
ALMATY-BISHKEK ECONOMIC CORRIDOR (ABEC)
REPORT ON THE TWO PRIORITY ROAD BORDER CROSSING
POINTS (BCPs): AK- JOL-KORDAY AND AK-TILEK-KARASU



KAZAKHSTAN REPORT

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I. AK -TILEK – KARASU ROAD BORDER CROSSING POINT

1. Karasu: Topographic and spatial characteristics

1.1. Description and Dimensions

Karasu is the Kazakh counterpart to Ak-Tilek BCP on the Kyrgyz side of the Chuy River. It is located near the main road to Almaty and also is connected to Bishkek and eastern part of Kyrgyzstan (Issyk-Kul region), as well as to Kant, with its cement factory.

Karasu facilities are located about 500 meters north of the bridge, which was a very good decision. It also separates physically different types of traffic flows.

Unlike any other facility visited under the ABEC project, Karasu has these two advantages:

1) It is well away from the bridge, which helps manage the traffic, by avoiding the queue forming at the bridge already or the queue blocking the traffic over the bridge; in that respect, Ak-Tilek is too close and it creates a bottleneck, especially at the eastern exit side, where cement trucks have a narrow passage between the main Administration building and the bridge, so that they cannot bypass each other, and one of the trucks has to go into reverse.

2) Trucks are normally very different than cars for processing purpose, due to their size, height and also, when they carry cargo, this potentially poses additional risks, due to the cargo physical characteristics (for example, hazardous, perishable goods) or customs profile (excise goods, tobacco and gasoline, especially). In the case of Karasu, that difference is much reduced, and the trucks' processing is very simplified, so much that they now are similar to cars (except the physical characteristics, which remain different). Karasu has the merit to have separated trucks and cement trucks from cars physically and quite well.

Description of Karasu lanes of control and facilities will also follow left to right (west to east) direction.

The first two lanes at extreme left (west) are devoted to cement trucks, both incoming and outgoing.

For cement trucks, an attractive option would be to separate them out completely and process nearby by automated gate, ALPR and one-two Border Officers; unfortunately, that would mean a separate bridge, which cannot be justified.

The next best option is to continue to process them via Karasu-Ak-Tilek BCP, but to straighten their flows, so that, instead of current shape of movement, similar to number 4: |__

|

they move via two straight parallel lines, like this: | |

| |

located at the extreme ends of BCP: the extreme left lane for outbound trucks from Kazakhstan to Kyrgyzstan and at the opposite end, those coming from Kyrgyzstan into Kazakhstan.

This entails building the missing lanes, which, for Kazakhstan, should not be difficult; cement factory trucks would use the extreme right (east) lane, going behind the current last deep-control/X-ray building.

In addition, all lanes used should be covered by asphalt and/or concrete, capable of resisting the weight of cement trucks. This would eliminate the dust and the cost of the water truck treatment.

The next is the pedestrian processing hall for outbound traffic. It is a simple covered building with 10 inside control cabins, offices and a toilet (in good condition).¹

This building and the next one for the inbound pedestrian traffic, are connected by a covered roof, resting on pylons. This is the main control area for cars. It is **11.20 meters** wide (at the narrowest point, foot of the pylon to another foot of the pylon) and **30 meters long**. In the middle, there is a control cabin, capable of simultaneously controlling both directions of traffic (which is excellent), but with the service windows are too high to enable processing through the driver's window (unfortunately). Also, its location contributes that there is only one control lane available per direction.

Then comes the second (east) Administrative Building, where inbound pedestrians (in reality, car passengers) are processed.

East of this Control Area is a large space dedicated to trucks – both inbound and outbound. This consists of a Weight-Lift Shed, an Administration/Passport Control building and an X-Ray and Detailed/Secondary Control building.

Looking south to north (Direction A, from Kyrgyzstan to Kazakhstan), we can identify three layers of control. The First Checkpoint Boom Gate, is 250 meters from the main Control Area. This is where both inbound and outbound vehicles are stopped. It is also about 100 meters from the bridge, which prevents congestion.

On the opposite side, there are at least three Checkpoint/Boom Gates, from west to east: Checkpoint/Boom Gate for cars and buses (both inbound and outbound), then in the Truck Control Area, where there is a separate Boom Gate for inbound and outbound traffic. The Cars/Buses Boom Gate was **76 meters** away from the beginning of the main Control Area.

¹ All Kazakhstan toilets were in good condition.

The next question is whether the Karasu facility as it is now can be expanded, where and how and whether this could be the site of the future One-Stop-Shop Joint BCP.

1.2 Potential Improvements & Expansion

The answers are already given in the introductory descriptions, as well as inside the Kyrgyzstan Report on Ak-Tilek side of this BCP.

The Kazakh side is higher, wider, more spacious and thus more suitable for either extension of current facilities or for the eventual Joint BCP location.

Infrastructure improvements to be done under any scenario:

1) Widen the bridge, ideally to 2+2 lanes – two per direction (or 3+3 lanes), plus pedestrian lanes on each side. Complete the missing eastward half and widen it then at either end. Whether the current bridge span can be incorporated into the new structure, or torn down, and then completely rebuilt, remains to be decided by engineers and transport economists.

2) Pave over (asphalt) the current dirt road bypass area for cement trucks (west of the main control facility) and any unpaved areas on the eastern side, where main X-ray control facilities, passport control container for trucks and other control buildings are located.

3) Remove the following obstacles to traffic:

- ❖ All boom gates
- ❖ radiation control poles to be moved in front of the Sorting Area or immediately before the First Line of Control.

Two Possible Locations

In all cases, however, the same changes would need to be made, in order to have processing capacity of 2 lanes outbound and 2 lanes inbound – not counting the cement trucks, which will use the extreme outside lanes (one of which just needs be paved over).

First option, keeping the **current location**, in order to minimize reconstruction work and keep existing facilities used to the extent possible, would require to:

1. Reassign the current two Control Lanes to outbound lanes only; the control cabin should be single and its service window should be at the level of truck window.
2. The current Administrative Building for the inbound passengers should open the cars' service window on the side facing outbound traffic

3. The two inbound Control Lanes would have to be set up on the other, western side of that Administrative Building, of which one could be directly serviced for the Administrative Building itself (for cars) and the other from a control cabin for trucks/buses.

This option also lives the east Administrative Building in partial use. It would be bypassed by the inbound traffic.

The second option (described in the Recommendations) would require that the Line of Control is moved 60-100 meters south (towards the bridge), where control could be established and control done completely from cabins, in the way described on the chart. The main difference would be that one Double Control Cabin for cars would serve both outbound and inbound car traffic. Trucks/Buses would be controlled from high-rise control cabins and in the Secondary/Bus areas. A new Secondary Control/Bus Area would have to be built on the tight-hand side of the outbound flow.

All control cabins to be reversible, i.e. to have windows on both sides and with space to enable Border Officers to move and work from either side of the cabin.

Control cabins and the window size should be such as to allow two Border Officers working, in case the countries agree to set up Joint One-Stop-Shop BCP – now or in the future.

To the right in the direction of driving, two covered facilities for buses, trucks and suspect cars, small offices and toilet facility. For outbound traffic, this would be the current cement trucks area; for inbound traffic, this facility would be located approximately where current First Outbound Checkpoint is located.

The entire Control Area is to be completely covered and asphalted, with overhead gantry with electronic traffic panels.

2. Current Inbound and Outbound Control Operations

2.1. Description of Traffic

The traffic at Karasu Road BCP consists of the following categories:

1. Cars
2. Commercial Trucks
3. Cement trucks, carrying raw materials for Kant Cement Factory. They come loaded from Kazakhstan, then return for another load.

4. Buses

At Karasu, there are also pedestrians, however those are actually passengers of cars and buses, who are required to get out of the vehicles and be processed as pedestrians. Pedestrians without any transport are very few and will not be considered in the remaining analysis and Recommendation section. In addition, it is strongly recommended to process both car as well as the bus passengers on board the vehicles; therefore, pedestrians as a category would disappear in any case.

In the Questionnaire completed by the Kyrgyz Border Guards and Kazakh Border Guards for 2017, they reported the following numbers for each category, per direction²:

From Kyrgyzstan to Kazakhstan, Direction A, 2017, INBOUND (*the larger number is highlighted*):

Category	KGZ Statistics	KAZ Statistics
Cars	84.241	82.416
Trucks (all types)	95.448	115.264
Buses	1.199	3.582
TOTAL (highlighted numbers:	203.087	

From Kazakhstan to Kyrgyzstan, Direction B, OUTBOUND - 2017 (*the larger number is highlighted*):

Category	KGZ Statistics	KAZ Statistics
Cars	40.880	63.237
Trucks (all types)	75.555	117.557
Buses	592	2.767
TOTAL (highlighted numbers:	183,561	

Recent Western Balkans experience teaches that discrepancies between the statistics of the two bordering countries are to be expected; there is no need to analyze here how and why they appear. For further analysis, it is advisable to use the larger of the two numbers – highlighted in the charts – were used.

