Princeton University

Princeton Univ. & FMERA

Creating a World-class Center for

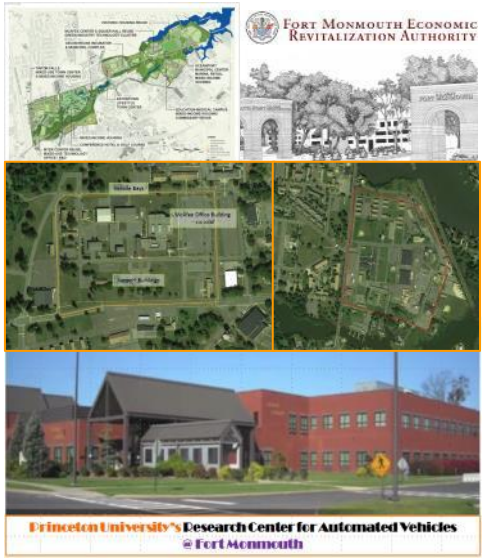
Research, Certification and Commercialization

of SmartDrivingCars

by

ALAIN L. KORNHAUSER, PHD

Professor, Operations Research & Financial Engineering
Director, Program in Transportation
Faculty Chair, PAVE (Princeton Autonomous Vehicle Engineering)
Princeton University



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TRB Automated Vehicle Conference
San Francisco, Ca

July 16, 2014

THE FORT

PAVE PRINCETON AUTONOMOUS VEHICLE ENGINEERING

Why NY/NJ Met Region?

- **Observation:**
  - NY/NJ Region:
    - HQ of Verizon, Prudential Ins., NJM Insurance,
    - NAHQ of: Munich Re, Mercedes, BMW, Subaru, Volvo, Jaguar/LandRover, MobilEye,
    - Home to 40M people with well educated workforce
    - Home of 3 of the nation's 4 largest Transit Systems: MTA, NJ Transit, Septa
    - Economy supported by largest fleet of commercial trucks
- **Action Item:**
  - **Create an environment that is conducive for these entities (and others) to successfully:**

    enhance, test and accelerate the adoption

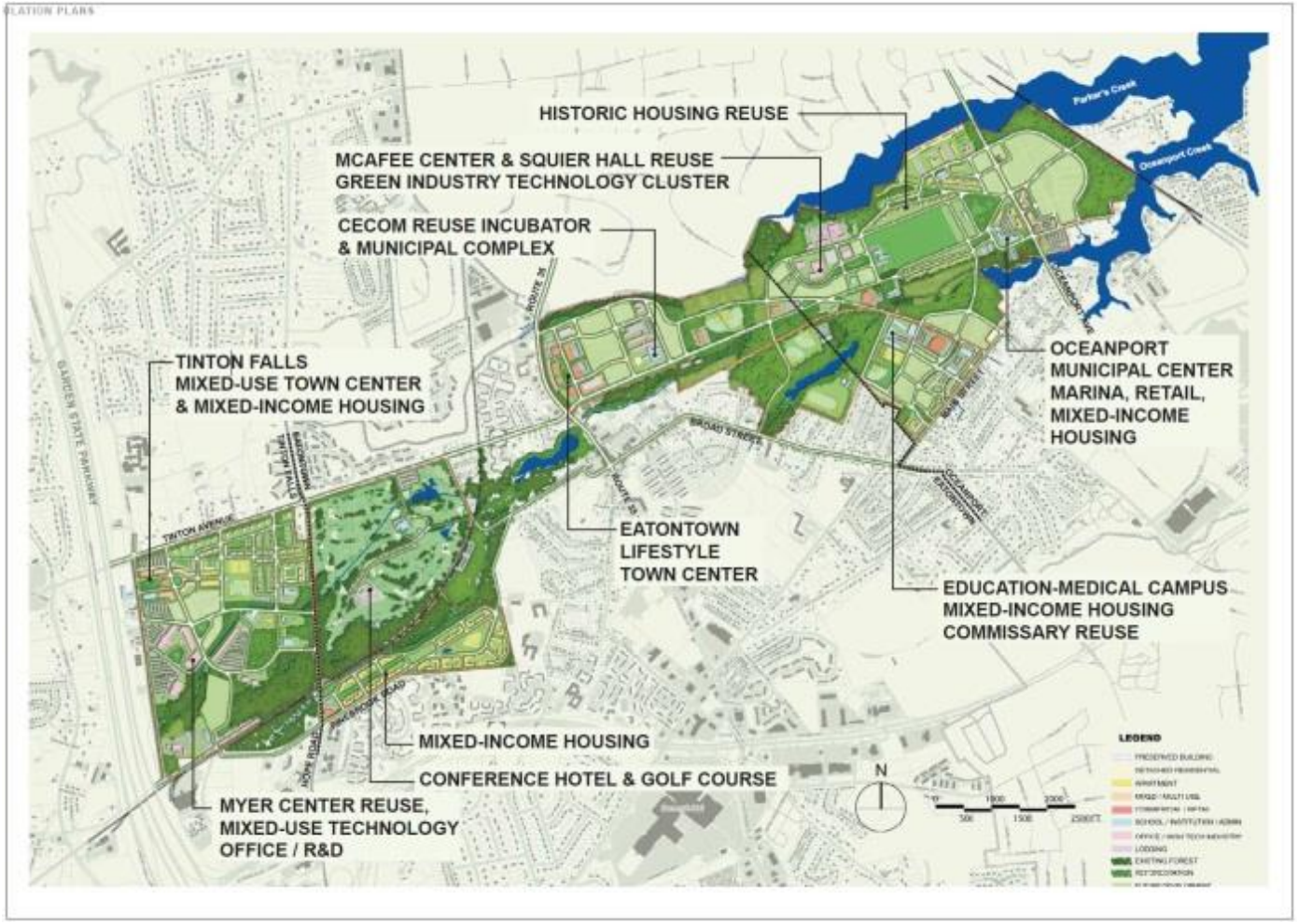
    of their versions of SmartDrivingCars

