



Michigan's National All-Domain Warfighting Center (NADWC)

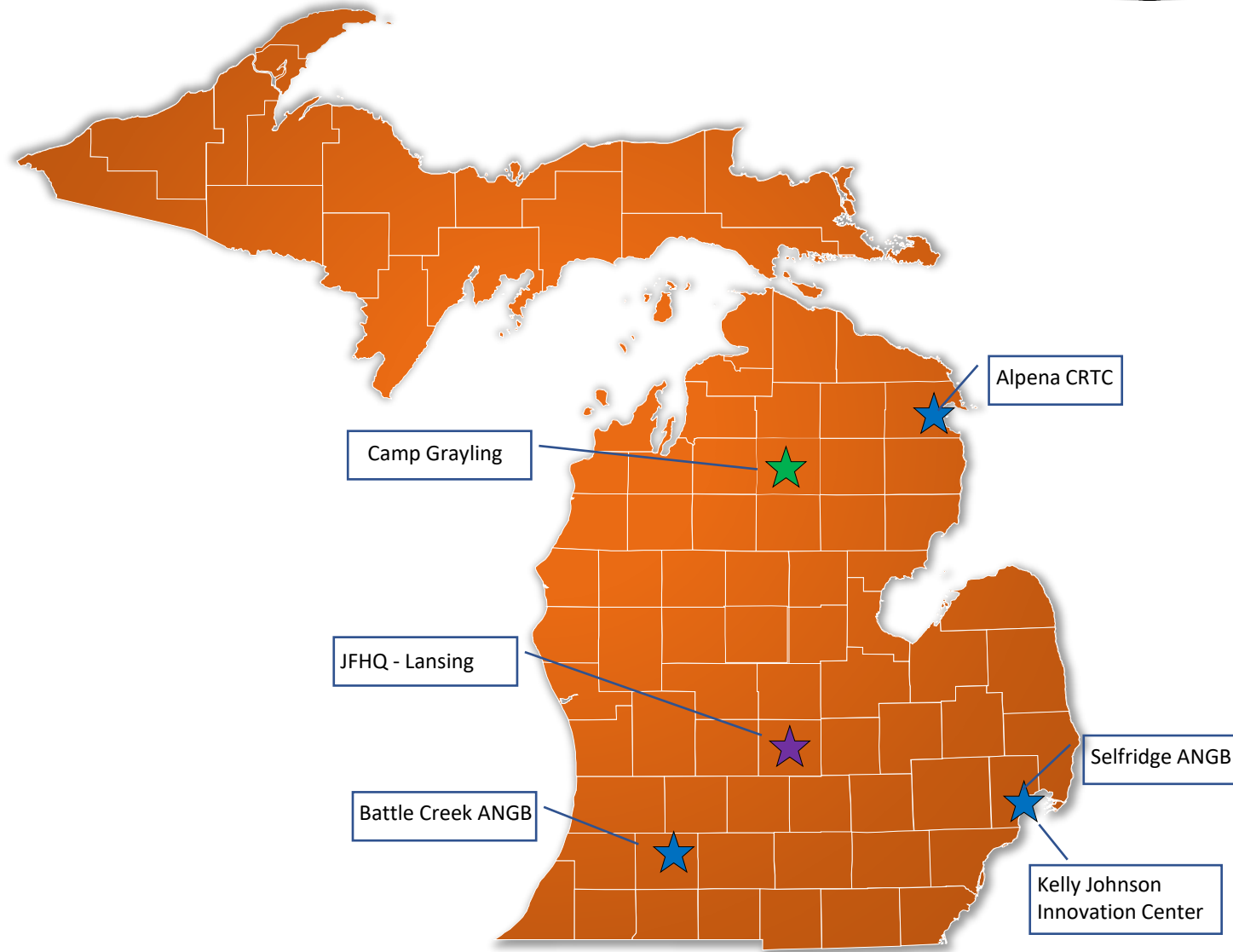
Unclassified briefing prepared for presentation to the Disruptive Technologies Lab (DTL) Presentation and Ideation Series 12 Oct 2022



What is the NADWC?

Aggregation of Michigan National Guard ranges, facilities, and organizations across the state.

