

Itchen Bridge Automation Project  
Options Analysis  
100826

Comparative SWOT analysis of Automation Solutions

| Option   | Strengths  | Weaknesses  | Opportunities   | Threats   |
|--|--|---|---|---|
| <p><b>1. ANPR/Tag (in all lanes)</b></p> <ul style="list-style-type: none"> <li>- All lanes automated using ANPR with Tag</li> <li>- Pre-payment by Tag</li> <li>- Post-Payment by Internet, Phone, Actionline</li> <li>- Barriers at booths</li> <li>- Concessions available for those with Tag</li> <li>- Concessions available for post-pay</li> <li>- Vehicles measured by length to calculate due charge</li> </ul> | <ul style="list-style-type: none"> <li>- No need to reconfigure vehicle approach</li> <li>- Limited FTE requirements</li> <li>- Remove tokens</li> <li>- Greatest increase in throughput (potential slowing of throughput over initial period though)</li> </ul> | <ul style="list-style-type: none"> <li>- Major change from existing set-up – biggest change in comparison</li> <li>- Higher-volume of back-office cost/work for post-payment</li> <li>- Post-payment method not as user friendly as pay on arrival methods</li> <li>- More difficult to enforce violations</li> <li>- Increase in throughput would create cues after toll and potential increase in accidents</li> <li>- Technology is less robust than Cash Bins/Card Payment</li> <li>- More complex transition process</li> <li>- Higher credit/debit card costs</li> <li>- Integrated Impact assessment issue by not providing cash option</li> </ul> | <ul style="list-style-type: none"> <li>- Change to tolling structure</li> <li>- Review concessions (particularly disabled concessions)</li> <li>- Review 'toll exempt' vehicles i.e. emergency, military, post office.</li> </ul> | <ul style="list-style-type: none"> <li>- Vehicle crossings reduce due to level of change required</li> <li>- Technology failure greatest for this option....</li> <li>- Hold-ups if technology not used properly</li> <li>- Potential loss of some income from tailgating/non-deduction</li> <li>- Potential for card fraud (although Council accepts this risk with Parking machines etc)</li> </ul> |
| <p><b>2. Unattended Roadside</b></p>   | <ul style="list-style-type: none"> <li>- No need to reconfigure</li> </ul>   | <ul style="list-style-type: none"> <li>- Not as great a throughput as</li> </ul>  | <ul style="list-style-type: none"> <li>- Change to tolling</li> </ul>   | <ul style="list-style-type: none"> <li>- Vehicle crossings</li> </ul>   |

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|--|---|---|--|---|
| <p><b>Collection and Tag (in all lanes)</b></p> <ul style="list-style-type: none"> <li>- Cash Bin/Card Machine in each lane</li> <li>- Tag system in each lane</li> <li>- Barriers at booths</li> <li>- Vehicles measured by length to calculate due charge</li> </ul>   | <p>vehicle approach</p> <ul style="list-style-type: none"> <li>- Same number of FTE as ANPR/Tag</li> <li>- Would increase throughput but not significantly meaning less likely to create cues after toll</li> <li>- Delivers similar efficiencies as ANPR/Tag but does not constitute as great a change from existing therefore less likely to change behaviours</li> <li>- More robust technology than ANPR/Tag</li> </ul> | <p>ANPR/Tag</p> <ul style="list-style-type: none"> <li>- Technology is less robust than manual cash collection</li> <li>- Concessions for those without Tag can not be given</li> <li>- Would need to decide approach for foreign coins</li> </ul>  | <p>structure</p> <ul style="list-style-type: none"> <li>- Review concessions</li> <li>- More payment options mean increased <span style="color: red;">????</span></li> </ul> | <p>reduce – although not as likely as ANPR/Tag</p> <ul style="list-style-type: none"> <li>- Technology failure</li> <li>- Potential for card fraud (although less than above option)</li> </ul> |
| <p><b>3. Unattended Roadside Collection and Tag (in one lane each way)</b></p> <ul style="list-style-type: none"> <li>- Cash Bin/Card Machine at 1 lane each way</li> <li>- Tag system at 1 lane each way</li> <li>- Both systems on two-way booth</li> <li>Barriers at booths</li> <li>- Vehicles measured by length to calculate due charge</li> </ul> | <ul style="list-style-type: none"> <li>- Same number of FTE as ANPR/Tag</li> <li>-</li> </ul>   | <ul style="list-style-type: none"> <li>- Would need to reconfigure vehicle approach so vehicles can 'get in right lane'</li> <li>- Depending upon take-up and transition likely major cues in one lane and fewer vehicles in other</li> <li>- Concessions for those without Tag can not be given</li> </ul> | <ul style="list-style-type: none"> <li>- Change to tolling structure</li> </ul>  | <ul style="list-style-type: none"> <li>- Vehicle crossings reduce – probably same risk as immediate above option</li> <li>- Technology Failure</li> </ul>                                       |
| <p><b>4. Attended Roadside</b></p>   | <ul style="list-style-type: none"> <li>- More robust technology</li> </ul>  | <ul style="list-style-type: none"> <li>- Would need to reconfigure</li> </ul>   | <ul style="list-style-type: none"> <li>- Change to tolling</li> </ul>  | <ul style="list-style-type: none"> <li>- Vehicle crossings</li> </ul>   |

