Processes DOTs Use For Noise Wall Final Design

Traffic Noise Practitioner Summit
Noel Alcala, OhioDOT

June 2018
ODOT Noise Wall Design/Construction plans

What do we follow?

- ODOT’S Traffic Noise Manual dated April 2015
- Noise Barrier Specification (NBS-1-09)
- Bridge Design Manual (Section 800)
Conference call requirement
20’ max height
4’ aesthetic step downs at ends
1’ max change in top of wall elevation from bay to bay
Bottom panel’s min buried depth of 6”
Absorptive vs reflective barriers
Review and approval process; 3 Stages of review. Stage 1-3.
Noise wall design BMPs

- Confirm placement of noise barrier with maintenance, utility and construction experts
- Same noise wall texture and/or color on both sides of wall
- Using no colored sealer on the posts for proposed new noise walls at the edge of shoulder to avoid the issue. Apply a waterproofing admixture to the posts.
Noise Barrier Specification
(NBS-1-09)

- Panel Heights
- Post Spacings
- Typical fill, cut, and sloped sections
- Post and drilled shaft requirements
- Control panel requirement
Noise Barrier Specification (NBS-1-09)

- Material specs
- Sound absorptive material (SAM) requirements
- Construction methods
- Tolerances
- Acceptance requirements
- Sealer specs and requirements
Bridge Design Manual
(Section 800)

- Drilled shaft design
- Aesthetics
- Noise wall plan requirements
- Review and approval process

Noise Wall Construction Plan Review
ODOT Noise Wall Design Philosophies

- We want smooth top of wall profiles
- We prefer our noise walls placed at the ROW
- Different colors and textures kept to a minimum
- Show the adjacent roadway or ramp profile on the plan and profile sheet
- Minimize post spacings
Major Components of a Noise Wall Design

- Schematic
- Typical Sections
- General Notes
- Summary of Pay Items
- Plan and Profile Sheets
- Maintenance of Traffic (MOT)
Major Components of a Noise Wall Design

- Cross Sections
- Colors and Textures
- Special Aesthetic Treatments (icons, etc)
- Special Detail Sheets
- Noise Wall Data Tables
- Soil Profile and Foundation Investigation Results
Major Components of a Noise Wall Design
Major Components of a Noise Wall Design
Major Components of a Noise Wall Design
Major Components of a Noise Wall Design
Major Components of a Noise Wall Design
Major Components of a Noise Wall Design

Noise Wall Construction Plan Review
Common Plan Review

Comments

- Add color and texture details
- Smoothen top and bottom of wall profiles (TOWP and BOWP)
- Eliminate sudden major elevation changes to the top of wall profile
- Eliminate any “valleys” in the TOWP
Overlap walls are 3:1
Show the roadway profile
Use an integral post cap and match the post rustication groove with the top of the highest adjacent panel
Number each bay
Recently Designed and Constructed Noise Wall Projects
Recently Designed and Constructed Noise Wall Projects
Recently Designed and Constructed Noise Wall Projects
Thank you! Questions?

Contact Info
Noel Alcala, PE
Noise and Air Quality Coordinator
Noel.alcala@dot.state.oh.us
614-466-5222
Noise Wall Final Design

Oregon DOT Process
Carole Newvine/OR DOT
Noise Wall Final Design

- Statement of Work
- Meetings: consultant and roadway designer
- Reporting
Statement of Work

TASK 11 - Final Design: Noise Wall Height/Location Analysis

Task 11.1- Review previous NTR to Confirm Findings **Step 1**

Consultant shall complete the following to confirm the earlier analysis and mitigation recommendations conducted for the Project are still applicable for current Project work. Work for this task includes consulting with ODOT Roadway Designer and Traffic Engineer to determine if there are significant changes to previous design and traffic data that would affect the traffic noise impact results and locations of recommended abatement from the previous NTR for the area. Work to include:

- Comparisons of traffic volumes/vehicle classification from previous to current as percent differences.
- Comparisons of previous to current roadway design to determine if recommended noise abatement locations could change.

