The need to eliminate, or at least substantially reduce shooting range noise current endured by the Residents and Users of Highland Park and Adjacent Neighborhoods

Presentation to HPCC August 20, 2020
David Klahr & Vivian Loftness
Highland Park is:

“Highland park” is A PARK
One of Pittsburgh’s 5 grand Olmsted parks (the planner of Central Park in NYC.)

Approximately 400 acres of green space, trees, lake, reservoir, swimming pool, playgrounds, picnic groves and trails.

“Highland Park” is one of several NEIGHBORHOODS whose residents use the Park

East Liberty, Garfield, Highland Park, Homewood, Larimer, Morningside, Stanton Heights ...

Several of Pittsburgh’s densest residential neighborhoods with small business districts, a wide range of housing and a nicely mixed demographic.
The Challenge

All police departments need to train new recruits in the use of firearms, in either open or closed ranges. Pittsburgh Training Academy runs several classes per year, with ~35 trainees in each class.

Experienced officers also need to maintain proficiency and to train with new weapons.

Almost all cities locate their outdoor firing ranges in areas with relatively high levels of background noise (industrial areas, airports, etc.)

About 30 years ago, the City of Pittsburgh inadvertently became the only major city in North America to build an outdoor firing range within earshot of residential neighborhoods and one of its most serene public parks.
Where is the Firing Range??

Location:
a few hundred feet east of Washington Boulevard, about half way up the hill leading to Shuman Center and VA Hospital (now vacant).

Site chosen for its proximity to the Police Academy Training Center on the west side of Washington Blvd and its (apparent) isolation.

Two major blunders:
no noise analysis was ever conducted!

no noise-suppression methods were used in constructing the site!
While it seemed isolated, it is remarkably close and very audible –
At all of these locations:

Swimming Pool: **1200 ft**
Picnic & Exercise Stations,
Reservoir Drive: **1500 ft**
HP Houses: **1800 ft**
Stanton Tennis courts. **2000 ft**

shooting hours often unlimited, day, night, weekend, religious holidays, Mothers’ day..

Single shooters and barrages… for hours
The Neighborhood fought back, over 30 years. Some suggestions for improvement:

• curtail repeated and extended periods of simultaneously firing; many weapons generate a lot of noise!!

• Consider relocating or enclosing the range – this open air range has an unacceptable proximity to the Park and its tranquil surroundings

• Invest in noise-suppression methods.

• Conduct a noise analysis (City agreed!)
PITTSBURGH POLICE GUN RANGE
NOISE STUDY
RESULTS AND RECOMMENDATIONS

SUBMITTED BY:
William R. Thornton, Ph.D., P.E.
Consultant in Acoustics and Noise
250 Shagbark Drive
RD#1 Cheswick, PA 15024
(412) 265-2000

September 10, 1989

Note the date:
1989 Noise Study
Sound Levels heard in Highland Park, when shooting one weapon at a time
35dBA is the background for a park

38 cal+ produce 62-64 dBA, 4 times the sound level

<table>
<thead>
<tr>
<th>Loc #</th>
<th>38 cal</th>
<th>38 cal +P</th>
<th>9mm</th>
<th>223 cal</th>
<th>12 gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>47</td>
<td>52</td>
<td>51</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>2</td>
<td>&lt;BG</td>
<td>53</td>
<td>52</td>
<td>55</td>
<td>54</td>
</tr>
<tr>
<td>3</td>
<td>&lt;BG</td>
<td>51</td>
<td>52</td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td>4</td>
<td>&lt;BG</td>
<td>&lt;BG</td>
<td>&lt;BG</td>
<td>&lt;BG</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>&lt;BG</td>
<td>46</td>
<td>46</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>6</td>
<td>&lt;BG</td>
<td>&lt;BG</td>
<td>&lt;BG</td>
<td>45</td>
<td>44</td>
</tr>
</tbody>
</table>

These results must be used with caution. Preliminary measurements were made on 7/31/89 at Location 3 and these readings were substantially higher. Standard 38 cal gunfire produced 53 to 56 dBA and the 38 +P produced 62 to 64 dBA. These readings are 10 to 12 dBA higher (twice as loud). On the day of the detailed tests, an overcast existed which probably suppressed noise propagation. The brief measurements on 7/31 were made with a bright sun and clear skies.
Consultant tested only one weapon at a time.

But normal usage is many weapons simultaneously and for extended bursts!!

These houses have only local traffic and the gun range is a significant noise source. These intermittent noises of gunfire would tend to mildly annoy an average person. A few might be moderately annoyed and some would not be bothered by it. In community noise problems, attitudes can play a role. For example a gun buff would not object to this gunfire whereas a person with anti-gun sentiments is more likely be bothered.

RECOMMENDATIONS

Corrective action is justified to suppress the noise of gunfire. Because of the terrain and location of the gun range on Washington Blvd., it is not likely that simple controls such as a barrier wall or similar devices would produce sufficient noise attenuation. A more comprehensive solution is needed. A totally enclosed range would suppress the noise to background noise levels. Walls and the roof must have an STC 25 or more to achieve the desired noise reduction.
Possible solutions:

The Physical Solution: a new, indoor facility! (VA?)

Some Interim Physical Solutions

1. **Reorient shooting direction** to face the VA and the steeper slope with dense vegetation.
2. **introduce a wood canopy** or 'shelter' with sound absorbing materials to extend both behind and in front of the shooting positions.
3. **introduce earth berms** to the sides of the 'lanes' (which may also reduce flooding), or **wood fencing frame with outdoor sound absorbing blankets**, or even hay walls.
The Procedural Interim: Suggestions

1. Post total hours required per year, fully schedule groups
2. Hard and Fast Hours, Posted and Enforced
3. Monday to Thursday, 8 to 5 only?
4. No summer months when pool is open?
5. Night fire schedule for late in year: (early darkness)

Engage Site Engineers in Providing Acoustic Solutions

1. While solving the flooding problem, propose affordable acoustic solutions.
2. Allow neighborhood to review engineering report.
Thanks for your attention