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| <p><b>Collection and Tag (in one lane each way)</b></p> <ul style="list-style-type: none"> <li>- Cash collector at 1 booth either way</li> <li>- Tag system 1 booth either way</li> <li>- Barriers at booths</li> <li>- Both systems on two-way booth</li> <li>- Vehicles measured by length to calculate due charge</li> </ul> | <p>than other options</p> <ul style="list-style-type: none"> <li>- Concessions for those without Tag can be given</li> </ul> | <p>vehicle approach so vehicles can 'get in right lane'</p> <ul style="list-style-type: none"> <li>- Depending upon take-up and transition likely major cues in one lane and fewer vehicles in other</li> <li>- Higher staffing levels represent the smallest saving against current establishment</li> </ul> | <p>structure</p> | <p>reduce – lowest risk of all options.</p> <ul style="list-style-type: none"> <li>- Technology failure</li> </ul> |
|---|--|---|------------------|--|

**Issue and Risk Considerations and Solution**

**ANPR with Tag**

| Potential Issue  | Solution  | Cost for business case                        |
|--|---|---|
| Volume of Post-Payments could be significant                                 | <ul style="list-style-type: none"> <li>- Incentivise Tag Option take up for residents.</li> <li>- Incentivise Tag Option for non-residents through other incentivisation schemes (free Tag, buy 10 trips get 2 free etc)</li> </ul> | Considered within Financial options analysis. |
| Cost of small payments on debit/credit cards for post-payment in particular. | <ul style="list-style-type: none"> <li>- Only accept credit (debit ?) cards for post (and pre) payment.</li> <li>- Increase toll fee to cover charge (subject to Hants Act)</li> </ul>  | Considered within Financial options analysis  |
| Must enable various post-payment options for                                 | In shop, by phone, by Actionline – would require  | Considered within Financial options           |

