# 1NC

## 1NC—Orbital Debris Counterplan

### The United States federal government should establish an Orbital Debris Recycling and Removal Fund.

### The counterplan solves the case—a sustainable economic environment that includes private companies is a prerequisite to technical orbital debris removal—faster than the case.

Dunstan & Werb 9 [James E. Dunstan is an acknowledged expert in Space Law, having been in practice for over 25 years representing aerospace companies before federal regulatory agencies. Jim drafted and negotiated the lease of the Mir space station in 1999 on behalf of his client MirCorp, the only time control of a manned space asset has changed hands. Bob Werb is Chairman of the Board and co-founder the Space Frontier Foundation and has long been an active advocate for unleashing the power of free enterprise to open the space frontier to human settlement. Space Frontier Foundation. “Legal And Economic Implications Of Orbital Debris Removal”. 10/30/09. http://www.scribd.com/doc/23379988/Legal-and-Economics-Implications-of-Orbital-Debris-Removal. //jaramilloj]

From an economic perspective, the worst possible technique for ODR would be to use general tax revenues to fund cost-plus contracts. The use of general tax revenues separates the economic consequences of generating additional debris from the parties in a position to minimize its creation. The use of cost-plus contracts creates perverse incentives, rewarding failure and delay with additional funding. Fortunately, a number of other techniques are available to government with much greater prospects for success. The needed funding could at least partially be raised from parties who generate debris. An Orbital Debris Removal and Recycling Fund (ODRRF) could be created and funded in one of several ways. The debris potential of a particular launch could be evaluated and charged an upfront fee paid into the fund. Alternatively, parties could be required to purchase insurance that would pay into the fund in the event that any debris is actually generated. Government launches could also be required to pay into the ODRRF and it may make sense for government to seed the fund by paying for debris already in space. Whatever funding mechanism is chosen factors directly relevant to the danger posed by the debris should be effectively priced including: mass of all objects that will remain in orbit (vehicle and upper stages,) congestion of the orbit into which the vehicle (and upper stages) will be launched, EOL plan for all components and track record related to EOL operations. By way of reference, the FCC charges satellite operators between $116,000 and $400,000 in initial licensing fees, and then $130,000-$181,000 per year in regulatory fees (depending on the orbit of the satellite).Thus, over the expected 10 year life of a satellite, the FCC collects between $1.4 million and $2.2 million in fees to regulate satellites. ODR providers could be compensated in one of several ways. The ODRRF could make payments for debris removal based on a clear set of published criteria. Alternatively, the ODRRF might prefer the greater flexibility and simplicity of placing a fixed price on each object, or set of objects. Or perhaps, the ODRRF would issue performance-based debris removal contracts to qualified service providers. Whatever the pricing and payment mechanism chosen, it should be based on the danger posed by the object (orbital altitude, orbital inclination, mass, and trajectory analysis of potential impact) and the action taken to “safe” the object (whether the object is deorbited, captured and controlled, placed into a safer orbit, or physically tagged for better accuracy of measuring its risk.) An alternative or supplement to creating an ODRRF would be to create a mechanism similar to carbon trading, where anyone who is creating debris is required to mitigate its effects by either removing (or paying someone else to remove) the debris, or some other more threatening debris. Choosing among these economic techniques and determining how they can be effectively combined is more urgent than any effort to understand the needed engineering techniques because with the correct incentives in place the private sector will analyze and test the various technical solutions and through competition amongst themselves determine which ones are the most effective, with a marketplace, rather than the government, choosing winners and losers. The current legal regime creates perverse economic incentives that are greatly aggravating the problem of orbital debris. **The quickest and surest path** to resolving the problem is to establish a legal and economic environment that places a high price on anyone generating new debris while simultaneously creates adequate rewards for anyone who mitigates debris. Significant work involving expertise in the law, economics, diplomacy and politics is required to choose among the workable legal and economic techniques that are available to government.

# 2NC/1NR

## Solvency Explanation & Comparison

### The counterplan solves the case quickly — it is a prerequisite to technological solutions — that’s Dunstan & Werb.

### And—NASA fails—only the counterplan can solve for all orbital debris.

Ansdell 9 [Megan. Third year graduate student in the Master in International Science and Technology Policy program at the George Washington University’s Elliot School of International Affairs focusing on space policy. “Active Space Debris Removal: Needs, Implications, and Recommendations for Today's Geopolitical Environment”. Journal of Public & International Affairs. Et al Spring 2010. <http://www.princeton.edu/jpia/past-issues-1/2010/Space-Debris-Removal.pdf>.]

