Summary of Initial Recommendations

Our Subcommittee has defined two critical goals and the strategic tasks that must be executed for each goal:

Goal 1. Design recommendations to use IT to *enhance the competitive resilience of the national supply chain and to help advance a sense and respond capability to address system-wide risks* and challenges in as near real time as possible.

Strategic Tasks:

A. We propose the creation of an **Information Architecture/Design Template for an Executive Supply Chain Dashboard** that can serve as a basis for further development and be used to solicit inputs from stakeholders.

> *Next Step:* Will work with DOC IT unit to develop a design template to visualize the content and operations of an Executive Dashboard.

B. We have also consulted with non-traditional actors in this space, particularly providers of real time supply chain wide threat intelligence and believe that an important part of any Dashboard development should include a **Virtual National Supply Risk Center** functionality capable of streaming real time threat data and analysis to key supply chain leadership communities.

> *Next Step:* Will survey security threat service providers to better understand their services being offered and to obtain business models for implementing an unclassified system in the public sector and a shared service for the private sector. Our end goal: Recommend that the Secretary of Commerce create a "Risk Services Market Place" where "real time risk alerting" companies and other government agencies, like NOAA, can offer information that will help U.S. companies' and infrastructure asset holders to develop supply chains that are more resilient/competitive; and where companies and groups could gain volume discounts for those services.

C. We also propose a **Survey of Third Party Logistics Providers (3Pls)** in order to capture data on national and international origination/destination flow efficiencies in the supply chain that can feed a **National Supply Chain Network Map** functionality of the Dashboard; and to form the basis for supply chain streamlining improvements.

> *Next Step:* Will follow-up with DOT to further study research conducted on networks in other markets, such as Canada, to better understand commodity flow efficiencies and to contact 3PLs to gather better ways to understand movement of goods within the

United States and the connections to global supply chains. We will also explore how this information can be overlaid onto DOT's intermodal GIS transportation map.

Rationale:

There is currently no source of unified information and analysis about the national supply chain and its web of key assets, inter-modal interactions and associated financial and information flows.

The sub-committee has focused on defining a basic design and information architecture for an Executive Dashboard that can provide public and private sector supply chain leaders with a common view into the critical commodity flows, infrastructure elements and overall performance metrics that define the end to end operational throughput and efficiency of our national supply chain.

Toward that end, we have consulted with senior officials and technical experts in Treasury, DOT, CBP, and the manufacturing and logistics community to gain insights into framing the appropriate design requirements for such an Executive Dashboard. We have begun to inventory and catalogue current and potential data feeds from government and private sector sources that could build a Common Operating Picture (COP) of the national supply chain.

This Common Operating Picture needs to include not only the aggregation of supply chain data across agencies related to trade/ freight flows, infrastructure and standards/policies but also a real-time functionality for situational awareness/ risk analysis. Streaming information may include more generalized alerts about natural hazard, incident/accident, political risks, etc. as RSS feeds to institutional subscribers; or highly specific and localized alerts based on subscriber profiles. For example, real-time threat data could be broadcast to the whole community of port operators in the U.S., as well as tailored alerts could go to a single port or even specialized functional roles within that port based on its unique geographic and risk profile. Commercial automated data aggregation and analytics technology is already in widespread use and many corporations and agencies are reliant on these types of alert systems today.

We are proposing a higher level concept of risk alerts/ assessments that could establish a common national delivery service for trade corridor-wide alerts; that could leverage the collective buying power of classes of national supply chain actors e.g. county and state development authorities, ports, airports, 3Pls, etc. to set up a highly efficient, private sector-managed alert system for "National Supply Chain Situation Awareness".

Questions on feasibility, hosting, confidentiality of information and competitive advantage issues will need to be addressed in the future.

In the interim, staff has asked the DOC information office to develop an online template to show how stakeholders could obtain information about potential disruptions to their supply chains. This template could be linked to the current website export.gov which is already seeking to develop a “one-stop” portal that companies could use.

A pilot for this risk information could focus on certain airports and ports, and/or possibly truck hubs. Also, specific cross-border areas such as Laredo (with Mexico) or Windsor/Detroit (Canada) could be considered.

The risk information can be provided to stakeholders in multiple levels. Level 1 could provide the general public some general situational awareness information (macro risks). Level 2 could enable registration of assets/provide risk information at the geocode level (to zipcode level/street level) to those stakeholders willing to pay for this specificity. Vendors able to supply this risk information could provide this information at a volume or institutional discount to pools of stakeholders. Interested stakeholders for this detail level could be from individual ports, airports, associations that represent multiple ports, CT-PAT members. In addition, organizations along entire trade corridors could pool resources to obtain alerts about risks along the latitude/longitude encompassed by the corridor.