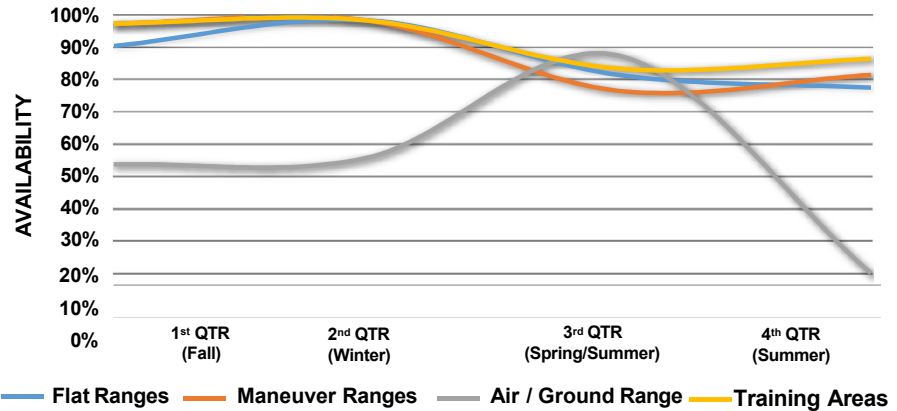
- **Camp Grayling Joint Maneuver Training Center: Grayling, MI**
 - 148K* Acres, four-season terrain, topography/climate analogous to Northern Europe
 - Emerging Counter-UAV capability to include “drone buster” technology
 - Extreme Cold Weather collective training equipment sets and maneuver ranges
- **Alpena Combat Readiness Training Center: Alpena, MI**
 - 17K square miles of Special Use Airspace configurable from 300’ – 50K’
 - MOU with civilian partner for littoral training space
- **127 Wing Selfridge Air National Guard Base, Mt Clemens, MI**
 - A-10
 - KC-135
- **110 Wing Battle Creek Air National Guard Base**
 - Air Ops Group
 - MQ-9
 - Cyber Ops Squadron
- **Kelly Johnson Joint All Domain Innovation Center**
- **Industry, Academia, and Civil Partnerships**





4 Season All-Weather Experimentation Capability

- For winter experimentation, not as extreme as Alaska, but significantly cheaper and logistically easier
- Unmatched range availability