If significant design changes have occurred, Consultant shall discuss with Agency’s Noise Specialist and prepare a summary Memorandum on the status of proposed mitigation to document whether or not those changes have the capacity to affect the originally proposed noise mitigation (i.e. render it ineffective or unnecessary.)

Depending on the outcome of this subtask, Agency could authorize Contingency Task 11.2.

**Deliverables and Schedule:**

Memorandum summarizing the findings of the review due to Agency ten (10) business days after NTP or as directed by the APM.
Statement of Work

Contingency TASK 11.2 – Updates to Build Scenario due to Significant Design Changes  Step 2 (possibly)

(Note: this task is not necessary for all projects with recommended abatement – may not be needed or could be a contingency task, depending on Project timing. Results from Task 11.1 will determine need for Task 11.2)

If the design has significantly changed (Task 11.1), Consultant shall re-analyze (via TNM modeling) the Build (or Preferred) Alternative to determine if the number and locations of the traffic noise impacts have changed. The findings from this task will determine if noise walls that were previously proposed are still feasible and reasonable. Work in Task 11.3 determines final noise barrier design. Impact analysis work under this task is defined in Task 7.

Consultant shall confer with APM and Project Team if locations and numbers of receivers previously analyzed have changed. Using TNM, Consultant shall re-create the Build Scenario using the updated design and traffic data as appropriate. The Consultant shall report modeling results in Status of Proposed Mitigation Memorandum. Consultant shall provide preliminary noise wall design revision recommendations to Agency if necessary.

Deliverables and Schedule:

Status of Proposed Mitigation Memorandum (if warranted by design changes) due three (3) weeks after NTP or as directed by the APM.

All TNM modeling files to be submitted with Memorandum
Statement of Work

Task 11.3 Final Noise Wall Height/Location Analysis  Step 3

This task is intended to cover the work required to analyze the various wall iterations that may be required for decision-making purposes by the Agency Project Team for final location of noise barrier(s) and for incorporation into the Project’s final design. Task 11.3 may follow Tasks 11.1 and 11.2; it may also be a stand-alone task.

Note: The original noise impact analysis and proposed mitigation for noise impacted properties where it was determined to be both reasonable and feasible. The product of that work (the NTR) was then summarized in the environmental document and the noise technical report. This task may require that the Consultant work with the roadway designer to finalize dimensions and footprint for the noise barrier(s).

Consultant shall:
Add more modeling receivers as appropriate to TNM barrier modeling so that noise reductions at each receptor, particularly in the area of wall termini, are well identified. If not done so under another Task in this SOW, Consultant shall identify via mapping, receptors assigned to each modeling receiver.

Consultant shall work with Agency staff to model up to six (6) noise wall iterations for each final wall analysis. Iteration means one wall alignment with multiple heights analyzed.

Each height iteration analyzed must be summarized in spreadsheets that show insertion loss at each receiver for each wall height analyzed, number of receptors benefited by the representative receiver, impacted receivers that meet feasibility requirements, impacted receivers that do not benefit from the proposed wall, benefited receivers that meet Agency’s noise reduction design goal, and cost per benefited receptor so that each wall height demonstrates how it meets or fails Agency feasible and reasonable criteria. (APM to provide sample spreadsheet if necessary.) Spreadsheets/tables data must be presented so that insertion loss comparisons can be made among wall heights for each modeled receiver.
Statement of Work

Wrap around features added to wall termini must be considered a separate iteration. Final wall height for each location must be optimized if necessary and as directed by the APM.

After final wall location and dimensions are agreed upon, Consultant to provide Agency roadway designer with wall alignment coordinates and top-of-wall elevations.

After final wall analyses are complete, Consultant will provide Agency with a draft Noise Wall Analysis Memorandum. Draft and final Memorandum, at a minimum, shall include:

- spreadsheets comparing wall heights for receivers (described previously in this task);
- Recommendation for final wall dimensions;
- wall coordinates;
- top-of-wall elevations for all final walls;
- final wall locations shown on mapping;
- benefited properties shown on mapping and tabular form with street addresses. (Consultant shall provide Agency with location of properties that would benefit from the mitigation so that residents and owners can be surveyed as to their wishes concerning mitigation. The number of benefited receptors may vary depending on the barrier scenario. Consultant shall determine number of benefited properties for each wall scenario. Agency is responsible for survey/voting process unless specified under specific task authorization.);
- if a receiver represents more than one receptor, Consultant shall indicate graphically receptors represented by each receiver; and
- TNM modeling files.

