

Gaiashield Group



Critical strategic assessment and comments on the integrity of the NASA/OSTP

NATIONAL NEAR-EARTH OBJECT PREPAREDNESS STRATEGY AND ACTION PLAN

<<https://www.whitehouse.gov/wp-content/uploads/2018/06/National-Near-Earth-Object-Preparedness-Strategy-and-Action-Plan-23-pages-1MB.pdf>>

*<A formula for Mankind's sooner-or-later extinction by NEO impact...
and a case for the formation and mission of a National Space Corps: Planetary Defense Division.>*

A Report by the INTERAGENCY WORKING GROUP FOR DETECTING AND
MITIGATING THE IMPACT OF EARTH-BOUND NEAR-EARTH OBJECTS
of the NATIONAL SCIENCE & TECHNOLOGY COUNCIL JUNE 2018

<By mitigating they actually mean completely deflecting/destroying not just reducing the severity of an impact.>

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About the National Science and Technology Council

A primary objective of the NSTC is to ensure science and technology policy decisions and programs are consistent with the President's stated goals.

<Aside from the NEO Survey goals stated in the 2005, 2008 and 2010 Space Acts, there have been no Executive or Congressional policy or mission objectives expressed regarding our intentions to defend against this threat and no National Agency delegated to execute such a policy. Today, we count rocks in Space... nothing more. >

About the DAMIEN IWG

The Detecting and Mitigating the Impact of Earth-bound Near-Earth Objects (DAMIEN)

<Again, they mean deflecting/destroying but the acronym 'DADDIEN' just does not roll off the tongue as well. Note too that to 'destroy' is to fragment and energetically explode which is essentially a deflection-in-detail.>

NATIONAL NEAR-EARTH OBJECT PREPAREDNESS STRATEGY AND ACTION PLAN

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The Strategy and Action Plan builds on efforts by the National Aeronautics and Space Administration (NASA), Department of Homeland Security (DHS), and Department of Energy (DOE) to detect and characterize the NEO population and to prevent and respond to NEO impacts on Earth.

<Correct. Prevent. Not Mitigate. Not reduce the severity of NEO impacts... Unfortunately, words are not exactly the first language of astronomers and aerospace engineers.>

Goal 1: Enhance NEO Detection, Tracking, and Characterization Capabilities: NASA will lead the development of a roadmap for improving national capabilities for NEO detection, tracking, and characterization. Supporting actions will reduce current levels of uncertainty and aid in more accurate modeling and more effective decision-making.

<Not until NASA and OSTP et al comes to recognizes the five strategically critical relevant existential conditions it has so far chosen to ignore:>

A) Forever: The general, systemic threat of asteroids striking Earth will never change or can ever be eliminated and will persist... Forever.

B) TNLA: There is no imaginable systemic response. We can not change the laws of physics or beam asteroids to a Galaxy far, far away. We can only respond as asteroids become impending impact threats individually. Therefore, the best definition of this threat will always be 'The Next Large Asteroid on its way to strike Earth'. Which will always be out there, somewhere, now... And we can never know which one it is until we see it coming.

C) Perturbation: The primary or even proximate cause of all asteroid impact events would be some random and dramatic kinetic or gravitational Perturbation. As such, any asteroid of any size anywhere in the Solar System can become perturbed into an Earth-orbit crossing orbit and its inevitable or even immediate impact with Earth at any time. No asteroid in the Solar System can ever be considered 'safe'.

D) Random: Since all that is required for one asteroid impact event is the behavior of one asteroid. And since the geometry and dynamics of the asteroid population is completely random. Then it follows that all asteroid impact events must be completely Random: without any recursive pattern, both in their occasion and magnitude.

E) EL Asteroid: Given the above there is no rational logic that could conclude that the next asteroid to strike Earth will not do so tomorrow or that it would not be a 10km Extinction Level Asteroid.>

Goal 2: Improve NEO Modeling, Prediction, and Information Integration: Agencies will coordinate the development of validated modeling tools and simulation capabilities that aid in characterizing and mitigating NEO impact risks while streamlining data flows to support effective decision-making.