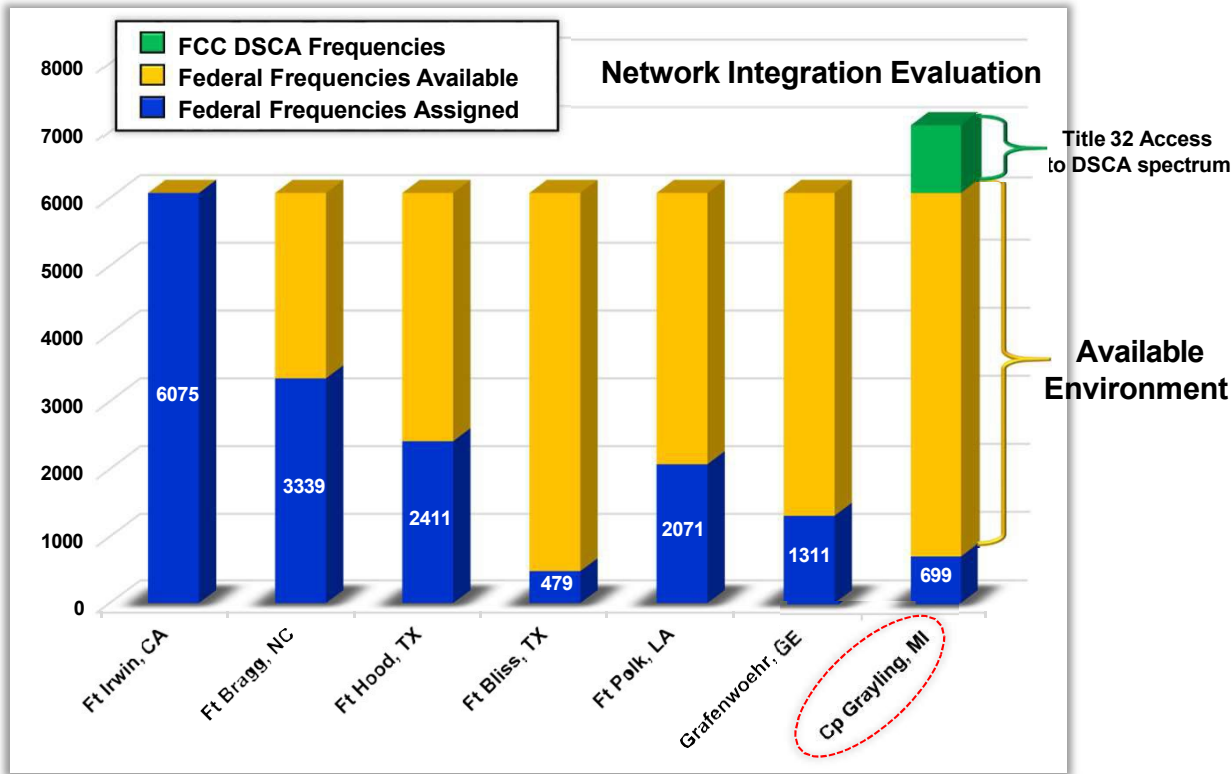


Grayling, MI – Climate Averages

	JAN	FEB	MAR	APR	MAY	JUN
Average Temps - H/L	26/8	29/8	39/15	53/29	66/39	76/49
Average Snowfall	30	22	13	4	0	0
	JUL	AUG	SEP	OCT	NOV	DEC
Average Temps - H/L	80/54	77/52	69/44	56/34	42/25	30/16
Average Snowfall	0	0	0	1	9	26



Grayling Spectrum Analysis



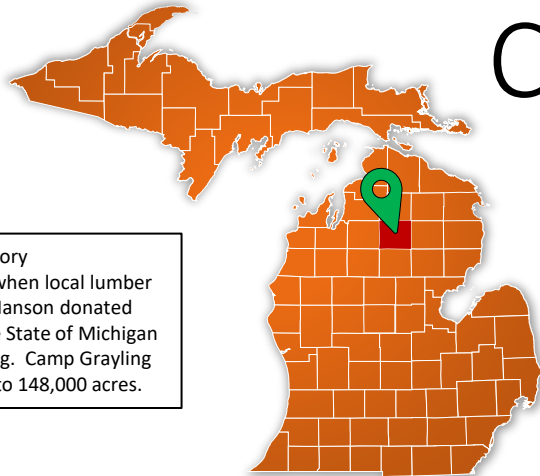
Camp Grayling is in a geographically ideal location for DoD Spectrum use.

1. Very little urban development leading to a non-contested spectrum environment for DoD Departments/Agencies/Organizations (DAOs)
2. There are very few currently existing DoD frequency assignments (699 assignments within 100 miles compared to Ft Irwin with over 6000 assignments within 100 miles)
3. This lack of congestion leaves much of the spectrum available for assignment to the MIARNG as needed for exercises.

- Data depicts all Federal Government frequency assignments within 100 miles of each location
- Data from Spectrum XXI frequency assignments as of 06MAY16
- Grayling Spectrum Growth is a collaborative effort with ARCYBER/G3-Cyber to secure a spectrum footprint that is highly compatible with Ft Bliss (NIE) and Ft Irwin



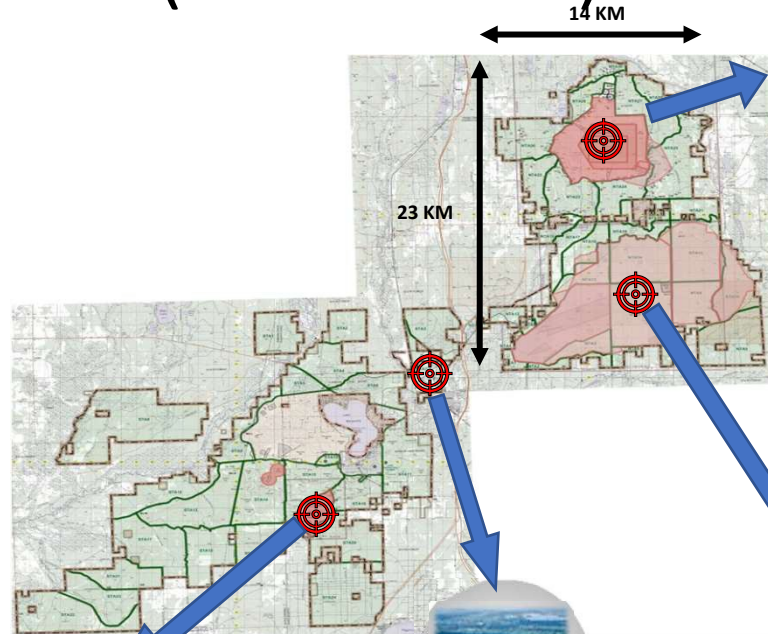
Camp Grayling Joint Maneuver Training Center (CGJMTC)



History
 Founded in 1913 when local lumber baron Rasmus Hanson donated 13,000 acres to the State of Michigan for military training. Camp Grayling has since grown to 148,000 acres.