Spreadsheets for each wall location must be included in the appendices of the draft and final Memorandum, showing modeled receivers, number of receptors represented by each receiver, receiver noise levels with build alternative, receiver noise levels for each barrier height being considered, and insertion losses for each receiver. In addition each wall height must demonstrate how it meets or fails Agency feasible and reasonable criteria. (APM to provide sample spreadsheet if necessary.)

After Consultant receives Agency’s comments on the draft Noise Wall Analysis Memorandum, Consultant shall submit a final Noise Wall Analysis Memo to APM.

Consultant shall conduct quality assurance/quality control (QA/QC) checks on all submittals to the Agency. This includes checking all modeling input and output, and tables and figures in draft and final Memorandum for errors. These checks will be performed by someone other than the noise analyst. Submittals to the Agency will be reviewed by senior Consultant staff other than the analyst, who is proficient in TNM, traffic noise impact and abatement analyses. Submittals to the Agency will be edited to eliminate grammatical errors, and to ensure consistency and readability.

Consultant shall submit the draft NTR for review by Agency. Consultant shall respond to Agency review comments and incorporate responses into the final NTR.

Upon approval by Agency staff, the final NTR must be stamped by a Registered Professional Engineer, employed full-time by the Consultant, licensed to practice in the State of Oregon with sufficient knowledge to review the NTR. Once the final NTR has been stamped, electronic and hard copies of the finished product will be submitted to Agency.
Statement of Work

Deliverables and Schedule:

Data from each wall iteration to be summarized in table(s) showing receiver, build noise level, insertion loss, dimension of subject wall, cost, number of benefited properties, benefited properties meeting Agency noise reduction design goal, impacted properties meeting feasibility goal. Final location of wall(s) to be presented and discussed in draft and final Memorandum, other wall iterations and heights to be included in appendix material.

Location of properties that would benefit from noise mitigation due with draft and final Noise Wall Analysis Memo. Street addresses for benefited properties must be provided as well as shown on mapping.

Draft Noise Wall Analysis memo is due within twenty-one (21) business days of NTP or as directed by APM.

Final Noise Wall Analysis Memo within seven (7) business days of receipt of draft review comments from Agency. Final Noise Wall Analysis Memorandum must be reviewed and stamped by an Oregon-licensed professional engineer.
Meetings

- OR Noise Specialist, Consultant, Project Management, (discipline leads ), project designer: expectations
- Communications
- Process
- Project Management: site constraints
- Coordinate system; wall stationing
- Project Deadlines Known
Process

- Roadway designer initiates 1st iteration (locates footprint in roadway design from noise tech report)
- Consultant:
  - builds wall heights for 1st iteration (footprint) via TNM
  - checks feas/reas criteria for all iterations
  - provides figure with TNM Receivers with associated receptors
  - Provides spreadsheets for footprints/iterations
  - Optimizes wall, provides final height recommendation
- OR Ns Specialist: checks heights and ILs for each iteration
Reporting Results

• Memorandum-style - reviewed and PE-stamped
• Figures: benefited properties/associated TNM receiver; wall height changes/wall stationing
• Spreadsheets for iterations
• Top-of-wall elevations
• List of benefited: voters ID’d (ideally cross referenced with TNM Receiver)
• TNM files
Memo

Date: October 30th, 2017

Project: K18849 - I-5: Santiam Hwy – View Crest Dr. (Albany)

To: Carol Newvine, ODOT Noise Program Coordinator

From: Craig Milliken, HDR Engineering Inc.

Subject: I-5: Santiam Hwy – View Crest Dr. (Albany) Final Noise Wall Design

Introduction
This memorandum summarizes the final noise wall design, top of wall elevations, feasibility and reasonableness calculations, and location of benefitted receptors eligible to express their viewpoint on the inclusion of noise mitigation as part of the project.