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| Equality IA  | linked/interfaced system   | analysis   |
| Increase in non-payments of post-payment   | - Penalty Charges for non-payment (assume this is enforceable do similar at the moment)  | - Back-office admin costs<br>- Impact on income (although not part of financial options analysis)  |
| Non-DVLA registered cars will get out of paying  | Take the hit   | - Low cost   |
| System Failure/Can't read Tag at booth   | - Help Point (same as MSCP); or,<br>- Lane-attendant   | - Increased charge for supporting system<br>- Staffing cost – included in financial options analysis   |
| Lane Attendant – Lone Working Policy   | H&S assessment to enable Lone working (done in parking and other areas)  | Assumed this is achievable no cost in financial options analysis for joint working.<br>Support costs (i.e. radio)  |
| Foreign Vehicles – ANPR will not recognise so can not levy charge  | - Take the hit (although may lead to an increase in this class of traffic which does not fulfil traffic management / environment protection reason behind collecting the tolls)<br>- Lane Attendant deals with<br>- Cash/Card collection facility                  | - Likely loss of income – approx £6500 – although impact on income not part of financial options analysis<br>- Lane Attendant included in financial options analysis |
| Lost vehicles will be charged - Currently we present a positive image of the city by allowing 'lost' drivers who arrive at the booths 'free' crossing and provide directions to their destination. To arrive home from a cruise to find an invoice from SCC for a toll and non-payment charge would not present such an image. While some would appeal and we could cancel the | - Is this really an issue? Could allow 'lost' driver to claim back<br>- Lane-attendant could deal with (help button for driver)<br>- Improve signage for the docks to reduce number of 'lost vehicles' which are always at their highest when cruise ships are in. | - Back-office work<br>- Lane attendant allowance in financial options analysis<br>- Included in implementation costs – small cost                                    |

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| cost some will pay and retain a negative image fo SCC for spoiling their holiday   |  |   |
| Closing Bridge for incidents   | <ul style="list-style-type: none"> <li>- Somebody on call</li> <li>- Police do it</li> <li>- Lane-Attendant can do it</li> </ul>   | <ul style="list-style-type: none"> <li>- Staff call-out charges (no impact on financial option as included in recharge)</li> <li>- Lane-Attendant included in financial options analysis</li> </ul>   |
| <p>Motorcycles</p> <ul style="list-style-type: none"> <li>- method to allow regular users through free</li> <li>- method for non-regular users getting free crossing if Council decide to extend.</li> </ul> | <ul style="list-style-type: none"> <li>- Simply allow free passage for those motorcycles eligible via Tag (currently we have 275 residents on the motor-cycle scheme)</li> <li>- System could 'identify' a motorcycle and allow free pass.</li> <li>- Lane attendant could deal with</li> <li>- Motorcyclist could claim back</li> </ul> | <ul style="list-style-type: none"> <li>- Back-office function if claiming back</li> <li>- Lane attendant in the financial options analysis</li> <li>- Income not part of financial options analysis</li> <li>- <b>Separate issue (not part of project scope) re. all Motorcycles getting 'free pass'</b></li> </ul> |
| Change to vehicle classification required  | <ul style="list-style-type: none"> <li>- New system to measure length of vehicle required</li> </ul>   | Include cost of system in implementation cost   |
| Bus Lane Violation increases   | <ul style="list-style-type: none"> <li>- Dealt with as separate system and project due to certification issues</li> <li>- Include cost as part of solution.</li> </ul>   | - Included in implementation costs  |
| Vehicle Approach   | <ul style="list-style-type: none"> <li>- All lanes take all payment options so no issue with what lane vehicles positioned in on approach</li> </ul>   |   |
| Outstanding tokens will not be usable  | <ul style="list-style-type: none"> <li>- Residents can trade in for a tag 'credits' for up to set period of time</li> </ul>  |   |

**Unattended Roadside Collection and Tag – All Lanes**

| <b>Potential Issue</b>   | <b>Solution</b>   | <b>Cost for business case</b>   |
|--|---|---|
| Cost of small payments on credit cards   | SEE ABOVE   |   |
| Cash collection still required   | None  | Actually no impact on savings case as not a realisable saving                                   |
| System Failure/Can't read  | SEE ABOVE   |   |
| Lane Attendant – Lone Working Policy   | SEE ABOVE   |   |
| Concessions (e.g. disability) for those without Tag can not be given.<br>(there are currently approx. 2500 people on the disabled concession. Visitors are still given the exemption provided they have proof of entitlement at the time of crossing. We could either remove the concession completely – political approval required - or limit to those who apply for our concession and are issued with a tag. However we have no way of checking the disabled person who is entitled to the concession is in the vehicle so we re-open the concession to the type of abuse experienced under the pervious scheme whereby tickets were allocated to the vehicle) | -Incentivise Tag take-up<br>-Could be claimed back<br>- Remove concessions<br>- Lane Attendant deals with | Back-office cost if claiming back<br>Lane Attendant cost included in financial options analysis |
| Lost vehicles will be charged  | SEE ABOVE   |   |
| Closing Bridge for incidents   | SEE ABOVE   |   |
| Motorcycles  | SEE ABOVE   |   |
| Change to vehicle classification required  | SEE ABOVE   |   |
| Bus Lane Violation increases   | SEE ABOVE   |   |

