Final Integration:

- Blade
- Plastic casing
- Power Button
- Handle to Casing Connector
- Easy Grip Handle
- Charging Receptor

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400 User Survey Respondents

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**Market Research and User Experience:** Obtaining market research from target users helped refine key user needs.

**User Needs and Performance Goals:** Key user needs derived from market research were used to determine performance goals.

<table>
<thead>
<tr>
<th>User Need</th>
<th>Performance Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effortless</td>
<td>Clears windshield in &lt;5 min</td>
</tr>
<tr>
<td></td>
<td>Minimal applied force at grips</td>
</tr>
<tr>
<td>Comfortable</td>
<td>Handle Diameter and length</td>
</tr>
<tr>
<td></td>
<td>Reach distance over 2’</td>
</tr>
<tr>
<td></td>
<td>&lt;5lbs in weight</td>
</tr>
<tr>
<td>Durable</td>
<td>Functional in cold weather</td>
</tr>
<tr>
<td></td>
<td>Minimal component wear</td>
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</tbody>
</table>

**Key Design Features:**

**Actuation Mechanism:** Chipping motion is rendered by axially oriented eccentric drive.

**Blade Design:** Blade material is safe for use on auto glass, but pliant to get under tough ice.

**Handle Ergonomics:** Incorporates physical needs of the scraper into a high end aesthetic.

**Power:** Lithium Nanophosphate batteries were chosen to fulfill performance requirements.

- Lithium NanoPhosphate Chemistry
- Excellent cold weather performance
- Safe, eco-friendly
- High energy density
- Lightweight
- Trade off-Cost

**Business Plan:**

- Sales Price: $165
- NPV: $1.3 million
- Investment: $350,000
- ROI: 80%
- Break-even point: 3 years