

## MEMORANDUM

RE: A New system to move containers from the Ports of Los Angeles and Long Beach inland

To: Hassan Ikhata, Executive Director, Southern California Association of Governments

From: Thomas Buckley, Principal, The Buckley Company

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### OVERVIEW

For decades, the twin Ports of Los Angeles and Long Beach have served as primary import entry points for goods from Asia. As the amount of imported goods exploded over the past 20 years, the movement of the containers inland to their final destination has become more and more time consuming, more and more expensive, and has had more and more of a deleterious impact on the transportation infrastructure designed to serve all southern Californians.

A number of solutions have been proposed to this problem, some of which have at least in part been implemented. However, no single comprehensive solution has been able to garner enough political, public, and business community support to truly tackle the problem.

Short line rail? Not cost-effective.

Dedicated truck lanes to carry containers inland? Expensive and environmentally suspect.

Now, however, we believe we may have found a solution that combines the best aspects of a number of previous proposals by using a new technology to move containers inland inexpensively and carefully while significantly reducing freeway usage and having few environmental impacts.

### MECHANISM/CONCEPT

Imagine if you will a conveyor belt. Now imagine instead of the conveyor belt having a flat surface on which items can be placed it is fact made up of a continuous line of hooks designed to have individual platforms attached. (This is somewhat analogous to a cable car, though while a cable car grabs a moving cable below it the hooks would “grab up” to move the platform.)

On this line of hooks (either a single line of two parallel lines) platforms would be placed and shipping containers would then be attached to each platform. This “hook rail” system would be a continuous loop running from the ports through the Vernon area and then head east through Industry into the Inland Empire and back. At three or four pre-determined “stations” (such as Vernon, Industry, Ontario, etc.) the containers would exit the main loop and be attached to a

waiting truck to be moved the last few thousand feet or so. (The containers would be tagged upon placement on the system and automatically shunt off of the main loop at their destination).

The loop route would be elevated and could follow, roughly, the 710 or 110 freeways, the port rail lines, or, potentially, be built in the bed of the Los Angeles and/or San Gabriel Rivers.

This concept would accomplish a number of goals, including:

- Cost Savings – Far less would need to be spent on fuel, drivers, trucks, and truck maintenance
- Environmental Sensitivity – The system would be electric, eliminating any at-site emissions
- Freeway Capacity Expansion – The thousands of truck currently moving containers inland would simply disappear, freeing up a significant amount of space for other traffic on the already over-burdened freeways
- Consistency – Currently thousands of man hours and tens of millions of dollars are wasted each year due to traffic issues, issues that would simply not impact the system

While we believe the concept to be sound and exciting, the technology needed to implement the plan needs significant development, essentially from scratch. Therefore we are seeking assistance to mature the concept and complete a preliminary feasibility/viability study. The study would address both technical and potential systemic issues, including gauging public/stakeholder support, costs, planning, routing, etc.

Thank you for your time and consideration.

Thomas Buckley  
The Buckley Company

## California Sustainable Freight Action Plan: Pilot Project Ideas

### Submission for Consideration

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An electrified continuous loop dedicated track shipping container conveyor system.

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The system would run from the twin port complex north to approximately south Los Angeles and then turn east ending approximately in the Ontario area before looping back on an immediately parallel path to the twin port complex. Determining the exact latitude and longitude of each point on the system is not feasible at this time.

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Imagine if you will a conveyor belt made up of rollers. Now imagine the conveyor belt having hooks below interspersed in either one or two continuous lines amongst the rollers. Individual platforms would be placed on the conveyor system and attached to the hook system with a shipping container then attached to each platform.

This “hook rail” system would be a continuous loop running from the ports through the Vernon/south Los Angeles area and then head east through City of Industry into the Inland Empire and back. The containers would be digitally tagged upon placement onto the system (similar to how containers are currently placed on long-haul trains) and automatically shunt off of the main loop at three or four pre-determined “stations” (such as Vernon, Industry, Ontario, etc.) where they would meet a waiting truck to take them to their final local destination. Containers – empty or full (hopefully!) - would also be able to be placed onto the system at the shunt points for travel back to the ports for re-use or shipping.

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The fully-electrified hookrail concept is a green concept. Initial estimates show that the system could take up to 3 million trucks off of the southern California highway system, reducing pollutant emissions considerably. There would still be the need of local trucking to and from the exit/shunt points, but the ability of a truck to make a dozen or so local deliveries rather than just two or three round-trips to/from the ports would save fuel, time, truck wear, etc. (One note – the system would still “use” about the same number of trucks – and drivers – as currently required. They would just be used more efficiently.)

As to the incorporation of advanced technology, the majority of the physical infrastructure is, for lack of a better term, quite analog – concrete, rollers, hooks, metal, electric motors, etc. However, the operational system required to coordinate the split-second timing of putting containers on the system,

making sure they exit at the correct point, making sure the truck is there to deliver the container to its final destination, etc. will require one of the most sophisticated “just-in-time” information control systems ever.

Alternative fuel uses would be incorporated through the electricity used to operate the system (which could – and should – run 24 hours a day, thereby accessing less-expensive and oft-underused nighttime electricity output) and could be integrated into the “final mile” transport side (trucks that do not have to use the freeway can more efficiently access different fuels, different designs could be created, etc.).

