

What do the neighbors think?

Transcript of the July 27, 2007, ILC School meeting with six members of the ILC Citizens' Task Force and about 150 Fermilab scientists and users.

[Intro by Doug Sarno:]

>> Thanks Kurt. When Judy Jackson, the Director of Communications, was approached to do a session on public outreach for the ILC, she immediately thought well "That's a great idea, but I'm not gonna do it. Why don't we let the citizens do it; we're meeting with the citizens, we have citizens working on this and that makes the most sense." And so we thought about it a little bit and said let's have an opportunity for you all to talk to them and them to talk to you and really look at this as a way to start a conversation, because that's really what we're trying to do with the citizens here at Fermilab around the ILC. So we had originally 28 folks; we have 24 folks right now on the Citizens Task Force for the ILC here at Fermilab and they've been meeting monthly since January to learn all about the ILC. We've been running our own community school for the community; and they've been really getting into all kinds of details and many of you have been there giving presentations to them so you know what they're doing; but they're looking at things in depth and they're trying to understand the ILC and as they're doing that they are raising lots of questions; questions that they're asking themselves, questions that they'd like to have answers to, but even more important questions that they'd like to be able to answer to their neighbors. Because they know as they're going through this process, they're going to be seeing people with some information and some information to share and their neighbors have lots of questions. So we thought we would frame today around some of those questions that have been coming up, some of those key things that are arising around the ILC. And as part of them introducing themselves, they're going to start to pose some of those questions to you and we'd like to have a little bit of time where you offer some insight as to how you would answer those questions, and then we'll have some time for you to ask questions to them as we get on. Because we have such a short period of time, it's gonna be a little bit of rush but they're also gonna join you for the wine and cheese and we all know that's where real conversation happens anyway, so we'll use that time as productively as we can; but I'm gonna get right to them, let them introduce themselves, frame some questions and then we'll take some Q and A.

>> Ok. I'm Kent Mutchler [assumed spelling]; I'm Superintendent at Geneva 304 school district and I've been excited to be involved in this process. Besides being a School Superintendent I also have a Master's Degree from Iowa State University in the history of science and technology and so I actually got to take some science and engineering courses as part of those degrees. I am part of the link with the educational community in the area. There are a couple of superintendents on this community, and we're just really excited about the possibilities that this sort of a project might bring and we have a

lot of questions in that regard too. The question that I have from the group is how can we be sure that we will get honest information about risks and impacts of the ILC. It goes on why should we trust you.

[audience laughter]

>> How do we know that we will be treated fairly by the government when it comes to construction impacts and land acquisitions; so those are pretty heavy questions all folded in one. And the only things that I could think of in this regard, there are property rights and we're learning a lot about property rights in law and so we're taking a look as a committee; we're asking these questions. And the facilitator and the Fermilab staff have been good about getting us their best answers or just simply saying we'll get you the information when we can, so that's been very good. The second part of this I would like to use a quote from Enrico Fermi that is in on the wall in the Public Relations Department; and he said at one time scientific thinking and invention flourish best when people are allowed to communicate as much as possible unhampered. What's interesting about that is unhampered, because I know part of the strategy of this group is how can we discuss these issues, and make public the things when they need to be public but not when we don't have answers; and so that's one of the key balancing issues. When you're dealing with the government you have to be open; you have to let the sunshine come in as the sunshine laws say. So being open and having that open discussion as a group has been important. You, as scientists in the neighborhood, need to also take that in mind because people will undoubtedly ask you questions and that sort of thing; and that's part of going back to the trust. You have circles that you run in, friends that you have, you're a rich part of the community and so it's a matter of knowing what you have or saying, "Hey I'll get back to you with that answer later on." And the last thing that I would have to answer this question on trust and risks is that we as a committee are learning these things all the time. So this very process, the fact that Fermilab has stepped forward and said we're going to have this very open process and we're going to take this process over a year or longer; that is a great step forward in getting information because information creates trust.