<Decision making by whom? We have no National Planetary Defense Agency delegated to become responsible and expert in addressing this threat and capable in making effective strategic and tactical decisions. Do we just make one up after we see the next one coming? Or just leave such details for after-the-fact and to some temporary POTUS that may not even know which way Space is let alone how to spell asteroid as a threat?>

Goal 3: Develop Technologies for NEO Deflection and Disruption Missions: NASA will lead development of technologies for fast-response NEO reconnaissance missions and timely missions to deflect or disrupt hazardous NEOs. Developing these technologies before an imminent threat arises will strengthen our ability to prevent NEO impact disasters.

<Providing we also select, build and train personnel to the point of expertise then strategically deploy this technology to the level of effectively addressing a potential worst case scenario... before we see one coming. We can never count on Time being on our side here. We only have all there is left in the World.>

Goal 4: Increase International Cooperation on NEO Preparation: Agencies will work to inform and develop international support for addressing global NEO impact risks. International engagement and cooperation will help the Nation to prepare more effectively for a potential NEO impact.

<Step one here would be a codified National Policy to endeavor to deflect these objects as they present themselves as impending Earth impact threats and the formal delegation of a qualified National Planetary Defense Agency to become responsible and expert in executing it. Effectively setting the example for the rest of the world in eventually forming a Global Planetary Defense Agency of Agencies... a NEO NATO, if you will.>

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while larger objects can cause local damage or even global devastation

<At random and up to and including our total extinction.>

However, near-Earth comets (NECs) represent less than 1 percent of the NEO population, and once comets cross into the orbit of Jupiter they are much easier to detect.

<Which only means that for a 6km Long Period Comet we may have as little as 6 months warning to ponder our extinction. Here, even Nukes may not be effective in deflecting or destroying such an object unless we build and deploy something far more massive than Mankind has so far ever seriously considered doing.>

NEO impacts of varying size could have major environmental, economic, and geopolitical consequences detrimental to the United States, even if the impact is outside U.S. territory.

<Extinction by NEO impact should qualify as a major environmental, economic, and geopolitical consequence detrimental to the United States here.>

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Larger NEOs greater than 140 meters have the potential to inflict severe damage to entire regions or continents. Such objects would strike Earth with a minimum energy of over 60 megatons of TNT, which is more than the most powerful nuclear device ever tested. Fortunately, these are far less common

<Unfortunately, all NEO impacts occur completely at Random.>

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An asteroid as large as 10 kilometers across is thought to have caused the extinction of the dinosaurs when it struck the Yucatan peninsula some 65 million years ago. NASA is confident that it has discovered and cataloged all near-Earth asteroids *<NASA estimated>* large enough to cause significant global damage and determined that they are not on collision courses with Earth

<All asteroid impact events are completely random: without any recursive pattern or periodicity, both in their occasion and magnitude. And all that is required for one asteroid impact event is the random behavior of just one asteroid. Therefore, since any asteroid (discovered or undiscovered) anywhere in the Solar System (PHA, NEO, NMO, Main Belt or Trojan) of any size (10m Window Buster or 10km Extinction Level Asteroid) can be gravitationally or kinetically perturbed into an Earth orbit crossing orbit or directly onto an impact trajectory at any time, there is no rational reason to ever think that the next asteroid impact will not occur tomorrow or that it will not be a 10km Extinction Level event... And we are not remotely prepared. How can we ever expect to defend against the unthinkable if we can not find the courage to even think about it?>

but there is still some chance that large comets from the outer solar system could appear and impact the Earth with warning times as short as a few months.

<As an existential condition, here the 'If' is a sooner-or-later certainty. Only the 'When' would ever be a matter of random chance.>

Our ability to assess the overall risks of a NEO impact improves with more detection and better characterization of the total NEO population.