Having this risk center information will give companies an early warning system that can help them trigger contingency plans for response to disruption (looking at this tool as reactive) but also companies can use this information to optimize supply chains for the movement of goods and services more efficiently/competitively (they can apply this tool in a proactive manner).

[As a follow-up to the Advisory Committee on Supply Chain Competitiveness meeting and proposed recommendation from the IT & Data Subcommittee, an alerting company-NC4- presented a brief overview to staff on how this could be done]

Goal 2. Design recommendations to use IT to *accelerate the speed and efficiency of trade flows between the U.S. and its commercial international partners; urgently complete the technical architecture and deployment of the ITDS/Single Window facility*; and help implement a U.S.-led set of Electronic Single Window specifications across the emerging Global Free Trade Community in support of the President's Export Promotion Goals.

Strategic Tasks:

We propose standing up a White House-sponsored technology and policy "SWAT Team" to complete the ITDS/Single Window by- at the latest - December 2015. This team would have multiple objectives and tasks:

A. Conduct a rapid review of requirements and update/refine based on new Free Trade Agreement and Export Promotion mandates. Tease out implications of regional free trade zones and regional electronic single windows for ITDS. Position the U.S. government to promote unifying IT trade facilitation system standards worldwide.

B. Speed up the technology build-out of the ITDS and leverage not only new rapid development methodologies but also best practices in information exchange and accompanying incentive structures for broad agency/industry participation gleaned from world class providers such as Singapore.

C. Untangle and de-risk the process steps involved in OMB information gathering approvals and other roadblocks to rapid implementation by as many of the 47 participating government agencies as possible within this time period.

Rationale:

The White House is the only entity that has the ability to bring 47 agencies together to make this system work. It is already involved with ITDS via the National Strategy for Global Supply Chain Security (NSGSCS) and we are suggesting there is a logical extension of what is being done in the NSGSCS committee to help the "SWAT Team" to accomplish ITDS in a shorter timeframe.

Please note: The subcommittee also held interviews with government officials and business representatives on various issues, including development of electronic filing systems in the United States and abroad, reduction of duplicative reporting efforts by agencies, and security concerns that impact the supply chains, which served as the foundational research underpinning our preliminary findings and recommendations.

1. Create an Information Architecture/Design Template for a National Supply Chain Executive Dashboard

There is currently no example of such a national supply chain dashboard that the subcommittee has found through extensive research. At a minimum, taking a dashboard design approach provides the opportunity to think through the information needs of major national supply chain stakeholders. At the outer boundaries of this approach, we might be able to create an innovative mechanism (e.g., portal dashboard—again this is just blue sky thinking at this point) for national supply chain collaborative planning between the public and private sectors.

- **Proposed actions (to enhance competitiveness)**

  Near term: Introduce three-tier approach: 1) Strategic approach to find ways to improve the competitive network analysis; 2) Tactical approach to find ways to share more information in real-time; and 3) Conversational approach to offer forums where stakeholders can chat about decisions or policies that impact supply chain activities.

  Long term: For the Strategic approach, the IT&D subcommittee recommends that 3PL companies are surveyed to improve the trade commodity flows information for major trade corridors within the United States and between the United States and key overseas hubs or nodal destinations. For the Tactical approach, the IT&D subcommittee recommends developing an information clearing house that provides various types of information, including information on supply chain-related legislation/standards development progress, indices of supply chain mode performance, intelligent transport system updates; and the Risk Center functionality described previously. For the Conversational approach, the IT&D subcommittee recommends that the chat room provides a social platform for government interaction with industry and industry interaction with other industries that directly or indirectly link to their industries, but also provides other concerns.

- **Economic or operational impact (quantified in terms of cost, speed, safety/security, and reliability, or some subset of those measures)**

  Enhanced real-time supply chain reliability and predictability, accelerated supply velocity, reduced costs, better policy making with direct input by expert stakeholders

- **Target audience for recommendation and action plan:**

  Manufacturers/Service Providers, Importers/Exporters, Transport Infrastructure Planners/ Developers/Owners

- **Additional resources needed to achieve solutions:**

Federal, industry, public-private partnerships

- Competitiveness Enhancing Factors

□ Predictability
□ Cost
□ Ease of movement
□ Safety/Security
□ Speed/efficiency
□ Technology enabled

2. Survey Third Party Logistics Providers (3PLs) to capture data on national and international origination/destination flow efficiencies in the supply chain and create a National Supply Chain Network Map

3PLs are the best resource for mapping capability for intermodal freight flows and flow thru speeds that link the various modes both nationally and internationally. They provide many different types of commodity information that pertain to various sectors, including manufacturing, mining, wholesaling, and retailing. They are also the only ones that can better capture freight movements of goods within the United States by foreign companies. Canada has already engaged their 3PL Community in similar flow analyses.