>> Hi I'm Brett Larson. I live on the southwest side of Batavia; I'm also President of our family business, Larson Becker Company. We are distributors for water well supplies. We supply the contractors the necessary equipment to complete a residential or an irrigation well to the ground water, and we've been doing that since 1945 so my extended community, my customers and the homeowners that they serve, possibly could be impacted with the construction of the ILC. You think about if you have a home, you have a well; you actually want to build this tunnel underneath your house. What does that mean? My question here is what is the true risks to people and the environment from potential radiation generated by the ILC. When people hear the word radiation they always think of massive amounts; is it big with this thing or is it small? What are the potential effects of the ILC on ground water during this operation but mainly I think with more of this construction how much of

an impact will it have; because of its tunneling effect, the access shafts, how would you convey these risks to the public during say a PTA meeting where you have parents and mothers and educators to frame it in true facts so that they can understand exactly what you're trying to do okay?

>> Good afternoon. I'm John Carlson. I live in Geneva and I've lived there all of my life. I own a company called Carlson Tool and Machine, started in 1947. I'm also the Geneva Township highway commissioner which means I've got the public side. I'm doing this a little differently I believe. I've been, I'm gonna say connected vicariously I guess with Fermilab for over, well over 30 years. My father had neutron treatment back in 1976 at the beginning of neutron treatments; it was not successful but it was a scientific program at that time and it's certainly come a long way in 30 years. After that I was on the Valley Industrial Board and worked with Leon Letterman who challenged business owners to do something for their community and set up the Math Science Academy. I have friends that work out here. I see one in the audience that I was on the Geneva Council with, Chuck Brown. So when I was asked to come on this community it was pretty much my curiosity I guess I would say, got the best of me and I sort of wondered with this ILC was. And so that's why my interest in this is now since I'm not working off of notes. I think my question is in the local, state, national, and international groupings things are not done as they were when this place was set up. One, people aren't allowed to smoke so there's no smoke-filled rooms but there are politicians; we need to deal with them. This is by no means the ILC being sited here as a [inaudible]. It's gonna require a lot of participation; a lot of participation from the technical people, the scientists, everybody. And certainly my question is, I guess you can maybe tell, I'm really a proponent of this because Fermilab has been a fantastic neighbor for over 30 years but that doesn't guarantee beans; you know with the state, the local people. I have a brother-in-law, college educated; when the SCC came here he was worried about radiation. I said, "Your family puts more radiation in your hamper with your Morton Salt that there's gonna be under the ground." But again, people need to be educated and you just can't shove it down their throats. So beating around the bush I guess my question is I'm wondering what level of participation and when people of the Fermilab community will help us get on with doing this because we're gonna need a whole boat load of help.

>> Hi. My name is Terry Voltik and I reside in Aurora, DuPage County. I am here today because I care about my community as well as the world that we will leave for our grandchildren. I'm an active member of the following groups: I'm a War 10 Alderman's Committee member, I'm a former ex-common active member of the Valley of the Fox Sierra Club, and I'm also active in the Big Woods Marmion Neighborhood Association; I'm also a regular in Aurora City Hall; I'm the grandmother of 6, but at one time I was the PTA mom that we were talking about that will be addressing the ILC. We need to explain this is non-scientific easy

terms so that everyone in our community can understand the ILC and its function and benefits. So my questions are: One, if you had 60 seconds to describe the ILC, how would you describe what it is and what it does, and that's kind of in the spirit of your last page of Symmetry Magazine, and my second question is, what political strategy would turn the ILC into a reality both locally, regionally, nationally, and internationally. Thank you.

>> Hi. My name is Roger Vernon and I'm the citizen of Aurora, I'm also the President of the Big Woods Marmion Neighborhood which is borders farming on the Southside; I'm the Chairman for the Aurora Neighborhood Council and as such I've got a lot of inroads into the general community citizens. Questions that I've got are: Why should we build the IRC at Fermilab? Why is the ILC best for Fermilab and conversely why is the Fermilab best for the ILC? Also what can the local citizens do to promote the ILC in the US, specifically how can we help bring the ILC to Fermilab?