For example, it seems that 63.237 cars leave Kazakhstan to go to Kyrgyzstan, but the Kyrgyz Border Guards process only 40.880. The Questionnaire clearly defines the difference between cars and buses

² These are the same numbers used for Ak-Tilek Chapter of Kyrgyzstan Report; only the direction is reversed, because Inbound for Kazakhstan means Outbound for Kyrgyzstan and vice versa.

Karasu Road BCP, also has its **seasonality peak(s)** as well as **daily and weekly peaks**. According to the replies from Kyrgyz and Kazakh Border Guards, the busiest months are July and August, due to the summer vacation season at the nearby Issyk Kul Lake. This is somewhat surprising due to the heavy dominance of trucks; during Field Visits as well as during the recent Bilateral Transport Commission meeting on 21st September, no buses and few cars were observed.

The busiest days of the week were Fridays and Sundays. The Kyrgyz Border Guards explain this by the fact that state inspections are closed during the weekend. The Kazakh Border Guards explain this peak by the weekend leisure traffic from and to Kazakhstan. It is reasonable to expect that both explanations have merit and that the first affects mostly cargo traffic from Kyrgyzstan (trucks), whereas the second relates to the increased traffic by cars from/to Kazakhstan.

Daily peaks were not separately explained in either Questionnaire and the Field Observations have not registered any extreme fluctuations of operational relevance. It is reasonable to assume that the daily traffic follows the rhythm of a regular working day.

Only the Kazakh Border Guards quantify (Question 9) the absolute peak number of vehicles and they put this number at 1.000 vehicles from each direction. The Kyrgyz Border Guards consider that the peak has been reached in 2017.

The **forecast for the future traffic growth** would be up to 5%, certainly not more, or possibly even less, if new Road BCP nearby are open, and especially of the cement factory traffic is partially or fully diverted. There is no information that this will happen, however, Kyrgyzstan and Kazakhstan are developing better trade and tourism cooperation and increasing number of BCPs is one of the activities planned.

At most BCPs in Europe and North America, there is a marked difference between the amount of time and attention taken when comparing inbound and outbound vehicles, especially trucks. This is due to import duties that need to be collected and risks of smuggling of good and people. Prosperous countries are faced with the risk of illegal migration and so the inbound control is more detailed and takes more time.

None of this applies to the same extent to the Kazakh-Kyrgyz border, which makes this analysis much simpler and easier. Indeed, both Kyrgyz and Kazakh Border Guards reported that: 1) both inbound and outbound control are done practically in the same way; 2) logically then, it takes the same length of time to perform either one.

Therefore, how long will the control take, will depend more on the intensity of the traffic in a given time period, rather than on anything else. This results in a certain higher stability and predictability, otherwise hard-to-model, random border traffic flows.

Capacity calculations

For this section, the data are taken from the Questionnaires as well as from the Field Visit measurements.

Question 5

For the inbound workload of Kazakh Border Officers, there are 82.241 cars annually, or 225 cars daily and **9.38 cars** per hour coming for inspection; in other words, they have **6.39** minutes per car to complete the inbound check on one car.

Question 14

At the same time, in response to Question 14, the Kazakh Border Guards informed ABEC Team that the minimum, average and maximum time for processing were **10, 15 and 25 minutes**, respectively – not counting the waiting time. Completely the same numbers were given for the inbound and outbound procedures.

The Actual Times Measured

The measurements taken at Karasu BCP on Wednesday, 29 August in the early afternoon hours, with good weather and low traffic intensity from either direction have given the following results:

Direction + Vehicle Description	Time, Car stop to Start, minutes
OUT, White Chevy H plates	5:13
INB, Audi green KG S plate	5:15
INB, KZ 05 plate, driver + 2 persons	3:20
INB, KZ 08 Hyundai Elantra	4:26
INB, RUS Suburban Forrester	10:33

The average is $28.7/5= 5.74$ minutes.

The last vehicle was an outlier, and the explanation why it took him so much longer is that he repeatedly parked in the wrong place, was told by the Border Officer to move, then would come into a wrong lane, had to back up and this maneuvering explains a part of this measurement.³

However, most other measurements are fairly similar and reinforce the conclusion that the processing is better than the Question 14 response would suggest and that it is more in line with the calculations based on the response to Question 5.

³ There were several much smaller measurements, which were excluded, in order not to skew the result.

Explanation: **Stop Car-to-Start Car** is measuring the time of actual control, plus any movement on foot or otherwise, plus any other time, until the control is completed and the car leaves the Control Lane towards the exit Checkpoint.

NOT measured are:

- 1) waiting in front of entry Checkpoint/Boom Gate
- 2) time to drive 76 meters from entry Checkpoint/Boom Gate to the Control Lane
- 3) time to drive 150 meters to the Exit Checkpoint/Boom Gate

This way we also approximate also the operational time without the Boom Gates, at least to a certain extent.

Also, the passport control alone was measured, and the times **were 30, 17 and 29 seconds**.⁴ This is also in line with the Kyrgyz results, even though the Kazakh procedure includes completion of Migration Card (inbound – or surrendering one – outbound) and stamping Routing Slip.

Queuing Theory Calculation

Using the 9.38 arrival per hour are $\lambda = 0.156$ per minute, and service time of $\mu=0.174$ per minute, a simple M/M/1 online calculator of Clausthal University⁵, provides the following results:

Key performance indicators of the queueing model, if we assume one control cabin (one Officer):

Utilization of the workstation $\rho=0,897$
Average number of clients in the system $E[N]=8,667$
Average queue length $E[Q]=7,77$
Average number of clients at the workstation $E[B]=0,897$
Average residence time in the system $E[V]=55,556$
Average waiting time $E[W]=49,808$
Average service time $E[C]=5,747$

Whereas if we increase the number of operators (control cabins) from 1 to 2, then the performance improves almost four times (total residence time, bolded):

Utilization of the workstation $\rho=0,448$
Average number of clients in the system $E[N]=1,122$
Average queue length $E[Q]=0,225$

⁴ Larger sample and more measurements could be taken if access will be provided.

⁵ <https://www.mathematik.tu-clausthal.de/en/mathematics-interactive/queueing-theory/queueing-calculator/>

Average number of clients at the workstation $E[B]=0,897$

Average residence time in the system $E[V]=7,192$

Average waiting time $E[W]=1,445$

Average service time $E[C]=5,747$

The waiting time is reduced to 1.4 minutes, the total time would be 7.1 minutes. On the other hand, with the same processing speed, if we increase the arrival rate even by 20%, the following results would be obtained:

Average residence time in the system $E[V]=8,08$

Average waiting time $E[W]=2,333$

Average service time $E[C]=5,747$

The waiting would increase to 2.3 minutes on average and the total processing by less than 1 minute. The conclusion is that by having two control cabins, the results, even with the current speed of processing would be improved; also, an increase in traffic can be handled even by the current system. The improvements are necessary to improve (shorten) the overall processing time.

If with the same arrival rate per minute $\lambda=0.156$ per minute, the service time were 15 minutes (average time reported in the Questionnaire), then the per minute service units would be $\mu=0.066$, and the following performance would result in the utilization rate of Utilization of the workstation $\rho=1,182$, or 118% per cent. Border Officers are busy, but surely not that busy at Karasu BCP, as shown by the calculation as well as direct measurement and observation.

2.2. Inbound Procedure

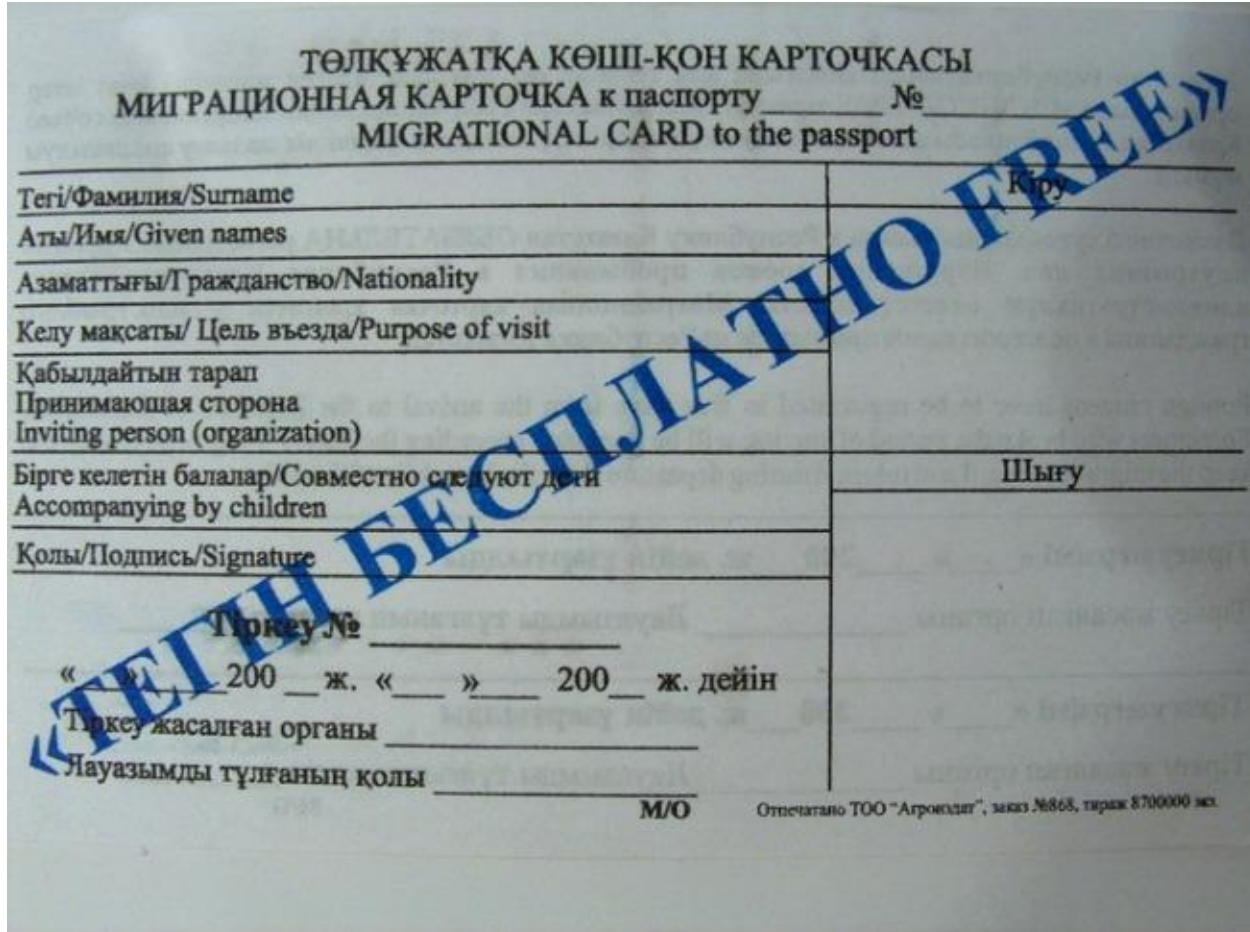
The inbound traffic – coming into the country, in this case Kazakhstan, was processed generally in the same way as at other Kazakh BCPS and similar to Kyrgyz processing procedures. The difference was that the inbound procedure requires these two documents: 1) Migration Card, filled on the spot, by hand, signed and handed over to the Border Officer, and, 2) Routing Slip.