- **Proposed actions (to enhance competitiveness)**

Near term: Define information fields that could be used for sampling less than ten 3PLs companies and then conduct the interviews to define possible areas of cooperation, a consensus portfolio of metrics to measure and organizational arrangements for sponsoring/staging/ scaling a 3PL industry-focused survey.

- **Economic or operational impact (quantified in terms of cost, speed, safety/security, and reliability, or some subset of those measures)**

Enhanced real-time supply chain reliability and predictability, accelerated supply velocity, reduced costs, better policy making with direct input by expert stakeholders

Target audience for recommendation and action plan:

3PLs providing service to manufacturers, importers, exporters

- **Additional resources needed to achieve solutions:**

Federal and private sector service providers

- Competitiveness Enhancing Factors

□ Predictability

- ❑ Cost
- ❑ Ease of movement
- ❑ Safety/Security
- ❑ Speed/efficiency
- ❑ Technology enabled

3. Incorporate a Virtual Supply Chain Risk Center component to the Executive Dashboard that is capable of streaming real-time threat data and analysis to key supply chain leadership communities.

Improving the awareness of potential or real disruptions to a company's supply chains is critical to the vitality of its operation as a whole and to the economy, as a whole. By sharing relevant risks to critical infrastructure and continuity of operations more quickly will reduce the impact of the crisis and minimize costs to address the situations. There are several companies that offer mature risk center services that could be evaluated/incorporated into the Executive Dashboard functionality. In addition, we have documented some of the existing public and private sector data feeds that could support the real time information environment of the risk center:

-The Office of the Director of National Intelligence (ODNI) has launched a technology suite of capabilities to support analysis related to supply chain risk management (SCRM) and promote innovative information sharing among Intelligence Community professionals and non-title 50 Agencies whose purpose is to defend, deter, and protect American interests against hostile national security threats.

-DHS already pushes out a variety of real-time threat, emergency, and business continuity alerts to supply chain firms – immediately - through a variety of email, SMS/text, and wireless alerts, and at no charge.

-CBP has an Unified Business Resumption Message alert email service that (from its website)… "provides the trade and travel community (with) instant alerts and up-to-date information if an event occurs that could delay the flow of trade through a Port of Entry. (Users can) find out what ports are affected, alternative routes, and projected disruption periods automatically." Business resumption alerts are available for maritime, air, northern border highway, northern border rail, southern border highway, and southern border rail. I'm a subscriber to these alerts. A description is available at http://www.cbp.gov/xp/cgov/trade/trade_outreach/bus_resumption/.

Sign-up information for this and other alerts is at: https://public.govdelivery.com/accounts/USDHSCBP/subscriber/new .

- CBP also sends immediate alert emails – and in some cases SMS/text and/or wireless messages that provide companies/users/subscribers with such information as:

- emergency information and advisories
- border fence breach data
- cargo systems information messaging for such issues as ACE portal accounts; air, ocean, truck and rail manifests; and Automated Broker Interface. (This last

messaging appears to be only for changes to filing and system status requirements.)

- FEMA provides wireless emergency alerts to those who sign up for their alert service, with information including:
  - Extreme weather and other threatening emergencies in subscriber area
  - AMBER Alerts
  - Presidential Alerts during a national emergency

- Approved / vetted private sector subscribers and national infrastructure protection stakeholders can participate in a special Communities of Interest (COI) section of the Homeland Security Information Network (HSIN), including an HSIN Critical Sector COI. These firms can download information in near-real time on homeland security-type events (attacks, hurricanes, etc.) and emergency response and restoration activities. More information is available through DHS.

-Private sector organizations, such as NC4 and Resilinc, have well developed real time corporate supply chain risk threat assessment systems offered as subscription services.

- **Proposed actions (to enhance competitiveness)**

  Near term: Meet with current/potential supply chain security threat/risk information providers to determine key elements for inclusion in Executive Dashboard and to find out what it would take to implement an unclassified system for public/private sector sharing potential or real security threats.

- **Economic or operational impact (quantified in terms of cost, speed, safety/security, and reliability, or some subset of those measures)**

  Enhanced real-time supply chain reliability and predictability, accelerated supply velocity, reduced costs, better policy making with direct input by expert stakeholders

- **Target audience for recommendation and action plan:**

  Security threat risk providers in the public and private sector

- **Additional resources needed to achieve solutions:**
  Federal and private sector service providers

- Competitiveness Enhancing Factors

❑ Predictability
❑ Cost
❑ Ease of movement
❑ Safety/Security
❑ Speed/efficiency
❑ Technology enabled

4. Create White House-sponsored technology and policy "SWAT Team" to work with CBP and the other 46 agencies to complete the ITDS/Single Window electronic filing system by at the latest December 2015.