Autonomous Car Benefits to New Jersey

Amount	Item	Units
-50%	Reduced chance of dying in a car accident	Per Collision Avoidance (Level 2) car
~ 1	Lives Saved	Per 1,000 cars equipped with Level 2 (= # new cars sold each day in New Jersey)
~300	Lives Saved	Per year in NJ (Widespread Level 2 adoption)
-50%	Reduced chance of a collision	Per Collision Avoidance (Level 2) car
~ 1	Injury Avoided	Per 15 cars equipped with Level 2
~20,000	Injuries Avoided	Per year in NJ (Widespread Level 2 adoption)
>$125	Self insurance payments	Per year per NJ driver
>$250	Insurance discount	Per year per NJ driver
$1.25B	Reduced Insurance Claims	Per year in NJ (Widespread Level 2 adoption)
-50%	Reduced Energy	Widespread autonomousTaxi Deployment
-50%	Reduced Pollution	Widespread autonomousTaxi Deployment
Elimination	Road Congestion	Widespread autonomousTaxi Deployment
5X increase	Ridership on NJ Transit	Widespread autonomousTaxi Deployment
1,000	Well-paying jobs	Directly connected with the Center
100,000	Well-paying jobs	Created around the Center to implement Commercialization of the technology

Fort Monmouth

Fort Monmouth



Fort Monmouth

- 1,126 acre former US Army base closed in 2011
- State of New Jersey created Fort Monmouth Economic Revitalization Authority (FMERA)
- Promote, develop, encourage and maintain employment, commerce, economic development, and the public welfare
- Conserve natural resources; and
- Advance the general prosperity and economic welfare of the people in the affected communities and throughout the state.

Fort Monmouth

- FMERA has embraced the vision that Fort Monmouth is uniquely positioned to become the premier east-coast Center for Research, Certification and Commercialization of SmartDrivingCars
- Facilities already in place to host specialized vehicle R&D and internal urban roadway network will support real-world testing

Princeton University's Research Center for Automated Vehicles
@ Fort Monmouth

McAfee Center – 100,000 sf – office and lab space - has anechoic chamber and garage bays large enough to accommodate trucks and buses

FMERA Executive Director Bruce Steadman hosts Princeton/CARTS tour of Fort Monmouth

Unique facilities – McAfee Center - entrance to large vehicle bay

Internal roadway network and authority to create transportation network to test and utilize smartdrivingcars

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PAVE PRINCETON AUTONOMOUS VEHICLE ENGINEERING

Tech giant COMMVAULT has 650,000 SF under construction

Why Fort Monmouth?