>> And last but hopefully not least, I'm Dan Lobbes, I'm the Director of Land Protection for the Conservation Foundation which is a regional land and water shed protection group; we were founded in 1972 so we've been at it quite a while now. Of course I have concerns along the environmental strain of things, but I'm also a soccer dad, I also attend church in the area, I'm a resident of Batavia; and when I talk about the ILC project, my involvement so far, and there is one overriding question that comes up and people say so what. Why should we spend so much of our tax dollars to bring this thing to us? What practical applications does it have for me? And so if you're thinking about, and you guys might be called on to address the PTAs in your community about what the ILC is, et cetera; so what scientific as well as social benefits are there to bringing the ILC to Fermi? And my second question that I hear a lot is "What's that gonna do to my house if there's a tunnel underneath it?" What are the safety environmental health impacts that will happen to me and my family?

>> [Doug Sarno speaking:] Thanks everyone. As you can see this is just a few of the folks that are on our Task Force but we have a really wide range of interests and backgrounds; they're spending a lot of time getting smart, but they want to figure out how do they do a better job communicating and how can they work with you to do a better job communicating and understanding the ILC. Before any of you maybe get the wrong idea, I put this poster back behind Dan and Roger. It's not our poster or our mascot or anything; it's sort of our incentive to do public participation right and Judy Jackson kind of drags us around with her all over; because this is what happened when it wasn't done that well during the SSC days. Fermilab was cast in a very negative light and it turned out really being quite instrumental in having the SSC go somewhere else, although that's another longer story, and we don't want that to happen. We want to make sure that we have constructive

relationships; we're not trying to convince anyone of anything; I keep telling these guys your job is not to be cheerleaders for the ILC, that's not what we're trying to do. If anything, we want a healthy dose of skepticism; but what we want to do is make sure that we're facing all potential issues or problems as a partnership, as a team; that we're trying to figure out what are the issues we should be talking about and how do we deal with them. So they've put some questions on the table and we want to get some ideas from you. Let's start with the one that Dan talked about which is really the most important one; it's the so what question. Do you guys have some ideas and how would you tell people this is a worthwhile investment? How do these guys go to their neighbors and say yeah this is the greatest things since sliced bread because. Because why? What are the things that would be compelling for people to say this is something we should get behind? Any ideas? Any thoughts?

>> Hi. My name is George Gollin. I'm a Professor of Physics at the University of Illinois downstate a couple of hours. I have worked on experiments here and I do things involving the ILC now. So let me start by answering your question with a question so to speak; and that's what's the timescale one should use to decide whether or not a project or some effort has had a good payoff. We all know, we all think we all have timescales in mind when we do our own planning. Many of us will save for retirement, we'll save for our kids' education, we will put off having that second scoop of ice cream because it will have a bad payoff later on. I think when one looks at the payoff from basic science versus applied science, what we've seen historically is that it's common for something that just begins because someone is interested in it; for example, quantum mechanics; what makes atoms work; have a complete unforeseen and surprising payoff that plays out typically 30 years later. Quantum mechanics got invented in the '30s, the transistor got invented 15, 20 years later, much of the gross national product in the world comes from the transistor. The thing about basic research is that it's something so new to us, the thing that we're working on, that we can't really foresee the particular societal benefits that occur from it but the payoffs have been so large. The invention of the transistor, nuclear magnetic resonance imaging technology, the computer, that sometimes just casting our nets widely because someone found it interesting to pursue will have a tremendous payoff that makes it worthwhile. There are shorter term benefits; keeping people sharp; making things that are interesting to our young students that attract them is also good, but the societal payoffs are not things that we can predict with enough accuracy to say why if we build this now in 18 years we'll have this benefit. But we've tended to find that good things come about so I guess I would answer that. Sir.

