiseless” & Safer Back-Up Alarms**

*BroadBand Sound*

*Natures Natural Alarm Sound*

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# Safer by Design

- The need for change
- Effective backup alarm requirements
- Why broadband is better than tonal beepers
- Concerns
- Benefits

# The Need

- Fatalities still occur where tonal alarms are fitted.
- Broadband will reduce the risk
- Atlantic Alliance specifies broadband
- UK ... all major mining companies
- Authorities – increasing demand
- USA

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# Effective Back-Up Alarms

- Counter the hazard caused by backing vehicles colliding with people.
- Affective alarms:
  - Enable quick identification of hazard location
  - Give minimal false alarms
  - Are not masked by other sounds or person’s (at risk) hearing impairment

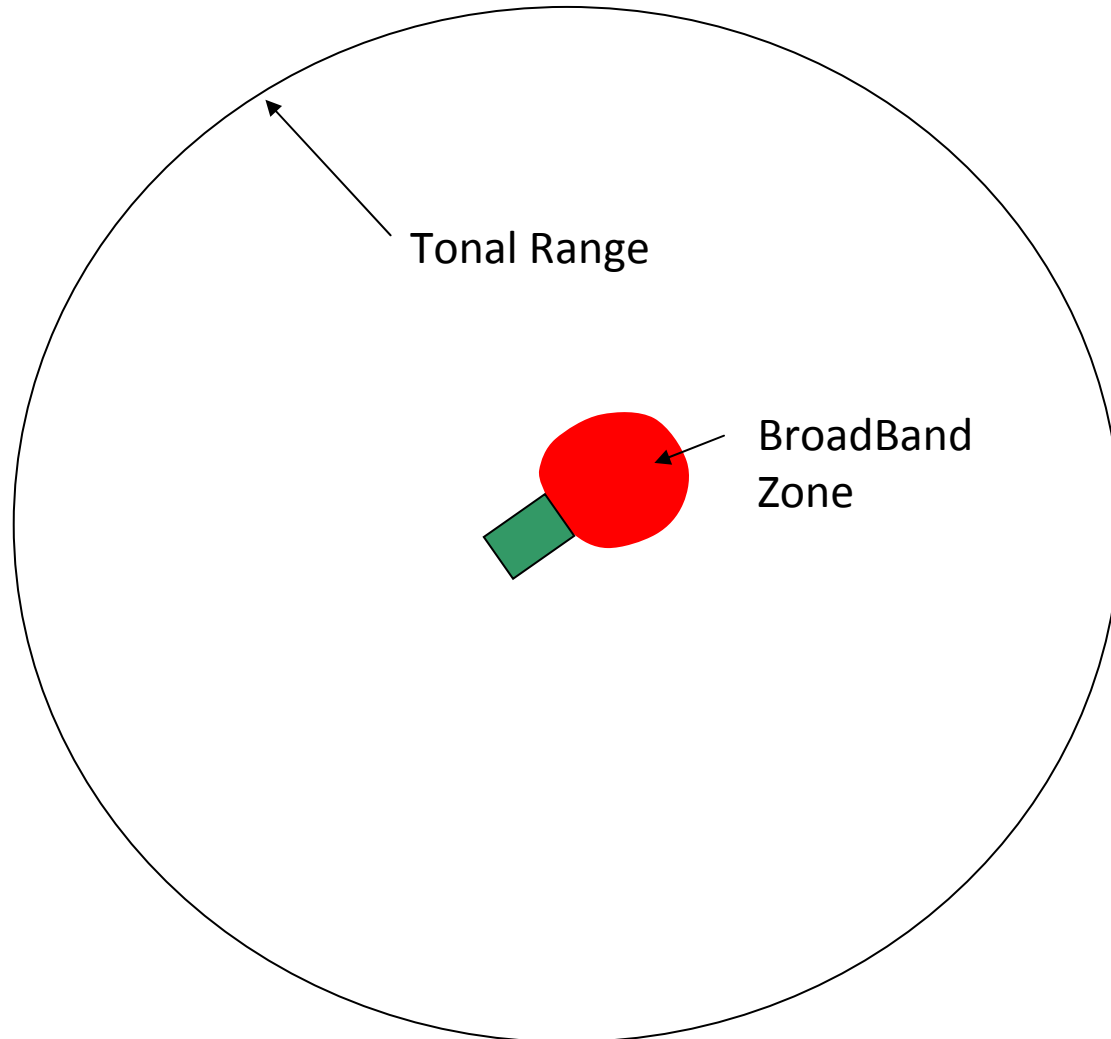
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## Why broadband is safer