Moreover, current U.S. National Space Policy asserts that the United States will take a “leadership role” in space debris minimization. This could include the development, deployment, and demonstration of an effective space debris removal system to remove U.S. debris as well as that of other nations, upon their request. There could also be international political and economic advantages associated with being the ﬁrst country to develop this revolutionary technology. However, there is always the danger of other nations simply beneﬁting from U.S. investment of its resources in IH this area. Thus, mechanisms should also be created to avoid a classic “free rider” situation. For example, techniques could be employed to ensure other countries either join in the effort later on or pay appropriate fees to the United States for removal services. Going forward, the U.S. government should engage the commercial sector in space debris removal. Government contracts with several commercial ﬁrms would create a competitive environment, encouraging innovation and cost minimization. Having several companies working on the problem at the same time would also accelerate remediation as several critical orbits could be addressed at once. Furthermore, early investments in a domestic space debris removal industry would give the United States a head start in what may become a critical industry over the coming decades. The aforementioned 2009 International Conference on Orbital Debris Removal, co-hosted by DARPA and NASA, suggests that these two agencies could lead U.S. government efforts in space debris removal. However, it is important to recognize that DARPA and NASA are driven by very different motives: one is a civilian space agency, while the other is a defense research agency. Failure to appreciate these differences when establishing mission requirements could lead to a situation like that of the National Polar Environmental Satellite System (NPOESS), where the attempt to combine civil and military requirements into a single satellite resulted in doubling project costs, a launch delay of ﬁve years, and ultimately splitting the project into two separate programs (Clark 2010). Furthermore, any system developed through a joint NASA-DARPA partnership would need to be transferred to an operational agency, as both NASA and DARPA are research and development entities. The U.S. Air Force, as it is the primary agency responsible for national security space operations, is a possible option. Funding the development of a national space debris removal system carries risks because, due to the nascent state of the ﬁeld, detailed cost-beneﬁt estimates have not yet been carried out. The Space Frontier Foundation, however, proposes that the government should establish special funds at the expense of parties who generate debris (Dunstan and Werb 2009). Suggested mechanisms for raising the funds include charging fees for U.S. launches based on the debris potential of the mission, with the size of the fee determined by relevant factors such as the mass of the anticipated debris resulting from the mission and the congestion of the orbit into which the space object is being launched. Satellite manufacturers, operators, and KJ service providers could all share responsibility for payment into such funds. Once debris removal systems are in operation, additional funds could also come from service fees. For example, entities that created debris could pay a speciﬁed amount to removal providers in return for the service rendered. Any national space debris removal program must also be kept transparent with ongoing international dialogue in forums such as COPUOS so that other nations can build-up trust in the effectiveness and efﬁciency of the program. A proven debris removal program will result in more productive discussions in these international forums. If the United States and other powerful governments do not take steps now to avert the potentially devastating effects of space debris, the issue risks becoming stalemated in a manner similar to climate change. Given the past hesitation of international forums in addressing the space debris issue, unilateral action is the most appropriate means of instigating space debris removal within the needed timeframe. The United States is well poised for a leadership role in space debris removal. Going forward, the U.S. government should work closely with the commercial sector in this endeavor, focusing on removing pieces of U.S. debris with the greatest potential to contribute to future collisions. It should also keep its space debris removal system as open and transparent as possible to allow for future international cooperation in this ﬁeld. Although leadership in space debris removal will entail certain risks, investing early in preserving the near-Earth space environment is necessary to protect the satellite technology that is so vital to the U.S. military and day-to-day operations of the global economy. By instituting global space debris removal measures, a critical opportunity exists to mitigate and minimize the potential damage of space debris and ensure the sustainable development of the near-Earth space environment.

## Politics DA Is A Net-Benefit

### Congress supports the use of bounties and economic incentives for private companies in space – CSLA act proves

Chaddha 10 [Shane. Ph.D. candidate at University of Manchester. “Space Debris Mitigation”. 4/8/10. <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1586539>.]

The advanced opinion can be supported by looking at the growing development of the U.S. space sector. It has been argued that ‘[t]he United States has laid down a space infrastructure which offers affordable manned and unmanned space services to the government and commercial enterprises, including individuals, and economically sustains its private space industry’. One such factor identified was American political and legislative support. The House of Congress enacted the Commercial Space Launch of Amendments Act of 2004 (CSLAA) to accommodate to the commercialised space travel market and nurture its growth, and repealed earlier legal frameworks containing obstacles which significantly impeded the maturity of the country’s space markets and stifled space technological innovation. This Act has several purposes in order to achieve ‘to promote the development of the emerging commercial space flight industry’, which are codified under section 70101(10) – (15), Title 49 of the United States Code. For the purposes of the following analysis, section 70101(a)(15) in Title 49 of the United States Code shall be considered. It reads: ‘the regulatory standards governing human space flight must evolve as the industry matures so that regulations neither stifle technology development nor expose crew or space flight participants to avoidable risks as the public comes to expect greater safety for crew and space flight participants from the industry’. This provision adds impetus to the claim that States are prepared to exercise leniency in controlling, in this case, the manned spaceflights market and imposing mandatory safety requirements in order to stimulate technological innovation for the build of human-carrying vehicles.

