Memo

Stantec

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Reference: Cornelius Pass and SR 217 Projects

Violation Revenues and Expenses

The purpose of this memorandum is to evaluate the how a violation enforcement system might work for the above mentioned projects and the likely revenue potential and expenses associated with such a system.

To a large degree, violation enforcement in the toll industry is designed and intended to deter loss of revenues from drivers not paying tolls expected on toll facilities. Since the 1950s when the Garden State Parkway instituted automatic coin machines (ACMs) at their toll plazas, which were initially known as “Honor Baskets”, there has been a portion of the traveling public who has not paid their expected fare. Ranges of revenue losses historically have been in the 1% to 5% range at most Mainline Toll Plazas, with losses at isolated toll ramps reaching above 50% in the most egregious cases. The beginning of Electronic Toll Collection (ETC) and highway speed non-stop toll collection has generally increased violations at facilities with such alternatives, and revenues losses in the range of 5% to 10% are not uncommon.

The majority of new toll systems being planned and implemented today are expected to be a mix of ETC (with transponders) and video license plate post-payment; by definition there are no “violator” in such systems as there is no violation at the point of transaction, but only non-payment for invoices for payment received at a later time. It is expected that there will be revenue losses for all ETC systems, both due to the inability to capture the license plate for every vehicle, to find and identify the owner of said vehicle and to collect the appropriate toll from the owner.

In the planning of traffic and revenues for future project, it is common to assume the revenue losses expected from non-payment will be offset by the fines and/or fees that are established as part of the violation deterrence system. This has been proven by many agencies, but it important that legal structures, administrative follow-up and business rules are designed to support the revenue collection effort.

Legal Issues. The most effective toll agencies have legislative and legal support underpinning their collection of revenues. The non-payment is generally considered and

administrative transaction (as a parking ticket) and an escalating set of administrative fess accompany each level of non-payment.

Business Rules. These establish the policies to support the violation enforcement and their delineation can be wide and varied. One of the most important decisions in developing the business rules is the determination of how to treat “one-time” violators. There is an accepted theory in the toll industry that violators can be grouped into two broad categories: those who intentionally do not wish to pay and try to “beat” the system, and those who are ignorant or unaware that there are tolls to be paid, and were on the road unexpectedly and then realized that they should have not have been. The latter typically occur once, hence the name “one-times”. Most violation enforcement programs target the intentional violators heavily and ignore or minimize the “one-timers”.

Loss of Revenues. For these two projects, which are so undefined at this point in terms of how they will operate, it is only possible to apply some broad guidelines as to what might happen. We assume that signage will be very well formulated, with clear indications that those without transponders should not be on the road; how well that will be accomplished is simply a matter of speculation. We expect revenue losses to approximate industry averages for all ETC non-stop toll facilities: the range is from 1% (SR-91 in Orange, CA) to 15% (several new facilities throughout the US), so we suggest using 5% as a mid-point. We assume that the “violators” a split 50/50 between intentional and “one-timers”.

For Cornelius Pass project, with an expected use of about 2500 vehicles on an average weekday, this would amount to about 125 “violators” daily, or about $150 revenue loss on an average weekday.

Violation Revenues. Typically toll agencies provide an escalating set of fines for those who do not pay their toll as expected: for example, $10 with the first notice, $50 with the second notice and $150 with third notice.

It is expected that only about 50% of the license plates for those do not have transponders will be captured by video and determined as to whom owns the vehicle. The loss is a combination of bad images (no license, temporary license, dirty license, rain/fog/snow, etc.) and inability to find the owners registration (out-of-date data base, no current address, etc.) Of those whose image is captured and identified, about 30% are expected to pay the first administrative fine (30% times 50%, or 15% of all violators), 15% will pay the second administrative fine (15% times 50% or 7.5% of all violators, 5% will pay the third administrative fine (5% times 50%, or 2.5% of al violators) ,and the rest will not pay.

Reference: Violation Revenue and Expenses

In terms of revenue, applying these data to the Cornelius Pass project produces the following:

125 violators $150 revenue loss

63 violators not found

62 violators identified

20 pay $10, or $ 200

9 pay $50, or $ 450

3 pay $150, or $450

Total $1,100

Thus, it is easy to see how toll agencies can claim that their violation enforcement system makes money. If the expense for finding, identifying, and collecting the violators is $4 per violator, the system produces positive revenue.

$1100 -$150 (revenue loss) - $500 (125 violators times $4)=$450

Violation Expenses. This is a difficult number to estimate, as it depends on factors that cannot be easily estimated in early planning: how many one-timers versus intentional, how many in-state versus out-of-state users, etc. It is estimated that the costs to identify a plate, find the owner and contact that owner for a one-time is in the range of $1 to $2 per transaction; this assumes enough mass of activity to keep the unit prices low (say several thousand transactions per day). At the level of activity on Cornelius Pass, the unit costs per transaction could be $3 to $4 per violator.

If the business rules dictate that one-timers are ignored, then the likely revenue would be $325, but the costs would probably be in the $1 to $2 range, so the system may still produces positive revenue.

$550 - $150 (revenue loss) - $124 (31 intentional violators times $4)= $276

Violation Enforcement Systems. With the scale of the numbers indicated in the above example, it reinforces the claim by most toll agencies that their violation enforcement system is revenue positive. This works to some degree because of high administrative fines set and paid by a small portion of the population. There are political difficulties in establishing such high rates and collecting them without some negative public reaction. For this reason, most agencies focus on repeat offenders and try to make major media moments when successful in pursuing small multiple offenses.