SafeClear
Rapid Response Analysis

Houston Action Research Team (HART):
Alexander Heath, Jacob Jaffe, Jarvis Miller, Carolina Osuna
SafeClear Program
SafeClear Program Goals

- Increase public safety through decreased collisions
- Decrease duration time of incidents through quick arrival of tow operators to disabled vehicles
- These goals are being met
Recommendations for Improving SafeClear Program Performance

- Program improvements still possible
- Focus on rapid removal of disabled vehicles
- Strategic placement of HPD rapid response units
Chance of Secondary Collisions as Duration Time Increases

Figure 5: Regression of Duration Time and Probability of Secondary Collisions
Criteria for Rapid Response Unit Placement

- Where
  - Significant Segments
    - High overall duration time
    - High number of collisions
  - Direction of Traffic

- When
  - Time of Day
  - Time of Week
  - Time of Year
Segments with Significantly Longer Duration Times
Segments where Rapid Response can make the Biggest Difference
Afternoon is Worse than Morning

Proportion of Total Collisions per Segment at Time of Day

Safeclear Segments:
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Weekdays and Weekends are Similar

Proportion of Total Collisions at Time of Day

Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Season has little impact on Collisions
Rapid Response Placement
Pierce Elevated/US 59/I-10
Collisions more Frequent in Northbound Traffic

Number of Collisions by Direction

North

South

Number of Collisions

Safeclear Segments

- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Collisions more Frequent in Eastbound Traffic
## Conclusion

**Recommendation:**

<table>
<thead>
<tr>
<th></th>
<th>NW 610 Btwn I-10 and 45</th>
<th>Pierce Elevated Downtown Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Season</strong></td>
<td>Any</td>
<td>Any</td>
</tr>
<tr>
<td><strong>Time of Day</strong></td>
<td>Weekday: 4-8 pm Weekend: 4-8 pm</td>
<td>Weekday: 1-5 pm Weekend: 1-5 pm</td>
</tr>
<tr>
<td><strong>Direction</strong></td>
<td>North/Eastbound</td>
<td>Northbound</td>
</tr>
</tbody>
</table>

![Map showing traffic conditions for NW 610 Btwn I-10 and 45 between Pierce Elevated Downtown Area.](map.png)
Afternoon Collisions are Worse Regardless of Season

Proportion of Total Collisions at Time of Day

Hour of Day

Proportion

Summer
Fall
Winter
Spring

Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Distribution of Duration Times for Significant Segments

Safeclear Segments:
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Number of Collisions per Segment

Number of Collisions per Segment

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area

Number of Collisions
- 0
- 100
- 200
- 300
Time of Day

Proportion of Total Collisions per Segment at Time of Day

Hour of Day

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Time of Week

Proportion of Total Collisions at Time of Day

Proportion

Hour of Day

Weekday

Weekend

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Time of Week

Annual Number of Collisions for a Day

Number of Collisions

Weekday

Weekend

Safeclear Segments

- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Time of Week

Average Annual Number of Collisions for a Day

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area

Number of Collisions
- Weekday
- Weekend
Time of Year

Proportion of Total Collisions at Time of Day

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Time of Year

Annual Number of Collisions for a Day by Season

Summer
- Winter
- Spring

Fall
- Weekday
- Weekend

Number of Collisions

Safeclear Segments
- 288 Inside Loop
- 290 Btwn 610 & Beltway 8
- 610 Btwn 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Time of Year

Average Annual Number of Collisions for a Day by Season

Safeclear Segments
- 288 Inside Loop
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Direction - Time of Day

Proportion of Total Collisions at Time of Day

Hour of Day

Proportion

North

South

Safeclear Segments
- 288 Inside Loop
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Direction

Proportion of Total Collisions at Time of Day

Safeclear Segments
- 290 Btw 610 & Beltway 8
- 610 Btw 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Direction

Number of Collisions by Direction

Safeclear Segments
- 288 Inside Loop
- NW 610 Btw I-10 & 45
- Pierce Elevated Downtown Area
Direction

Number of Collisions by Direction

East

West

Number of Collisions

Safeclear Segments
- 290 Btwn 610 & Beltway 8
- 610 Btwn 288 & 45
- I-10 E of 610
- I-10 W of Beltway 8
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area

Safeclear Segment
Similar Number of Collisions Between Weekend and Weekday

Average Annual Number of Collisions for a Day

Safeclear Segments
- NW 610 Between I-10 & 45
- Pierce Elevated Downtown Area
Candidates - Time of Day

Proportion of Total Collisions per Segment at Time of Day

Hour of Day

[Graph showing the proportion of total collisions per segment at different times of the day, with two segments highlighted: one for NW 610 Btwn I-10 & 45, and one for Pierce Elevated Downtown Area.]
Weekend versus Weekday

Proportion of Total Collisions at Time of Day

Hour of Day

Weekday

Weekend

Proportion

SafeClear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Candidates - Time of Week

Annual Number of Collisions for a Day

Number of Collisions

Weekday | Weekend
---|---

Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Candidates - Time of Year

Proportion of Total Collisions at Time of Day

Hour of Day

Proportion

Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area

Summer
Fall
Winter
Spring
Candidates - Time of Year

Annual Number of Collisions for a Day by Season

<table>
<thead>
<tr>
<th>Season</th>
<th>Weekday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Winter</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Spring</td>
<td>80</td>
<td>30</td>
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<tr>
<td>Fall</td>
<td>70</td>
<td>15</td>
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</tbody>
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Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Candidates - Direction

Proportion of Total Collisions at Time of Day

**Safeclear Segments**
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area
Candidates - Direction

Proportion of Total Collisions at Time of Day

Hour of Day

Proportion

Safeclear Segments
- NW 610 Btwn I-10 & 45
- Pierce Elevated Downtown Area

East

West
Police Presence

![Bar chart showing mean duration time of police presence and no police presence. The chart indicates a higher mean duration time when police presence is present compared to when it is not present.]