Camp Grayling




40 Complex

Joint Training, Maneuver Live Fires, Artillery Impact Area, Special Use Airspace

- 17,000 Acres of Maneuver Space
- 10,000 Acres of Live Fire Area
- 2,800 Acres of Duded Impact Area
- All Tube Artillery & Mortars, 104 firing points
- All Small Arms up to Mk 19, Door Gunnery
- AT-4, Javelin and TOW
- Company Live Fire and Defense
- Live Fire Drops up to 500lbs (MK82)
- Restricted Airspace to 23,000'



30 Complex MPRC

Multi-Purpose Range Complex (Heavy)

- 42,000 Acres of Maneuver Space
- 5,300 Acres Fenced
- M2 Qualification Range
- MK19 Qualification Range
- Sniper Range
- Infantry Platoon Battle Course
- Convoy Live Fire
- MLRS/HIMARS Firing Area
- UAS Operations Day/Night
- 3D Modeled for Virtual Events
- Maneuver & Training Equipment Site



GAAF

Grayling Army Airfield

- 5000' Runway *Rail Spurs*
- Housing for 260 Personnel
- Dining Facility
- Training, Office, Academic Facilities
- UAS Shadow Simulator
- 400+ Square Miles of Controlled Airspace
- Fire Barn & Municipal Fire



South Camp

Light Maneuver Area & Small Arms Ranges

- Qual Ranges: M9 – M240B
- Known Distance Range
- Grenade Ranges
- Light Demo Range
- Fire & Movement Range
- Infantry Squad Battle Course
- 60MM Mortar Impact Area

Infrastructure & Operations

- 148,000 Acres
- 8,000 Transient Bed Spaces
- 429 Buildings (1.8M sqft)
- 83 Miles of Paved Roads
- 482 Miles of Unpaved/Trails
- Contracted Fire Fighting
- Wildland Fire (Internal)
- 7 Classrooms / 2 DLCs

Logistical Movement & Support

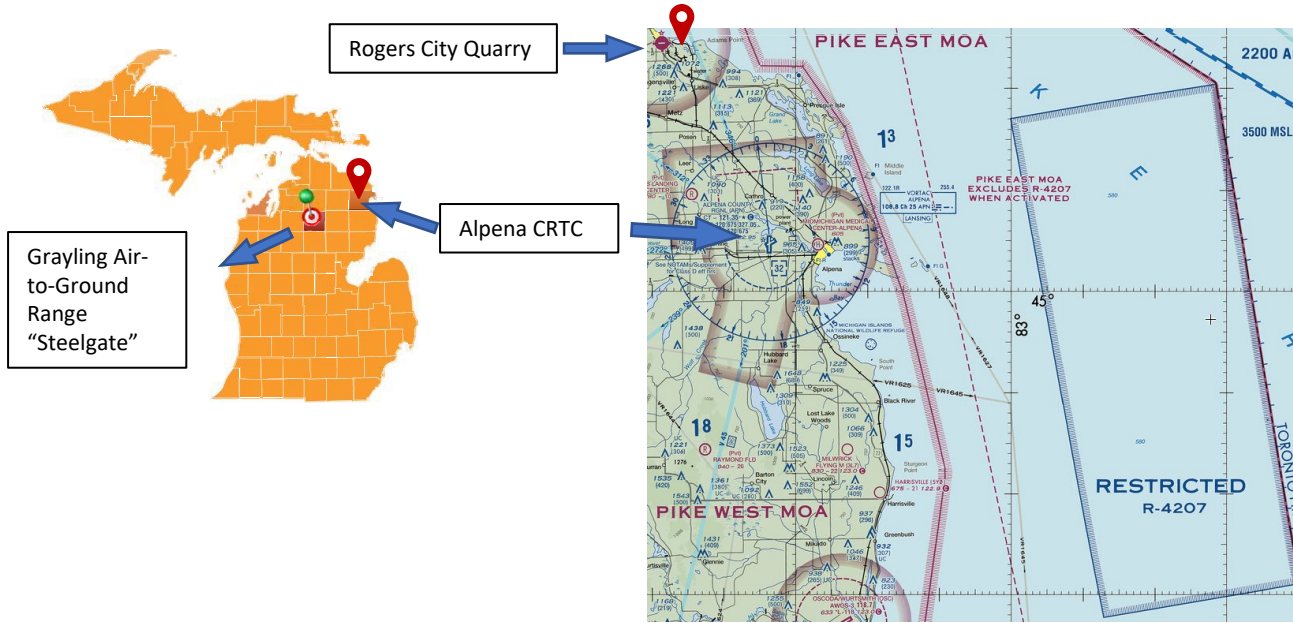
- 3 Hours From Detroit via I-75
- 5 Hours From Chicago
- 2 Rail Spurs, 15 Cars/Spur
- 1 Rail Spur, 15 Cars
- Rail Maintenance Facility
- Class I, II, V Warehouse
- 118K sqft Total Storage
- DLA Bulk Fuel Site
- 30,000 gal DF & JP Tanks
- ASP (SA, HIMARTS, NATO)