Noise Mitigation Design

Wall 5: Receivers C19 through C27, and C30 through C62
Receivers C19 through C27, and C30 through C62 represent 88 single-family and mobile home trailer residential properties with outside use areas, on the east side of Interstate 5 (I-5), between Dunlap Avenue NE and David Avenue NE in the City of Albany, Oregon. A noise barrier was evaluated to reduce noise at this set of receivers.

A wall was evaluated within Oregon Department of Transportation (ODOT) right-of-way as shown in the figures in Attachment 1. The modeled wall has total length of 3,322 linear feet, with a variable panel height of between 11 and 15 feet. In addition to figures showing the alignment, Attachment 1 provides detailed information related to predicted insertion losses (i.e., noise reductions due to the barrier [feasibility]) and cost-effectiveness calculations based on the number of receptors benefitted (reasonableness). The figures in Attachment 1 also indicate which specific receptors are benefitted by the proposed walls, as defined in the ODOT Noise
Noise Wall Final Design
Reporting: Receptors/Receivers; Benefited Identified
### Table 1-1: Wall 5 Wall Reasonableness and Feasibility Calculations

<table>
<thead>
<tr>
<th>Rec</th>
<th>Activity Category</th>
<th>Build Leq (dBA)</th>
<th>Leq with Mitigation (dBA)</th>
<th>Insertion Loss (dBA)</th>
<th>Number of Units</th>
<th>Receptors with IL &gt;=7dBA</th>
<th>Number of Benefitted Units</th>
<th>Impacted Receivers Receiving 5 dBA IL</th>
<th>Impacted Receivers Not Benefitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>C19</td>
<td>B</td>
<td>65</td>
<td>63</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>C20</td>
<td>B</td>
<td>65</td>
<td>63</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>C21</td>
<td>B</td>
<td>76</td>
<td>68</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C22</td>
<td>B</td>
<td>69</td>
<td>63</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C23</td>
<td>B</td>
<td>64</td>
<td>59</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>C24</td>
<td>B</td>
<td>63</td>
<td>58</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>C25</td>
<td>B</td>
<td>62</td>
<td>58</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>C26</td>
<td>B</td>
<td>68</td>
<td>61</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C27</td>
<td>B</td>
<td>62</td>
<td>58</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>C28</td>
<td>B</td>
<td>77</td>
<td>69</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C29</td>
<td>B</td>
<td>69</td>
<td>63</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C30</td>
<td>B</td>
<td>67</td>
<td>61</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>C31</td>
<td>B</td>
<td>64</td>
<td>59</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>C32</td>
<td>B</td>
<td>63</td>
<td>58</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>C33</td>
<td>B</td>
<td>68</td>
<td>63</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>C34</td>
<td>B</td>
<td>67</td>
<td>61</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>C35</td>
<td>B</td>
<td>66</td>
<td>61</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>C36</td>
<td>B</td>
<td>75</td>
<td>67</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>C37</td>
<td>B</td>
<td>69</td>
<td>63</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>C38</td>
<td>B</td>
<td>66</td>
<td>61</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>C39</td>
<td>B</td>
<td>65</td>
<td>60</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>C40</td>
<td>B</td>
<td>75</td>
<td>68</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C41</td>
<td>B</td>
<td>70</td>
<td>64</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C42</td>
<td>B</td>
<td>68</td>
<td>62</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C43</td>
<td>B</td>
<td>66</td>
<td>61</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C44</td>
<td>B</td>
<td>65</td>
<td>60</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C45</td>
<td>B</td>
<td>65</td>
<td>60</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C46</td>
<td>B</td>
<td>68</td>
<td>61</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C47</td>
<td>B</td>
<td>60</td>
<td>61</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C48</td>
<td>B</td>
<td>66</td>
<td>60</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C49</td>
<td>B</td>
<td>64</td>
<td>59</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C50</td>
<td>B</td>
<td>72</td>
<td>66</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C51</td>
<td>B</td>
<td>68</td>
<td>63</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C52</td>
<td>B</td>
<td>68</td>
<td>63</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C53</td>
<td>B</td>
<td>66</td>
<td>62</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C54a</td>
<td>B</td>
<td>67</td>
<td>62</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
## Reporting: Wall Data