Migration Card⁶ is shown below. It repeats five data elements from the passport: the number, last name, first name, nationality, signature. In addition, the passenger declares the purpose of

⁶

https://www.google.com/search?q=Migration+Card+Kazakhstan+%5D&tbm=isch&tbs=rimg:CSOLOzFB4g49ljh8JaEkkB2U33zZw5_1Jl_1-Hoq6MT5NFRoPzC0PSyQ77HZ5yFIM3k_1wuzNZmF7pk1h9amYPdjsCQ4CoSCXwloSSQHZTfEZFFbbsRWK-sKhIjfnNdn8mX_14cRXV_1iomSHOr4qEgmiroxPk0VGgxEYtMO7Nhii-

visit and the “inviting organization” (if any). All of this is either already provided via passport or could be obtained by the Border Officer without filling out the card.



ТӨЛҚУЖАТҚА КӨШІ-ҚОН КАРТОЧКАСЫ
МИГРАЦИОННАЯ КАРТОЧКА к паспорту № _____
MIGRATIONAL CARD to the passport

Тегі/Фамилия/Surname	Көру
Аты/Имя/Given names	
Азаматтығы/Гражданство/Nationality	
Келу мақсаты/ Цель визита/Purpose of visit	
Қабылдайтын тарап Принимающая сторона Inviting person (organization)	
Бірге келетін балалар/Совместно следуют дети Accompanying by children	Шығу
Қолы/Подпись/Signature	
Түркеу № _____	
« ____ » 200 ____ ж. « ____ » 200 ____ ж. дейін	
Түркеу жасалған органы _____	
Лауазымды тұлғаның қолы _____	

М/О Отпечатано ТОО "Агрохолдинг", заказ №865, тираж 8700000 экз.

While providing no added value, and taking valuable time, Migration Card should be abolished as soon as possible.

The Routing Slip is a perfect example of a bureaucratic mindset, which, for the sake of its own comfort imposes needless requirements onto the clients, in this case passengers. The first point is that the control process should be organized at a **single point of control**, rendering any routing redundant. The general scheme of control is that cars freely and directly arrive at the Control Line, are completely checked and then leave. They are **not** shunted from one point to another and yet another.

CoSCfMLQ9LJDvsdEfxM8IJYQjLKKhIjnnIUgzeT_1C4RTmLYXcOL40MqEgnM1mYXumTWHxFbRBIYA
K-
wLCoSCVqZg92OwJDgEVaMdEriL2v4&tbo=u&sa=X&ved=2ahUKEwjzsjTJ5tDdAhWix0UKHRCvCRkQ
9C96BAGBEBs&biw=1536&bih=754&dpr=1.25#imgsrc=I4s7MUHiDj1WZM:

Apart from these two procedures, the Kazakh inbound process follows these steps:

- 1) Arrival at the Entry Boom Gate; receives the Routing Slip. The Border Officer will then allow up to 4-5 vehicles to drive to the Line of Control.
- 2) The vehicles park and the drivers walk to the Administration Building with passports/IDs and vehicle registration documents. They stay in the queue, then fill out the Migration Card, their documents are checked, and they are photographed. They receive a stamp in the passport and also stamp on the Routing Slip.
- 3) They walk outside and move the car to the place indicated by the Border Officer. They will undergo a physical check of the vehicle. The check is done at a 100% rate, no Risk Management applies. It is also detailed for every vehicle. Certain vehicles are sent to X-ray and still more detailed checks to the Truck processing area, which is another 700 meters round trip. In practice, every car is a high-risk one and then some are even higher – a very high-risk category. There is no low-risk or medium-risk.
- 4) When the physical check is completed, the Border Officer will stamp the Routing Slip, give it to the driver and release the car. If there are passengers, they will have been processed separately and in parallel, and will wait for the driver to pick them up; that includes another stop. If the passengers are delayed in their processing, then the driver will have to wait for them. Usually, passengers are processed earlier than the driver, due to the physical check of the vehicle and walking and maneuvering the car.
- 5) At the Exit Boom Gates, the driver will surrender his Routing Slip to the Border Officer.

This process could be significantly improved not only by removing the redundant paper documents – Migration Card and Routing Slip – but also by **integrating controls at one place and one time**. As the measurements at both Kyrgyz and Kazakh control cabins have shown, the actual documentary control is fast and comparable to the best world standards. However, the overall process contains redundant movements and procedures that could be eliminated; also, the physical check of the vehicle is longer and much more detailed than in Europe or the USA.

Documentary control and physical check should be done in the Control Lane, in front of the Control Cabin, simultaneously (to the extent possible). This requires two Border Officer working together – one in the Control Cabin, doing the documentary check and the other, outside, who will complete the physical inspection.

In the chart below, the Kazakh vehicle control **for compliant vehicles** is compared to the Best Practice vehicle control in order to demonstrate the differences and identify time savings,

Number	Current Kazakh Practice	Best Practice
1.	Arrive and Wait at the First Boom Gate; take the Routing Slip	NO
2.	Drive to the Administration Building, park, walk inside.	NO
3.	Complete documentary control – identity + vehicle + photo + Migration Card + Routing Slip stamp	Hand over the passport for checking Vehicle controlled via ALPR, plus Risk-based physical check
4.	Walk out, position the vehicle and undergo physical check, pick up the stamp in the Routing Slip	Already completed under 3; LEAVE
5.	Pick up any passengers	NO
6.	Stop at the exit Boom Gate, hand over the Routing Slip	NO

By changing to the Best Practices, steps 1,2, 5 and 6 would be eliminated completely, whereas the step 4 would be:

- 1) merged as a parallel procedure within step 3;
- 2) significantly redesigned according to the most modern Risk Management techniques. This means that not every car will have to be physically inspected and that those which are inspected, may not all be inspected in detail. If the detailed inspection is deemed necessary, this will be done at the Secondary Area/Bus Area.

Buses, Cement Trucks and Pedestrians

No **buses** were observed during the Field Visits at Karasu; however, the general description is that the passengers disembark, are processed in the offices as pedestrians, while the bus and the driver are processed as a car. At the end of the process, the passengers board the bus again. All this can be a very time-consuming. Recently, Croatian Border Police, which use the same procedure, stated that they want to process one bus in maximum 20 minutes; however, field observations showed times of 45 minutes and more. Another issue is that a bus, due to its size, blocks a large area at a BCP, where this is always a constraint.

Cement trucks use a simplified procedure, similar to the US Line Release, subject only to passport and truck registration. Cement truck control should be done in the respective inbound and outbound lanes using the ALPR cameras and automated gates.

Especially during hot and dry summer months, cement trucks create a large amount of dust, which is then sprayed by a water truck every 1-2 hours, thus creating mud. This unsanitary cycle and additional expense should be avoided by providing properly paved lanes also for cement trucks.

Pedestrians are processed in the Administration Building. There are sufficient control cabins and this category does not represent a problem, especially not at Karasu.

2.3. Outbound Procedures

Outbound procedure is a mirror image of the inbound procedure and it takes the same amount of time. Migration Card is handed over and not filled out; this makes the outbound procedure faster; however, all the comments and conclusions made in respect to the inbound procedures, apply to the outbound procedure in the same way.