>> Ok. My name is GP [Yeh] and I live in Geneva and I remember that George emphasizes the long term benefits. But actually the ILC was also, something like a great project like this, also has short term tremendous benefits. For example, because the high-energy physicists

wanted to share the data around the world, the world wide web was invented which changed the world; and because for example in the last 10 years or so of research for the ILC, somebody came up with the idea of using the first two miles to make the new light source. The new light source will be a billion times brighter than any single term light source available now. So starting two to five years, it's gonna revolutionalize biology, chemistry, nanotech, the world; so there are many such inventions or in large scale computing, or large scale data network around the world, we improve the world, revolutionalize the world. Another comment that I would like to add is I'm from Asia and I'm very familiar with the situation in Asia and I can honestly say that in Asia we believe that it would be good to build the ILC somewhere in the world.

[Audience laughter]

>> I would like to add just one little word as a benefit. My name is Manfred [Wendt]. I am an engineer at Fermilab but as you know from my ancient I'm from Europe so I work here since a few years only. There are sometimes unforeseeable benefits which come immediately and everyone of you is using probably the Internet today as the Internet was founded at CERN which is a high-energy physics lab as you know which was already not foreseen to make this at CERN because they want to make high-energy physics and not Internet. But it came out so there are sometimes benefits which you cannot foresee.

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[Inaudible audience question]

00:21:02

>> My name is Bokol [assumed spelling] Banergy [assumed spelling]. I am a computer professional at Fermilab but I am trained as a scientist. I came to this country about 30 years ago and for the past 20 years I lived in this area. I worked at Argo National Lab and then I came and worked here. So my children, I raised two girls in this area, and my children went to school just outside of the laboratory, and both of them fortunately became engineers. Both of them are daughters. So one of the great benefits you will find is that having this new facility built here, the whole region will benefit tremendously regarding education. As you know that we really need to push ahead in this country in science and technology education. Although my daughters are engineers, they are very good students. In their classes, they all became lawyers.

[Audience laughter]

>> And I do a lot of mentoring myself to those children, and I think you will realize that also the tremendous benefit is the jobs in the area. There will be tremendous opportunities of jobs, and not just scientists and engineers but also auxiliary jobs that we cannot even fathom yet.

>> I'm Tom Roberts; I live in Batavia, just a half mile past Kirk Road. I think it's important to maintain a sense of wonder. The ILC is a machine that's specifically designed to answer questions that we don't know the answers to and we don't even know the questions yet. And to just keep searching for what it is that makes this world be and behave the way it is and the sense of wonder that engenders in your mind I think is a very important thing to preserve.

>> [Doug Sarno:] Let's follow up on that and change the question just slightly. We had the issue of explain it in 60 seconds. I would add to that. I say how can you say something quickly about the ILC that would make people go, cool. I'd like to have that in my community because that's what we're trying to get people to do. We want people to say wow, neat, that's great, that's something we want to have here. How do you do that? How do you describe it? A sense of wonder I think is one good term. What else might you use to get people who don't know anything about particle physics to suddenly say, "You know that sounds really kind of cool, kind of neat, kind of like something we want to do." Any ideas?

>> My name's Chris Hill, I'm head of the Theory Group here. When my neighbors ask what is the Fermilab Tevatron and what is this all about. It's a very simple answer. That's the world's most powerful microscope. The ILC will be a better microscope. Now you can answer for yourself the question of what good are microscopes. I wanted to add one other thing. Prior to World War II, Paul Samuelson the great economist of the 20th Century was a young wunderkind and he was very famous already and he made a prediction that after World War II the great depression would come back and it did not. And in fact what happened as a result of it not coming back is the economists sat down and they tried to figure out why didn't the great depression come back. And they now understand for the first time since Adam Smith, way back in the late 1700's, why economies grow; and the answer is very simple, basic research. In fact they can actually calculate what fraction of the growth post World War II was due to basic research and the number is 80 percent. There were a bunch of Nobel Prize winners and economists including Robert Solow who were responsible for that. I highly recommend the book called Knowledge and the Wealth of Nations. I can't remember the author which delves into this but those are two simple reasons why.

