

# Traffic Noise Analysis

- > Existing conditions provides the basis for evaluation
- > IDOT Policy follows FHWA Noise Abatement Criteria (NAC)

Traffic noise impact is when predicted noise levels approach, meet or exceed the NAC

- Residential, Parks, Schools, Playgrounds, Hospitals (67 dBA)
- Offices, Hotel, Restaurants (72 dBA)

## Evaluation Process

Noise Monitoring

Traffic Noise Model (TNM) for 2040 conditions

Determine impacts and assess potential mitigation



## TRAFFIC NOISE *based on these factors*

- + SPEED
- + DISTANCE FROM ROAD
- + PERCENTAGE OF TRUCKS
- + TOPOGRAPHY/ELEVATIONS

## Goals

### Must be both feasible and reasonable

- Achieves at least an 8 dBA reduction for at least one benefited receptor
- Economically reasonable
  - \$24,000 + adjustment factors per benefited receptor

# Traffic Noise Analysis

## IDOT Noise Policy and Process

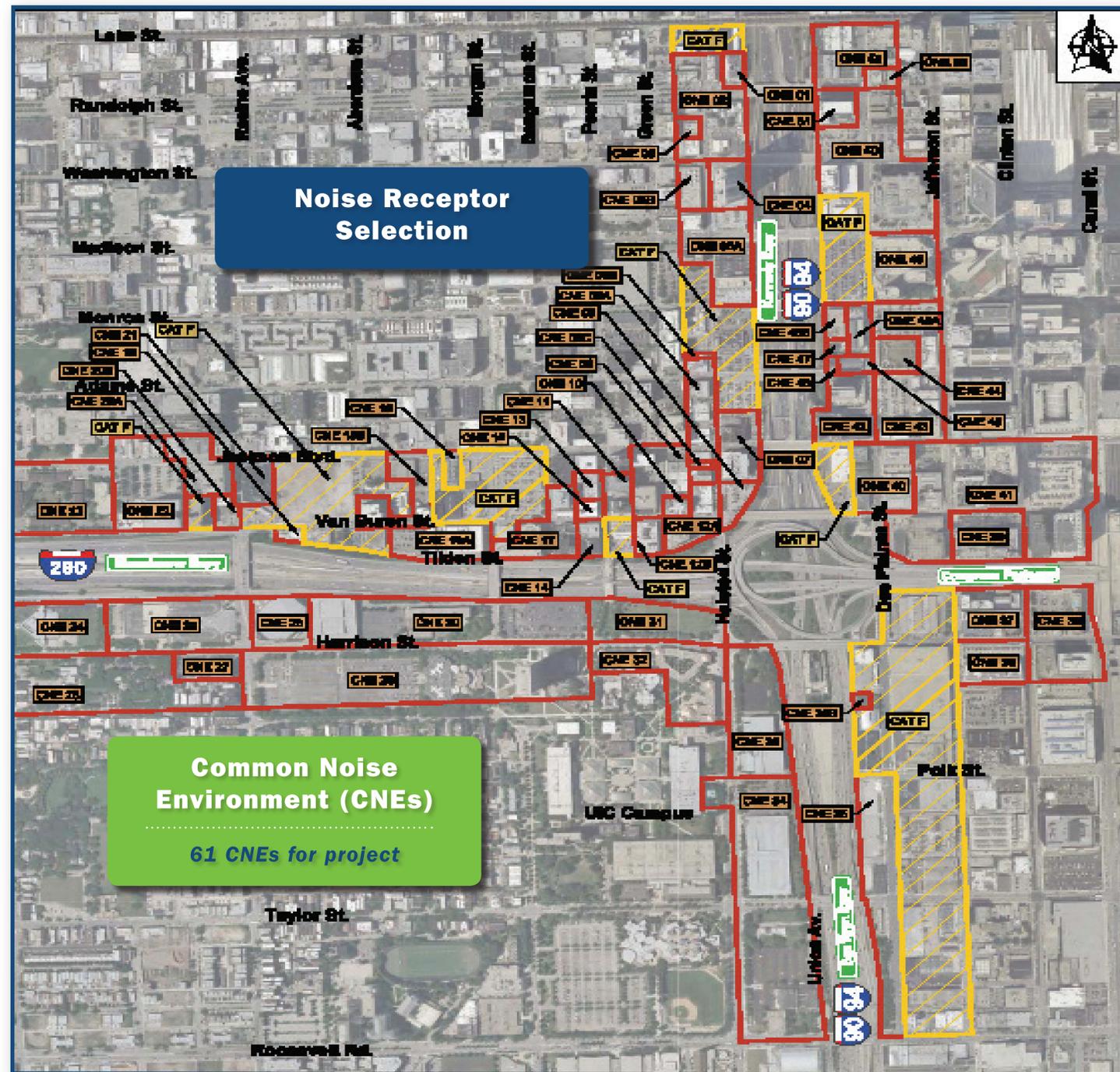
- > Highway Traffic Noise Assessment Manual
- > IDOT BDE Manual – Chapter 26-6 (Based on 23 CFR Part 772 from FHWA)
- > Process includes combination of field monitoring and computer modeling
- > Noise impacts are determined from predicted 2040 traffic levels

