

Operational benchmark comparing lead times, freight rates, container specifications, and port gate throughput across North-South corridors linking Caspian ports to Russian regional distribution hubs.

1. COMPARATIVE TRANSIT CORRIDOR MATRIX

Tradeoff evaluation across Road, Maritime Ro-Ro, and Rail routes connecting Iranian origins to Western/Southern Russia.

Corridor / Route	Transit Mode	Avg. Lead Time	Estimated Freight Rate	Border Congestion Risk	Best Suited For
Astara – Baku – Dagestan <i>(Overland Highway)</i>	Reefer / Dry Truck (TIR)	5 – 8 Days	\$3,200 – \$4,500 / Truck	HIGH (Seasonal Queues)	Urgent fresh produce (tomatoes, cucumbers), fast-moving packaged goods.
Anzali / Amirabad – Astrakhan <i>(Maritime Sea-Freight)</i>	Container Vessel / Ro-Ro	10 – 14 Days	\$1,800 – \$2,400 / 40ft Container	LOW (Predictable)	Bulk shelf-stable foods, aseptic tomato paste, industrial polymers.
Amirabad – Makhachkala <i>(Short-Sea Direct)</i>	Dry Bulk / Container Ship	7 – 10 Days	\$1,600 – \$2,100 / 40ft Container	LOW (Fast Clearance)	Canned goods, dried fruit, industrial packaging materials, jumbo bags.
Eurasian Eastern Rail <i>(Incheh Borun – Russia)</i>	Standard / Covered Railcars	14 – 20 Days	\$42 – \$58 / Metric Ton	MEDIUM (Gauge Shift)	Heavy bulk liquids, petrochemical lubricants, paraffin wax, raw chemicals.

2. FLEET & CONTAINER SPECIFICATIONS FOR CASPIAN ROUTES

Equipment requirements and temperature/humidity parameters mandated for Caspian sea transits and Russian railway integration:

A. Dry Box Containers (20ft / 40ft High Cube) Target Cargo: Canned food, dried fruits/nuts, plastic preforms, corrugated cartons. Caspian Standard: Must meet CSC safety approval for sea stacking. Heavy desiccants (dry-packs) are mandatory during autumn/winter transits across the Caspian to prevent condensation damage ("cargo sweat").
B. Reefer Containers (40ft High Cube Reefer) Target Cargo: Fresh tomatoes, cucumbers, potatoes, chilled meats. Technical Mandate: Integrated Genset (generator set) required for overland road legs. Pre-cooling to target temperature (+2°C to +8°C for produce, -18°C for meats) prior to loading is strictly required by Caspian vessel operators.
C. Aseptic Flexitanks & ISO Tank Containers Target Cargo: Bulk tomato paste, industrial lubricants, process oils. Operational Rule: Food-grade multi-layer PE flexitanks with EVOH oxygen barriers permitted in 20ft dry boxes. Lubricants require chemical-grade ISO tanks or heavy-duty steel drums palletized on ISO-certified wooden pallets.

3. RUSSIAN ENTRY PORTS & DESTINATION RAILWAY TERMINALS

Operational profiles, channel draft limits, and customs processing capacity at key southern entry gateways into the Russian Federation:

Astrakhan Sea Port (SEZ Lotus)

Volga-Caspian Channel: Draft limited to 4.2 meters; vulnerable to winter ice conditions (Dec–Mar).

Customs Posts: Olya Customs Post & Solyanka Terminal. Specialized in containerized food and industrial cargo.

Rail Integration: Direct connection to Russian Railways (RZD) network heading to Moscow & Central District.

Makhachkala Commercial Port

Navigational Edge: Deep-water ice-free port year-round. Draft up to 6.5 meters accommodating larger vessels.

Cargo Focus: Ro-Ro trucks, grain, bulk liquids, heavy industrial equipment, and containerized chemicals.

Logistics Reach: Immediate highway link to North Caucasus and southern Russian distribution centers (Rostov/Krasnodar).

4. KEY DESTINATION CUSTOMS & LOGISTICS TERMINALS IN RUSSIA

Terminal / Destination Hub	Region / City	Primary Cargo Handled	Customs Clearance Capacity
Kresty / Bekasovo Logistics Hub	Moscow Region	Ambient foods, packaged consumer goods, plastics	High-capacity automated EAEU customs clearance terminal with bonded warehousing.
Vorsino Freight Village	Kaluga Region	Containerized rail freight from Caspian ports	Direct multimodal rail head; specialized in fast-track industrial and chemical clearance.
Krasnodar Distribution Terminals	Southern Federal District	Fresh produce, bulk agri-products, fertilizers	Outfitted with large-scale cold-storage inspection facilities for Rosselkhoznadzor checks.