As to local economic development, the potential benefits are clear and significant. From increased commercial development in the vicinity of the shunt points to traffic impact savings to ease of use, the system could have major local and regional impacts. A major part of the benefit is that modern warehousing systems, for example, operate on very tight timelines, timelines that can be seriously jeopardized by an accident on a local freeway, heavier than normal traffic, etc. As the system would eliminate those issues, the warehousing/re-packaging/delivery goods movement segments would become more efficient and reliable and be able to amortize that new consistency.

The project would completely transform the freight infrastructure of southern California and dramatically increase its efficiency, its future global competitiveness, and reducing emissions all at once.

Currently, while most containers off-loaded at the ports end up on long-haul trains or other forms of transport to head out to the rest of the country, a very significant percentage (roughly 25-30 percent) “stay local,” either for direct regional use or for “just-in-time” warehousing/repackaging. It is this segment – millions of containers each year, chewing up millions of freeway miles – that would be served by the project

Overall, this concept would accomplish a number of goals, including:

- Cost Savings – Far less would need to be spent on fuel, trucks, and truck maintenance
- Environmental Sensitivity – The system would be electric, eliminating the vast majority of at-site emissions
- Freeway Capacity Expansion – The thousands of truck currently moving containers inland would simply disappear, freeing up a significant amount of space for other traffic on the already over-burdened freeways
- Consistency – Currently thousands of man hours and tens of millions of dollars are wasted each year due to traffic issues, issues that would simply not impact the system as it would run essentially both around the clock and on autopilot.

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This submission is for a phase one pilot feasibility study. Estimating the cost of actual construction and final implementation – and estimating the revenues it would generate (each container would be charged a fee to access the system, a fee that would in fact save money for the shippers, forwarders, end-users, etc. per previous SCAG studies in relation to dedicated truck lanes) is at this moment impractical. However, we believe that this system could not only pay for itself through per-container tolls but even possibly contribute additional funds back to various agencies.

That being said, we have created a detailed budget for the initial study:

We would hope that all tasks – including a final Phase One description and “next steps” document - would be complete in about seven months.

Not including overhead/project management, there would be a number of tasks undertaken and completed, with the results of each discrete task incorporated into the final “going forward” document/plan.

These tasks would include:

- Engineering Study – The Leonard Center at CSU-San Bernardino has been contacted on the project in the past and would be tasked with an initial engineering feasibility study - \$100,000
- Design/Aesthetics – The Katalyst Group would be tasked with creating an outline concerning the aesthetics of the project and how best to work with and incorporate it into local communities - \$12,000
- Public Relations – Clearly, the project would need an overall public/government agency outreach program if it is to be successful. A number of firms have already been contacted and would be interested in carrying out such a task, though we would be absolutely open to taking input from CARB and/or SCAG prior to making a final choice - \$15,000
- Industry Outreach – Mick Fountain, an internationally known worldwide leader in international shipping who has worked with private firms and public groups such as the CFIE – has been contacted regarding the concept and would be tasked with working with various stakeholders in the shipping industry - \$15,000
- Port/Labor Outreach – Clearly, such a project must involve – from its inception – input from regional agencies such as SCAG, CARB, and, most importantly, the twin Ports. It must also involve ongoing input from various labor organizations even though the project is not expected to negatively impact the members of such organizations - \$17,500
- Legal – Self-explanatory - \$25,000
- Economic Impact Study – We would expect to use a major regional firm but would be happy to entertain suggestions - \$20,000
- Initial Environmental Impact Outline – Obviously, if and when the project comes to complete fruition various local, regional, state, and federal requirements would have to be met, it would be best to have an outline of all potential impacts and issues the project could face. It would also discuss the reductions in greenhouse gasses and other positive climate impacts. We would expect to retain The Sauls Group, a firm that has a long-established reputation for excellence in the field - \$18,000
- Land Use – A number of firms have been informally contacted regarding the project. A report from this vendor would include a number of items, including a determination whether or not the project could be integrated into any on-going or future TOD and/or work-live projects - \$20,000
- Modeling – Once the initial engineering study has been completed, we would envision the creation of both a system-wide computer model and a small-scale physical model of how it could best operate - \$32,500

As to overhead/project management, we expect the total cost – including approximately 140 (at \$120 per hour) hours per month of labor, plus general expenses, etc., to be \$120,000.

Therefore the total feasibility study project would cost \$395,000.

Upon the completion of the initial studies/phase one we would create a final report and present said report as requested. We would then move forward into Phase Two.

While there are no other existing funding commitments, a number of regional and industry stakeholders have been informally consulted on the concept and have expressed interest in participating in further studies and actions.

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This initial study should take about seven months. The results of the study would set the “going forward” final timeline.

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Progress is measured by successful completion of each task noted above in the appropriate timeframe, including the creation of the final initial report and its presentation to the appropriate agencies and stakeholder groups.

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The concept has been socialized amongst key SCAG staff and the cooperation and support of CARB and the twin ports would be both actively sought and crucial to its success. We would also consult with CALTRANS and other key stakeholders, including labor organizations, local governmental and regulatory authorities, and potential industry partners.

Without question, the project would work best as a full-realized PPP, from planning to funding to implementation.

We would like to thank you for this opportunity to present what we believe is a truly revolutionary concept that could transform the goods movement sector in southern California.

DRAFT

### **Proposed Hook-Rail Initial Phase One Budget and Timeline**

Along with the overall concept document, we have created an initial budget and timing outline.

We would hope that all tasks – including a final Phase One description and “next steps” document - would be complete in about seven months.

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Thank you for your consideration.