>> Any others? Some of you must have ways that you describe the ILC.

>> What I say now has nothing to do directly with the ILC what was basic research and ILC is a non for profit, or is research which is really basic research and I think that this is just this what makes a difference between humans and animals.

>> Anything else? Another question you guys want to see posed while we still have time?

>> I think that one thing, any project like this and this is so huge, it's never been done before, it takes so much support. I'd like to go back to the question of what can be done to turn this into a reality and what can each of you do to help bridge that gap locally, state-wide, nationally, internationally; how do we get people excited about this and participate in it?

>> Any thoughts about that?

>> One important thing which I think is going to require participation from community people like yourselves is that it doesn't matter that I know how carefully studies were done about the effect of electrons traveling hundreds of yards under the ground, it doesn't matter that I know how carefully environmental impact is studied. What matters is how we convey it and people like yourselves need to, number one, be willing to pick up the knowledge from us but more importantly be willing to pitch in and try to have ideas as to how this is best conveyed to the public. I think scientists can be very, very good at studying things and being sure, and they can be very, very bad at conveying why they are sure; and that has to be done as a partnership, it can't be done just because the smartest scientist in the room says I'm sure.

>> I think that this group definitely agrees with that and one of their main charges is to do that; is to figure out how we can communicate better, but they're hoping to get a jumpstart from some of you guys.

>> Hi, it's George again. There was a report that the National Academies of Science wrote a couple of years ago now called Rising Above the Gathering Storm. It was something bi-partisan, it was very good, they put it together very rapidly. And it described how important education, basic research, and lots of things in the intellectual infrastructure of the country are to maintaining our competitiveness in the world. It got tremendous play in Washington; all the congressional officers that we visited in various trips to DC knew about it. But I think reports like that have a certain lifetime and then people begin to think about other things. So I think just contact with your congressional delegates, just send them a short note or an e-mail from the website saying that you have concerns about maintaining the US intellectual leadership in the world, and so forth and so on and so support for basic research is important and the ILC is an example of basic research that should be supported. I think the officers do pay a lot of attention to the mail they get from the constituents and that does help.

>> George, the question was also what is the scientific community doing and so you may want to just add a few sentences that contacts that scientists already have with Washington, DC or other places.

>> I think maybe I would let Breese [assumed spelling] Quinn, who's another university professor answer that. Breese is really a pro at this.

>> Not a pro. Yes, I'm Breese Quinn. I work at the University of Mississippi. I've worked at Fermilab since about the late '80s or so. Over the past couple of years I've been on Users Executive Committee, a sort of representative group of the users of Fermilab, and my job on Users the past couple of years has been organizing our advocacy efforts in Washington. And so the things that we do, we take about 40 physicists every year, every spring to Washington; and this year we visited with 286 Congressional officers in two days and to tell them basically about why we think high-energy physics is really cool and why we think it should be funded. We also go to more specific trips to talk to key members of the administration, and we've also in the past year started an effort to try to get nationwide visits to local congressional offices and using people from all of the national laboratories not just Fermilab. And so we've been going for a long time. We do a lot of letter writing campaigns as well at key times and we've gotten a lot of coverage, we make an awful lot of visits. One of the things that I would hope for a little bit longer term that I might disagree with Doug a little bit on and that is eventually after the end of this process, I would love it if you guys would become cheerleaders for what's going on; because one of the challenges that we have for high-energy physics and basic research in general, is that there's some other scientists that there are very obvious immediate paybacks, immediate practical benefits that build you a better TV next year. That's not the case for us. It's a little bit harder sell. And some of these scientists, their scientists go to Washington, they talk about what's cool about their field but then also a dozen other industries come with their lobbyists and they talk about why that field is really cool too. We don't have that so much. What I think is really missing in our advocacy efforts is they're not hearing high-energy physics from too many other places except from high-energy physicists; and so I would love it if at the end of this process that you guys are going through that we do have some cheerleaders from other sectors that then can organize supportive efforts to government officials, that can help sell this idea of high-energy physics and basic science in general; but particularly with them at the ILC so yeah I mean having other people talking specifically about why they think high-energy physics is great and we ought to be doing it here. So that's sort of what we're doing and how I think we would love to have your help in those efforts as well.