3. Recommendations

3.1 Introduction – One-Stop Shop Basics – Control Cabins

For Ak-Tilek-Karasu Road BCP, only Straight-Line basic configuration is proposed and it can be implemented either as the One-Stop-Shop (OSS) or in the form of the current separate BCP facilities.

The differences between Joint One-Stop-Shop BCP and the current BCP with separated facilities, in terms of infrastructure are not very large.

The main difference will be the size of the control cabin, which, in case of One-Stop-Shop Joint BCP will have to accommodate two Border Officers, sitting next to each other, in front of a somewhat larger service window (Joint Control Cabin - single size). The car being inspected will be parked in front of the Boom Gate and to the right of the control cabin.

The first to act will be the exiting country Border Officer. He will take the passport or ID card of the driver and passengers and will run them through his Regula machine. The feed from this operation can be sent simultaneously to the computers of both Border Officers. Of course, it is also possible to maintain the current two separate, consecutive operations: first the exit country Border Officer, then the entry country Border Officer. However, the advantage of speed would be diminished. If the feed from reading is sent simultaneously to both computers, the entry country Border Officer will also quietly

check his databases and wait for his colleague to complete his check and hand over the passport to him. At that point, the passenger has legally left the exit country and is being processed for admission into the entry country (even though he never moved anywhere physically). The exit country Border Officer will, in the meantime, take another passport and start the process again.

At the same time, ALPR camera will have sent the video feed again to both Border Officers.

Photographing, if it cannot be abolished completely or restricted significantly, may require the driver to exit and then return to the car. Without knowing in detail why photographing is currently mandatory for all, exit and entry, and for any nationality, it may be difficult to provide more specific proposals regarding this control item – however, it is sure that abolishing this requirement for Land BCPs or restricting it only to entry of third-country nationals – defined here as non-Kyrgyz and non-Kazakh – would save roughly about 420.000 seconds for photographing itself (140.000 drivers X 3 seconds each), plus 490.000 seconds for walking from the car to the cabin and back (140.000 drivers X 3.5 seconds each; much longer at Korday) – in total, **252.77 hours annually** and only for car drivers could be saved, not counting their passengers and pedestrians, bus and truck drivers.

Double Control Cabins/Joint Control Cabins/High-Rise Cabins

Double control cabins for Joint BCPs are also possible and desirable; two officers would sit in a diagonally opposing locations and process simultaneously cars from two opposite directions. Double cabins enable **reversibility – ability to use and the same control lane to check vehicles coming from either direction.**

In the Straight-Line configuration, double control cabins (service windows on both sides of the cabin) also save space, as the centrally-positioned double cabin replaces two single control cabins.

One explanation: a double cabin simply means that there are two Border Officers from the same country operating. A **Joint Control Cabin** means that there is at least one Border Officer from each country.

It is also possible to have a **Joint Double Control Cabin**, which would entail four Border Officers, in pairs, two on each diagonally opposite sides of this type of control cabin.

High-rise Control Cabins are those at 1.65 meters above ground in order to enable control of buses, trucks and similar high vehicles.

It is finally also possible to have **Two-level** cabins for mixed traffic flows – mixed in terms of height of the vehicles controlled. Access to the higher-level cabin can be made by an external ladder or internal spiral staircase.

Straight-Line Configuration – One or More Control Cabins?

There may also be a question whether it would be advisable and desirable to put two or more control cabins, one behind the other, in the direction of traffic, and simultaneously check two or more vehicles. That is already the case at Korday, for example.

The answer is that it depends on the width of the lanes and the space available for bypassing. The main practical problem of multiple control cabins in line, is that there is no way to ensure that the vehicle being checked by the Border Officer in the first control cabin – that is the one nearest to the exit – will indeed be done first and be released. If not, the vehicle(s) behind may be blocked, as observed at Ak-Jol outbound lanes (blocked because the unused fence was not removed, and the car could not switch to the other lane). Another way the blockage occurs is when the vehicles are too close to each other and the vehicle released cannot exit until the one in front does not move (observed at Korday outbound). This can be remedied by drawing perpendicular lines, that would allocate a minimum maneuvering space in front and behind each vehicle.

The current and near-future traffic levels at Karasu are such that Single-Line configuration with only one line of control cabins will be sufficient.

In peak times, when there are 10 or more cars queueing in the lane, Border Officers with mobile passport readers can go forward towards the incoming traffic and check 3-4-5 vehicles and release them through, in coordination with the colleague(s) working in the control cabin and operating the Boom Gate for that same control lane. For this type of situations, it is necessary to find the solution to operate ALPR cameras in places other than the fixed installation. A mobile ALPR hand-held solution would be ideal; or temporary posting of a fixed ALP camera, that can be quickly installed for temporary use, would also work well. Such a post could be set up before or even after the control cabin. If congestions persist, then it is relatively easy to install additional control cabins and create Straight Double-Line of Control.

Misconceptions about Joint BCPs

As Joint BCPs are currently – but not for long - unknown in the Central Asia, there are objections raised, showing that the concept is misunderstood.

Firstly, Border Officers will continue to operate under the same set of laws and regulations as they are applying currently. Certainly, some laws and regulations will have to be amended in order to allow implementation of this concept; however, the fundamental laws and regulations for checking passengers will NOT be changed.

Secondly, the Border Officers will continue to operate the same equipment and use the same databases, in the same way as used currently. The data will not be shared, unless this is already agreed previously.

The decisions of both Border Officers will remain independent and will not interfere with each other. A **good, detailed, comprehensive MOU/Bilateral Cooperation Protocol** will need to be drafted in order to regulate all the operational details.

3.2. Recommendations for Karasu BCP

Recommendation 1: Re-design this BCP as a One-Stop-Shop (OSS) Joint Integrated Road BCP

1. Infrastructural Changes Necessary

In this optimal scenario, the two countries would select one site for a Joint BCP. It is possible to build Joint BCP on either side of the border, preferably at the Kazakh (north) side), due to more flat terrain available.

In all cases, **the current incomplete bridge would have to be widened** into minimum four (4) lanes – 2 per each direction, or preferably 3 lanes per direction, plus a meter of space on each side for pedestrians. Whether the current structure can be incorporated and thus used for the future bridge will be decided by civil engineers, based on costs and safety criteria.

In both cases, current buildings and infrastructure would be re-utilized to the extent possible, in order to minimize construction time and costs.

The following infrastructural interventions will be necessary at Karasu,

1. Enable the vehicles to come freely and directly to control cabins, as well as to exit freely, once released. Remove the boom gates from both ends of BCP, exit and entry. The only boom

gate operated should be at the control cabin, managed by the Border Officer responsible for documentary check; once he puts the stamp into the passport and returns it to the driver, he will also open the boom gate, which signals the completion of the check.

Starting from the left (west) to the right, the following will be the new designation of lanes, per vehicle category:

2. The current first lane on the extreme left side will be used as the outbound lane for cement trucks leaving Kazakhstan. The lane will be completely asphalted. It is also recommended to install ALPR camera and e-gate.

3. The extreme right-hand side lane will be used by inbound cement trucks coming from Kyrgyzstan. It will also be controlled by ALP camera and e-gate. The lane will be completely asphalted.

4. The middle lanes will be used as follows:

Outbound

1 Trucks/Buses with a high-rise Control Cabin

2 Cars with a Double Control Cabin

Inbound

3 Inbound cars controlled by the same Double Control Cabin

4 Inbound Bus/Trucks controlled by the High-rise Control Cabin

Space and budget permitting, two additional Car lanes – one per direction- would be inserted.

5. Secondary/Bus/Special Area will consist of two building, one per direction, located at the right-hand sides of the Control Area. This will include also the area for Hazardous Cargo, small office space and toilets (at least one for the staff and one for the public).

6. ALPR cameras will be installed in all lanes near the control cabins.

7. Radiation controls will be moved in front of the control cabins, at the shortest safe distance.

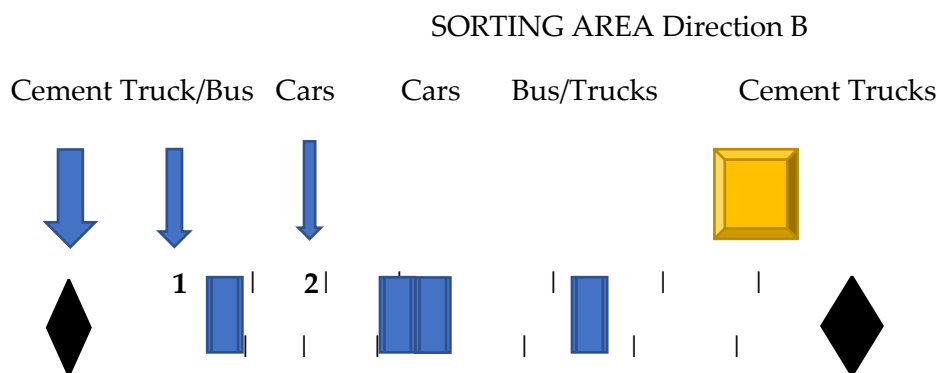
10. Overhead electronic signs will be installed to show green (free) lanes and types of vehicle processes (cars, buses, trucks) processed per each control lane.