- Enable quick identification of hazard
  - Broadband is locatable sound
  - Tones create standing waves which cause confusion
  - Not masked by other sounds or hearing impairment

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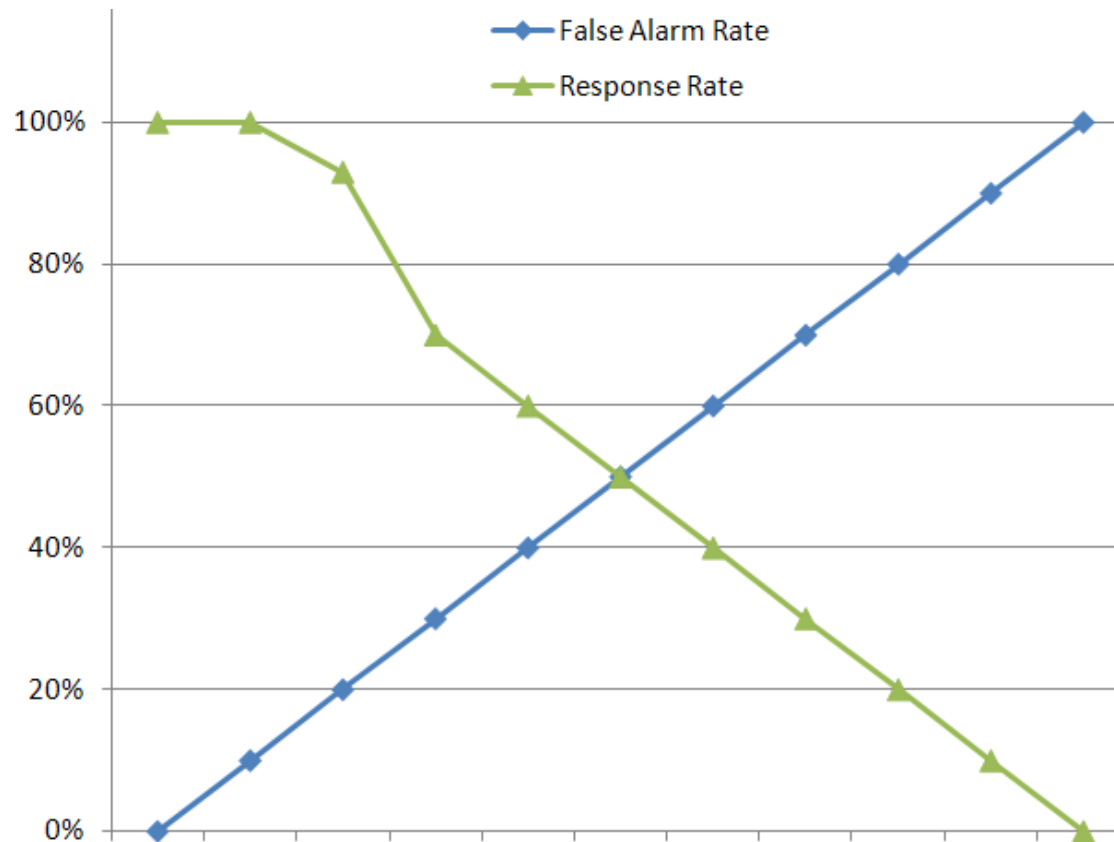
# Relative Impact Zones



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# Why broadband is safer

- Enable quick identification of hazard
- Minimal false alarms



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# Concerns

- Regulation compliance
- Recognition
  - Instant ... Hear, Look (locatable), Learn