- **Observation:**
  - **Ft Monmouth may well be one of the most hospitable sites for various automated vehicle entities to develop, test, certify and commercialize their intentions.**
- **Action Item:**
  - **Create a Testing & Certification Environment for use by Various stakeholders to transition their products from Research to Full Commercialization**

Unique Business Model

- Vehicles last a long time – technology progresses at a faster pace
- Emphasize retrofitting existing and future vehicles with better technology
- Focus on collaboration with many stakeholders
  - Technology suppliers
  - Insurance companies
  - State regulators
  - Vehicle manufacturers
  - Fleet owners
  - Mobile communications providers

The Team

FMERA:

Vision for World-Class Advanced Technology Center @ The Fort

Princeton University:

Facilitating FMERA's Vision with a World-Class

Center for Research, Certification and Commercialization of SmartDrivingCars (&Trucks & Buses) (RCCS) (pronounced "R Sis")

Planning for Participants

Automakers	Suppliers	Facilitators	Insurance	Universities	Public Sector
Mercedes Benz (HQ-NJ)	Continental	Bertram Capital	NJ Manufacturers	Princeton	NJ DoT
BMW (HQ-NJ)	Bosch	Verizon	Ins. Inst. for Hwy Safety	Monmouth	NJ Transit
Subaru (HQ-NJ)	Delphi	AT&T	State Farm	Rutgers	PA NYNJ
Volvo	Texas Inst	DCH AutoGroup	Progressive	NJIT	NJTPA+DVRPC
Ford	autonomouStuff	Google	Munich Re	U of Maryland	FHWA+FTA
Nissan	MobilEye	VisLab	Geico	James Madison	Monmouth County

The McAfee Center and The Fort's Roadways

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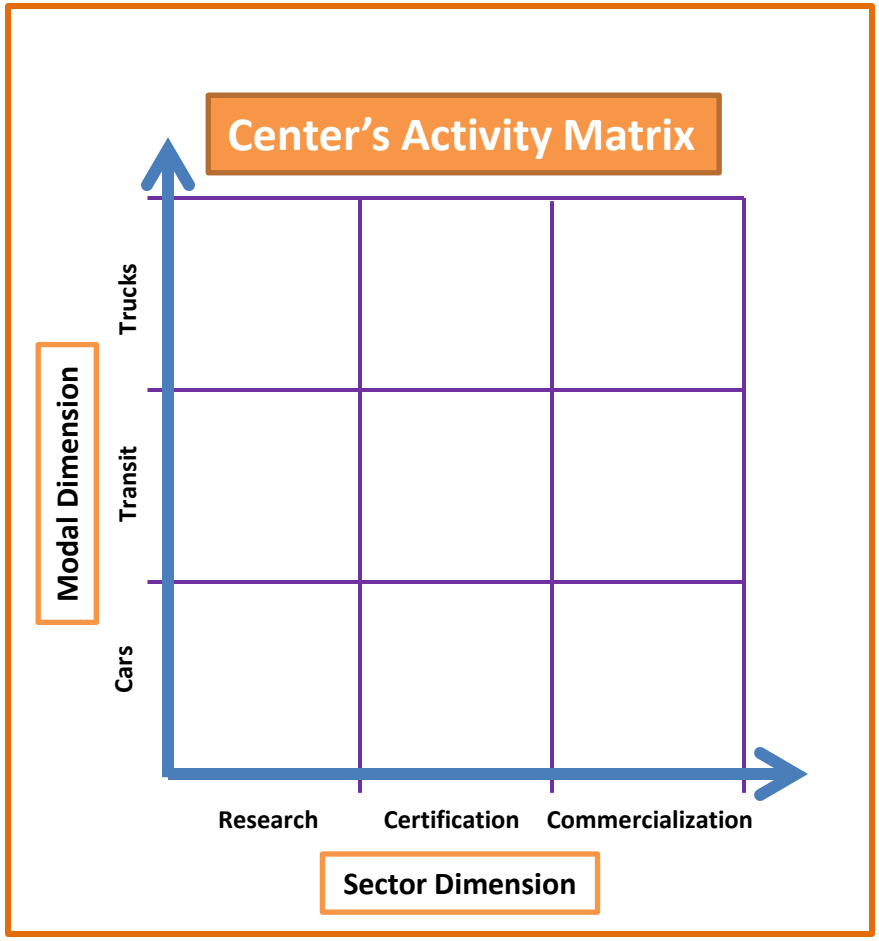
PAVE PRINCETON AUTONOMOUS VEHICLE ENGINEERING


Center's Activity Matrix
Modal Dimension
Trucks
Transit
Cars
Research
Certification
Commercialization
Sector Dimension