Simulations Capabilities

- Engagement Skills Trainer II
- Call-for-Fire Trainer
- HMMWV Egress Trainer
- BCT Individual Reality Trainer
- Virtual Convoy Operations
- Virtual Battle Simulation 3
- Unstabilized Gunnery Trainer
- Tactical Combat Casualty Care



Alpena Combat Readiness Training Center



Adaptable All-Domain Training Areas

- 1,000 Square Miles
- Surface to 45K MSL
- Live and Inert Capable
- Chesty Waters Drop Zone
- Rogers City Quarry – Littoral and Full Mission Profile Area

Steel Gate

- 2 Buildings / 37 Facilities
- Access to Grayling's 148,000 Acres
- 20MM, 30MM, MK-82, GBU-12, GBU-31, GBU-38 Capable
- Scoring Arrays, Heated Targets, Smoky SAMs
- Multiple Villages and Urban Areas With Over 200 Live and Dry Targets
- IR and Laser Marking Capable
- 3 x Drop Zones



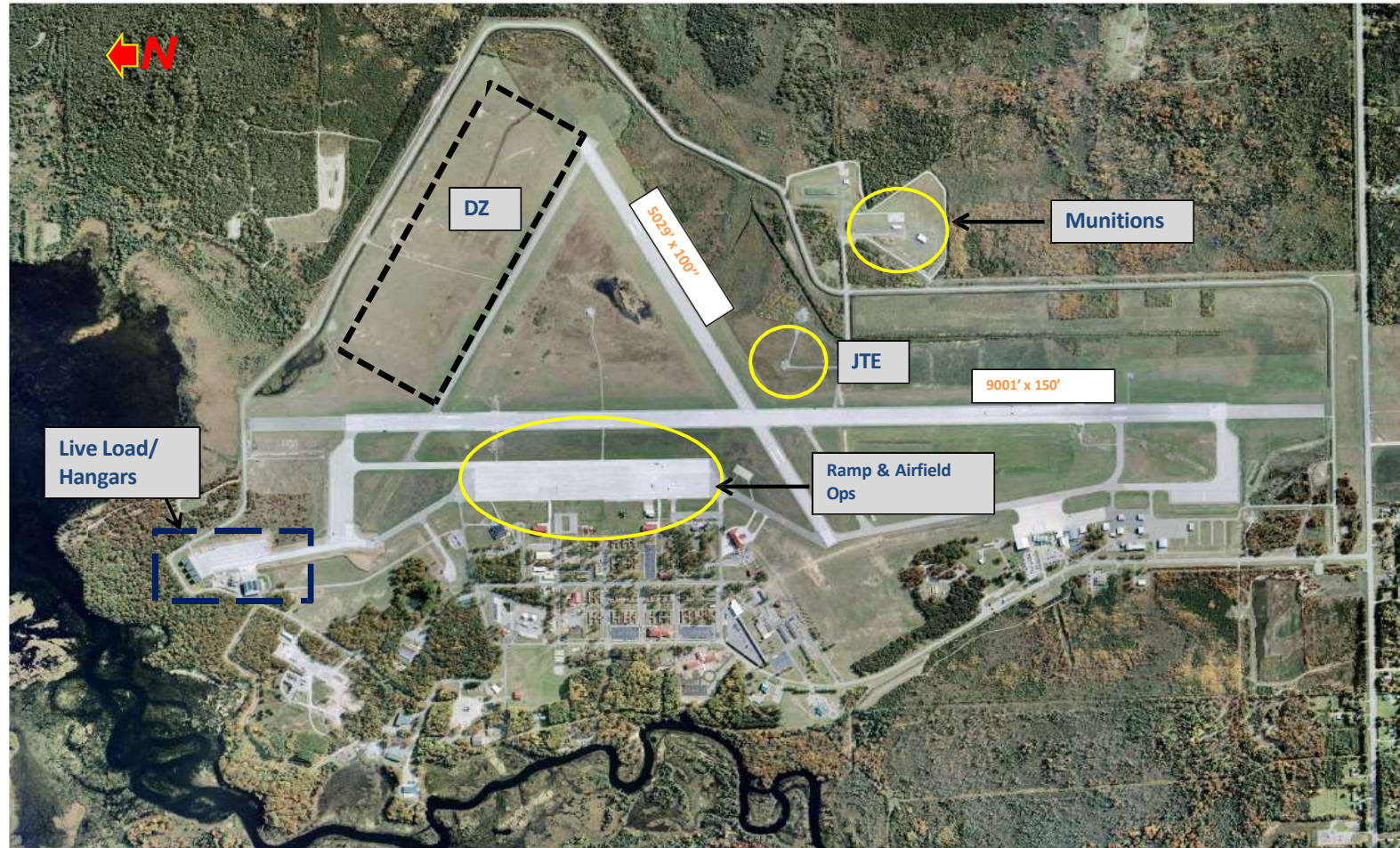
Special Use Airspace

- Largest SUA east of Mississippi
- ATCAAs 62,977 cubic statute miles
- MOAs 35,614 cubic statute miles
- 11 Separate Airspace Ops Areas
- Configurable 300' to 50K'