<Ability to assess is worth nothing without a standing tested ability to respond. And then effectively to the worst case manifestation of this threat.>

In 2005, Congress directed NASA to find at least 90 percent of NEOs that are at least 140 meters by 2020.⁸

<Unfortunately, this has become the defining standard of what has become accepted to be 'Planetary Defense'. Within that, those executing this mission have come to define success as finding 90% of a population, as defined by their own estimate, and finding them all to be 'safe'. However, since we know that asteroid impact is an existential condition, it follows that the next asteroid on its way to strike Earth is out there, Now! And success, in terms of any real Planetary Defense mission, would be to find it ASAP... No matter how long it takes.>

To discover 90% of the estimated NEO population and declare victory, and not determine which asteroid, large or small, is the next asteroid on its way to strike Earth would in fact be the definition of failure. And given the prospect that at random the next asteroid on its way to strike Earth could result in an extinction level event... failure is simply not an option. Someone needs to explain that to Congress.>

Managing the NEO Impact Hazard

Unlike other natural disasters (e.g., hurricanes), once a NEO is detected and tracked we can typically predict many years in advance whether it will cause a devastating impact,

<Unless it is found to be already on a near-term impact trajectory. Or, after characterization and deemed safe, we stop observing it and move on to look for the next one and it then becomes perturbed onto an impact trajectory. And since we do not intentionally monitor these objects post discovery we would not even know it unless by random chance we rediscovered it as new. As an Early Warning network, what we have now is far more hole than cord. With the Survey approach, we are doing little more than just counting rocks in Space.>

and, most importantly, we can potentially prevent impacts when detected with sufficient warning time.

<As things stand, only if the asteroid is small. Or, if not, we have developed and built gigatons of Space capable thermonuclear NEOMines and have strategically deployed them for a ready and rapid interception mission.>

A NEO may be deflected via spacecraft systems designed to alter the NEO's orbit such that it misses the Earth. When deflection

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is not practical or advisable, a NEO may be disrupted via spacecraft systems designed to fragment the NEO into smaller pieces that are more likely to miss the Earth or burn up in the atmosphere.

<Only if the asteroid is small. Or, if not, we have developed and built hundreds of gigatons of Space capable thermonuclear NEOMines and have strategically deployed them for a ready and rapid interception mission.>

<Whiskey Tango Foxtrot! How the Hell do you get this:>

The Trump Administration's 2018 National Strategy for Space¹¹ recognizes the NEO hazard, and directs agencies to undertake multilateral efforts that promote U.S. scientific, economic, and security interests, including mitigation of space environmental hazards such as near-Earth objects.

<from this???:>

¹¹<https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-unveiling-america-first-national-space-strategy/>

<What kind of mental defect or total failure of rational logic is this? Or does someone need to be schooled in the art of telling a lie? Rule 1: Do not provide a link to the incontrovertible evidence that you are lying! This needs to be done but if everyone thinks it already has then no one will advise and lobby POTUS to actually do so.>

National Space Policy¹² directs the NASA Administrator to “pursue capabilities, in cooperation with other departments, agencies, and commercial partners, to detect, track, catalog, and characterize near-Earth objects to reduce the risk of harm to humans from an unexpected impact on our planet.”

<And the Congressional mandate that (as an extension of the 2008 mandate) by October 2012 the Director of OSTP (as back door proxy for POTUS to avoid any Constitutional Separation of Powers problems) to delegate a qualified Federal agency to become responsible for defending the planet from this threat. No Joy here so far. However, the mandate still stands for this administration.>

Figure 5: Illustrative timeline of the potential phases of operations in a NEO threat scenario.