## Traffic Noise Analysis Results

- 61 Common Noise Environments (CNEs) studied within the project area
- 18 locations of field measurements to validate computer noise model
- 84 receptors modeled
- Noise barriers found feasible and reasonable at 6 locations



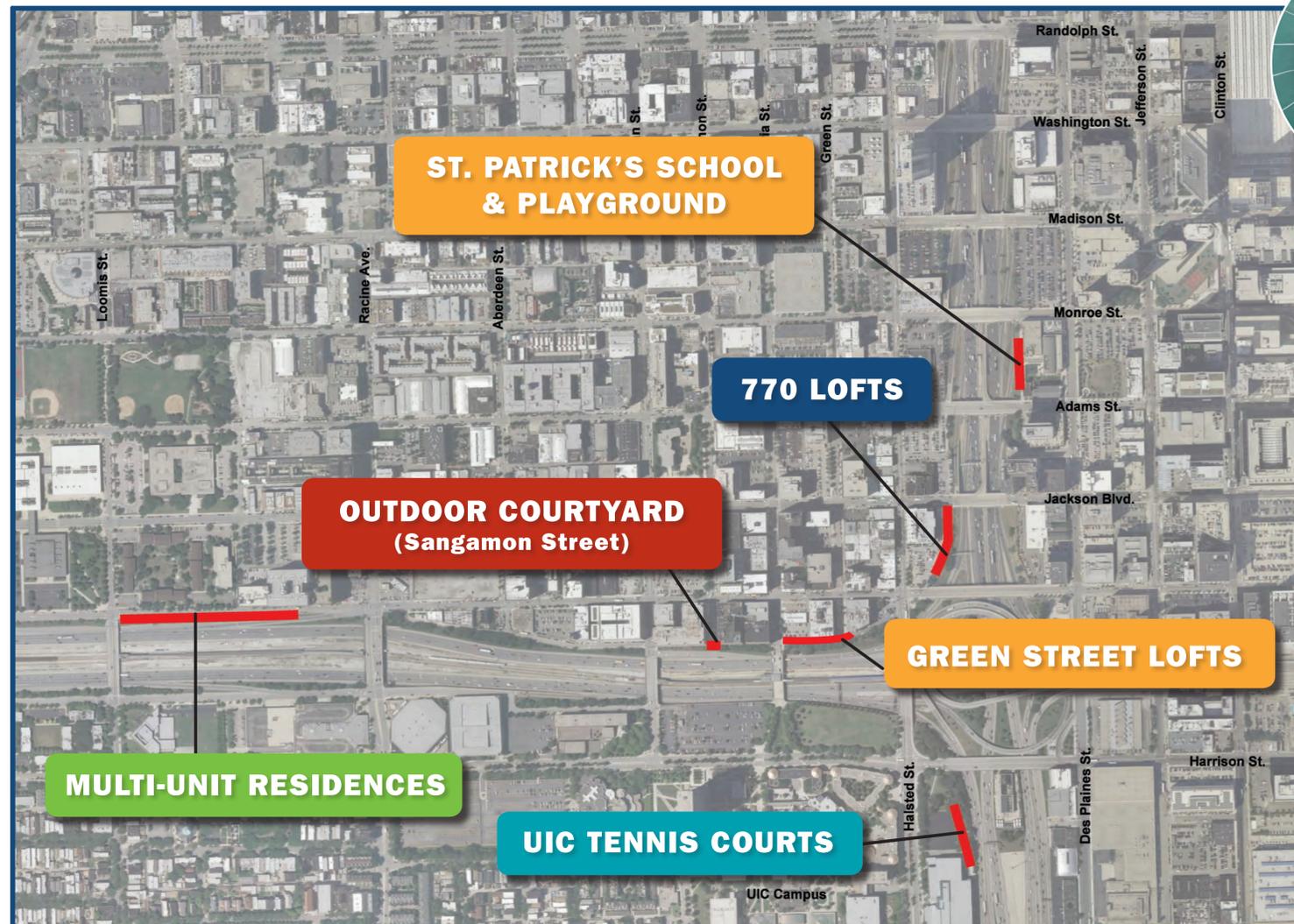
# Common Noise Environments



The Circle Interchange Project study area is divided into Common Noise Environments (CNEs). CNEs are determined by:

- Common land uses (i.e. residential, commercial, institutional, mixed use, etc.)
- Within 400 to 500 feet of the project area
- 61 CNEs established for project

# Potential Noise Wall Locations



## Next Steps...

Currently the Department is soliciting viewpoints from benefitted receptors (*property owners and tenants*).