## Benefits

- Improve safety
- Improve working environment
- Eliminate noise complaints
  - Improve neighborhood relations
  - Eliminate neighborhood objection during the permitting process (planning permission)
- Reduce risk of hearing causing impairment

## Conclusion

- Broadband backup alarms are:
  - Safer by design
  - Socially more responsible for both neighbors and co-workers

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# Any Questions

Lafarge

Port of Houston

Hanson

City of Seattle

Aggregate Industries

Waste Management

North West Glacier

Iowa DOT

Teichert

NYC

Tilcon

City of Austin

Tarmac

Texas DOT

Granite Rock

Scottish Environmental Protection Agency

Cemex

BP

Olcastle

etc



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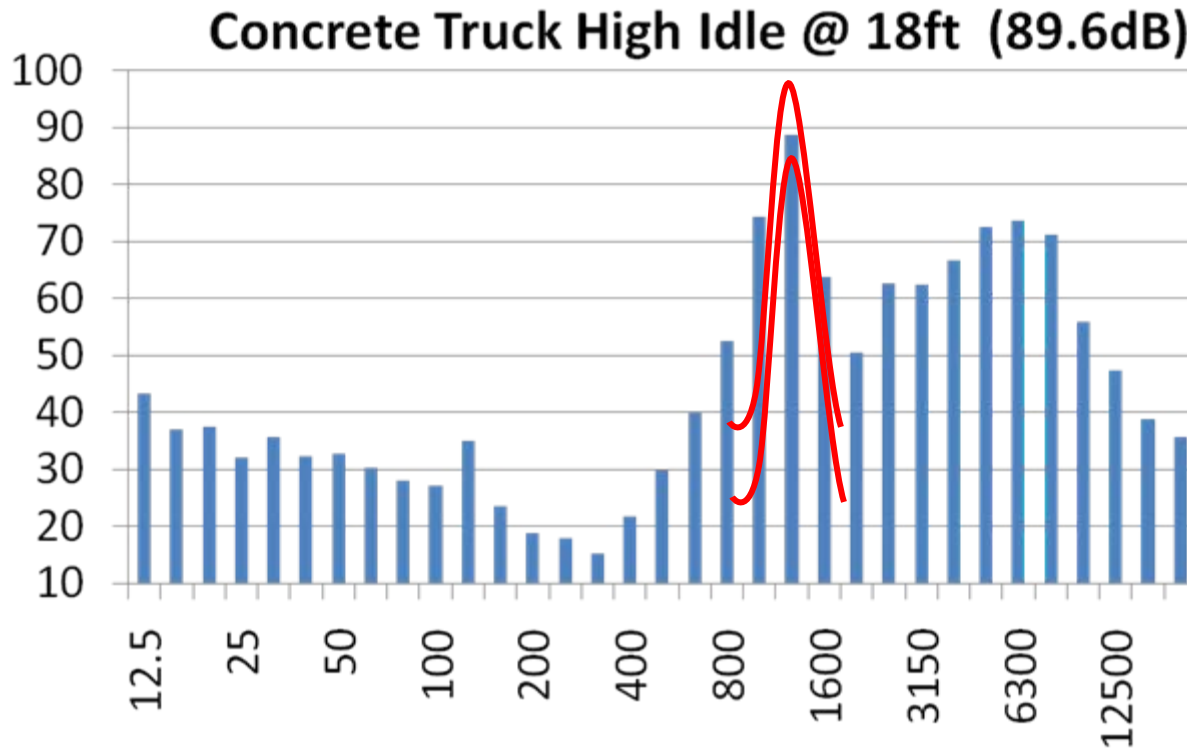
# Comparison

Characteristic	Tonal	Broadband
Loudness (equal dBA)	Quieter	Louder
False Alarms	More likely	Less Likely
Locatability	Poor	Good
Confusion	Likely	Unlikely
Stridency	Greater	Lesser
Impact outside hazard area	Greater	Lesser

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# Why broadband is safer

- Not masked by other sounds



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