<Note the absence of any actual timelines which might present themselves as being random in their duration from case to case. These timelines will be elements of a overall Detection-to-Impact window beginning with a political/decision window then a precursor/recon mission window.>

Then, as things stand, select, design, develop, build, train and deploy a response tactic window, then hope for suitable launch/interception window(s), then an execution of force window and finally a displacement window. Again, the actual duration of all the above will always be a consequence of random chance after we see the next one coming. Would it not be wise to do everything we can do before we see the next one coming and load the damn dice in this Cosmic crapshoot? Time and Chance may not be on our side here.>

Recognizing the lack of a whole-of-government or international strategy for addressing NEO hazards, the Committee on Homeland and National Security within the National Science and Technology Council (NSTC) established an Interagency Working Group (IWG) for Detecting and Mitigating the Impact of Earth-bound Near-Earth Objects (DAMIEN). The DAMIEN-IWG developed this Strategy and Action Plan to enhance national preparedness over the next decade for the hazard of NEO impacts. Its primary role is to help organize and coordinate NEO-related efforts within agencies, with a particular focus on efforts that are already existing and resourced.

<Distributed Responsibility. The not-my-job defense tactic of bureaucracies everywhere. What we need here is a single mission oriented, hierarchical expert military grade command and control structure responsible for both formulating a single coherent and clear recommendation to the Executive authority in order to shape and inform the best possible decision for successful action and a desirable outcome. And then executing that action. There is no room here for the compromises of any academic committees or some scientific consensus that invariably ends up accounting for the short-term-political-interests or ethical vagaries or simple stupidities or basic cowardice of individuals. Examples of which can all be found in this DAMIEN work product. Make no mistake. This is not some super sized science fair project. This is War: Defend the Planet! At any cost. By any means. Failure is not an option. We get this right... or sooner-or-later we go extinct. This is the business of soldiers, not scientists.>

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Goal 3: Develop Technologies for NEO Deflection and Disruption Missions

<This should read “Goal 3: Develop, Build and Deploy Technologies for NEO Deflection and Disruption Missions Capable of Responding to Any Level of This Threat.” Why do they persist in holding the optimistic expectations and that in the face of random-chance we will always be the beneficiary of good luck and have plenty of time and that the asteroid will always be small? A formula for our sooner-or-later suicide by NEO.>

The *National NEO Preparedness Strategy and Action Plan* is formulated to inform the policy development process. *<and fails miserably>* Any commitment of Federal resources to support the activities outlined in this document will be determined through the budget processes. Most actions should not require allocation of additional resources.

<Agreed... at least as far as the recommendations of this plan go. Given that these scientists and academics approach this threat with optimism and expectations of good luck they consistently recommend we take the greater risk in terms of magnitude of loss and gamble. Choosing to manage only the lesser level of this threat. Which costs us next to nothing... until we lose. Then it costs us everything. All there is, gone... Forever. Risk Management is the art of applied rational pessimism. Tempered only by value and capability, Leave Nothing To Chance: as a species we have learned to stack the deck, fix the race load the dice... Game the system. Cheat! If we can not even begin to think about this right then how can we expect to ever do this right?

To fully address this threat would require a commitment on the order of an annual Global allowance of 0.1% of Gross World Product. Forever. Not a cost. But rather an expense resulting in a permanent economic stimulus generating jobs and profits and taxes world wide. In a century or so we should be able to develop the capability and skill sets required to potentially defend our planet and our existence from the full measure of this Cosmic threat... come good luck or bad. Then we can afford to be optimistic and hope that what we have done to the best of our ability is good enough... Big Picture: Given the potential to defend against our extinction: all there is, gone... Forever, cost should not be a problem. Here, Plan B would be to make sure Plan A works at any cost! How can anything less be wise?>

Goal 1: Enhance NEO Detection, Tracking, and Characterization Capabilities

Early detection and characterization of hazardous NEOs increases the time available to make decisions and take effective mitigating action,

<Unfortunately, this is not reflected in the Congressional mandate currently driving the NEO Survey efforts. All dynamics considered, to achieve any reliable form of early warning network we will need to evolve from Survey to Surveillance. Given the prospect of random perturbation, theoretically we would need to watch every asteroid in Real Time... Forever. However, we could achieve a suitable result by strategically deploying a number of Space Based Observatories to constantly monitor an Area of Interest between the orbits of Earth and Mars looking for any object that has become an impending Earth impact threat... also, Forever.>

and it is the first priority for planetary defense.