Customs and Border Protection (CBP) has been developing the Single Window system for more than 15 years. Current statements from CBP officials estimate the system to be completed within the next 39 months. Private sector companies suggest the system needs to be completed more quickly, by at the latest December 2015. The White House will need to work with agencies-and co-test each iteration of the system with private sector lead users- to adopt this system in this new time frame.

- **Proposed actions (to enhance competitiveness)**
  - Near term: 1) Expedite the implementation of full U.S. Single Window capabilities and better reach the goals of the National Export Initiative through White House establishment of a Task Force to work with CBP to develop a Single Window system by the end of 2014; 2) Conduct a rapid review of requirements and update/refine system specifications and roll out plans based on new Free Trade Agreement and Export Promotion mandates. Tease out implications of regional free trade zones and regional electronic single windows and position the U.S. government to promote unifying IT trade facilitation system standards worldwide; 3) Speed up the technology build-out of the ITDS and leverage not only new rapid development methodologies but also best practices in public/private sector information exchange and accompanying incentive structures for broad agency/industry participation gleaned from world class providers such as Singapore's Trade Net System; 4) Launch highly targeted simplified and easily implemented pilot phase (6-9 months) based on parameters agreed to by the White House, which includes engaging inter-agency group to create Service Centers of Excellence at the chosen sites to assist in designing a highly simplified set of data requirements, reduce inspection delays and accelerate processing of imports/exports and engaging a Steering Committee led by co-chairs, with one chair from the trade community and one chair as a White House designee, to ensure that CBP maintains the managerial/technical talent necessary for completing the pilot and scale up phases of the ITDS in an accelerated schedule; 5) Launch an 18-month scale up phase to deploy ITDS

as an inter-agency and public/private partnership model to be used across the whole network of U.S. ports, airports, rail and truck import/export clearance sites; 6) Untangle and de-risk the process steps involved in OMB information gathering approvals and other roadblocks to rapid implementation by as many of the 47 agencies as possible within this time period; 7) Survey trade community to determine priority ranking of the top 5-15 agencies to focus on completing the implementation/integration process first.

- Mid-to Long term: 1) Select 3 industries to pilot an integrated National Service Center of Excellence approach to manage all trade interactions with the federal government. The National Service Center will bring together government and industry stakeholders for policy/regulation coordination; to support priority commodity value-stream mapping and process reengineering work; to focus on processes/engagement from the community to ensure incremental and continuous improvement; and crucially, to assist GUI/data field development.

There are some major challenges at the implementation level:

1. Cybersecurity. While the current system has its own security components – anything installed by the government over the last 20 years has incorporated various aspects of cybersecurity. Moving to an interim UML-based information model will require the trading authorities to agree on the necessary cybersecurity requirements on the interfaces. We know there will be a lot of posturing that takes place, but everyone should have a common objective in this area that will drive them to an agreement on the necessary levels for cybersecurity across the various systems platforms.

2. Data sharing. We know that the trading community is wary of having data shared between agencies, but we need to develop protections so this can occur. The alternative is too costly cumbersome trade. The single window system developed in Singapore highlights it can be done and goes way beyond mere data sharing into a single, common data set. **Singapore, have used its online Trade Net system since 1989 to provide the trading community with an electronic means of submitting trade documents to all relevant government authorities (Singapore customs and the controlling agencies can obtain permits from the applicable 12 agencies within ten minutes).**

3. Middleware Development**.** At the tactical level of border trading system development and deployment, the information technology function is key. Currently, the United States has a huge problem since its diverse systems cannot share information. Intermediate data models (possibly based on Unified Modeling Language or UML) need to be constructed so that interfaces can be built. This will enable a trading partner to make

one entry, regardless of the system, that can be ported to all of the other systems they need to interact with. This is the only way to approach implementing a single-window system aside from scrapping all previous work and starting over. Future trading systems that conform to the UML models will move us closer to a true single-window system in the future. Some in the trading community already incorporate Digital Imaging and Communication for Security (DICOS) which is already bought and paid for by the government. Specifically, DICOS represents the same kind of middle-ground model that should be considered as a solution to the current array of diverse trading systems. And, DICOS is designed to negotiate data exchanges between dissimilar imaging and viewing platforms in much the same way you'd expect the trading system of the future to perform.

- **Target audience for recommendation and action plan:**

  Small, medium, and large businesses, manufacturing companies, service providers (including freight forwarders, brokers)

- **Additional resources needed to achieve solutions:**
  White House, Federal, industry, public-private partnerships
  White House needs to work with agencies to adopt processes for Single Window system.

- Competitiveness Enhancing Factors

❑ Predictability
❑ Cost
❑ Ease of movement
❑ Speed/efficiency