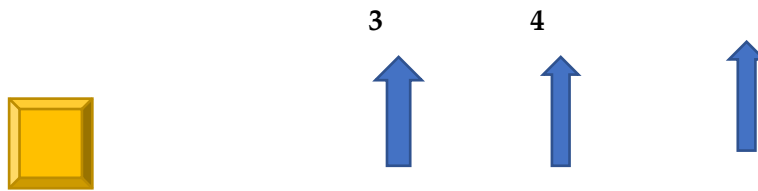
11. The current inbound processing facility would need to be removed. An alternative is to move the Line of Control 100 meters southwards towards Kyrgyzstan, where the building would not be in the way.

12. At Karasu, there will be no special facilities for pedestrians, rickshaw, bicyclists, motorcyclists. Any such units would be considered as cars and processed in the car lanes. Ideally, Border Officer with mobile passport readers would process them, if photographing was not required. Car passengers would be processed in the car, while the bus passengers would be checked onboard buses in the Bus/Secondary.

13. The Extended Control Facilities currently at the right edge, would be all merged into the new Secondary/Bus/Special Facility. All X-ray and other controls would be performed there.

The graphic plan of 4 control lanes (2 per direction) plus special two Cement Truck lanes (1 per direction, at the extreme ends of the BCP), would be as follows:





SORTING AREA Direction A

Legend:



= Control Cabins (Joint CC, in case of Joint BCP), including the central Double Cabin



= Two Areas of Secondary Control, Buses & Special Procedures (incl. Hazardous Goods)



= Two ANPR/ALPR Automated Check Posts for Cement Trucks

Recommendation 2: For Kazakhstan, it is also recommended to remove these two time-consuming requirements:

- 1) filling out the Migration card by hand and signing it*
- 2) collecting stamps and surrendering Routing Slip at the exit Boom Gate (which itself should be abolished).*

Recommendation 3: Process the following categories as described below:

1. Pedestrians are defined as persons without transport and without a seat in any vehicle, moving only by walking. At Karasu-Ak Tilek, there were no real pedestrians, even though in the Questionnaires, a significant number of pedestrians were reported. This is probably due to misunderstanding, because passengers in buses and cars should not be considered pedestrians, nor processed as such – which is currently the case.

If real pedestrians walk to Ak Tilek, they will be processed in the car lanes. The same is valid for bicyclists and motorcyclists. They will walk up to the control cabin and present their documents, or the officers operating in control lanes can process them using hand-held passport readers.

2. Cars will be processed in the following way:

- ✚ Cars will pass by the radiation control.
- ✚ On the approach to the control cabin, ALPR camera will read the vehicle license plate data and deliver the data it to the Border Officers of both countries simultaneously (or only one country, if the current set up is maintained) .
- ✚ Approaching the control cabin, window to window, the driver will hand over his/her passport, as well as all the passports of eventual passengers, to the Border Officer of the exiting country.
- ✚ In case of Japanese-made cars, with the right-hand steering wheel, the driver can hand over the passport to the Border Officer working in the control lane and be checked by the mobile hand-held passport reader.
- ✚ While the Border Officer (Exit Country) in the control cabin is checking the passport or passports, his colleague will check the vehicle boot and the interior.
- ✚ When the Exit Country Border Officer completes his check, he will hand over the passport or ID card to the Entry Country Border Officer (in case of Joint BCP only)
- ✚ Photographs will be taken of the driver and all the passengers and the images delivered to the databases of both countries simultaneously.
- ✚ During the entire procedure, the driver and the passenger will stay inside the vehicle all the time, except for the time needed to take photographs, unless it can be differently arranged.
- ✚ Upon completion of the entry check, the Border Officer of the entry country will open the automated boom gate.
- ✚ The car will leave the Line of control and no further procedures will be undertaken: no checkpoint gates will hold the traffic.
- ✚ For cars: 1) that require special complex paperwork (for example, temporary imported cars from Russia or similar), as well as for 2) those that are targeted for additional controls and any other that cannot be immediately admitted, there is a

special area where they will go and such checks and procedures will be completed there.

3. Buses of any size, regular or charter, will be processed as follows:

- ✚ Pass by the radiation control.
- ✚ ALPR camera will record the license plate number of the bus and send the information to both (or one) national database(s).
- ✚ Bus will drive to the **Secondary Control, Buses & Special Procedures Area**. Border Officers of both countries will board the bus with hand-held passport readers and will check passengers' documents.
- ✚ At the same time, their luggage will be checked by sniffer dogs and X-rays, mobile and stationery. Whenever necessary, a piece of luggage will be pulled out and opened.
- ✚ Bus passengers and the driver will stay on board the bus during the entire procedure. Only exceptionally, they may be asked to get off the bus to be checked.
- ✚ At the discretion of the Border Officer, the complete check could be done while in control lane, just as it is done with the cars. This could be particularly used when the bus is empty or has few passengers and/or there is low intensity of traffic.

After the procedure is completed, the bus will be released without any delay.

Two additional procedures for buses could be considered to be introduced:

- 1) A list of passengers to be sent in advance to the Border Guards of both countries by e-mail or fax
- 2) Bus from Bishkek to Almaty could be **pre-cleared** in Bishkek and/or en route to the BCP (Karasu or Ak-Jol) by both countries' Border Officers. If pre-cleared in Bishkek, the information would be sent to the BCP by Border Officers. Upon arrival, ALPR camera would read the license plate and the bus would be allowed to continue without additional control. The bus would not be allowed to stop anywhere (at least in the exit country) and this would be controlled by video cameras on the bus, external and internal, and possibly, by the GPS device that measures speed and position.

It is also possible that both Kazakh and Kyrgyz Border Officers would board the bus and control it directly until it crosses the border. A small office for buses going to Kazakhstan

could be set up at the Bishkek Bus Station and all passengers going to Kazakhstan could be completely pre-cleared there, then the Border Officers would ride with them to the BCP, enable them to pass and leave the bus, continuing their shift at the BCP.

4. Trucks will be processed by:

- ✚ Radiation check
- ✚ ALPR camera will recognize the license plate and all the associated information and send this information to Border Officers.
- ✚ Passport check will be completed as with the cars. The control cabin should be at the same level as the truck cabin and on the left hand-side.
- ✚ No other documents are to be checked as the BCP is inside the Eurasian Customs Union, not at the external border.

As for other categories of transport, the principles of pre-clearance and advance information are even more applicable to trucks. As the Eurasian Economic Union (EAEU) Single Window will be mandatory and operational from 1 January 2019, the trucks should become the easiest type of vehicles to clear.

5. Cement Trucks going with the raw materials from Kazakhstan to the Kant Cement Factory are already well-regulated and facilitated. The improvement proposed would simplify and straighten their itinerary on both sides of the border. No longer would inbound and outbound trucks mix and cross paths of the oncoming traffic; now they just drive straight.

In addition, the dirt roads will be paved and covered by canopy. No need for water truck to come every hour and spray the entire BCP with water.

All processing will be done in the lane, automated and with the ALPR camera, connected to a computer, tracking, registering and counting all movements in both directions.

However, now the directions will be separated. The same plan should be applied at both sides of the border.

Therefore, the cement trucks will have a two-step process:

- ✚ Radiation control
- ✚ ALPR camera and registration and passport control.

Recommendation 4: Introduce a genuine Risk Management system instead of 100% physical checks, everything, every vehicle; when completing physical checks, order the vehicle to the Secondary/Bus area.

Check every car, interior of the car, glove compartment, under the hood, the car boot, with a mirror under the car and in hard-to-reach areas is not justified by the Risk Management concept. This inevitably takes time. Risk Management means targeting high-risk vehicles, whereas low-risk ones do not require such detailed, time-consuming checks.

Recommendation 5: Complete physical check in parallel with the passport check.

If the presence of the driver is necessary, then his/her staying at the wheel, enables the two checks to be completed simultaneously. Even the fact that both passport and physical checks are done at the same, one, place – without lengthy walking back and forth- would save time and speed up the process. This, however, is more of an issue at Korday than at Karasu.

Recommendation 6: Organize a tender and procure and install mobile passport readers and ALPR (ANPR) cameras and systems for each lane, two e-gates for each direction of cement factory trucks and at least 10 mobile passport readers for Karasu.

The ALPR is designed to improve accuracy and speed of checking of vehicle data. For the lanes used by cement trucks only, this ALPR system should be developed into an automated e-gate, so that the driver would never need to leave the truck and the registration and counting would occur automatically. Only one such e-gate/LPR would be needed per direction.

Mobile passport readers can be procured for \$300 to \$800 per piece; higher-end models may cost more but include also fingerprint-reading capability.

Recommendation 7: Border Officers with mobile passport readers should check drivers and passengers further away from control cabins, then signal to the colleagues to release those already checked vehicles.

Recommendation 8: Photographing should be abolished at Road BCPs, or at least for the outbound passengers.

Recommendation 10: For trucks and other high vehicles, install control cabins that are on the same level as is the driver's cabin.

This way, the driver will not have to leave the truck, but will be checked and processed while at the wheel.

Recommendation 11: When the control is finished, the responsible officer will also open the boom gate and release the vehicle.

This makes redundant any exit checkpoint with boom gates as well as control tickets and stamps.