<Perhaps from the Astronomers perspective. If they see an asteroid coming they call POTUS and sit back and watch. Job Done! Strategically, the first priority is a three legged stool. Preparation, Training and Vigilance. There is no point in looking for the next asteroid on its way to strike Earth if we are not prepared and trained to deal with it. Why would anyone ever look for any kind of strategic advice from an Astronomer?>

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For example, multiple technologies may be suitable for preventing NEO impacts that are predicted well in advance, while disruption via nuclear explosive device may be the only feasible option for NEOs that are very large or come with short warning time.

<This appears to be a fearful anti nuclear biased characterization. In a stand-off application, thermonuclear explosive devices have long been seen as a means to ablate a large area of an objects surface generating thrust and achieve a distributed and gradual deflection. Particularly effective in the case of loosely bound rubble piles. Further, In 2006, in a conservative application, they were found by NASA to be 100 times more effective than any of the Second Best Alternatives. Subsequently, in an aggressive application, they can be seen to be 10,000 times more effective. Even further, in NASA's recent HAMMER analysis they have been determined to be the only feasible tactic for threats over 200m. These 'experts' should know all this... Just whose side are they on here?>

Observing NEOs over many years (as outlined in Goal 1) will improve the understanding of their orbits and future trajectories, and should also improve our understanding of their size and composition, which would assist in planning for deflection or disruption space mission campaigns.

<The best, if not only, way to actually understand how to deflect or explode asteroids would be to become expert at doing it: Practice, Practice, Practice! Then, institutional expertise is not enough. We need to keep our Planetary Defense personnel well trained and need to be Nuking an asteroid every 5 years. Doing it in the lab or on a white board or in a computer simulation only gives us theoretical planetary defenders.>

Develop technologies and designs for NEO deflection and disruption missions The United States should develop and validate technologies and techniques for deflecting and disrupting NEOs of varying physical properties before the need arises to deploy them in an actual threat scenario.

<This should begin with the threat of extinction level impact events. We can only ever afford to Hope for the best after we have become prepared for the worst. Here, the approach of this report wants us to only prepare for the best and merely Hope against the worst. Sooner-or-later this pathological optimism bias will kill us all.>

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They should also consider NEO impact scenarios that may have received insufficient attention thus far (e.g., binary asteroids, high-speed comets).

<And Extinction Level Asteroid threats. How do we defend against the unthinkable by not thinking about it? Defend against the unspeakable by not speaking about it?>

This effort will address current deficiencies in understanding how rapidly the United States can deploy planetary defense missions while maintaining acceptable reliability and mission success probability, and with sufficient redundancy.

<When we account for the 11th Hour political indecisiveness, delays due to hasty production demands, the size of the mission if the threat is large, addressing margins of error and contingencies, waiting for the results of any precursor/recon mission, the random availability of suitable launch/interception windows, the random chance for short warning times and consequences of very large extinction level threats, all the potential sub sections of Murphy's Law, and just plain shit happens bad luck... the wisdom in codifying a National Policy and delegating a qualified National Planetary Defense Agency to become responsible for selecting, designing, developing, building, training and deploying our response to the level of addressing a worst case threat 'before' we see the next one coming becomes clear. And 'before' begins... NOW!>

This action includes preliminary designs for a gravity tractor NEO deflection mission campaign, and for a kinetic impactor mission campaign in which the spacecraft is capable of either functioning as a kinetic impactor or delivering a nuclear explosive device.