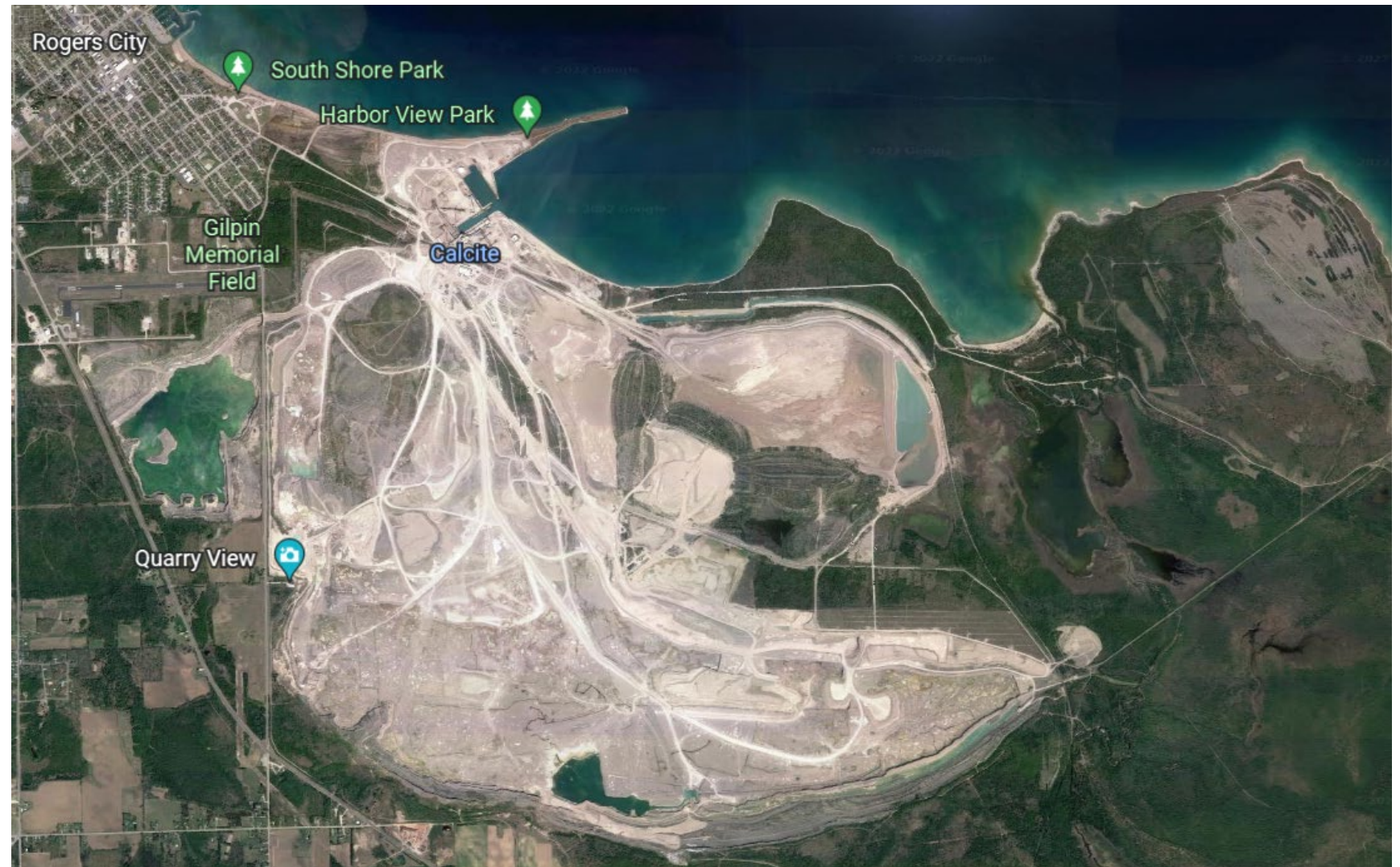


Alpena CRTC Campus/Facilities





Calcite Quarry, Rogers City





Kelly Johnson Joint All-Domain Innovation Center (KJJADIC)

The purpose of the KJJADIC is to provide opportunities, and a location, for military members, government, and industry professionals to research, rapid problem solving, and collaborate in direct support of National, Military and Michigan leadership objectives.

Established to:

1. Promote collaboration of joint service and industry technologies
2. Support major exercise alignment with MI senior leadership objectives
3. Solve problems and apply technology solutions
4. Enable service members to contribute to solving crucial needs
5. Link current and future National Innovation Centers to KJJADIC





Our Partners



Air Force Test Center,
Hangar 4F (AFTC/DO)



National Oceanic and Atmospheric
Administration (NOAA)



Combat Capabilities
Development Command,
Ground Vehicle Systems
Center (DEVCOM GVSC)



Silent Swarm



Naval Surface Warfare
Center, Crane Division



Takeaways

- The NADWC offers a four season, available, relatively inexpensive, multi-domain, quiet, risk reduction environment in which to operate
- We are not a test range but feel that works in our favor

Questions for the audience:

- What do you need to make this a viable location?