The deadline for returning the "View Point Form" has been extended to July 12, 2013.

- **33% response rate** is the goal
- Viewpoints tallied
- Requires **greater than 50%** of viewpoints to be in favor of potential abatement measure

If it develops during final design that constraints not foreseen in the preliminary design or public input substantially change, the noise abatement measures may need to be modified or removed from the project plans. A final decision of the installation of the abatement measure(s) will be made upon completion of the project's final design and the public involvement process.

# Drainage Summary

## Existing Drainage Conditions

- + Existing drainage system consists of inlets, catch basins, storm sewers and three pump stations (Nos. 5, 22 and 26).
- + The Location Drainage Study investigated 14 locations with existing flooding concerns.
- + I-90/94 and I-290 have separate main drain systems.

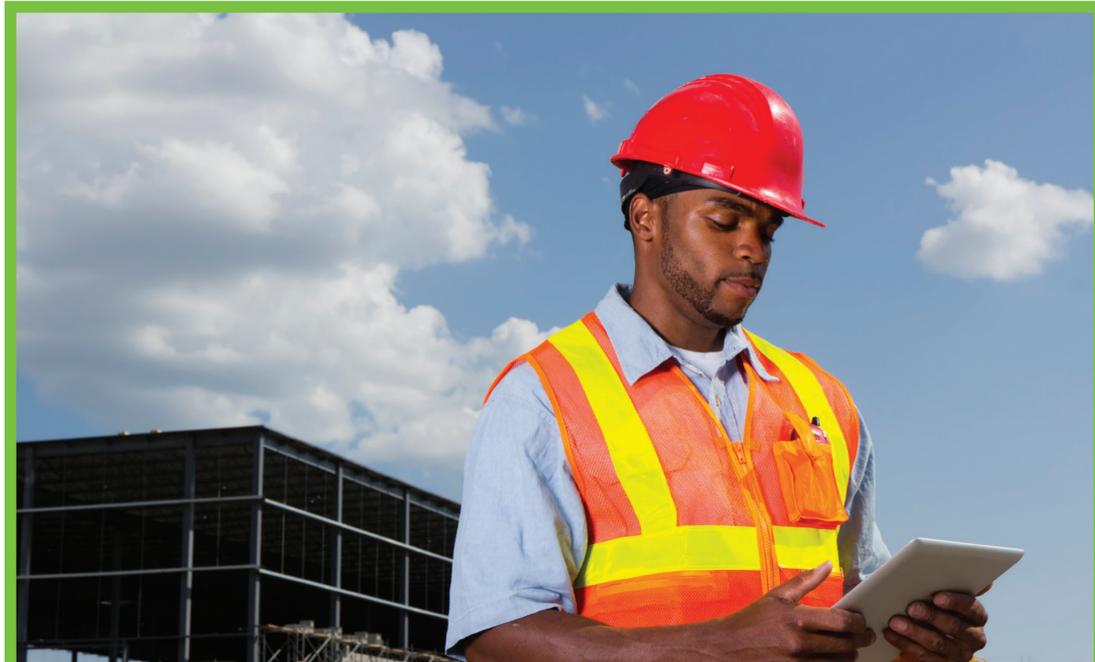


Pump Station No. 5

## Proposed Drainage Conditions

- + Collector sewers and inlets will be upsized to accommodate a 50-year storm.
- + The proposed hydraulic design for Pump Stations Nos. 5 & 26 will eliminate flooding for the 50-year storm event.
- + Where feasible, best management practices will be incorporated with the project.
- + An underground storage structure will be constructed beneath the Accident Investigation Site in the median of I-90/94.

# Building Vibration Program



## Early planning

- **Identify risks**
- **Establish allowable vibration thresholds**

## Building vibration monitoring

- **Before construction**
  - *Visual condition inspection*
  - *Vibration baseline identification*
- **During construction**
  - *Vibration monitoring*
  - *Alerts when approaching vibration thresholds*



# Land Acquisition

## Acquisition Types

- Fee simple taking
- Permanent Easements
- Temporary Easements



### Three types of land acquisition.

- 1 The first is fee simple, or the acquisition of all rights and interest of real property.
- 2 The second type of acquisition involves a permanent easement or use of the property, where underlying ownership is retained by the property owner, but access is provided for maintenance of facilities such as traffic signal equipment, storm sewers and outfall ditches.
- 3 The third type is a temporary construction easement where access is required only during construction for grading work, sidewalk or driveway construction, and other improvements.

## Right of Way Needed

- Approximately **0.1 acres of fee simple acquisition** is required (from 1 parcel)
- Approximately **0.2 acres of Temporary Easement for grading and access** is required (from 6 parcels)