<Why are we still talking about a gravity tractor and kinetic impactor? It has already been shown that a GT would be more effective if we simply crashed it into an asteroid like a KI. And Nukes, in terms of payload mass to applied force, are 10,000 times more effective than a KI. Further: Nukes can be used to accelerate an object which would be the better approach in half the instances whereas the KI can not. Nukes can be employed in standoff detonations for addressing loosely bound rubble pile threats (estimated to constitute 70% of the asteroid population) whereas the KI can not. Nukes do not require high relative velocity interceptions as is the case with the KI. And the KI has been shown to be impractical for addressing threats over 200m... Why are we still talking about the gravity tractor and kinetic impactor? Nukes are the one tactic that fits all size threats.>

Any flight demonstrations relevant to nuclear explosive techniques would not incorporate an actual nuclear device, or involve any nuclear explosive testing.

<Seriously!!! To demonstrate nuclear explosive techniques without actually detonating a nuclear explosive only serves to demonstrate our current candy ass academic standard of stupidity. What's next, shoot Nerf balls?>

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The United States should assume a leadership role in fostering global collaboration and leveraging international capabilities to improve NEO preparedness and response.

<Here, the first step in demonstrating our political will and seriousness of our intent would be to codify a National Policy to endeavor to deflect or destroy these objects as they present themselves to be impending Earth impact threats and delegate a qualified National Planetary Defense Agency to become responsible and expert at executing such a policy. With that, the rest of the world should follow suit.>

Further increasing international participation in these efforts will improve our collective situational awareness, predictions, and overall preparedness for NEO events.

<Within the bounds of what is currently politically correct and in the absence of any national policies or dedicated agencies or any realistic funding to actually do so.>

The strategic objectives to increase international cooperation on NEO awareness and preparation are:

- Build international awareness of potential NEO impacts as a global challenge

<And Fear. Fear focuses the mind. It reminds us there are dire consequences if we fail. Fear energizes action. Only Fear ever defines Necessity. Fear is our friend. If we want more from others... scare them better.>

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This action could include holding an international workshop on the use of ground-based telescopes to improve global NEO monitoring

*<Monitoring???. No one is actually **monitoring** anything now. Once we discover any new asteroid we observe it intermittently over a period of weeks or months to determine and characterize its orbital elements then move on to find the next one. There is no program to return to any of the 18,000 asteroids we have already discovered and confirm that their orbital elements have not changed. Survey... Counting Rocks in Space.>*

This action could include sponsoring a workshop for global and international disaster management organizations on NEO preparedness, response, and recovery.

<And be based around an analysis of our Nuking an asteroid every 5 years in the effort of our becoming increasingly expert and maintaining that standard of progress with current operational personnel. In War, the technology is only half the battle. Preparation, Training, Vigilance! Huuraagh!>

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Developing and exercising procedures and action protocols to support decision-making and communications will enable timely and effective implementation of NEO impact response and mitigation measures *<like Nuking an asteroid every 5 years>*. Communication and coordination are necessary *<not nearly as much as Practice, Practice, Practice>* across all areas of government and span the entire impact scenario timeline,

Since NEO impact emergencies are extremely rare

<Rare, but completely Random: without any recursive pattern or periodicity, both in their occasion and magnitude. Therefore, there is no reason to think that the next asteroid impact event will not occur tomorrow or that it will not be a Chicxulub Class extinction level event. And we can never know when until we see it coming. As such, we should be primed and in a constant state of emergency and readiness. Def Con 2... Forever.>

due to the unique nature of the NEO threat (including the rarity *<and complete unpredictability>* of damaging events, the scale of potential consequences, and the legal and policy implications of potential mitigation measures), most scenarios will involve direct Presidential decision making.

<Whose decisions should be shaped and informed by an expert command and control structure of a National Planetary Defense Agency responsible for and expert in executing those decisions.>

Following identification of any potential NEO impact, the Federal government will assess the nature of the threat and prepare key information to inform subsequent communications and decisions regarding defense and other forms of consequence mitigation.