If this cannot be completed within a very short time, then the vehicle is directed to the Secondary/Bus area, where it will be either: 1) checked additionally and/or 2) special procedures will be completed. **The control lane will always remain free and fluid.**

Recommendation 12: Regulate and publish the maximum time for completion of checks for compliant cars, buses and trucks.

Recommendation 13: Organize joint study tours for Kyrgyz and Kazakh Border Officers to BCPs with advanced processing abilities, including Joint BCPs.

II. AK-JOL – KORDAY ROAD BORDER CROSSING POINT

1. Topographic and spatial characteristics

1.1. Description and Dimensions

Korday is a town in Zhambyl Region of Kazakhstan, where the road from Kyrgyzstan crosses the Chuy River and continues to Almaty. The BCP is located at the southern edge of Korday. The landscape is mainly flat and open, and, apart from a canal, there are no natural or artificial obstacles for the BCP.

Looking from north, the road comes to an abrupt end at the metal fence and entry Boom Gate where the BCP controls start. Behind the gate, there is a covered Control Area, containing 2+2 Control Lanes. The satellite dimensions are 36.2 meters of length and 35 meters of width. The BCP is configured as a gate, so that at either side, there are Administration Buildings, where pedestrians are processed, and Border Guard offices are located.

There is a side road to the right, which leads to an administrative area entrance, as well as to the covered X-Ray Control Building, where vehicles, inbound and outbound, are sent for detailed inspection (please see the photo below)



However, its location is such that inbound vehicles must cross the path of all outbound traffic twice, whereas the outbound vehicle make a detour of 250 meters and 250 meters back to the main Control Area.

For vehicles, the Control Cabins are in the middle of the Control Area and there is one control cabin at the right-hand side of the outbound lanes. This entails considerable walking back and forth, waiting in the queue.

Recommendations 1 and 2 below show how the new design would look like. For Korday and Ak-Jol, there are two basic configurations provided as alternatives: Straight-Line with one single line of control cabins; and two 45-degree Configurations: Peel-Off and Falling Leaf, with 4 control cabins per direction, plus the Truck/Bus straight lanes and Pedestrian passages, which remain in the same positions, in all options.

1.2. Potential Improvements & Expansion

Korday would be a good site for expansion, under all scenarios: if the Joint BCP is accepted, Korday has the space to expand. Under the current, set up with separate facilities, again, Korday can accommodate the doubling of control lanes from 2 to 4 per direction, plus the pedestrian lane.

Already the first two Recommendations alone would bring significant improvements:

- ✦ Removal of obstacles, vertical or perpendicular to the direction of movement, particularly the Boom Gates
- ✦ Installation of ALPR cameras and system would improve the speed the quality and accuracy of control of vehicles
- ✦ Pedestrians could be controlled by e-gates and/or combination of traditional control and e-gates.
- ✦ In the straight-line configuration, control cabins will be set up with service windows on both sides – diagonally inside the cabin – in order to ensure **reversibility**, i.e. ability to switch lanes to accommodate changes in traffic and still operate at a full capacity.

The most substantial results and improvements, however, can be expected by operational changes, notably:

- ✦ Organization of Joint Road BCP on the basis of One-Stop-Shop, on either side of the border.
- ✦ Introduction of mobile passport readers and change of work methodology for buses and cars. Now the passengers would be checked while on board. Car passengers would be checked while inside the car, either by the Border Officer in the control cabin, or by another Border Officer, with mobile passport reader, who will operate in the control lane – and who would also check the car boot and the interior. Bus passengers will be checked while on board the bus.

- ✦ Continuous flow instead of batch processing operations, whereby the vehicles would approach the Control Line in the most direct and shortest possible way, be checked and leave the Control Area immediately.
- ✦ Secondary Area/Bus Area would be immediately to the right of the main direction. All complex and time-consuming operations would be completed in the Secondary Area/Bus Area. Buses, due to their size and number of passengers, could be checked directly in the Control Lane, if the Border officer considers this could be done quickly (empty bus, low number of passengers, no other buses and trucks waiting); otherwise, the bus would be sent to the Secondary/Bus area.
- ✦ The only boom gates would be operated by the Border Officers working in Control Cabins. They would open the boom gates upon completion of their controls.

Korday’s current location allows expansion towards the east, if necessary. However, by clearing obstacles and opening up the space between the current administrative buildings, the space would be sufficient for 4+4 lanes.

2. Current Inbound & Outbound Control Operations

2.1. Description of Traffic

Korday traffic is a mix of long-distance and local traffic; this gives it vitality and long-term sustainability. The cars are prevalent, then there are buses and a good number of pedestrians. There are relatively less trucks, and many are empty. Korday is mainly a passenger BCP, not a cargo-dominated one.

Pedestrians, although in significant numbers, will not be analyzed in any detail. The reason is that they are already processed efficiently, and the only recommendation related to pedestrians is to set up e-gates to improve this segment even further.

At the same time, car and bus passengers would not be processed as pedestrians any more and that would indirectly help the remaining “true” pedestrians to be processed even faster. Another improvement for the pedestrians – on the Kyrgyz side in Ak-Jol- would be that they will walk in the straight line and not have ever to cross the road and face vehicles.

In comparison to Karasu, more buses were noticed, including minibuses Bishkek-Almaty as well as a regular bus line to Krasnoyarsk, Russia.

Traffic statistics are the same as for Ak-Jol, except the denominations of direction are reversed.

From Kyrgyzstan to Kazakhstan, Direction A, 2017, INBOUND (*the larger number is highlighted*):

Category	KGZ Statistics	KAZ Statistics
Cars	212.533	251.080

Trucks (all types)	41.745	14.264
Buses	9.310	4.605
TOTAL (highlighted numbers:	302.135	

From Kazakhstan to Kyrgyzstan, Direction B, OUTBOUND - 2017 (*the larger number is highlighted*):

Category	KGZ Statistics	KAZ Statistics
Cars	103.669	253.569
Trucks (all types)	20.379	14.694
Buses	3.908	5.181
TOTAL (highlighted numbers:	279.129	

It is also clear that there is imbalance by direction, whereby Direction A (Northbound, Kyrgyzstan to Kazakhstan) was consistently more frequented; however, the difference could be handled by reversing the controls – i.e. switching one inbound lanes to outbound traffic, which is possible under Straight-Line configuration illustrated below.

In the analysis below, inbound and outbound processes are quite similar and take about the same time.

The annual capacity for cars is equal to **687 cars inbound per day** (28.6 per hour) and 695 outbound per day (28.9 per hour). That leaves **2.09 minutes** per each car, which is the result at the limit of the current capacity.

In addition, the Kazakh Border Guards, must process:

- ✚ 25.5 inbound buses (almost 1 hour available per bus) and 14 outbound buses daily (1,71 hours available) – obviously, buses are not a critical problem, but they are in addition to all the other categories;
- ✚ 114 inbound trucks daily (4.76 per hour or 12.60 minutes per truck), plus 55.8 trucks outbound daily, which corresponds to 2.3 trucks per hour, leaving for each truck 26 minutes to process

The conclusions are that the current traffic can and is processed on time; however, any increase in the near future, will put the strain on the capacity.

Seasonality was reported to include peaks in July and August, due to the summer tourist season at Issyk-Kul Lake. On a weekly basis, Sunday was reported as the busiest day due to the Dordoy market.

None of this was confirmed during the Field Visits and observations, which were deliberately set on a Sunday and during August; the maximum load and waiting were observed on Monday afternoon at exit from Kyrgyzstan, allegedly due to congestion at Korday (KZ).

Kazakh Border Guards reported the peak of traffic on 5 July 2017 of **1.050** vehicles coming to Kazakhstan, while in the opposite direction, the peak was reached on 15 August 2017 and **1.508** vehicles were processed.

In responses to another key question about processing times (Question 14), Kazakh Border Guards wrote that, both for inbound and outbound processing, the maximum times was 15 minutes, whereas, the maximum time for waiting was 50 minutes for both directions.

The field measurements confirmed the quality and speed of processing⁷; however, waiting times reported in the Questionnaire probably refers to the waiting only in the Control Area, but not in front on the Checkpoint Boom Gate, which is much longer.

Therefore, the problem is not so much the length of time to complete the check – even though this can and should be further improved – but to arrive to the control cabin.

The field measurements made on Sunday afternoon (26th August 2018) at Korday showed the following results:

Number	Description	Time in minutes
1.	INBOUND Kia Cerato, KZ Astana plates	7:20
2	INBOUND, KZ car, 04 Aktyubinsk	13:20
3	INBOUND, white KG car, with yellow special plates	4:16
4.	INB, black Toyota, KG Bishkek plates with 2 children	5:23
5.	INBOUND, White Toyota, KZ Almaty oblast	5:33
6.	OUTBOUND, KG Bishkek truck	1:29
7.	OUTBOUND, KG Bishkek minibus	1:26
8.	OUTBOUND, KZ 02 Almaty white Subaru SUV	2:20

The first car was required to undergo X-ray control and that is why it took so long. To do that, the driver had to unload the goods, take them inside the building, then back and re-load. The second car was also checked by a dog, but still have to take the goods through the X-ray control. This is an outlier and will not be taken into calculation of the average.