<table>
<thead>
<tr>
<th>Site</th>
<th>B</th>
<th>Receptors</th>
<th>Wall Height (ft)</th>
<th>Length of Wall (ft)</th>
<th>Wall Area (sq.ft)</th>
<th>Wall Cost ($/sq.ft)</th>
<th>Total Cost of Selected Wall($)</th>
<th>Cost Effectiveness ($/Benefitted Residence)</th>
<th>Cost Reasonableness Criteria ($/Benefitted Residence)</th>
<th>Cost Effectiveness vs Cost Reasonableness? (yes/no)</th>
<th>Noise reduction design goal – One receiver achieves the noise reduction design goal of 7 dBA? (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C60</td>
<td>B</td>
<td>60</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>C61</td>
<td>B</td>
<td>60</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>C62</td>
<td>B</td>
<td>59</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Key:
- **Orange**: Impacted Receiver (under the Future Build Condition)
- **Green**: Benefitted Receiver (>= 5 dBA)
- **Blue**: Receiver achieves design goal (>= 7 dBA)

### Calculation of Feasible Abatement (majority of impacted receptors receive a minimum of 5 dBA IL?)
- % receiving 5 dBA IL: 82%
- Feasible (>50%)?: Yes

### Total Receptors
- 88
- 18
- 66
- 60
- 13
Top of Wall Elevations

Table 1-2: Top of Wall Elevations

<table>
<thead>
<tr>
<th>Station</th>
<th>Wall Height (feet)</th>
<th>Top of Wall Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8+00</td>
<td>11</td>
<td>232.2</td>
</tr>
<tr>
<td>8+12</td>
<td>12</td>
<td>233.0</td>
</tr>
<tr>
<td>8+30</td>
<td>13</td>
<td>234.0</td>
</tr>
<tr>
<td>8+78</td>
<td>14</td>
<td>235.2</td>
</tr>
<tr>
<td>11+25</td>
<td>15</td>
<td>234.8</td>
</tr>
<tr>
<td>17+26</td>
<td>14</td>
<td>233.3</td>
</tr>
<tr>
<td>20+33</td>
<td>13</td>
<td>233.0</td>
</tr>
<tr>
<td>26+23</td>
<td>12</td>
<td>232.8</td>
</tr>
<tr>
<td>27+47</td>
<td>13</td>
<td>233.0</td>
</tr>
<tr>
<td>30+90</td>
<td>12</td>
<td>232.0</td>
</tr>
<tr>
<td>32+42</td>
<td>13</td>
<td>233.0</td>
</tr>
<tr>
<td>33+52</td>
<td>14</td>
<td>233.9</td>
</tr>
<tr>
<td>40+68</td>
<td>13</td>
<td>230.9</td>
</tr>
<tr>
<td>41+95</td>
<td>12</td>
<td>229.9</td>
</tr>
<tr>
<td>41+50</td>
<td>11</td>
<td>228.8</td>
</tr>
</tbody>
</table>
## List of Benefited

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
<th>Street</th>
<th>Street Address</th>
<th>Zip Code</th>
<th>Owners</th>
<th>Owners</th>
<th>Owners</th>
<th>Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant</td>
<td>Albany</td>
<td></td>
<td>123 Main St</td>
<td>97333</td>
<td>Applicant 1</td>
<td>Applicant 2</td>
<td>Applicant 3</td>
<td>Applicant 4</td>
</tr>
<tr>
<td>Applicant</td>
<td>Albany</td>
<td></td>
<td>456 Smith Rd</td>
<td>97333</td>
<td>Applicant 5</td>
<td>Applicant 6</td>
<td>Applicant 7</td>
<td>Applicant 8</td>
</tr>
<tr>
<td>Applicant</td>
<td>Albany</td>
<td></td>
<td>789 John St</td>
<td>97333</td>
<td>Applicant 9</td>
<td>Applicant 10</td>
<td>Applicant 11</td>
<td>Applicant 12</td>
</tr>
</tbody>
</table>

**Note:** The above table is a placeholder and should be replaced with actual data from the document.
Discussion/Questions