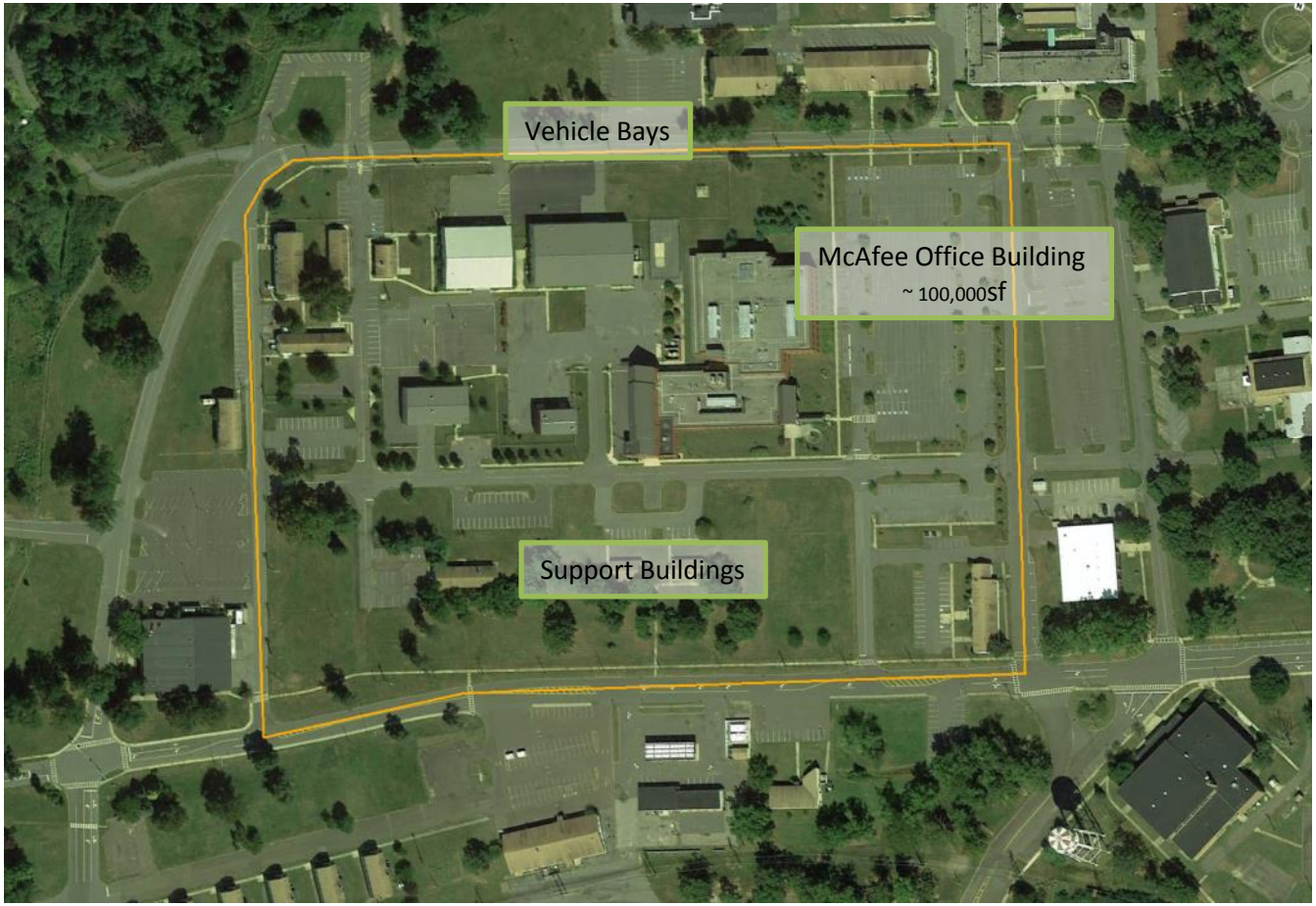
Princeton University

Princeton University Center

for

Research, Certification & Commercialization of SmartDrivingCars (RCCS) at Fort Monmouth

1250’ x 865’ = 25.8 acers



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Research, Certification & Commercialization of SmartDrivingCars (RCCS) at Fort Monmouth