- What do you have that could contribute to the areas of
 - EW
 - Maritime targets
 - Cyber effects
 - C2



BACKUPS



CGJMTC 30 Complex – Multipurpose Range Complex (MPRC)

30 Complex Capabilities

- 10-Lane Known Distance Range
- Infantry Platoon Battle Course (IPBC)
- Multipurpose Range Complex Heavy (MPRC)
- MLRS/HIMARS Firing Areas
- UAS (Day & Night Ops)
- Combined Arms Collective Training Facility (CACTF)
- Fiber optic connection ports
- Mounted, Dismounted and Attack Rotary Wing Joint CALFEX capability
- R-4201B airspace up to 9K AGL, proposed to FL230
- Proposed Grayling MOA's will expand protected air maneuvering space
- Portable Target Package (303 SITs, 37 SATs)
- Miller DZ: 200 acre area capable of handling personnel and cargo drops
- 3D modeling has been completed to assist in virtual training events with VBS3

Future Improvements (In RCMP)

- Multipurpose Machine Gun range with Sniper Lanes
- MPRC-H Target Package
- Scout RECCE Range



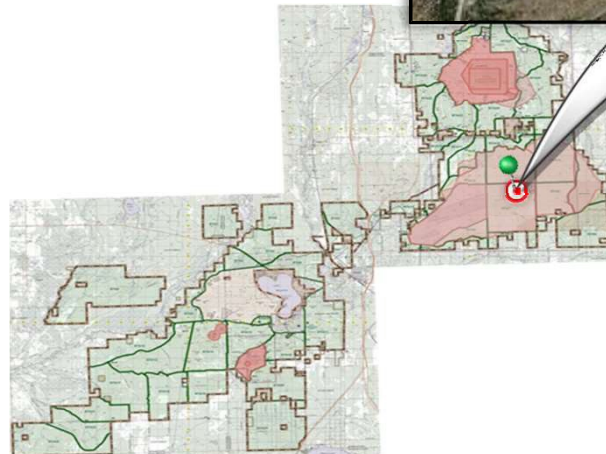
M1 Variants

- Two Firing Lanes on the MPRC
- Table XII Capable
- Armored Tank Boresight/Maint/Calibration Capabilities
- 51 miles Maneuver Tank trails
- 7.62mm, .50 Cal, 105mm and 120 mm SABOT capabilities
- Year-Round Availability
- Artic Weather Capable
- 8 Defensive Defilades
- 6 Offensive Fire Boxes