|                                       |   |  |
|---------------------------------------|---|--|
| Vehicle Approach                      | - All lanes take all payment options so no issue with what lane vehicles positioned in on approach  |  |
| Outstanding tokens will not be usable | - Could cash bins accept tokens? If so, could allow grace period for tokens to be used<br>- Residents can trade in for a tag 'credits' for up to set period of time |  |

**Unattended Roadside Collection and Tag – split by lanes**

| Potential Issue  | Solution            | Cost for business case   |
|--|---------------------|--|
| Cost of small payments on credit cards   | SEE ABOVE           |  |
| Cash collection still required   | SEE ABOVE           |  |
| System Failure/Can't read  | SEE ABOVE           |  |
| Floating Lane Attendant – Lone Working Policy  | SEE ABOVE           |  |
| Concessions (e.g. disability) for those without Tag can not be given                               | SEE ABOVE           |  |
| Lost vehicles will be charged  | SEE ABOVE           |  |
| Closing Bridge for incidents   | SEE ABOVE           |  |
| Motorcycles  | SEE ABOVE           |  |
| Change to vehicle classification required  | SEE ABOVE           |  |
| Bus Lane Violation increases   | SEE ABOVE           |  |
| Vehicle Approach – booths accept different payment and therefore vehicles will need to change lane | - Plaza alterations | Cost included in implementation costs and overall financial options analysis |
| Outstanding tokens will not be usable  | SEE ABOVE           |  |

**Attended Roadside Collection and Tag**

| <b>Potential Issue</b>   | <b>Solution</b>                      | <b>Cost for business case</b>  |
|--|--------------------------------------|--|
| Vehicle Approach – booths accept different payment and therefore vehicles will need to change lane | SEE ABOVE                            |  |
| Booths would have to be retained/developed in a manner to enable manual collection as well         | - Phase/adjust the plaza alterations | Two phases of work, increase civils cost,<br>Disruption and reputational issue |



### Transitional Solutions for Bridge

Assuming Tag/ANPR is preferred solution then options are:

| Option   | Strengths  | Weaknesses   |
|--|--|--|
| Big Bang change-over<br>- close with manual collectors, re-open with ANPR/Tag  | - No transitional arrangements/structures required<br>- Quickest delivery of efficiencies<br>- Only one-phase of work required                                     | - Some confusion for motorists (although ANPR post-payment mitigates this)<br>- Roll-out of Tag and removal of tokens more complex |
| Install 1 lane each way with ANPR/Tag and retain 1 lane each way with Collectors<br>- then at some point, transfer from manual collections to ANPR/Tag | - Enables a more gradual change in behaviour allowing public to get used to new approach<br>- Enables continues use of tokens and other concessions                | - 3 Booths would have to be configured in a way to maintain manual collections<br>- More phases of work requiring more disruption  |
| All lanes with collectors and ANPR/Tag for a period of time and then big bang  | - Enables a more gradual change in behaviour allowing public to get used to new approach<br>- Enables continued use of tokens and concession for a period of time. | - How would lane with ANPR and manual collection work?<br>- More phases of work requiring more disruption                          |

Assuming Unattended Roadside and Tag on all lanes

| Option  | Strengths | Weaknesses |
|---|-----------|------------|
| Big-Bang change over  |           |            |
| 1 lane each way with UR and Tag and 1 lane each way with Collectors |           |            |
| All lanes with collectors, UR and Tag                               |           |            |