1250’ x 865’ = 25.8 acers

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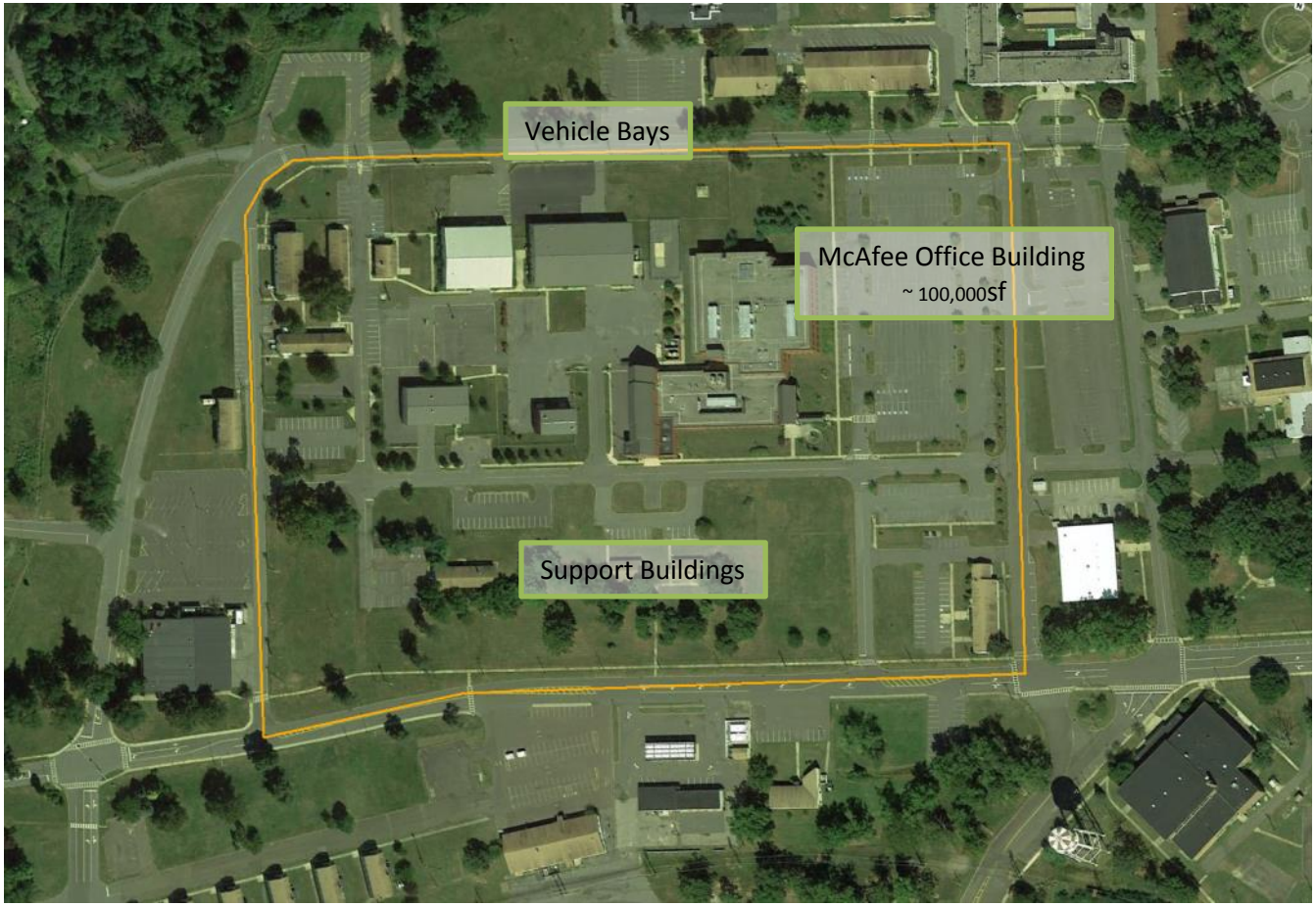
Center for Research of SmartDrivingCars (CRS)
at Fort Monmouth
McAfee Complex

1250’ x 865’ ~ 25.8 acres



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PAVE PRINCETON AUTONOMOUS VEHICLE ENGINEERING

Princeton University

Princeton University
Center for Research of SmartDrivingCars (CRS)
at Fort Monmouth
Exclusive Use Roadways Area

~ 60 acres

THE FORT

PAVE PRINCETON AUTONOMOUS VEHICLE ENGINEERING

Princeton University

Princeton University
Center for Research of SmartDrivingCars (CRS)
at Fort Monmouth
Mixed Use Roadways

½ The Fort ~ 1 sq. mile

THE FORT

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