HIMARS

- Total Firing Points: 4
- FP 630 to MPRC: 8,350 Meters
- Range 37 to Miller DZ: 10,305 Meters
- Table XII Capable
- Year-Round Availability
- Artic Weather Capable



From the IPBC, Mounted Gunnery Tables to Convoy Live Fire and HIMARS/MLRS, the 30 Complex specializes in live fire training.





CGJMTC 40 Complex

40 Complex Capabilities

- 2,781 acres of Duded Impact Area
- Small Arms up to MK-19
- AT-4, Javelin and Tow Inert
- Platoon Live Fire
- Joint Combined Arms Live Fire
- All Current Tube Artillery and Mortars (104 FPs) and Direct Fire

- Helicopter Door Gunnery, Fixed and Rotary Wing Aircraft Gunnery
- Aerial Live Bombing up to 500LBS
- R-4201A: Restricted Airspace up to 23,000 feet
- Restricted airspace up to FL230. Garland ATCAA connects to Alpena SUA Complex

- Proposed airspace changes add Grayling MOA's and R-4201B ceiling increase to mirror R4201A
- JTE co-located with GAGR for low altitude threat reactions
- 10 x hi-fidelity heated surrogate targets with strafe scoring available
- Weapons scoring capability on 5 targets, (4 tactical, 1 bomb circle)

- Non-Standard Range Capabilities
 - "Range 46" Company Live Fire Attack Lane
 - "Range 42" Anti-armor, Rocket R&D familiarization range
 - "Range 45" Combined Arms Defense Lane
 - 3D modeling has been completed to assist in virtual training events

Future Improvements

- Convoy Live Fire Lane
- Squad Defense Range
- Improved Direct Fire Points



The 40 Complex is a multifaceted, joint fires capable training range with a history of platoon live fire, CALFX, and Joint Training Exercises.



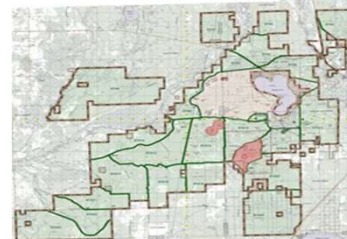
M777

- Total Firing Points: 72
- Charge 4H FP 704: 12,301 Meters
- Direct Fire
- Table XVIII Capable
- Year-Round Availability
- Artic Weather Capable



M109A6

- Total Firing Points: 72
- Charge 4H FP 704: 12,301 Meters
- 51 miles Maneuver Tank trails
- Direct Fire
- Table XII Capable
- Year-Round Availability
- Artic Weather Capable





Maneuver Area Training Equipment Site (MATES) Overview – Capabilities

Michigan's MATES is the 3rd Largest in the ARNG Inventory.

- ❑ 73 Acres of Secure Logistical Support Area
- ❑ 147,500 Square Feet and 125 Bays of Indoor Maintenance and Storage Area
- ❑ 6 Loading Dock Lanes
- ❑ Up to 120 Maintenance Technicians
- ❑ 7.5 & 25 Ton Overhead Lift Capability
- ❑ 2 New Classrooms for Up To 50 PAX
- ❑ CL IX 14,500 Square Feet
- ❑ CL III Retail (2 Lanes), 12,000 Gallons

Provides Multi-Compo / State / Service / National Support to:

- ❑ Armor, Artillery & Engineer Equipment
- ❑ Missile, Electronics & Optics
- ❑ Armament
- ❑ Allied Trades Fabrication Capability
- ❑ TACOM and GVSC

Route Access to All CGJMT

- ❑ Tactical & Administrative Movements
- ❑ Track Vehicle Route connecting MATES with the Rail Spur, range 30 & 40

Future Developments:

- ❑ 3 Additional Transient Repair Facilities
- ❑ Security Upgrades
- ❑ Robust Pooled Equipment Packages
- ❑ CL III Bulk / Retail (4 / 8) 60,000 Gallons