>> Great. Thanks. Any questions for these guys with the last few minutes that we have. Anything you'd like to hear from them?

>> My name is Chuck Brown; I'm a Physicist here at Fermilab but I'm also an Alderman in Geneva and I know Superintendent Mutchler and Alderman Carlson. Those are two titles that you keep for your life it turns out; I have no idea why. I'm also an Alderman in Geneva and I'm also a casualty, if you wish, of the fight for the SSC against CATCH. CATCH stands for Citizens Against The Collider Here; the operative word is Here. I got to know these people and their passion against the SSC was inversely proportional to their distance from the proposed path. Those people who lived within a mile or so were worried about traffic, they were worried about the tailings, they were worried about the noise of the compressors. Those people who lived within a few hundred yards were worried about property values, the religion in the western suburbs. And the problem is that the passion of those people was not outweighed, was not canceled out by the passion of the other people. Fermilab had very good relations; it was a lot of people who liked us very much, they were in favor of the SSC, but their passion was not enough to outweigh the volume that was coming from CATCH, and that was the probably we had; people would say oh that sounds like it's good, it's ok, but it's another big government project and we'll sort of ignore it because we have lots of problems on the local level which we all know about, and we just never managed to generate enough enthusiasm to overcome the volume of the CATCH people. And I see that that's the problem that we have to somehow overcome because it will occur; it will be this phenomena of the closer you live to the actual footprint the more you are likely to be against it and it was very little in the way of logic that could be used to operate on these people. They would start their sentence by "Well I've been to college but," and you'd watch the argument and you just don't get anywhere. So I think it is the matter of getting the general public to realize that having this project will bring lots of good things to the area; I think Fermilab is a good example of that; it certainly enriched the western suburbs and in many ways direct and indirect. And you have to somehow convince enough people that in the end we're going to be able to outweigh the people at the vortex of the problem who are probably gonna be against it, and they're gonna be against it enough to invest money in it, hiring lawyers, et cetera. This is the problem we had at CATCH that we never actually overcame.

>> Any thoughts or reactions to that?

>> No not much but other than Fermi right now is contained within 6,000 acres. This is a project that will be extending beyond that. Sure it's 300 feet underground but it's going to be below somebody or ruins their property, and sure it's pretty much out of sight but there are these access shafts and what opportunities do these access shafts present to these local communities and how they're built and structured, and the noise around them just during the construction and operations, esthetics; how can the project benefit those local areas, whether it's five acres or ten acres or whatever these sites are. It seems to be

wide open right now, we don't really know. We'll find out I think shortly from Vic over here. But that's where I think you're going to find any resistance to this thing. This project is where is it gonna be and how does that affect us locally? And of course like I said in my industry, the water wells and if it's underneath the house, it has a water well and they have no other option for water and that's well gotta move, what are you gonna do? You know, so.

>> Peter Passe [assumed spelling] visiting from the University of Glasgow. It seems to me that the European experiences are relevant. There are two European centers which have built high-energy colliders in tunnels underground with access shots in Geneva, Switzerland and in Hamburg. There are residents there who don't seem to mind at all and they're very happy about this; maybe there are others who were apprehensive at first; but there should probably be some conversations with both the laboratories and the residents in those areas just to find out what they have to say and how this can reassure at least some of the doubts about the future project here.

>> I think Chuck raised a great, great, issue and I don't know the answer to that Chuck. I think part of that goes back to applied versus theoretical science, and if you can show people the applications and the benefits that they're gaining and the short-term, that's so important. If we can put scientific terminology and impact into understandable terminology or concepts; it's like raising a level of thinking, raising a level of concepts and also throwing out the pragmatic implications where people benefit but when it comes to the term, for example, radiation. Well what quantity, what is the past experience and again drawing on the experiences in Europe where you can show the impact or the lack of impact; that's the best thing that can be done but you're also correct in that there are some folks out there that don't want change or will oppose anything. So the best thing I think that anyone can do is take their best step forward and try to make it as logical as possible.