⁷ Please see the measurements' chart in the Karasu Chapter, page 11.

All the cars were compliant – or else would be excluded from the sample.

The average found was **4.01 minutes per car**. This means the service rate per minute is $\mu=0.24$, while the arrival rate is $\lambda=0.47$ per minute.

Using the same online queueing theory calculator, for one control cabin, inbound, one Border Officer, we get:

Utilization of the workstation $\rho=0,117$
Average number of clients in the system $E[N]=0,133$
Average queue length $E[Q]=0,016$
Average number of clients at the workstation $E[B]=0,117$
Average residence time in the system $E[V]=0,282$
Average waiting time $E[W]=0,033$
Average service time $E[C]=0,249$

The average total time is very low. Perhaps the results are overly positive, due to a small sample and also due to low intensity of traffic on the day measurements were taken. Doubling the parallel operators (two Border Officer, working in parallel)- would further reduce the total time to **0.25 minutes**.

2.2 Inbound Procedure

The inbound control procedure already described in the Karasu Chapter above is the same for Korday. The Korday enforcement, however, was even more detailed and time-consuming than any of the other BCPs. Several times, buses and cars were returned for another inspection, to the Secondary Inspection area or – as described above – to take their bags for X-ray inspection inside the Administrative Building.

The inbound procedure description for cars is adapted from previous chapters and presented below.

The cars stop well in front of the control cabins, or as instructed by the Border Officer operating outside in the control lanes. Drivers then walk to the control cabin with their identity documents (passport or ID) and car registration documents. They join the queue and when their turn comes, they fill out the Migration Card and submit documents to the Border Officer inside the cabin. Upon completion of the processing, the Border Officer will return the documents to the driver, plus the stamped Routing Slip.

The next step is taking photographs, which is a 100% requirement.

When the photograph is taken, the driver will walk back to his/her car and another Border Officer will be waiting for his/her arrival in order to complete the physical check. This operation will be completed 100% and in detail, for all cars. This is contrary to the Risk Management principles and practice in all OECD countries.

At that point, the driver is released. He may stop to pick up his passenger(s).

His last stop will be at the Checkpoint Boom Gate. This completes the inbound processing.

Many other measurements were done, which only confirm the conclusions below:

- ✚ The documentary control – which is the most important – takes the least time.
- ✚ Most of the time is taken for maneuvering, walking back and forth, physical inspection and boom gates – all of which can and should be eliminated, by introducing in-lane controls.

2.3 Outbound Procedure

Outbound control is similar to the inbound, except that – most likely - the major loss of time occurs in the front of the Control Area – at the Checkpoint/Boom Gate. At Korday, it is not possible to see how many cars are waiting behind the metal fence and the entry Boom Gate.

The duration of outbound and inbound procedures were reported as exactly the same by the Kazakh Border Guards. This was confirmed during the Field Visits. It is true that in the outbound procedures, drivers surrender the Migration Card and the Routing Slip and they do not need to fill out anything.

Only at Ak-Jol, 48 minutes was one actual measured time during one afternoon; it could be assumed that the waiting times are similar at Korday as well.

3. Recommendations

Recommendation 1: Sorting Area, Control Lanes should be free of any obstacles to free movement of vehicles (fences, concrete blocks, gates of any type, deep canals)

Korday has the following obstacles to remove:

- 1) **An open pit** in the inside outbound lane, remnant from the Customs. This hole in the ground is a hazard and also prevents the lane from being used.
- 2) On the opposite sides, there are **metal covers**, that were used to close the weighbridge, they slow down the traffic significantly. The inbound lanes need to be levelled and asphalted.
- 3) The **control cabins** should follow the preferred configuration.
- 4) The **Secondary/Bus Control Area** should be built in two locations, to the right of the Truck/Bus lanes, one per direction, instead of the current one location for all. Secondary Control should be behind - not before - the First Line of Control - because it will serve for buses and only those vehicles selected for secondary control; thus, first they must approach the control cabins of the First Line of Control for that triage to take place.
- 5) **Exit and Entry Boom Gates** should be demolished and the area flattened and made passable. This is the minimum requirement for any process improvement.

When finished, the Control and Sorting Areas must be completely free, flat and marked only by lines on asphalt, similar to the Grzechotki Road BCP (Poland-Russia) shown below.



Recommendation 2: Re-design the traffic flows into four parallel linear streams, and ensure there are 4 control lanes per direction, trucks- as shown below.

Two options are provided: Straight-Line, single, configuration and Peel-Off (Falling Leaf) Configuration with 4 control cabins for cars per direction.

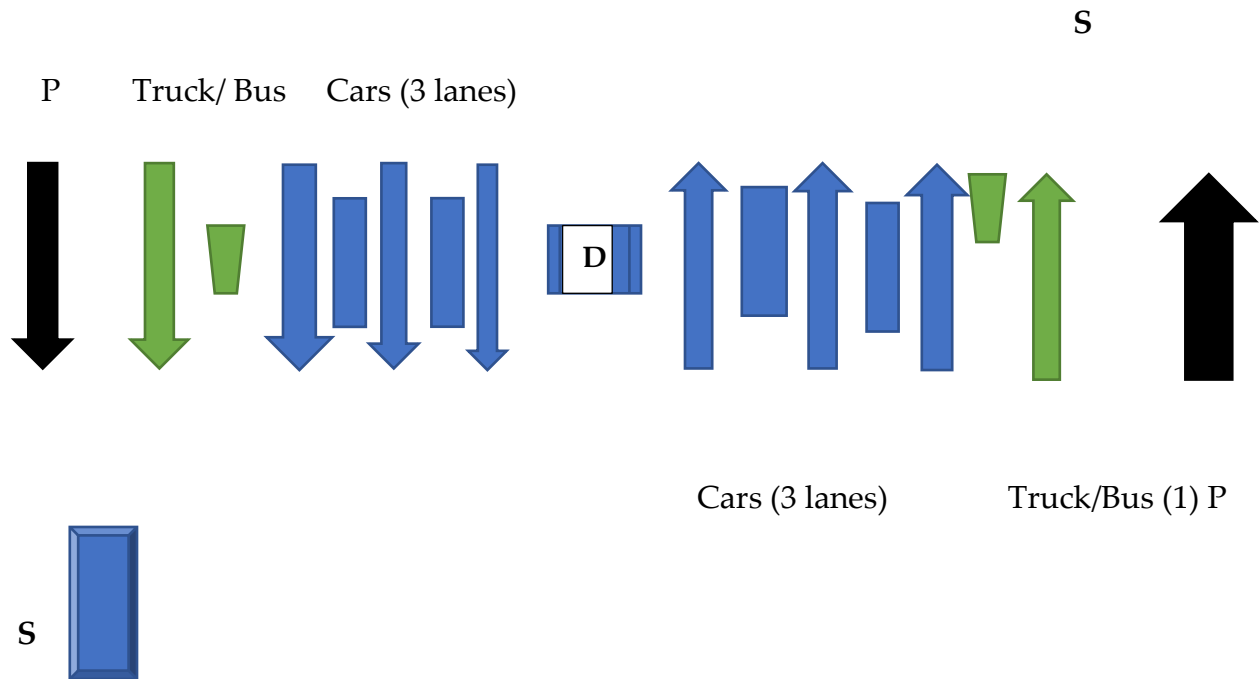
P=Pedestrians C=Cars B=Buses T=Trucks

NORTH (Kazakhstan)

Inbound (4 lanes + Pedestrians)

Outbound (4 lanes + Pedestrians)





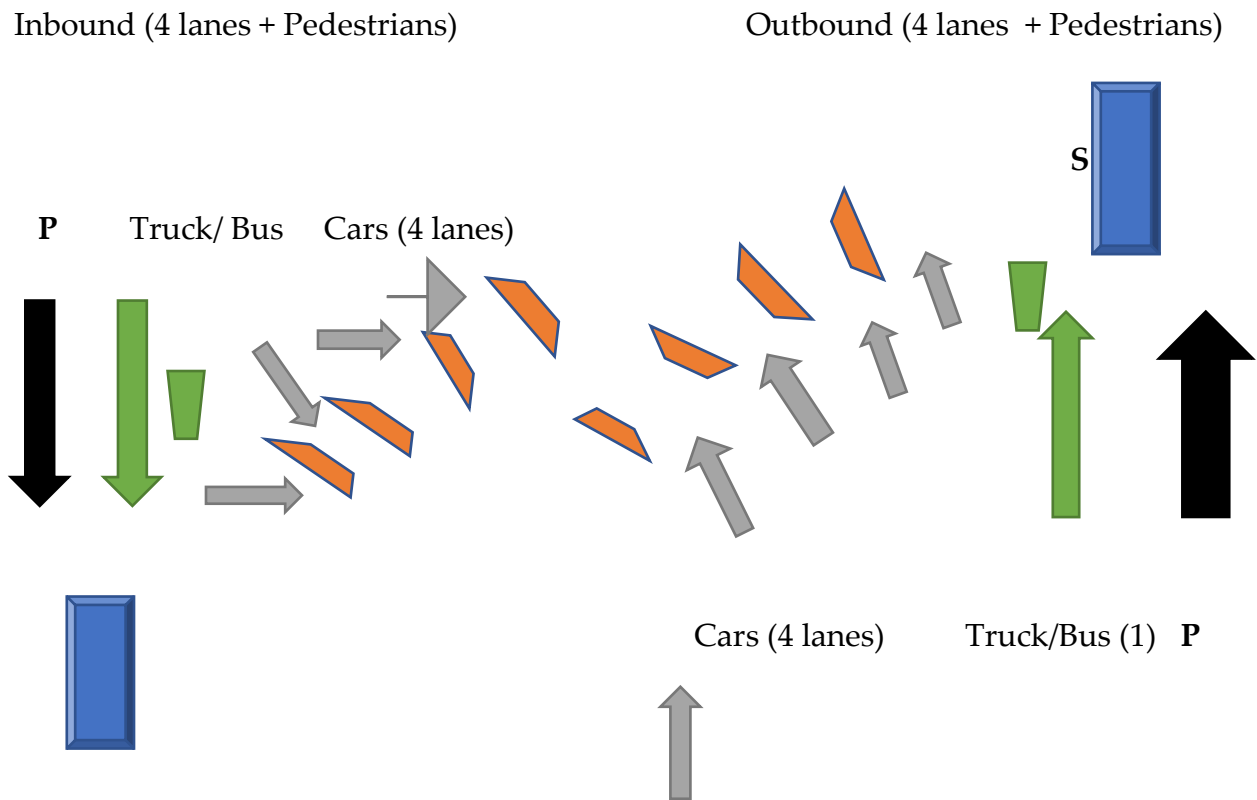
SOUTH (Kyrgyzstan)