<Just what 'agency' of the Federal government will be responsible here? Will the highly evolved strategic and tactical security mindset of DoD having successfully defended the territory and interests of our country for over 200 years be ignored? While NASA has never been responsible for the security or defense of anything... strategically or tactically. Whereas DoD has the largest and most suitably fungible security/defense budget in the world. As well as the world's largest space agency. Exceeding that of NASA's budget by 10%. As well as the operational authority for our nuclear arsenal. Who should be our National Planetary Defense Agency? Perhaps a hybrid of both NASA and DoD at the point of their unique relevant skills and aptitudes for this threat?>

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5.1 Develop a set of real-world scenarios based on credible impact threats with observable parameters to inform planning and procedure development.

<Which should begin with addressing the prospect of the 10km extinction level threat. If we can not begin with the worst case scenario we are simply fooling ourselves into thinking we have done something to make us safe.>

Standardize the threat assessment content to provide suitable inputs for subsequent decisions regarding notification, mitigation, response, and recovery. It should include specified thresholds for time to impact (e.g., hours, days, months, years, decades); probability of impact (e.g., greater than 0.1%, 1%, 10%, 50%); expected level of damage

<Again, which should begin with addressing the prospect of responding to the 10km extinction level threat.>

It should also include developing warnings and text for emergency alerts.

<Which can begin with telling truth to power regarding the random and ever potentially imminent prospect of a 10km extinction level event. Preferably, at least a hundred years before we see one coming... hopefully, NOW! Our government needs to see this threat as the perpetual Cosmic Sword of Damocles.>

This process includes an analysis of mitigation alternatives

<Deflection alternatives! Nukes: The one alternative that fits all size threats. Won't save home without it...>

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Conclusion

NEO impacts pose a significant and complex risk to both human life and critical infrastructure, and have the potential to cause substantial and possibly even unparalleled economic and environmental harm

<Including the random extinction of Mankind... All there is, Gone... Forever. Game Over. No Joy. Restart Darwin's Clock again. Perhaps the cockroaches will be wiser and/or have better luck next time.>

This Strategy and Action Plan provides a road map for a collaborative and federally coordinated approach to developing effective technologies, policies, practices, and procedures for decreasing U.S. and global vulnerability to NEO impacts.

<The role of the master scientist is to objectively identify and characterize all the dots in a given condition. Then it becomes the role of the master strategist to subjectively determine which dots are relevant and how they can be connected to achieve a desirable outcome. It is rare to find an individual that is both master of science and strategy. And no evidence of that here. It is time to put this issue into the hands and minds of those who are expert in going into Harm's Way and dealing with fearful things. After all, this is about Security, not Science. Building a comprehensive Planetary Defense will be a journey of a thousand miles and here these starry-eyed narrow-minded academics would have us believe this single first awkward step to be the journey complete. This assessment is effectively a greater threat than The Next Large Asteroid on its way to strike Earth itself.>

When implemented, the activities outlined herein will improve detection, research, mission planning, emergency preparedness and response, and domestic and international engagement. Implementing the NEO Action Plan will increase the United States' ability and readiness, together with domestic and international partners, to mitigate the impact hazard posed by NEOs.

<We begin, in fact, only with a codified National Policy to defend ourselves from this never ending Cosmic threat and with the Executive Office implementing part (b) SEC. 808 of the 2010 Space Act and formally delegating a responsible National Planetary Defense Agency. All things considered, a hybrid of NASA and DoD. Add another ring to the Pentagon. A little one... in the center. Where it can develop and secure its unique mission-locked institutional memory and bureaucratic mindset: US Space Corps: Planetary Defense Division.>

The Universe is a dangerous place. It does not suffer dilettantes or fools gladly.

R. Dale Brownfield

Gaiashield Group:

<http://Gaiashield.Com>

2017 Strategic Assessment:

<http://Gaiashield.com/TFSW>