>> [Doug Sarno:] Just so you know, we went out of our way to find some of the leaders of CATCH and get them on this task force; and so that we make sure that we have that perspective, we understand where they're coming from and where they're concerns were so that we can address them better this time and do a better job reaching out to them this time. Any other? We have probably time for one or two more comments.

>> [Brendan Casey:] So I have 30 cents in my bank account right now because I bought a house last week, and so first we started talking about water and then we started talking about property values, and then we started talking about noise. This ILC thing certainly doesn't sound like such a good idea. So where do I get all these answers to all these

questions? So I'm here and I don't even know where to get the answers to these questions.

>> [Kurt Riesselmann:] Yes the first reaction is trying to say that accelerators found around nobody will hear anything about it. But then yes if you think about it there will be generators on site and everything, and that is something that is part of this engineering phase that is going on right now, and hopefully by 2009, 2010 we will understand better what exactly the details are, which machines are needed above ground, how much rock needs to be removed, how many [inaudible], so these are answers that people are working on right now and in many cases we are to say honestly, we don't know the answer yet. Some we already have, others are still in the works; but what we all have to come to realize, everybody in the room, everybody working on the ILC that we over the next couple of years, the sooner the better, we need to find these answers for the property owners, for everybody here in the community. Vic, you want to chip in?

>> I'm Vic Kuchler. Most of you know me and I've had the opportunity to work with the Task Force over the past months. When I'm in town I attend the meetings and just this last Tuesday I was able to give a presentation on exactly this topic which is the conventional facilities. I'm not a physicist; I'm in charge of trying to match what you guys need with the community and what the impact on the community is. And one of the points I tried to make on Tuesday is if anyone including anyone in this room thinks that we can build this without bothering anyone, that's not gonna happen. What we have to do is understand what the impacts are, understand and minimize any kind of problems and get that to some consensus with the community at large and let people know what's gonna happen, what the differences are between the constructional phase, and the operational phase, which on the surface is significant in some cases. We have to try to make adjustments to the absolute parameters that the conventional facilities guys are given, say the shafts have to be here and the cryogenics have to be here, and this has to be here, and match those with what the site can give us and also a point that I've suggested totally on my own, so Department of Energy please bear with me. But the point is that if we're going to co-exist from the start in the community, we have to be able to make concessions to the community for what their needs are. There will be shafts, there will be areas off the site that impact and take up space on the surface. We don't have an exact amount of space, or buildings or acreage that needs to be done but if one place is a little bit easier to do, maybe we can put a little bit more there. If there's some place that's very restricted, we may have to adjust. If there's some place that needs other things for the community, we may have to accommodate that. We may have to include that into the development of that area. And so we talked about this on Tuesday, they've been talking about it for eight months and this is a good start. This is exactly what has to get done because there's scientific and technical requirements, there are community requirements,

and somehow we have to reach a consensus. We can't just say this is the way it's gonna be or it won't be here, is my opinion anyway, so.

>> Vic, I have one comment and that is (a) The trick is to make it as desirable as possible to the community, and (b) to communicate those desirable aspects so that they'll be willing to put up with the inconveniences during construction obviously but also during operation and that's a tall order.

>> It is but we have to get started. We've already started.

>> We'll use that to wrap this up and I think that gentleman's question hit the nail on the head; which is the way that you view this in terms of wanting to build this thing up, seeing all the value of building this thing both to the physics community and society at large and the world and the future, is one perspective. It's a very different perspective for somebody who's just realizing this is gonna be under their house and what does that mean to me. And how do we marry those perspectives and how do we get those people in true communication and true partnership is what this Task Force is starting to do and what we need to do over time here at Fermilab. So thank you all for your time and they'll be there upstairs to talk to you more as we move forward.

[audience hand claps]