## Weaponization DA Is A Net-Benefit

### No company would use their orbiting garbage trucks as a weapon—license would be revoked

Foust 9 (Jeff Foust is the editor and publisher of The Space Review. 7/27/09, “Putting a Bounty on Orbital Debris”, The Space Review, http://www.thespacereview.com/article/1427/1)

Any such approach, though, does raise questions about space weaponization: any system that can remove a useless object from orbit, as one questioner noted, can also remove a *useful* object from orbit. “It is a sticky issue,” Wingo admitted. “If you have an open system where you tell everyone what you’re doing and allow everyone to look at it, I think you can get it through.” “What I’m doing is a garbage truck. It could be a lethal weapon,” said Carroll. “But, if the company’s registered, if they’re paid to remove garbage and they could lose their registration and their paycheck if they use it as a lethal weapon, there’s less to worry about.”

## Spending DA Is A Net-Benefit

### Bounty is paid by launch vehicle fees – little government spending is needed

Foust 9 (Jeff Foust is the editor and publisher of The Space Review. 7/27/09, “Putting a Bounty on Orbital Debris”, The Space Review, http://www.thespacereview.com/article/1427/1)

While the potential economic benefits of either salvaging GEO satellites and/or getting paid by satellite operators to boost their satellites from GEO at the end of their lives might yet allow a business plan to close for companies interested in this market, attorney Jim Dunstan proposed an alternative concept. He took as his inspiration the little-known Universal Service Administrative Company (USAC), a non-profit corporation that administers the Universal Service Fund. That fund collects fees from telecommunications companies (usually in the form of surcharges on customers’ bills) and disperses it to companies and organizations providing services in rural areas or to low-income consumers. Dunstan proposed a similar approach, with the government levying a fee on launch vehicle and spacecraft operators based on the spacecraft mass, orbital inclination, and other key parameters. The fees would be escrowed by a corporation similar to USAC. This company would, in turn, place “bounties” on objects in orbit based on their size that the risk that they posed. US companies would be eligible to collect the bounties if they deorbited or otherwise safed the objects. (Foreign companies would not be eligible since it would be a US program, Dunstan explained, but he said he could see other countries establishing similar programs.) While **the bounty fund would not come from taxpayer dollars**, Dunstan said there would still be a government role in licensing the “bounty hunters” and making sure they can operate safely in orbit, setting up insurance requirements, and indemnify the bounty hunters for any losses above their required insurance level (a system analogous to launch insurance requirements and indemnification.) Dunstan said he’s still working the numbers on this proposal, but notes that USAC collects and distributes $4 billion a year, and companies already pay the FCC $120,000 a year for communications satellite licensing, even though there’s very little regulatory overhead once the satellite is launched and operating. “That’s my project for the next few months: to talk with the user side and the potential bounty hunter side and see if there is a happy medium, see if we can come up with a program that doesn’t cost the government money but would provide economic incentive.”

## Solves Environmental Leadership

### ODRRF instills environmental responsibility into private companies – fosters environmental leadership

Chaddha 10 [Shane. Ph.D. candidate at University of Manchester. “Space Debris Mitigation”. 4/8/10. http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1586539.]

Under the recommended legal structure, the International Space Authority would undertake an investigation as to the identity of the polluting space actor. Where the identity is known, that entity is responsible for the adverse harm caused to the outer space environment, and any physically damage to space assets in the ownership of other users will result in a sanction being imposed by virtue of the Space Environmental Tax. However, it is the foreseeable circumstances that the operator’s identity is unknown, or the reasons why debris matter has occurred cannot be determined or it has resulted from the ‘cascading effect’. In instance of the former scenario, the Agency would enter into the financial resources pooled of the ODRRF and bear the cost for the clean-up operation to physically remove the fragments from affected orbit. As well serving as a remedial role, the incorporated economic instruments have a deterrence effect. The joint pooling of the space community’s financial contributions into this Trust not only resolves the issue of free-riding, but acts also as a powerful vehicle to instill environmental responsibility. Individual actors, depositing such payments, would realise that they have a vested interest in the quality of the space environment, and thus persuading these users to adjust their behaviour in such a manner that would preserve their future use. The action of good decision-making choices by planning operations and carrying out in-orbit manoeuvres that are safe would be repeated by the space community, which could result in short- and longterm benefits. Applying the inter-generational equity doctrine, this enables present and future space users to continue enjoying the freedom to enter and use the outer space environment in less congested orbits, greatly reducing the risk of collision and interferences to space operations.