Explanations:

1. Black Arrows mark pedestrian flows. The pedestrians will be checked preferably by automated e-gates or a combination of current control cabins and e-gates.
2. Green Arrows show the flow of buses and trucks; to the left is a green rhomboid, denoting high control cabin.
3. Two blue beveled rectangular marked S denotes the Secondary Check/Buses area. This will also contain offices and toilets.
4. Four narrow blue rectangles are control cabins for cars, with the service window at the level of car window. This enables the control to be done while the driver remains inside the car.
5. (Not marked) there are 8 ALRP cameras in each control lane. It automatically transmits the license plate number and other data to the Border Officer inside the control cabin.
6. The middle, larger, control cabin is marked with D (Double) because it controls cars from both directions – inbound and outbound.
7. (Not marked) Lights for night operations, overhead gantry at 4.5 meters high with traffic lights red/green, plus electronic signs/messages, from both directions.

2. Peel-Off (Falling-Leaf) Configuration

A. Peel-Off Configuration

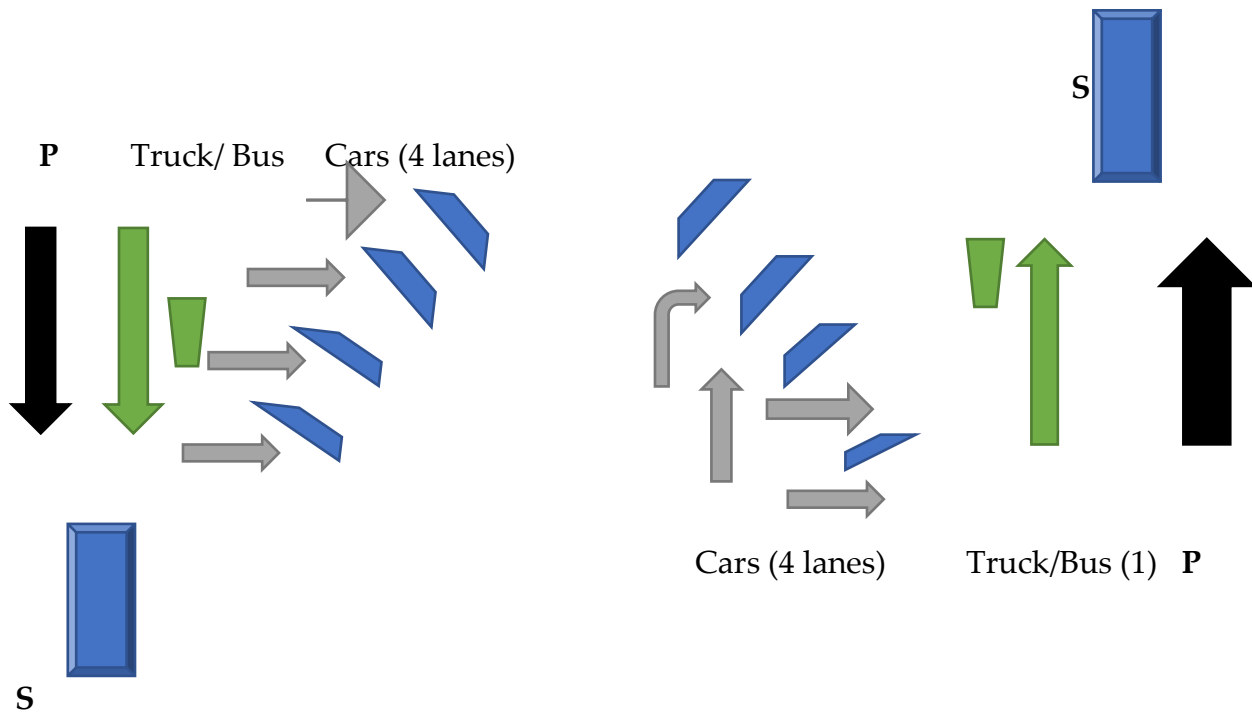


Please note that the arrows only approximately represent the direction of movement; however, everything is clear when knowing that the control cabin (orange) must be to the left of each car.

B. Falling-Leaf Configuration

Inbound (4 lanes + Pedestrians)

Outbound (4 lanes + Pedestrians)



Explanations:

1. Please see the Straight-Line configuration above; the difference relates to the processing of cars, all the rest remains the same (Pedestrians, Buses, Trucks, Secondary Area, ALPR system)

2. Cars coming to the Control Area will have 4 Control Cabins to choose from, selecting the nearest one with green traffic light (or, visually, the one the driver sees as available). Control cabins will be at 45 degrees against the axis of movement, so the car will make a slight right turn and enter the control lane between two cabins, so that its window is nearest to the control cabin window. The documentary control will be completed by handing over passport/ID card to the Border Officer. Passengers will also hand over their identity documents via the driver, or, alternatively, hand them over to another Border Officer, who will operate in that control lane. His main duty will be to check the vehicle interior and the car boot but will also carry a hand-held mobile passport reader and check

documents. ALPR cameras will automatically read license plates and deliver this information to the computer of the Border Officer inside the control cabin.

This configuration enables more control cabins and control lanes to be deployed; it saves the width of the Control Area.

The Recommendations below are identical and are reproduced from the Karasu Chapter.

Recommendation 3: Introduce and implement a genuine Risk Management system instead of 100% checks, everything, every vehicle

Kyrgyz – but even more the Kazakh - Border Officers check every car, interior of the car, glove compartment, under the hood, the car boot, with a mirror under the car and in hard-to-reach areas. This inevitably takes time. Risk Management means targeting high-risk vehicles, whereas low-risk ones do not require such detailed, time-consuming checks.

Recommendation 4: Complete physical check of the vehicle in parallel with the passport check.

If the presence of the driver is necessary, then his/her staying at the wheel, enables the two checks to be completed simultaneously.

Recommendation 5: Car passengers should stay in the car and be processed together with the driver.

Recommendation 6: Install ALPR (ANPR) cameras and systems for each lane.

This is designed to improve accuracy and speed of checking of vehicle data.

Recommendation 7: Complete bus passenger checks on board the bus, using mobile passport readers

Mobile passport readers can be procured for \$300 to \$800 per piece; higher-end models may cost more but include also fingerprint-reading capability.

Recommendation 8: Border Officers with mobile passport readers should check drivers and passengers further away from control cabins, then signal to the colleagues to release those already checked vehicles.

This is in case of long queues, an active measure to clear the vehicles and prevent long waiting.

Recommendation 9: Photographing should be abolished at Road BCPs, or at least for the outbound passengers.

Recommendation 10: For trucks and other high vehicles, install control cabins that are on the same level as is the driver's cabin.

This way, the driver will not have to leave the truck, but will be checked and processed while at the wheel.

Recommendation 11: When the control is finished, the responsible officer will also open the boom gate and release the vehicle.

This makes redundant any exit checkpoint with boom gates as well as control tickets and stamps.

Recommendation 12: Triage: All the checks are done and completed while the vehicle is in the control lane, then it is released by raising the boom gate. If this cannot be completed within a very short time, then the vehicle is directed to the Secondary/Bus area, where it will be either: 1) checked additionally and/or 2) special procedures will be completed. The control lane will always remain free and fluid.

Recommendation 13: Regulate and publish the maximum time for completion of checks for cars, buses and trucks.

Recommendation 14: Organize study tours for Kyrgyz and Kazakh Border Officers to BCPs with advanced processing abilities, including Joint BCPs.

This action could be very useful to dispel any doubts about the operations and efficiency of Joint BCP. As the practice is till not widely diffused, it is necessary to select very well, so that the field visit does not become a boomerang.